



The Impact of Climate Change on Public Health in Egypt

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The Forum for Development and Human Rights Dialogue.

A civil institution- registered with No. 6337 of 2005, non-partisan.

Non-profit organization, Governed by Law No. 149 of 2019 of NGOs and Private Foundations.

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Introduction

Egypt, as is the case in many countries, is facing difficult tests in trying to meet the growing demands and expectations of the population in light of political, economic and social challenges. Health and health care are among the topics of importance to Egyptians and political leaders in recent times. Supernatural factors attack public health and the right to health. The consequent increases in morbidity and mortality rates caused by heat waves, hurricanes and droughts, and the spread of diseases transmitted by insects and water, in addition to the increase in the severity of chronic diseases resulting from environmental pollution that pave the way for lung diseases.

The climate crisis threatens to undo the progress made over the past 50 years in global health, development and poverty reduction, and threatens to further widen health inequalities within population groups. They negatively impact the achievement of comprehensive health coverage in various ways, including by increasing the current burden of disease and exacerbating existing barriers to accessing health services at the times when they are most needed.

Corruption of the right to health may interfere with the enjoyment of other human rights, such as the right to education or work, and vice versa human rights are interdependent, intertwined and indivisible. Climate changes in all their forms are considered variables that affect in some way the right to health, in terms of pollution, harmful emissions, rising temperatures, the increasing frequency and severity of extreme weather phenomena, and others.

The effects of climate change, in Egypt are clearly evident in the economic field, especially in the agricultural and tourism fields, has caused the scarcity of natural resources needed for the quality of agriculture, including the food industry, and the erosion of beaches, which threatens the marine ecosystem, including coral reefs. However, climatic changes have repercussions on public health, especially in light of the outbreak of viruses, some of which may contribute to cholera, dengue fever or malaria.

The report deals with the impact of climate change on public health in Egypt, by explaining the right to health in international human rights conventions, and



discussing international conventions related to climate change, and the repercussions of climate change on public health and the right to health in Egypt. Finally, present the Egyptian state's strategies to provide comprehensive health care and at the same time to address climate changes in recent times, which are the National Human Rights Strategy, and the National Strategy for Climate Change in Egypt 2050.

First: The Right to Health in International Human Rights Conventions and in the Egyptian Constitution

The right to health is one of the main human rights and it intertwines with many other human rights like the right to food, housing, work, education, life, non-discrimination, privacy, access to information, prohibition of torture, and so on. Thus, the right to health is a human right that needs direct positive intervention by states.

The right to health has key principles that govern it, which are: **non-discrimination** of any guarantee and protection of the right to health without discrimination based on gender, age, social level, disability, etc.; **participation** in the way decisions are made on health-related issues and influencing government decisions that affect health is a human right; and **accountability** where effective measures and monitoring mechanisms are put in place to ensure that governments adhere to standards of the right to health, and people should have free access to appropriate mechanisms if they feel that their rights have been violated.

Everyone has the right to health, and this right relates to the right of individuals to a certain level of health and health care and the right to the obligation of states to ensure a certain level of general health for society in general. The World Health Organization (WHO) states the right to health as "**Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.**"



Within the framework of the right to health is that states guarantee both freedoms and rights, and that freedoms include the human right to control his health and body, including his sexual and reproductive freedom, and the right to be free from interference such as torture, medical treatment or medical experiments without satisfaction. It also includes access to health services and access to appropriate health care facilities, as well as countries taking appropriate measures related to the social and economic determinants of health such as food, water, sanitation, safe and healthy working conditions, housing and poverty.

1- The Right to Health in International Human Rights Conventions

In the Universal Declaration of Human Rights 1948, Article 25 (1) states that: “Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.”

The 1965 International Convention on the Elimination of All Forms of Racial Discrimination affirmed the right to health in Article 5, which stated: “States Parties undertake to prohibit and to eliminate racial discrimination in all its forms and to guarantee the right of everyone, without distinction as to race, colour, or national or ethnic origin, to equality before the law, notably in the enjoyment of the following rights: “...(iv) The right to public health, medical care, social security and social services.”

