Coexistence and Time of Change

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AUTHOR'S PREFACE

At the core of coexistence is the recognition that the environment and humanity differ in many ways, including conditions, factors and views on the equilibrium of coexistence. These group dimensions may cause differences, contribute to the emergence of contradictions, or may intensify as contradictions develop and expand, contributing to the emergence of obstacles. However, the equilibrium of coexistence should reduce the likelihood that differences between groups of parameters will not develop into destructive or insoluble conflict over time.

The coming of such a time means that a person, a community or even humanity as a whole can and should change their views, situation, position or status in life. When it's time for change, I guess it's time to change something.

The environment and our world are constantly changing and/or developing because that is their nature. When we recognize and accept such changes, we begin to understand that our situation in the world around us cannot last forever, and we must move towards something bigger and better. If we reject change, most likely we will not be able to fully understand the essence of change that underlies the coexistence of the environment and humanity. We will not be able to prepare for such changes in time to protect humanity and preserve the environment.

People have hope that change will ensure that bad situations in our lives will end. It is changes that open up opportunities for the natural course of things in the world around us, therefore, looking back at the past, we may miss the opportunities of the present and future.

We cannot change what has already been done or not done in the past. The only option we have now is the choice to live and coexist with the environment in the present and future life.

PART ONE:

TIME OF CHANGES AND ENVIRONMENT

Changes in the environment that are noted with changes in time and the state of space are represented as changes or disturbances in the equilibrium of the environment, most often caused by manifestations of the effects of both natural processes and human activity. Environmental changes include various manifestations such as natural disasters, climate change, etc., human intervention or other interactions at various levels of manifestation of processes in the natural and spatial environment. Since the environment plays an important role in the lives of people and the existence of life itself on planet the Earth, not only a close dependence is revealed, but also a mutual combination of the environment in the life of mankind, which

essentially determines the coexistence of the environment and humanity.

Humanity, while calculating changes in the environment, sometimes forgets that all these changes are possible manifestations of the evolution of environmental development. Changes can be the result of a range of changes in different areas, but they mainly occur due to changes in the external environment. Therefore, it is necessary to distinguish between changes and evolutionary changes in the environment. Unfortunately, without sufficient knowledge of the mechanism of environmental evolution, we cannot always correctly qualify changes, often defining them as negative, and, in fact, as ones that we have not encountered before. The evolution of the environment is not just change, but development accompanied by change.

It is worth noting that the definitions of the environment used, in my opinion, do not accurately reflect this relationship between humanity and the environment. Their main drawback is that they do not take into account the most important element of the current environment, which is man or humanity as a whole. The environmental definitions used include lithosphere, hydrosphere, atmosphere and biosphere, corresponding to rocks, water, air and biological ecosystems. The long-term formation and evolution of biological organisms causes qualitative transformations of the earth's biosphere, leading to the noosphere [53, 1938], which should be understood as the sphere of contact between society and the natural environment, in which intelligent human activity becomes one of the main factors. The biosphere, as an organized shell, is the human habitat. Therefore, stage-by-stage changes in the biosphere, due to the scientific and evolutionary development of man, seem to be a non-random, well-founded process of the biosphere growing into the noosphere. There are a considerable number of examples and explanations of environmental change. Collectively, they add up to problems and

themselves give rise to new problems, the source of which begins with environmental changes. New problems require new solutions. Therefore, despite the attractiveness of some already established approaches to the possibility of proposing solutions, other solutions are based on the presence of existing problems of a systemic nature, which are characterized by the equilibrium of the conditions of the state of the system, solutions and approaches to their analysis and assessment.

Examples of environmental changes, primarily at the global level, are climate change, loss of biodiversity (with consequent changes in the functioning of ecosystems) and so on and so forth. The consequences of global environmental changes for humanity are literally reflected in the state of existence of people, as well as their current living conditions. It must be said that the consequences of such changes at the regional and local levels are accompanied by an increase in the intensity of such changes, which may be accompanied by increasing differences in the economic conditions of countries and regions, as well as increasing dependence on the environment [11,2005, 29, 2006].

