



**Arab American University- Campus of Ramallah**

**Faculty of Graduate Studies**

**Challenges of Measuring the Impact of Strategic  
Planning on Environmental Health Management in  
Palestine**

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requirements for the Degree of Master in Strategic  
Planning and Fundraising**

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# Challenges of Measuring the Impact of Strategic Planning on Environmental Health Management in Palestine

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## DECLARATION

I, the undersigned, declare that the work presented in this thesis is based on my own work and has not been submitted for any degree in any University, institution, or other college of higher education than Arab American University – Palestine (AAUP) in Palestine for academic credit.

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## **ACKNOWLEDGMENTS**

We certify that this thesis by Fatma Rabaya was undertaken under our Appendix supervision, and the above declaration is definitely true to the best of our knowledge and belief.

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## **Abstract**

This study aims to identifying the challenges facing the Palestinian environmental health sector in adopting and implementing strategic planning, and its impact on the management of the environmental health in Palestine; through studying, analyzing the strategic plans and policies that are adopted by the related ministries and institutions, studying the reality of the institutions structure, and the role in carrying out the responsibilities, in order to recognize the obstacles encountered in the implementation process. So as to reach the best strategy, I studied the reality of the situation in Palestine, and the benefits gained from the past experience from other countries in this field.

To achieve this goal, the researcher used a quantitative approach by designing a survey questionnaire as a means of collecting the necessary data and surveying the sample of the study. (٥٥) Questionnaires were distributed to the employees of the Palestinian ministers, institutions and municipalities, (٥٢) questionnaires were retrieved representing (٩٥%) response. The researcher used windows software program (SPDSS version ٢٠) to analyze data, and the results of the study showed that there is a positive and significant impact of strategic planning as an independent variable on all the dependent variables of the study (managing the five environmental health departments: Food Safety and Control, the Discharge of Solid and Liquid Waste, Pest and Rodent Control, Safety of Drinking Water, the Crafts and Industries Control)..

The study concludes a range of results mainly: despite that there is high positive degree of perceptions of the importance of employing strategic planning on the environment health management in Palestine, but the plan was not quite up to the national level, it need more development in the strategic planning and policies, to dell with some mainly

challenges like financial issue, poor planning in the organizations, Israeli occupation practices, and lack of clarity of powers which play negative impact of environmental health management.

The study provided the policy maker with a set of recommendations: to upgrade the national planning to include all the environmental health categories and integrate its developmental needs in a sustainable framework of comprehensive planning cross all sectors, and to concentrate on developing financial and critical policies through forming a supreme council of environmental health to organize the management of environmental health sector, to help the future generation contribute to achieving the nations sustainable development.

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## List of Abbreviations

<b>WHO:</b>	World health organization.....
<b>EHA:</b>	The environmental health of Australia.....
<b>ALGA:</b>	Australian local government association.....
<b>DOH:</b>	The south Australian department of health.....
<b>EPA:</b>	Environmental protection authority.....
<b>IPA:</b>	Israel planning authority.....
<b>EIP:</b>	Environmental impact assessment.....
<b>MOEP:</b>	Ministry of environmental protection agency.....
<b>EEA:</b>	The European environmental agency.....
<b>DEPA:</b>	The Danish environmental protection agency.....

## Chapter one

### Introduction

#### ١,١ Introduction

The importance of the strategic planning lies in the systematic process, that seeks to achieve a clear vision, on the future of a specific topic, in order to translate it into objectives based on a series of steps, which are a means to help the officials, especially the executives, determining the appropriate actions to achieve the best results, based on the use of the available resources in the work environment.

The environment sector possesses a great importance at the global and local levels, because of its economic, social, and health effects. It must be managed in a deliberate and planned manner.

Public health clarifies the science of protecting the safety and improving the health of communities; through research and policymaking for disease, education and injury prevention.

Environmental Health is the branch of Public Health concerned with all aspects of the natural environment that may affect human health. To understand the meaning of the environmental health exactly. See the definition of it by WHO (n.d) “health topics. Environmental health “Retrieved ١٠ January ٢٠١٥.”<sup>١</sup>

(The Environmental Health addresses all the physical, chemical and biological factors<sup>٢</sup> external to a person, and all the related factors impacting behaviors. It encompasses the assessment and control of those environmental factors that can

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<sup>١</sup>World Health Organization World Report on Ageing and Health. Geneva, Switzerland: World Health Organization, ٢٠١٥

potentially affect health. It is targeted towards preventing diseases and creating health supportive. This definition excludes the behavior not related to the environment, as well as the behavior related to the social and cultural environments as genetics).

The environmental health services defined also by WHO as (those services which implement the environmental health policies through monitoring and control activities). They also carry out the role by promoting the improvement of the environmental parameters, and by encouraging the use of the environmentally friendly and healthy technologies, and the behaviors. They also have a leading role in developing and suggesting new policy areas.

Environmental health contains five basic disciplines: Exposure science, Toxicology. Environmental epidemiology, Environmental engineering and Environmental law.

So we can see that the environmental health system should provide safe and affordable health care for humans, it studies how the environmental factors can hurt the human health and how to recognize, control and prevent such effects. Detect technique of diseases caused by the environmental exposures, by treating the disposal of toxic and solid waste, in addition to reducing water, air, food and noise pollution.

The management of environmental health in Palestine must be one of the cornerstones of the coming phase of the reconstruction, as preserving health is a basic need for the citizen.

The industrial and technological progress, accelerated development, in addition to the urban and demographic growth and development resulting from the high fertility

of our Palestinian society, have played a major role in increasing the burden of the Environmental Health management due to the increase of pollution.

The Palestinian environment suffered from an exceptional situation, where the destructive behavior of the Israeli occupation left a catastrophic situation for the environment, in terms of the lack of water resources, and deterioration in quality, in addition to the random spread of landfills, in addition to high population growth, and the worst decrease in the level of the environmental awareness among citizens of the Environmental Affairs.

The study aims to shed light on the environmental health sector in Palestine, and its management through deepening creative initiatives in the strategic planning and institutional cooperation, as well as integrating roles with the local and regional community to develop mechanisms, and procedures that enable this sector to protect the human from diseases caused by the environmental factors and mitigate pollution in all environmental areas of soil, water and air, and to reduce the spread of those diseases in cooperation with the rest of the world.

## **١,٢ The study significance**

The global interest in environmental health has increased recently, as well as the keenness to develop its management through targeted strategic planning, and defining the future vision so that it works on the continuous improvement of human public health. This was clear from the increased conviction of the importance of maintaining positive interaction, between man and his surrounding environment, and the reflection of each on the other.

Therefore, the result of this study will bridge the knowledge gap, due to the scarcity of the studies on the challenge facing the Palestinian environmental health sector in adopting and implementing strategic planning and its impact on the environmental health management in Palestine, especially in Arab studies and Palestinian. Therefore, the importance of this study lies in its scientific and practical importance.

## 1.3 Problem statement

In the reality of the Palestinian territories, many efforts have been made in the environment and health sectors, by the government ministries and private sector institutions, from the start of the strategic planning to the implementation phase, which has led to tangible improvements on these two important sectors, but this does not negate the existence of some outstanding problems and renewed several reasons, which negatively affect the health of the citizens, such as the negative impact of the spread of random dumpsites or the disposal of toxic or medical wastes in a non-scientific way that preserves the environment from pollution, in addition to the spread of sewage, in some areas where there is no sewage network and many other environmental problems.

In Palestine, there is no independent administration that manages the issue of environmental health, so as to clarify and monitor the impact of environmental factors on human health and develop the strategic plans to manage this file effectively, in cooperation with other concerned ministries, government institutions and the private sector. Hence, the issue of the environmental health in Palestine is not managed, in an orderly or planned manner in an integrated way, but is complex and distributed to several ministries and institutions overlapping their responsibilities and sometimes, unfortunately, conflict because of the lack of clarity of laws and missions.

It is worth mentioning that the lack of a clear link between the environmental factors, and the impact on health has led to a lack of attention of citizens and their awareness of the importance of preserving the environment, and helping reduce pollution.

## **١,٤ Study objectives**

The main objective of this research is to identifying challenges facing the Palestinian environmental health sector in adopting and implementing strategic planning and its impact on the environmental health management in Palestine in the period ٢٠٠٤-٢٠١٩.

### **١,٤,١ Sub objectives**

١. Studying the organizational structure of the Environmental Health management in Palestine, the work mechanism of implementing plans, monitoring, and the chain of responsibilities.
٢. Thinking in mitigating environmental health challenges facing Palestinian in management health in Palestine.
٣. Searching for the best strategy to manage the environmental health file in Palestine, according to the local data, while benefiting from the experiences of other countries that have succeeded in managing this issue.

## **١,٥ The research questions**

### **١,٥,١ Study questions**

١. What is the general state of the environmental health in the organization?



٢. What are the challenges facing the Palestinian environmental health sector in adopting and implementing strategic planning?
٣. What are the perceptions of the importance of employing strategic planning in improving the environmental health management of Palestinians?
٤. What are the best practices and lessons learned from other countries in employing strategic planning and effect does planning have on the management?

### **١,٦ Scope and limitation of the study**

- Time Limits: This study will apply to the time period between ٢٠٠٤ -٢٠١٩.
- Spatial boundaries: This study will be applied to the State of Palestine.
- Objectives: This study will be applied to the national strategies for the health, to assess the implementation process for this strategic plan.

### **١,٧ The study's community**

The research community will be consisted of all employees and workers in the environmental health sector or related to it, whether in ministries, municipalities, and private sector during the period ٢٠٠٤-٢٠١٩.

## Chapter two

### Literature review

#### ٢,١ The importance of the environmental health

- If we look at the issue with a global dimension, we recognize that the relationship between the human and the environment is one mutual influence, since our actions and choices have a significant impact on the environment. On the other hand, the health of our planet affects our current health, and the future of our societies and families.
- Environmental health is essentially improving the quality of life and health, by understanding, analyzing, and testing the interaction between health and the environment which is reflected in all aspects of life, in terms of the public health of the citizens and the sustainable development of the economy, this is what we will explain in the coming chapters.

#### ٢,١,١ The importance of the environmental health on the public health

For a good and healthy life, we need a supportive, healthy and safe environment, since we depend on the energy and the materials, which are important to sustain life; such as clean air, safe drinking water, nutritious food, and a safe place to live, otherwise, if there is a low level of the environmental quality, it will have a significant impact on the health of people whose health conditions are already at risk. Based on the World Health Organization, the ١٥ of the extra ٢٠ years of life, that we now enjoy compared with a century ago, can be attributed to the environmental health interventions, and it is estimated that; by ٢٠٣٠, climate change is expected to cause an

estimated 20,000 additional deaths per year, from the issues requiring the environmental health solutions, including malnutrition, malaria, diarrhea, and heat stress. Despite being the most essential profession for protecting human health, environmental health is under recognition, misunderstanding and overlooking<sup>Υ</sup>. And it is estimated that 26%<sup>Υ</sup> of the deaths among children under 5 years can be referred to modifiable environmental risk

- Factors such as water, soil and air pollution, climate change, UV radiation and the chemical exposure.<sup>Ξ</sup>
- In order to understand the magnitude of the problem, it is necessary to look at the estimates of the World Health Organization (WHO), where the latter estimated that; the air pollution in the populated areas causes the death of 1.3 million people annually, in addition to 19% of the cancers spread, due to environmental factors such as pollution of outdoor air through heating and cooking fuel in addition to smoking.
- The Environmental Health is considered the cornerstone, to address the environmental factors that increase exposure and disease like: Exposure to hazardous substances in the air, water, soil, and food, climate change, occupational hazards, Natural and technological disasters, the built environment.

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<sup>Υ</sup>Resnick BA Zablotsky J Burke TA Protecting and promoting the nation's health: the environmental public health workforce as a critical component J Public Health Manag Pract 2009;15:21.

<sup>Υ</sup>Sheridan. P, Wilcox. L, Gray et al .Health protection. Working in Public Health: An Introduction to Careers in Public Health 2014;45

<sup>Ξ</sup>Prüss-Ustün A Wolf J Corvalán C et al. Preventing Disease through Healthy Environments: A Global Assessment of the Burden of Disease from Environmental Risks Geneva, Switzerland: World Health Organization, 2016.

- Environmental hazards can increase the risk of disease including asthma, cancer, and heart disease.<sup>o</sup>

**Table (1): The environmental exposures and their implications for the human health.**

<b>Environmental exposure</b>	<b>Example of health effects</b>
Outdoor air pollution.	Respiratory conditions, cardiovascular diseases, lung cancer.
Unsafe drinking water.	Diarrheal (gastrointestinal) illnesses.
Contaminated recreational water.	Diarrheal (gastrointestinal) illnesses, (eye, ear, nose, and throat infections.
Second hand smoke.	<b>In infant:</b> low birth weight, sudden unexpected death infancy (SUDI). <b>In children:</b> Asthma, lower respiratory infections, middle ear infections. <b>In adults:</b> ischemic heart disease, stroke lung cancer
Mosquitoes, ticks and other vectors.	Malaria ,dengue fever ,rickettsia disease
Climate change.	Infectious diseases, including giardiasis cryptosporidiosis and salmonellosis, heatstroke.
Noise	Hearing loss, cardiovascular problems, insomnia, psychophysiological problems.
Lead.	<b>In children:</b> developmental delays, behavioral problems. <b>In adults:</b> increasing blood pressure.
Hazardous substances.	Poisoning, burns, dermatitis.
Household crowding.	Infections, diseases, including lower respiratory infections.
Cold and damp housing.	Excess mortality.
Asbestos.	Breathing difficulties, lung cancer, and mesothelioma.

We want our children to grow up and develop in a healthy and natural way, it is important to provide them with a safe, healthy and protected environment.

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<sup>o</sup>Resnik DB, Portier CD, ٢٠٠٨.

## ٢,١,٢ The importance of the environmental health on the sustainable development

The link between the environmental health and the sustainable development is strong and interdependent, as health is a prerequisite and a product of the economic development. The low level of health is often a consequence of the environmental exposures that trap population and therefore must be addressed to achieve the sustainable development.

Just as healthy people are an essential element of the economic development, people who are less fortunate are more likely to be exposed to the environmental factors. Unhealthy children often cannot attend or perform well in school, and unhealthy adults cannot do well in work or care for their families.

The Environmental health programs also have a direct financial return on the economy, in terms of saving on health sectors, for example in USA every \$١ spent on the national state –level programs \$٧١ in asthma-related expenditures is saved.<sup>٦</sup>

So the important question now is; how can the environmental health be integrated into the sustainable development?

The Environmental health can be integrated into sustainable development by:<sup>٧</sup>

- ١) Enhancing the environmental quality for the poorest populations
- ٢) Realizing that some practice, policies and technologies designed to promote the sustainability and economic development.
- ٣) Addressing the environmental problems that can also provide health benefits, by identifying efforts

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<sup>٦</sup>EEA General brochure- ٢٠١٥-EN

<sup>٧</sup>Carlos F. Corvalan Tord Kjellstrom and Kirk: R, Smith, health, Environment and Sustainable development identifying link and indicators to promote action.

The environmental health community has an essential role to play in underscoring the relationships between the sustainable development and environmental health, as international leaders gather to craft the sustainable development policies.

The sustainable development policies must tend towards large-scale, long-term interventions, on the driving forces working in human society. At many developing countries, this means addressing Inequality, poverty and therefore population growth contribute, for example, to control land degradation and deforestation, loss of biodiversity, soil erosion, food insecurity, and low water quality. In developed countries, inequality is also important large population groups live in distress and relative's poverty.

In addition to the health and the environment, concerns should become an integral part of planning within the framework of sustainable development.

## **٢.٢ The environmental health system**

Environmental health is one of the branches of public health that is concerned with monitoring the relationship between the environment and public health, monitors, measures and examines the effects of the environmental factors on health, in an attempt to mitigate harm to human health, and prevent the spread of diseases and protect children from epidemics and prevent their spread.

The government services provided in the field of environmental health are not a luxury but essential services to keep citizens healthy from exposure to the negative environmental factors; such as pollution of water, soil, air, food, in addition to the change, which leads to diseases and epidemics.

In order to obtain the best management and results in environmental health, it is necessary to build an integrated system that monitor and measures diseases, exposure, hazards and health outcomes, can present real data to quickly respond to emergencies and collect data over time to identify problems for program planning. Also, all government agencies should assess the environmental health of their policies and programs, across all sectors to enhance the health of all communities and people. In order to achieve the best environmental health management system, it is good to consider some important points such as:

- ۱) Creating an integrated infrastructure to collect and track important information.
- ۲) Ensuring that policy and programs are grounded in existing and up –to- date evidence based research.
- ۳) Developing a highly skilled and well -trained workforce.
- ۴) Providing numerous and sustainable funding from diverse sources.
- ۵) Assuring that the environmental health services are equitably accessible.
- ۶) To support the consideration of health impacts, we must encourage incentivizing cross –sectorial partnerships.<sup>^</sup>

Environmental health can support a systematic approach to define the most cost affordable, sustainable, effective, culturally appropriate and feasible set of interventions, across sectors, and can achieve synergy through multiple opportunities that projects and policies provide in different sectors provide.<sup>۹</sup>

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<sup>^</sup>The Environmental health playbook: investing in a Robust environmental health system, ۲۰۱۷.

<sup>۹</sup>Investing in an effective environmental health system”, NEHA Annual Reports ۲۰۱۹

In the document issued by the World Health Organization (WHO) in Europe, several actions have been proposed to help the Member States strengthen and support a sustainable environmental health system. This is done by drawing a road map that can be followed by taking such things as: <sup>١\*</sup>

- ١) Overarching action: adopting a national environmental sustainability policy for health systems;
- ٢) Minimizing and adequately managing waste and hazardous chemicals;
- ٣) Promoting efficient management of resources
- ٤) Promoting sustainable procurement;
- ٥) Reducing health systems' emissions of greenhouse gases and air pollutants;
- ٦) Prioritizing disease prevention, health promotion, and public health services;
- ٧) Minimizing and adequately managing waste and hazardous chemicals;
- ٨) Increasing community resilience and promoting local assets;
- ٩) Engaging the health workforce as an agent of sustainability.

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<sup>١\*</sup>World Health Organization for Europe, ٢٠١٧ (Environmentally sustainable health systems: strategic documents)



## **٧,٧ The strategic planning and policies of the environmental health**

It is known that the importance of strategic planning is the success of the management of any of the files, in terms of studying the reality and the surrounding factors and trying to read the future through the data and analysis, and use them to reach the required vision through achieving the desired goals, and reduce the risks by taking effective and flexible policies to deal with changes constantly.

The Strategic planning in the environmental health differs from all other organizations, because it is characterized according to time limitations. It is a planning for a very long time, and passed on from generation to generation, so it is of great importance and needs to draw up an integrated action plan supported by creative work and policies, that work to maintain Human health and its impact on the surrounding environmental factors.

### **٧.٤ The Environmental health approach-another point of view**

In order to plan and manage environmental health well and successfully in our country, we must review the experiences of others in this subject, in order to benefit from their experience in an attempt to come up with the best system and plan of action, to start from the stage they reached.

Accordingly, we will review some international experiences in environmental health management.

## ٢,٤,١ The Jordanian approach

The health sector in Jordan consists of the sub-sectors provided for the service, which are: the public sector; the private sector; the international organizations; the non-governmental organizations; the charitable societies; and the institutions and councils working to develop the health policies.

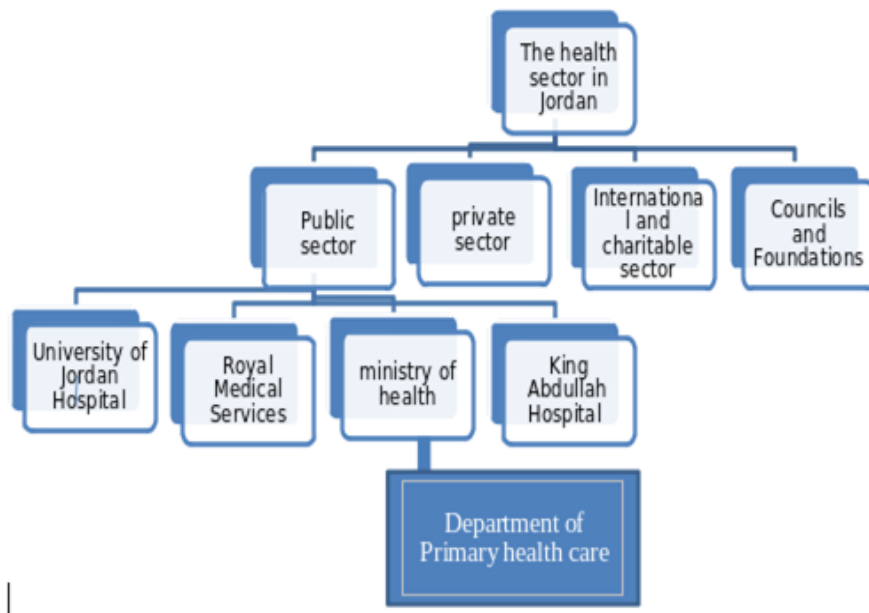
The health sector in Jordan has witnessed an evolution of citizens, and the general health indicators have reflected the quality and efficiency of the health services provided, placing Jordan at an advanced level among the countries of the world, the overall life expectancy at birth has stabilized at ٧٣ years for the year ٢٠١٦, and the maternal mortality rate has decreased from ٤١ per one hundred thousand newborns in ١٩٩٦, to reach ١٩ per ١٠٠,٠٠٠ live births in ٢٠١٦, in addition to expanding the umbrella of the civil health insurance, and providing the voluntary subscription insurance for all citizens who wish, where the proportion of the population of health believers reached ١٠٠% according to general statistics for the year ٢٠١٥<sup>١١</sup>.

The public sector consists of: The Ministry of Health; the Royal Medical Services; in addition to two programs on a smaller scale built on the public university sector: The University of Jordan Hospital; and the King Abdullah Foundation Hospital.

