



**Palestinian Working Women Society for Development
PWWSD**

Environmental Challenges in Palestine “Gender perspectives”

October 2021



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Chapter 1

General Background, Objectives, methodology, and Importance of Study.

General Background

Women's empowerment and gender equality are obviously linked with the fight for a sustainable and healthy environmental system. In dealing with the ongoing environmental challenges facing women, requires both personal conviction and collective commitment towards achieving Sustainable Development Goals, particularly those related to a clean, healthy environment for our communities to ensure the preservation of vital natural resources. Thus, it is crucial to develop a gender-based perspective on the environmental challenges, underpinned by grassroots activism and pressure from different interest groups (citizens, NGO's, etc...) on legislative bodies to make necessary amendment, particularly at this time of the dramatic climate and environmental changes that are taking place in the world.

In this regard, Palestine has signed its commitment to a number of international conventions, most notably the Rotterdam Convention, a multilateral treaty to promote shared responsibilities in relation to importation of hazardous chemicals. This is in addition to the Stockholm Convention on Persistent Organic Pollutants, and Palestine participated and signed "Paris Global Summit" agreement on Climate changes.

Women throughout history and all over the world have played a crucial role in the struggle for environmental protection. In 1906, a woman-led movement in Nepal went so far as to get themselves bound to trees to prevent them from being cut down for commercial purposes. This movement continued to evolve over the course of decades, raising public awareness of environmental issues, thus avoiding further environmental damage. Another example of a women-led environmentalist movements in the Global South is the Green Belt Movement, led by a Kenyan woman named Wangari Maathai, who won the Nobel Peace Prize in 2004 for her environmental activism.

Objectives of the Study:

- Examine the gender dimension in the environmental changes that are taking place, particularly to highlight the right of Palestinian women to food safety and security, high quality water, fertile soil, and the appropriate ways to dispose wastes, as prerequisites for achieving sustainable development.
- Determine and analyze the major risks that Palestinian women face, particularly those resulting from the occupation's authority's policies and practices in regards to the environment.
- Derive issues and topics through which we can generate a policy-paper on certain environmental aspects, with a special focus on the gender perspective.
- Extract recommendations that shed light on the environmental demands, priorities, and approaches from gender perspectives.
- Formulate a scientific paper to be used as a tool for advocacy and campaigns to support Palestinian women's causes and the use of environmental resources.

Importance of the Study:

This unique study will have short- and long-term understandings and hence policy formulations, pertaining climate and hence environmental changes, with focus on the gender aspects:

- The unique status of Palestinian women as they are constantly facing environmental threats and risks due to settlement building and the overall policies of the settler colonial system, endangering their food security and safety and depletion of resources along with the overall environment, therefore, compromising any prospect for potential sustainable development in the field.
- The study will contribute to bridge the gap within the Palestinian and the Arab academic and research fields, in examining the environmental issue from a gender-based point of view, and its relevance to achieving sustainable development.
- Focusing on collective awareness regarding the environmental question from gender perspective, while identifying the knowledge sources used to answer the question.

Methodology:

The study adopts descriptive analysis method, while utilizing the following research tools:

- Literature review, pertaining Environmental impact and gender
 1. Relevant Reports, periodicals and research papers.
 2. Reports of local trends and national strategies.
 3. International conventions and treaties
- Establishing lines of communication with the relevant actors through conducting focus groups, in order to delve deeper into the most crucial of relevant topics.
- Collect, categorize and analyze acquired information
- Analyze data in order to be able to put forward viable recommendations through matrix analysis.
- Provide solutions and transitions measures, in terms of practical step to reduce the gap between men and women when comes to impact of the environment.
- Identify the appropriate legislative and political foundation for establishing a collective accountability, pertaining the environmental system from a gender lens.

Chapter 2

Literature's review and theoretical framework

The Palestinian National Authority has been alerted to the environmental hazards that it inherited and continues to suffer from as a result of the practices of the occupation on one hand, and as a result of the low level of awareness of the community of these threats to the future of the Palestinians, on the other hand.

The Environment Sector Strategy 2017-2022, which came after years of preparation for the environment sector, sets the strategic approach and the guidelines for transforming the environment from a separate and limited sector into a cross-sector domain that overlaps and intertwines with all sectors. However, government budgets allocated for the environment do not exceed 1% of the national Budget (Palestinian Central Bureau of Statistics 2017).

Although there are important references to the most important environmental issues in national strategies such as (the strategies of the Ministry of Education, the Ministry of Local Government, the Water Authority, the Ministry of Agriculture, the Solid Waste National Strategy, Gender Strategy on Environmental Issues by focusing on water and solid waste management 2013-2017¹, preliminary indications suggest that what has been achieved in the environmental field is very modest, and the absence of the emphasize on the environmental concerns and priorities from gender perspectives.

Furthermore, the report of the UN Special Rapporteur, submitted to the Human Rights Council in March 2019, notes serious violations carried out by the occupation authorities in violation of the Palestinian environment and points out that 96% of the water of the Gaza Strip has become unfit for human consumption.

The report shows that Israel is carrying out dangerous practices related to the disposal of liquid and solid wastes in what is known as areas C². Michelle Bachelet, the United Nations High Commissioner for Human Rights, addresses in her report the Israeli settlements in the occupied Palestinian territories, including East Jerusalem and the impact of that on the environmental

¹ The Palestinian National Authority has not provided an assessment of what has been achieved or updated on this plan.

² According to the Oslo Accords, the West Bank is divided into areas A, B, and C.

system. The report notes an acceleration in settlement activities in the West Bank, including East Jerusalem, as well as proliferation of Palestinian property demolition which automatically means the displacement of the residing families³ (United Nations Environment Program 2019). Despite that, the above reports did not address precisely the gender dimension of the impact on the environment caused by the occupation, it is obvious that the most vulnerable population such as women, will be the most affected, either through causing the shortage of the resources, or the displacement and migration caused by the Israeli measurements.

Al-Haq biannual report of 2020 notes that the occupying forces demolished four houses for security reasons, nine Bedouin homes for reasons of lack of construction permits, and demolished and confiscated nine ordinary dwellings.

The demolition of houses displaced 304 Palestinians, including 149 females and a total of 153 children. The number of displaced school students is 102. The majority of the demolished houses were completely built, while 26 houses were under construction at the time of the demolition. The residents of the demolished houses were not able to evacuate their belongings before the demolition. 23 of the 95 houses were forced to be demolished at the hands of their owners; this phenomenon has been on the rise in the past few years in the occupied city of Jerusalem due to the threat of fines and costs imposed by the occupation authorities

It is also reported that 20 families had their homes demolished for the second time and at least 3 of the demolished dwellings sheltered more than one family. Al-Haq statistics show that 12 families applied for a building permit before the demolition, which is a relatively low number, as it is well-known that the occupation authorities will not issue building permits in the occupied land. Therefore, Palestinians are forced to build without the issuance of the required permits. As appeared from these statistics, the most affected segments as a result of houses demolition and displacements are women and their children. This impact has dramatic effects on access and quality of environmental resources available to the Palestinian women.

Reports of human rights organizations also indicate that the occupation authorities demolished 88 private non-residential facilities such as livestock farms, shops, warehouses, water wells, support walls, barracks, etc. the majority of which (82) are located in area C (according to Oslo Accords) and 6 within the boundaries of the occupation's municipality of Jerusalem, 3 of which were

³ More details can be found on <https://news.un.org/ar/story/2020/06/1056582>

demolished by their owners. 4 of the demolished facilities were private facilities belonging to the heads of families whose homes were demolished simultaneously.

Five of the facilities were in the process of being constructed, and 17 of the demolished facilities were demolished for the second time at least after previous demolition and reconstruction. The belongings of 31 facilities were damaged because the owners of the demolished facilities could not properly evacuate before the demolition. Additionally, the occupation authorities did not give an opportunity to challenge the demolition decision in at least 29 cases⁴. Forty-four of the totals of the demolished facilities were major sources of income their owners, and this entails major economic consequences.)

