

Food Security in the Context of Sustainable Development as One of the Social Consequences of the Climate Change Problem

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Doctoral candidate, Research-fellow, <https://orcid.org/0009-0007-3058-2063>, hafizaimanova@yahoo.com
Azerbaijan National Academy of Science, Institute of Philosophy and Sociology (Baku, Azerbaijan)

Abstract.

The article examines the socio-philosophical analysis of the climate change problem in the context of an interdisciplinary approach. The necessity of the transition of individual eco-thinking to collective eco-thinking, the exceptional role of environmental education and morality in the foundation of society, the factors that accelerate the transition process of collective consciousness have been studied.

The effects of wars and technogenic revolutions that have occurred in the world in recent times on the social consequences of climate change (food security, health, poverty, etc.) have been interpreted in the context of an interdisciplinary approach. The article highlights the landlocked countries' practices and impacts of climate change on these countries' food sustainability issue. The author concludes that without transformation into eco-consciousness in the society it is challenging to solve the problem in the context of sustainable development.

It is concluded that one of the most important points is to form a society with eco-thinking, eco-consciousness, "green thinking", "green consciousness" in general, and to unanimously minimize the negative effects of climate change. For this, educational work should be expanded, special educational programs should be developed in schools and universities, research institutes and the number of educational works aimed at the development of an eco-conscious society should be increased in research. Public awareness on climate crisis impact on our future should be increased and expanded starting from educational institutions and implemented in all fields of our lifestyle to make our future sustainable.

Keywords: climate change, eco-consciousness, food security, ecological morality, landlocked countries, philosophical analysis, sustainable development

Продовольча безпека в контексті сталого розвитку як один із соціальних наслідків проблеми зміни клімату

Іманова Хафіза

Національна академія наук Азербайджану, Інститут філософії та соціології, (Баку, Азербайджан)

Анотація.

У статті розглядається соціально-філософський аналіз проблеми зміни клімату в контексті міждисциплінарного підходу. Досліджено необхідність переходу індивідуального екомислення до колективного, виняткову роль екологічної освіти та моралі у фундаменті суспільства, чинники, що прискорюють перехідний процес колективної свідомості.

Вплив воєн та техногенних революцій, що відбулися у світі останнім часом, на соціальні наслідки зміни клімату (продовольча безпека, здоров'я, бідність тощо) інтерпретовано в контексті міждисциплінарного підходу. У статті висвітлюється практика країн, що не мають виходу до моря, та вплив зміни клімату на проблему продовольчої стійкості цих країн. Автор робить висновок, що без трансформації в екосвідомість у суспільстві є складним вирішення проблеми в контексті сталого розвитку.

Зроблено висновок, що одним із найважливіших пунктів є формування суспільства з екологічним мисленням, екологічною свідомістю, «зеленим мисленням», «зеленою свідомістю» загалом та одночасне мінімізація негативних наслідків зміни клімату. Для цього слід розширити просвітницьку роботу, розробити спеціальні освітні програми в школах і університетах, науково-дослідних інститутах і збільшити кількість навчальних робіт, спрямованих на розвиток екологічно свідомого суспільства. Обізнаність громадськості про вплив кліматичної кризи на наше майбутнє має бути підвищена та розширена, починаючи з навчальних закладів, та впроваджена в усі сфери нашого способу життя, щоб зробити наше майбутнє сталим.

Ключові слова: зміна клімату, екосвідомість, продовольча безпека, екологічна мораль, країни, що не мають виходу до моря, філософський аналіз, сталий розвиток

Introduction.

We currently live in a world where food security is not ensured, and food insecurity has reached a high level. Today, the problem of global food security is one of the main issues on the agenda, as well as one of the social consequences of climate change. *"Climate change and ecological crises in general have become the most urgent and existential problems of the modern world"* (Gümplova, 2023, p.72).

The interconnected ecological crises and climate change give rise to new philosophical questions surrounding the problem of the existence of man as a biological being. The complete answers to these questions are also of great importance in determining the future fate of humanity. Ecological problems also have a fundamental impact on new socialization processes in the paradigm of the modern era. The socialization process begins with the assimilation by man of ready-made values prepared by society. However, the development of human interaction with society along this line is not always effective. Because society sometimes rejects it or, due to certain circumstances, man himself distances himself from it. In conditions where external socialization is not successful enough, man again turns to nature. In other words, he tries to find the order he is looking for, what is missing in society, in it directly. He wants to master the beauty, goodness and truth that are also reflected in nature. The fact that nature has the listed qualities makes this process logically possible.

According to the United Nations "Food and Agriculture Organization of the United Nations (2004). Current Situation on the Status of Food in the World", approximately 798 million people were "undernourished" in 1999-2001. Currently, wars in Russia and Ukraine, which are considered major grain exporters, continue to have their impact on Africa, as well as creating a food shortage problem in Eastern Europe. Taking this into account, the Toshka project in Egypt can be cited as an example, which will make a significant contribution to solving the food and water problems. Once again, observing the economic and ecological paradigms of climate change, we see that the solution of the global issue in the context of sustainable development goals is inevitable. The development of infrastructure and urbanization, the availability of food and water, the elimination of poverty, and the provision of economic development play an important role in preventing the negative consequences of climate change.

