

# BALATORIUM Ecological x Cultural Concept

of VEB 2023 Balaton Ecological Programme  
Summary



Veszprém-Balaton 2023  
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## Introduction

**The aim of the ecological x cultural concept summary is to clarify the ecologically relevant conceptual framework of Hungary's biggest Lake Balaton and its region, to identify the key challenges for the region and to lay the foundations for the development of a series of related cultural programmes.**

The development of the concept is a synthesis work based on the opinions of representatives of disciplines and institutions dealing with ecological processes and challenges, incorporating regional knowledge. The **ecological x cultural concept** will help both the ECOC and future applicants and participants to navigate and gauge the topics chosen as relevant for the **Balaton Ecological Programme**. It was developed between October 2020 and January 2021 and has taken the form of expert interviews, questionnaires and workshops, desk research and training sessions for programme organizers. The exact steps of the process can be found under the process tab of the website.

Through its Balaton Ecology Programme, the Veszprém – Lake Balaton 2023 European Capital of Culture (VEB 2023) project aims to support:

- Raising awareness of the natural values of and threats to Lake Balaton,
- promoting social consensus on the protection of Lake Balaton,
- the international positioning of Lake Balaton as a unique ecosystem and cultural landscape,
- establishing a series of long-term sustainable ecological-cultural events.

Following is a summary of the concept, with interviews and other information linked within the text.

## Ecological challenges

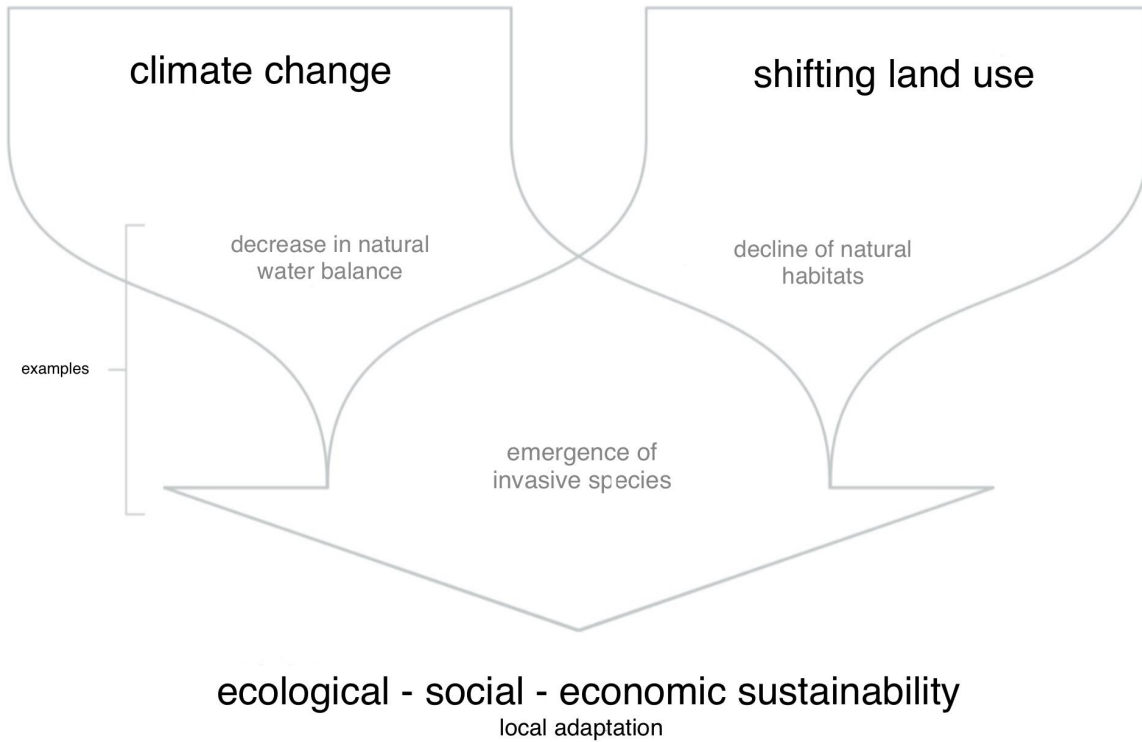
### What are the ecological challenges the region is currently facing?