The Ministry of Health consists of several directorates, each with its own specialization and independent management, where Environmental Health has its own directorate.

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<sup>١١</sup> The development of the health sector in the Hashemite Kingdom of Jordan between ١٩٨٤ and ٢٠١٣ Dr. Kamal Bani Hashem, Dr. Rima Yatm, M. Sara Al-Rousan.



**Figure (١): Hierarchical structure of the environmental health sector in Jordan**<sup>١٢</sup>

In order to understand how to manage the environmental health in Jordan, it is necessary to understand the mechanism, and the sequence of the developing strategic plans and policies there. Jordan's public health policy is drawn up by the High Health Council, the council aims to draw, organize and develop the health sector in general, with the aim of expanding health services for all the citizens, in accordance to the latest methods; scientific and technological development.

The Ministry of Health is the largest sub-sector in terms of size, operation and use compared to other sub-sectors.

The national strategy for the health sector is in accordance to the objectives of: “The National Agenda”, “We Are All Jordan”, “Jordan Vision ٢٠٢٥” and “Executive Development Program ٢٠١٦-٢٠١٩” as well as the strategies and plans of the health sectors and sectors related to health.

<sup>١٢</sup>The Center for the Strategic Studies at the University of Jordan (health, public health and health policies, and strategic vision).

The Ministry of Health, in its strategic plans<sup>١٣</sup>, draws the main axes of the Ministry, leaving each directorate with the responsibility to implement the action plan for its administration and achieve the goals set. Through developing annual implementation plans according to strategic plans, goals and indicators.

Each director must follow up and evaluate the extent of implementation of the Plans, and report to the Minister of Health.

**Table (٧): The main tasks for every level in the environmental health management.**

The level	The responsible authority	Main task
National level	High health council	Draw, organized and develop the health sector
Ministerial level	Ministry	١) develop the national strategy for health sector ٢) Monitor the performance of the directorate ٣) Developing the action plan, reporting to the minister.
Provincial level	Health directorate and stakeholders	Implementing the tasks assigned to it under the umbrella of the Environmental Health Directorate in the Ministry

#### **The environmental health directorate:**

It is one of the central directorates of the Ministry and reports to the Primary Health Care Administration, and is located at the executive level of the organizational structure of the Ministry. Which states: "Maintaining public health by providing preventive, curative and supervisory health services.

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<sup>١٣</sup>Strategic plan for the ministry of health in Jordan (٢٠١٣-٢٠١٧), report about the status of environment in Jordan – Policies and Environmental management.

### **The environmental health directorate goals:**

The Directorate derives its general objectives from the objectives of the Ministry, and they are summarized as follows:

- ☐ Ensuring the preservation of public health,
- ☐ Raising the health level of the population,
- ☐ Ensuring compliance with the Ministry's policy, procedures and standards for drinking water quality
- ☐ Ensuring that drinking water service providers
- ☐ The tasks of the Central Environmental Health Directorate are defined by the Ministry of Health within the national strategic plan. For example, the ministry has defined in its strategic plan for the years ٢٠١٨-٢٠٢٢.

### **The sections of the environmental health directorate:**

The Environmental Health Directorate consists of five main sections: Water and Sewerage Resources and Control Division, Controlling the factories and water stations, Environmental Control Department, Chemical Safety Department, and Department of Laboratory.

In Jordan the environmental health sector suffers from the environmental risks, resulting from the climate change and from the great shortage in the amount of water supply for citizens, and the lack of coverage in many regions of the Kingdom of sewage networks, surrounding air pollution and the low level of solid household waste management service. By looking at the Jordanian experience, it becomes clear that it is close to the Palestinian experience and is not much ahead of it, but it can be benefited from in terms of the existence of a special plan for the Environmental Health

Department within the strategic plan of the Jordanian Ministry of Environmental Health, and this does not exist on the Palestinian side.

### ٢,٤,٢ The Australian approach

In Australia, environmental health provides the basis for public health. Improvements in drinking water quality, sanitation, house condition, disease control land, food safety have been fundamental to the dramatic improvement in the quality of life and longevity it has experienced over the past ١٠٠ years.<sup>١٤</sup>

Australian government work on policy and programs to improve Australian's environmental health, working with states and territories through The Office of Health Protection(OHP) which coordinates environmental health advice by The Minister of Health and a wide range of Commonwealth, State, Territory, Industry and the general community.

In Australia, each state and major territory has a local system of the government, as it has its own parliament and legislature, is sovereign, but is subject to Commonwealth powers. It is worth mentioning that each state consists of several local government councils.

On the national level, The Environmental Health Council (EN Health) is primarily responsible for environmental health in Australia, where it is entrusted with the following tasks<sup>١٥</sup>:

- ١) Providing national leadership on environmental health issues.
- ٢) Setting priorities

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<sup>١٤</sup>Journal of public health (Environmental health in Australia: over looked and underrated)

<sup>١٥</sup>Environmental health management plan ٢٠١٢-٢٠١٦. Coorong district council.

- ٣) Coordinating national policies and programs.
- ٤) Providing a pivotal link between environmental health stakeholders in Australia and internationally.
- ٥) Being responsible for the implementation of the Australian National Environmental Health Strategy.

In cooperation with other national institutions such as: The Environmental Health Australia (EHA), relevant Commonwealth State and Territory Department, the public

Health sector, the public environment sector, Australian Local Government Association (ALGA).

On the local level, when we move to the South State we find that The South Australian Department of Health (DOH) is the primary state government which is responsible for the environment health issues such as coordinating environmental health policy, key project and legislation, works in partnership with other relevant state department like: Environmental Protection Authority (EPA), the department for communities and social inclusion.

The local councils have statutory responsibilities for promoting proper standards of environmental health within their area through: Administration of legislation, Provision of environmental health services, and Community education.

By looking at the Australian experience, it is noted that it is characterized by many advantages that have worked to improve the quality of environmental health there, such as:

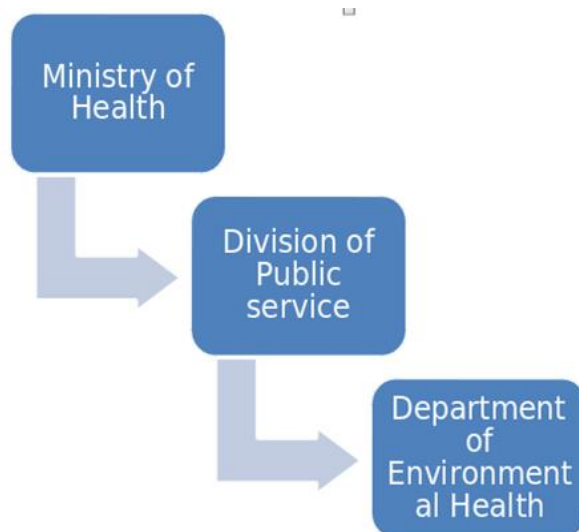
- ١) The existence of a special council for environmental health, where it develops and adopts the strategy for the environmental health department and coordinates and manages work.
- ٢) Existence of a special strategic plan for the environmental health sector.
- ٣) The presence of many institutions, departments and scientific research centers supporting the government in the field of environmental health as business partners within a detailed plan of the tasks of each party in addition to an executive plan and a mechanism for following up on implementation and reporting in addition to clarifying the sources of funding.

#### **٢,٤,٣ The Israeli approach**

In view of our participation in the same environmental conditions, and despite the conflict with the Israeli occupation, we saw it useful to see the Israeli experience in the subject of the environmental health management to see the positives and try to avoid the negatives.

The theme of the environmental health is administered in Israel by the Ministry of Health; by dividing the Public Service through the Department of Environmental Health.





**Figure (٧): The structure of the environmental health sector in Israel**

The department of the environmental health performs the following tasks:

- ☐ Addressing the aspects of human health that are affected by health.
- ☐ The department assesses the health and the environmental factors.
- ☐ The department defines the ministry's policy on environmental health issues..
- ☐ Initiating regulations.
- ☐ Participating in regional planning.
- ☐ Procedures and works on health supervision and monitoring of various entities.

It carries out its tasks by taking responsibility for the following subjects:

- ١) Supervision of drinking water, irrigation with treated sewage, sewage installations, health institutions of educational and welfare institutions courses in the field of the environmental health and courses in the field of the environmental health.
- ٢) Authentication of sewer scheme.

- ٢) Providing preliminary views in accordance to the Commercial Interests Licensing Act, views on building licensing for commercial interests and institutions and perspectives on country, regional, local, detailed maps.
- ٤) Considering and approving new methods and devices for water treatment and sewage treatment.<sup>١٦</sup>

In Israel the hierarchical governmental body that promotes, regulates and plans for infrastructure, industry, development of land for housing and use of natural resources- is the Israel Planning Authority (IPA) which is a part of the Ministry of Finance.

The government produced a report (EIP) Environmental Impact Assessment which is a comprehensive report, on the estimated environmental effects of development projects. Then the (MOEP) and (EIP) regulations do not explicitly require assessment of the health implications of planning initiatives, but they do require the assessment of several health related issues. In ٢٠١٥ the (MOEP) published the Guide to Environment Planning which are the major topics in the field of the health and environment.<sup>١٧</sup>

In general, the environmental health system faces many problems:

- ١) Environmental health policy and regulatory responsibilities are fragmented across multiple national government ministries, regional and local government.
- ٢) For different reasons, data accessibility is limited for researchers and public
- ٣) Lack of capacity and capacity building resources for the environmental health.

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<sup>١٦</sup>Report of the Israeli Ministry of Health, ٢٠١٩

<sup>١٧</sup>Dr. Tamar Berman, Dr. Zohar Itzhak, Environmental health in Israel, ٢٠١٧.

- ٤) There is no central laboratory with the capacity, to deal with all necessary environmental health monitoring.
- ٥) Lack of the analytical capacity for certain contaminants.
- ٦) Lack adequate process to ensure the timely access to important environment health
- ٧) Lack of adequate funding and limited technical expertise.
- ٨) No authority or organization believes that it has a specific environmental health mandate... <sup>١٨</sup>

Due to the lack of sufficient information, the Israeli experience cannot be judged.

### ٢,٤,٤ The Danish approach

The European Union pays great attention to the environmental issues, especially those related to their health implications, and has worked through the World Health Organization there, to promote common solutions, in particular to address health goals and objectives related to the environment, in the sustainable development plan ٢٠٢٠. In Ostrava declaration, ministers and representatives of the European countries in the WHO, European Region set out an intersectional approach to improve the environment.

The EU environmental health portfolio is managed by the European Environmental Agency (EEA), which mainly provides independent information on the environment. The EEA aims to support the sustainable development by helping to achieve a measurable and significant improvement in Europe's environment, through the provision of reliable, targeted, relevant and timely information, to policy making agents and the public.

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<sup>١٨</sup>Environmental Health in Israel, towards enhancing capacity and capabilities.

The Danish environmental policy is generally open and consultative, with a range of measures in place to ensure public participation and stakeholder involvement. In general, Denmark is considered to have a high level of protection in most areas covered by the resort of the Danish Environmental Protection Agency <sup>19</sup>, in particular, in relation to soil, water, waste and waste water.

To understand how the environmental health is managed in Denmark, a brief look at its political system and its sequencing is essential, Danish democracy is organized in three autonomous political and administrative tiers:

**National level:** The Folketing (the Danish Parliament), Government and Government departments.

**Regional level:** The counties; elected county councils and county administrations.

**Local level:** The municipalities; elected city councils and city council administrations.

In relation to the environment and health in particular, the Ministry of the Environment and Energy, the Ministry of Food, Agriculture and Fisheries, the Ministry of Health are important. The most important duties of the departments of those ministries, are tasks directed at the Parliament (the Folketing

Denmark is divided into ١٢ counties, each of which is governed by a county council, a whole range of administrative functions and services are carried out by the counties, namely those which are too comprehensive to be handled by a municipality. The counties also have a wide range of vital tasks in the field of protection of nature and environment.

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<sup>19</sup>The report of Ministry of Environment of Denmark about the Danish Environment Protection Agency DEDA.

Denmark is divided into ٢٧٥ municipalities. A local council governs each local authority, the municipalities deal with the tasks close to the citizens, they are also responsible for the implementation of a substantial part of the Danish environmental regulation as well as spatial planning<sup>٢٠</sup>.

### **The regulatory framework**

The important actors at national level include, but are not limited to, the following:

١) **The Danish parliament:** The parliament work of the parliamentary committee for the Environment & Planning:

- ☐ Lays down the rules, in environmental factors in relation to health.
- ☐ Appropriates money to fulfil the purpose of the legislation.
- ☐ Oversees the administrative implementation of the legislation, based on an interest in the realization of the goals.

### **٢) The ministry of the environment and energy**

The Ministry is responsible for the compliance with the law, and for the implementation of most of the environmental policies. The basic administrative and expert work of the Ministry is carried out by its three agencies:

- ☐ The Danish Environmental Protection Agency (DEPA).
- ☐ The National Forest and Nature Agency.
- ☐ The Danish Energy Agency.

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<sup>٢٠</sup>Environmental factors and health. The Danish Experience, ٢٠٠١

The National Environmental Research Institute is an independent Institute, which was managed by the ministry, its duty is to generate knowledge of relevance for handling the environmental factors in relation to health.

**The Danish environmental protection agency (DEPA):**

The agency's mission is to implement the environmental policy with the help of the county and municipal authorities, and it also administers the environmental legislation.

The following table will clarify the agency's role in every field

**Table (၃): The role of (DEPA) on every field of the environmental health**

Area	responsibility and role of( DEPA)
Drinking water	DEPA is responsible for the preparation of the draft acts, statutory orders and guidelines on water resource planning, and provides guidance for the work of the regional and local authorities, and supports research and development.
Air	DEPA lays down policies and objectives concerning combating air pollution, and prepares draft acts, statutory orders and guidelines to reduce air pollution.
Waste-water	DEPA is responsible for the preparation of draft acts, statutory orders and guidelines on wastewater..
Soil	DEPA prepares and administers the legislation and guidelines on contaminated soil, waste sites and landfills, and supervises clean-ups and purification operations for chemically contaminated soil. DEPA is responsible for the continuous elaboration,
Chemicals	The administration of the Chemical Substances and Products Act is centralized in DEPA, and a very little authority in this area is delegated to the local authorities.
Waste	DEPA is responsible for the preparation of draft acts, statutory orders and guidelines. DEPA prepares statutory orders on waste and specific categories of waste.
Noise	DEPA prepares draft acts, statutory orders and guidelines on noise from trade and industry and from traffic. , and supports research and development.

**٢) The ministry of food, agriculture and fisheries:**

The ministry cooperates with **DEPA**, through the Danish veterinary and food administration, which works as a consultant to the agency, in the tasks related to toxic and risk assessment, where it sets specific values for the maximum use of food additives and for the presence of pollutants or pesticide residues in food.

It also examines food and veterinary supplies, and provides information and guidance related to legislation, including veterinary and food medicine.

**٣) The ministry of food, agriculture and fisheries:**

Collaborates with the **DEPA** agency to take responsibility for ensuring the safety of the food produced and distributed environmentally.

**٤) The ministry of health:**

It is the main health authority in Denmark, and is responsible for the general development of the health sector in its various fields. As for the environmental health, the Ministry of Health is not responsible for regulating the environmental factors, but rather deals with the health problems, resulting from the environmental factors, from a public health perspective. In each province there is one medical office institution so that its employees are in regular contact with the National Health Council and the **DEPA** agency, in order to ensure coordination and modernization of the management of the environmental and health problems, the role of the medical officials in the health field in general, is to monitor the health status in each province, including the health aspects derived from the environmental factors. It is important to note that the medical officials are independent of the county and municipal authorities, as well as being independent of economic interests.

## **٦) Ministry of labor.**

The ministry of labor cooperates with the **DEPA** agency in relation to working environment affairs through the National Working Environmental Authority (NWEA) which subordinate the ministry. This authority inspects the work environment, to verify its compliance with the rules issued by **DEPA**.

### **At the county level:**

The environmental administration at county level is comprehensive, as the environmental administration in Denmark to a high degree, is decentralized to the county and municipal councils, leaving substantial discretionary power in low to the counties and the municipalities, each county therefore implementation, thus rests with the county council and municipal council, and each county council has a number of committees, one of these would be the committee for technical and environmental matters.

When analyzing the Danish experience, we notice a similarity with the Australian experience in terms of the existence of a special council for environmental health, which adopts the strategic plan for environmental health, sets policies, operational plans to distribute tasks to partners and clarify the role of each party.

## **٢,٥) Literature review on theories**

### **١) Carlos F. Corvalan Tord Kjellstrom and Kirk: R, Smith, health, Environment and Sustainable development identifying link and indicators to promote action.**

The paper discussed the link between sustainable development and environmental health. It reviewed the framework that extends from the epidemiological domain to the political domain, and clarifies the environmental pressures that ultimately



lead to changes in the state of the environment, and contribute to human exposure to health impacts as a result of this complex network of interventions.

The paper also discussed the importance of the integrated actions at all levels, and focused on long-term actions to reduce the driving forces that generate environmental health risks.

The paper concluded that: the sustainable development policies should affect us towards longer term, touching upon the driving forces operating in human society.

This would mean- in many developing countries -tackling poverty, thereby contributing, inequities and population growth, for example; the control of land deforestation and degradation, soil erosion, biodiversity loss, decline in water quality and food insecurity. Also, emphasis should be placed on reducing the use of nonrenewable fuels, unsustainable consumption, reducing the generation of solid wastes to minimize boundary pollution. All these action would have sustainable beneficial and long term effects on human health. In general, the paper concluded that the environment and health concerns must become an integral part of the planning within the framework of sustainable development.

#### **٢) The paper of Epidemiology on ISEE ٢٠٠٧ Conference Abstracts Supplement.**

The paper examined the negative impact of environmental degradation in Gaza and the West Bank on environmental health, and attempted to develop a framework to avoid such damage in cooperation with the Israeli side. The data of the study was based on the Palestinian Central Bureau of Statistics and the World health office in Palestine.

The paper concludes that sustainable environmental care is essential for maintaining health issues related to air and water pollution, water quality, food contamination, and waste disposal.

The paper concluded that the cooperative efforts between Palestinian Authorities and Israelis, are necessary to enhance the environmental health in both communities because the environmental health issues do not confess of political, and it is a shared responsibility.

**ሃ) Desk study on the environment in the occupied Palestinian territories (UNEP), march፺፻, ፺፻፲፱.**

The study discussed the environment status of Palestine from several axes, like fresh water, waste water solid waste, hazardous, waste. Finally, it spots light on laws, institutions and land use, and international cooperation in this file.

The objectives of the study were; to clarify the current status of the environment, and to identify the key environmentally affected areas, based on relevant studies and interviews with experienced and knowledgeable individuals.

It outlined priorities and made recommendations to resolve the outstanding environmental problems in the region by The United Nations Environment program.

The study concluded that there is a need for an institutional framework, to negotiate the environmental issues especially during times of conflict.

**፩) In J Environ Res public health ፺፻፻፱ Apr ፩, Guidelines for Environmental Health Management in Children's Homes in Sub-Sahara Africa.**

The objective of the guidelines is to develop a conceptual framework for evaluating, implementing and monitoring the environmental health.

The author recommended a lot of action to manage the environmental health, and its effect on children's home.

#### **●) Human health and environment (OECD)**

The objective of this chapter is to describe the most important impacts on human health of the environmental degradation, and to evaluate the associated amount of health loss. Moreover, to estimate the economic costs of the environment related to health loss that can help to inform the environmental policy design.

## **Chapter three**

### **Environmental health in Palestine**

#### **٣,١ Environmental health in Palestine (general overview)**

##### **٣,١,١ Introduction**

In this chapter, we introduce a study about the current situation of environmental health in Palestine, to shed light on the positives, as well as identifying the weaknesses and negatives, in an attempt to find solutions without being pessimistic. This requires research from all the planning, administrative, executive, and legal aspects. We followed the method of field visits to the officials, who are responsible for work in their ministries and departments, to see the mechanism of work they have on the ground. In addition to seeing the plans, they provided and published.

##### **٣,١,٢ Distribution of roles and responsibilities**

In Palestine, the Ministry of Health is mainly responsible for monitoring environmental health, while the rest of the ministries and institutions, provide assistance and cooperation, such as the Ministry of Local Government, the Water Authority, the Environment Quality Authority, the Ministry of Agriculture, the Municipalities, the Customs Police, the Tourism, the Antiquities and Environment Police, as well as some civil organizations, each according to its role and tasks, which is related to his field of work and jurisdiction. We will clarify that at the end of the chapter through a matrix defining the tasks of each agency, in the issue of the environmental health.

The Ministry of Health includes several departments, including the Public Health Department, which has the branch of the Environmental Health Department,

which is responsible for managing and monitoring the health affairs related to environmental factors.<sup>٢١</sup>

The environmental health department consists of five departments, representing its field of work, as follows:

Food safety control, Drinking water safety, Discharge of solid and liquid waste.

Insects and rodents control, and Control of trades and industries.

