We are members of the Sustainable Romania Coalition and NATURA 2000

AQUATERRA

Implementing UN Conventions and 1991 EU Directives in Romania

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Project

Ecosystem Revitalization: Transforming the Bucharest Botanical Garden into a Sustainable Biodiversity and Urban Education Hub

Content

Organization details:

The Aquaterra Ecological Society

Date of establishment of the organization is: 08.01.1993, CIF 8046291

As pioneers in the field of biodiversity conservation in Romania since 1993, the Aquaterra Ecological Society stands out as a distinct authority, enriched by over **30 years of outstanding experience.**

Our team, a dynamic combination of passionate scientists, dedicated experts and enthusiastic students, is relentlessly dedicated to the protection of fish species and aquatic ecosystems. Actively contributing to the ecological balance and conservation of our rich natural heritage, our work is marked by innovative projects and strategic research partnerships.

Deeply committed to promoting sustainability, the Aquaterra Ecological Society is a pillar in Romania's environmental conservation efforts, having a significant and focused impact on our national landscape.

I.Project context

Bucharest is facing rapid urban growth and various climate changes, which are putting pressure on natural resources and environmental quality. In this context, the Botanical Garden becomes a focal point for the conservation of biodiversity and the promotion of a sustainable urban environment. At present, the Botanic Garden is facing some challenges related to maintaining an ecological balance in the perimeter of the lakes, as well as a degradation of the Historic Garden, where no development and maintenance investments have been made. Thus, considering the context of the project, synergies between biodiversity conservation and sustainable urban development will be achieved within the project. Through its contextual and integrated approach, the project addresses contemporary issues of the urban environment, providing a broad and sustainable vision for transforming the Bucharest Botanical Garden into a local and national focal point for recreation, environmental education and awareness.

II.Period of implementation of the activities

The period required to implement the activities foreseen in the project is **3 years (2024-2027).**

III.The problem addressed and the changes we want the project to contribute to

The project focuses on solving specific problems related to urban environmental degradation and biodiversity conservation. The project aims to bring about significant changes to improve the state of the environment and promote sustainability in this key area. This defines the problems addressed and the expected changes:

Issues:

-Deterioration of the ecological status of the lakes and specific habitats: the lakes in the garden have been affected by several negative factors, including accelerated eutrophication and removal of aquatic, semi-aquatic and marsh plants leading to a degradation of specific habitats.

-The need for adequate conservation of the Historic Garden.

-Pressure on green/ecological spaces in the urban environment: rapid urbanisation puts pressure on green spaces, which can affect the biodiversity of the Botanic Garden.

Changes:

-Restoring the quality of lakes and habitats.

-Enhancing the Historic Garden: redeveloping and strengthening the Historic Garden and transforming it into a cultural centre.

-Promoting environmental education and sustainability: the project aims to create a more environmentally aware community and promote sustainable practices.

-Developing a sustainable management model: the project aims to implement a sustainable management model, including environmentally friendly practices and community engagement, to ensure the long-term sustainability of the project benefits.

IV.Aim and objectives of the project for which we are requesting funding through this call for projects - what we want to achieve by implementing this project

The overall aim of the project is to achieve both an ecological reconstruction, an improvement of the quality of the lakes in the Botanical Garden and the rehabilitation of the Historic Garden by implementing a comprehensive set of activities. The main objective of the project is to restore and conserve the aquatic ecosystem, promoting biodiversity and establishing sustainable practices for water resources management.