The two main and interlinked ecological challenges affecting Balaton and its region are **climate change** and **shifting land use**. There is a consensus among the ecologists and experts in related disciplines interviewed that climate change will transform Lake Balaton and its region, independently of current changes in land use by humans. In addition, increasingly intensive land use, the decline of natural and semi-natural habitats, human overutilization and overdevelopment are in many cases already transforming the environment independently of the effects of climate change, and are thus the main cause of changes in local microclimate,, the emergence of invasive species, the extinction of certain species and habitat degradation. [An example to illustrate the connections relevant to human use of Lake Balaton.](#)

These changes lead to a reduction in ecosystem services, that is, they also cause damage at the level of society as a whole.

- It is therefore of utmost importance to initiate a social dialogue on our expectations from Lake Balaton, what „services” and natural features we consider valuable, and on how sustainable these needs are in view of the impacts of the impending changes.
- It is also important to examine what local adaptation potential Lake Balaton and its region have and what cultural tools can be used to support these.

ECOLOGICAL CHALLENGES AFFECTING BALATON AND ITS REGION



In the next section, we discuss some of the key ecological challenges affecting Balaton and its region, which the Balaton Ecological Programme intends to address in more detail. As the programme progresses, the issues will be elaborated further and expanded thematically.

**Lake Balaton and its water resources**

climate change - managed ecosystems - water level - water quality - coastal zone - nature-based coastal protection

Lake Balaton is a managed ecosystem, its known natural habitats and their organisms have been significantly affected by centuries of human activities that have altered the natural environment.

*Today's Lake Balaton is in no small part a product of human activity. Many of Hungary's famous wetlands are similarly managed ecosystems, kept alive and in a state of adequate preservation through artificial structures and other types of interventions. These include the magnificent Lake Kis-Balaton/ Lake Balaton-Minor, which bears enormous conservation value, Lake Tisza, the Szigetköz, many oxbow lakes and the Gemenc floodplain. (Honti)*

Societal needs determine how much a managed ecosystem mimics nature/is close to natural status. Therefore, it is important to raise awareness in order to ensure that interventions and their consequences are sustainable in the long term, from an ecological, social and economic point of view.

## The water level of Lake Balaton

The water balance of Lake Balaton and its catchment area is very sensitive, so in addition to the scientific study of the shifts caused by climate change, it is also important to monitor human interventions in the water balance. Keeping the water level of the lake within a narrow control range is not an ecological but a perceived societal preference. The current water level of 120 cm is **not sustainable** with today's set of tools due to the expected impacts of climate change over the coming 10-20 year time period. More frequent periods of drought and lower water levels in the future are very likely.

The experts consulted agree that **fluctuating water levels** are essential for the lake's biota: for the mixing of water, for the regeneration of shore vegetation, including reed wetlands.

## Water quality

*We consider water quality from a human perspective and from an ecological perspective. From the human perspective, water is used for industrial purposes, for bathing and for consumption. The quality of drinking water is assessed based on the amount of chemicals or infectious organisms present in the water that might potentially cause problems for human consumption. **In terms of bathing**, there is also an aesthetic aspect, whether the water is clear or at least pleasant enough for bathers to want to go in. Water is a habitat itself, and the **ecological quality of water** determines what kind of organisms and what kind of ecosystem can develop in the water. This is mainly related to the temperature of the water, its transparency, i.e. its content of suspended solids, and there is a third parameter which actually characterizes the habitat itself, the community of the aquatic ecosystem, and that is the amount of algae, determined by the chlorophyll concentration. (Zlinszky)*

According to the researchers interviewed, the external and internal nutrient load of the lake is also undergoing a transformation as a result of climate change and this could have an impact on water quality: for example, algae blooms could be expected more often in the future.

*Algal blooms mean that the growth of algae (single-celled, photosynthesising, floating organisms) in the water is exponential, i.e. when there are sufficient nutrients and light available and they are not limited in their growth and are not consumed by herbivores at the given time. (Zlinszky)*

The correlation between a regulatory high water level of 120 cm and good water quality is not always clear (in fact, high water levels increase the risk of algal blooms), so what may have improved water quality in the past may not have the same effect now. Therefore, in addition to further research, it is also important to take an adaptive approach to water use patterns and to examine how we, as lake users, can adapt to the potentially changing water levels of Lake Balaton.

## Coastal area - Shore protection

Almost 70 percent of Lake Balaton's shoreline is artificially constructed. Artificial shoreline protection works bisect the natural/near-natural shore zone and hinder the self-cleansing process of the lake.