Humanity depends on the natural environment, regardless of industrial power. Humanity is forced to both revive and protect the environment. Humanity must apply knowledge about natural laws in its own interests without disturbing the equilibrium development of the environment.

The environment is generally defined as the surroundings or conditions in which a person, animal or plant survives or operates. This has led to the idea that it is relatively easy to understand its importance in the famous cycle of life. However, our environment is constantly changing, and as it changes, so does the need to become more aware of the environmental issues that these changes cause. With the massive increase in natural disasters, warm and cold periods

and different types of production and land use, people need to be much more careful in how they live their lives in relation to the types of environmental issues our planet faces.

CHAPTER 1

CHANGES AS A FORM OF DEVELOPMENT

Environmental development is characterized by alterations that manifest themselves in various changes over time. This means something must change and/or change should be expected. These concepts are largely the same, but there is a certain difference between them. A time of change can mean one change or many changes.

The peculiarity and importance of environmental changes lies in the fact that such changes can contribute to its development or, the development of the environment involves certain changes. Developmental change is the process of changes in environmental factors that occur throughout development. Environmental factors involve many cross-level interactions and are characterized by dynamic developmental changes over time. In this case, development as a process of change involves a series of actions and events that unfold over time and lead to growth, transformation and convert that manifest themselves through the continuous evolution of the environment.

Changes and Development

Changes is known to characterize many aspects of the environment and human life. However, shortcomings in the recognition of such changes make their explanations and definitions difficultто Changes can affect both the external forms and the internal content of the environment. Manifestations of changes that have occurred or are occurring in the environment make it possible to ascertain such

changes, although such an assessment of changes may be somewhat belated. Apparently, it is necessary to develop certain mechanisms that can be built on various processes, such as correlation, balance, etc., which will allow indexing such changes.

Thus, discussions of changes in the environment gave rise to many concepts of change, the consequences of which were of great importance not only for the development of science, the preparation of technological solutions, but also for the development of various indicators of changes in various environmental environments.

It is well known that environmental change occurs as a result of both natural and human processes. Ecological systems and human activities contribute to environmental change by transforming and transporting large amounts of energy and materials. For example, burning fossil fuels, deforestation, and livestock farming are increasingly affecting the Earth's climate and temperature. This adds huge amounts of greenhouse gases to those naturally present in the atmosphere, increasing the greenhouse effect and global warming. Thus, a change or disturbance of the environment, most often caused by human influence and natural ecological processes, is called environment or environmental change. These changes include various factors such as natural disasters, human intervention or animal interactions, etc.

Forms of Changes

Changes in the environment can be of two types: physical and chemical changes. A physical change is a change that involves only a change in the physical state of matter. Its chemical properties remain unchanged. Typically, increasing the temperature or applying pressure, or both, produces physical changes.

In addition to the above, one should distinguish between the main types of environmental changes [51,2023]: ongoing, reactive, expected and gradual changes. The changes that occur are unpredictable and usually occur due to the influence of external factors. Changes of this kind are profound and far-reaching because their consequences are unknown and often unpredictable.

Reactive changes occur in response to an event or a chain of various events, which can be called reactive changes. Changes of this kind usually occur when there is an increase or decrease in external pressure on the environment. It can also be a response to a problematic situation or crisis that may occur within an ecosystem or in the environment as a whole. If observed changes are implemented with a preliminary expectation of the occurrence of an event or chain of events, it is called anticipatory or expected change. Expected change essentially involves changing elements or the entire environment from an existing state to an expected state as a preliminary stage of development, and then transforming the entire process of transition to another state.

As a result of large-scale processes, for example, earthquakes, the awakening and active manifestation of volcanic activity, and the like, transformational changes in the environment can be considered, meaning a complete restructuring and the formation of something completely new. This is a radical process that can change the state, structure and form of ecological systems.