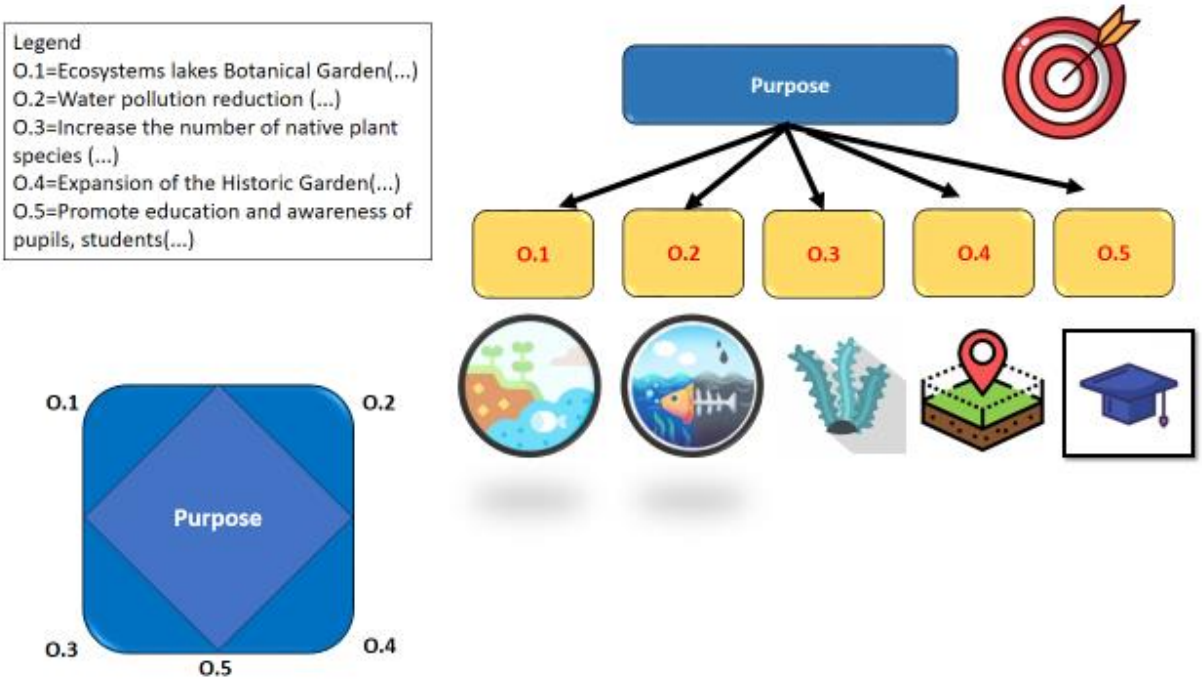
Objective 1 To ensure the conditions for the natural regeneration and development of the entire lake ecosystem of the Botanical Garden by 2025 by assessing the success of recolonisation and development of reintroduced species, and implementing corrective measures if necessary.

Objective 2 Reduce water pollution levels by 50% by the end of 2024 , by implementing modern water treatment and filtration technologies.

Objective 3 Increase the number of native plant species in lakes by 25% by 2025, by reintroducing and cultivating 20 species.

Objective 4 Adequate expansion of 50% of the Historic Gardens sector by 2025 for visitor accessibility.

Objective 5 Promote education and awareness of students on the importance of conserving lake ecosystems and the environment throughout the project through events, seminars, and volunteer activities for the local community.


Legend
O.1=Ecosystems lakes Botanical Garden(...)
O.2=Water pollution reduction (...)
O.3=Increase the number of native plant species (...)
O.4=Expansion of the Historic Garden(...)
O.5=Promote education and awareness of pupils, students(...)
Purpose
O.1
O.2
O.3
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Purpose
O.1
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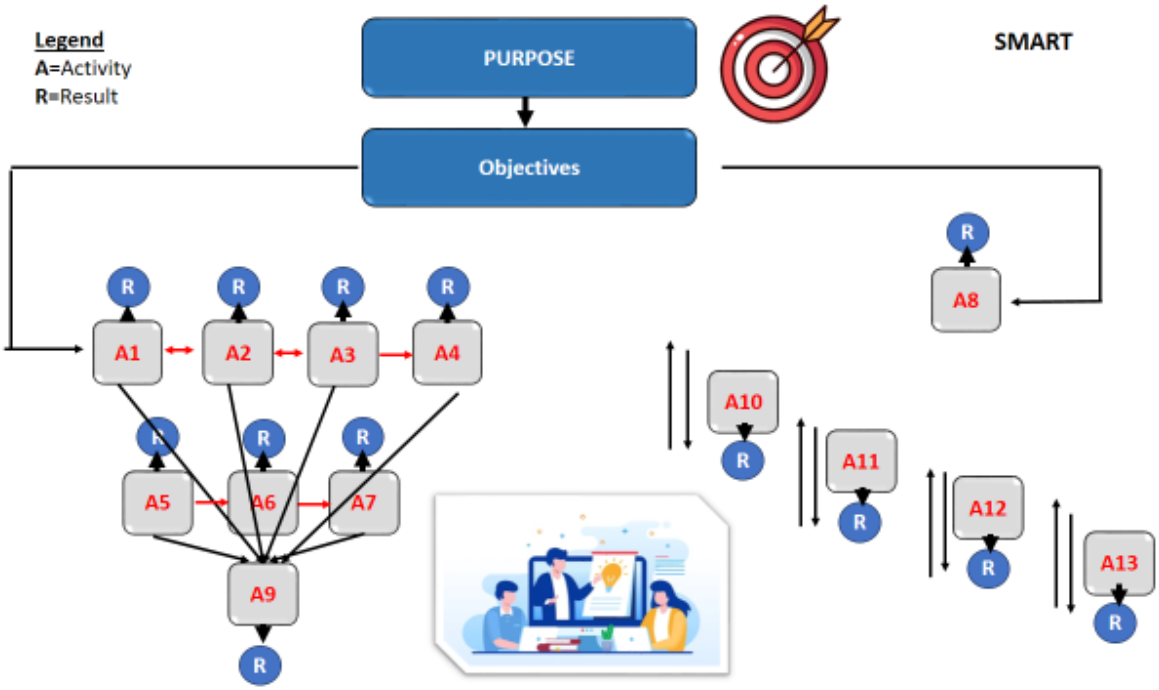