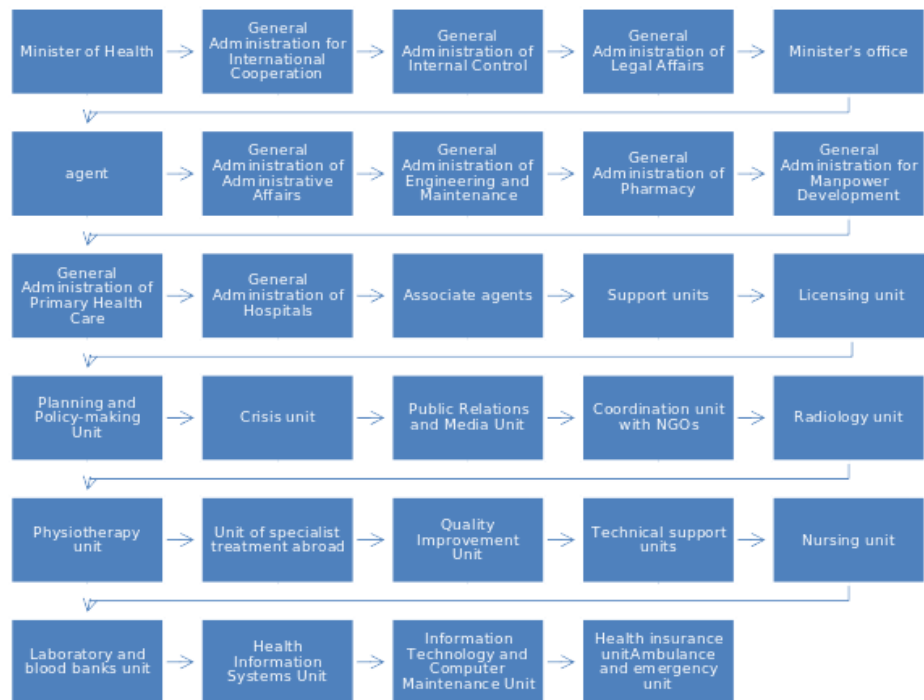
Each of the previous sections, has a specific job description, legal regulations, and definitions of violations and the applicable conditions.

In each department, there is one employee who is responsible for following up the implementation of the work of his department, by the ١٤ environmental health departments in the health directorates spread in the governorates, as the number of the employees in these departments, ranges between ٥-١٠, according to the area of the province, and its need. Their task is to implement the procedures and regulations applicable by the central department in the ministry, as the environmental health inspector has the capacity of a judicial seizure because he carries an identification card.<sup>٢٢</sup>

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<sup>٢١</sup> Dr. Yasser Bouzieh - General Director of Public Health at the Palestinian Ministry of Health.

<sup>٢٢</sup> Engineer Ibrahim Attia - Director of the Environmental Health Department at The Ministry of Environmental Health.



**Figure (٢): The Structure Diagram of the Palestinian Ministry of Health**

The mechanism of the action in managing the environmental health file.

The tasks of implementing the environmental health file, are divided among several parties:

**١) Fourteen health directorates distributed over the governorates:**

- Each governorate has a health department, affiliated with the Ministry of Health, and represented by it, implements its directions and recommendations. It has an Environmental Health Department, and consists of five divisions. It has the same departments as the Environmental Health Department in the aforementioned Ministry, as there are ٢-١٠ employees in each division, the number varies from one directorate to another, according to the area, and the need of the

governorate. The work of these employees shall be field work, represented as follows:

- The Periodic monitoring of the markets, health and food commodities, factories, restaurants and bakeries, water sources from wells and water bottling companies. The monitoring consists of following up and collecting samples periodically, to follow up committing to the health conditions, which are two types. The first is the periodic samples taken according to a pre-prepared schedule, to ensure continued commitment to the health and environmental conditions. Those samples are sent to the central laboratory in the Ministry of Health in Ramallah, on a specific day for each governorate. The second type is urgent samples taken when there is an emergency problem, such as a case of food or water poisoning, or a spread of a disease. Coordination is made to send them to the laboratory, even if this is outside the applicable deadlines.<sup>٢٢</sup>
- Issuing violations of the parties that violate the environmental and health conditions, by dumping waste in places other than those designated for it, for example, not adhering to hygiene.
- Destroying the foodstuffs that are not suitable in the field, with the consent of the owner, or guarding against them in case of failure.
- Participation and supervision of the seasonal business, even outside the official working hours, such as controlling the insects and rodents, and monitoring the night markets during Ramadan.

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<sup>٢٢</sup> Khaled Naierat - Head of the Water Division in the Health and Environment Department in the Jenin Health Directorate.

- Field monitors are assigned at the end of the daily working hours, to write a report explaining the outcome of their municipalities within their work boundaries, and submitted to the head of the health and environment department in the district.

The Municipalities within their boundaries.

The municipalities assist the health directorates, to monitor the environmental health matters within the limits of their properties, and the departments and the mechanism of work differ from one municipality to another in some details, but they all meet in the main tasks of following up the safe disposal of solid and liquid waste, monitoring the food safety, caring for the environment of the municipality boundaries, in terms of cleanliness, afforestation and cooperation with the local community ,to raise the environmental awareness through the environmental clubs in schools and associations, granting licenses to establishments and factories, after verifying that they meet the environmental and health conditions.

For example, in the Municipality of Al-Bireh in the Ramallah governorate, the Health and Environment Department consists of ٧ departments:<sup>٢٤</sup>

١) The Department of the Solid Waste Management:

It is concerned with collecting waste and cleaning the city. It collects waste and transfers it to the Zahrat Al-Finjan landfill in the Jenin governorate, also the department is concerned with removing tree branches, cleaning streets and disposing of destructive things from furniture and other.

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<sup>٢٤</sup>Dr. Iyad Daraghme - Director of the Health and Environment Department at Al-Bireh Municipality.



٢) The Department of the Environment and Horticulture:

It is concerned with planting sidewalks, streets, islands and roundabouts, in order to beautify and make the city green, as well as creating the environmental initiatives, that protect the environment with schools and the environmental associations.

٣) The Department of Health Control.

It is concerned with following up the city's markets, in terms of food, including butcheries, restaurants, bakeries, the municipal slaughterhouse, as well as pursuing health hazards (such as the sewers, the random dumps, and throwing waste in the streets).

**٤) The municipalities have the right to release violations**

Which are legally binding on their owners, and there are some cases that are submitted to the Municipal Court, concerned with the matter for adjudication, noting that the municipalities are legally affiliated with the Ministry of Local Government, which supervises it.<sup>٢٥</sup>

**٥) Different ministries, each according to its specialization:**

The ministries follow up the matters related to environmental health, according to their specialization, and the limits of their authority. For example, the Ministry of the Local Government is concerned with the issue of waste, providing support to the municipalities and health directorates, and supervising and organizing this sector. The Environment Authority follows up and organizes the environmental

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<sup>٢٥</sup>Majed Naiirat - Head of Health Department in Maythaloun Municipality in Jenin.

matters. The Water Authority is concerned with providing water sources, and organizing its distribution, as well as the issue of dealing with wastewater, while the Ministry of Agriculture is concerned with the plant and animal aspect, fertilizers, and their quality and validity. Each ministry has its own strategic plan and goals that it seeks to achieve, and sometimes joint actions are performed through joint meetings and cooperation projects<sup>٢٦</sup>

#### ٤) **The national institute of the public health:**

It was established upon the recommendation of the Council of Ministers on ٤-٥-٢٠١٦ by a presidential decision, as the institute enjoys being legal, financial independence, and legal capacity to undertake all actions, that ensure its achieving.

The goals of the institute:

- ١) Providing the recommendations to the decision-makers and stakeholders.
- ٢) Support and encourage the culture of using scientifically proven information, in setting health policies, and in setting priorities in the field of public health.
- Establishing health records and monitoring systems, supporting and facilitating the use of the national health information.
- Capacity building and competencies in the field of the research and analysis of the relevant health systems.
- ٣) Supporting and encouraging the scientific research in the related fields.
- Building a communication mechanism between the specialists and the researchers, in the field of the public health, to exchange experiences and information.

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<sup>٢٦</sup>Engineer Zaghloul Samhan - Director of the Environmental Quality Authority.

- Supporting the relations between the institutions working in the field of the public health, locally and internationally.

But in fact, the institute's contribution to scientific research is limited, and its work tends towards coordinating efforts and funding for health projects. Its work is directed indirectly by the Ministry of Health through arranging its needs and priorities.<sup>٢٧</sup>

**o) The customs control force is a force within the Palestinian:**

Internal security forces, subject to the laws and regulations of the Palestinian security forces. It was established in ١٩٥٥, by the presidential decree, and works to implement the government's economic policy, and combat settlement goods, and spoiled, expired, forged and counterfeit goods, in addition to combating customs and tax evasion.

Its work is coordinated in the regions, through the Public Safety Committee in the governorate, where a number of committees emerge, and the committee consists of the Ministry of Health, the Customs Police and the National Economy inspect the markets in villages and cities.

The Customs Control sets out its own strategic plan, embodied in setting the agency's goals and achieving them, through the available resources to reach the desired goal.

The Customs Control plays a fundamental and pioneering role in monitoring the foodstuffs of all kinds, as they conduct regular and continuous inspection rounds on shops, factories and others, to ensure their compliance with the conditions.<sup>٢٨</sup>

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<sup>٢٧</sup>Dr. Rand Salman - President of the Palestinian National Institute for Public Health.

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<sup>٢٨</sup> Dr. Hassan El-Jamal - Director of the Department of Tourism, Archeology and Environment.

## ٦) The antiquities, tourism and environment police

The tourism and antiquities police department was formed by a presidential decree by President Yasser Arafat in ١٩٩٥, and it is one of the specialized departments in the Palestinian Police, and has ١١ branches distributed over the governorates of Palestine.

The Environmental police bear the status of the general judicial control, and their goal is to work to enforce laws, protect rights and freedoms, and facilitate the movement of the citizens, and they are legally authorized to investigate and control the environmental crimes, and carry out other assistant procedures, and this is stipulated in the Palestinian law.

### **The environmental police tasks**

- Controlling the environmental crimes in implementation of the Palestinian Environmental Law No. ٧ of ١٩٩٩, and all the laws and regulations emanating from and complementing them.
- Providing protection and support for the competent environmental teams, during inspection tours and environmental monitoring campaigns.
- Contributing to the community awareness to increase interest in preserving the environment, and instilling concepts of sound environmental culture.
- Contributing to preserving the biological diversity in Palestine, both animals and plants.
- Preparing statistics on the environmental crimes and violations, and providing those concerned with them.

- Contributing to preparing strategic plans across sectors, in partnership with stakeholders.
- Capacity building and institutional building development, to keep pace with the development of the environment file.<sup>٢٩</sup>

### **٣,١,٣ Strategic planning and policies followed in the environmental health department in Palestine**

The Palestinian Ministry of Health, which is primarily responsible for environmental health, has a clear vision about the issue of health, which it announced in its strategic plan ٢٠١٧-٢٠٢٢, as its vision was (A comprehensive and integrated health system, that contributes to improving the quality, and promoting the health situation in a sustainable manner) and has set many goals, procedures and indicators of success to achieve this vision. In general, without specifying the concerned administration for each procedure, and without specifying the partners from the rest of the ministries and institutions. However, the Ministry does not deal- in its strategic plan and policies-, with the environmental health file separately and clearly:<sup>٣٠</sup>

- ١) Its duties and objectives were divided into several axes, and overlapped with other files, so there is no link between the factors and their effects on health.
- ٢) The Ministry does not have an information base, or statistics on diseases and health problems related to environmental factors.

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<sup>٢٩</sup> Lotfi Nasser - customs police officer. ١٠ Engineer Milvina El-Jamal – Director of the Environmental Health Department in Ramallah Municipality.

<sup>٣٠</sup> Engineer Ibrahim Attia - Director of the Environmental Health Department at The Ministry of Environmental Health.

- ϣ) It does not have a research department to study the relationship and the influence of the environmental factors on public health, and the spread of diseases, and to predict potential dangers and prepare for them.
- Ϸ) There is no clear definition, standards and indicators for declaring a state of emergency, by the ministry when the environmental risks affecting health exceed the permissible limits.
- ϡ) There is no clear policy to define the relationship between the Ministry of Health, and the rest of the partners in managing the environmental health file.
- ϣ) Adopting a policy of dealing with the current reality, and dealing with its effects, with shy attempts to take preventive procedures, in very narrow areas such as food, drinking water and waste.

The Environmental Health Department in the Ministry of Health, does not have its own plan, unfortunately, not even a specific, targeted and time-bound work plan. Rather, the work is done on an ad hoc basis, according to the experience and vision of the director of the department, without having an approved written plan, despite the department's participation in the Arab environmental health meetings. Coming up with a strategic plan for the environmental health in the participating Arab countries. It has been left to each country to reformulate the plan, in accordance with its specificities. Even the departments do not have an action plan. The policy followed for managing the environmental health file in Palestine, is to define the tasks of each of the five environmental health departments, and to carry out these tasks of monitoring, following up and issuing violations in a routine, customary and agreed upon by the employees where a schedule is set daily, weekly or monthly, to follow up on these matters according to what the head of the department finds appropriate.

As a natural result, the health directorates do not have a specific written plan, to manage the environmental health department, but work is done, and routine monitoring and inspection processes.

The same applies to the environmental health department, or departments in most municipalities. There is no plan for the environmental health department, such as the municipality of Al-Bireh in the governorate of Ramallah and Al-Bireh , or as a municipality representing in the Jenin governorate, but work is done within the municipality's vision in general and its plan.

Some municipalities, such as the municipality of Ramallah, may be exempt from this, where the environmental health department in the municipality has its own written action plan, available for each of its four departments, where work tasks and projects are limited to time and material cost. The meetings are held every three months, to evaluate the work in the department, and the extent of their progress with the terms of the plan.<sup>٣١</sup>

Through the interviews that were made with the concerned parties, we concluded that the planning process is binding on the level of higher administrations only, which means that there is a strategic plan for the ministry as a whole, for the municipality as a whole, or for the directorate as a whole, and the issue of plans is neglected with regard to departments and divisions, and leaves the freedom of people and their convictions.

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<sup>٣١</sup> Engineer Milvina El-Jamal - Director of the Environmental Health Department in Ramallah Municipality.



To clarify how to manage the environmental health issues, and to distribute tasks and responsibilities within the five applicable axes, we decided to summarize this in a matrix for easy reference.

(Table 4): matrix that describes the distribution of responsibilities among the governmental entities in Palestine

Axes	Drinking water safety	Discharge of solid and liquid waste	Food safety control	Insect and rodent control	Control of trades and industries
Water Authority	It monitors the natural water resources (wells and springs) in quantity and quality periodically and regularly to ensure that they remain within the specifications.	Recruiting the necessary funds for the work of the treatment plants and preparing the necessary strategic plans and technical studies, including designs.			Intervention can be made in the event that factories produce pollution that seeps into the groundwater sources.
Ministry of Health	١) It monitors water resources from wells and networks on a regular weekly basis ٢) Recently, in cooperation with the Water Authority, the water distribution tanks are being monitored ٣) Supervising the water bottling companies.	Require the health team to follow safe methods when dealing with medical waste and adhere to the process of sorting, separating and temporary storage of medical waste.	Inspection visits to food establishments from factories, companies, restaurants and m٤) Inspection tours of school canteen markets ٥) Conducting medical examinations for workers in the field of food handling ٦) Approval of the food license for establishments in cooperation with the municipalities.	Monitoring and supervising the spraying campaigns to eliminate insects and rodents ٧ times a year or as required by the situation as a result of following up the injuries resulting from the spread of insects in a specific area.	Granting licenses to factories and industries after inspecting health conditions and following up on complaints in the event of a violation.
Environmental Quality Authority	Monitor and evaluate the status of drinking water and the extent of its possible exposure to	It plays a monitoring role to assess the reality of waste and develops drafts and draft laws for it to		The Cenotaphs of environmental biological changes such as insects, rodents and birds, issuing	Drafting laws and specifications for factories and facilities to preserve the

	pollution through environmental imbalance, and draw the attention of the concerned authorities.	coordinate various efforts and activities Address the topic.		reports accordingly and assessing its impact on the environmental balance and public health.	environment and health.
Ministry of Local Govern-ment		Managing waste services through coordinating efforts between common service councils And the rest of the partners.			Monitor and remove any facility that constitutes a health detriment.
Ministry Of Agriculture		Shy use of wastewater after treating it and conducting a laboratory examination on it to determine the type of crop that suits it.	Monitor the pesticides used in the cultivation of crops and classify them as dangerous and internationally prohibited.	\\). Inventory and classification of plant diseases and harmful insects. \\) Determine the most successful ways and means to combat agricultural and epidemic pests to eliminate sources of infection and prevent their spread.	Monitor commercial and industrial establishments to ensure the implementation of sanitary protocols.
Customs control	Combating counterfeiting and corruption in bottled drinking water		Combating spoiled, expired and counterfeit goods	General control through monitoring of fertilizers and pesticides, not to smuggle or forge them, and their compliance with Palestinian specifications and standards	Monitoring factories to ensure their compliance with sanitary conditions, as well as their compliance with Palestinian specifications and standards

That necessitated development, and the emergence of new challenges and problems for that.

### 3.1.4 **Summary**

The reality of the environmental health in Palestine, is an inconsistent painting due to the presence of several painters, each one draws his part according to his vision. There is no special strategic plan, and a general policy in this sector, that works to arrange work priorities, exchange experiences and unify efforts, as well as follow up implementation and evaluate performance. For an institutional body that sets these strategic plans, general policies, and is referred to in order to gather and arrange all the matters.

### 3.2 **Water pollution problem in Marda village**

As a case study, about the role of the strategic planning in the environmental health management in Palestine, we will study the issue of water pollution, and the poisoning of the citizens in the village of Marda, resulting from drinking it. How the crisis was managed there on reality, and how the problem was solved.

#### 3.2.1 **Case details**

On 4/22/2019, about a thousand residents of the village of Marda, north of Salbit, were poisoned -nearly half of the population- as 2,270 residents live in the village, (according to the Palestinian Central Agency of Statistics for the year 2017), and after examination, it was found that the poisoning was caused by drinking contaminated water.

After many citizens had come to the health center in the village, complaining of the symptoms of food poisoning, they contacted the village council,

and after follow-up and examination, it was suspected that water pollution caused the poisoning of the citizens, and the village council contacted the concerned authorities; the ministries of health and water to report the incident and request assistance.<sup>٣٣</sup>

### ٣,٣,٣ Crisis management

After reporting the increase in poisoning cases in the village, and suspicion of water pollution, crews from The Ministry of the health and The Water Authority<sup>٣٣</sup> went to the village to verify, and find out the causes and source of poisoning, in addition to cooperating with the governorate officials, security agencies as well as members of the local community. The Ministry of Health, represented by its technical teams, directly did the following:

١. Taking samples of water from the main tank in the village, the spring of the village, the water network, and the citizens' tanks, and sending them to the Ministry of Health laboratories for examination.
٢. Taking blood and stool samples from the sick citizens and sending them to be examined, to find out the type of germ.
٣. Preventing the citizens from drinking water from the main tank until it is assured that it is safe. The citizens have been informed of the necessary instructions, through the loudspeakers of the village mosque.
٤. Opening the doors of the clinic of the village for ٢٤ hours, for the citizens, to provide them with the necessary services.

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<sup>٣٣</sup> Dr.Ayed Rateb Alkhuffash, The head of the village council of Marda.

<sup>٣٣</sup> Engineer Ibrahim Attia - Director of the Environmental Health Department at the Ministry of Environmental Health.& Khaled Naierat - Head of the Water Division in the Health and Environment Department in the Jenin Health Directorate. & Dr. Iyad Daraghme - Director of the Health and Environment Department at Al-Bireh Municipality.

٥. Establishing a field hospital in the village, and providing it with medical teams to control the health status of the patients. In order to help the Ministry of Health; the Water Authority's staff also participated in taking samples of water, and sending them to its laboratories for testing.

After reviewing the results of the tests, it was found that coliform bacteria were present in the water, and its contamination due to its mixing with the nearby sewage water. Rapid procedures were taken by the Ministries of Health and the Water Authority to control the situation, represented by the following steps:

١. Stop pumping water to the citizens' houses immediately.
٢. Sterilizing the central water tank in the village, the water network, as well as the citizens' tanks, by teams of the environmental health inspectors from the Ministry of Health.
٣. Providing the citizens with clean and potable water.
٤. An investigation was opened to find out the causes of the pollution.

### **٣,٢,٣ Results of the investigations**

The results of the investigation revealed that the village council in the village pumped water from the village's spring, which later turned out to be contaminated with nearby sewage water, in order to compensate to the water shortage, due to the Israeli company's reduction in the amount of water pumped to the area, which led to the poisoning of the citizens with coliform bacteria.

Despite the council's attempts at first to evade responsibility, and lay the charge against the worn out water network, and sewage water leakage into it through nearby cesspits- after investigations and research- it was found that one of the council's members mixed the network's water with the spring water, to increase the

quantity and fill the shortage, which led to the water pollution and the pollution of citizens.

After the investigations, the truth became clear, and the Council recognized that it assumed responsibility and submitted its resignation to the local government, bearing responsibility and recognition of the error. The behavior shows good faith and lack of experience and knowledge.

### ٢,٢,٤ **The role of the water authority**

The Palestinian Water Authority is responsible for the water networks, and their rehabilitation in the village, as well as providing clean water sources for the citizens, and it used to supply the village of Marda with the water purchased from the Israeli Makaroot Company. It was gathered in the main tank in the village, and then pumped to the citizens' houses. ٢ The Water Authority performs periodic water checks to ensure the safety of the water. When the pollution incident occurred in the village, the Water Authority, in cooperation with the Ministry of Health, directly sent its technical teams to the village, to take various samples, and examine them in its laboratories, to determine the source and cause of the pollution. The results concluded that the cause of the pollution is the use of water from the village's spring contaminated by the absorption holes close to it.

The authority has taken several decisions to solve the problem and ensure that it does not recur.

In addition to the steps taken by the Ministry of Health in this matter, which we mentioned previously, the Water Authority has rehabilitated the most affected part of the network to reduce the loss, which reaches ٤٠٪, and the project is currently in its final stages, in addition to protecting and developing the spring, so as to prevent

recurrence of pollution. It has been closed and prevented from access by the citizens until it is rehabilitated and strict instructions are issued so as not to use it.<sup>٣٤ ٣٥</sup>

### ٣,٢,٥ Conclusion

The incident of water pollution in Marda, revealed the following weaknesses in the strategies of managing the environmental health issues in Palestine:

١. The lack of a unified and clear strategy, with its priorities and projects being studied, classified, and announced to all, so the decision to rehabilitate the network in the village came as a spur of the moment, and was not planned even though the network was not the cause of the pollution, as if the decision came to satisfy the people of the village, and avoid their anger, and not to implement the previously prepared strategies and plans, in which the projects of a high priority within are defined within previously defined criteria.
٢. The absence of a supreme environmental health council; with the specific members and known powers, and plans to refer to it, in case of disagreement, emergency or crisis, as what happened in the village of Marda. Several parties were contacted when the accident happened ,(the Ministry of Health, the Water Authority, the Ministry of Local Government, the Governorate, the security services) and some confusion occurred at the beginning, and it was quickly remedied, but it may be more severe in other incidents in the future if there is no cooperation by the parties concerned due to their multiplicity, and

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<sup>٣٤</sup> Engineer Deeb abdelgafour, Director of the water resources Department at the Palestinian Water Authority.