The shoreline is the area of the lake which is the richest in species, both because of the diverse habitat conditions it contains and because of the relative isolation of the shore vegetation from human impacts. Reed beds provide an outstanding set of ecosystem services, the most important of which are fish reproduction, shore protection, microclimate provision and the characteristic Lake Balaton landscape.

It would be important **to consider the shore as a complex system of several zones**, and to communicate the diversity and different types of natural shores of Lake Balaton better to a wider audience.

It would be advisable to restore the natural shore, where possible. Where this is impossible, it would also be important to consider **nature-based coastal protection solutions** for established shorelines, for example in order to better adapt to changing water levels.

When it comes to shoreline management issues, it is important to prioritize natural conditions over recreational, economical and other similar motives.

**Currently, the fish stock in the lake can only be maintained through significant and regular input of young fish raised in fish ponds.** In the past, the small wetland bays of Lake Balaton were the primary spawning grounds for Balaton fish, but this has been eliminated with their separation from the water system of the lake. The **possibility of targeted, local wetland rehabilitation** would certainly be an issue worth discussing. The Fishery Management Ltd. is responsible for fish stocking, and the impact of fishing on the lake is also substantial. The promotion of fishing methods and practices that do not nutrient loads is also important, because, for example, the use of fishing bait releases a lot of nutrients into the lake. The impact of fishing bait on water quality is currently being examined.

#### **The Balaton region: Forestry - Agriculture - Land use**

climate change - education – adaptation - water retention - soil conservation - species change - ecosystem services - sustainability

As the region of Balaton is a diverse and complex cultural landscape, *„it would be worthwhile to maintain this small-scale, **diverse landscape structure**, which traditionally characterises most places in terms of landscape character.” (Drexler)*

Closely related to the issue of land use is the **rapid urbanisation of the area**, the rapid transformation of former land use patterns, which promotes the decline of natural habitats.

From an ecological perspective, the transformation and adaptation of forests as a result of **climate change** is a key challenge in forestry and conservation due to the typically more extreme and warmer, drier weather. Due to the decreasing water availability in the transforming watershed, one of the major problems forests are facing in the Lake Balaton Uplands is **water scarcity**. It is therefore important to adopt as many **water retention** methods and practices as possible.

#### **Regional adaptation options**

Experts agree that due to changing circumstances, it is very important to **explore and rediscover local adaptation methods** and to increasingly support existing practices. Some suggested directions are:

- In the Lake Balaton region, the transition to organic farming would be of crucial importance due to the proximity of the lake, because *the problem of pesticide contamination of groundwater and leaching into surface water (Drexler)* is a persisting factor.

● According to the experts interviewed, **soil protection** is also a priority issue for the region. *„Most of the Balaton uplands display a variety of brown forest soils, while a large part is no longer occupied by forests but arable land, orchards or vineyards. On these lands, the forest itself create the humus-rich, nutrient-rich soil. If we don't resettle the trees and therefore their humus and the carbon they provide to these areas, sooner or later this soil will be depleted.” (Borovics)*

● According to Attila Borovics, Director of the Institute of Forestry Science, adaptation of climate change will create a requirement of **tree species replacement** and mixing with native plants. This is currently almost generally accepted, but Borovics believes that some species are likely to disappear, or may be replaced, or need to be replaced by non-native species with external help.

● **Viticulture** will also be affected by the need to **replace varieties** due to climate change. *„For example, on the south side of St. Georges /Szent György Hill there is almost no more Olaszrizling (Welschriesling) white wine grape variety left, because the Olaszrizling growing there no longer produces the wine we have come to know as part of most vintages since the acidity simply burns out. Now they plant Rhine Riesling, Furmint, Kéknyelű or even blue grape varieties from Tuscany, which ripen later and can better preserve the acidity. Again, because of climate change, we will not be able to grow our traditional varieties successfully, nor will we be able to make wines of the character that we have been able to produce for hundreds of years. We therefore need a change in the structure of the varieties, or else producers will switch to blending and grow to say, for example, that this is Badacsony wine, the composition of which can be flexibly modified.” (Kovács)*

