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Policy Brief  
Interlinkages between Climate  
Change and Sexual and  
Reproductive Health in Jordan

2020

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Jordan  
منصة المعرفة - الأردن  
للصحة الجنسية والإنجابية والحقوق الإنجابية



**Policy Brief**  
**Interlinkages between Climate Change**  
**and Sexual and Reproductive Health in Jordan**

**2020**

## List of Abbreviations

<b>FIGO</b>	International Federation of Gynecology and Obstetrics
<b>HPC</b>	Higher Population Council
<b>ICPD</b>	International Conference on Population and Development Conference
<b>MOE</b>	Ministry of Environment
<b>MOH</b>	Ministry of Health
<b>SDG</b>	Sustainable Development Goals
<b>SIGI</b>	Sisterhood is Global Institute
<b>SRH</b>	Sexual and reproductive health
<b>SWOT</b>	Strength, weaknesses, opportunity, and threats
<b>US</b>	United States
<b>WHO</b>	World Health Organization
<b>WSRH</b>	Women's sexual and reproductive health

## Executive Summary

As the focal entity for population and development issues, the Higher Population Council (HPC) strives to update and enhance population and development data and information, and propose evidence-based population policies in line with the commitments of Jordan to the Programme of Action of the 1994 ICPD (Cairo Conference), Nairobi Summit commitments, and 2030 agenda for sustainable development, including SDG 3 “ensure healthy lives and promote well-being for all”, the fundamental right of every human being to enjoy the highest attainable standard of physical and mental health, and SDG 13 “taking urgent action to combat climate change and its impacts”. As such, it became important to link climate change to sexual and reproductive health and identify research resources to measure climate change indicators and its impact on women's sexual and reproductive health (WSRH).

To follow up on current issues affecting WSRH in the short and long terms, HPC issued this policy brief that identifies the linkages between climate change and women's sexual and reproductive health in Jordan for the first time. The policy brief aims to mitigate the potential negative consequences of climate change which has intensified in the last two decades. It also intends to identify the links between climate change and sexual and reproductive health in the short and long term based on available related information and data.

The impact of climate change on WSRH has attracted interest from researchers around the world and has become a focus research area. Numerous studies have become available indicating that climate change impacts aspects of WSRH. However, these findings have not been proven worldwide due to limited research in different parts of the world and the difficulty of identifying research methodologies that can isolate the impact of climate change from other factors. Some studies indicated that there is a connection between rising temperatures and fertility, birth weight and abortion. Other studies focused on the impact of climate change on the quantity and quality of food, which indirectly affects WSRH [1]–[3].

In Jordan, significant attention and efforts have been directed towards mitigating the impact of climate change on differ-

ent sectors including agriculture, water and health, especially with respect to respiratory diseases and cancer. Addressing the impact of climate change on SRH has been identified as a national priority for public authorities, considering the lack of research locally due to lack of support for this type of research and the linkages between SRH and climate change in Jordan. Given the lack of evidence, public and civil society institutions concerned with women, health and environmental issues in Jordan have paid limited attention to providing medical awareness and education on the impact of climate change on sexual and reproductive health. These proposed policies shed light on this critical aspect of climate change effects and enable following up on the impact in the next years.

The policy brief presents four policies on linking climate change to SRH. The first policy is on directing scientific research in Jordan towards linking climate change to WSRH in the public and private sectors. The second policy seeks to educate governmental and educational sectors in how to link climate change to WSRH, whereas the third policy focuses on enhancing the role of the media in highlighting climate change and linking it to WSRH in Jordan and the fourth policy concentrates on engaging the medical private sector in WSRH. To ensure successful implementation of these policies, communication channels among various stakeholders should be strengthened to facilitate coordination of all issues pertaining to the impact of climate change on SRH in Jordan.

Climate change means the significant differences in weather patterns over an extended period of time. The effects include higher global temperatures, an increase in frequency and intensity of extreme weather events, and severe impacts to the sustainability of ecosystems[4]. Global interest in tracking climate change and its impact on different aspects of life has grown in recent years. Climate change appeared in the form of average temperature increases and decreases in different locations, delays in the rain season in some countries, unfavorable rainfall distribution, higher humidity and evaporation from higher temperatures or wind speed, and more hurricanes in some parts of the world.