Environmental change includes both systemic changes that operate globally through the major geosphere-biosphere systems, and through the consequences of such changes, which represent the global accumulation of localized changes. Since the environment is represented as a system, its changes can be expressed in the form of manifestations of variable global processes. These rightfully include:

global climate change, air, land, water pollution, afforestation and loss of biodiversity, etc.

Perception of Change

Along with the change or changes in the relationship between the environment and humanity, there are changes in how we perceive such changes. In this regard, it is important to note what happened in the beginning: time changed, which changed our ideas about the change that had occurred, or our ideas changed and then we discovered the changes. I guess that in one case or another the important thing is what decision we make. The decisions we make may be different because changes generate other changes or consequences that require different decisions. Ultimately, our perception of change, expressed in decisions, should be aimed at optimizing the relationship between the environment and society, i.e. should lead to an equilibrium between society and the environment, even through changes. Such a result of understanding and proposing appropriate solutions can and should be based on equilibrium in the development of both the environment and human society as a whole.

Understanding changes in the humanity variable as part of the environment-humanity system requires attention to both components of the system through studies that integrate findings across spatial scales from the global to the local. A regional or mesoscale focus represents a particularly promising direction of approach. Researchers may make decisions in different ways when studying and assessing environmental changes. In one case, such actions of researchers can be based on their own experience and intuition, in another case, they will need more time, knowledge and resources for any action [19, 2011]. So, in other words, people can somehow adjust their ideas about environmental change. At the same time, the environment, unlike people, and which represents one of the most important elements of the system, always develops, changes, and

evolves according to “its own laws”. The mission of researchers is to study the features of the manifestations of such changes in the environment, presenting them in the form of a pattern and then formulate certain conclusions on the change that has occurred and propose appropriate solutions and definitions.

Currently, humanity is experiencing a critical period in its development path, as evidenced by the intensification of conflicts both within countries, regions, and on a global scale. The prevailing situation of anxiety and fear can either affect us negatively, or we can become agents of change. Every choice that humanity makes leads to a result that changes the world for the better or for the worse, from the point of view of assessing the events taking place. At the same time, the state of the environment is not defined as worse or better; it may or may not correspond to our ideas for the period of change, since it can itself “balance” the situation in the “environment-humanity” system. However, the new state of the “environment and humanity” system may not always meet people’s expectations. In this case, humanity should adapt to the current situation in the conditions of a new stage of development. The process of restoring harmony and balance between society and the environment is proposed to be called equilibrium development. Such a development represents the achievement of a state of equilibrium between opposing forces or actions, which is either static (in the case of the relief of the earth’s surface, which is acted upon by forces whose resultant is zero) or dynamic (as in a reversible chemical reaction, when the reaction rates in both directions are equal). This phenomenon is called dynamic equilibrium, when the body is in equilibrium but continues to move at an unknown speed. A distinction is made between stable equilibrium if small processes caused by external displacements from this state create forces that tend to counteract the displacement and return the particle of matter

or energy to a state of equilibrium. In addition to the above, a distinction is also made between unstable and neutral equilibrium.

The concept of equilibrium plays a pivotal role in the neoclassical maximization theory. Equilibrium, or balance of forces, is an ethically neutral term, while optimum is a position considered by the decision-maker as the most desirable, according to some predetermined criteria of optimality. However, along with the state of equilibrium, there is also a state of disequilibrium. In sociology, disequilibrium refers to a state of imbalance or instability in a social system. It occurs when there is a disruption or lack of harmony in the various components of society, leading to tension, conflict, and the need for change. Disequilibrium is also defined as a discrepancy between the actual and desired outcome. In this context, the optimal situation is achieved when the ideal and actual values of the most important variables measuring the outcome coincide. This concept is important for understanding social dynamics and the processes of social change as one of the most important components in the "environment and man" system.

