

Ukrainian Biosphere Reserves

call for action to advance

Ecosystem-based Adaptation to Climate Change

Eberswalde Statement 2020

jointly elaborated by the participants of the international training on
“Ecosystem-based Adaptation to Climate Change”

From 9 to 13 December 2019, 26 experts and practitioners from Ukraine and Germany, who are dedicated to Biosphere Reserve management, ecological research and Ecosystem-based Adaptation (EbA), met in Eberswalde, Germany, to conduct a training in frame of a bilateral International Climate Initiative (IKI) adaptation project¹. The authors comprise experts and active members from five out of eight Ukrainian Biosphere Reserves² and further governmental and non-governmental organizations, as well as academia³. Diverse formats of lectures, workshop sessions, and excursions provided a variety of insights and space for discussions.

This statement aims at establishing a common basis for the elaboration of an EbA strategy for Ukraine and strengthen the role of the Ukrainian Biosphere Reserves in the context of climate change adaptation and protection of biodiversity. The document will open with an introduction to the current situation of climate change in Ukraine and continue with the political and legal framework concerning climate change and adaptation. The second part is concerned with the solution approach to climate change challenges, introducing the concepts of Ecosystem-based Adaptation and UNESCO Biosphere Reserves (BR).

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² Carpathian BR, Danube BR, Desnianskyi BR, Roztochya BR, and Shatskyi BR

³ Ministry of Environmental Protection and Natural Resources of Ukraine, NGO Environment-People-Law, Sumy National Agrarian University, Ukrainian National Forestry University, Ivan Franko National University of Lviv, Eberswalde University for Sustainable Development, and Michael Succow Foundation

Situation – Part I: *Climate change in Ukraine*

We state that **in Ukraine, climate change already is and in the future increasingly will negatively impact ecological, socio-economic, and political systems** and severely alter the face of our cultural landscapes. Human wellbeing and the welfare of communities are at stake.

By global climate change processes, the Ukrainian territory is already under a regime of regional changes in climatic conditions and natural zones, prompting an increase of natural hazards and secondary alterations such as in species composition of flora and fauna. **Anthropogenic activities paired with climate change diminish ecosystem functionality, affecting local thermic regulation potential and other regulating functions.** Concomitant, accelerated loss of biodiversity inevitably leads to cascading effects in food webs, putting at risk the supply of agricultural produce and other ecosystem services for humans.

In Ukraine and our respective Biosphere Reserves, we consider the following threats and risks induced by climate change as serious to very serious:

- **Extended dry seasons, higher temperatures, and more intense drought events** will impact the hydrological regime, cause aridization and increase the risk of forest, field, reedbed as well as peatland fires, and losses in forestal, agricultural and other economic sectors. Human health is prone to be directly affected by potential water supply shortages, heat stress, and food crises.
- An **increasing occurrence of windstorms** poses a direct threat to both natural ecosystems and human infrastructure and wellbeing. For example, diminished natural windbreaks by forests and other vegetation types due to overlogging, clear-cutting, and poor, often monoculture forest stand conditions elevate the potential for destruction.
- **Increasing events of heavy rainfalls** may lead to flooding, mudflows, and landslides.

Thus, **climate change** poses a **vital challenge for the survival and wellbeing of all species**, putting **humans in a position of responsibility for adequate action**. It is not only an ethical question regarding other creatures and future generations but also one of our own, current wellbeing. The protection and recovery of the Ukrainian biosphere are fundamental to achieve sustainable social and economic development. Climate change threatens to offset actions referring to the Sustainable Development Goals, especially if disconnected from ecosystem-based solutions.

Prolonged political and economic crises that also led to a focus on fast profit maximization hamper the long-term strategic decision-making on sustainable development of Ukraine's economy and society. This makes the need for a fundamental change in managing approaches self-evident and necessary and we want to face this challenge.

We unite our efforts for finding and developing practical solutions and progress towards a resilient Ukraine in times of climate change, major political uncertainty, and conflict. **We need an honest and informed dialog for such transformational changes in both our perspectives and actions.**

Situation – Part II: *Political and legal framework*

Since the initiation of international climate negotiations, Ukraine has actively participated in the process. Moreover, within the last decades, Ukraine ratified all major treaties regarding climate change, such as United Nations Framework Convention on Climate Change (UNFCCC, 1992), the Kyoto Protocol (1997), and the Paris Agreement (2016).