But the impact goes beyond loss of physical property and economic opportunity. Denied a legal avenue to construct dwellings or commercial buildings, Palestinians living in Area C are left with little choice but to build illegally, forcing them to live in undeveloped conditions and under threat of Israeli demolition, where women are often significantly and differentially affected by this demolition practices such as the demolition of houses is forcing families to live in shelters or in environmentally unsustainable houses.

The inability to obtain environmentally sustainable housing, entails dire psychological and social impacts on families living in area C, especially female members. Negative impacts on women would include but not limited to, a constant fear of forced eviction by the IDF, crowdedness due to the small size of the dwelling and lack of access to clean water and sanitation, causing harmful hygiene issues related to women's health.

As a result of Israel's segregation wall that was built in 2002, 9.4% of the West Bank land is trapped and isolated in –between the wall and the disputed 1967 borders. The occupation authorities further declared that 20% of the Wes Bank area are to be designated closed military zones. All of these actions complemented with constant land confiscation, forms an integral part of Israel's matrix of control over Palestinian land⁵, depriving Palestinians in the process from essential natural resources, and hence women naturally have little alternatives to access resources, they are the most impacted.

⁴ <https://www.alhaq.org/ar/monitoring-documentation/17268.html>

⁵ Settlements are illegal under Security Council resolutions, including Resolutions 2334, 446, 452, 465, 471 and 476 of the Fourth Geneva Convention.

Israel's control over Palestinian land includes pillaging of the most crucial natural resources which is water. these nefarious policies are resulting in ground water salinization (increase concentration of various salts in water), due to over pumping, in addition to illegal drainage of Palestinian water wells. Consequently, this leads to increased land desertification and shortage of water, which in return significantly effects Palestinian families, where women comprise majority of the working force.

The confiscated land in Jordan river basin has the most potential to expand the Palestinian agricultural realm, due to its high fertility. This has major ramifications on the livelihood of Palestinian families, particularly female members who would otherwise lack alternative options of employment. Because traditionally, majority of the women in the Jordan valley area work in agriculture.

The Jordan Valley is the only area in which the Israeli settlers are given generous allocations of water, appreciably larger than the average consumption of Israel's families, both in Israel and in the other settlements. The settlements in the area have been allocated large swaths of land; their municipal area is 28 times as large as the built-up area. These benefits have enabled the settlers to develop modern, intensive agriculture, based in part on cheap labor from among the local population.

The Jordan Valley contains the largest land reserves available to the Palestinian Authority in the West Bank with which the Palestinians can develop a modern agricultural sector, tourism, industry, and logistic elements such as airports and roadways. However, Israel restricts the Palestinians' ability to affect future of the area. Clearly, settlements are a cause of destruction of Palestinian land and a source of pollution of the Palestinian environment with huge adverse effects on women in the areas.

The Israeli annexation plan will have environmental implications on future land investments, the right to access water and cause geographical fragmentation of Palestinian lands, where women will be the most affected due to their inability to move and find other sources for living.

The annexation plan imposes the greatest danger in recent years in terms of its effects, as it impedes any structural planning in the Palestinian land, endangers food security prospects, since the areas targeted, especially the Jordan Valley, are a major source for the Palestinian food basket.

There is also another factor to consider which is the unsafe use of pesticides, that are being marketed and used by the Occupation authorities, disregarding the fact that their use is

internationally prohibited. The annual quantity of the used pesticides in Palestine is estimated to be 4000 tons, where international researches showed that most pesticides affected women, particularly pregnant and lactating women in a dangerous manner.

Furthermore, more environmental harm comes as result of wastewater disposal from settlement industrial plants, such as the one adjacent to the Barkan settlement, near the Palestinian city of Salfet. It was also found that were serious health implications caused by the Geshori Israeli factory's harmful practices in Tulkarem, (Environment Quality Authority 2018).⁶ These industrial pollutants will have major impact on women and their children in the areas.

Soil samples taken for the purposes of this study from areas around the Geshori Plant, and the concentration of heavy metals is shown in the table below:

Table 1. Heavy metal rates in the soil of the areas surrounding the Geshori Agricultural Settlement in Tulkarem (mg/L).

Sample number	1	2	3	4
(mg/Kg) or (Part per million) (ppm)				
Ni	38.4	61.3	49.9	48.7
Pb	35.1	10.2	12.3	22.4
Cu	36.1	28.7	31.6	46.4
Fe g/kg	24.94	29.83	28.83	35.1
Cr	59.7	72	70.4	89.2
Mn	747.8	914.4	1117	911
Co	16.5	21.3	33.1	21
Zn	230.1	169.1	124.9	21.3

⁶The results show that the main sources of heavy metals in the study area refer but are not limited to the following factors:

- Mainly Gishori Industrial Complex by-product which emits aerosols holding heavy metals (Cu, Co, Al, Zn, Cd and i) and major elements (Mg , SO₄, Cl and NH₄)

The results of the chemical analysis show that there is a rise in the concentration of Ni, Zn, manganese (Mn), chromium (Cr), iron (Fe), lead (Pb) and cobalt (Co); all chemical elements that greatly affect soil fertility and biological pollution. Other studies' analysis, indicate significant contamination caused by fumes and gases coming from the Geshori plants.

The most significant ramification of pollution resulting from settlements is air pollution, where women and children are the most vulnerable to, which causes damage to large areas of agricultural land after the fall of dust particles on agricultural crops and trees, destroying them in the process.

A survey report⁷ by B'Tselem – The Israeli Information Center for Human Rights in the Occupied Territories, published in December 2017, reveals that Palestinian land is used to dispose Israeli waste. The report states that a large part of the waste produced inside Israel is being disposed outside its borders with major environmental degradation to the Palestinians land and resources that often used by women.

Israel has double standards when it comes to laws and regulations regarding environment, as they are much more relaxed in the industrial areas of the settlements, and even offers economic incentives, such as tax concessions and government subsidies for the establishment of waste treatment plants in the occupied territories. This inconsistency increases the potential for environmental and health risks on the population of the West Bank, where women and children are more susceptible.

A report by the UN Human Rights Council notes that Israel transports electronic waste from within, and from settlements, to areas close to Palestinian communities in the West Bank. For example, many illegal e-waste workshops operated by illegal recyclers are located in the town of Ithna, which is near water springs. This causes further water pollution, and leads to penetration of toxic chemicals and toxic substances such as mercury into the land. Many workshops are also located close to agricultural land, which threatens agricultural biodiversity, the quality of agricultural products⁸ and public health in general. The adverse effects of these process will be

⁷ **The Israeli information center for human rights in OPT Bensalem "Exploiting Palestinian Land for treatment of Israeli waste"**, Jerusalem, December 2017, p7

⁸UN Human Rights Council, "The Human Rights Situation in Palestine and other Occupied Arab Territories, Israeli Settlements in the occupied Palestinian territory, including East Jerusalem, and in the occupied Syrian Golan" Report of the Secretary-General at the twenty-fifth session, February 2014, p. 1

more obvious on women health, particularly on those who are in pregnancy and the subsequent long-term effects on their fetuses and children.

Israel's environmentally harmful practices includes a recently-established landfill in the area of the Yitzhar settlement. A study shows that the Geshori plant is one of the reasons for the increase in rates of cancer and asthma and eye inflammation (Qato, Nagra 2013), and hence women who reside longer time than mean in the area round, they are more likely to expose to the pollutants.

A Human Rights Watch report shows that the Israeli civil law applies to settlements and thus provides them with protection from prosecution, which contradicts and violates international human rights laws⁹. In a statement by the Head of the Environment Quality Authority on 17 August 2018 to the Anatolian News Agency, he notes that there are 98 random landfills in the West Bank used to dump waste coming from Israel. This practice impacts the access to resources from gender perspectives, as women have less ability to mobilize and then to find alternative resources.