CHAPTER 2

CHANGES AND DEVELOPMENT

One of the features of the evolution of the environment is its constant change. The question is what needs to change and what should be the basis for our understanding of change. Typically, people imagine their life experiences on a mental scale of past, present and future. But this graph is not as simple as we think. The nature of events can influence how close or far in the past or future it happened or will happen. Catastrophic events in the past environment may seem closer in time or more present than neutral events. This appears to be why people appear to take the threat of negative events that they anticipate in the distant future less seriously and perceive them as less risky compared to events closer to the present. This does not mean that people will not take action unless their homes are destroyed by extreme natural disasters. But communication strategies that are focused on today and have a high level of territorial attachment can motivate more people to take action [14, 1995]. To stimulate people's actions, it is necessary to transform our ideas about ongoing events and the forms of their presentation. For example, it is very important to show how climate change can affect people, for example, in their city and how this is happening right now. However, instead, researchers, and increasingly policymakers, are turning their attention and the public's attention to the connection between people's perceptions of time and the actions they take regarding climate change. Research shows that our perception of time is subjective, just like our mental time scale. Our sense of time changes as we age and leads to the feeling that time passes faster as we get older. Our thoughts, feelings and actions also affect our perception

of time. This means we may be more receptive to messages about changes in the environment depending on our mood and what's going on in our lives.

It should be noted that an important feature of our coexistence with the environment is the fact that there is almost always a lack of time to make any decisions. Digital technology is accelerating the pace of life for many people, and a "hustle culture" means some groups view being busy as a marker of success [39, 2023]. Social changes can be a solution to emerging problems under time pressure. This may mean moving away from productivity-oriented time models, in which "time is money" and free time is rare, to a gentler relationship with time to make room for our perceptions of needs and desires. Shifting to a slower pace of life can also provide time to reconnect with nature and discover manifestations of a sense of equilibrium between our existence and the environment.

One of the areas of research conjugate by problems with the proposed discussion is how people interpret the vast time scales required to understand environmental change. For example, the scale of planetary change caused by human activity also seems evident in the changing physical landscape.

The 2023 Forest Declaration estimates that the world lost more than 16 million acres of forest in 2022 [15, 2023]. In addition, land degradation has increased to such an extent that its biotic functions are disrupted. Soil degradation is spreading at an alarming rate, threatening the fertility and productivity of land. Land degradation occurs naturally but is aggravated by human activities. Deforestation, industrial agriculture, overgrazing and urbanization have significantly accelerated degradation, especially in recent decades.

Fig.1-2. Degradation of terrestrial vegetation.

What Does Environmental Change Mean?

When it comes to environmental change, a commonly used definition is the following. Change or disturbance to the environment caused by natural or human activities is known as environmental alteration. Strangely, in this definition, change seems identical to a disturbance in the environment. Then the question arises, what does a violation of the environment mean: a violation of the stability or internal equilibrium of the environment. The environment as a system in the ecological sense is usually understood as a set of interactions between elements of the biosphere, including the atmosphere, hydrosphere, lithosphere and ecosphere. If the environment is viewed as a system, then changes in it should be considered as an imbalance or disruption of the interactions between the main elements of this system.

Changes in the environment may be caused by various reasons. To understand the causes and trends of ongoing changes in the

environment, it is necessary to understand the extent to which such changes contributed to the depth and scale of change.

As noted above, the development of the environment is characterized by changes, which is the natural evolutionary path of its development. However, when people begin to evaluate such changes, they make a certain classification of such changes, from the point of view of their positive or negative effect on the life of society.

The proposed assessment of environmental changes can be, to a certain extent, considered subjective, since it characterizes the consequences of such changes on people's lives and the development of society. People often frame the results of their own perceptions of environmental changes in the form of violations of environmental safety. However, environmental security can have many different meanings and is usually discussed within the framework of politics, but mainly it is about changing the established life patterns of people, communities or society as a whole.