● The interest in **agroforestry solutions** has also increased significantly in recent years, both from the conservation and the agricultural sector. Agroforestry is *„a combination of arable farming and forestry, or fruit growing and forestry (...) French farmers, for example, have recently reintroduced tree plantations along the most expensive vineyards. This drastically reduces the amount of pesticide they use, preserves soil fertility and brings back diversity, for example by enriching bird fauna. But it would also be possible, for instance, to bring back trees for grazing or berry production, so that shade is not provided by various man-built structures, as trees can also provide their beneficial climate protection. These are also included in the adaptation process.” (Borovics)*

● **Wooded pastures** play an important role in the conservation of biodiversity. *„Pastures with woods are characterised by closed and open wooded areas, groups of trees, and areas of grassland with groves, shrubs and bare grassland, which have been established for grazing purposes and preserved (...) Long-term sustainable grazing can be achieved not only on “pasture” but also by grazing areas of different types of land (forest, grassland, arable) and habitat types.” (Varga)*

### The concept of ecological sustainability in the regional context

Although sustainability is not an ecological concept, it is important to discuss it because of its broad sense and its overuse nowadays. The environmental, social and economic pillars of sustainability are not separable, nor are they of equal importance. Environmental constraints determine what can be sustainable, and therefore the programme must address the **ecological issues of sustainability** at the discourse level. The ecological understanding of sustainability is described by one of the researchers interviewed as follows:

*The opposite of exponential growth is exponential decline, when we wipe each other out or run out of resources, so sustainability is when we want to avoid a radical, significant change in a short*

*period of time. I would therefore consider the reverse of exponential growth or decline to be sustainable, where there are no abrupt transitions, where changes occur at a speed at which we can adapt to them. Needless to say, this is only possible if the changes occur so slowly that the natural ecosystems can adapt to them, since these are the basis for the existence of humans. The aim is to keep changes at a speed to which at least we, or, in ecological terms, the ecosystem, can adapt.(...) Another aspect of the concept of sustainability is the concept of ecological networks. Just as a food web, an ecological network, key species and habitat building species are part of a network, this network is also embedded in a spatial context. The wetlands around Lake Balaton, the small watercourses that flow into the lake, the grasslands around it, belong to this network. Lake Balaton itself as a living system is a network: if you tinker with it on one side, something might pop up on the other. As a consequence, you cannot treat water quality in isolation from everything else. (Zlinszky)*

Starting from the current situation and taking into account the consequences of climate change, it is important to think about what exactly we want to sustain and at what cost. Both expert interviews and ecological questionnaires have highlighted unsustainable land use practices in Lake Balaton and its region, and tensions along the lines of conflicting interests.

*Sustainability, as a term, refers to the clear definition of a state where a steady compromise between multiple, conflicting interests is made. But there is and probably can be no objective criterion for determining whether a state is still acceptable from a sustainability perspective. (Honti)*

#### **Agricultural sustainability**

*Responsible agricultural production preserves public resources while producing food. What I mean by preserving public resources is that agriculture does not pollute our water, air or soil. Sustainability is about using resources in a way that does not limit the opportunities for future generations. In an agricultural context, this means that we strive to preserve all the resources we use to grow food in a way that will sustain others in the future. We therefore should not pollute or destroy these resources, to be able to grow and eat healthy food and maintain a balanced food and agricultural system. (Drexler)*

#### **Sustainable forest management**

*According to foresters, sustainable forest management means that an independent forestry organisation draws up a management plan for each hectare of forest based on a professional consensus, all in the long-term interests of the forest. This way, farmers do not just act according to their own will, what they would like or what they need at that very moment, but what authorities allow them to do according to the criteria of sustainability. A strict system has been established whereby, as a limited private property, the forest must be managed in a way that public expectations and the public interest are met. The reason for this is that Europe has already punished itself by having cut away the vast majority of its forests over the past centuries. It is only in the last 100 years that a new practice has emerged in Europe, as well as in Hungary that forests are a natural resource to be maintained and grown in the long term, contributing to our well-being not only through timber production but also through a range of social and ecosystem services. (Borovics)*



## Social adaptation

local communities - community-based solutions - traditional ecological knowledge - small scale - local value chains - commons - tourism landscape - nature-centered approach to well-being - social participation - nature-based solutions - food culture - building culture - social access

## Clarifying societal expectations of Lake Balaton and its region

Most experts and researchers agreed that it was of top priority to launch a broader societal dialogue on the **vision of the region's future**. This process can be well broken down into themes by ecological challenges and related social practices, as all stakeholder groups in the region can relate to it in different ways.