A report by Amnesty International notes that Palestinians are denied fair access to water. The report holds Israel accountable for much of the water crisis in the Palestinian territories. (Amnesty International, 2009¹⁰). These reports confirm the extent to which the Israeli occupation has affected the development of the water sector over the past decades. The reports state that this negative situation has resulted in:

- Significant decrease in water service levels, in terms of both the quality and quantity of available water, especially in the Gaza Strip.
- Stoppage in sanitation services and development projects, increased environmental damage, and reduced treatment/recycling capacity of wastewater that can be used as a non-conventional resource for agricultural and environmental purposes. This negative situation was the first result of the terms of the Oslo II Agreement of 1995, which imposed

⁹ The issue of settlement in the occupied territories of 1967 is related to the issue of occupation and the rights of the inhabitants of the areas under occupation, as well as the position of the Israeli procedures in the occupied territories. With regard to the rules of international law on military occupation, these rules give the occupying power limited powers in order to enable it to manage the territory under its control. The Hague Convention of 1907 in Article 43 allows the occupying authorities to take necessary measures to ensure public order and security as soon as possible, and in return, The Convention prevents in articles 46 and 55. Article 55 of the Hague Convention states "The occupying State shall be regarded only as administrator and usufructuary of public buildings, real estate, forests, and agricultural estates belonging to the hostile State, and situated in the occupied country. It must safeguard the capital of these properties and administer them in accordance with the rules of usufruct."

¹⁰ Amnesty International. 2009. Troubled waters: Palestinians denied fair access to water. London: AI Publications.

restrictions on Gaza Strip during the interim stage, and also as a result of the continued Israeli occupation of large parts of the Palestinian territory (approximately 61%).¹¹ The shortage in water, particularly in Gaza strip will impact more women, who either housewives and use the water for domestic purposes or work in agriculture and hence affect their ability to use land for livings.

The following is the outcome of a study by the Palestinian Hydrology Group -the study is based on a questionnaire distributed to 20 experts in the field and review of the basic documents of water governance in the Palestinian territories.¹³¹²ⁱ

Table 2. Indicators of governance in the water sector (prepared by the researcher)

Item	Mark and percentage(%)
Budget allocated for water	8 /25 32%
Carrying out responsibilities for right holders and right providers	6 /20 30%
Reduce the geographic service gap	20 /40 50%
Public policies to reduce the gap between geographical areas	6/30 20%
Public policies to reduce the gap between community groups	10/35 29%
Public policies to fulfill needs	14/20 70%
Public health services related to water	9/15 60%
School-related public health services	15/25 60%
Number of workers in relation to need in the water sector	2/10 20%
Water pricing policies	5/15 32%
Public policies in defining capacity to pay	5/25 20%
Policies in the application of fair tariffs	4/20 20%

¹¹ For more details see *Towards Water Security for Palestinians, A diagnostic of Improvements Needed in Water and Sanitation Services in the West Bank & Gaza*

¹² Rates calculated for 65 sub-indices

¹³ Palestinian Hydrology Group (2019) Score Card for equitable use of water in Palestine .

Public policies in social protection	3/20 15%
Public policies to strengthen governance	26/70 37%
Average	35%
National Index	35%

Noticeably, in the area of public policy, the key point in the decline of the national index is the result of a number of challenges that renders policy making very difficult.

According to the findings of the study by the Hydrology Group, 4.7% out of 11% of families who are headed by women have problems in accessing water, (including 12% in the West Bank and 9% in Gaza Strip).

The presence or absence of a safe and sufficient water supply and improved sanitation facilities has a disproportionate effect on the lives of women and girls for three main reasons:

- First, women and girls, have specific hygiene needs during menstruation, pregnancy and child rearing.
- Second: Women are residing more time in the house and take care of children; thus, a shortage and bad quality water will impact their life and the wellbeing's of their children.
- Third: Significant number of Palestinian women depends on agriculture for their livings, in contrast to men who have the ability to move or relocate and find other jobs.

Chapter Three

The Gender, Social, Economic, Political and Environmental Changes

The Palestinian Social, Economic, Political and Environmental Context

The Palestinian National Authority and non-governmental organizations have undertaken a range of steps over the past years to promote gender equality, through the participation of all actors in environmental and women's issues. With the support of the Ministry of Women's Affairs and the participation of official, civil and international institutions, the Palestinian Council of Ministers approved that promoting social justice and gender equality is one of the major components of the Palestinian Development Plan (2017-2022).¹⁴

Plans and strategies to contribute to the achievement of the National Policy Agenda of the State of Palestine were formulated. Civil institutions, especially women organizations, sought to integrate women and their rights in all sector and cross-sector strategies. However, the social, political and economic context remains a major impact, and that includes:

- The right to environmentally friendly housing from a gender perspective is far from implementation.
- The right to access clean, adequate and affordable water, and the ability to exercise it between men and women still exist.
- The right to appropriate environment free of toxins, pesticides, etc. The biological and the cultural roles of women make them more vulnerable of exposure.
- The right to environmental and occupation health safety in the workplace and the gender dimension in achieving it.

The demographic characteristics of the Palestinian society in the West Bank and Gaza Strip play a key role in the attainment of these rights by women (the right to a clean and safe environment, the right to access clean and affordable water, the involvement of women in decision-making, etc.). The estimated population in mid-2020 in Palestine is about 5.10 million, of which 2.59

¹⁴ For more details see the National Policy Agenda
https://palaestina.org/uploads/media/NPA_Arabic_Final_Approved_20_2_2017_Printed.pdf

million (or 51%) are males and 2.51 million (or 49%) are females. The gender ratio is 103.4, which means there are 103 males to every 100 females.

Males and females	Females	Males	Region
5,101,152	2,507,511	2,593,641	Palestine
3,053,183	1,497,442	1,555,741	West Bank
2,047,969	1,010,069	1,037,900	Gaza Strip

Table 3. Palestinian Census 2019 (Palestinian Central Bureau of Statistics 2019)

In addition, the data places the prevalent social inequality under the limelight, as it further drives away youth's priorities from environmental issues, as young males and females (who comprise a significant portion of the Palestinian population) are mainly overcome with finding jobs to avoid poverty, rather than fighting for a healthy environment.

Women in Palestine head about 11% of families, 12% in the West Bank and 9% in Gaza Strip, according to the 2019 Labor Force Survey data. (Palestinian Central Bureau of Statistics, 2020). Gaza Strip is one of the most overcrowded areas in the world at 5,453 individuals per square kilometer (Palestinian Central Bureau of Statistics 2019). This makes the right to adequate housing extremely difficult. The overcrowding of the population, especially in Gaza Strip and poverty rates, impedes women in particular and poor families in general to enjoy the right to adequate housing and basic services.

Impact of Environmental Changes on Gender in Palestine

Among the most fundamental women's rights, are to guarantee good water quality and food security, by ensuring that it is free of heavy metals, organic chemicals and hormones, which cause damage to a female's health, especially in the case of pregnancy and lactations, as published research studies in international journals showed that chemicals including pesticides that heavily used in agriculture in the world and in Palestine transferred through placenta from pregnant mothers to their fetus, with potential health damages (Abu-Qare et al, 1998, 2000, 2001). This is significant from gender perspectives, since majority of those who participate in agricultural

activities in the Palestinian intensive agricultural areas such as in the Jordan valley areas are women.

The World Bank estimates that about two million women and children in developing countries die each year as a consequence of air pollution. Thus, women are disproportionately affected by environmental crises as they are not given the opportunity to fully participate in the processes of development and protection of the environment. (World Bank 2017). This situation is not far from the reality that the Palestinians women face, either through ingestion air, during spraying chemicals in agriculture or through exposure to contaminated air by industrial pollutants.

The changing dynamics of the social, economic and political landscapes, on both local and global scales, further exacerbates the environmental plight of Palestinian women. While ramifications of climate change are not the sole risk, Palestinian women must deal with the environmentally damaging aspects of the occupation and its practices (toxic waste, smuggled pesticides, land confiscation, water depletion, waste water from settlements, food safety and security, and the desertification.). The Gaza strip seems to be the most effected pertaining environmental degradation, as its citizens live under the recurrent Israeli attacks, during which there were clear evidences of the use of destructive weapons and dangerous bombs that may contains chemicals that persist in the environment for long time.