As a result, numerous studies and research focused on climate change. In Jordan, there has been wide interest in this issue through academic studies and research that look into different aspects of climate change. The majority of these studies concentrated on highlighting the different forms of direct climate change that involve change in weather conditions including change in temperatures in summer and winter, rainfall levels, and wind speed. In addition, many studies focused on air pollutants and their concentrations as well as the direct impacts of change, but failed to look into the indirect changes resulting from the direct impact and affecting human health in the short and long terms. A comprehensive review of this topic requires a focus on the impact of climate change on women's sexual and reproductive health (WSRH) as well as the impact of women's role in reducing the effects of climate change in the short and long terms[4].

Examining the indirect impact of climate change on health in general and on WSRH has not been widely tackled worldwide or in Jordan. This is attributed to the lack of experts in linking climate change to sexual and reproductive health. Linkages can be established by mapping out studies on climate change from one side and studies on SRH, assessing the impact, and identifying and limiting impacts caused by climate change. On one hand, understanding the dynamics of impact allows connecting policies on mitigating the impact of climate change

to policies on maintaining sexual and reproductive health and reaching a policy that links climate change to SRH.

Jordan pays considerable attention to the Sustainable Development Goals and means to achieve them by 2030. In the context of Goal 13, which calls for taking urgent action to combat climate change and its impacts, these policies will help to enhance resilience in the face of climate-related risks and natural disasters, and enhance the ability to adapt to emerging risks. These policies complement the policies adopted by the

Ministry of Environment to address the impact of climate change on different aspects of life[5] as well as the policy adopted by the Ministry of Health on the impact of climate change on health in general[6]. These policies are intended to complement other national studies that aim to mitigate the impact of climate change, thereby supporting the achievement of SDG 13.

On the other hand, these policies will support the implementation of the Paris Convention[7], which Jordan ratified. The Convention aims to address and mitigate the impact of climate change at an international level. In the same context, the policies aim to enhance healthcare services provided to women, and at the same time, boost women's role in mitigating climate change by reducing emissions.

The impact of climate change has intensified in recent years. While developing countries contribute the least to climate change, they are the most affected by its consequences, including on sexual and reproductive health. Reports revealed that studies that look into the impact of climate change on women's sexual and reproductive health are still in the early stages, and recommended intensified scientific research in this field.[8]

The International Federation of Gynecology and Obstetrics (FIGO) released a report that tracks studies in this area. The study pointed out that climate change affects sexual and reproductive health and presents an imminent health risk to pregnant women and the developing fetus. The report provided that climate change has adverse neonatal outcomes including pre-term birth, low birth weight, and stillbirth and may also affect the fertility and women's mental health[1]. On the other hand, a report by (Blomstrom et al.) provided that women and children are 14 times more likely to die than men during natural disasters, the mortality rate of women over 40 in Bangladesh as a result of the 1991 Cyclone was 31 per cent, while more than 70 per cent of the dead from the tsunami were women[4]. The National Adaptation Programs report provided that 215 women worldwide do not have access to family planning, maternal care or information about family planning methods[9].

Climate reports by the Jordanian Meteorological Department[10] and World Bank [11] reports on Jordan revealed that the maximum temperatures have increased between 0.3 and 1.8 degrees Celsius, while international reports have indicated that exposure to high temperatures or heat waves impact the health of pregnant women, particularly when healthcare is not accessible or economic conditions prevent from obtaining protection against high temperatures. Studies have demonstrated that temperatures over 40.6 Celsius multiply risks for pregnant women and can be found in areas in Jordan such as the Jordan Valley and Aqaba, or in other areas of Jordan during heatwaves.