Article 12 of the 1966 International Covenant on Economic, Social and Cultural Rights states that: “1. The States Parties to the present Covenant recognize the right of everyone to the enjoyment of the highest attainable standard of physical and mental health. 2. The steps to be taken by the States Parties to the present Covenant to achieve the full realization of this right shall include those necessary for: “(a) The provision for the reduction of the stillbirth-rate and of infant



mortality and for the healthy development of the child; (b) The improvement of all aspects of environmental and industrial hygiene; (c) The prevention, treatment and control of epidemic, endemic, occupational and other diseases; (d) The creation of conditions which would assure to all medical service and medical attention in the event of sickness.”

In its General Comment No. 14, the United Nations Committee on Economic, Social and Cultural Rights provided detailed guidance for states on their obligations to respect, protect and fulfill the right to health. The Committee also indicated that this right includes the following interrelated and essential features:

-Availability: Countries should provide a sufficient number of functioning public and individual health care facilities throughout their territory, as well as safe water and sanitation facilities, trained and equitably paid medical personnel and professionals, and essential drugs.

-Accessibility: It has four basic components: non-discrimination, physical accessibility, economic accessibility, and access to information. Everyone should have access to health-related facilities and services, especially the most vulnerable, without any discrimination on any of the prohibited grounds. Facilities and services, as well as basic determinants of health such as water and sanitation facilities, must be within physical and safe reach. Everyone must be able to bear the expenses of utilities, goods and services related to health, provided that the principle of fairness is observed in the payment of the material consideration, thus avoiding poor families from bearing the burden of health expenses that are not commensurate with them. Finally, states must ensure that everyone has the right to seek, obtain and impart information on health issues, without prejudice to the confidentiality of medical data.

-Acceptability: All health facilities should respect the medical ethics and culture of individuals and societies, as well as take into account gender and life cycle requirements.

-Quality: Health facilities should be scientifically and medically appropriate and of good quality. This requires, among other things, the availability of necessary



drugs and equipment, skilled medical personnel, and safe water and sanitation facilities.

The 1979 Convention on the Elimination of All Forms of Discrimination against Women included the right to health in some articles. Article 12 states that: “1. States Parties shall take all appropriate measures to eliminate discrimination against women in the field of health care in order to ensure, on a basis of equality of men and women, access to health care services, including those related to family planning. 2. Notwithstanding the provisions of paragraph 1 of this article, States Parties shall ensure to women appropriate services in connection with pregnancy, confinement and the post-natal period, granting free services where necessary, as well as adequate nutrition during pregnancy and lactation.”

With regard to rural women, Article 14(2) stated: “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: “...(b) To have access to adequate health care facilities, including information, counselling and services in family planning;”.

The 1989 Convention on the Rights of the Child dealt with several measures taken by states with regard to ensuring the right to health for children. Article 19 (1) stated that “States Parties shall take all appropriate legislative, administrative, social and educational measures to protect the child from all forms of physical or mental violence, injury or abuse, neglect or negligent treatment, maltreatment or exploitation, including sexual abuse, while in the care of parent(s), legal guardian(s) or any other person who has the care of the child.”

Article 23 emphasized on states obligation to intervene to protect children with disabilities and take care of their health: “1. States Parties recognize that a mentally or physically disabled child should enjoy a full and decent life, in conditions which ensure dignity, promote self-reliance and facilitate the child's active participation in the community; 2. States Parties recognize the right of the disabled child to special care and shall encourage and ensure the extension,



subject to available resources, to the eligible child and those responsible for his or her care, of assistance for which application is made and which is appropriate to the child's condition and to the circumstances of the parents or others caring for the child; 4. States Parties shall promote, in the spirit of international cooperation, the exchange of appropriate information in the field of preventive health care and of medical, psychological and functional treatment of disabled children..”