Palestinian women take-on big roles in various aspects of life, most importantly utilizing farmland, which directly contribute to their sources of income and affects achieving food security. They participate in the preparation and spraying of chemical pesticides, with potential environmental and health consequences, particularly on pregnant and lactating women and on their children. This is alongside many other necessary activities to confront the Israeli occupation with its scathing practices on the surrounding environment. However, the practices of the settler Occupation system still negatively impact the lives of Palestinian women on a grand scale. These practices would include but not limited to, harmful disposal of industrial waste coming from settlements, confiscation of farmland and water sources, uprooting thousands of Olive Trees and the demolition of both residential and agricultural facilities, particularly those located in the northern side of the Jordan Valley and south of the West Bank.

Palestinian women also face further structural difficulties, impeding the acknowledgement of their institutional role, which in turn prevents their participation in setting and formulating special policies to serve the environmental needs from gender perspectives. This is happening despite the fact that there are many qualified female environmentalists, capable of being part of the decision

–making process and performing executive, planning and policy –setting tasks, that ultimately ensure adapting to the environmental needs, with focus on gender dimensions

The ongoing women voice in Palestine is a created reality after long-lasting years of occupation, and during this period, the Palestinian people were alienated from managing their public matters. This led to an overall disinterest in the environmental question, particularly to the Palestinians women who had other demands from gender point of views, which place the emphasize on environmental changes at the bottom of their priorities.

This is obvious for Palestinian women who work in Agriculture, where the impact of the environmental changes is more visible, either in term of the shortage in using good quality water, or the availability of the fertile soil for production, or the consequences of the heavy use of chemicals or the disposal of wastes. This is in addition to the synergistic impact on environmental degradation that brought up by the occupation and the ultimate effects of that on the Palestinian women.

This situation necessitates that Palestinian woman should assume decision-making and administrative leading roles in the process of preserving the environment, and this can only be achieved on the basis of equal opportunity and access and use of resources and the elimination of all forms of gender inequality.

The knowledge system and the social, economic, political and environmental context are the main framework in understanding the factors that are most influential from a gender perspective in a particular society, including the Palestinian Society, as follows:

Environmental culture forms the basis of the knowledge system on environmental issues in a society from a gender perspective, as it relates to balance of power and hence access to resources and information between men and women. This system is the rule that summarizes an educational vision that seeks to find a balance between human and economic prosperity, cultural traditions and the sustainability of environmental natural resources.

Environmental education and knowledge of the mechanisms and factors of environmental degradation are organically linked to the knowledge system that is formed at home, school, and society. From a gender perspective, there is a tangible relationship between education, knowledge

and recognition of the right of women, especially the marginalized women, to environmentally decent housing, access to clean water and a safe environment¹⁵.

In order to internalize culture of sustainability, it is necessary to include environmental concepts and values in the educational curricula that accommodate the issues of the environment as the Palestinian educational system lacks these values, especially those linked to the environment from a gender perspective.

This means focusing on environmental issues that affect women in particular, for example, the effect of agricultural chemicals and gases, and industrial pollutants and tear gases on pregnant women¹⁶.

This knowledge system is the basis for individual's ability to meet environmental challenges, on the one hand, and to correct environmental behavior to minimize natural hazards as much as possible, on the other. Poverty, marginalization, ignorance and psychological pressures are issues that greatly affect women and their environmental behavior¹⁷. This requires positive handling and best practices towards the environment such as sorting waste and reducing the use of plastics and other aspects.

Environmental Conditions and the Gender Dimension (Adequate Housing)

Previous research on the lack of adequate housing revealed the following:

(1) Overcrowding caused women to feel unsafe and vulnerable – young women and girls in particular often feel unsafe and reports of sexual violence were reported

(2) Overcrowding often result in poor sanitation and lack of access to sufficient and clean water. This is an issue for women in terms of hygiene and sanitation.

(3) As the main caregivers for elderly, sick and children, women relied heavily on frequent access to clean water.

¹⁵ Universal Declaration of human rights 1989

¹⁶ See report on the European Charter, the Arab Charter, the Human Rights Declaration of South East Asia Nations and the European Social Charter (report on regional conventions).

¹⁷ Other evidence of positive behavior in this perspective show that many people were keen to throw their waste into designated dumpsters or put it in plastic bags, which they put in their cars, and when they were filled they threw the bags in the containers, instead of throwing them randomly on the ground. One of the positive behavioral initiatives is that some people use shopping bags when they shop from stores rather than putting their purchases in plastic bags, which cause damage. I see that very few people who follow or care about this behavior. As for hazardous waste, including telephones and batteries, some put them in containers designated for this purpose although they are very limited.

(4) lack of freedom of movement for women meant they often had to spend most of their time in overcrowded housing and women reported feeling under constant surveillance and not being able to move freely.

(5) Overcrowding conditions reduces women's ability to use home as a base for generating an income (for example, selling produce or growing produce).¹⁸

Environmental Conditions from Gender Perspectives (Demography)

The majority of the members of the society are young people. A society with a high rate of education and low rate of illiteracy, and high rate of unemployment and poverty, particularly in Gaza Strip. This situation reflects on the social conditions of rural, marginalized and poor families. Women are probably the most affected because of their dubious employment status, as most of the female workers are casually employed or have low-income. As a result, female workers are exposed to environmentally unhealthy exploitative working conditions, as work locations lack the minimum of health and safety requirements, such as protective workwear.

Additionally, with the absence of a regulatory oversight body, female workers are deprived of their basic right to demand a minimum living wage. Usually, women in agricultural sector lack of protection tools to protect her from toxic materials (pesticides or other chemicals).

The intensive use of agrochemicals in Palestine, has raised the risks of exposure of women who work regularly in agriculture close to pesticides and other such chemicals, which constitutes a major occupational risk that may result in poisoning and death and, in certain cases, work-related cancer and reproductive impairments.

Women, particularly young women are exposed to higher economic risks due to their limited integration into the job markets and their restricted access to productive assets and land. This is reflected on Palestinian families, especially families headed by women.

The unemployment rate among Palestinian women is more than three times higher than men. The proportion of women engaged in the labor market is low, as they comprised less than 19% of the labor force. The wages of women in the same occupations are 30% less than men. Women in most workplaces are also denied many of the job rights and privileges such as insurance, social security and various other prerogatives, even for those whose working hours in some jobs are the same or longer than the working hours of men. Additionally, many women continue to be subjected to

¹⁸ For more details see "Sian k. Maseko ; Gender Based Violence Programming in Contexts Affected by Violence and Conflict.learning paper .Christian aid .Ireland, June 2018

various forms of violence and abuse, including sexual assaults and harassment in workplaces. These conditions make impact of the environmental changes on women more severe and could last for longer time compared to men.

Environmental Priorities and the Gender Factor (Economic Conditions)

The Palestinian economy declined sharply by 12% in 2020 due to the coronavirus pandemic. Most economic activities experienced a decline in their added value, resulting in a marked decline in per capita GDP and an increase in the number of unemployed.

New social groups are categorized into poverty levels, reducing the level of overall demand for consumption and investment. This has an impact on the priorities of Palestinian families and women, as 2020 saw a 12% decline in GDP compared to 2019 (Abdel Karim, 2020).

During the second half of 2020, most economic activities began to recover gradually from the point of view of balancing the economy and health, where GDP increased. However, its level remained lower than before the pandemic, also influenced by the Israeli occupation's punitive measures by withholding the tax revenues, and that lasted for more than seven consecutive months. These withheld tax revenues constituted 70% of the total government revenue and is considered the primary source of current expenditure.

The pandemic has deepened the suffering of Palestinian women in the labor market, as statistics from the Palestinian Central Bureau of Statistics indicate that the Covid-19 pandemic has massively hit the private sector, which employs 66% of the Palestinian workforce. Given the participation rate of women in private sector employment, the sector has 83,600 female workers in the West Bank and 25,300 in Gaza Strip, distributed across several sectors. According to the same statistics, 35% of female workers in the private sector are paid less than the Palestinian minimum wage of 1,450 shekels under normal circumstances.

Statistics from the Palestinian Central Bureau of Statistics indicate that poverty rates are steadily higher among households whose income depends on the private sector. The picture is even darker if we look at the catastrophic economic impact of the pandemic on the casual private sector, which employs 32,200 female workers distributed in the education, agriculture and restaurants sectors, all of whom are at risk of losing their sources of income as the pandemic continues

The economic consequences of the pandemic and its obvious effects on women's participation in the labor market may worsen the inability of these women to support their families,¹⁹ and their ability to access resources and enjoy healthy environmental conditions, including the basic ones, such as water, food, and shelter.