However, the implementation process of international provisions on the national level has been progressing quite slowly. State policy is predominantly focusing on energy efficiency and the increase of energy sources with low CO₂ emissions, which is rather only one of the strategic approaches in mitigation and adaptation to climate change.

A reference to climate change is missing in most of the important sectoral legal acts of Ukraine, such as the law On Environmental Protection.

With the approval of a Climate Policy Action Plan in December 2017, the Ukrainian government set a milestone. The goals of the document include the adoption of a Strategy on Climate Change Adaptation from 2021-2030 which was planned to be finalized in 2020. Due to ongoing reforms in the Ukrainian Ministry of Environmental Protection and Natural Resources, the work on the Strategy on Climate Change Adaptation was suspended for some time. The work on the Strategy was gradually restarted in March 2020 with the planning of a new working format and group.

Presently, the strategy on the Environmental Policy of Ukraine until 2030 states the necessity of adaptation to climate change with the help of certain types of ecosystems, while the strategy on Sustainable Development of Ukraine until 2030 sets the goal of adaptation of local people to climate change. **The EbA approach is now being introduced into the draft of the Strategy of Adaptation to Climate Change in Agriculture, Forestry, and Fisheries by the working group of German–Ukrainian Agricultural Policy Dialogue (APD)**. This document is currently reviewed by the Ministry for Development of Economy, Trade, and Agriculture of Ukraine.

Appreciating these recent developments in the Ukrainian legislation towards adaptation to climate change, **we encourage the Ministry of Environmental Protection and Natural Resources to restart effective work on the Strategy on Climate Change Adaptation at the earliest possible time**. Recognizing the importance of this document, we stress the **necessity to include the notion and principles of Ecosystem-based Adaptation to climate change in the strategy** assigning them a guiding role for other sectoral legal acts. With awareness of its pioneering character, we encourage the Cabinet of Ministers of Ukraine to adopt the Strategy of Adaptation to Climate Change in Agriculture, Forestry, and Fisheries soon.

Solution Approach – Part I: *Ecosystem-based Adaptation (EbA) to Climate change*

Adaptation to climate change is about dealing with the unavoidable consequences of climate change. In Ukraine, this is especially relevant for water-, wetland and forest ecosystems, agro-ecosystems, steppe-, mountain-, urban- and marine ecosystems. Embedded in the ecosystems human-made social systems and human wellbeing are affected likewise and highly vulnerable. All nature-based sectors such as water management and provision, forestry, agriculture, aquaculture, energy production, mining, manufacturing, and tourism are highly exposed to climate change impacts. In turn, by anthropogenic land and natural resource use these sectors nowadays largely contribute to ecosystem degradation and climate change. By taking adequate action today, future damage can be minimised. Well anticipated and planned adaptation measures can save lives and money later, while they guarantee sustained well-being.

Ecosystem-based Adaptation to climate change describes a recent and promising **approach to conserve existing functional ecosystems, reduce human stress on ecosystems, and restore ecological structures and processes** to increase overall system functionality and health. By this, EbA efforts help safeguard ecosystem services in times of anthropogenic climate change, above all the regulating services including thermal buffering. Ecosystem services also include provisioning and cultural benefits, vital for human well-being. These efforts are often highly synergetic with ecosystem-based mitigation (e.g. carbon sequestration) efforts in the fields of forestry, agriculture, wetland management, and other types of land use and natural resource management.

A fundamental necessity to make EbA effective is **sound support by the state along with the willingness of local and national actors and decision-makers to rethink and change priorities regarding the use of ecosystem services.** Furthermore, it is essential to showcase good practices of implementation of EbA measures and highlight the advantages of such measures in comparison to the conventional utilization of ecosystem services to local people in participatory ways.