It is known that the simplest and most basic approach to understanding change as a process is to break change down into separate, understandable elements, which makes it possible to analyze environmental change as systemic change. Three states of change provide a powerful framework: the current state, the transition state, and the future state. In general, several changes can occur in the environment as a result of the manifestation of certain processes. These processes are associated with changes in the state of substances within the main areas of the environment. For example, in the hydrosphere these are the processes of melting, freezing, evaporation, condensation and sublimation of water. If we move to the area of the lithosphere, then the processes occurring on the surface of the land as a whole are united by the concept of weathering, which includes processes of denudation or destruction, processes of deposition or sedimentation. Destructive processes on

the surface include gravitational processes such as landslides, avalanches, the formation of ravines, etc. The biosphere and the atmosphere are in constant interaction with each other since the life of all living beings depends on the gases in the atmosphere. When living organisms absorb oxygen gas from the atmosphere, they subsequently release carbon dioxide back into the atmosphere.

Ultimately, the above-mentioned changes in the state of matter are necessary for many natural processes occurring in the environment, contributing to changes in the environment itself. Such changes can be summarized in the form of deforestation, rising sea levels, desertification and drought, land degradation and, finally, changes in the state of water and air as a result of geophysical pollution processes.

It should be noted that any change in the normal state of an ecosystem is considered an environmental change. An environmental change can be the result of natural causes, such as lightning causing a forest fire. It can also be the result of human causes, such as clearing a rainforest to create farmland. Environmental changes also include various factors such as natural disasters, human intervention, or animal interactions. Environmental changes include not only physical changes but also factors such as invasive species.

Time in Environmental Change

While the effects of environmental change are already occurring, the most significant and far-reaching consequences of such change are likely to lie in the future. There is a distance between our lives now and the future consequences of environmental change. Changing environmental conditions can affect which organisms survive and reproduce and which become extinct, which in turn can lead to evolutionary changes in animal and plant populations. An example of large-scale changes in the environment is the following. Scientists

reported that the Earth began spinning faster in 2020, after consistently spinning slower than 86,400 seconds per day in previous decades. On June 29, 2022, the Earth's rotation was completed in 1.59 milliseconds in less than 24 hours, setting a new record. Since the 1970s, about 27 extra seconds have been added to the world clock to correct this, and timekeepers plan to subtract a second for the first time as early as 2026 [41, 2024).

Thus, time in environmental change is a climatic regime of temporality or the logic of human perception and understanding of the time of environmental change and its elements in relation to the environment. Since the Industrial Revolution, human activity, coupled with natural processes such as solar energy changes, volcanic eruptions, etc., have resulted in the release of large amounts of carbon dioxide and other greenhouse gases into the atmosphere, changing the Earth's climate. Climate change is defined as a gradual change in all the interrelated weather elements on our planet over a sufficiently long period of time. At the same time, such change is characterized by a certain cyclicity. Climate change data from recent decades shows that the Earth is gradually warming up, which requires changes in the "life activity" of our planet.

Can time be considered a physical obstacle to ecological changes in the environment? If so, when compared with other obstacles such as location, space or climate, it may prove to be a serious obstacle to the process of effective coexistence between humanity and the environment. Can time be considered a physical obstacle to ecological changes in the environment? If so, when compared with other obstacles such as location, space or climate, it may prove to be a serious obstacle to the process of effective coexistence between humanity and the environment.

CHAPTER 3

CONSEQUENCES OF ENVIRONMENTAL CHANGES

The consequences of environmental change include loss of habitat, changes in climatic conditions, etc., which exceed migration capabilities; changing the equilibrium of the basic elements of the environment as a system. Among the many reasons for changes in the state of the environment, climate change is rightfully one of the most important and great causes facing humanity, including. The effects of climate change can increase air pollution, stimulate extreme weather events, contribute to the spread of disease and population migration.