<sup>٣٥</sup> Mageda Alawena, laboratory director at Palestinian Water Authority.



overlapping powers and the absence of a supreme reference that distributes roles and coordinates between the concerned parties.<sup>٣٦</sup>

٣. The lack of awareness among citizens, and doubts about the sincerity of the warnings of the responsible authorities, as they were previously warned, about the unfit for domestic use of the spring water due to its contamination, and the lack of purification devices on it, and unfortunately- even after more than a year and a half after the accident- knowing its causes and emphasizing the inappropriateness of the spring water- the village council of Marda still denies the pollution of the spring, and blames the worn out water network, this indicates the importance of placing experts and specialists in sensitive centers, responsible for important issues in the lives of citizens such as water, food, and health.<sup>٣٧</sup>
٤. The weak infrastructure in the matter of liquid waste, and the proliferation of the absorbed pits in an ill-considered, and illegal manner in all the lands of the West Bank, makes it easy to repeat the state of pollution, that occurred in the village, in addition to its other dangers; such as the occurrence of children and individuals in it, as what happened in several places in the West Bank, and its contribution Polluting the environment and crops.
٥. Indulgence in applying penalties against violators, justifying it in good faith, and acting in the public interest from a personal point of view, this weakens the confidence in the government and its agencies, which may encourage penetration into other sites.

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<sup>٣٦</sup> Engineer Ibrahim Attia - Director of the Environmental Health Department at the Ministry of Environmental Health.

<sup>٣٧</sup> Adnan Alkhuffash, a citizen from Marda village.

## Chapter four

### Research methodology

In this chapter, the researcher will focus on details on the procedures, and the systematic work of how she implements the task of this study. So the chapter addressed the design study, sample size, method of data technique, reliability and validity of data technique that were used in this study.

#### Σ, \ Study design

From the researcher's point of view, she represents the empirical road map that the researcher will follow to accomplish the research work that leads to identifying other tasks and missions in the study work, starting from the selection of the sample, the sample instruments that were used, and study procedures. To answer research questions, this study adopted the quantitative approach which is an approach that starts from the development of the theory, and then identifies the questions through using quantitative techniques, to get the results of the study, and also using qualitative approach using individual interviews and participant observations. So the research approach of this study contains from two phases:

Phase I: the researcher constructed a study conceptual Model; which contains five elements (Variables) and five main hypotheses, and will be addressed in the study variables.

Phase II: In this, the researcher will conduct an empirical study that will use a questionnaire as the study instrument, in order to answer research questions.

Since the quantitative approach is a structured approach, the researcher will require quantitative measures and instruments, to illustrate the concept and the

hypothesized model, and emphasizes the collection and validity of data. Thus, in this empirical study the researcher concentrates on the quantitative research method.

## ٤,٧ Sampling design

### ٤,٧,١ Population

This study is concerned with how the ministries and institutions plan and manage the issue of environmental health, through the five main axes (food safety control, solid and liquid waste disposal, insect and rodent control, drinking water safety, crafts and industries control).

So the statistical population for this study is represented by the employees of the planning departments in the relevant ministries: (the Ministry of Health, the Ministry of Local Government, the Ministry of Agriculture, the Water Authority, the Environmental Quality Authority), in addition to the employees of the environmental health departments in the health directorates distributed in the governorates as well as in the municipalities.

### ٤,٧,٢ Sample size

A convenience sample from the strategic planning departments' and environmental health departments' employees of different municipalities, and ministries in Ramallah city were targeted. (٥٥) Questionnaires were distributed; of which (٥٧) were returned with a **respondent rate of ٩٤,٥%**.

A number of (٥٥) questionnaires distributed to respondents, and about (٧) questionnaires have been excluded for the lack of seriousness in the answers by the respondent, and data missing due to an empty questionnaire. Thus, the researcher continues to hand out questionnaires again until obtained the conformed sample study

size, in order to get (100%) rate responses and an objective result. At the end, the researcher collected (85) valid questionnaire from respondents.

## **Σ,Υ Study variables & conceptual model**

### **Σ,Υ,1 Study variables**

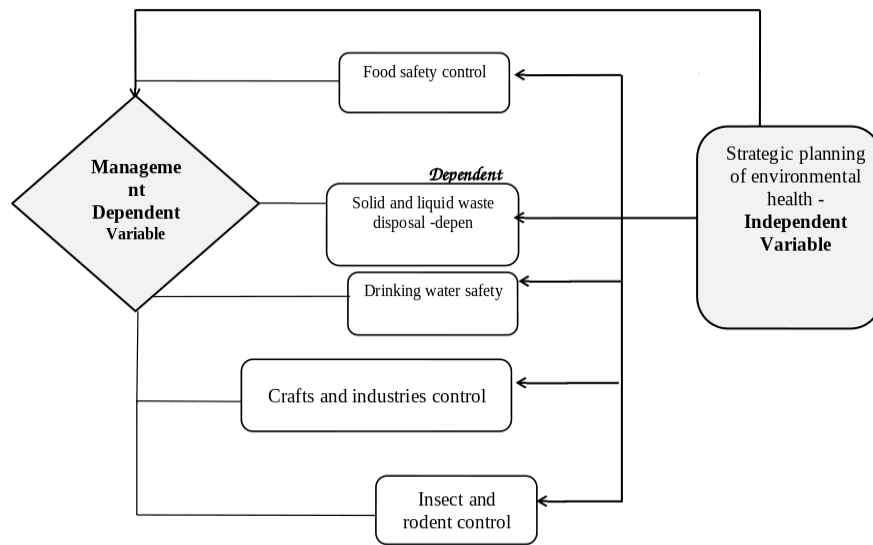
The operational variables that are involved in this study are:

1. Independent variables; variables that cause change and effect on others variables (dependents variables). Here in our study Strategic planning of environmental health.
2. Dependent variables; variables that are affected by the independent variables. Here in our study, the Management of the five environmental health departments (food, water, insects and rodents, solid and liquid waste, crafts and industries)

### **Σ,Υ,2 Conceptual model**

The main aim of this study is to determine the role of the strategic planning on management of the environment health in Palestine, so the study focused on the five environmental health departments; (food, water, insects and rodents, solid and liquid waste, crafts and industries).The researcher constructed a Study Conceptual Model in which the Strategic planning of the environmental health is the main model aspect that formed from five components:

According to the variables of the study and its objectives above; below shown the model of the study which will help the researcher identify clearly the variables, in order to examine and well understand the study hypothesis.



**Figure (٤): Study Conceptual Model**

Source: Researcher

## ٤,٤ Data collection methods

### ٤,٤,١ Data collection source

The researcher used two main sources of information.

#### ٤,٤,١,١ Primary data

This data source has been collected through the study field, which embodies the questionnaire study tool that was used as the main tool, to collect the primary data from participant population study for the fulfillment of the questionnaire, and use personal interviews of participants to determine the state of the environmental health in the field.

#### ٤,٤,١,٢ Secondary Data

The researcher handles this data source through the theory research that was found in different academic sources and empirical studies; such as Academic research

Journals, reports and essays, periodicals, empirical studies, and from different academic websites internet.

### ٤,٤,٦ Data collection technique

According to the design study and its objectives, the researcher depends on the personal interviews and on a questionnaire as the tool of the study; because it is a suitable instrument for the nature of the study society and the characteristics of the sample, and it serves the purpose for having the information that our study required.

### ٤,٥ Questionnaire design

The study model constructed from five elements: food safety control, solid and liquid waste disposal, insect and rodent control, drinking water safety, crafts and industries control and. To cover all the five elements the researcher composed the questionnaire study from two parts:

١. **Part one:** This part included four closed questions; one to four questions aimed to capture the general information and background of population study such as: age, gender, job characteristic, and education level.
٢. **Part two to seven:** composed of close short statements by using multiple Likert Scales (from ١=strongly disagree, to ٥=strongly agree), which embodies the five elements of the model study as following:
  - ١,١ Part one: This part contains the seven items that captured the general state of environmental health in organizations strategic planning.
  - ١,٢ Part two: This part contains the eight items that captured the challenges facing good management of environmental health.

- ١,٣ Part three: This part contains the eleven items that captured the perceptions of the importance of planning on the management of the food safety and control department.
- ١,٤ Part four: This part contains the nine items that captured the perceptions of the importance of planning on the management of the solid and liquid waste department.
- ١,٥ Part five: This part contains the six items that captured the perceptions of the importance of planning on the management of insects and rodents control department.
- ١,٦ Part six: This part contains the ten items that captured the perceptions of the importance of planning on the management of the drinking water safety department.
- ١,٧ Part seven: This part contains the nine items that captured the perceptions of the importance of planning on the management of industries department.

## ٤,٦ Study procedures

### ٤,٦,١ Validity of questionnaire

Before the finalization of the last version of the questionnaire to the study population, the questionnaire passes through many stages as illustrated below:

The questionnaire was sent to (٤) four evaluators including the supervisor's thesis, in order to evaluate the dimensions and the consistency to achieve the purpose of the thesis.

The content validity of this study tool for the present thesis was endorsed as the BYC-Relationship dimensions and its elements, Brand awareness, knowledge, and intended purchase are identified from the previous literature, and were reviewed by (٤) evaluators who participated to test this study tool :(Dr Khaled Rabaya ,Dr Dalal Iriqat,Dr Mohamad abusharbeh,Dr.abdelrahman Tamimi). All evaluators agreed that the above mentioned dimensions and its items in the questionnaire will achieve the main purpose of research objectives.

### ٤,٦,٢ Reliability of questionnaire

To find out the reliability degree of the questionnaire, the researcher used **Cronbach Alpha test** to compute the reliability score, it is used for the study tool before and after the main survey. The acceptable Alpha value that meets the statistical requirement for

The instrument to be characterized as reliable should be equal or above (٠,٧٠) according to Travakol (٢٠١١).



The **Cronbachs alpha** test for the study variables in the questionnaire had a **total value of ٩٢,٨%**, with its value for each main dimensions being as illustrated in Table (٥).

**Table (٥): Cronbach's alpha test values for each dimension of the study**

<b>Variables</b>	<b>Cronbach's Alpha Value (%)</b>
The perceptions of the importance of employing strategic planning on the management of the food safety and control department.	<b>٩٢,٨</b>
The perceptions of the importance of employing strategic planning on the management of the solid and liquid waste disposal department.	<b>٨٤,٢</b>
The perceptions of the importance of employing strategic planning on the management of the insects and rodents control department.	<b>٨٧,٨</b>
The perceptions of the importance of employing strategic planning on the management of the drinking water safety department.	<b>٩٤,٨</b>
The perceptions of the importance of employing strategic planning on the management of crafts and industries control department.	<b>٩٠,٦</b>

Since the total Cronbach's alpha test value and all sub-values shown in table (٥) are higher than ٧٠%; then all of the elements were considered reliable, and the researcher continued to the next step that is the Statistical Analysis of the gathered data.

### **٤,٧ Data analysis methods**

The study adopted a symmetric statistics analysis using windows software program (**SPSS version ٢٠**), in order to analyze the value collected from participants of the questionnaire distributed to them. The researcher uses two kind of statistics analysis to encompass every data result that was collected from the questionnaires as the following:



### ١. Descriptive analysis

The researcher used a descriptive analysis statistic to describe the frequencies and percentage of demographic characteristics of the study sample and primary data; such as histogram, tabular, graphs, charts, to make study data easier to read and more understandable. Also the standard deviation and mean were computed to show the average location of the data, besides inferential statistics were used to know the most respondent of the participant on the statement of the questionnaire.

### ٢. Qualitative analysis

To test the constructed study conceptual model, the researcher employed (Pearson-Correlations) to find the correlation relationship between the independent variable (Strategic planning of environmental health) and dependent variables management of the five environmental departments : food safety control, drinking water safety, insects and rodents control, solid and liquid waste disposal , crafts and industries control), and linear regression to test the significance impact of independent variable upon the dependent variables. And for the test of the hypothesis the researcher uses: independent T-test, and One-way ANNOVA test.

## Chapter five

### Statistical analysis and discussion

The sample data collected by the researcher using the questionnaire (appendix) will be analyzed using SPSS ١٩,٠, through the following statistical tests:

- Descriptive statistics: Frequencies and percentages will be used for analysis of demographic variables.
- Mean and standard deviation will be used for assessing the levels of agreement and disagreement to the variables of the different dimensions of the study.
- One sample T- Test will be used to find out if there are statistical differences between the samples means of variables of the different dimensions and the test value.

A convenience sample from strategic planning departments' and environmental health departments' employees of different municipalities and ministries in Ramallah city were targeted. The sum of (٥٥) questionnaire was distributed; of which (٥٢) were returned with a **respondent rate of ٩٤,٥%**.

#### **Part I: Sample description (Demographic Factors)**

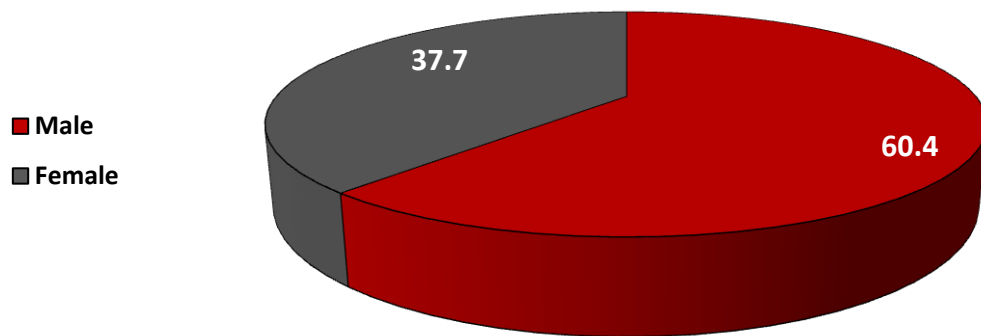
**Personal information of the participants included the following four demographic factors:**

### A. Gender

As illustrated in **table (٧) & chart (١)**, according to gender, the sample included ٣٢ males (٦٠,٤%) and ٢٠ females (٣٧,٧%).

**Table (٧): Gender**

Gender		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	٣٢	٦٠,٤	٦١,٥	٦١,٥
	Female	٢٠	٣٧,٧	٣٨,٥	١٠٠,٠
	Total	٥٢	٩٨,١	١٠٠,٠	-
Missing	System	١	١,٩	-	-
	Total	٥٣	١٠٠,٠	-	-



**Chart (١): Gender**

### B. Age

**Table (٨) & chart (٢)** describe the sample by Age; in which the sample was divided into four categories; less than ٣٠ years (٥ participants with a percentage of ٩,٤%), ٣٠ to less than ٤٠ years (١٤ participants with a percentage of ٢٦,٤%), ٤٠ to less than ٥٠ years (٢٥ participants with a percentage of ٤٨,١%), and ٥٠ years or older (٨ participants with a percentage of ١٥,١%).

Table (٧): Age

Age	Frequency	Percent	Valid Percent	Cumulative Percent
Less than ٣٠ years	٥	٩,٤	٩,٦	٩,٦
٣٠ to less than ٤٠ years	١٤	٢٦,٤	٢٦,٩	٣٦,٥
Valid ٤٠ to less than ٥٠ years	٢٥	٤٧,٢	٤٨,١	٨٤,٦
٥٠ years or older	٨	١٥,١	١٥,٤	١٠٠,٠
Total	٥٢	٩٨,١	١٠٠,٠	-
Missing System	١	١,٩	-	-
Total	٥٣	١٠٠,٠	-	-

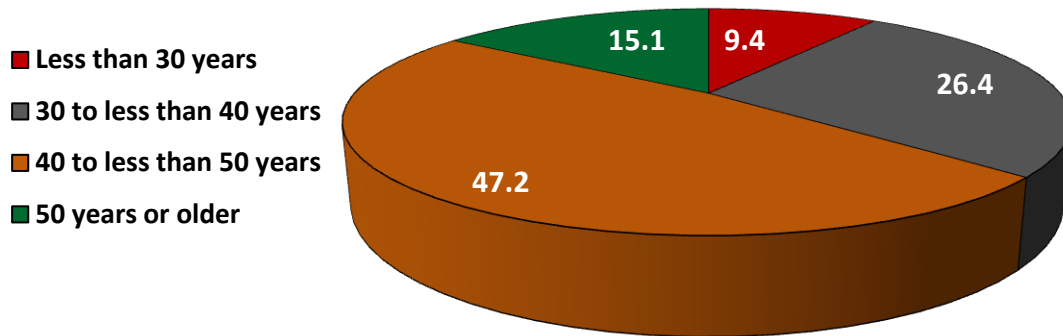


Chart (2): Age

### C. Educational level

The participant from different ministries and municipalities were divided into four categories depending on their Educational level as detailed in **table (٤) & chart (٣)**; only one participant holding a High School or less education (١,٩%), ٦ participants holding Diploma degrees (١١,٣%), ٢٦ participants holding Bachelor degrees (٤٩,١%), and ١٩ participants holding higher educational degrees (٣٥,٨%).

Table (٨): Educational level

Educational Level		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High school or less	١	١,٩	١,٩	١,٩
	Diploma	٦	١١,٣	١١,٥	١٣,٥
	Bachelor degree	٢٦	٤٩,١	٥٠,٠	٦٣,٥
	Higher education	١٩	٣٥,٨	٣٦,٥	١٠٠,٠
Total		٥٢	٩٨,١	١٠٠,٠	-
Missing System		١	١,٩	-	-
Total		٥٣	١٠٠,٠	-	-

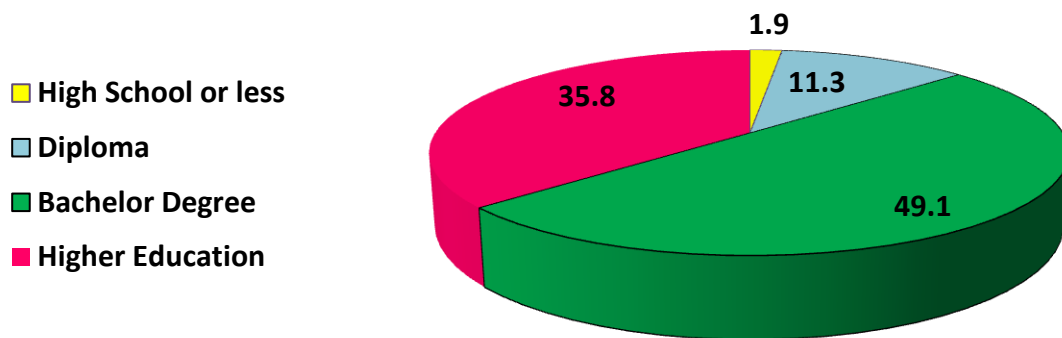


Chart (3): Educational Level

#### D. Years of experience within the field

Years of experience of the participants in the sample and as described in **table (٥) & chart (٩)** included; less than ١٠ years (١٣ participants with a percentage of ٢٤,٥%), ١٠ to less than ١٥ years (١٣ participants with a percentage of ٢٤,٥%), and ١٥ years or more (٢٦ participants with a percentage of ٤٩,١%).

Table (٩): Years of experience within the field

Experience		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than ١٠ years	١٣	٢٤,٥	٢٥,٠	٢٥,٠
	١٠ to less than ١٥ years	١٣	٢٤,٥	٢٥,٠	٥٠,٠
	١٥ years or more	٢٦	٤٩,١	٥٠,٠	١٠٠,٠
Total		٥٢	٩٨,١	١٠٠,٠	
Missing system		١	١,٩		
Total		٥٣	١٠٠,٠		

■ Less than 10 years  
■ 10 to less than 15 years  
■ 15 years or more

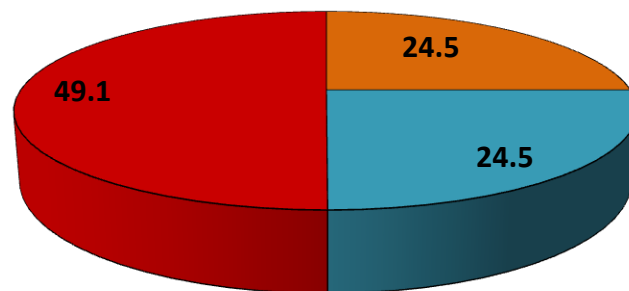


Chart (4): Years of experience within the field



## **Part II: Descriptive statistics and one-sample T-test:**

The discussion of these statistics and test will continue in a manner that follows the dimensions included in the questionnaire of the study; as follows:

**1<sup>st</sup> Dimension:** the general state of environmental health in the organization's strategic plan

Regarding "the general state of EH in the organization's SP" variables and as shown in **Table (1) & Chart (2)**; it is found that the answers for **all the statements except the two statements highlighted with blue** lent toward **(agreement)** with moderate to high percentages varying from **70,5% to 92,5%**.