Under these economic conditions and the lack of healthy environmental conditions, and from a gender perspective, there are legislative gaps concerning women, such as the right to adequate housing. There are many legislations that need to be updated, such as the Environment Law No. 7 of 1999, especially after Palestine joined many international treaties which added many obligations towards the environmental field (development of standards and regulations to conform to international standards, especially in the field of human rights in general and economic, social and environmental rights in particular).

The environmental system has been in decline, and the state of the environment has deteriorated not only because of the occupation, but also that the amount of the funds allocated to the environment in the fiscal national budget and that is less than 1%, which is mostly operational expenses.

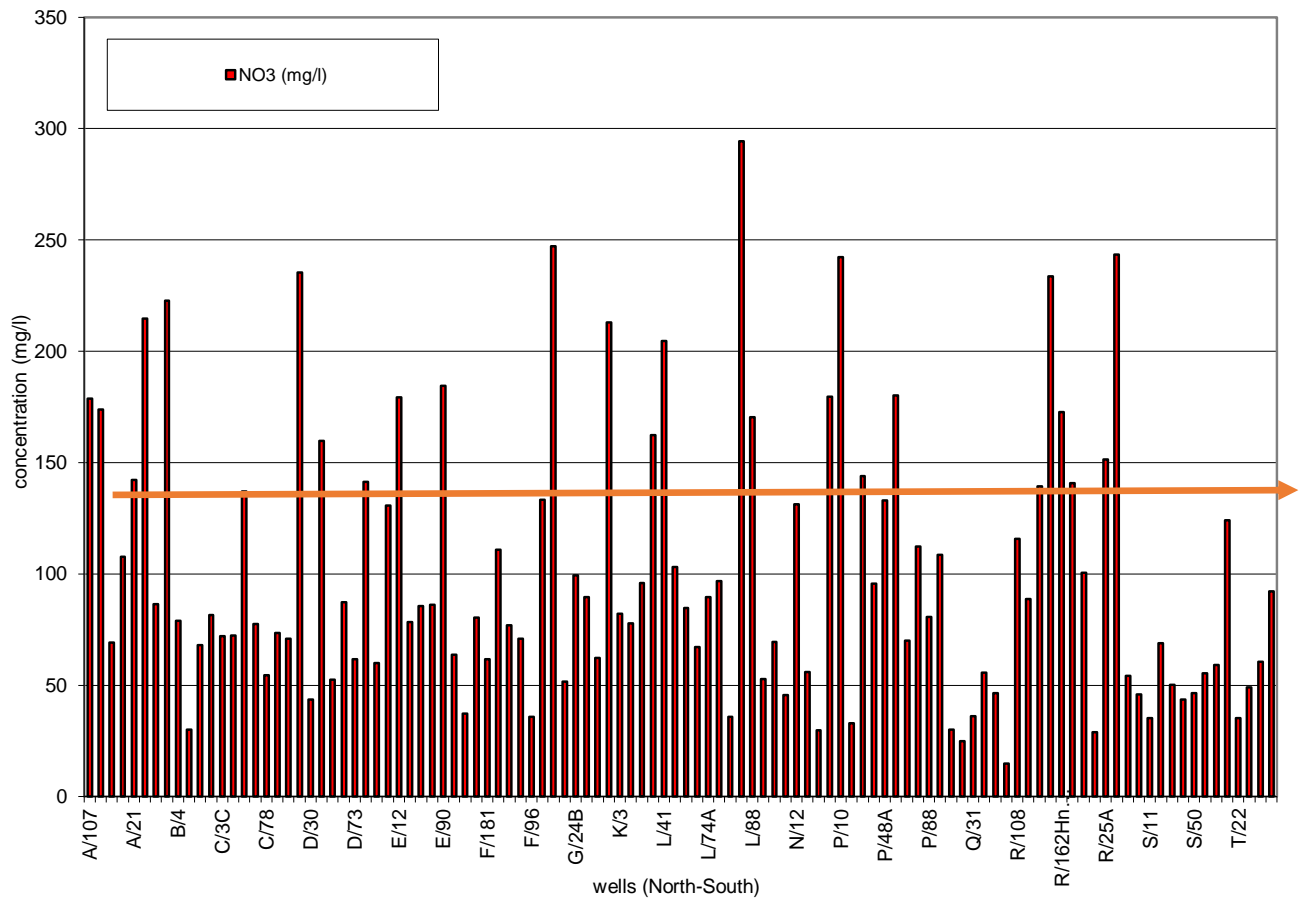
The environmental situation in Gaza continued to face enormous water and sanitation challenges, with a negative impact on the well-being and rights of women and girls, including the right to safe drinking water. Repeated military operations, a prolonged blockade and the ongoing electricity crisis disrupted the delivery of water and sanitation services and affected already difficult living conditions in Gaza. Gaza Strip has the lowest domestic water consumption rates globally (13 liters per day per capita), while the average human consumption according to WHO standards is 100 liters per person per day. In other terms, Gaza Strip does not exceed 13% of international standards, especially since the quality of water used is also very low and the following figure shows the ratios of nitrates in a large part of Gaza wells²⁰.

¹⁹See Women's Centre for Legal Aid and Counselling study

https://www.wclac.org/News/304/On_the_Occasion_of_Labor_Day_The_Womens_Centre_for_Legal_Aid_and_Counselling_Demands_Greater_Prioritization_of_the_Needs_of_Palestinian_Working_Women_in_the_Governmental_Economy

²⁰ WHO limit is 50 mg/l

Figure 1: Nitrate ratios in some Gaza wells (mg/L)



A field study in Gaza for the purposes of this report shows that 85% of families have had at least one of their members during the past five years exposed to diseases such as (diarrhea, itching, amoeba, etc.) due to poor quality and pollution of water because of the lack of sanitation systems.

Chapter Four

The Unique Environmental situation from a Gender Perspective in Palestine

Palestinian women suffer from a combination of marginalization and discrimination when it comes to the environmental conditions, including access to good quality water, healthy place and food security. This chapter will discuss the most important environmental problems related to population overcrowding, water, liquid solid waste, radiation and climate change from a gender perspective.

Environmental problems are mainly the result of the historical context of Palestine (social, economic, political and environmental). For hundreds of years, Palestine has been under the regime of colonizing power. This means that public administration was in the hands of a party that did not put much emphasis about environmental issues, while also creating a distorted environmental system. It is difficult to repair some of what had been sabotaged, such as the depletion of groundwater.

The following is an analysis of environmental problems from a gender perspective within the Palestinian context:

1. **Population density and Environmental Conditions:** According to PCBS (2019) Gaza Strip is the most densely populated place in the world due to its narrow area (360 square kilometers). The population growth rate in Palestine is high at 2.7%. Population overcrowding is considered to be the cause of environmental problems from a gender perspective where it has negative effects on:
 - Lack of environmentally friendly housing for large poor families, where women are most affected.
 - Population growth, which is disproportionate to the rates of economic development, contributes to high rates of poverty and unemployment, especially among women, which is not commensurate with the pace of development of infrastructure for sanitation services, water supplies and waste disposal mechanisms, causing environmental threats such as sewage flow between homes or the scattering of solid waste in the streets. In this regard,

and from health perspectives, women, particularly those who are pregnant or lactating or taking care of children or elderly, are the most affected.

- The high rates of population growth are one of the most pressing indicators for the environment in terms of food availability and public space, putting pressure on natural resources (land and water) and on the production of liquid and solid wastes. Solid waste in Gaza Strip is expected to reach approximately 3,000 tons per day and nearly double that amount in the West Bank. Rapid growth in urban areas affects the development of construction²¹ and increases population density in Gaza Strip where population density is high and stands at about 11,000 people/ per square kilometer.

A study conducted in densely populated areas indicates that there is a relationship between densely populated areas and an increase in coronavirus infections²². A study by Mohamad Miqdadi²³ indicates that the population density in a society that accepts violence towards others or supports male dominance over women and children, as well as cultural norms that support violence or revenge as a way to resolve conflicts, is a fertile ground for violence and harm against others, where women are the most liable to be exposed to all forms of violence (physical, psychological, sexual, and others).