Legend
A=Activity
R=Result
PURPOSE
Objectives
SMART
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
R

V.Direct beneficiaries of the project for which we are applying for funding. Indirect beneficiaries

This project has been designed with a diversity of beneficiaries in mind, both direct and indirect, to ensure the sustainable and positive transformation of this iconic area.

a)Direct beneficiaries:

1.Students in Bucharest: students of all ages who will benefit from specific educational and volunteering programs aimed at raising awareness on the importance of environmental conservation.

2.Biology and ecology students: young biology and ecology-oriented students who will benefit from educational programmes and research/volunteering activities, thus contributing to their professional development and raising awareness on environmental conservation.

3.Local community in Bucharest: groups of inhabitants living in the vicinity of the Botanical Garden who will be involved in public consultations and volunteer activities.

b)Indirect beneficiaries:

1. Teachers and academics from pre-university and university who can carry out projects with young people in a new, renovated and more accessible green space.

2. Local authorities and environmental organisations: the project will be a promoter of awareness raising, education and greening activities, which will stimulate local authorities and various organisations to involve the Botanic Garden as a partner.

VI.Involvement of other community residents in the development and implementation of the project?

This project is addressed to the whole community of Bucharest. Thus, the project will focus on the whole macro-structure of the community by involving all social spheres and age groups. In this respect, the following methods of involvement will be pursued:

Effective and transparent online communication: creation of a platform directly linked to Meta and TikTok platforms where data about the project will be presented in an interactive way. The community will be able to choose between different landscape plans, plant species, as well as propose initiatives within the project objectives.

Direct involvement: facilitating opportunities for volunteering and active participation in different stages of the project, i.e. recruiting a group of volunteers to organise and hold community conferences in the Botanic Garden.

Working with schools throughout Bucharest: establishing partnerships and involving teachers and students in various educational and interactive activities that include the project theme (workshops, seminars, mini-excursions in the Botanical Garden).

Environmental education programme: development of an extracurricular environmental education programme in schools to involve students in the project and to promote awareness of the importance of nature conservation.

Promoting sustainability: educate residents on environmental and sustainability concepts through awareness campaigns and workshops.