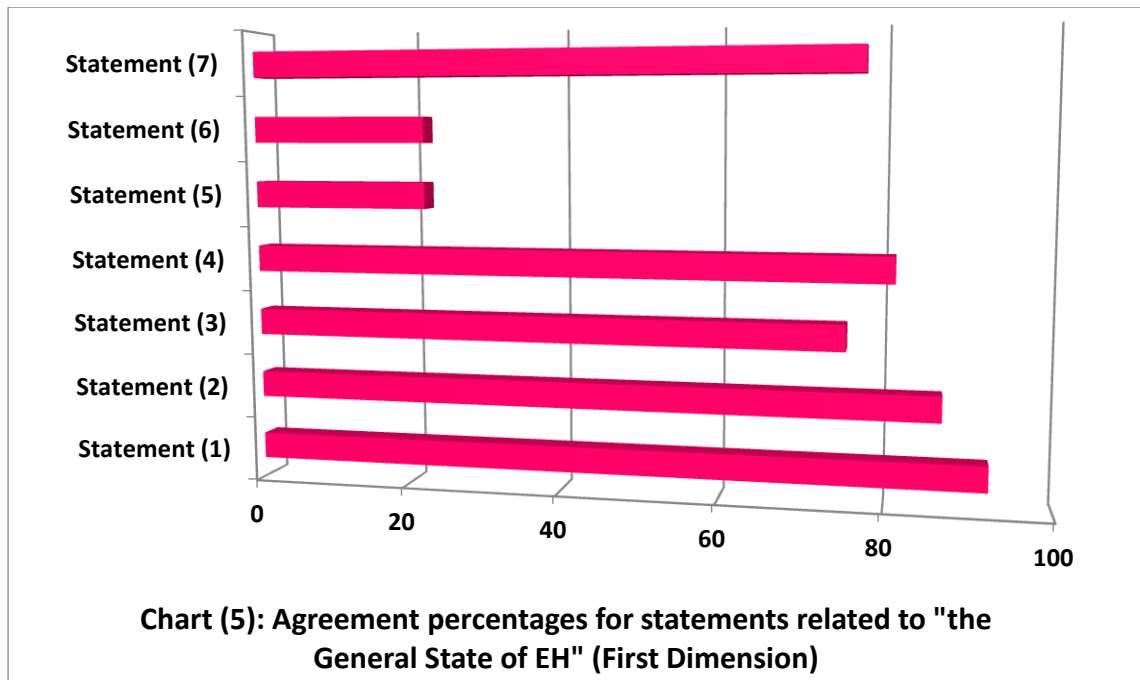
As for **the two statements highlighted with blue** in table (1); "Environmental health is not one of the organization's responsibilities for it to be included in its strategic plan" & "Environmental health must only be included in the plan of the Ministry of Health", the answers lent toward **(disagreement)** with the **moderate percentages** – in order – being **(19,5% and 17,9%)**.

Table (1 ♦): Descriptive Statistics and One-Sample T-test for "The General State of EH" (1<sup>st</sup> Dimension) variables

#	Statement	Strongly Disagree		Disagree		Don't Know		Agree		Strongly Agree		Agreement Percentages	Mean	SD	CV
		F	%	F	%	F	%	F	%	F	%				
(1)	Improving the general state of environmental health is a part of the vision of the organization's strategic plan	-	-	2	3,8	1	1,9	30	56,7	19	35,8	92,4%	4,27	0,689	16,1
(2)	The quality of environmental health is one the goals of the organization's strategic plan	-	-	4	7,0	2	3,8	30	56,7	16	30,2	86,8%	4,12	0,808	19,6
(3)	The executive plan of the organization includes pointers for monitoring and evaluating the effect that the organization's activities have on the environmental health	-	-	0	9,4	7	13,2	27	50,9	13	24,0	70,4%	3,92	0,882	22,0
(4)	Environmental health is a main element of the organization's strategic plan	1	1,9	3	5,7	0	9,4	27	50,9	16	30,2	81,1%	4,04	0,907	22,0
(5)	Environmental health is not one of the organization's responsibilities for it to be included in its strategic plan	12	22,6	20	47,2	2	3,8	9	17,0	3	5,7	22,7%	2,33	1,194	51,2
(6)	Environmental health must only be included in the plan of the Ministry of Health	12	22,6	24	45,3	4	7,0	9	17,0	3	5,7	22,7%	2,37	1,189	50,2
(7)	Environmental health must have an independent strategic plan	2	3,8	0	9,4	2	3,8	24	45,3	17	32,1	77,4	3,98	1,078	27,1

\*T: One-Sample T-Test

\*\*Sig.: Sig. (T-tailed)



**٣<sup>rd</sup> Dimension:** challenges facing a good management of environmental health in Palestine

In **Table (١١) & Chart (٦)**; it is found that the answers for **all the statements** regarding "**challenges facing a good management of EH in Palestine**" variables lent toward (agreement) with **moderate to high percentages varying between ٧١,٧% & ٩٠,٦%.**

The one sample T-test results illustrated in table (١١); show that the sig. (٢-tailed) P-values were less than ( $\alpha = ٠,٠٥$ ) for **all of "challenges" statements**, this indicates **rejecting the null hypothesis** "that there are no statistical difference between the samples means of **obstacles dimension variables** and the test value ( $\bar{Y}$ )", and **accepting the alternative hypothesis** that there are significant statistical differences in these statements.

Table (١١): Descriptive statistics and one-sample T-test for "challenges" (٣<sup>rd</sup> Dimension) variables

#	Statement	Strongly Disagree		Disagree		Don't Know		Agree		Strongly Agree		Agreement Percentages	Mean	SD	CV	T*	Sig.*
		F	%	F	%	F	%	F	%	F	%						
(١)	The Zionist occupation in one of the challenges facing a good management of environmental health in Palestine	-	-	٣	٥,٧	٣	٥,٧	١٩	٣٥,٨	٢٧	٥٠,٩	٨٦,٧	٤,٣٥	٠,٨٣٧	١٩,٢	١١,٥٩	٠,٠٠٠
(٢)	Financial challenges stand in the face of a good management of environmental health in Palestine	-	-	٢	٣,٨	١	١,٩	٢٢	٤١,٥	٢٦	٤٩,١	٩٠,٦	٤,٤١	٠,٧٢٦	١٦,٥	١٣,٨٩	٠,٠٠٠
(٣)	The overlap of authorities between ministries and organizations is one of the challenges facing a good management of environmental health in Palestine	-	-	٦	١١,٣	٢	٣,٨	٢٤	٤٥,٣	٢٠	٣٧,٧	٨٣,٠	٤,١٢	٠,٩٤٣	٢٢,٩	٨,٥٣	٠,٠٠٠
(٤)	The inadequate and outdated legislation and regulations are challenges facing a good management of environmental health in Palestine	١	١,٩	١	١,٩	٢	٣,٨	٢٨	٥٢,٨	١٨	٣٤,٠	٨٦,٨	٤,٢٢	٠,٧٩٠	١٨,٧	١٠,٩٢	٠,٠٠٠
(٥)	The inadequate authority granted to parties responsible of tracking any of the challenges facing a good management of environmental health in Palestine	-	-	٧	١٣,٢	٧	١٣,٢	٢٧	٥٠,٩	١١	٢٠,٨	٧١,٧	٣,٨١	٠,٩٣٠	٢٤,٤	٦,٢٧	٠,٠٠٠

\*T: One-Sample T-Test

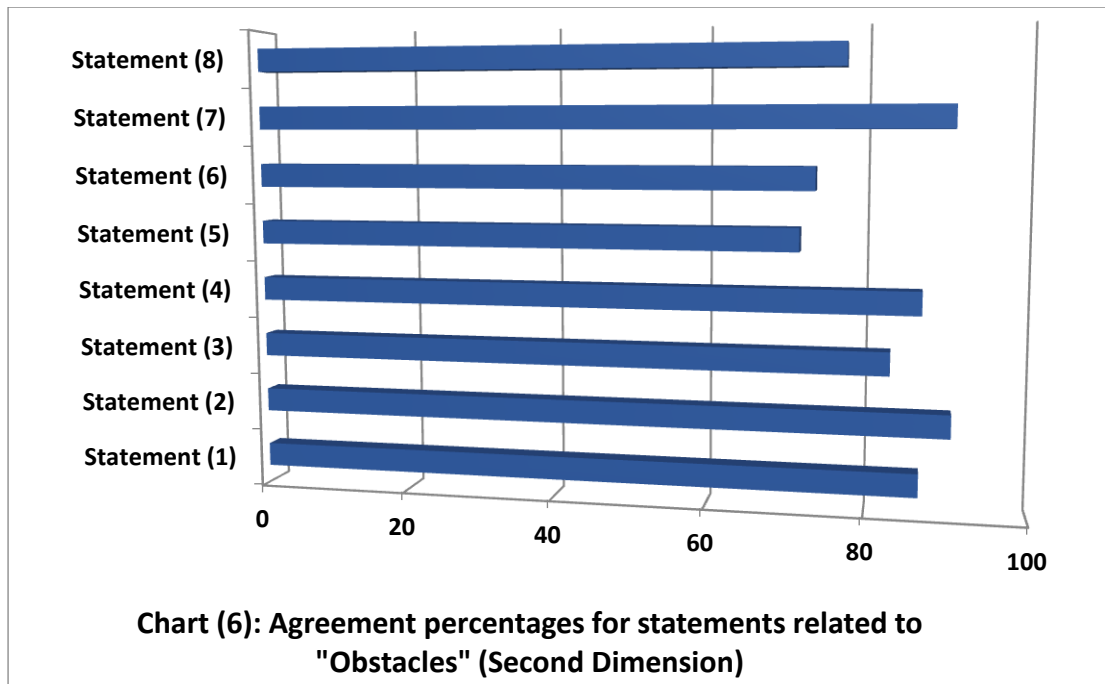
\*\*Sig.: Sig. (٣-tailed)

Continuation of Table (١١): Descriptive Statistics and One-Sample T-test for "Obstacles" (٣<sup>rd</sup> Dimension) variables

#	Statement	Strongly Disagree		Disagree		Don't Know		Agree		Strongly Agree		Agreement Percentages	Mean	SD	CV	T*	Sig.**
		F	%	F	%	F	%	F	%	F	%						
(٦)	The inadequate coordination between the responsible ministries and organizations is one of the challenges facing a good management of environmental health in Palestine	-	-	٩	١٧,٠	٣	٥,٧	٣٦	٤٩,١	١٣	٢٤,٥	٧٣,٦	٣,٨٤	١,٠٠٧	٢٦,٢	٥,٩٨	٠,٠٠٠
(٧)	Poor planning is an challenge facing a good management of environmental health in Palestine	١	١,٩	٢	٣,٨	١	١,٩	٢٧	٥٠,٩	٢١	٣٩,٦	٩٠,٥	٤,٢٥	٠,٨٣٧	١٩,٧	١٠,٧٧	٠,٠٠٠
(٨)	The lack of specific managerial skills prohibits a good management of environmental health	١	١,٩	٦	١١,٣	٤	٧,٥	٢٨	٥٢,٨	١٣	٢٤,٥	٧٧,٣	٣,٨٨	٠,٩٨٣	٢٥,٣	٦,٤٩	٠,٠٠٠

\*T: One-Sample T-Test

\*\*Sig.: Sig. (٣-tailed)

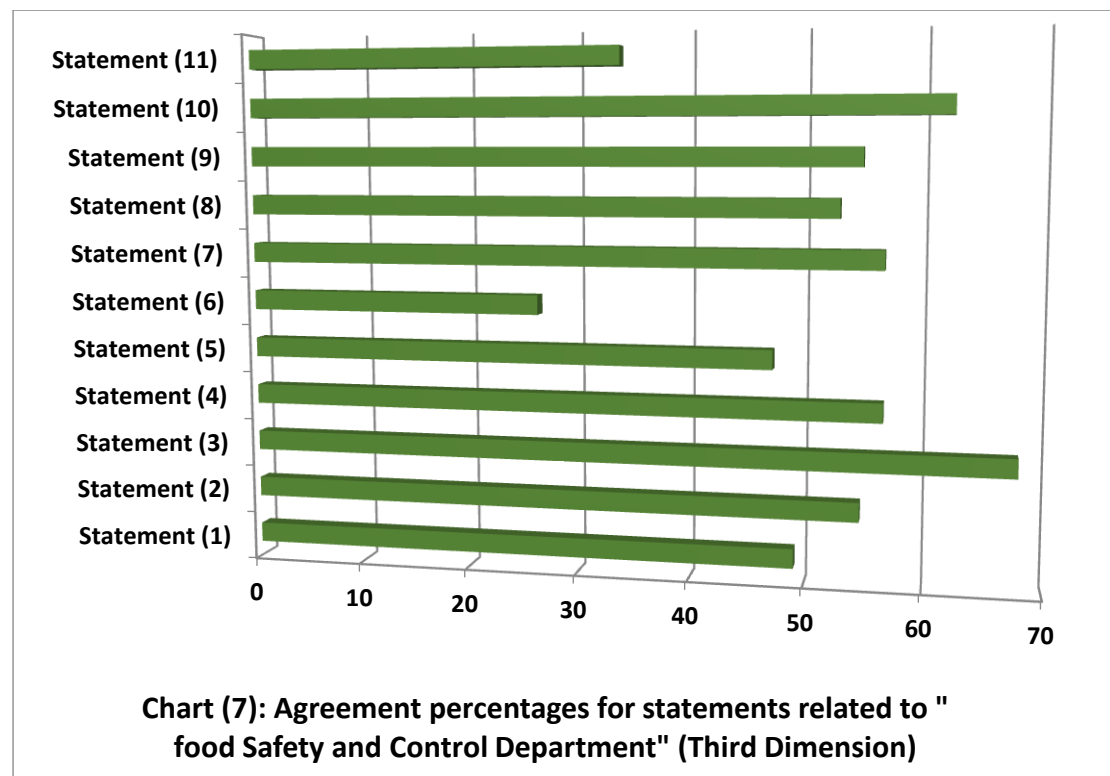


**3<sup>rd</sup> Dimension:** The perceptions of the importance of employing strategic planning on the management of the food safety and control department

**Table (12) & Chart (7)** detailing the participants' answers regarding "variables related to the food safety and control D."; show that the answers for **all the statements except the two statements highlighted with blue** lent toward (agreement) with **low to moderate percentages varying from 47,2% to 67,9%.**

As for the **two statements highlighted with blue** in table (12); "You have statistics of sick cases due to food contamination" & "Legislation and regulations in this domain are holistic and adequate", the answers lent toward **(not knowing)** with **low percentages** – in order – of **(30,8% and 32,1%)**. Looking at the sig. (2-tailed) P-values **highlighted with red** for **these same two statements**; it is noticed that these values are more than  $(\alpha=0,05)$  which indicates **accepting the null hypothesis** "that there are no statistical difference between the samples means of **The effect of planning on the management of the food safety and control D. variables** and the test value (3)" **in these two statements.**

As for the one sample T-test results for the remaining statements in table (١٢); the sig. (٢-tailed) P-values were less than ( $\alpha=٠,٠٥$ ) for **all of the remaining statements**, which indicates **rejecting the null hypothesis** "that there are no statistical difference between the samples means of **The effect of planning on the management of the food safety and control D. variables** and the test value (٢)", and **accepting the alternative hypothesis** that there are significant statistical differences.



**Table (15): Descriptive Statistics and One-Sample T-test for "variables related to food Safety and Control Department" (3<sup>rd</sup> Dimension)**

#	Statement	Strongly Disagree		Disagree		Don't Know		Agree		Strongly Agree		Agreement Percentages	Mean	SD	CV	T*	Sig.**
		F	%	F	%	F	%	F	%	F	%						
(1)	You have a written executive plan for controlling food safety	1	1,9	10	28,3	9	17,0	17	32,1	9	17,0	29,1	2,20	1,12	22,7	2,2	0,022
(2)	Your department has a record of all the facilities that provide food (restaurants, food processing plants, commercial stores)	-	-	11	20,8	11	20,8	10	28,3	12	27,8	52,7	2,63	1,11	20,8	2,0	0,000
(3)	You have food safety standards	-	-	6	11,3	9	17,0	17	32,1	19	35,8	67,9	2,96	1,01	20,8	6,7	0,000
(4)	You have a system for evaluating food facilities	1	1,9	6	11,3	1	2,0	18	34,0	12	22,6	56,6	2,68	1,02	28,3	2,6	0,000
(5)	The evaluation record of food facilities is updated in a periodic holistic manner	1	1,9	8	15,1	1	2,0	16	30,2	9	17,0	27,2	2,27	1,02	29,6	2,2	0,002
(6)	You have statistics of sick cases due to food contamination	7	12,7	11	20,8	19	35,8	11	20,8	3	5,7	37,0	2,82	1,10	28,8	1,0	0,012

\*T: One-Sample T-Test

\*\*Sig.: Sig. (2-tailed)



Continuation of Table (١٢): Descriptive Statistics and One-Sample T-test for "variables related to food Safety and Control Department" (٣<sup>rd</sup> Dimension)

#	Statement	Strongly Disagree		Disagree		Don't Know		Agree		Strongly Agree		Agreement Percentages	Mean	SD	CV	T*	Sig.**
		F	%	F	%	F	%	F	%	F	%						
(٧)	A complaint against any food facility is followed up and a sample is submitted for examination within ٢٤ hours	١	١,٩	٨	١٥,١	١١	٢٠,٨	١٦	٣٠,٢	١٤	٢٦,٤	٥٦,٦	٣,٦٨	١,١١٥	٣٠,٣	٤,٣١	٠,٠٠٠
(٨)	You previously participated in food safety courses and forums	٤	٧,٥	٧	١٣,٢	١١	٢٠,٨	٢٢	٤١,٥	٦	١١,٣	٥٢,٨	٣,٣٨	١,١٢٣	٣٣,٢	٢,٣٩	٠,٠٢١
(٩)	You carry out awareness campaigns about food safety	٢	٣,٨	٨	١٥,١	١١	٢٠,٨	٢١	٣٩,٦	٨	١٥,١	٥٤,٧	٣,٥٠	١,٠٧٤	٣٠,٧	٢,٢٩	٠,٠٠٢
(١٠)	There are specific procedures and penalties against violators	-	-	٦	١١,٣	١١	٢٠,٨	١٩	٣٥,٨	١٤	٢٦,٤	٦٢,٢	٣,٨٢	٠,٩٨٣	٢٥,٧	٥,٩٠	٠,٠٠٠
(١١)	Legislation and regulations in this domain are holistic and adequate	-	-	١٥	٢٨,٣	١٧	٣٢,١	١٤	٢٦,٤	٤	٧,٥	٣٣,٩	٣,١٤	٠,٩٤٨	٣٠,٣	١,٠٤	٠,٣٠١

\*T: One-Sample T-Test

\*\*Sig.: Sig. (٢-tailed)

**٤<sup>th</sup> Dimension:** The perceptions of the importance of employing strategic planning on the management of solid and liquid waste disposal department

From **Table (١٣) & Chart (٨)** showing the participants' answers regarding **"variables related to solid and liquid waste disposal D."**; it is found that the answers for **all the statements except the two statements highlighted with blue** lent toward **(agreement)** with **low to moderate percentages varying from ٤٩,١% to ٦٧,٩%.**

As for **the two statements highlighted with blue** in table (١٣); **"You have statistics of sick cases due to air contamination such as respiratory diseases in areas surrounding waste disposal sites"** & **"Legislation and regulations in this domain are holistic and adequate"**, the answers lent toward **(not knowing)** with **low percentages – in order – of (٤٥,٣% and ٣٢,١%).**

As for the one sample T-test results illustrated in table (١٣); the sig. (٢-tailed) P-values were less than ( $\alpha=٠,٠٥$ ) for **all of statements except one**, this indicates **rejecting the null hypothesis** "that there are no statistical difference between the samples means of **The effect of planning on the management of solid and liquid waste disposal D. variables** and the test value (٣)", and **accepting the alternative hypothesis** that there are significant statistical differences in these statements.

As for the sig. (٢-tailed) P-value for **the red highlighted statement: "Legislation and regulations in this domain are holistic and adequate"**; its value is more than ( $\alpha=٠,٠٥$ ) indicating the **acceptance of the null hypothesis** in this statement.