As air temperatures rise, as a result of warming ocean surfaces and other natural processes, as well as rising concentrations of greenhouse gases, widespread environmental changes are being observed. This is apparently due to a disruption of the general cycle in nature and, as a result, a change in the equilibrium in the environment. The ocean surface absorbs much of the heat from global warming, causing average sea surface temperatures to rise, ice sheets to melt and sea levels to rise. Since the ocean also absorbs carbon dioxide, keeping it from the atmosphere, this leads to an increase in the absorption of large amounts of carbon dioxide, acidifying ocean water and threatening marine ecosystems, including coral reefs.

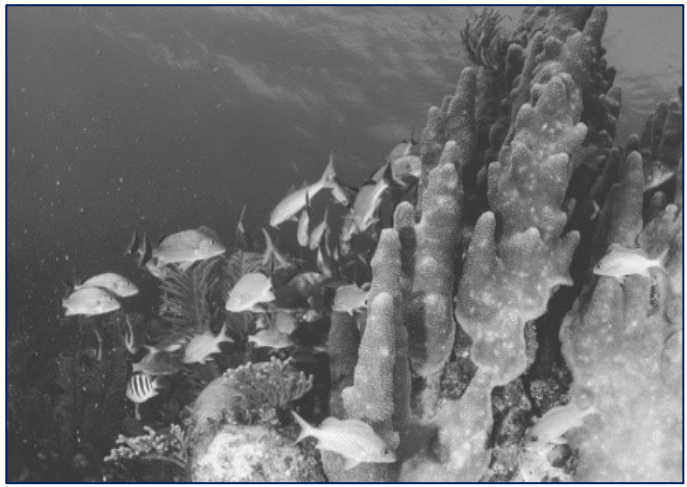

Fig.2-3. Degradation of coral reefs.

According to UN reports, 70% of all coral reefs on Earth are under threat: 20% have already been completely destroyed with no hope of recovery, 24% are in imminent danger of collapse and another 26% are at risk of extinction due to long-term threats [59, 2016]. Another source of incredible amounts of carbon dioxide (2.3 trillion) [54, 2024] is soil containing organic carbon. There are also huge reserves of inorganic carbon concentrated in mineral resources. Unfortunately, in addition to stating with such a volume of carbon dioxide in nature, science has not yet offered any explanations regarding the dynamics and nature of the release, as well as the possible impact of such amounts of carbon dioxide on the environment. One thing is clear that such a process of carbon dioxide release cannot occur immediately and not in full.

Environmental changes may lead, against the backdrop of global climate change, to an overall decline in biodiversity. Since the scale of the effect of climate change will depend on the speed of such changes, this may complicate the adaptation of species, both plants

and animals of our planet, as well as human communities. Such environmental changes may be accompanied by habitat destruction and contribute to species extinction, as well as increased soil erosion and water pollution. Therefore, measures to protect or even slightly reduce the rate of environmental change include the implementation of policies for adaptation of ecological systems and various species of plants and organisms within such systems.

Reduced water availability in ecosystems due to climate change may affect the ability of aquatic ecosystems to maintain an equilibrium state. It is known that even low water flow can lead to an increase in pollution of water surfaces, but at the same time the concentration of nutrients in the water. Ultimately, such change processes can contribute to drinking water shortages and generally lead to changes in the landscape structure of the habitat of many species of vegetation and fauna within ecological systems.

The inevitable impacts of climate change on most ecosystems are exacerbated by anthropogenic factors such as land use change and surface pollution. Some ecosystems may be resilient to some impacts of climate change, but evidence suggests that most need to be supported through planned adaptation measures if we are to prevent irreversible changes to ecosystems. Therefore, a critical goal of modern environmental science is to document and understand how human impacts on the environmental system interact with other processes of global change. This understanding is an important prerequisite for determining the consequences of further population growth and increased economic activity, with all the attendant consequences in terms of higher demand for energy, water and a wide range of resources, both renewable and non-renewable. It should be noted that many of these issues described above are not unique to biodiversity and ecosystem services. Those that are particularly interdependent with other sectors include floods and coastal erosion,

water quality and availability, land use change, pollution and the development of invasive species.