2. **Impact of Climate Changes on Gender:** Palestine has unique position when it comes to responding to climate changes. With limited natural resources, fast growing population and competition for land and other resources, Palestine is expected to face harsh conditions as a result of climate changes within the next few years. Women as a vulnerable segment of the population is expected to suffer the most, either when comes to water, soil, food, wastes disposal and the desertification. Palestine has few water sources and an expected rise in temperatures from 1.2 degrees to 2.6 degrees over the next 50 years, which will also affect rainfall rates. This is expected to change agricultural behavior and practices. This may lead to the decline of agricultural land and accelerate the process of desertification, and thus farming families may lose their income and may lead to a decline in pastoral areas

²¹ The shape of the building has changed and the Palestinian village has lost its heritage construction identity.

²² Lamia, Mohsen (2020) "The Relationship between Population Density and Infection of the Coronavirus in Baghdad Province," Education College of Humanities/ Wasit University.

²³ Mohammed Miqdadi "Analysis of the Roots of Violence: Jordan's Al-Ghad Newspaper, 14/10/2020

which directly threatens the social and economic life of Bedouin communities, whose income depend on women's contribution to work including livestock care and the marketing of animal products.

3. **Geographical fragmentation and Environmental Degradation:** Due to the political situation and the division of the West Bank into areas A, B, C, in accordance with the Oslo Accords, there are planning challenges related to environmental and structural planning, including land use, as urban areas expand towards agricultural areas, naturally causing the decline of green areas. Geographical and environmental fragmentation also leads to inability to access some areas, leading to their neglect²⁴. The difficulty in obtaining building permits, especially in areas c, leads to overcrowding in Palestinian cities surrounded by these areas. Overcrowding has social implications and leads to high levels of violence, especially domestic violence, particularly gender-based violence and its impacts on women, as several published studies correlated between the decline in economic-social conditions and the rise in gender-based violence (GBV). In addition, fragmentation in environmental governance, where Israel controls 68% of the land and East Jerusalem, which makes it difficult to manage liquid and solid waste due to Israeli constraints is making implementing environmentally friendly methods for solid disposal difficult. This will harden the environmental burden on the Palestinians, particularly on women, who mainly manage disposal of the domestic wastes. Furthermore, area C is under the occupation authority, allowing Israel to dispose toxic dump over vast areas, as in the case of south Yatta, Rantis, Al-Mazra Al-Gharbeia and elsewhere. This uncontrolled environmentally situation may be linked to the increase in the yearly incidents of cancer cases, reported in southern Hebron and Aboud²⁵²⁶, especially among women, and for example in Aboud village (Ramallah Governance), at least eight cancer-related deaths in the village were recorded, 5 of whom were women. The hike in cancer cases is believed to be highly linked to the unhealthy disposal of Asbestos filled waste by the occupation

²⁴ It is very difficult to find a planning system for the environmental sector due to the divisions of Oslo and the location of most of the reserves and the appropriate sites for waste dumps and grazing areas in Area C.

²⁵ Interviews with a number of residents

²⁶ Akl Abu Qarea, " The importance of searching for the causes of cancer spread in our country, Al-Ayyam Newspaper, 24/1/2018

authorities on the outskirts of the village. Asbestos is internationally recognized to be a cancerous substance.

House Demolitions and Gender Impact

Several reports indicate a marked increase in house demolitions by the occupation authorities. The report of the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) indicates that 21 buildings in so-called E1 areas were demolished in August 2020, displacing families of women, men and children. Within such areas, women suffer morbid environmental and living conditions, due to the lack of security and severe restrictions imposed by the occupation authorities on their basic livelihood; ranged from barring local population from drilling water wells for rain water collection, to blocking necessary house expansions. These adopted policies by the occupation authorities are leading to family overcrowding, in addition to compromised water quality, as it is stored in unsanitary water tanks for long periods of time. This situation has significant gender impact, as women roles mostly confined to homes and taking care of children and maintaining good quality and quantity of water and food for the whole family.

Effects of the Separation Wall on the Palestinian Environment and Gender Sensitivity

After the construction of the separation wall that extends along the West Bank at a length of 725 kilometers, it confiscated and isolated about 1000 square kilometers of West Bank land, specifically in the western area, where the western groundwater resides, in addition to isolating about 26 groundwater wells drilled before the occupation, which had served Palestinian people. These wells produced an average of 4 million cubic meters a year or about 20% of the total extracted by Palestinians from the west basin.

The separation wall has strengthened Israel's control over most of water resources in the western basin and reduced the quantities of water extracted by the Palestinians. This situation deprives many families of their source of livelihood, especially in Qalqilya, Jayoos, and Tulkarem areas. The Israeli annexation plan has direct and indirect implications on the water sector and on the agricultural development in Palestine.

Direct implications are allowing Israel to deprive the Palestinian people of an estimated 70 percent of the water resources from the eastern basin, which is equivalent to 130 million cubic meters, and the Palestinian people will not be able to benefit from the Jordan River; therefore, Palestine (regardless of its legal status) loses its right as a state that has a border line to Jordan River, and

the Palestinian side will not be a partner in any future negotiations between Israel and the Arab side on water issues. In addition, Palestine will lose its right to access the Dead Sea; hence lose the benefit of the natural resources and springs adjacent to the Dead Sea estimated at 70-90 million cubic meters of water, and Israel will demand that the water of the eastern valleys not to be blocked and will store it, which is similar to the case now in the northern Jordan Valley. As a consequence of these effects, the Palestinian cities will be forced to purchase water of Israeli desalination plants, while Palestinian water will be allocated to serve the agriculture activity at settlements, and the Palestinian people will be unable to benefit from treated wastewater to develop agriculture in the Jordan Valley.

The denial of water to the Palestinian people will harm agricultural land and many Palestinian families will lose a source of income, especially women living in the Jordan Valley who heavily participate in agricultural activities, and as a result, the decrease in the water available for cultivation has led to an increase in the number of women working in settlements under unfair and insecure working conditions in terms of excessive use of toxic pesticides in settlements, as currently estimated that there are 35,400 workers working in Israeli settlements. In general, the women who are working in Israeli settlements are lacking protection tools or protection clothes which is important to protect themselves from the impact of chemicals used in agriculture

In this regard, the annual rate of pesticide use in Palestine has reached 7,502 tons, including some that internationally barred due to health-related reasons (PCBS, 2010). This situation is exacerbated by the unhealthy disposal of plastic waste, mainly plastic pesticide bottles, leading to the contamination of irrigation water in the process, which According to the World Health Organization, is associated with a number of health hazards with more impact on women health, one being the parasitic disease of leishmaniasis. (WHO Center for Development Action “Ma’an, 2020)”

Indirect effects:

In addition to its direct effects on the environment and gender , the separation wall has indirect and long-term consequences. This includes depriving the Palestinian from about one million dunums that can be cultivated through irrigation, and preventing the Palestinians from taking advantage of the eastern valleys on the grounds that they are branches of the Jordan River, as Israel will build dams to take advantage of the valleys. In addition, the annexation of water sources in the Jordan Valley will have a major impact on all prospects for economic and social development, particularly the possibility of ensuring food security while Israel's depletion of

groundwater or increased pumping will increase salinity of the Palestinian wells because of their lack of depth and age, particularly in the Jordan Valley. All of these effects will have a major impact on women working on farms belonging to their families and they will ultimately be forced to leave their work in agriculture due to lack of good water.

Furthermore, Israel's exploitation of groundwater has deprived the Palestinians of an integrated water plan and weakened integrated planning, particularly in the area connecting Gaza Strip and the West Bank to a water transport, especially if a major desalination project is implemented in the Gaza Strip²⁷. If the current situation persists, a Palestinian state will remain unattainable, and continue to be a dumping ground for Israeli products, and a source for cheap labor. The Palestinian people will become customers of Israeli desalination companies and Israel will use the Palestinian water to intensify agriculture and industry in settlements. As a result, thousands of Palestinian families will lose their livelihood and land, and will be further trapped into densely populated places that will generate many economic and social problems, in addition to its environmental implications with obvious gender aspects, particularly on women who will be trapped most of the time at home, with limited natural resources and the lack of working opportunities to support themselves and families. Furthermore, this may have a negative impact on women, as a large proportion of poor women will be unable to pay water bills, especially women and families who depend on the purchase of water tanks, and increase a hygiene risk and the consequent health implications.