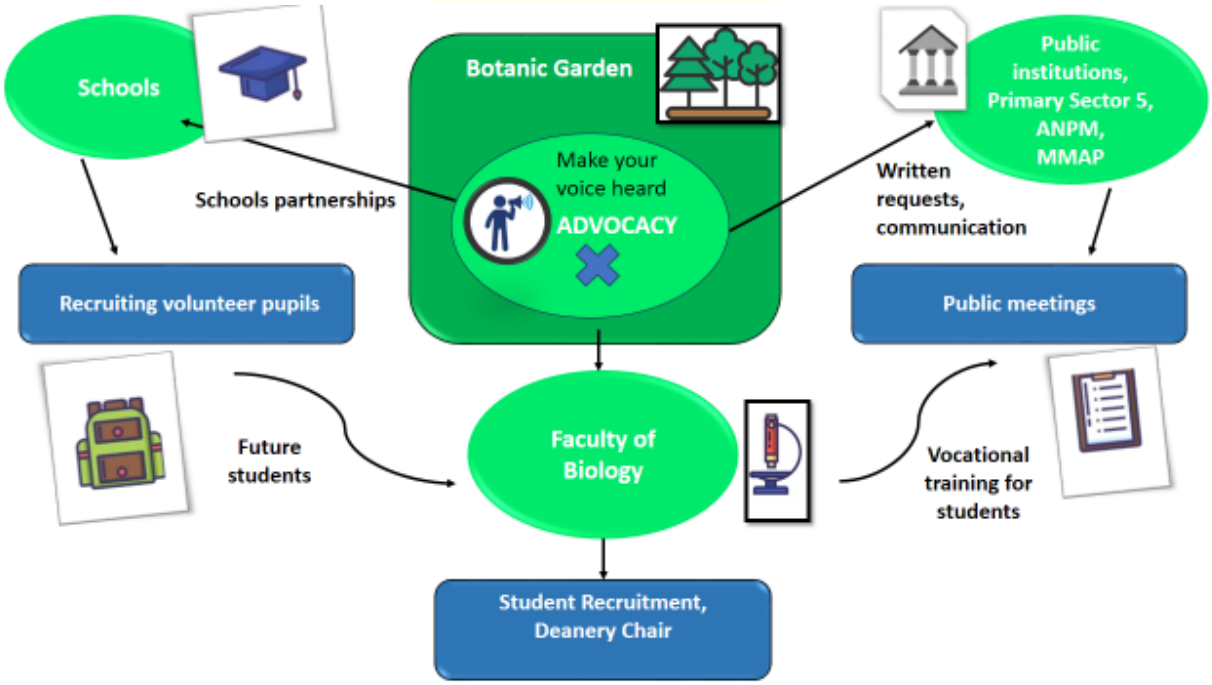
VII.Advocacy with local authorities.

Students of the Faculty of Biology, University of Bucharest, will be co-opted in the project in order to train them according to its needs. Students from the Faculty of Biology, University of Bucharest will also be involved to ensure that the requirements of the project are met.

Students from various schools in Bucharest will also be co-opted to actively participate in the project activities and will be interactively trained on the needs of the project and the importance of awareness of a healthy environment and the various problems it can face.

Together with the trained students, workshops and seminars will be organised for students and citizens of the community on topics related to the project and the environment in general. Information about the project will be disseminated to the City Hall of Sector 5 in order to organize educational, administrative events and conferences. The actions undertaken within the project will also be communicated to the National Agency for Environmental Protection, the Ministry of Environment, Water and Forests, as well as to the Ministry of Education in order to signal the need for proper maintenance of the Botanical Garden, which represents a natural heritage.

The public will also be informed through online platforms about the project implementation stages and the results achieved, through interactive and easy-to-understand posts.



VIII.Are the anticipated results of the project for which we are requesting funding through this call for projects concrete and measurable?

The anticipated results of this project are:

1.Restoration of biodiversity: the project aims to restore the aquatic ecosystems of the Botanical Garden, contributing to an increase in local biodiversity. Positive results are anticipated in terms of increased numbers of plant and animal species specific to aquatic habitats, including the growth and diversification of endemic species, thus providing a more robust and balanced ecological environment around the lakes.

2.Habitat restoration: Protecting and restoring crucial habitats for different species, fostering biodiversity and natural ecology.

3.Improving water quality: By implementing the project, measures will be taken to reduce pollution and negative impacts on water quality, creating a favourable environment for aquatic plants and animals.

4.Increasing the attractiveness of the Botanical Garden: Through ecological reconstruction and redevelopment of the lakes, the Botanical Garden will become a more attractive place for visitors, providing a more picturesque and familiar setting. At the same time, by creating recreational spaces around the lakes, it is expected that the number of visitors and public interest in the Botanic Garden will increase significantly and the quality of life of the citizens will improve.

5.Raise awareness for environmental and biodiversity conservation: Raise awareness of the importance of environmental conservation among the community and promote a sustainable model for similar projects in the future.

6.Community Awareness: Through the workshops and seminars to be organised, the aim is to provide an opportunity for a more comprehensive understanding of the importance of conservation of the environment and ecosystems, thereby increasing community awareness.

During and after the implementation of the project, community life will have a positive impact by:

-Increasing public awareness and involvement in environmental conservation.

-Increasing the number of aquatic plant and animal species, thus contributing to the natural diversity of Bucharest.