Against the background of the noted possible changes in the environment, special attention should also be paid to the well-being of people, whose life and activities are inextricably linked with the environment, often in complex ways. Most of the risks of such human interdependence from environmental change are associated with the consequences of natural disasters, changes in the supply of clean water, or disruptions in the connectivity of major economic sectors of the country, region, and even at the global level. Among the indirect consequences of environmental change and, above all, climate change are changes in the size and distribution of the population and the associated increase in the population's need for housing and education. This is thought to influence all biodiversity risks such as soil changes, species behavior, water quality and in particular increased risk from pests and diseases.

In the current situation, decision-making by local and national authorities can have an impact on biodiversity risks, but in particular on the formation of measures to mitigate the effects of climate change and the environment in general, such as the development of an energy strategy and the use of renewable energy sources, the creation and dissemination of green technologies, etc.

Thus, the consequences of environmental change are related to the impact on the environment of various types of emissions of products, as a result of significant and sometimes difficult to regulate consumption. Therefore, such decisions by definition must be intended, first of all, to solve environmental problems. and in general, to protect the environment. One way to protect the environment is by recycling – a way to reduce the carbon footprint and conserve natural resources. It also decreases the amount of waste that goes into landfills, which causes less pollution to water bodies.

Since global climate change is considered the most pressing issue affecting all humanity, combating climate change is a real opportunity to transition to a low-carbon society, creating jobs, innovation and social justice at the local and international levels. As a result of global climate change (warming), the main consequences of environmental change include rising temperatures and climate shocks that disrupt the existence of ecosystems. The disappearance of many species, both plants and animals, including endemic species, and, conversely, the emergence and invasion of invasive species into the natural environment have already been noted.

Climate change and social impacts

Climate change impacts our societies by disrupting the natural, economic and social systems on which we depend. This disruption impacts food supplies, industrial supply chains and financial markets, damages infrastructure and cities, and harms public health and global development. This is already causing heat waves, increased UV exposure, extreme and harmful weather events, prolonged and intense flowering seasons, the spread of infectious diseases and wildfires. Vulnerable groups such as the elderly, children and people with low incomes or poor health are hit hardest. The effects of climate change on Earth, caused by increased emissions of heat-trapping greenhouse gases from human activities, are already having widespread environmental impacts: glaciers and ice sheets are shrinking, river and lake ice is breaking up earlier, and plant and animal habitats are shifting to other habitats.

Social change can arise from a variety of sources, including contact with other societies (diffusion), changes in the ecosystem (which may lead to the loss of natural resources or the widespread spread of diseases), and technological change (epitomized by the Industrial Revolution, which created a new social group, the urban population). The health of a population is highly dependent on the environment:

a significant proportion of human mortality worldwide is due to environmental factors, including excessive heat, poor air and water quality, the spread of disease, and food shortages.

Many of the environmental problems the world faces today, such as climate change, water and air pollution, and species extinction, are consequences of productive economies, agriculture, land development, and industrial production. People are not spared these shocks. Climate change is affecting the global economy. Lack of resources, such as food and energy, is creating new conflicts. Rising sea levels and floods are displacing populations. Small island states are particularly at risk.

In terms of the social impact of environmental change, we should expect closer cooperation and teamwork among international and national organizations and institutions, as well as the adoption of beneficial behaviors and beliefs. On the other hand, failure to manage and adapt to the effects of environmental change may lead to the spread of harmful or dangerous behaviors and the suppression of individuality and critical thinking.

Against the background of these changes, climate change, a global phenomenon, affects every aspect of our lives, including cultural heritage in both its forms - tangible and intangible. Extreme weather conditions expose these important elements of our cultural identity to serious threats.