The water issue and the Gender Impact

Field studies indicate that 27% of households in the West Bank receive water services less than 3 hours a week and 15% receive such service less than one day a week. This is a violation of the fundamental human right to receive at least the minimum standard amount of water (100 liters/person/ today according to the World Health Organization). Despite that, The Palestinian National Authority has not reached the required level of international water governance standards, while its National Water Governance Index is still less than 35%, which is quite low compared with international standards. The issue of water shortage and quality present an additional hardship to poor families, where women are the most affected. Either at home or in the agricultural fields. In addition, there is an unjustified disparity in water prices, and a large gap in the fairness of water

²⁷ The Water Authority's strategic plan along with the central station include: "The construction of three small desalination plants that will be completed in the short term to produce 13 million cubic meters per year, which will be used to cover part of the household needs after being partially mixed with the water of the underground reservoir, in addition to working to improve the efficiency of water distribution systems and reduce unaccounted for quantities.

distribution, where there are families relying on the transport of water through tanks from distant sources such as the Bedouin communities in the south of Hebron which are most often unregulated. In this regard, measures must be taken to improve the water situation and water governance, which necessarily will improve women's ability to access water in sufficient quantities, but at the current rate this will not be accomplished in the near term. As a result of the above, Palestinian women suffer from a complex situation of water-related problems in contravention of international human rights standards in the water sector, and this is in a conflict with CEDAW treaty, which the Palestinian Authority ratified, because according to the CEDAW agreement, Article 14 2(h), "States Parties shall take all appropriate measures to eliminate discrimination against women in rural areas in order to ensure, on a basis of equality of men and women, that they participate in and benefit from rural development and, in particular, shall ensure to such women the right to enjoy adequate living conditions, particularly in relation to housing, sanitation, electricity and water supply, transport and communications." (Convention on the Elimination of All Forms of Discrimination against Women, 1979).

In this regard, UN report (2016) showed that 95% of the water in Gaza Strip is unfit for human consumption due to pollution, resulting in diseases, where pollution is most frequently caused by wastewater contamination, especially in rural areas where there are no sewage systems. It should be noted that many freshly produced vegetables and fruits are irrigated with contaminated water, another dangerous source of harmful germs. Such hazardous implications will have sounded effects on women, as they are more susceptible to use contaminated water and food.

Solid Waste Disposal and the Gender factor: Israeli restrictions limit where waste can be disposed, even as Israeli settlements dump their own waste on Palestinian villages. The amount of solid waste is estimated at about 800 tons per day in both the West Bank and Gaza Strip. Failure to dispose of waste properly, especially hazardous wastes including medical waste, leads not only to the deterioration of the ecosystem but also to environmental and health consequences suffered by both women and men, however, as women who reside longer time at home and then manage waste disposal, they will have more impact when it comes to gender sensitivity. Furthermore, The industrial zone at the Israeli settlements are at the forefront of polluting the Palestinian environment due to the nature of the industries located in these industrial settlement areas such as the Barakan Industrial Zone (located in Salfit governorate). Because of its location, rising gases and wastewater is sweeping into the valleys without any treatment. This colonial industrial plant contains 130 factories (plastic, metal materials, fabric, aluminum) and others. According to reports of the Palestinian Water Authority and the Environmental Quality Authority in 2005, this area

produces 810,000 cubic meters of wastewater a year. It pollutes soil and air and destroys biodiversity and food security significantly, especially since most of this wastewater flows in agricultural areas, such as Salfit and Wadi Al-Nar, which has major public health implications such as hepatitis tapeworm and redness of the skin. (See Annex 1 industrial settlements in the West Bank). In addition, the Israeli settlements surround Palestinian geographical areas and impedes their ability to expand or alter the shape and architecture of Palestinian villages. This existing situation shows the potential high health and environmental hazardous that may impact women and their children in the area, as they are mostly work in the fields, and may get expose to wastewater and its contents of the hazardous chemicals.

Soil pollution and fertility and Effects on Gender: Excessive use of pesticides and fertilizers in addition to the proximity of wastewater and industrial waste, especially coming from the quarries, whose water flows into the valleys leads to a deterioration in the quality of soil and affects its fertility. The use of pesticides in the West Bank has been estimated at 700 tons per year, and almost similar amount in Gaza Strip (5), which explains the deterioration in biodiversity and the environmental and health consequences. It is estimated that a total of 123 pesticides are being used in Palestine. Among them, some pesticides are internationally suspended, cancelled or banned. All of these pesticides either come from or are shipped through Israeli companies, and mostly arrive into the West Bank and Gaza with only Hebrew labels, warnings and instructions, where very few Palestinian farmers read Hebrew. A such use of pesticides presenting major potential problems for the health and welfare of farmers, neighboring residents and produce consumers, the unregulated use of these chemicals is also detrimental to the area's biological and genetic diversity.

As a result of the heavy use of pesticides, there are increasing indications in the Jordan Valley region, which highlight the faltering soil-fertility rate and rising breast diseases among Palestinian females, exceeding the maximum limits allowed as per due diligence. The results of laboratory tests for 29 samples of tomato and capsicum crops that were taken from various cities of the West Bank, shows that 72.4% of the samples were contaminated as they contain one or more types of pesticide residues. The test results also show that 55.1% of the samples were residual; they contain residuals of chemical pesticides higher than the maximum limit allowed by the World Health Organization, while the samples that contain pesticide residues less than the maximum limits allowed accounted only for 17.2%, or five samples of the 29 samples analysed, and the percentage for those completely free of pesticide residues did not exceed 27.5%, or eight of the 29 samples in the study. Such results show that the high health and environmental hazardous the excessive

use of these chemicals will have on women and their children in the area, as they are mostly work in the fields, including participating in spraying pesticides, picking up crops, and consume crops that contain pesticides residues (before the safety period is fulfilled).

Pollution and Gender (Radiation)

Various reports indicate that there is a rise in cancer cases in southern West Bank. It is believed that this rise is caused by the radioactivity of nuclear waste buried in this area by Israel. The Dimona reactor is known to be low-tech and produces large amounts of nuclear waste. (Abu Safia 2012). A number of press and environmental reports, including a 2013 MA'AN Development Center press investigation into the increase in cancer cases in both Al-Thahriyi and Yatta confirmed this link. Additionally, according to reports published by the Israeli Newspaper "Haaretz" in 2016, the findings of the latest survey of the nuclear reactor proved that the center of the reactor has 1,537 defects and any malfunction could lead to a serious disaster. In light of this evidence, in 2020, the Palestinian Prime Minister during a press statement officially accused Israel of being the main cause of some diseases, especially cancer, in light of the high rate of cancer among Palestinian citizens. The Palestinian PM said that these cases were related to Israeli nuclear and chemical waste.²⁸ In this context, It is assumed that women is having significant portion of the reported cancer cases in the Palestinian Territories, and that breast cancer cases constitute a major percentage of the total number of cancer cases in Palestine.

Pollution and Gender (Air and Noise)

The results of the 2018 Social and Economic Control Survey showed that 29% of Palestinian households were exposed to harmful odors and 14% of households were exposed to dust, while 8% of households were exposed to harmful smoke (PCBS, 2019). The number of emissions resulting from the energy, agriculture and waste sectors in 2017 is estimated at about 4,777,2 thousand tons equivalent of Co2, an increase of 45% from 2010. The increase in the types and concentrations of pollutants is considered as one of the reasons for the spread of chronic diseases and according to UN recent reports, it caused the death of millions of women and children.

²⁸ "There are 6,251 cancer patients, which is a high percentage compared to neighboring countries, because the Israelis use our land as a dumpster," Shtayyeh said during the opening of a cancer and genetic disease diagnosis center in Ramallah in the West Bank.