Studies have shown that long exposure to high temperatures leads to stillbirth, birth defects, or pre-term birth irrespective of age [2][12][13]. Studies have also shown that high temperature can lead to pregnancy complications, including gestational hypertension[14], Eclampsia, and

infantile

hypotonia[15], low birthweight [16]–[18], and increased release of active substances in blood vessels and blood viscosity, and affects the endothelium and subsequently the placental blood flow, increased susceptibility to high blood pressure and pre-term birth[12]. Studies have also shown that abortion can be caused by high temperature, as fetuses cannot tolerate high temperature during their growth stages (Asamoah)[19].

On the other hand, reports on climate change in Jordan showed that the minimum temperatures in recent years dropped from 0.4 to 2.8 Celsius[11]. A study by (Xu et al) explained that exposure to cold weather leads to reproductive diseases in females [20], and that no studies have explained the nature of this impact.

Some studies have indicated that climate change has an impact on the age of pupetry in females[21]–[23], leading to early puberty. A study by (Saar et al.) in Palestine revealed that the age of puberty for girls in Safad is higher by 17.9% than that of girls in Eilat, attributing this to temperature[23]. A study by (Canelon& Boland) that was based on a systematic literature review of female puberty age showed that climate change can cause females to reach puberty sooner due to undernutrition resulting from high temperature and lower rainfall affecting food availability and quality[22]. Another group of studies

focused on the impact of climate change on fertility [24]–[27]. A study by (Barreca et al.) conducted in the United States showed that fertility declines as temperature increases as the periods during which temperatures are around their average increase. (Barreca) study in the US provided that sperm quality in males and testosterone levels in females decline in high temperatures, lowering the chances of pregnancy[24][28].

Reports by international organizations showed that women can play a key role in mitigating climate change[29][4] and some have indicated that population increase will lead to higher emissions that amplify climate change. Reports also note that family size, age distribution, and higher population rates in urban areas increase emissions and climate change. On the other hand, the reports recommend improving women's access to education, better economic opportunities, SRH and family planning services to mitigate the impact of climate change by decreasing the greenhouse gas emissions and promote sustainable growth.

Interviews were carried out with climate change experts (Jordanian Meteorological Department, Ministry of Environment, Ministry of Water and Irrigation, Ministry of Transport and Ministry of Agriculture), SRH experts from the public sector (Ministry of Health, Balqa'a University, Jordan University, Yarmouk University, Jordan University of Science and Technology, Rafida College), private sector medical doctors, women's organizations (SIGI, Arab Women Organization), and WHO-Jordan Country Office. In addition, brainstorming session were held with representatives of the Ministry of Health, Ministry of Environment, and Jordanian universities, and a review was carried out of policies on adapting to climate change (the National Climate Change Health Adaptation Strategy and action plan in Jordan adopted by MOH in 2015, the Climate Change in Jordan Policy (2013-2020) by MOE).

The following findings were concluded:

1. Lack of scientific studies that link SRH and climate change in Jordan. This can be addressed by forming study groups comprising SRH and climate change researchers[27].
2. Lack of education and awareness in climate change in the women's sector in Jordan.
3. Differential impact of climate change across different regions of Jordan due to different weather conditions and environments.
4. Lack of medical activities and specialists in healthcare and psychological counselling concerning climate change and its effect on WSRH in Jordan to provide counselling to women in different regions of Jordan.
5. Lack of studies on climate change to help accurately identify aspects of climate change.
6. Lack of online platforms that provide information and guidance on the impact of climate change on SRH in Arabic and English.
7. Scientific research in climate change and SRH has not reached maturity yet and is still in the early stages
8. Inability to isolate the impact of climate change from other impacts to reach confirmed findings about the impact of climate change on SRH.
9. Lack of medical records that link climate change to SRH in Jordan.



## SWOT analysis to assess interest in the impact of climate change on SRH in Jordan

Based on the outcomes of interviews with SRH experts, public institutions concerned with climate change and SRH in Jordan, international health organizations working in Jordan and women's organizations (as shown in the annexes), the following SWOT matrix was developed.