To support this, the **introduction and application of the ecosystem services concept in Ukraine are highly recommended.** It will provide a common conceptual framework concerning regulating ecosystem services for BR staff, researchers and policymakers, and ease tailor-made legislation, thus supporting the introduction of the EbA approach. A **new management perspective**, guided by a systemic and long-term understanding that informs adaptive planning can allow both the economy and society to adapt to climate change.

This implies that **functional natural ecosystems are inherently protected for the common good of all Ukrainians**, which in large part depends on the provision of the manifold ecosystem services, and that **larger ecosystem networks are effectively set-aside for conservation.** Various types of **economic activities and land use need to be adapted to the challenges caused by climate change** by minimizing their negative impact on the ecosystems' functionality. In the case of degraded or heavily altered ecosystems, renaturation and restoration are necessary.

For this, our shared effort for a climate-resilient Ukraine needs to focus on **restoring and maintaining a natural water balance** (e.g. renaturation of wetlands), thereby **enhancing water retention in the landscape** (e.g. dismantling of drainage systems, increasing green infrastructure) **increase above- and below-ground biomass** (e.g. expanding areas of natural and close-to-nature forests), and the **abandonment of harmful land-use practices**, inter alia, forest clear-cuttings, conifer monoculture plantations, plowing of abandoned farmlands (used before for haymaking and pasturing), lacking crop

rotation schemes, application of pesticides, lacking field protection strips as well as illegal land-use practices and periods.

As mentioned above, both awareness and knowledge about ecosystem functions and the complex interaction with our social systems are key. This can be advanced by **holistic, ecosystem-based, and people-centered education, training, and capacity building** with a broad variety of groups. Pilot projects and the active support of **international cooperation and experience exchange concerning EbA** can lead to faster advancement in finding tailor-made solutions for Ukraine.

Furthermore, targeted monitoring and understanding of key indicators of climate change and the corresponding consequences for Ukraine are relevant to conduct conclusive risk analyses which give way to the most effective solutions. At the moment, this is largely missing. Thus, the introduction of EbA is more complicated due to:

1. a lack of reliable data indicating which adaptation measures should be implemented;
2. a lack of methodologies and regulations of implementation of such measures;
3. a lack of loss compensation schemes, which support a shift from conventional to environmental-friendly resource utilization.

We encourage the parliament and ministries of Ukraine to **include the notion and principles of EbA in relevant policy documents in the fields of climate change, environmental policy, and nature-use policies**, at least:

1. in the newly developed draft Strategy on Climate Change Adaptation until 2030;
2. amending the current Strategy on Environmental Policy of Ukraine until 2030;
3. adopting the Strategy on Adaptation to Climate Change in Agriculture, Forestry, and Fisheries;
4. in the Strategies on Regional Development for 2021-2027;
5. adopting or amending Strategies on Development of Forestry, Agriculture, Energy and Water sectors;
6. amending the current state construction standards on urban development, spatial planning, and sustainable road infrastructure.
7. considering the establishment of special 'ecologically sustainable economy zones' within BRs with required tax, investment, and other regulations. Such zones should be a primary recipient of state financial support, assistance from various environmental funds, subsidies from the local budget for enhancing organic farming, close-to-nature forestry, sustainable tourism development, and other sectors.

Environmental protection and improvement of ecosystem functionality can no longer be seen as a single item to be chosen from a long list of political options but must be an **integral part of the economic and sustainable development agenda**. To guarantee effectiveness, both binding and enforceable action plans and regulations are necessary.

Solution Approach – Part II:

UNESCO Biosphere Reserves of Ukraine as model areas and drivers of Ecosystem-based Adaptation

Transforming the Biosphere Reserves of Ukraine, existing in all major ecological regions of the country, into **learning sites and model areas for sustainable development is an important task on the nationwide level**. These areas have **UNESCO status**, highlighting their special role for testing interdisciplinary approaches to understand and manage changes in social and ecological systems, including conflict prevention and biodiversity management. They are expected to follow internationally agreed requirements on safeguarding ecological functionality, protecting cultural heritage, and local traditions. Despite being home to highly valued ecosystems, BRs do not have official protected or another special status according to Ukrainian legislation. This counteracts and prevents coordinated management of ecosystems and their services within the entire BR area in line with international obligations.

