



POSITION PAPER (2023)

ON IMPLEMENTATION OF NATURE-BASED SOLUTIONS WITHIN THE CONTEXT OF CLIMATE CHANGE ADAPTATION IN POLAND

Each year, we see more and more evident signs of climate change in Poland, in neighbouring countries and around the world.

According to the "Strategic adaptation plan for sectors and areas sensitive to climate change until 2020, with a perspective until 2030" developed and adopted in 2013 (Strategic plan, 2013) it was noted that over the past few decades Poland has experienced a noticeable rise of temperature and an increase in the frequency and intensity of extreme weather events.

Climate change has an impact on almost all sectors of Poland's economy. For example, in agriculture, the increase in average annual temperatures leads to a lengthening of the vegetation period for crops. This, on one hand, has a positive effect on crop yields, but at the same time increases the risk of damage to crops by pests. The pests also benefit from warmer temperatures, resulting in increased reproduction rates and reduced their winter mortality. It is also very important to mention about one more issue - changes in the quantity and quality of water resources connected to climate change, which also create serious challenges to all sectors of the economy, especially to agriculture. Both farmers and politicians are being forced to adapt to these changes in order to ensure food security and safety.

These are just a few examples that highlight the need to study, understand and select the efficient and sustainable adaptation solutions to address climate change. Climate change impact all sectors of the economy: transport, forestry, energy, urban development, tourism, healthcare and others.

MAMA 2022 states that the implementation of Nature-Based Solutions for adaptation to climate change is an important step that should be actively pursued in Poland.

According to the Resolution adopted by the United Nations Environment Assembly on 2 March 2022, nature-based solutions "are actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services, resilience and biodiversity benefits...may contribute significantly to climate action" (Resolution, 2022).

When it comes to agriculture, as an example of a nature-based solution for pest control, we can consider the biological control of pests by using their natural enemies. In addition,

planting inter-row plants that repel pests is also can be considered as an effective nature-based solution. Another example of nature-based solution is wetland restoration, which can help improve the quantity and quality of water resources. The nature-based solutions are studying by scientists around the world.

To ensure that the implementation of nature-based solutions is successful, sustainable, and does not impose additional burdens on ecosystems or create economic problems as well as to avoid conflicts with local communities in Poland,

the following principles should be applied:

- it is important not only to develop nature-based solutions, but also to study the consequences, as well as the economic and financial aspects of their implementation in the concrete region;
- the economic challenges and benefits, along with financial mechanisms and incentives for implementing nature-based solutions, with a focus on their role in climate change adaptation and supporting both economic growth and effective climate actions in Poland, should be thoroughly analysed;
- new projects with nature-based solutions planned for implementation in the region need to be communicated to the population, explaining the benefits of their adoption;
- each "nature-based" project should be implemented and operated in accordance with the national legislation.

The nature-based solutions in the context of climate change adaptation are actively being studied by scientists, as well as by international and non-governmental organizations around the world. Reports, guides and catalogs containing examples of environmental solutions for various sectors are developed on international and national level, as well as literature that determines the "portfolio" of financing ecosystem-based adaptation to climate change. (Yashkina V., 2021). One of the most comprehensive analysis of the situation with climate adaptation and the role of natural solutions was conducted by the United Nations Environment Program (Adaptation Gap Report, 2020). Good examples of nature-based solutions can be found for cities (Manual, 2022) and for agriculture (Miralles-Wilhelm, F. 2021).

*Ukrainian Climate Network developed a catalog-manual, which present twenty-five nature-based solutions aimed at adapting urban spaces to the consequences of climate change. (UCN Catalog, 2021). **MAMA-2022's representatives are among the authors of this catalog.***

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