Forest, Water and Peace – Worldview Imperative of the New Era

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For many years UN states that climate changes are primarily reflected by rising global average temperatures (due to greenhouse gas emissions), water crisis and chemical pollution of the planet. In a new report dated 09.04.2025, *Interconnected Disaster Risks 2025*, released from UNU-EHS (United Nations University. Institute for Environment and Human Security), presenting a bold approach for change in the global climate agenda.

Unlike previous reports focused on the most dangerous threats to humanity, this time UNU-EHS experts are focused on attempts to formulate systemic solutions. The authors of the report put forward the slogan *«Turning Over a New Leaf»,* claiming that superficial measures such as waste recycling, switching to electric vehicles, technical innovations, etc. are also important, but do not eliminate the main causes of the global environmental crisis, while a profound restructuring of social attitudes and economic guidelines as well as the rejection of humans' thoughtless, destructive attitude towards nature are necessary.

«Society is at a crossroads», says Prof. Shen Xiaomeng, Director of UNU-EHS. *«For years, scientists have warned us about the damage we're doing to our planet, and how to stop it. But we aren't taking meaningful actions. We know climate change is worsening, yet fossil fuel consumption keeps hitting record highs. We already have a waste crisis, yet household waste is projected to double by 2050. Time and again, we see the danger ahead, yet we keep moving towards it. In many cases, we see the abyss, we know how to turn around, and yet we confidently keep walking towards it. Why?»*

Let us try to address this problem from a scientific point of view, based on a standpoint of the fundamental Theory of biotic regulation of the environment and climate, formulated by the outstanding Russian eminent scientist Viktor Georgievich Gorshkov (1995, https://bioticregulation.ru/ab.php?id=vg95&lang=ru), taking into account five key directions of action outlined in this report:

- Rethink waste: From trash — to treasure
- Realign with nature: From separation — to harmony
- Reconsider responsibility: From me — to we
- Reimagine the future: From seconds — to centuries
- Redefine value: From economic wealth — to planetary health,

without which, according to the report, "it is impossible to build a sustainable future." As we can see, there is a call for systemic changes - not only in politics, economics and ecology, but also in the thinking of every human being of the Earth. Essentially, a change in the development paradigm (system of views on the structure of the new world order) is suggested.

The main issue in these key directions is *reconsideration of values:* From economic wealth — to planetary health. The point is to assess environmental and human well-being: from calculating and comparing GDP to assessing ecological and human potential. This means that the future desired by the majority should be measured not by economic growth, but by the state of dynamic stability of natural ecosystems on Earth and the quality of people's life.

An instructive example of value reconsideration in respect to the natural environment is our attitude to natural ecosystems (primeval, intact or slightly distorted forests, swamps, meadows) proved to contain the necessary genetic information about the optimal characteristics of the environment, most suitable for the diversity of life on Earth, including humans. Such ecosystems have a unique natural ability to regulate the environment, climate and freshwater cycle on land. They can exist in a dynamically stable state and are virtually immortal. This was the case for millions of years of evolution, until humans began to destroy wild nature, creating comfortable living conditions for themselves.

For example, in the current flawed paradigm of civilization development natural forest ecosystems are assessed only from an economic point of view as a set of a certain type of trees, as raw wood for economic needs. Everywhere on the planet where such forests exist, both clear-cut industrial and illegal logging are carried out. Destructive forest fires occur in the places of logging, with **9 out of 10 fires** caused by human fault. Logging and fires in intact forests increase the surface temperature of the entire forest area, which leads to growing risk of repeated fires, regardless of the nature of the ignition source, as well as to vulnerability of the remaining trees, particularly towards insect pests.

It should be particularly noted that intact natural forests are not just an arbitrary set of trees, but an integrated and specifically selected system of interactions in a large community of living organisms (biota) formed and stabilized over millions of years of evolution. For complete understanding, they should be called natural intact forest ecosystems. They consist of strictly defined sets of species, including bacteria, fungi (mold), mosses, lichens, trees, shrubs, grasses, insects, soil invertebrates, protozoa, etc. Moreover, the overwhelming majority of this biota (99%) consists of bacteria and fungi.

Grasses and other non-woody plants are an important factor in the natural forest ecosystem. When a large tree in a forest dies and its trunk falls, a large space (called a gap) opens up in the forest canopy. Succession begins in this space, eventually resulting in the vacated space occupation by a new large tree after about one or two hundreds of years. Succession is the process of self-restoration of an ecosystem after some disturbance (e.g. fall of large trees or fire).

The state of biota is quantitatively characterized by the following figures. **1/3 cubic meter** of forest soil contains about **one trillion** different microorganisms, and 1 cubic cm of soil contains **up to 2 km** of fungal hyphae (thread-like formations of micron thickness), through which the fungi are supplied with water and microelements. Inside this biota diverse and highly specific biochemical reactions continuously proceed at the molecular level. Each of these types of biota consumes its strictly defined share of the ecosystem's products and performs its specific function. A natural ecosystem does not provide a maximum productivity, but features by stability and control over the environment and climate.

The power of a stabilizing effect provided by natural ecosystems is proportional to their area. If the threshold of natural ecosystems destruction is exceeded, the environment degrades to a state unsuitable for human life, regardless of the presence or absence of direct anthropogenic impacts such as carbon dioxide and methane emissions. It is the global destruction of natural ecosystems that primarily determines the observed destabilization of the regional and global climate and observed climatic cataclysms.