- How can a shared vision of the future be achieved? Discussion of different visions
- Why do we love Lake Balaton so much? What does Lake Balaton need to be at its best, ecologically speaking?
- What kinds of future scenarios are possible? Clarifying the concept of the scenario
- What is good conservation like?
- Discussion of ecosystem services (as a general concept) and their importance for the region
- Clarifying ecological concepts and presenting them through examples at a regional level
- Different types of protected areas in the region
- Clarification of issues related to invasive species
- Visibility of systemic processes rather than protection of individual species

### Focal themes in the social adaptations of ecological challenges:

- Environmental education projects that address and reach a wide range of social groups
- Initiating a dialogue on shared and differing visions for the future of the region
- Introduction and connection of local communities already actively self-organising
- Reaching out to and involving local communities, focusing on community-based solutions
- Exploring and strengthening local value chains
- More emphasis on incorporating traditional ecological knowledge
- Supporting small-scale projects and programmes
- Strengthening social participation in specific adaptation experiments

### Examples of lake and landscape use:

- Mapping the initiatives focusing on and organizing **local food systems** around Lake Balaton and fostering a collaboration among them
- Partial revitalisation of the long-established **community gardens** near the banks of the streams and creeks in the area (as these still exist in some places in the region)
- Creating a **link between gastronomy and nature** conservation with regards to grazing and pastoralism
- Rethinking the potential of **wooded grasslands as community spaces**
- Thematising **fishing** and **aquaculture** issues of Lake Balaton and its region

- Sustainable landscape-specific architecture - exploring the ecological aspects of vernacular architecture

### **Touristic region and ecotouristic landscape**

The region surrounding Lake Balaton is one of Hungary's most important touristic regions, where tourism has shaped the lake's environment and society since the early 18th century (Schleicher, 2016:9).

Numerous research studies have focused on the historical-cultural analysis of the various parts of the region, but the most comprehensive study of environmental and socio-cultural interactions so far is the research of Vera Schleicher and her colleagues and Schleicher's PhD dissertation.

*Beyond the struggles over resources and the culture war itself, in which cultural patterns clashed over the ownership and interpretation of a piece of land, a bay, a vineyard, a spring, the interpretive elite attempted to alter the landscape as a whole from the very first moment of the emergence of tourism. As a result of the continuous construction of meaning and identity through the arts, science and politics, Lake Balaton was made to shift into a kind of synthetic touristic landscape (cited by Schleicher 2014, cf. Kramer 1984; Köstlin 1994; Szijártó 2000. 12432).*

Most of the land use issues and conflicts that persist to this day are caused by the different motivations and needs of these land user groups, but unsustainable land use practices make it increasingly urgent to better understand the different motivations and visions.

What are the current visions of the touristic landscape of Balaton and how do these align with the actual ecological sustainability of the region?

What kinds of sustainable tourism formats work in the Lake Balaton region and how can different social groups access these?

## **Green/environmental/ecological examples and best practices**

### **Previous green/environmental/ ecological and related cultural and artistic festivals, initiatives and projects within and beyond the European Capitals of Culture programmes**

Within the secondary research, the primary focus was on identifying cultural projects with a specific ecological theme. Unfortunately, at present, there are many misunderstandings (unclear conceptual frameworks) surrounding the use of the term itself, and, in many cases, the word 'eco' has taken on a much broader, more common meaning. The concept of 'eco' has entered the general conceptual framework of sustainability, green, environmentally friendly, therefore focusing on reducing the environmental impact of human activities (generating less waste, environmentally friendly transportation, natural raw materials, etc.). In many cases, eco means using natural materials and living more harmoniously with nature. Through our research, we have examined cultural events that are broadly defined as eco, green, or sustainable within the current conceptual framework.

Part of the development of the concept guidelines was to analyze the presence of a green/environmental/ecological approach in the programmes and commitments of the European Capitals of Culture in recent years. The analysis shows that, although the winning cities of recent years have included sustainability, climate and green projects in their programmes, no specific projects were found around strictly ecological topics. Nevertheless, below are some of the initiatives implemented via the programmes of the winning cities of recent years.