BRs hold the **potential to induce and accelerate transformative change in the area of climate adaptation and promotion of sustainable natural resource use** as they allow for regulations of nature use via functional zoning. If properly supported by their respective government and project funds, they are equipped with a highly qualified staff, promoting sustainable approaches to nature use, raise environmental awareness, involve the youth and locals by varied activities and environmental education programs. They are home to diverse landscapes and rich ecosystem services, increasing the region's visibility and attractiveness. By this, they offer perspectives for investments in the sector of sustainable land use and other businesses and therefore can have a positive influence on demographic development.

Biosphere Reserves are especially relevant to exploring and showcasing EbA measures because of their potential to test, monitor, and collect scientific information on their effectiveness in all key ecosystems of the country over long periods. They hold the human potential (staff, active civil society, NGOs, etc.) to implement and maintain measures of climate adaptation based on ecologically sound principles. By cooperation, research, and capacity building they can strengthen the possibilities of local executives and bodies of local self-government for developing and undertaking measures for prevention and adaptation of climate change impacts.

As **members of a global network** comprising other partner sites, UNESCO BRs can effectively cooperate, exchange information, and benefit from best practices of partners worldwide. They can form part in solving global environmental problems locally by protecting their biosphere and sharing lessons learnt. Ecological transboundary cooperation can support peace processes and the solving of cross-border conflicts, often causing human, ecological, and economic harm.

Available experiences regarding EbA can be transferred to other sites and the learning process is sped up. Joint research opportunities and monitoring can support and accompany the implementation of new methods and approaches. By making use of the international network, transnational projects in the field of EbA between current and potential transboundary Biosphere Reserves in Ukraine and neighbouring countries can be realized. Due to the access to both international and national decision-making, united efforts can be more powerful when making proposals for global ecological policies.

Good practice examples that are **tested in other UNESCO Biosphere Reserves** that could be transferred to Ukraine include:

- **Close-to-nature forestry**, where the area of near-natural mixed and deciduous forests is increased by converting conifer monocultures, clear-cutting practice is replaced by selective logging, and living and

dead biomass remains in the forest. This helps to preserve ecological functions of forested areas and contributes to evolving of multi-aged forest stands which are more resilient to climate change. A **new forestry vision and management approach** is developing, focusing on enhancing ecosystem functionality and climate regulation whilst integrating socio-economic effects and potentials.

- **Peatland and wetland conservation and restoration** to stabilize the water-cycle, rehydrate the landscape, buffer drought and heat periods by evaporation processes, thus supporting microclimatic self-regulation. Besides increasing the set-aside area size for wetland conservation, alternative uses of peatland are discussed with academia and the economic sector.
- **Organic farming approaches** that increase the overall resilience and resistance to drought, storms, and flooding by shifting away from conventional and intensive agricultural practices with chemical-intense, structurally poor, soil-degrading practices.
- **Conservation and restoration of natural steppe ecosystems** on sites of degraded agricultural lands and areas of military purpose, which are not used anymore (e.g. former training grounds).
- **Restoration and revitalization of riverbeds and riverbanks of channelized small watercourses.**
- **Creation and development of ecological networks** on regional, national, and international levels.
- New ways of **networking and involving the local population** within Biosphere Reserves e.g. via joint activities, participatory events, idea contests, and consultation hours. Environmental education campaigns and citizen science projects concerning Ecosystem-based Adaptation can actively inform and engage local people and stakeholders and incentivize tailor-made and transferable adaptation mechanisms and measures.

To **fully embrace the function of model sites for EbA** exploring and developing practical measures, the **UNESCO Biosphere Reserves of Ukraine request changes in state and regional policies and legislation.** The legal entity *Biosphere Reserve (Biosfernyi Rezervat)* needs to be strengthened and equipped with distinguished competencies, setting them apart from other protected areas. For BRs to work successfully, sufficient political and stakeholder support, as well as legal backing and law enforcement are necessary. Secured financing from the state and regional administrations can support continued activities independent from slow project acquisition processes and provide planning security. Local stakeholders need support and encouragement for the implementation, research, and monitoring of ecosystem-based measures, increasing the level of sense of belonging and local benefits.