While Article 24 stated that: “1. States Parties recognize the right of the child to the enjoyment of the highest attainable standard of health and to facilities for the treatment of illness and rehabilitation of health. States Parties shall strive to ensure that no child is deprived of his or her right of access to such health care services; 2. States Parties shall pursue full implementation of this right and, in particular, shall take appropriate measures:

“(a) To diminish infant and child mortality;

(b) To ensure the provision of necessary medical assistance and health care to all children with emphasis on the development of primary health care;

(c) To combat disease and malnutrition, including within the framework of primary health care, through, inter alia, the application of readily available technology and through the provision of adequate nutritious foods and clean drinking-water, taking into consideration the dangers and risks of environmental pollution;

(d) To ensure appropriate pre-natal and post-natal health care for mothers;

(e) To ensure that all segments of society, in particular parents and children, are informed, have access to education and are supported in the use of basic knowledge of child health and nutrition, the advantages of breastfeeding, hygiene and environmental sanitation and the prevention of accidents;

(f) To develop preventive health care, guidance for parents and family planning education and services.”



And not only that, the third paragraph made sure that “States Parties shall take all effective and appropriate measures with a view to abolishing traditional practices prejudicial to the health of children.”

The 2006 Convention on the Rights of Persons with Disabilities (CPRD) adopted in Article 25 the right to health and stated “States Parties recognize that persons with disabilities have the right to the enjoyment of the highest attainable standard of health without discrimination on the basis of disability. States Parties shall take all appropriate measures to ensure access for persons with disabilities to health services that are gender-sensitive, including health-related rehabilitation. In particular, States Parties shall:

- a) Provide persons with disabilities with the same range, quality and standard of free or affordable health care and programmes as provided to other persons, including in the area of sexual and reproductive health and population-based public health programmes;
- b) Provide those health services needed by persons with disabilities specifically because of their disabilities, including early identification and intervention as appropriate, and services designed to minimize and prevent further disabilities, including among children and older persons;
- c) Provide these health services as close as possible to people’s own communities, including in rural areas;
- d) Require health professionals to provide care of the same quality to persons with disabilities as to others, including on the basis of free and informed consent by, inter alia, raising awareness of the human rights, dignity, autonomy and needs of persons with disabilities through training and the promulgation of ethical standards for public and private health care;
- e) Prohibit discrimination against persons with disabilities in the provision of health insurance, and life insurance where such insurance is permitted by national law, which shall be provided in a fair and reasonable manner;
- f) Prevent discriminatory denial of health care or health services or food and fluids on the basis of disability.



2- The Right to Health in the Egyptian Constitution

Article 18 of the 2014 Egyptian constitution includes the right to health and it stated: “Every citizen has the right to health and to integrated health care in accordance with quality standards, the state guarantees the maintenance and support of public health services facilities that provide services to the people and work to raise their efficiency and equitable geographical spread.

The state commits to allocating a percentage of government spending to health that is no less than 3% of the gross national product (GNB), to gradually increase until it is in line with international rates.

The state is committed to establishing a comprehensive health insurance system for all Egyptians that covers all diseases, and the law regulates citizens' contributions to its subscriptions or exempts them from them according to their income rates.

It is criminalized to refrain from providing treatment in its various forms to every person in emergency situations or danger to life.

The state is committed to improving the conditions of doctors, nursing staff, and health sector workers.

All health facilities, products, resources, and means of publicity related to health are subject to state control, and the state encourages the participation of the private and private sectors in health care services in accordance with the law.”

Second: Climate Change Agreements

1- Montreal Protocol for the Protection of the Ozone Layer 1987

Twenty-four countries signed the Montreal Protocol on September 16, 1987 to ban the use of harmful substances and chlorofluorocarbons that destroy the Earth's protective ozone layer. The number of countries that have signed this protocol has reached more than 190 countries at the present time. Although the protocol was not intended to deal with the climate change crisis, it is considered a model environmental agreement for subsequent diplomatic efforts.



2- United Nations Framework Convention on Climate Change (UNFCCC) 1992

It was signed by 154 countries at the United Nations Conference on Environment and Development (UNCED), known as the "Earth Summit", which was held in Rio de Janeiro in June 1992. Since 2020, the number of parties to the United Nations Framework Convention on Climate Change has reached 197. It is the first global agreement to deal directly with the climate change crisis, and the treaty defined different responsibilities for three categories of signatory countries, namely developed countries, developed countries with special financial responsibilities, and developing countries. The agreement established an annual forum known as the "Conference of the Parties - COP" to stimulate discussions to develop means to reduce the concentration of greenhouse gases in the atmosphere.