Table (1): SWOT analysis of the outcomes of linking climate change to SRH in Jordan

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>A specialized entity adopts the topic of linking climate change to WSRH and coordinates with other entities locally and internationally</li> </ul>	<ul style="list-style-type: none"> <li>Lack of research and studies addressing the link between climate change and SRH in Jordan.</li> <li>Lack of scientific methodologies to help isolate the impact of climate change from other impacts on SRH.</li> <li>Lack of sufficient funding to support scientific activities in this field.</li> <li>Lack of experts in linking climate change to SRH in Jordan .</li> <li>Lack of local policies that aim to mitigate the impact of climate change on WSRH.</li> <li>Lack of guidelines on the impact of climate change, particularly on SRH.</li> <li>SRH is considered is important than other healthcare issues, such as the respiratory diseases and cancer.</li> </ul>

Opportunities	Threats
<ul style="list-style-type: none"> <li>Benefit from the experience of other countries in the medical field to conduct studies on the link between climate change and SRH in Jordan.</li> </ul>	<ul style="list-style-type: none"> <li>Climate change appears in multiple forms that change from year to year and the nature of its impact is difficult to predict.</li> </ul>

## Policies to link climate change to SRH in Jordan

The following policies were developed based on the findings of interviews conducted with stakeholders in the public and private sectors who work in the field of climate change or SRH in Jordan, in addition to women's organizations concerned with women's issues in Jordan. A literature review was also carried out to inform the formulation of the policies with the following objectives:

### Short-term objectives

The short-term objectives are:

1. Direct the attention of concerned public and private entities towards studying climate change patterns in detail by forming teams to carry out assessments on daily, monthly and yearly basis in different geographic locations across Jordan.
2. Direct healthcare professionals and SRH stakeholders in the public and private sectors and public universities to focus on scientific research in the impact of climate change on SRH and its adverse effects on family planning, and to educate women more about limiting emission that impact climate change in Jordan.
3. Provide the required financial support for research and studies in climate change, especially those that connect climate change to SRH in Jordan.
4. Disseminate different forms of media messages highlighting climate change and its impact on SRH in Jordan.
5. Provide awareness programs nation-wide that link climate change to WSRH in Jordan through government and semi-government women agencies.
6. Urge international organizations to direct logistic and financial support to linking climate change to SRH in

Jordan.

7. Integrate the topic of climate change and its link to WSRH in secondary and higher education curricula to raise public awareness.

#### **Long-term policy objectives:**

The long-term policy objectives are:

1. Establish scientific research centers specialized in climate change and SRH in Jordan.
2. Build sufficient expertise in climate change and SRH in Jordan to track the long-term impact and identify solutions to mitigate its current forms and unexpected future forms.
3. Incorporate the topic of climate change and its link to SRH in policies formulated by ministries and government departments in the long term.
4. Raise awareness of the impact of climate change and its connection to SRH across all maternal and child health centers in Jordan.
5. Identify sustainable electronic tools to disseminate advice and guidance in this area in Arabic to all women across the kingdom and develop updated educational materials based on the findings of studies and scientific research on this topic in Jordan.

The policies are as follows:

#### **Policy I : Enhance scientific research in the link between climate change and SRH**

Encourage scientific research at public and private universities on the impact of climate change on SRH in public, and provide support to hospitals and health centers to conduct medical studies that assess the impact in Jordan.

The implementation of this policy requires the involvement of different governmental actors, public universities as well as public and private scientific research centers. The advantages and limitations pertaining to this policy are:

#### **Policy I Advantages:**

- Direct the SRH sector to build capacities in climate change and utilize these capacities in researching the link between climate change and SRH in Jordan.

- Learn international scientific methodologies for linking climate change with SRH and apply them in Jordan.
- Link different climate conditions across different geographic locations to SRH.
- Identify priorities for linking climate change to SRH in Jordan based on the repeated changing weather patterns over the years.
- Enhanced coordination between healthcare bodies concerned with SRH and climate change stakeholders in Jordan.
- Setting comprehensive plans for monitoring climate change and linking it to SRH in Jordan.