The impact of climate change on landlocked countries.

Many landlocked countries (especially African countries) are located in arid areas. Drought, in turn, leads to increased desertification as a result of climate change, and at the same time, the loss of soil fertility. Landlocked countries are the countries that experience the most water problems and are constantly facing desertification. As an example, we mentioned Egypt and its project in this

direction, Toshka. We would like to note that landlocked countries refer to a group of states that do not have access to the world ocean due to their geographical location. The countries located in sensitive areas include the following countries:

1. Mongolia, Uzbekistan, Kyrgyzstan, Tajikistan and Kazakhstan, located around the Gobi Desert.
2. The provinces of Botswana, Zimbabwe and Zambia, located near the Kalahari Desert.
3. Burkina Faso, Nigeria, Mali, Ethiopia, located in the Sahel region.

Many landlocked countries are facing an impending water shortage. According to the United Nations Sustainable Development Goals Report 2018, the land area with water resources in these countries has decreased by 4.7% in the last decade. Lake Chad is the most obvious example of the negative impact of climate change on water resources. As a result of high temperatures and droughts over the past 50 years, the volume of the lake has decreased significantly. This indicates that the resource that meets the primary water needs of the population living in that area has reached a dangerous state. As a result, this factor has become one of the main factors causing population migration.

If we look at this issue more broadly on a global scale, the location of landlocked countries in arid areas seriously harms agriculture. Agriculture plays an important role as the main source of income for the welfare of life and the workforce in these countries. As the agricultural sector, which is one of the main targets of climate change, seriously declines, the population is forced to migrate. In particular, the population living in rural areas is moving to cities. This leads to an increase in the population density in cities and significantly reduces the welfare of life in villages. In the next 10 years, the population density in cities is expected to account for 60% in total. This, in turn, will create the basis for the emergence of many additional problems. Thus, "the disease, which becomes more severe with climate change, may bring the population to a point where they do not have the human resources to grow the food they need to survive. Since most people in developing countries still use manual food production methods, any change in health that will occur as a result of climate change is likely to affect future food security" (Hanna, 2011). In other words, the modern world's food market is usually supplied by economically backward traditional agricultural countries. In such countries, poverty and its logical continuation, the problem of hunger reaching its peak, are capable of breaking the world food chain.

Philosophical approach to the problem.

If we analyze the above in the context of sustainable development, we observe the close connection between the fight against climate change and other sustainable development goals. Whether it is building and strengthening partnerships, ensuring peace and justice, ending hunger, eradicating poverty, developing infrastructure, building

sustainable cities and villages, developing education and technology, gender equality, transitioning to alternative energy, providing water and sanitation, ensuring the health and social well-being of the population, issues that solve both the issue of food security and help reduce the negative impact of the social consequences of climate change. It is when we consider the issue with a complex interdisciplinary approach that we see that the solution to the problem of climate change is possible.

In international practice, today, Egypt's Toshka project will prevent both the country's future food problem and the possible water war with neighboring countries. With the Toshka project, a country with arid areas like Egypt will contribute to the comprehensive strengthening of its economy and agriculture (Earth Resources Observation, 2025). Once again, we observe in the world practice that a comprehensive approach to the social consequences of climate change and a view in the context of sustainable development are necessary.

If we want to combat climate change, protect the ecosystem, and improve the socio-cultural well-being of the population, it is important to mobilize our capabilities to ensure the sustainable development of the country through a comprehensive and interdisciplinary approach.

Ecological migration impact of food security.

As we mentioned above, one of the consequences of climate change is migration and ecological migration. Ecological migrations, in turn, trigger the problem of food security. As can be seen from this, food security and eco-migration are directly related to each other. Although the Toshka project in Egypt mentioned above is aimed at solving the problem of food security, on the other hand, it will serve to prevent the flow of the Egyptian population to neighboring countries. The Toshka project that Egypt is trying to implement is a clear example of this. The Toshka project, which is being implemented in terms of ensuring actualized food security, expanding water basins and increasing water sources, is a successful solution to prevent future ecological crises that may arise as a result of climate change and ecological migration. Surrounded by deserts and providing water resources mainly through the Nile River, Egypt's Toshka project will both strengthen irrigation systems by eliminating future water problems and reducing Egypt's grain imports (The Arab Republic of Egypt. Presidency, 2021). In the fight against climate change, we once again see that the role of technological development in restoring the ecosystem is indispensable. This can happen as a result of direct human intervention. The processes that humans have accelerated through their interference with nature can only be solved by humans themselves, and this can only happen when they take care of the environment within the framework of morality and conscience towards nature by increasing their eco-thinking. The effects of climate change on people's health are among the factors that lead to poverty. This in itself is a factor that leads to regression rather than development in society as a social outcome.