3- Kyoto Protocol 2005

The Protocol was adopted in Kyoto, Japan, 1997, entered into force in February 2005, and in September 2018, the Protocol provided legal obligations to limit the emission of four greenhouse gases (carbon dioxide, methane, nitrous oxide and sulfur hexafluoride) and two groups of gases (hydrofluorocarbons), and perfluorocarbons (perfluorocarbons) produced by industrialized countries. The Kyoto protocol also provided for general obligations for all member countries. The Protocol is the first legally binding document, which required developed countries to reduce greenhouse gas emissions by 5% less compared to 1990 levels, and established a system to monitor countries' progress in achieving this goal.

4- Paris Agreement to address global climate change 2015

The agreement followed negotiations held during the 21st United Nations Climate Change Conference in Paris in 2015. On December 12, 2015, 195 countries attending a conference in Paris ratified the agreement. The Paris Agreement on Climate Change works mainly on confronting the problem of greenhouse gas emissions, and how to find solutions to adapt to it, mitigate its damage to the environment, seriously consider the obvious effects of climate



change, and limit the temperature rise to less than two degrees Celsius; As the global average temperature rose by 0.85 degrees Celsius from 1880-2012. It is considered the most important agreement to tackle global climate change to date, as it requires countries to make voluntary and explicit pledges to reduce emissions that cause global warming, in what are known as Nationally Determined Contributions (NDCs). This agreement stipulates that the global average temperature shall be well below two degrees Celsius above pre-industrial levels, while obligating all countries to “follow up efforts” to limit the temperature rise to 1.5 degrees Celsius. This agreement also aims to be carbon neutral (zero emissions in the second half of this century). The agreement also provides for countries to evaluate the implementation of their commitments to the agreement every five years, in what is known as a "global assessment", a step planned to begin in 2023.

Third: The Impact of Climate Change on the Right to Health and Public Health in Egypt

Frequent and severe weather events, such as heat waves, storms, and floods, cause thousands of deaths and disrupt millions of lives. Health care systems are threatened when they are most needed. Changes in weather and climate threaten food security and lead to an increase in food and waterborne diseases, such as malaria. Whereas climatic influences have negative repercussions on mental health.

According to a report by the World Health Organization (WHO), air pollution resulting primarily from burning fossil fuels causes 13 deaths per minute worldwide, and that reducing air pollution would reduce the total number of global deaths from air pollution by 80%, and would reduce emissions of greenhouse gases that fuel climate change.

In this regard, Maria Neira, Director of Environment, Climate Change and Health at the World Health Organization, said: “In order to ensure that the Paris Agreement is effective in protecting people’s health, all levels of government



must prioritize building the health system's resilience to climate change, a trend emerging among an increasing number of people. from national governments.

Since the Industrial Revolution, the world has faced an escalation of climate instability due to the arbitrary practices of humans on the planet and the global warming crisis due to emissions of harmful gases into the atmosphere. This was proven in the report of the United Nations Climate Committee issued in August 2021 to confirm that the levels of greenhouse gases in the atmosphere It has become so high that it will disrupt the climate for decades, if not centuries.

Climate change affects health in many ways, directly through extreme weather or changes in temperature; and indirectly through changes in natural systems that lead to crop failure, expansion of disease vectors, and displacement of people. These consequences contribute to human susceptibility to disease and injury, deterioration of occupational and mental health, and threats of population displacement due to scarcity of resources.

Climate change casts a shadow on Egypt, and scientists concerned with climate change believe that Egypt is among the developing countries most vulnerable to the potential negative effects of climate change, despite it being one of the least contributing countries in the world to greenhouse gas emissions, with 0.6% of the world's total emissions. There are many negative effects on Egypt, including the rise in sea level and the impact on water resources, in addition to the negative effects of climatic changes and changing climatic patterns on the productivity of most crops, and air pollution. This is according to data from Egypt's latest report on the volume of greenhouse gas emissions to the NDC.