Table 4. Total emissions by type and year (Environment Quality Authority, 2018)

	Amounts of emissions by type (1,000 tons)			Amounts of emissions by type (1,000 tons) Co2 equivalent
	Carbon dioxide	Methane	Nitrogen oxide	
2010	2,049.7	35.7	1.5	3,276.5
2011	1,900.2	38.2	1.7	3,226.3
2012	2,059.3	38.5	1.7	3,380.6
2013	2,294.7	38.5	1.6	3,612.0
2014	3,180.3	40.5	1.6	4,614.9
2015	3,013.4	42.8	1.9	4,496.1
2016	3,254.5	44.2	1.5	4,645.5
2017	3,284.3	44.2	1.8	4,777.2

General Environmental Hazards and Gender

The following matrix shows the most important environmental hazards to which Palestinians are exposed to, and their impact on Palestinian society and environment

Environmental dimension	Future threats	Impact on society and women
Water	1. Acute deficiency 2. Pollution	Threat to water security Threat to public health
Solid and liquid waste	3. Risk increases with	Outbreaks of diseases

	4. Settlement expansion	Soil and water contamination
Radiation	Israeli waste	Diseases, especially cancer
Degradation of the environmental, heritage and civilized landscape	1. Geographical dismemberment and environmental deformation	Overcrowding Decline of agricultural land
Invisible dimensions and distortion of the environmental knowledge system	Destruction of Palestinian knowledge of the environment with time	The disappearance of many environmental landmarks

Effects of the Israeli Settlements on the environment and the Gender factor (Case Study):

The City of Ramallah has seen significant growths in a short period of time following the Oslo Accords. Since 1994, more than one million and five hundred thousand square meters have been built and its population has increased nearly threefold. The urban landscape has been greatly affected by the settlement and restricts its growth, as Ramallah and its twin city of Al-Bireh cannot expand to the east because they are surrounded by settlements, hence, Ramallah and Al-Bireh found solutions in high residential and commercial buildings. By 2020, it is estimated that there will be left no more than 5 percent, of the land allocated for construction in Ramallah.



Figure 2: Settlements surrounding Ramallah

Ain Yabrud Village

The village of Ain Yabrud, located northeast of Ramallah, is the most active village in the field of urbanization, where nearly 14,000 square meters have been built over the past 10 years. However, the establishment of the settlement bypass road east of the village to serve the Israeli settlement of Ofra has brought about the following changes to the village landscape:

- i. The village's inability to expand due to the settlement bypass road and Ofra settlement, and the loss of 70% of the land due to confiscation by the occupation authorities.
- ii. Changing the construction landscape of the village to the high buildings (not characteristic of the Palestinian village).
- iii. A large number of residents migrated to live in Ramallah or emigrate

Bedia Village

The village of Bedia is located 32 km southwest of Nablus. It includes about 120,000 agricultural dunums and is surrounded by a number of settlements, including Ginat and Shomrun. From 1975 to 1994, this village had considerable economic activity, including shops and industrial workshops between 1975 and 1994 along the main street, which runs from the village towards the Green Line. Bedia is also a magnet for investors from nearby villages. After the occupation authorities diverted

the street from this village and built a settlement road to the Green Line, the village economic activity declined by about 75%, and this led to a 6% annual immigration from the village.

Chapter Five

Conclusions and Recommendations

Conclusions

- 1) The annexation plan (which is still being carried out insidiously) will cause population overcrowding that deprives Palestinians and poor families of adequate housing and basic services such as water and sanitation. A such situation will have a clear gender dimension, as women will be the most affected, as they spend more times at homes, with limited opportunities to mobilize and find adequate jobs.
- 2) As the current situation persists, Palestinian women will be exposed to scathing environmental, social and economic conditions, as they would suffer from shortages in water supply, used for drinking and agricultural purposes. This constitutes a significant impediment for women, in terms of preserving minimum subsistence and security, and in terms of maintaining healthy conditions inside the house, for their families.
- 3) The targeted areas to be annexed by occupation authorities are the main areas of jobs creation for woman (mainly Jordan valley) which means most of women are working in agriculture will lose their jobs, and hence the subsequent economic and social implications on their families.
- 4) The salinization of water in Jordan valley (Due to the over -pumping) will lead to land degradation and reduction of production and ultimately to desertification. the impact of land degradation and low quality and quantity of production will cause negative livelihoods condition, particularly on women who used to grow certain crops that require fresh water such as Bananas.
- 5) Because Israel is no longer able to attract the population to settlements as in the past and at the pace it wishes, it has begun to change the pattern of settlements and trends towards agricultural and industrial settlements (Yakir, Barakan), whose harmful waste is disposed into Palestinian landscape. Furthermore, agricultural settlements in the Jordan valley have a major impact on women working in these settlements as they are exposed to hazardous chemicals in agriculture without the use of minimum safety measures, or awareness on protective mechanisms.
- 6) As long as there is an occupation that restrict access to land and natural resources and a decline in the economic and social indicators in Palestine, Palestinian women will continue

to suffer from the consequences of environmental degradation, both as a result of the lack of sanitation, water and solid waste infrastructure. This situation has led to a decline in water consumption and hygiene standards, which has disproportionately affected women and girls since the management of household water supply, hygiene and sanitation is usually part of the responsibilities undertaken by Palestinian women inside the household.

- 7) The lack of water, services and overcrowding conditions, particularly in the Gaza Strip has brought it to the brink of a major environmental disaster, according to the 2018 UN report, which notes that at this rate Gaza will become an inhabitable place in the coming years. As the UN reports indicate that more than 95% of the water resources, which is mainly from ground resources in Gaza are not fit for human consumption. Such situation has short- and long-term effects on women and their babies and children.
- 8) The absence of the Legislative Council along with the division between the major Political parties in Palestine, disrupts many environmental legislations which would protect women from gender perspectives, and would make the environment the top national priority.

Recommendations

Legislative and policy level

1. Ensure participatory and open consultative processes to amend legislation and regulations, ensuring gender mainstreaming in the consultative and decision-making process.
2. Update the list of hazardous pollutants, particularly pesticides, taking into consideration the latest research and international studies in this regard, with particular emphasize on women and children health.
3. Formulate clear polices and Instructions on the reuse and the treatment of wastewater, particularly in agriculture produce that may cause harm to women and children.
4. Activate the role of civil society organization working on environmental matters. Including working on mechanism toward achieving women's rights to live in healthy environment.
5. Incorporate environmental planning in the overall planning and handling environmental issues throughout Palestine regardless of divisions forced on Palestinians by the occupation, such as the division of the West Bank into Areas A,B, and C and the separation between West Bank and Gaza, and mainstream gender sensitivity in the environmental planning, with focus on needs and opportunities from gender perspectives.
6. Consider the significant overlap between all sectors, as this is significant in formulating strategic objectives, policies and interventions. This should include the environmental impact of the Covid-19 pandemic, particularly on women life.
7. Implement regulatory restrictions on the use of prohibited chemical, particularly those chemicals that could cross placenta to fetuses during pregnancy and the adverse effects on women life and on their children.

Raising public awareness

1. Use of social media tools and techniques to raise environmental awareness, especially among women in rural areas and in Gaza Strip.
2. Establish networking and collaboration with women's institutions along with the specialized environmental institutions.

3. Distribute leaflets and other awareness materials on restricting the use of chemicals at home and replacing them with natural organic materials, especially to women in rural areas.

Political and administrative level

1. Working with government institutions to increase environmental budgets, with focus on allocating resources that consider the gender dimension when dealing with the environment.
2. Engage women and Women Rights Organizations (WROs) in planning and policy-making regarding the environment.
3. Conduct local and international campaigns to expose the environmental impacts of settlements, with focus on confiscating agricultural and hence restrict access for women as a source of livings.
4. Cooperate with international environmental institutions by exposing Israel's practices that violate the Palestinian environment, and the impact they cause from gender perspectives.
5. Conduct in-depth research to identify the consequences of environmental deterioration on the psychological well-being of women.
6. Examine the negative implications of overcrowding and noise pollution on psychological well-being and intra-family relationships, with emphasize on women and children

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Annex 1: Map of Israeli Settlements in the Palestinian Land