Table (1Ψ): Descriptive Statistics and One-Sample T-test for "variables related to Solid and Liquid Waste Disposal Department" (Σ<sup>th</sup> Dimension)

#	Statement	Strongly Disagree		Disagree		Don't Know		Agree		Strongly Agree		Agreement Percentages	Mean	SD	CV	T*	Sig.**
		F	%	F	%	F	%	F	%	F	%						
(1)	You have a clear written executive plan for handling wastes	1	1,9	8	10,1	1	2,7	19	20,8	11	20,8	56,6	3,71	1,06	29,8	Σ,10	•,•••
(Ψ)	There are clear standards and written systems for handling wastes in general and specific ones for handling medical wastes	-	-	Σ	7,0	1	20,8	29	0Σ,7	7	12,7	77,9	3,76	0,79	21,8	7,92	•,•••
(Υ)	There is periodic monitoring of the solid and liquid wastes' hording sites	-	-	2	0,7	1	27,Σ	20	Σ7,2	9	17,8	7Σ.2	3,78	0,80	21,8	7,92	•,•••
(Σ)	There is cooperation in handling wastes with the concerned ministry	-	-	2	0,7	1	20,8	28	02,8	7	12,7	77,0	3,80	0,76	20,1	7,20	•,•••
(ο)	Complaints regarding wastes are followed up in a maximum period of five days	-	-	7	11,2	1	20,8	18	2Σ,0	8	10,1	Σ9,1	3,00	0,90	20,8	Σ,20	•,•••

\*T: One-Sample T-Test

\*\*Sig.: Sig. (Ψ-tailed)

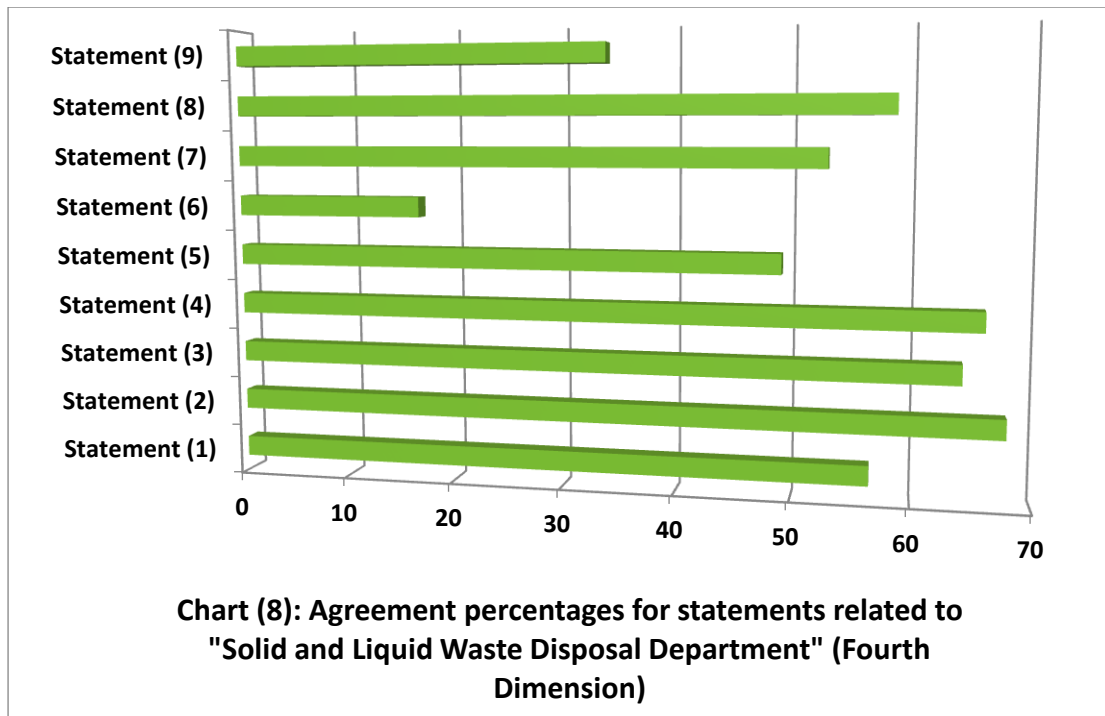
Continuation of Table (١٢): Descriptive Statistics and One-Sample T-test for "variables related to Solid and Liquid Waste Disposal Department"

(٤<sup>th</sup> Dimension)

#	Statement	Strongly Disagree		Disagree		Don't Know		Agree		Strongly Agree		Agreement Percentages	Mean	SD	CV	T*	Sig.**
		F	%	F	%	F	%	F	%	F	%						
(٦)	You have statistics of sick cases due to air contamination such as respiratory diseases in areas surrounding waste disposal sites	١٠	١٨,٩	٨	١٥,١	٢٤	٤٥,٢	٨	١٥,١	١	١,٩	١٧,٠	٢,٦٥	١,٠٢٦	٢٩,١	-٢,٤٢	٠,٠١٩
(٧)	You carry out awareness campaigns for citizens about the best methods for handling wastes	١	١,٩	٧	١٢,٢	١٤	٢٦,٤	١٧	٣٢,١	١١	٢٠,٨	٥٢,٩	٢,٦٠	١,٠٥٠	٢٩,٢	٤,٠٤	٠,٠٠٠
(٨)	There are specific procedures and penalties against violators	١	١,٩	١	١,٩	١٧	٣٢,١	٢٣	٤٣,٤	٨	١٥,١	٥٨,٥	٢,٧٢	٠,٨٢٤	٢٢,٤	٦,١١	٠,٠٠٠
(٩)	Legislation and regulations in this domain are holistic and adequate	٢	٣,٨	١٤	٢٦,٤	١٧	٣٢,١	١١	٢٠,٨	٧	١٣,٢	٢٤,٠	٢,١٤	١,٠٩٦	٢٤,٩	٠,٩٠	٠,٢٧٥

\*T: One-Sample T-Test

\*\*Sig.: Sig. (٢-tailed)



**8<sup>th</sup> Dimension:** The perceptions of the importance of employing strategic planning on the management of insects and rodents control department

The participants' answers regarding "variables related insects and rodents control D." are detailed in **Table (١٤) & Chart (٩)**; these answers for **all the statements except the one highlighted with blue** lent toward (agreement) with **low to moderate percentages varying between ٤٧,٢% & ٦٢,٣%**.

As for the **blue highlighted statement** in table (١٤): "**Legislation and regulations in this domain are holistic and adequate**", the answers lent toward (**not knowing**) with the **low percentage of (٣٩,٦%)**. Looking at the sig. (٧-tailed) P-value **highlighted with red** for **this same statement**; this value is more than ( $\alpha=٠,٠٥$ ) which indicates **accepting the null hypothesis** "that there are no statistical difference between the samples means of **The effect of planning on the management of insects and rodents control D. variables** and the test value (٣)" **in this statement**.

As for the one sample T-test results for the remaining statements in table (١٤); the sig. (٢-tailed) P-values were less than ( $\alpha=٠,٠٥$ ) for **all of the remaining statements**, which indicates **rejecting the null hypothesis** "that there are no statistical difference between the samples means of **The effect of planning on the management of insects and rodents control D. variables** and the test value (٣)", and **accepting the alternative hypothesis** that there are significant statistical differences.

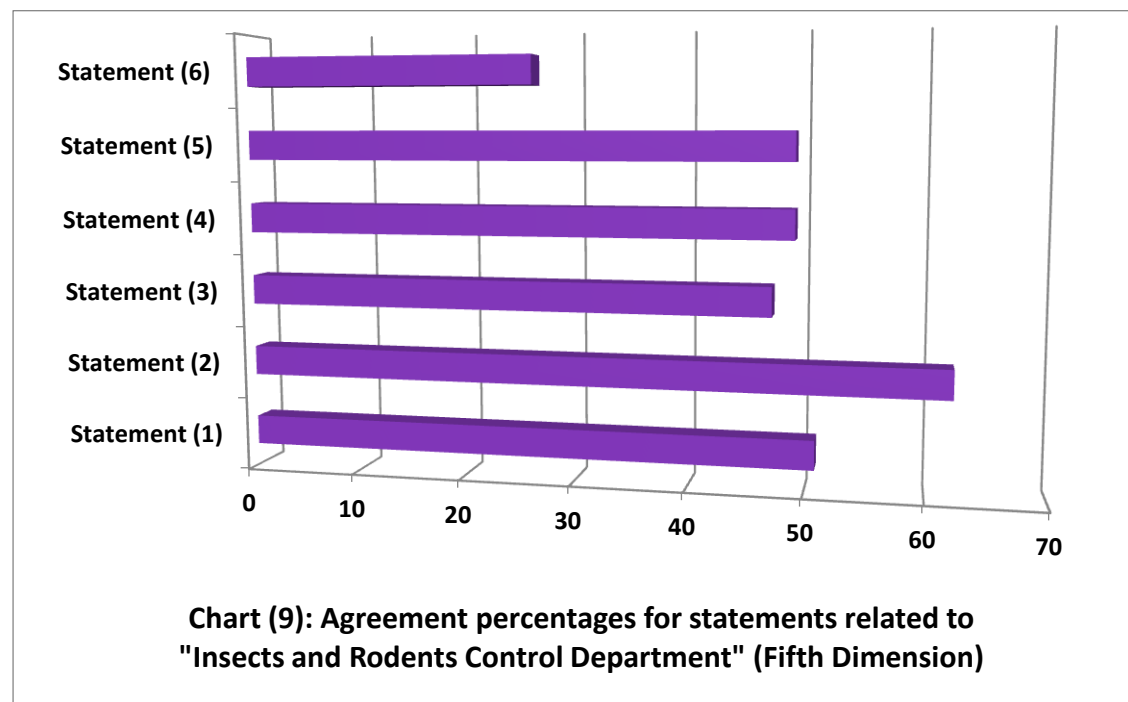


Table (1Σ): Descriptive Statistics and One-Sample T-test for "variables related to Insects and Rodents Control Department" (ο<sup>th</sup> Dimension)

#	Statement	Strongly Disagree		Disagree		Don't Know		Agree		Strongly Agree		Agreement Percentages	Mean	SD	CV	T*	Sig.**
		F	%	F	%	F	%	F	%	F	%						
(1)	You have a clear written executive plan for controlling insects and rodents	1	1,9	ε	7,0	20	37,7	19	30,8	8	10,1	50,9	3,38	1,107	2ε,2	2,ε	0,02
(2)	Your department has records and periodic follow ups for getting rid of insects and rodents	1	1,9	2	3,8	16	20,2	27	32,1	16	20,2	62,2	3,06	0,916	20,7	ε,29	0,00
(3)	Insects and rodents causing factors are managed (such as drying up stagnant water pools, disposing of dead animals corpses, ... etc)	2	0,7	9	17,0	10	28,2	10	28,2	10	18,9	ε7,2	3,87	0,971	20,1	6,ε2	0,00
(ε)	You have awareness leaflets for citizens about the most dangerous disease carrying insects and rodents, places where they're found, and the manner in which they spread	2	3,8	7	12,2	17	22,1	10	28,2	11	20,8	ε9,1	3,00	1,09ε	21,2	2,20	0,002
(ο)	There are specific procedures and penalties against violators	2	3,8	0	9,ε	19	20,8	16	30,2	10	18,9	ε9,1	3,02	1,028	29,0	2,61	0,001
(7)	Legislation and regulations in this domain are holistic and adequate	ε	7,0	12	22,6	21	39,6	7	12,2	7	12,2	26,ε	3,02	1,122	27,2	0,120	0,901

\*T: One-Sample T-Test

\*\*Sig.: Sig. (2-tailed)

**7<sup>th</sup> Dimension:** The perceptions of the importance of employing strategic planning on the management of drinking water safety department

**Table (10) & Chart (11)** representing the participants' answers regarding "variables related to drinking water safety D."; show that the answers for **all the statements except the two statements highlighted with blue** lent toward (agreement) with moderate percentages varying between 50,9% & 67,9%.

As for the two statements highlighted with blue in table (10); "You have statistics of sick cases due to drinking water contamination" & "Legislation and regulations in this domain are holistic and adequate", the answers lent toward (not knowing) with low percentages – in order – of (39,6% and 38,3%). Looking at the sig. (Υ-tailed) P-values **highlighted with red** for **these same two statements**; it is noticed that these values are more than ( $\alpha=0,05$ ) which indicates **accepting the null hypothesis** "that there are no statistical difference between the samples means of **The effect of planning on the management of drinking water safety D. variables** and the test value (Υ)" **in these two statements**.

As for the one sample T-test results for the remaining statements in table (10); the sig. (Υ-tailed) P-values were less than ( $\alpha=0,05$ ) for **all of the remaining statements**, which indicates **rejecting the null hypothesis** "that there are no statistical difference between the samples means of **The effect of planning on the management of drinking water safety D. variables** and the test value (Υ)", and **accepting the alternative hypothesis** that there are significant statistical differences.



**Table (١٥): Descriptive Statistics and One-Sample T-test for "variables related to Drinking Water Safety Department" (٦<sup>th</sup> Dimension)**

#	Statement	Strongly Disagree		Disagree		Don't Know		Agree		Strongly Agree		Agreement Percentages	Mean	SD	CV	T*	Sig.**
		F	%	F	%	F	%	F	%	F	%						
(١)	You have a clear written executive plan for assuring the safety of drinking water	٢	٢,٨	٩	١٧,٠	٩	١٧,٠	١٩	٣٥,٨	١	١٨,٩	<b>٥٤,٧</b>	٢,٥٣	١,١٣ ٨	٢٢,٢	٢,٢ ٦	٠,٠٠ ٢
(٢)	You have specific goals tied to a specific time frame	٢	٥,٧	٦	١١,٣	١٤	٢٦,٤	١٩	٣٥,٨	٨	١٥,١	<b>٥٠,٩</b>	٢,٤٦	١,٠٩ ٢	٢١,٦	٢,٩ ٨	٠,٠٠ ٤
(٣)	There are periodic monitoring reports for evaluation tied to a specific time frame	٢	٢,٨	٣	٥,٧	١١	٢٠,٨	٢٥	٤٧,٢	٨	١٥,١	<b>٦٢,٢</b>	٢,٦٩	٠,٩٦ ٢	٢٦,١	٥,٠ ٥	٠,٠٠ ٠
(٤)	Your department has a record of all drinking water sources (including wells, springs, and water packing factories)	٢	٢,٨	-	-	١٢	٢٢,٦	٢٣	٤٣,٤	١ ٣	٢٤,٥	<b>٦٧,٩</b>	٢,٩٠	٠,٩٣ ١	٢٣,٩	٦,٨ ٣	٠,٠٠ ٠
(٥)	There are periodic follow ups and inspections tied to a specific time frame for all drinking water sources	٢	٢,٨	٢	٣,٨	١٥	٢٨,٣	٢٠	٣٧,٧	١ ١	٢٠,٨	<b>٥٨,٥</b>	٢,٧٢	٠,٩٩ ١	٢٦,٦	٥,١ ٤	٠,٠٠ ٠

\*T: One-Sample T-Test

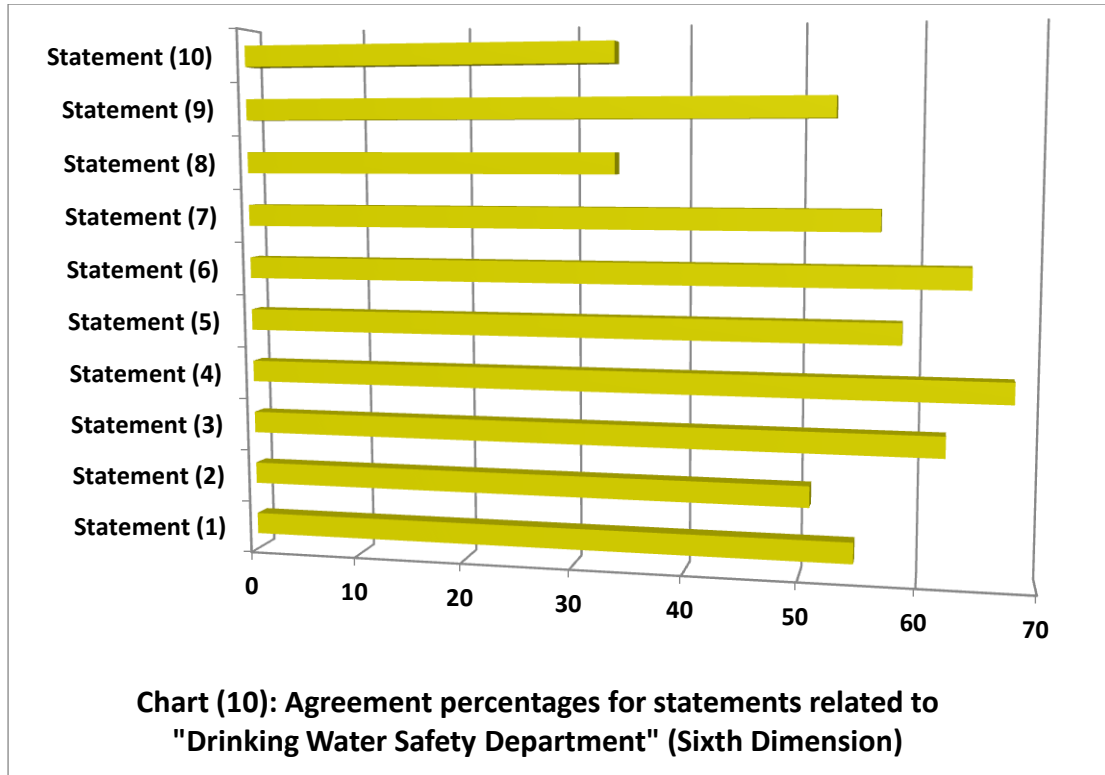
\*\*Sig.: Sig. (٢-tailed)

Continuation of Table (10): Descriptive Statistics and One-Sample T-test for "variables related to Drinking Water Safety Department" (7<sup>th</sup> Dimension)

#	Statement	Strongly Disagree		Disagree		Don't Know		Agree		Strongly Agree		Agreement Percentages	Mean	SD	CV	T*	Sig.**
		F	%	F	%	F	%	F	%	F	%						
(7)	There is cooperation with the ministry concerned with drinking water	2	2,8	1	1,9	12	22,7	22	22,2	11	20,8	72,2	2,82	0,90	22,9	7,01	*,**
(V)	You continuously develop legislation to assure drinking water safety	2	7,0	2	7,0	12	22,7	21	29,7	9	17,0	56,7	2,02	1,12	21,9	2,28	*,**
(Λ)	You have statistics of sick cases due to drinking water contamination	8	10,1	2	2,8	21	29,7	12	22,7	7	11,2	22,9	2,12	1,20	28,0	0,71	*,2V9
(9)	There are specific procedures and penalties against violators	0	9,2	-	-	17	22,7	20	27,7	8	10,1	52,8	2,02	1,09	21,0	2,27	*,**
(10)	Legislation and regulations in this domain are holistic and adequate	2	2,8	10	28,2	10	28,2	12	22,7	2	7,0	22,9	2,02	1,02	22,9	0,20	*,2Λ0

\*T: One-Sample T-Test

\*\*Sig.: Sig. (T-tailed)



**7<sup>th</sup> Dimension:** The perceptions of the importance of employing strategic planning on the management of crafts and industries control department.

Regarding "variables related to crafts and industries control D." and as shown in **Table (16) & Chart (11)**; it is found that the answers for **all the statements except one** lent toward (agreement) with **low to moderate percentages varying between 30,3% & 67,9%.**

As for **blue highlighted statement** in table (16): "**Legislation and regulations in this domain are holistic and adequate**", the answers for this statement lent toward (not knowing) with the **low percentage of (37,7%).**

The one sample T-test results detailed in table (16); show that the sig. (T-tailed) P-values were less than ( $\alpha = 0,05$ ) **for all of the statements**, this indicates **rejecting the null hypothesis** "that there are no statistical difference between the samples means of

**The effect of planning on the management of crafts and industries control D. variables** and the test value ( $\chi^2$ ), and accepting the alternative hypothesis that there are significant statistical differences in these statements.

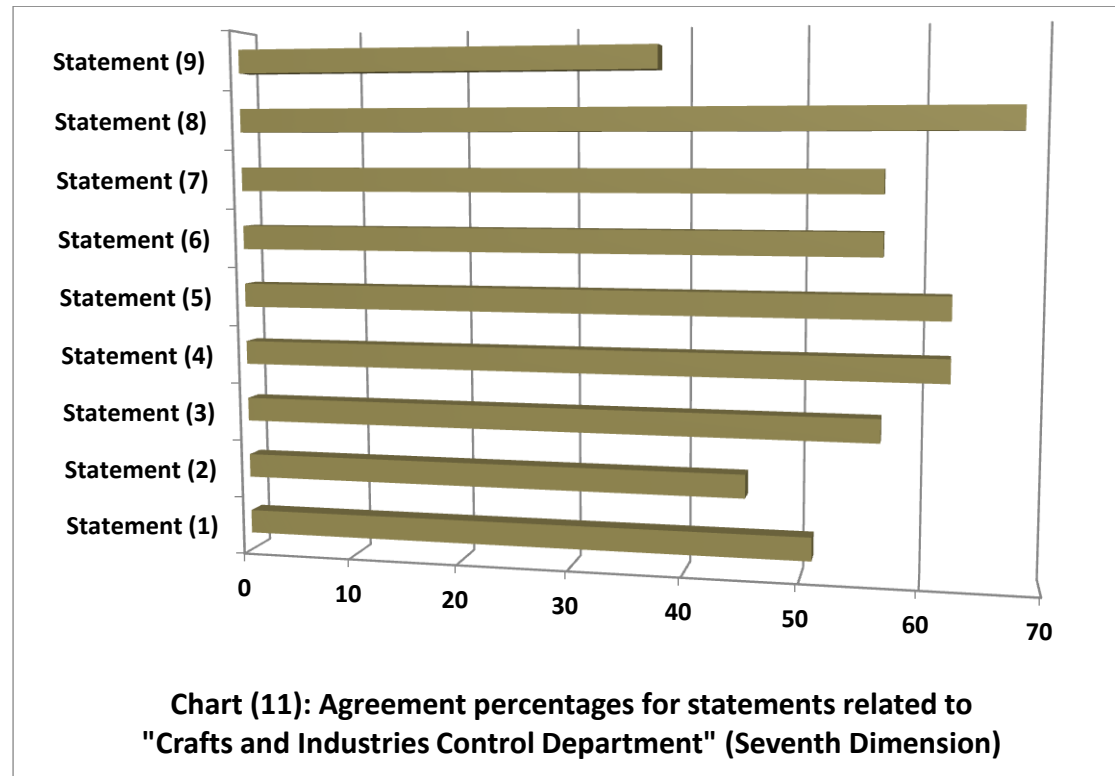


Table (16): Descriptive Statistics and One-Sample T-test for "variables related to Crafts and Industries Control Department" (V<sup>th</sup> Dimension)

#	Statement	Strongly Disagree		Disagree		Don't Know		Agree		Strongly Agree		Agreement Percentages	Mean	SD	CV	T*	Sig.**
		F	%	F	%	F	%	F	%	F	%						
(1)	You have a clear written executive plan for monitoring crafts and industries	3	0,7	7	17,2	14	36,8	16	40,2	11	20,8	51,0	3,29	1,100	22,1	2,03	0,002
(2)	You have specific goals tied to a specific time frame	3	3,8	0	9,2	20	37,7	16	40,2	8	10,1	50,2	3,20	1,006	29,2	2,2	0,002
(3)	There are periodic monitoring reports for evaluation tied to a specific time frame	-	-	2	3,8	18	32,0	21	39,6	9	17,0	56,6	3,72	0,803	21,0	6,01	0,000
(4)	Your department has a record of all workshops and factories	-	-	2	7,0	14	36,8	23	43,2	10	18,9	62,2	3,76	0,862	22,9	6,23	0,000
(5)	There are clear written standards that all factories and workshops must comply to	-	-	2	3,8	16	40,2	23	43,2	10	18,9	62,2	3,80	0,800	21,1	7,17	0,000