A report by the Egyptian Ministry of Environment identified the impact of climate changes directly on the deterioration of public health when storms or floods occur, and high temperatures, and indirectly through the biological changes to the extent of the spread of diseases transmitted by insects. Egypt is also exposed, due to its higher temperature than normal, to the spread of insect vector diseases such as malaria, lymph nodes, dengue fever, rift valley fever, and West Nile infection.

Officials from the Ministry of Health stated that climate change has a significant impact on health, causing the death of 250 thousand people annually, and other



diseases related to climate change, including diarrhea and nutrition. Egypt recorded 100 deaths in 2015 as a result of high temperature, and 15 people died as a result of the severe drop in temperature. Climate change is expected to cause direct damage costs to health between 5 and 7 billion pounds annually by 2030.

1- Chorionic Diseases

The environmental medicine, one of the branches of medical science, focuses on the quality of environmental factors that lead to diseases. The environmental medicine specialists assert that climate change contributes to increasing hunger and affecting healthy aging, and the spread and endemicity of some non-communicable diseases. Such chronic diseases include heart disease, stroke, high blood pressure, diabetes, cancer, and chronic respiratory diseases. Climate changes also affect the extent to which individuals respond to these diseases and weaken their ability to recover.

According to the statistics of 2020, Egypt ranked tenth in the world in terms of deaths related to chronic diseases, with a mortality rate of 5.5%. With regard to diabetes, Egypt ranks eighth in the world with nine million diabetics, while the average incidence of high blood pressure is 21% of the population (10 million and 413 thousand).

With regard to respiratory diseases, the pulmonary embolism affects about 3.5% of the Egyptian people, and the pulmonary embolism is the third cause of death in Egypt and the world, and asthma (chest allergy) affects at least 10 million Egyptians, either for genetic reasons or for frequent exposure to air pollutants such as car exhaust, and about 31% of asthma sufferers in Egypt are children. Lung cancer accounts for 15% of cancer cases in Egypt, and 18% of deaths from tumors, and is linked to smoking and some environmental factors such as exposure to asbestos and radon gas.

As for heart disease, 500 Egyptians out of every 100,000 die of heart disease, five times the global rate. Egyptians are exposed to heart disease about ten years earlier than the global average, with heart attacks affecting Egyptians at the age of 54 years instead of 64 years.



2- Infectious Diseases

There are some infectious diseases associated with climate change, including those that increase mortality rates, as nearly two-thirds of human and animal pathogens are sensitive to climate. Vector-borne diseases (VBDs) are mainly transmitted by arthropod vectors such as mosquitoes, which are particularly sensitive to changes in external climatic conditions. Temperature also affects the rate at which disease-causing agents mature and reproduce in mosquitoes, and increases the likelihood of infection. The most important drivers of VBD are the natural environment, followed by climate and travel and tourism.

For example, a virus transmitted by mosquitoes causes most West Nile infections, and most people infected with West Nile Virus (WNV) either have no signs or symptoms, or only mild symptoms, such as fever and mild headache. However, some people develop myelitis or encephalitis, which are life-threatening. Many areas within Egypt fall within the circles of the spread of this virus, and it spreads widely in the south and west, and its spread is less in some places in the north and east, and it may infect humans directly through the mosquito (*Culex Pipiens*) or through animals and birds that mix with humans and are exposed to infection from that mosquito. It is known that the increase in temperature due to climatic changes increases the spread of this mosquito. The following map shows the areas of spread of the virus in Egypt starting from March 2021, according to a study from the European Center for Disease Prevention and Control and the European Food Safety Authority (ECDC).