For this, a **high level of cooperation and continued dialog between administration, partners, stakeholders, and especially the local communities is required.** Successful EbA projects can then be showcased and attract further attention and investment. To perform this role, it must be ensured that Ukrainian Biosphere Reserves function as UNESCO Biosphere Reserves and not as classical protected areas of Ukraine.

To enhance institutional support for EbA, we encourage the Ministry of Environmental Protection and Natural Resources to:

1. **establish a focal point** or separate division in **the appropriate department focused on the facilitation and advancement of EbA** in Biosphere Reserves, protected areas, and valuable ecosystems;
2. **develop and present a bill on biosphere reserves**, which will cover issues of management of BRs as well as tools for funding EbA measures. The law also has to provide a clear definition of the status, goals, and functions of the BR, as well as guidance for the development of management plans, and the compliance of community development plans with the BR management plan;
3. **redirect funding allocated for a programme of regional and local sustainable development based on EbA principles**, primarily to biosphere reserves. This will increase the image and importance of BRs for communities, among the local population and the country's population in general;
4. **extend protected areas** including naturally reforested abandoned farmlands, particularly degraded ones. Such an approach, without a need for a substantial financial contribution, ensures long-lasting preservation of arable lands. Usually, due to long-lasting utilization in agriculture, these lands are degraded. Agricultural lands with natural reforestation on therein, which officially converted to forest land, can restore their natural fertility, biodiversity, and can withstand adverse effects of climate change;
5. **increase awareness on and implementation of the principles and measures of EbA among the administration staff** of protected areas responsible for certain BRs and the introduction of amendments to their management plans.

We urge to adopt those strategies and amendments and we stress the need for the Ministry of Environmental Protection and Natural Resources to **encourage the application of EbA by all protected areas in Ukraine**. Biosphere Reserves can develop guidelines and practices for the effective implementation of EbA, making the elaboration of planning documents more substantial.

Concluding statements

Ecosystem-based Adaptation is now needed to improve the ecological situation in the face of climate change impacts, secure livelihood, and the fulfillment of corresponding international commitments. Thus, it needs to be rigorously included in the administrative planning, state and regional policies, and legislation.

Biosphere Reserves as living laboratories offer the potential for testing EbA projects that can be replicated. This will **foster partnership, cooperation, international funding, and reinforce the notion and value of ecosystems** and the need for their conservation and legal status.

In light of the **Strategy on Climate Change Adaptation** and **on Environmental Policy** until 2030, *Ecosystem-based Adaptation* paired with *Biosphere Reserves* have the potential to:

- Systematically address and inquire into the available ecosystem services and functions, hence inform and support EbA strategies and measures for sustainable development of Ukraine.
- Support the goal of evaluating, protecting, and restoring Ukraine's biodiversity till 2030 and thus guarantee ecosystem services for today's and future generations.
- Slow and reverse the catastrophic reduction of wetland areas, steppe ecosystems, and natural forests which are mainly caused by deforestation and subsequent land conversion towards agricultural, industrial, and housing purposes alongside draining or excessive irrigation.
- Inform and locally ensure the most effective and efficient targeting of financial instruments which can provide stable financing of nature protection activities and ecological management systems. The support of eco-businesses, in particular, the production of high-quality goods will stimulate the tax income and thus ensure both public and private investment in ecosystem protection and restoration efforts to ensure livelihood and human wellbeing.
- Enable a cross-sectoral partnership and participation of relevant stakeholders (including public authorities, organs of self-government, management, private sector, the scientific community, and public) for planning and realization of policies.

For the achievement of substantial changes in the prevention and buffering of climate change impacts and escalating ecological crises, both Ecosystem-based Adaptation and UNESCO Biosphere Reserves offer a strong potential for active intervention. By 2030, they can support the Ukrainian nation in the challenging task to improve the ecological state and enhance sustainable development by striking a balance between socio-economic necessities and environmental goals. This will only work within effective partnerships between the state, management, and public society. **For this end, political, legal, and financial support for Biosphere Reserves and Ecosystem-based Adaptation is urgently requested by the here participating authors.**

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of Environmental Protection
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