Planting trees (so-called reforestation) in places of forest fires is only an illusion of actions aimed at improving the environmental situation. The key point is who and from where will bring (along with the planted trees) hundreds of thousands of cubic meters of soil, each of which containing 3 trillion different bacteria, as well as myriads of fungi (mold), soil

invertebrates, protozoa, various insects, as well as mosses, lichens, etc., inherent in this ecosystem? None of these "restorers" of forests even think about it. For this reason, artificial recreation of natural forest ecosystems cannot support the ecosystem stability and biotically regulate the environment and climate. A technological analogue of biotic regulation is impossible! The only way available to humans is the preservation of the remaining natural intact ecosystems on Earth by all means and efforts.

It has been scientifically proven that natural forest ecosystems maintain the moisture content in the atmosphere at an optimal level and regulate precipitation, i.e. can cause rain at the right time, in the right place and in the required amount without any floods. This process is called biotic regulation of atmospheric moisture and cloud transport ("forest biotic pump"). The power of solar energy used by forests in this process exceeds the power of modern civilization based on fossil fuels by more than a hundred times. A short film about the "Forest Biotic Pump" (https://t.me/bioticregulation/781) was shown at UNESCO in Paris at the international conference "Nature=Future" (https://www.ut-inscription.com/en/program/water-and-forests-guardians-of-our-survival/). Due to this ability to biotically regulate atmospheric transport of moisture and cloudiness, natural forests must be considered as climate- and water-regulating forests and consequently as subject to protection and preservation.

It seems hard to believe that the price of one hectare of natural ecosystems (intact forest or swamp) is more than USD **1 billion**. However, this is true, as confirmed by the scientific experiment "Biosphere-2" (1986-1992, Arizona, USA). The value of natural ecosystems is infinitely great if the measure is the existence of life itself on the planet.

Today it is difficult to imagine that presently existing deserts and steppes thousands of years ago were covered with forests with stable sources of fresh water and were the most favorable habitats for ancient people. Particularly, in the time of the ancient Greek philosopher Plato (430 - 350 BC) it was possible to walk 1000 km along the coast of the Red Sea in the shade of trees, where presently is the Arabian Desert.

The Intergovernmental Panel on Biodiversity and Ecosystem Services (IPBES) notes that 75% of the planet's land has already degraded. More than 3 billion people worldwide suffer from the effects of desertification. According to the UN, 100 million hectares of agricultural land have been lost annually in recent years (https://tass.ru/infographics/9495), which is equivalent to the area of Egypt. Desertification caused by human economic activity spreads over the area of about 2,000 football fields per hour.

A global challenge of the 21st century is disruption of the balance between the technosphere and biosphere. The natural environment is rapidly losing its stability, which is manifested as a dramatic climate change. The habitable environment continues to degrade, causing a stress factor and leading to the deterioration in the people’s health and quality of life. The number of disasters such as droughts, floods, hurricanes, fires, outbreaks of insect pests is currently growing. Soils are degrading and becoming polluted, desertification areas are permanently increasing, the nutritional value of food products is decreasing. All these factors contribute to an extremely high material and moral damage.

Unfortunately, in response to this global challenge UN structures preach a simplified and scientifically incorrect mainstream approach to the climate and water problem. If the destruction of natural forests on the planet continues, then even the reduction in carbon dioxide and methane emissions into the atmosphere recommended by the Paris Agreement on Climate Change will not stop the impending global environmental and climate catastrophe. When the threshold of destruction of natural ecosystems is exceeded, the environment will degrade to a

state unsuitable for human life, regardless of such direct anthropogenic impacts as greenhouse gas emissions.

The way out of this deadlock is reconsideration of values and relying on the natural scientific foundations of sustainability of Life in the biosphere. In this regards, the following priority measures are proposed:

1. Introduce a moratorium on logging of intact (climate- and water-regulating) forest areas. First of all, this applies to the tropical forests of Amazonia, Congo, Indonesia, as well as the boreal forests of Russia and Canada.

2. Create buffer zones of the largest possible size around all intact areas, closed to logging and other anthropogenic influence, including the currently fashionable ecotourism.

3. Reduce wood consumption, and carry out industrial wood harvesting only on created (grown) plantations of target tree species.

4. Promote self-restoration of heavily distorted forest ecosystems to a climate-regulating state, although this is a very long process taking up to 100 years or more.

5. Establish international scientific cooperation in the field of fundamental research on the topic of "Physical and Biological Foundations of Life Sustainability in Natural Ecosystems".

6. Strictly reject false solutions such as climate geoengineering suggesting a pseudoscientific approach that is unreasonably welcomed as a solution to the problem of climate change, since such experiments can unexpectedly cause climatic cataclysms with unpredictable consequences for life around the world.

7. Promote joint political efforts of countries preserving large areas of intact forests (Russia, Amazon and Congo river Basin countries, Indonesia, Papua New Guinea) in the development of a common approach to protecting natural forests from anthropogenic pressure.

8. Implementation of forest and water diplomacy tools based on Russian scientifically substantiated theoretical background involving the concept of biotic regulation of the environment and climate at international negotiations on climate change and carbon markets.

Thus, civilization is facing the most dramatic period of its history, i.e. the era of *tectonic processes of global transformation* in the conditions of a distorted balance between the technosphere and biosphere. The industrial society of expanded reproduction of capital has reached the "limits of growth" (the conclusion of the Club of Rome). The way out of the environmental (including chemical, water and climate) deadlock is possible on the basis of close international cooperation and interdisciplinary scientific background, with a clear understanding of the cause-and-effect relationships of the ongoing global processes in the biosphere and society.

In this situation, there is an urgent need for a profound restructuring of social attitudes, economic guidelines, and creation of reliable barriers to thoughtless attitude to nature. Generally, the key issue is the necessity in changing the worldview paradigm (views on the structure of the new world order in the post-industrial era).