\*T: One-Sample T-Test

\*\*Sig.: Sig. (T-tailed)

Continuation of Table (16): Descriptive Statistics and One-Sample T-test for "variables related to Crafts and Industries Control Department" (V<sup>th</sup> Dimension)

#	Statement	Strongly Disagree		Disagree		Don't Know		Agree		Strongly Agree		Agreement Percentages	Mean	SD	CV	T*	Sig.**
		F	%	F	%	F	%	F	%	F	%						
(1)	Your department has records and periodic inspection of all factories and workshops to assure the adherence to regulations and standards	-	-	3	0,7	18	32,6	21	39,6	9	17,1	56,6	3,71	0,832	22,2	6,06	0,000
(V)	You have communication channels for the reception and following up of complaints	1	1,9	6	11,3	12	21,8	20	37,7	1	18,9	56,6	3,73	0,999	27,0	2,28	0,000
(A)	There are specific procedures and penalties against violators	1	1,9	-	-	12	21,8	27	50,9	9	17,1	67,9	3,82	0,782	20,2	7,68	0,000
(9)	Legislation and regulations in this domain are holistic and adequate	-	-	12	22,6	19	35,8	12	22,6	8	15,1	27,7	3,21	1,010	20,0	2,22	0,031

\*T: One-Sample T-Test

\*\*Sig.: Sig. (T-tailed)

## Results

This study aimed to identifying the challenges facing the Palestinian environmental health sector in adopting and implementing strategic planning, and its impact on the management of the environmental health in Palestine, in order to recognize the obstacles encountered in the implementation process, so depending on the previous discussion of the data statistical analysis; the degree to which the study's objectives were achieved will be assessed through answering the study's questions as following:

We will use the following scale to consider the level mean scores degree for dimensions and items, this scale depends on interval length =range number of intervals, interval length=  $(\infty - 1) / \infty = 0,8$ , the following scale describe result's degree of impact:

Less than 1,8: very low

1,8- Less than 2,6: low

2,6-3,4: moderate

3,4-4,2: high

4,2-5: very high

**Question (١): “What is the general state of the environmental health in the organization's strategic plan in Palestine?”**

The previous discussion of the statistical findings of the part regarding the general state of EH in the organization's SP (table ١٠); showed that regardless of the level of agreement, **the participants agreed** (with the **high** average percentage of {٧٨,٧%} and an average mean of {٣,٦}) with the following:

١. Improving the general state of the environmental health must be a part of the vision of the organization's strategic plan.(mean score=٤,٧٧very high)
٢. The quality of the environmental health must be one of the goals of the organization's strategic plan.(mean score=٤,١٧high)
٣. The environmental health mustn't only be included in the plan of the Ministry of Health, but it must also be a main element of the organization's strategic plan.(mean score=٣,٩٧high)
٤. The environmental health might have an independent strategic plan, but it's more agreed that it must be a main element of the organization's strategic plan.(mean score=٤,٠٤high)
٥. The executive plan of the organization must include pointers for monitoring and evaluating the effect that the organization's activities have on environmental health.(mean score=٢,٣٣low)
٦. The environmental health is one of the organization's responsibilities and must be included in its strategic plan.(mean score=٢,٣٧low)
٧. The environmental health must have an independent strategic plan.(mean score=٣,٩٨high)

It appears from the table above that the degree effect of the average mean score of (general state of the environmental health in the organization's strategic plan) is high with mean score of (٣,٦) which mean that the strategic planning of environmental health it's a main element of the organization's strategic plan and one of its goals. But not the organization's responsibilities with a high recommended that the environmental health must have an independent strategic plan.

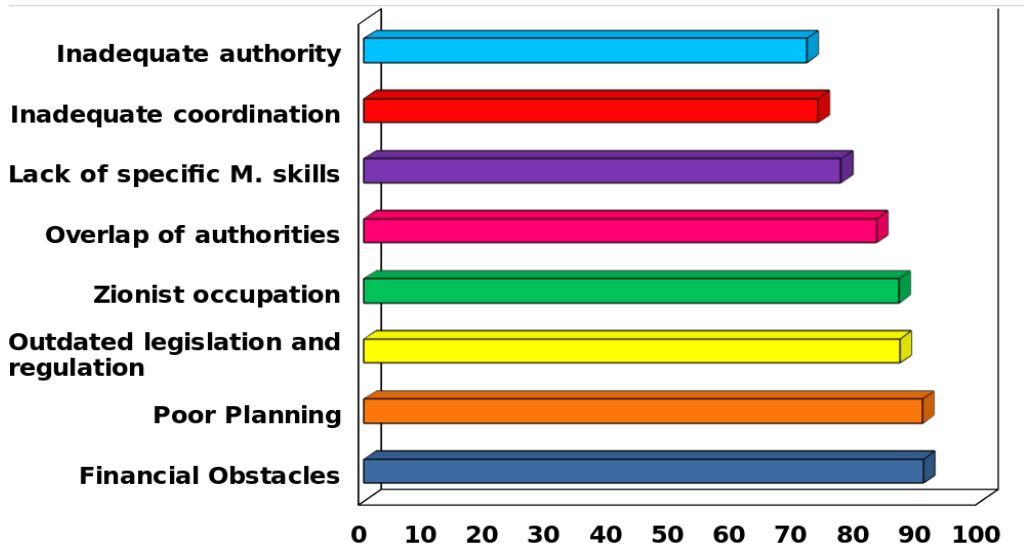


**Question (٢): “What are the challenges facing the Palestinian environmental health sector in adopting and implementing strategic planning?”**

According to the previous statistical analysis of the part concerned with the obstacles (table ١١); the participants agreed that **the challenges summarized in Table (١٧) & Chart (١٢) are the most prominent ones** that could hinder a good management of the environmental health in Palestine, with the financial obstacles and poor planning being at the top of the list.

**Table (١٧): challenges facing a good management of the environmental health in Palestine.**

<b>Percentage of Agreement</b>	<b>challenges</b>	
٩٠,٦	<b>Financial challenges</b>	<b>First</b>
٩٠,٥	<b>Poor planning.</b>	<b>Second</b>
٨٦,٨	<b>Inadequate and outdated legislation and regulations.</b>	<b>Third</b>
٨٦,٧	<b>The Zionist occupation.</b>	<b>Fourth</b>
٨٣,٠	<b>The overlap of authorities between ministries and organizations.</b>	<b>Fifth</b>
٧٧,٣	<b>The lack of specific managerial skills.</b>	<b>Sixth</b>
٧٣,٦	<b>Inadequate coordination between the responsible ministries and organizations.</b>	<b>Seventh</b>
٧١,٧	<b>The inadequate authority granted to parties responsible of tracking any of the challenges</b>	<b>Eighth</b>



**Chart (12): Obstacles facing a good management of environmental health in Palestine**

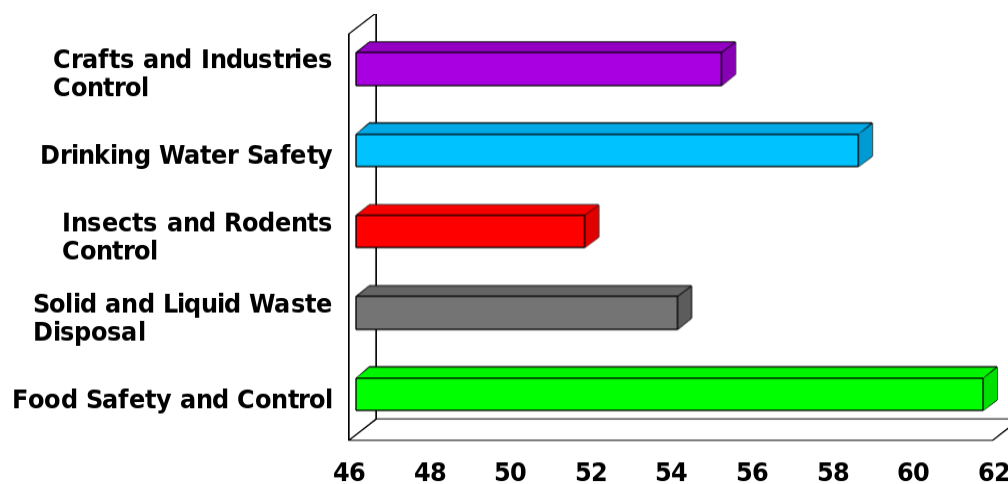
**Question (٣): “What are the perceptions of the importance of the employing strategic planning in improving the environmental health management in Palestine?”**

From the previous statistical analysis and the discussion related to the effects of planning on the management of different departments of the ministries - (included in tables ١٢ to ١٦),<sup>٢</sup> the **participants agreed that planning guides the different departments towards good management with the levels of the agreement summarized in Table (١٨) & Chart (١٣).**

**Table (18): Average percentages & means for perceptions of the importance of employing strategic of planning on guiding the different departments toward good management**

Level of Agreement	Average Mean	Average Percentage of Agreement	Department
high	3,61	61,6	Food Safety and control
high	3,06	54,0	Solid and Liquid Waste Disposal
high	3,07	51,7	Insects and Rodents Control
high	3,60	58,0	Drinking Water Safety
high	3,62	50,1	Crafts and Industries Control

\*The calculation of the average percentage and mean only included those of the significant elements.



**Chart (13): Average percentages for the effect of planning on guiding the different departments toward good management**

From **Table (18) & Chart (19)**, the participants' **weighted average percentage of agreement to the total** is calculated to be the **Moderate percentage of {86, 7%}** with **a weighted average mean of {3, 6}**.): **Average percentages & means for perceptions of the importance of employing strategic of planning on guiding the different departments toward good management**

Which mean that the impact of strategic planning on environmental health management is positive, the highest mean for all items related to the management of food safety and control with mean score (3, 6) and lowest mean related to the management of insects and rodents with mean score (3, 0) .

The researcher justifies this due to the increasing of the survey participants' sense of their responsibility towards the citizens' food and their assessment of the extent of the harm that will happen to them in the event of food contamination, in addition to the multiplicity and diversity of places serving food, and consequently the need for specific planning, policies and periodic monitoring tables to follow up on food conformity to specifications. While the survey participants find that insects and rodents are not a widespread phenomenon, but rather they are limited and linked to specific seasons of the year and therefore may not occupy a great place in strategic planning.

## Chapter six

### Conclusions and recommendations

#### ٦,١ Conclusions

Upon the results; attention is to be drawn to the following conclusions:

- ١) There is difficulty in measuring the impact of strategic planning on environmental health management in Palestine due to the lack of sectorial strategic plan in Palestine.
- ٢) The plans - in the ministries, municipalities and institutions- are currently concerned with the environmental health, and reflect the image of the institution and its local vision in terms of its role and work.
- ٣) The absence of a sectorial strategic plan for the environmental health has negatively affected the management of this sector, especially in the absence of an administrative umbrella that organizes its affairs so that it works to follow up work, develop plans and implement them.
- ٤) Lack of an integrated and clear system for managing the environmental health.
- ٥) The financial challenges and poor planning are the most prominent challenges hindering a good management of environmental health in Palestine.
- ٦) Two of the main elements hindering good management in the different departments of the ministries: are the lack of important data and statistics regarding sick cases, due to various contamination causatives, and the lack of the holistic and adequate legislation and regulations in this domain.

- V) A general lack of awareness between the participants regarding the availability of important statistics and certain legislation and regulations.

## ٦,٧ Recommendations

**Upon the results the following are the most important recommendations for the concerned organizations:**

١. To formulate a holistic strategic plan that branches to sub (departmental) strategic plans in order to ensure the reciprocal integrative relationship between the different parts of the organization which will help achieve a successful implementation of the overall strategic plan. (an proposed sectorial environmental health strategic plan in appendix ١)
٢. To formation of a supreme council for environmental health of members from the relevant organizations.
٣. To include more prominent and improved pointers in the executive plan of the organization in order to facilitate the monitoring and evaluating of the effect that its activities have on environmental health. To come up with new financial resources to support training courses and workshops that aim to improve the skills and abilities needed for good management of environmental health.
٤. To enhance the planning skills of its employees of different managerial levels through encouraging and facilitating these employees participation in the organization's planning sessions in order to build their loyalty to planning activities and the achievement of goals and objectives.
٥. To obtain data and statistics about sick cases due to various contamination causatives needed for researches that help the improvement of good

environmental health management through cooperating with the health sector and the Palestinian Central Bureau of Statistics (PCBS).

٦. To appeal to the responsible parties to establish clear adequate and holistic legislations and regulations related to good management of environmental health.
٧. To work on building awareness of and implementing the international standards of environmental health (for example; ISO)
٨. To conduct more in-depth researches in the field of good managerial practices related to environmental health.

### **٦,٣ Recommendations for future studies**

The researcher recommends further case studies on:

- The role of municipalities in environmental health management.
- Denmark's experience in environmental health management.
- The gap between strategic planning for environmental health and implementation on ground.

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Engineer Ibrahim Attia - Director of the Environmental Health Department at The Ministry of Environmental Health.

Khaled Naierat - Head of the Water Division in the Health and Environment Department in the Jenin Health Directorate.

Dr. Iyad Daraghme - Director of the Health and Environment Department at Al-Bireh Municipality.

Majed Naiirat - Head of Health Department in Maythaloun Municipality in Jenin.

Engineer Zaghloul Samhan - Director of the Environmental Quality Authority.

Dr. Rand Salman - President of the Palestinian National Institute for Public Health.

Dr. Hassan El-Jamal - Director of the Department of Tourism, Archeology and Environment.

Lotfi Nasser - customs police officer. ١٠ Engineer Milvina El-Jamal – Director of the Environmental Health Department in Ramallah Municipality.

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Dr.Ayed Rateb Alkhuffash, The head of the village council of Marda.

Engineer Ibrahim Attia - Director of the Environmental Health Department at the Ministry of Environmental Health.& Khaled Naierat - Head of the Water Division in the Health and Environment Department in the Jenin Health Directorate. & Dr. Iyad Daraghme - Director of the Health and Environment Department at Al-Bireh Municipality.

Engineer Deeb abdelgafour, Director of the water resources Department at the Palestinian Water Authority.

Mageda Alawena, laboratory director at Palestinian Water Authority.

Adnan Alkhuffash, a citizen from Marda village.

## Appendices

### Appendix (١): The Evaluators

Name	Academic Rank	Specialization	Affiliation
Dr. Mohammed Abu Sharbeh	Assistant Professor	Islamic banking and finance	Arab American University
Dr. Khalid Rabayah	Associate Professor	Microelectronics	Arab American University
Dr. Dalal Iriqat	Assistant Professor	Diplomacy, Conflict Resolution and Strategic Planning	Arab American University

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٥٨	Engineer Ibrahim Attia - Director of the Environmental Health Department at The Ministry of Environmental Health.	٢٢

٥٩	Khaled Naierat - Head of the Water Division in the Health and Environment Department in the Jenin Health Directorate.	٢٣
٦٠	Dr. Iyad Daraghme - Director of the Health and Environment Department at Al-Bireh Municipality.	٢٤
٦٢	Majed Nairat - Head of Health Department in Maythaloun Municipality in Jenin.	٢٥
٦٢	Engineer Zaghloul Samhan - Director of the Environmental Quality Authority.	٢٦
٦٣	Dr. Rand Salman - President of the Palestinian National Institute for Public Health.	٢٧
٦٤	Dr. Hassan El-Jamal - Director of the Department of Tourism, Archeology and Environment.	٢٨
٦٥	Lotfi Nasser - customs police officer. ١٠ Engineer Milvina El-Jamal – Director of the Environmental Health Department in Ramallah Municipality.	٢٩
٦٦	Engineer Ibrahim Attia - Director of the Environmental Health Department at the Ministry of Environmental Health.	٣٠
٦٨	Engineer Milvina El-Jamal - Director of the Environmental Health Department in Ramallah Municipality.	٣١
٧٧	Dr.Ayed Rateb Alkhuffash, The head of the village council of Marda.	٣٢
٧٧	Engineer Ibrahim Attia - Director of the Environmental Health Department at the Ministry of Environmental Health.& Khaled Naierat - Head of the Water Division in the Health and Environment Department in the Jenin Health Directorate. & Dr. Iyad Daraghme - Director of the Health and Environment Department at Al-Bireh Municipality.	٣٣
٨١	Engineer Deeb abdelgafour, Director of the water resources Department at the Palestinian Water Authority.	٣٤
٨١	Mageda Alawena, laboratory director at Palestinian Water Authority.	٣٥
٨٢	Engineer Ibrahim Attia - Director of the Environmental Health Department at the Ministry of Environmental Health.	٣٦
٨٣	Adnan Alkhuffash, a citizen from Marda village.	٣٧

## **APPENDIX (٧): The proposed strategic plan for the Palestinian environmental health.**

### **Introduction**

The World Health Organization, through the Regional Office for the Eastern Mediterranean, has classified the Arab countries participating in its activities into three groups, according to the burden of the diseases emerged from the environment. Palestine has been classified in the countries of the second group, which includes the countries (Jordan, Algeria, Iraq, Morocco, Palestine, Tunisia, Syria, Libya, Lebanon and Egypt), in which, the annual burden of the original environmental diseases reaches ٣٩,٣ years of the disability-adjusted life years per ١,٠٠٠ inhabitants, in which ٥٧% of the region's population lives. According to the estimate of the World Health Organization, the most common main environmental risk factors for countries of this group; are water and sanitation, exposure to chemicals and waste, food pollution, indoor air pollution, as these dangerous factors contribute significantly to increasing the burden of the communicable, and no communicable diseases, but at a smaller rate.

### **The reality of the environmental health in Palestine compared with other countries:**

In order to complete the picture of the environmental health situation in Palestine, it must be compared with similar Arab countries, that suffer from almost the same conditions and situations, in an attempt to monitor the axes that are witnessing progress in Palestine, and the axes that suffer from deficit, and need more focus and attention, and we will work here to reveal the special statistics on the subject, which depends on the World Health Organization- as a resource to its reports.

It should be noted here that Palestine, according to the Arab Environmental Health Strategy ٢٠١٧-٢٠٣٠, showed, in the period (٢٠٠٩-٢٠١٣), the interest and participation in the health and environment of high priority issues, in the national cooperation strategies in the fields of water and sanitation, chemicals and waste, as well as food safety. While it was not effective in the fields of the air pollution and climate change.

Table (١٩): The environmental health problems in Palestine compared with other Arab countries

Statistics source	Appreciation	Statistics	The main problems	The axes
	The reading of Palestine is equivalent to almost the lowest reading, which is good.	The indicator is the number of deaths per ١٠٠,٠٠٠ inhabitants, affected by water and sanitation Palestine: ٥ Index (٤ Syria-١٨٥ Somalia)	* Palestine and all the second group countries suffer from the weakness of the management systems of quality and safety of drinking water.  *As well as weak regulatory and monitoring roles.  * The absence of the financing bases that threatens the sustainability of water and sanitation services. *The continuous decrease of the availability of water in homes, due to water scarcity and intermittent pumping.	Water and sanitation.
World Health Organization - Outdoor air pollution in cities.	More than average. This is a negative indicator that the topic needs to work on.	١) In the annual mean average rate of particulate matter (١٠ $\mu\text{g-m}^3$ ) Palestine is ١٥٥ (within the eastern Mediterranean for low-income	*٩٨% of the population of the Arab cities breathe polluted air that exceeds the annual average rate, indicated in the guidelines of the World Health Organization on the concentration level of	air pollution

World Health Organization - Global Health Observatory.		<p>countries) The scale ranged from ٢٥ (European high-income countries) to ٢٤٠ (Eastern Mediterranean high-income countries).</p> <p>٢) The number of the deaths attributed to air pollution- with regard to Palestine statistics -are not available, although they are available to other countries.</p>	<p>particulate matter with diameters greater than ٢,٥ micrometer.</p> <p>* The main sources of the indoor air pollution in Palestine- as well as its counterparts in Group II countries- are tobacco smoke, building materials, and heating practices, where kerosene is used for heating and lighting.</p> <p>* As for the outdoor air pollution, it is attributed to vehicle emissions, sand and dust storms, as well as industrial emissions.</p>	
	<p>Recent survey conducted by the World Health Organization in the Eastern Mediterranean Region, which covers most Arab countries, indicated that; the implementation of the basic capacities related to the International Health Regulations in ٢٠١١ did not exceed ٥٠٪.</p> <p>table ٢٢</p>	The lack of the estimates at the Arab level.	<p>*A gap exists in the global understanding of the complexity of the environmental impacts of chemicals.</p> <p>*The absence of awareness among citizens, i.e. the culture of safety when dealing with chemicals.</p> <p>* The absence of a legislative framework, the implementation mechanisms, and overlapping responsibilities of parties concerned with the chemicals management.</p> <p>* Lack of the human resources with the necessary experiment, to assess chemical dangers.</p>	Chemical safety
World Health Organization - Global Health Observatory.	Damage is classified as high in Palestine, like other Arab countries, and	Palestine belongs to the Arab region, which in turn belongs to the Eastern	*Lack of rain, high temperature, decreased productivity of agricultural crops, thus a threat to food security.	Climate change and health.



	therefore it must be reduced.	Mediterranean region, which comes second after the African region, in terms of the severity of its vulnerability to climate change.	*Increased dust storms and desertification.	
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### **General aims:**

The general objective of the sectorial strategic plan of the environmental health, is to promote sustainable development that gives greater importance and weight, to the environmental concerns, and their reflections on the public health.

In order to implement this plan, there must be support and implementation by all sectors. As the relationship between the development, environment and health is closely related. Currently, health exists as one of the pillars in all sectors of society, not only the health sector, it exists in industries, agriculture, energy, but the health sector has an important, supportive and directed role for the health development.