#### **Policy I limitations:**

- The high costs of supporting scientific research and efforts to link climate change to SRH in Jordan.
- Lack of healthcare professionals who are specialized in SRH and have knowledge in climate change, its current forms and future expected forms.
- Lack of sponsors for efforts to track the findings of related research and studies on the situation of women in Jordan with respect to SRH.
- Lack of MOH records of medical cases linked to climate change and its impact on SRH in Jordan.

#### **Implementation Responsibility:**

Several agencies are responsible for implementing the Policy1, namely:

- Ministry of Health
- Schools of medicine in public universities
- Schools of medicine in private universities
- Royal Medical Services
- Scientific research centers in Jordan
- Ministry of Planning and International Cooperation
- Jordanian Meteorological Department
- Ministry of Environment

#### **Policy I implementation mechanism:**

- The ministry of health shall be responsible for overseeing healthcare programs concerned with linking climate change to SRH in Jordan.



- Enhance the capacity of sexual and reproductive health care professionals in climate change current and future patterns, under the sponsorship of the Jordanian Meteorological Department and the Ministry of Environment.
- Establish a national taskforce that includes representatives of the ministry of health, medical colleges in public and private universities, and scientific research centers and identify priorities for conducting studies that connect climate change to SRH.
- Secure support for implementing policy I through the ministry of planning and international cooperation.
- Strengthen cooperation with international healthcare entities to enhance capacities in this field.

#### **Policy II : Educate the Governmental and Educational Sectors**

#### **Educate the relevant governmental sectors and the educational sector about climate change and its connection to SRH in Jordan**

The implementation of this policy entails raising the awareness of personnel working in various related sectors within the government (Ministry of Health, Ministry of Environment, Ministry of Water and Irrigation, Jordanian Meteorological Department, Ministry of Education) about the impact of climate change on SRH to ensure that they are integrated in the action plans of these entities. The advantages and limitations of implementing the policy are:

#### **Advantages of Policy II:**

- The connection between climate change and SRH is integrated in the programs of ministries and concerned agencies to help provide accurate and accessible records on this topic for researchers in the field of connecting climate change to SRH in Jordan.
- Make special templates available for monitoring climate change patterns on daily, monthly and annual basis for different concerned ministries, especially the ministry of health to enable the tracking of SRH cases that require medical support.

- Records of public and private medical institutions and the Royal Medical Services demonstrate a link between the registered climate change conditions and the corresponding registered cases received in public and private hospitals and health centers and the Royal Medical Services.
- Integrate climate change and its connection to SRH in educational materials for students at puberty age and different levels of university education.
- Establish a national register of medical cases which climate change was a main or secondary cause of.

#### **Policy II Limitations:**

- Sufficient training from public and private healthcare entities and the Royal Medical Services in how to distinguish cases resulting from climate change and other causes.
- Increased workload and the subsequently higher staffing needs to carry out the work.
- High health staff turnover in different regions, which lowers the ability to follow up on climate change-related medical cases involving women.
- The difficulty of sharing related information among public and private health centers, hospitals and the Royal Medical Services
- The need to engage education professionals to increase their capacity in linking climate change to SRH in Jordan.
- The need to provide specialized educational materials and disseminate them to workers in concerned ministries and different departments.

#### **Policy II implementation responsibility:**

The entities responsible for implementing Policy II include the following:

- Ministry of Health.
- Public and private hospitals and the Royal Medical Svices.
- Ministry of Education.
- Ministry of Environment.
- Jordanian Meteorological Department.
- Ministry of Water and Irrigation .

### **Policy II Implementation Mechanism:**

- Assign staff from the ministry of environment and the Jordanian Meteorological Department to give lectures on forms and projections of climate change to staff from the Ministry of Education, MOH, public and private hospitals and the Royal Medical Services.
- Train healthcare professionals in drawing connections between (daily, monthly, yearly) climate change records and SRH cases visiting health centers.
- Educational materials developed by climate change and health affairs experts to offer information on linkages between climate change and SRH in Jordan.
- Set up a national observatory administered by the Ministry of Health to record SRH cases caused by the effects of climate change in Jordan and record cases received by public and private medical centers, hospitals and th Royal Medical Services.