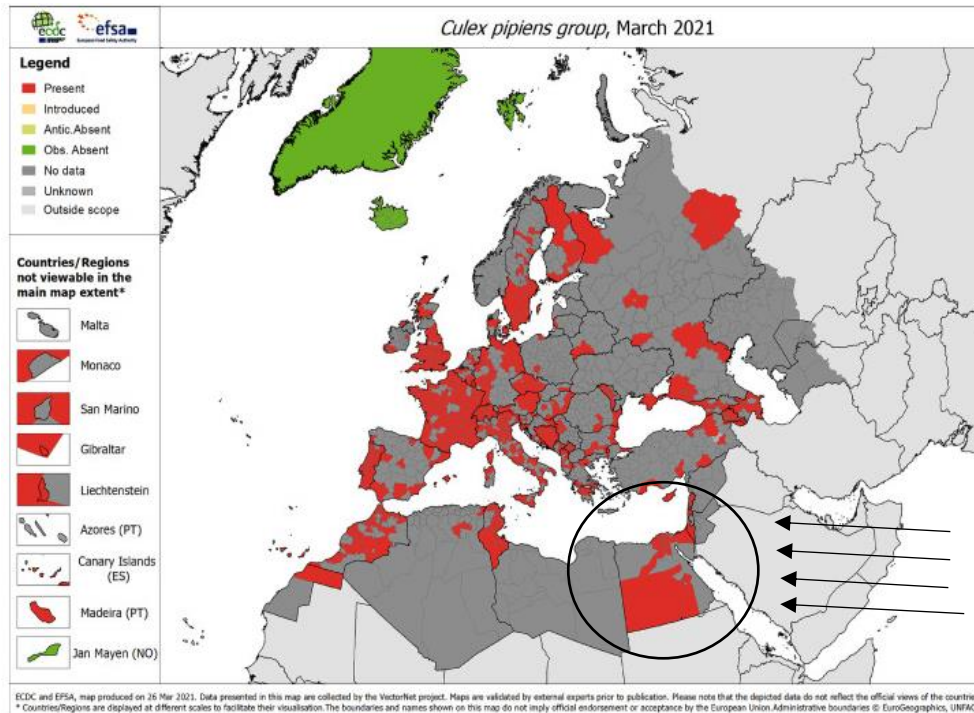


Figure 1: The current known distribution of Culex Pipiens populations in Europe and North Africa (Egypt), as of March 2021. Available at: <https://ecdc.europa.eu/en/disease-vectors/surveillance-and-disease-data/mosquito-maps>

3- Suicide and Mental Illness

According to medical estimates, there is a clear relationship between rising temperatures and an increase in suicide rates, and the climate crisis is causing widespread psychological stress of severe anxiety among individuals between the ages of 16 and 25, as well as affecting daily work performance. It is revealed in a report by the Intergovernmental Panel on Climate Change (IPCC) that rapidly increasing climate change poses an escalating threat to mental health and psychosocial well-being; from emotional distress to anxiety, depression, distress, and suicidal behavior.

Suicide rates in Egypt were at the level of 1.29 people per 100,000 people in 2018, according to data from the National Center for Criminal and Social Research. It is not possible to rely on this rate of annual suicide in relation to climate change explicitly, but perhaps to economic, family and other factors.



4- People with Disabilities

Climate change directly and disproportionately threatens the right of persons with disabilities to health due to rising ambient temperatures, rising air pollutants and increased exposure to extreme weather events including heat waves, fires and floods. Remarkably, the global mortality rate of persons with disabilities in natural disasters is up to four times that of persons without disabilities due to the paucity of comprehensive planning for them, accessible information, early warning systems, transportation, and sometimes discriminatory attitudes within institutions and between individuals. Higher temperatures are associated with higher emergency room visits, hospitalizations, and deaths for individuals with mental health, cardio-respiratory, and other disabilities; pre-existing psychosocial disabilities triple the risk of death during heat waves. High ambient temperatures also adversely affect the health of individuals whose disabilities are affected by temperature sensitivity or thermoregulation, including multiple sclerosis and spinal cord injury. Likewise, many drugs, including diuretics and antidepressants, can affect thermoregulation in people with mental and physical disabilities.

5- Food Security

It is well known that proper food is linked to public health because the health of the body depends on the basic food groups that enter it through food so that it can perform all its tasks on the part of the body. Food represents a source of strength for the state and its national security in the event that the food component is available and food security indicators are met. However, climatic changes lead to a disturbance in the food security equation through a decrease in the production of crops and livestock, including the rise in food prices resulting from the increase in production costs. Food security in Egypt was affected faster than global expectations, as it came ten years early, which reflected on the productivity of agricultural lands.