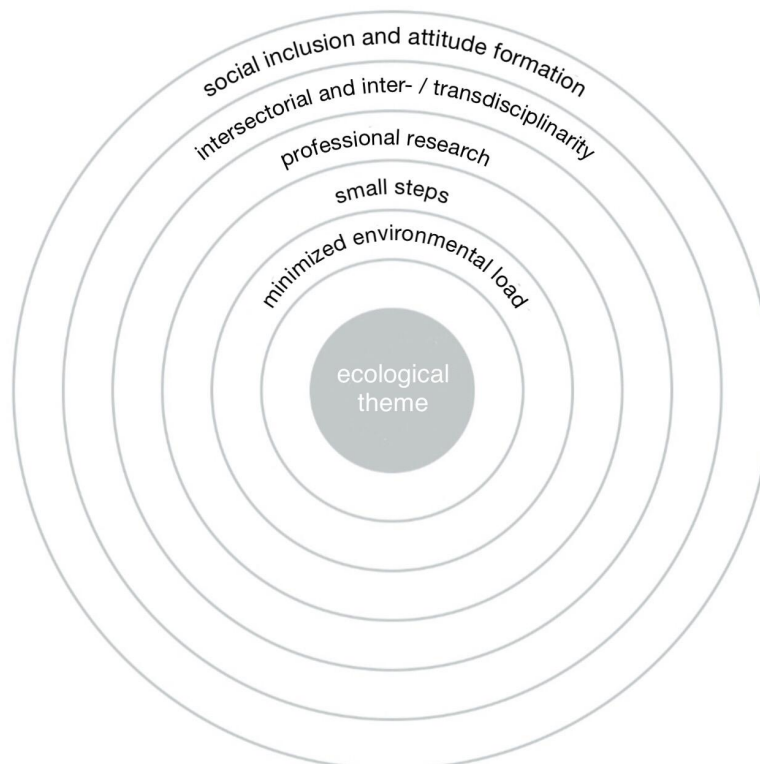
### **Key findings of the secondary research:**

- Previous ECoC programmes have not necessarily included a specific ecological theme
- The Green Capitals programmes also have few projects with a specific ecological theme
- There are, nevertheless, large-scale environmental education projects and sites around the world
- There are numerous green projects in cities around the world, but most of them are initiatives that try to shift nature back into the urban space in some way (urban gardening, bees, vertical gardens, green corridors, waterfront development, energy efficiency, waste management projects) with a strong environmental education approach
- Over the last 30 years, several large-scale rehabilitation projects (restoration to original/former state) have been implemented (urban green spaces, watercourses, waterfronts)
- Recently, an increasing number of art projects have chosen ecological issues as their theme

## Evaluation criteria of the projects implemented and supported in the Balaton Ecological Program

One of the important elements of putting together the concept was the development of a system of criteria, which helps to evaluate and make comparable various projects and programs in its format and content.

CRITERIA FOR EVALUATION OF ECOLOGICAL X CULTURAL PROJECTS AND PROGRAMS



Points	Criteria	
●	<i>ecological issue</i>	overall, the project addresses an ecological issue
●●	<i>thematic relevance</i>	addressing the ecological issues and needs of the region as a key priority, reflected in the choice of topics
●●●	<i>+ minimised environmental impact</i>	ecology is not just a theme, the choice of medium for the use of materials is in harmony with and does not damage or pollute the environment and landscape
●●●●	<i>+ small scale</i>	events are ecological in nature and scale (the aim is not to attract large crowds in a one-off event, but to build on the experiential approach of the process), e.g. workshops, micro-projects, actions, etc.
●●●●●	<i>+ professional research</i>	the presence of active communication between artists, ecologists and professionals from other sectors (in the form of discussions, interviews, etc.)
●●●●●●	<i>+ sector-based, inter-/transdisciplinarity</i>	close collaboration between art and culture professionals, ecologists and experts from related sectors, where the scientist is not just a source of information, the artist is not just a communicator, but they are both researcher-creators
●●●●●●●	<i>+ social inclusion and awareness raising</i>	presenting the knowledge to be imparted to a wide and diverse range of social groups, where these groups are not only passive recipients but active participants, whether it is a public art event, intervention, exhibition or workshop

Thanks to all the researchers, experts and respondents who helped to develop the concept with their knowledge and opinion.

The links and further materials in the summary are available at [www.veszprembalaton2023.hu](http://www.veszprembalaton2023.hu).

Contact information about the program and the concept: <https://bazis.balatorium.hu>

Veszprém-Balaton 2023: <https://veszprembalaton2023.hu/projekt/balatorium>

PAD: [www.pad.network](http://www.pad.network)