Hence, sustainable development policies must lead us to a comprehensive and long-term intervention, in which the workforce is encouraged in the human community; in order to improve the standard of life, therefore; we must confront poverty, inequality and high population growth, which in turn contributes to controlling the environmental degradation, desertification and soil erosion. The loss of the biological diversity, the decrease of water quality and food pollution. This is achieved by emphasizing attention to environmental exposures that are reflected in the public health, and all aspects of life in all parts of the earth, because pollution is Tran's boundary. Reducing it in every country contributes to reducing pollution problems, and the global environmental change- which is one of our goals that we look forward to achieving.

- Working to improve the environmental health standards in the Palestinian society.
  - The continuous improvement of governance to ensure the ability of the Supreme Council for Environmental Health, to represent its members and enhance the Palestinian environmental health.
- Developing the performance of the workforce in the fields of the environmental health, and enhancing their professional status.

### **Strategic framework**

The framework depends on interacting with the fact that the issue of the environmental health is outside the scope of the mandate of one party, and that it needs many aspects of the health and environment services. Therefore, it is necessary to use a cooperative multilateral method, under the leadership of the public health and the environment sectors, represented by the Supreme Council of Environmental Health, in order to subject it to governance, legislation and supervision, paying attention to the awareness and encouragement campaigns for other parties that provide specialized health and environment services.

Starting from the objectives of our strategic plan, associated with its counterparts in the Arab countries, to coordinate the efforts of the League of Arab States, the World Health Organization and the United Nations Environment Program, support these efforts by following the strategic framework approved by the World Health Organization. - The Regional Office for the Middle East - in its Arab strategic plan for the health and the environment ٢٠١٧. ٢٠٢٠-We will adopt the following framework:

- Consolidating the relationship between the health and environment sectors, and adopting a unified agenda to reduce the impact of the environmental risks on humans.

Strengthening the capacities of the public health, and the environment sector to assess, monitor, regulate and manage the environmental risks.

- Strengthening the awareness campaigns, building partnerships and the leadership roles in the health and environmental sectors, in order to gather the materials and take synergistic actions by other concerned sectors and the health and environment service providers.
- Providing the health and environmental sectors with standards, measurements, guidelines and evaluation tools, to motivate the concerned parties to include the

### **Vision**

We look forward to providing a healthy and safe environment, whether natural or built; for all segments of the Palestinian society by promoting the environmental health practices.

### **The message**

Working to develop and maintain the environmental health practices, by promoting the environmental health standards presented to the Palestinian community.

### **Values**

#### **١) Complementarity and Ethics**

To improve the environmental health in Palestine, it is necessary to work in a team spirit among members of the Supreme Council, national committees and the other partners, so that they have confidence and respect for differences in views and interests,

in order to work together to find solutions, to integrate these various interests that all contribute to improving the health of the Palestinian environment.

#### ٢) Professionalism

Working to perform the duty and tasks assigned to the team, and extracting results in the best possible way, taking into account the optimal use of resources, in addition to developing the professional performance, and improving work productivity.

#### ٣) Transparency

Maintaining the spirit of honesty and openness, when dealing with the members and partners.

#### ٤) Sustainability

Working to manage the resources in a sustainable manner, in order to improve the quality of life of the Palestinian community, and the future generations, by preserving its natural and environmental resources.

Fig ٩: The Structure of the Supreme Council for Environmental Health

### **Strategies**

A matrix of the role distribution among the responsible authorities, to implement procedures, to achieve the strategic goals. (The nine environmental health axes as recommended by the World Health Organization).

Table (٧٠): A matrix of the role distribution among the authorities in Palestine  
(suggested)

<b>The entity responsible for following up</b>	<b>Priority actions</b>	<b>strategic goals</b>	<b>The axes</b>
<ul style="list-style-type: none"> <li>• Water Authority.</li> <li>• The Water Authority, the Ministry of Agriculture, and the Ministry of Health.</li> </ul> <p>*Water Authority</p> <ul style="list-style-type: none"> <li>• Water Authority and the Ministry of Agriculture.</li> </ul> <p>Water Authority</p>	<ul style="list-style-type: none"> <li>• Preparing a national report every two years, on assessment and analysis of the water and sanitation sector.</li> <li>• Strengthening the monitoring of the availability and quality of drinking water, and using the treated wastewater in agriculture.</li> <li>• Updating the national standards for the drinking water quality, and water management systems, in order to reach the water safety plans.</li> <li>• Modernizing and activating the national standards for wastewater reuse.</li> <li>• Preparing the national policies for water requirements that achieve- at least- the minimum supply of water necessary to protect the health of citizens.</li> </ul>	<ul style="list-style-type: none"> <li>• Reviewing the strategies and activating the best ones in the areas of water quality, water security, and the safe use of treated wastewater.</li> <li>• Monitoring and evaluating the performance of the health sector, water and sanitation in the public health.</li> <li>• Preparing and delivering data-driven guidance and setting health-based goals.</li> <li>• Strengthening the capacities in the field of protecting water sources, and rationalizing their consumption in a way that ensures their safety and protection from waste use.</li> <li>• Working to strengthen the regulatory, institutional and legislative role of the health sector, which is related to water safety and services systems.</li> </ul>	Water, sanitation and health
<p>Environmental Quality Authority</p> <ul style="list-style-type: none"> <li>• National Institute of Public Health.</li> </ul> <p>Environmental Quality Authority.</p>	<ul style="list-style-type: none"> <li>• Calling for setting up and updating the air quality monitoring systems, as well as exchanging information with all stakeholders.</li> <li>• Conducting studies and research related to pollution in Palestine, its sources, and how to limit its impact on health.</li> <li>• Developing policies and legislation, to reduce the</li> </ul>	<p>Preparing and developing national air quality standards, and monitoring them according to the standards set by the World Health Organization.</p> <ul style="list-style-type: none"> <li>• Preparing and strengthening monitoring the environment and public health sectors, in relation to air quality.</li> <li>• Following the necessary procedures to reduce the</li> </ul>	Air Pollution

<ul style="list-style-type: none"> <li>• Tourism, Antiquities and Environment Police.</li> </ul> <p>Environmental Quality Authority. Energy Authority.</p>	<p>emission of air pollutants in the energy, industry and transportation sectors.</p> <ul style="list-style-type: none"> <li>• Strengthening the environmental police function, and its role in registering air pollution violations.</li> <li>• Developing and implementing projects and programs to reduce emissions, by adopting environmentally friendly technology.</li> </ul>	<p>air pollutants from the origin. (Combating the causes of pollution).</p> <ul style="list-style-type: none"> <li>• Raising the awareness levels among relevant stakeholders, including citizens, about the dangers of Air pollution.</li> </ul>	
<p>Ministry of Health and Environmental Quality Authority.</p> <p>National Institute of Public Health</p> <p>Ministry of Health and Environmental Quality Authority.</p> <p>Ministry of Health.</p>	<ul style="list-style-type: none"> <li>• Establishing and updating the national legislations and policies, and coordinating on chemical materials.</li> <li>• Establishing a system for monitoring, preparing and managing chemical, the accidents in cope with the International Health Regulations ٢٠٠٩.</li> <li>• Establishing a national poison center.</li> <li>• Establishing and updating programs to protect the environment's health from the unsafe use of pesticides, rodents and fertilizers.</li> <li>*Establishing and updating capacity building programs for the public health professionals to reveal exposure to chemicals.</li> </ul>	<ul style="list-style-type: none"> <li>• Adopting the right management of the chemicals, in the public health and environment programs and its procedures.</li> <li>• Establishing and strengthening an integrated Palestinian health, and environmental monitoring system for chemicals.</li> <li>• Establishing a Palestinian program to reduce chemical dangers.</li> <li>• Working on classifying and naming the chemicals, especially those commonly used in Palestine.</li> </ul>	Chemical safety
<ul style="list-style-type: none"> <li>• The Ministry of Local Government and the Environmental Quality Authority.</li> <li>• Ministry of Health</li> </ul>	<ul style="list-style-type: none"> <li>• Formulating national policies on waste management through safe disposal.</li> <li>• Organizing, monitoring and evaluating the impacts of waste on public health.</li> <li>• Establishing and updating administrative, technical and technical programs, in</li> </ul>	<ul style="list-style-type: none"> <li>• Adopting policies that support waste recycling programs, and their exploitation in several aspects to support the economy.</li> <li>• Minimizing to the minimum possible health risks, resulting from exposure to medical waste</li> </ul>	Waste management and environmental health services.

<ul style="list-style-type: none"> <li>• The Ministry of Local Government and the Environmental Quality Authority</li> </ul>	<p>order to use modern methods and technologies, within the framework of integrated waste management.</p>	<p>by workers in this sector as well as the general public.</p>	
<ul style="list-style-type: none"> <li>• National Institute of Public Health.</li> <li>• National Institute of Public Health and the Ministry of Health.</li> </ul> <p>Ministry of Health.</p>	<ul style="list-style-type: none"> <li>• Conducting studies to assess the vulnerabilities of climate change in the health sector, and its health effects on citizens, now and in the future.</li> <li>• Establishing early warning systems for diseases that are affected by the climate; by identifying indicators for that.</li> <li>• Work to include health system strategies, plans and projects in the field of climate change within the Palestinian health strategies.</li> </ul>	<p>Improving and developing capacities in the public health, and environmental sector, in order to reduce the health impacts of climate change.</p>	<p>Climate change and health.</p>
<p>Environmental Quality Authority and the Ministry of Health</p>	<p>*Promoting green policies that mitigate negative environmental impacts on the health sector, by strengthening the environmental health in social development programs and initiatives.</p> <p>• Adherence to sustainable development indicators at the national level as a guide.</p> <p>*Promoting the health gains of the sustainable development, and measure them through formulating a sustainable national development agenda, and making health a precondition.</p>	<ul style="list-style-type: none"> <li>• Strengthening the coordination and partnership within and outside the health and environment sectors, to face emerging challenges.</li> <li>• Work to make health a primary goal of sustainable development, by increasing health gains resulting from achieving sustainable development.</li> </ul> <p>*Promoting and supporting the health impact assessment of the sustainable development policies.</p>	<p>Sustainable development and health.</p>
<p>*Ministry of Health</p> <ul style="list-style-type: none"> <li>• Ministry of Health and Ministry of Agriculture</li> </ul>	<p>Adopting a comprehensive safety approach, during the food production stages from the field to the citizen's table through:</p>	<p>Reducing the burden of foodborne diseases.</p>	<p>Food safety</p>

<ul style="list-style-type: none"> <li>• National Institute of Public Health - Poison Center</li> <li>• Ministry of Health and Ministry of Agriculture.</li> </ul>	<ul style="list-style-type: none"> <li>• Capacity assessment of food safety programs.</li> <li>• Developing national programs to reduce the risks posed by all forms of food contamination.</li> <li>• Strengthening and supporting programs for monitoring foodborne diseases, and programs for controlling microbiological, chemical and toxic pollutants.</li> <li>• Linking legal legislation and specifications.</li> </ul>		
<p>The Ministry of Labor, the Ministry of Health and the Environmental Quality Authority.</p>	<ul style="list-style-type: none"> <li>• Establishing national frameworks, policies and action plans, concerned with workers' health and the work environment, taking into account the promotional framework of the ۲۰۰۶ Occupational Safety and Health Agreement.</li> <li>• Developing the methods of assessing health risks in the workplace as well as workers' accommodation and responding to them.</li> <li>• Establishing a system capable of providing primary protection from occupational hazards, diseases and injuries.</li> <li>• Establishing workers' health monitoring systems to identify and combat occupational dangers, and promoting research on the work environment and workers' health.</li> </ul> <p>*Inclusion of workers' health in the policies of other sectors, in addition to the health and environment sectors.</p>	<ul style="list-style-type: none"> <li>• Developing and implementing policies concerned with workers' health, and improving the work environment, in order to preserve and enhance health.</li> <li>• Improving the performance of occupational health services and improving their availability.</li> <li>• Monitoring data on workers and work environment risks.</li> <li>• Integrating workers' health and maintaining their safety into the policies of other sectors, in addition to the occupational health and safety sector.</li> </ul>	<p>Occupational Health and Safety.</p>
	<ul style="list-style-type: none"> <li>• Creating and updating the</li> </ul>	<ul style="list-style-type: none"> <li>• Identifying and</li> </ul>	<p>Environmenta</p>



<ul style="list-style-type: none"> <li>• The Ministry of Health, the Environmental Quality Authority.</li> <li>• The Ministry of Health, the Environmental Quality Authority and the Water Authority.</li> </ul>	<p>environmental health plans during emergencies.</p> <ul style="list-style-type: none"> <li>• Preparing systems for anticipation and early warning of emergencies, environmental disasters and preparing them.</li> <li>• Permanent evaluation of services related to the environmental health.</li> </ul>	<p>assessing the dangers facing the environmental health in Palestine.</p> <ul style="list-style-type: none"> <li>• Developing the necessary capabilities for effective management of the environmental health areas, during emergencies.</li> <li>• Focusing on protecting health from the environmental risks, while going through the stages of emergency and disaster management.</li> <li>• Leading health and environmental procedures in health care facilities, and refugee camps during wars and emergencies (in the areas of water, sanitation, excreta and rodent control)</li> </ul>	<p>l health management during emergencies.</p>
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## Appendix (۷): Questionnaire

### “Challenges of measuring the impact of strategic planning on environmental health management in Palestine.

#### **Part I: Personal Information**

##### **Gender:**

- ☐ Male
- ☐ Female

##### **Age:**

- ☐ Less than ۳۰ years
- ☐ ۳۰ to less than ۴۰ years
- ☐ ۴۰ to less than ۵۰ years
- ☐ ۵۰ years or older

##### **Educational Degree:**

- ☐ High school or less
- ☐ Diploma
- ☐ Bachelor degree
- ☐ Higher Education

##### **Years of experience within the field:**

- ☐ Less than ۱۰ years
- ☐ ۱۰ to less than ۱۵ years
- ☐ ۱۵ years or more

**Part II: Statements related to different aspects of the strategic planning for the environmental health management.**

((Strongly Disagree / Disagree / Don't Know / Agree / Strongly Agree))

**١<sup>st</sup> Dimension: the general state of the environmental health in the organization's strategic plan:**

- ١ Improving the general state of the environmental health is a part of the vision of the organization's strategic plan.
- ٢ The quality of environmental health is one the goals of the organization's strategic plan.
- ٣ The executive plan of the organization includes pointers for monitoring and evaluating the effect that the organization's activities have on the environmental health.
- ٤ The environmental health is a main element of the organization's strategic plan.
- ٥ The environmental health is not one of the organization's responsibilities for it to be included in its strategic plan.
- ٦ The environmental health must only be included in the plan of the Ministry of Health.
- ٧ The environmental health must have an independent strategic plan.

**٢<sup>nd</sup> Dimension: Challenges facing a good management of the environmental health in Palestine:**

- ١ The Zionist occupation is one of the obstacles facing a good management of environmental health in Palestine.

- ٢ The financial obstacles stand in the face of a good management of the environmental health in Palestine.
- ٣ The overlap of authorities between ministries and organizations is one of the obstacles facing a good management of environmental health in Palestine.
- ٤ The inadequate and outdated legislation and regulations are obstacles facing a good management of the environmental health in Palestine.
- ٥ The inadequate authority granted to parties responsible of tracking any of the obstacles facing a good management of environmental health in Palestine.
- ٦ The inadequate coordination between the responsible ministries and organizations is one of the obstacles facing a good management of environmental health in Palestine.
- ٧ Poor planning is an obstacle facing a good management of environmental health in Palestine.
- ٨ The lack of specific managerial skills prohibits a good management of environmental health.

**٣<sup>rd</sup> Dimension: The perceptions of the importance of employing strategic planning on the management of the food safety and control department:**

- ١ You have a written executive plan for controlling food safety.
- ٢ Your department has a record of all the facilities that provide food (restaurants, food processing plants, commercial stores).
- ٣ You have food safety standards.
- ٤ You have a system for evaluating food facilities.
- ٥ The evaluation record of food facilities is updated in a periodic holistic manner.

- ٦ You have statistics of sick cases due to food contamination.
- ٧ A complaint against any food facility is followed up, and a sample is submitted for examination within ٧٤ hours.
- ٨ You previously participated in food safety courses and forums.
- ٩ You carry out awareness campaigns about food safety.
- ١٠ There are specific procedures and penalties against violators.
- ١١ Legislation and regulations in this domain are holistic and adequate.

**٤<sup>th</sup> Dimension: The perceptions of the importance of employing strategic planning on the management of solid and liquid waste disposal department**

- ١ You have a clear written executive plan for handling wastes.
- ٢ There are clear standards and written systems for handling wastes in general and specific ones for handling medical wastes.
- ٣ There is periodic monitoring of the solid and liquid wastes' hording sites.
- ٤ There is cooperation in handling wastes with the concerned ministry.
- ٥ Complaints regarding wastes are followed up in a maximum period of five days.
- ٦ You have statistics of sick cases due to air contamination such as respiratory diseases in areas surrounding waste disposal sites.
- ٧ You carry out awareness campaigns for citizens about the best methods for handling wastes.
- ٨ There are specific procedures and penalties against violators.
- ٩ Legislation and regulations in this domain are holistic and adequate.

**٥<sup>th</sup> Dimension: The perceptions of the importance of employing strategic planning on the management of insects and rodents control department:**

- ١ You have a clear written executive plan for controlling insects and rodents.
- ٢ Your department has records and periodic follow ups for getting rid of insects and rodents.
- ٣ Insects and rodents causing factors are managed (such as drying up stagnant water pools, disposing of dead animal's corpses, etc).
- ٤ You have awareness leaflets for citizens about the most dangerous disease carrying insects and rodents, places where they're found, and the manner in which they spread).
- ٥ There are specific procedures and penalties against violators.
- ٦ Legislation and regulations in this domain are holistic and adequate.

**٦<sup>th</sup> Dimension: The perceptions of the importance of employing strategic planning on the management of drinking water safety department:**

- ١ You have a clear written executive plan for assuring the safety of drinking water.
- ٢ You have specific goals tied to a specific time frame.
- ٣ There are periodic monitoring reports for the evaluation tied to a specific time frame.
- ٤ Your department has a record of all drinking water sources (including wells, springs, and water packing factories)
- ٥ There are periodic follow ups and inspections tied to a specific time frame for all drinking water sources.

- ٦ There is cooperation with the ministry concerned with drinking water.
- ٧ You continuously develop legislation to assure drinking water safety.
- ٨ You have statistics of sick cases due to drinking water contamination.
- ٩ There are specific procedures and penalties against violators.
- ١٠ Legislation and regulations in this domain are holistic and adequate.

**٧<sup>th</sup> Dimension: The perceptions of the importance of employing strategic planning on the management of crafts and industries control department:**

- ١ You have a clear written executive plan for monitoring crafts and industries.
- ٢ You have specific goals tied to a specific time frame.
- ٣ There are periodic monitoring reports for evaluation tied to a specific time frame.
- ٤ Your department has a record of all workshops and factories.
- ٥ There are clear written standards that all factories and workshops must comply to.
- ٦ Your department has records and periodic inspection of all factories and workshops to assure the adherence to regulations and standards.
- ٧ You have communication channels for the reception and following up of complaints.
- ٨ There are specific procedures and penalties against violators.
- ٩ Legislation and regulations in this domain are holistic and adequate.

## الملخص

تهدف هذه الدراسة إلى التعرف على التحديات التي تواجه قطاع صحة البيئة الفلسطينية في تبني وتنفيذ التخطيط الاستراتيجي، وأثرها على إدارة الصحة البيئية في فلسطين. من خلال دراسة وتحليل الخطط والسياسات الاستراتيجية التي تتبناها الوزارات والمؤسسات ذات العلاقة، ودراسة واقع هيكلية المؤسسات، ودورها في القيام بالمسؤوليات، للتعرف على المعوقات التي تعترض عملية التنفيذ. وللوصول إلى الاستراتيجية الأفضل. حيث قمت بدراسة واقع الوضع في فلسطين والفوائد المكتسبة من التجارب السابقة من دول أخرى في هذا المجال..

ولتحقيق هذا الهدف استخدمت الباحثة المنهج الكمي من خلال تصميم استبيان مسح كوسيلة لجمع البيانات اللازمة ومسح عينة الدراسة. وزعت (٥٥) استبانة على موظفي الوزارات والمؤسسات والبلديات الفلسطينية، وتم استرجاع (٥٢) استبانة بنسبة (٩٥٪). وأظهرت نتائج الدراسة أن هناك تأثيراً إيجابياً وهاماً للتخطيط الاستراتيجي كمتغير مستقل على جميع المتغيرات التابعة للدراسة والتي هي إدارات المتغيرات البيئية الخمسة (الإدارات الصحية: سلامة الأغذية والرقابة عليها، تصريف المخلفات الصلبة والسائلة، مكافحة الآفات والقوارض، سلامة مياه الشرب، ومراقبة الصناعات اليدوية والصناعات)..

توصلت الدراسة إلى مجموعة من النتائج بشكل رئيسي: على الرغم من وجود درجة إيجابية عالية من التصورات لأهمية توظيف التخطيط الاستراتيجي في إدارة صحة البيئة في فلسطين إلا أن الخطة لم تصل إلى المستوى الوطني، فهي بحاجة إلى مزيد من التطوير في التخطيط الاستراتيجي والسياسات، للتعامل مع بعض التحديات بشكل رئيسي مثل مشاكل التمويل، وسوء التخطيط في المنظمات، وممارسات الاحتلال الإسرائيلي، وعدم وضوح الصلاحيات بين الوزارات والمؤسسات التي تلعب تأثيراً سلبياً على إدارة الصحة البيئية.. قدمت الدراسة لصانع السياسات مجموعة من التوصيات: الارتقاء بالتخطيط الوطني ليشمل كافة مجالات الصحة البيئية ودمج احتياجات التنمية في إطار مستدام للتخطيط الشامل عبر جميع القطاعات، والتركيز على تطوير السياسات المالية والقانونية من خلال تشكيل المجلس الأعلى للصحة البيئية لتنظيم إدارة قطاع الصحة البيئية، لمساعدة جيل المستقبل على المساهمة في تحقيق التنمية المستدامة للأمم.