For example, climate change threatens the flooding of the Nile Delta in Egypt due to sea level rise, 6 million feddans of agricultural land in Lower Egypt. The agricultural lands in Egypt also suffer from increased rates of salinization due to



the intrusion of sea water into the land and the excessive use of non-renewable groundwater. This threatens Egyptian food security, which imports 33 million tons of agricultural and food products annually.

According to the data of the Agricultural Research Center, the targeted production quantities decreased for 2021, as olive production decreased by 60-80% in the last season to reach between 100-200 thousand tons instead of 690 thousand tons, so that Egypt loses its position as the largest exporter of olives and oil in the world. The mango season was affected by a 25% decrease in production due to high temperatures in February and March, which affected the productivity of the feddan, dropping from five tons last year to only four this year. Potato production declined by 30-40% per feddan; And wheat by 40-50%.

This is due to unexpected heat waves, which cause plants not to enter the flowering stage, which needs a percentage of cold to bloom. Only summer crops such as cotton, rice and corn were not affected because of their association with hot weather.

Perhaps the current Ukrainian crisis has caused a global food crisis that threatens food security in Egypt due to its dependence on grain imports from both sides of the war- Russia and Ukraine- especially wheat. The Egyptian government from Russia and Ukraine is about 85%. In addition to the high global energy prices as a result of the war, which poses a significant challenge to the Egyptian government.

On the other hand, a study issued by the American Journal of Preventive Medicine in 2017, warned that food insecurity, which affects nearly 795 million people around the world, may exacerbate mental disorders. The study covered 11 regional regions, comprising 149 countries around the world, to monitor the relationship between mental health and food insecurity, and the researchers found that nearly one in 3 individuals, or 29.2% globally, suffer from a mental disorder during their lifetime, such as depression. anxiety and mental disorders. One of the main reasons for the exacerbation of mental disorders is the inability to maintain the food supply or get enough food in the future, and this triggers the body's response to stress, which contributes to anxiety and depression.”



It cannot be asserted that environmental factors and the climatic changes resulting from them are among the main causes of all the repercussions on public and psychological health in Egypt, but they play a significant role in increasing their rates recently. Thus, climate change leads to increased risks of infection, disease and death, as well as increased risks of undernourishment due to reduced availability and access to food; Including reduced work capacity and productivity. This, by role, undermines the sustainable development strategy by lowering average incomes and increasing poverty, compared to scenarios that do not include climate change.

However, reducing greenhouse gas emissions as required by the Paris climate agreement, for example, to improve transportation options, food and energy use, and can improve health, particularly by reducing air pollution.

Fifth: Strategies of the Egyptian State to Adapt to the Consequences of Climate Change on Public Health

Article 1 of the United Nations Framework Convention on Climate Change (UNFCCC) defines the adverse effects of climate change as “means a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.” Article 3 states that “the parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities.” While Article 4 calls on Parties to minimize the public health impacts of mitigation and adaptation projects and the measures they take, using relevant tools such as impact assessments.

Countries that have ratified international legal instruments related to climate change and/or the right to health are obligated to implement them and translate their commitments into national law. Therefore, states have clear obligations to take measures to prevent and address the negative impacts of climate change



on the right to health, including with regard to the environmental and social determinants of health.

Consequently, the Egyptian state is committed to working to strengthen the right to health and protect it from climate changes stipulated in international agreements and the constitution at several local levels, which can be clarified in the following:

1- National Strategies for Human Rights

The national strategy addressed the challenges facing the right to health in Egypt and at the same time some environmental factors that affect it, such as the disproportionate numbers of human doctors and nursing staff with regard to the number of those attending government hospitals, the completion of the implementation of the comprehensive health insurance system in all governorates, the low awareness of mental health, the lack of awareness and community participation in preserving the environment, And the potential negative effects of climate change on biodiversity and ecosystem services, the limited sources of funding available to achieve the effective management of the protected network, and the components of biodiversity.