### **Policy III : Enhance the role of media in linking climate change to SRH in Jordan**

Engage public and private media and utilize social media and online applications to disseminate awareness messages on linkages between climate change and SRH in Jordan.

The implementation of this policy requires communication with public and private media institutions to present TV programs linking climate change to SRH in Jordan in line with Jordanian society customs and traditions. The policy also calls for dedicating social media platforms to provide advice and information on the link between climate change and SRH in Jordan, develop application to provide women with awareness messages in this respect. The advantage and limitation related to the implementation of this policy are as follows:

#### **Policy III advantages:**

- Distinguish between environmental pollution and climate change and their different impacts.
- Expand the scope and coverage of education about the link between climate change to SRH.
- Shift the attention of women in the Jordanian society towards the impact of climate change on SRH to obtain

information on the different medical conditions that women experience and link them to climate change.

- Increase women's awareness and make information and guidance accessible on the procedures that should be followed to mitigate the impact of climate change on WSRH.
- Guide women to use online platforms and applications that offer information on linking climate change to SRH in Jordan.
- Enhance documentation of medical cases that resulted from climate change in Jordan.

#### **Policy III limitations:**

- Reluctance of private media to participate due to the high cost of related activities.
- High cost of developing special online applications for climate change and SRH.
- Difficulty of reaching women in all regions and social classes as cultural and social characteristics vary.

#### **Policy III implementation responsibility:**

The entities responsible for implementing Policy III include the following:

- Ministry of Health.
- Public and private media.
- The Higher Population Council.
- Ministry of Environment.
- Jordanian Meteorological Department.
- SRH workers who can link SRH to climate change.

#### **Policy III implementation mechanism:**

- The Ministry of Health coordinates with the Ministry of Environment, the Jordanian Meteorological Department and healthcare workers, under the auspices of international and local institutions, to present TV programs that offer educational information and link climate change to SRH.
- HPC establishes social media platforms that link climate change to SRH in Jordan
- Send awareness and educational messages on the link between climate change and SRH through public and private media.

**Policy IV : Engage private health care in efforts to conduct scientific research and assessments of climate change impact on SRH in Jordan**

This policy aims to broaden the base of scientific research on the impact of climate change on SRH to include private healthcare and provide a comprehensive record of medical conditions associated with climate change in private clinics and hospitals in Jordan,

This policy entails engaging physicians in private clinics and private hospitals' outpatient clinics directly, or through the Medical Association, in efforts to link climate change to SRH in Jordan and provide records to complement MOH records and offer a comprehensive view of the entire public health sector in Jordan. The advantages and limitations of this policy are:

**Policy IV advantages:**

- Increased coordination and sharing of experiences between the public and private sectors in the field of climate change and its connection to SRH in Jordan.
- A broader national pool of Jordanian WSRH experts who are concerned with linking climate change to SRH.
- Expand the national base of monitoring the links between climate change and SRH to provide more accurate data and information about this topic.
- Achieve broader outreach to women to provide guidance and awareness about the link between climate change and SRH.
- Facilitate access to different groups of the female population to provide them with guidance on the impact of climate change on SRH.
- Private sector support for related research.

**Policy IV limitations:**

- Private healthcare reluctance to contribute to this area due to the amount of time it requires.
- The private sector is concentrated in large cities, which limits the scope of research and prevents from conducting in-depth research in disadvantaged areas.
- High cost of training the private sector in linking climate change to SRH in Jordan.

**Policy IV implementation responsibility:**

The entities responsible for implementing Policy IV are:

- Ministry of Health.
- Jordanian Medical Association.
- Ministry of Environment.
- Jordanian Meteorological Department .

**Policy IV Implementation Mechanism:**

- The MOH contacts the Jordanian Medical Association, which shall contact SRH physicians to participate in activities and identify their numbers and locations.
- The MOH, in cooperation with climate change stakeholders, shall give lectures on climate change forms, predictions and its expected impact on SRH.
- Train private sector personnel in maintaining records on linkages between climate change and SRH and identify mechanisms for sharing and exchanging information.

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