Rapidly changing environmental conditions affect other dimensions of food production beyond agriculture. Fishermen have been already exploiting roughly 90 per cent of global fisheries at, or well beyond, maximum sustainable limits, and the global fish harvest have been steadily declining as a result since 1996 (Myers, 2019). It seems that ocean warming is likely to worsen these trends by reducing the size and number of fish while driving fisheries away from tropics and towards poles. From a human nutritional standpoint, these trends are concerning. Still in the jungles, forests of South American countries or in the islands of Asian countries are in high risk level of undernourishment due to lack of food accessibility due to climate change impacts. Protecting our planet is no longer only an environmental priority but also has become central to securing a livable future for humanity.

After fuel, food is the next frontier for solution to the climate crisis. Going one step better carbon neutrality, agricultural landscapes and food supply systems have the capacity to flip from carbon sources to carbon sinks. For millennia the landscapes from which we harvest food and on which we raise livestock have been net carbon sinks. Over millions of years, living creatures have been the route by which carbon flows from the atmosphere into the ground – into soils, oil and coal. Scientists are in strong consensus on how we could achieve the flip from source to sink for our food systems. The fundamental finding is that to cross the line we need action on all three of the following: diet, food waste, and agriculture. Empirical studies show that the environmental footprint of the same food product can differ fiftyfold or more, depending on agricultural production.

Practical activities in charge of implementation on the problem.

The current discussions on climate change show that 4 different methods can be used to take mass-based measures between the North and South hemispheres:

1. Commitments from the Global South: Mitigation targets for developing countries (particularly China and India) are a contentious issue, as it calls on the United States to comply with the Kyoto Protocol while ensuring that rapidly increasing emissions are kept under control. However, the strategies pursued by countries for development and economic growth remain unclear.

2. Expanded Clean Development Mechanism (CDM) project: The second option is to expand the CDM portfolio, which would lead to a significant change in the emissions trajectory of developing countries. However, there is no clear link between this idea and the needs needed to sustain current development.

3. The third way is to build a global trading regime for carbon emissions based on a certain emission formula. Decarbonizing the Southern Hemisphere: The idea of creating a global investment fund to decarbonize the Southern Hemisphere has been put forward by a number of scholars (Baumert et al., 2002).

Crucially, this crisis is being driven almost entirely by rich countries of the Global North-and are primarily by wealthier classes and corporations within those countries. This is clear when it comes to climate crisis the global North is responsible for 90 per cent of all emissions in excess of the planetary boundary. Meanwhile, most of the countries in the Global South and are still well within the fair share of the boundary and have therefore not contributed to the crisis at all.

Thinking ecologically, the biggest bang for carbon in food systems is conserving as many of our biodiverse carbon-rich ecosystems - forests, mangroves, and other wetlands as possible, as well as restoring those we have damaged. Agriculture remains the greatest driver of these ecosystems' destruction. Thus, the single most important change needed in agriculture is to reverse or reduce the pressure for greater expansion. This means that we must shrink our demand for agricultural products and make smarter use of the land which we do have. Many of these practices support adaptation and mitigation policies to climate change. Finally, we need to connect three fields like healthy diet, food sustainability and agriculture in order to prevent the negative impacts of climate change.

Conclusions.

Similarly, the world needs a structural adjustment program to regulate its economic behavior in order to achieve the required balance with the global climate system. Thus, in this program, the human factor must play a key role and must support development while protecting the rights of the poor. The measures taken in this direction on the issue of climate change have been delayed. As a result of this delay, the consequences and costs in the ecological environment and people's incomes have increased. Another missing nuance in climate discussions is the failure to see climate as a separate development problem. This is also evident in cost-benefit calculations. Similarly, the costs of mitigation measures depend on static technology tools. This approach is used in project selection in developing countries but is not directly related to macroeconomic costs (economic growth, unemployment, balance of payments, and

inflation). The integration of climate and development goals has a certain scale and scope. At one level, it requires a different way of thinking about the relationship between the goals, and at another level, it refers to the relationship between the North and the South. Finally, there is a need for an optimal range of strategic tools.

As climate change is qualitatively different from the other environmental challenges, because nearly all aspects of modern life result in greenhouse gas emissions yet none outright dominates emissions, which means that addressing climate change requires a wholesale societal reorganization.

The other important point is the development and provision of agriculture in a way that responds to the latest technological innovations in the context of climate change. Because one of the first social consequences of climate change is the issue of people's food. Food sustainability and resilience to climate change are among the most important issues and should be among the development priorities of states. Currently the most appropriate option seems to modify our diets and choose the healthiest nutritious food for protecting our health. We again observe interdisciplinary approach towards climate change since all the fields are related to each other in combating with climate change impacts.

The gathering of individual eco-thinking into a common, collective mindset has become an integral part of the life of civilized people. One of the most important points is to form a society with eco-thinking, eco-consciousness, "green thinking", "green consciousness" in general, and to unanimously minimize the negative effects of climate change. For this, educational work should be expanded, special educational programs should be developed in schools and universities, research institutes and the number of educational works aimed at the development of an eco-conscious society should be increased in research. Public awareness on climate crisis impact on our future should be increased and expanded starting from educational institutions and implemented in all fields of our lifestyle to make our future sustainable.

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