The strategy sets 17 targeted goals that the state seeks to achieve during the period (2021-2026) to improve health protection within the second axis, the most prominent of which are: Increasing awareness of the importance of preserving public health and preventing the spread of some practices harmful to health, passing a legislative amendment to tighten penalties in the environment law and related laws, and strengthening the implementation of pollution control policies, Increasing awareness campaigns related to preserving the environment, limiting the potential impacts of climate change on biodiversity and ecosystem services, increasing the participation of the private sector in the field of dealing with climate changes and effectively protecting and protecting natural resources, and providing biodiversity ; To ensure the sustainability of environmental systems' provision of their services for the benefit of the citizen as one of his constitutional rights.



2- The National Climate Change Strategy in Egypt 2050

On May 19, 2022, the National Council for Climate Change launched the “National Climate Change Strategy in Egypt 2050” as one of the pillars of ensuring the quality and continuity of development projects, and surviving climate disasters, which reflected the great strides Egypt made and is still on the path of climate action locally and internationally to confront the crisis of climate change. The climate, which poses a threat to all aspects of life, has two parallel lines: reducing emissions and dealing with potential climate changes.

Sub-goal “a” of the second main goal, **“Building resilience and adaptability to climate change and mitigating the negative effects associated with climate change,”** is one of the policies that guide the state to address climate changes in the field of public health, as “the sustainable development strategy states” Egypt’s Vision 2030. “The human being is at the center of development as one of the guiding principles of the strategy.” Based on this principle, the importance of protecting citizens from the negative health effects of climate change is evident. The strategy indicated the desired objectives in this item, as follows:

- Improving health services, increasing the health sector’s preparedness to face diseases caused by climate change,
- Studying the impact of climatic changes on the quality and activity of (bacteria, parasites, fungi, and viruses) currently present,
- Providing an adequate infrastructure that can provide health care to the targeted individuals and communities,
- Making a health map of diseases related to climate change,
- Epidemiological forecasting or proactive surveillance of emergency conditions related to climatic changes,
- Developing and supporting preventive services, especially those related to vaccination and immunization against infection,
- Availability of health teams with sufficient capabilities and capabilities to provide the required care, and training the health sector on the health risks posed by the effects of climate change, such as sunstroke.



Conclusion

The climate change crisis has cast a shadow over public health in Egypt, and the number of Egyptian citizens infected with some diseases has become the highest in the world. It cannot be asserted that environmental factors and the climatic changes resulting from them are among the main causes of all the repercussions on public and psychological health in Egypt, but they play a significant role in increasing their rates recently.

It is necessary to use and adopt the climate-smart agriculture approach to face the effects and repercussions of climate change in the future, which requires the development of new varieties that can withstand high temperatures, salinity and drought, which are the conditions that will prevail under the conditions of climate change, and adopt agricultural and sustainable technological methods to adapt to climate change to face the impact of climate change on production and thus the food security of these crops.

The Egyptian state is making many interrelated efforts on several axes to confront the challenges intertwined with the repercussions of climate change. However, remains a need for a number of complementary measures, especially at the level of scientific research, developing societal awareness, and activating the role of civil society as a necessary partner in facing these repercussions within the framework of the objectives of the national strategy of human rights and the national strategy for climate change.

Perhaps Egypt's hosting of the Climate Summit (COP27) in Sharm El-Sheikh next November will be an opportunity to address the implications of climate change on public health in southern countries that lack the infrastructure for health sectors that support them in adapting to climate changes.

Finally, states are obliged to respect, protect and fulfill human rights, and this includes obligations to mitigate domestic greenhouse gas emissions, protect citizens from the adverse effects of climate change, and ensure that responses to climate change do not lead to human rights abuses, primarily the right to health as it is linked directly and indirectly with climate change.



Adaptation to climate change also provides a global opportunity to increase the health equity of people with disabilities as required by the United Nations Sustainable Development Goals (SDGs), using the human rights principles of participation, inclusion, empowerment, non-discrimination and accessibility. Achieving climate resilient health equity will require enabling persons with disabilities and their organizations to represent their needs and identify solutions in equitable participatory planning and implementation processes, validated through disability indicators and cross-analyses.