-Creating green and recreational spaces, offering an opportunity to relax and connect with nature in the middle of the city.

-Improving the quality of life of residents and their health through more balanced ecosystems.

IX. Evaluation of the project for which we are requesting funding through this call for projects and the changes produced

Project appraisal is a crucial stage in measuring the project's impact on the environment and the local community. In order to obtain a comprehensive assessment, a set of methods, i.e. qualitative and quantitative indicators, will be used.

Evaluation methods:

1.Continuous monitoring: Implementation of a comprehensive monitoring system of all ecological and biodiversity parameters during and after project completion.

2.Ecological and biodiversity studies: Assessment of the regeneration and diversification of fauna and flora in the restored areas.

3.Community questionnaires and surveys: Distribution of questionnaires and surveys to collect direct feedback from the community on project perception, satisfaction and awareness. Evaluate the changes generated in community behaviour and attitudes towards the environment.

4.Socio-economic analysis: Assessment of the economic and social impact of the project by analysing data on increased visitor numbers, impact on local businesses and employment in the area.

5.Sustainability Indicators: Using sustainability indicators to assess the extent to which the objectives set have been achieved and whether the results are sustainable over time.

6.Cost-benefit analyses: Assess the financial efficiency of the project and determine whether the benefits to the community and the environment outweigh the costs invested.

7.Assessing progress of specific objectives: Establish performance indicators for each component of an objective and assess progress against them.

Qualitative indicators:

-Community perception: Degree of satisfaction and community perception of the project, collected through questionnaires and public discussion.

-Quality of life: Assessment of the perception of the quality of life in the community.

-Environmental Awareness and Education: Degree of community awareness of environmental issues and sustainable practices, measured through surveys and direct interactions.

Quantitative indicators:

-Biodiversity level: The number of plant and animal species identified after the project implementation.

-Water quality: Physico-chemical water quality parameters measured on a regular basis.

-Visitor numbers: Increase in visitor numbers.

-Local economic growth: Increased income from food service activities.

X.How our project contributes to increasing the accessibility of green spaces less than 1 km from home for the citizens of Bucharest

The Botanical Garden, located in the heart of Bucharest in the Cotroceni area with an area of about 20 hectares, represents for many Bucharest residents an accessible green space close to their homes.

It is well known that the Botanical Garden has a high number of visitors every year. Since the start of the "Green Week" programme on 27 February 2023, the "Dimitrie Brandza" Botanical Garden of the University of Bucharest has been visited by over 5,000 students. And in spring 2023 more than 14,600 crossed the threshold.

Unfortunately the lack of investment in this green space by decision makers has left the place in a state where it is not used to its full potential. A large part of the area also called the Historic Garden is unusable for visitors due to the chaotic growth of trees and shrubs. We therefore aim, together with the management of the Botanical Garden, to bring this area back into use by the general public by refurbishing the space. We will do this together with the students of the partner schools and thus contribute to raising awareness among young people.

Also, due to lack of funding many of the Botanic Garden's sectors are not tended and therefore the vegetation has made it difficult to observe plant species of interest. Together with our volunteers we will solve this problem by mowing, replanting and providing special areas for observation.

XI.How does the project aim to support local biodiversity during periods of climate extremes?

In order to sustain local biodiversity during periods of climate extremes, the implementation of the following climate change related measures and strategies will be considered:

1.Establishment of buffer zones: Establish buffer zones around lakes that provide protection against the effects of extreme weather. These zones can consist of dense vegetation or natural fences, depending on the specifics of each area of the Bucharest Botanical Garden. These buffer zones can reduce the direct impact of climate extremes on local biodiversity and provide a more stable environment for plants and animals.

2.Use of native vegetation: In order to restore aquatic and semi-aquatic vegetation, native plants specifically adapted to local climatic conditions and with high resistance to climatic extremes will be used. At the same time, biodiversity will be enhanced, providing food and shelter for bird species that prefer aquatic ecosystems.

3. Implementation of water filtration systems to reduce pollution and improve water quality in lakes: This will ensure water level control to avoid flooding or a dramatic drop in lake levels during dry periods.

4. Conservation of vulnerable species: Species vulnerable to climate change will be identified for conservation and sustainable measures such as the creation of artificial or protective habitats will be addressed.

XII.Describe the risks that may arise in the implementation of the project for which you are applying for funding through this call for projects.

a) Risks associated with the interest of the target audience:

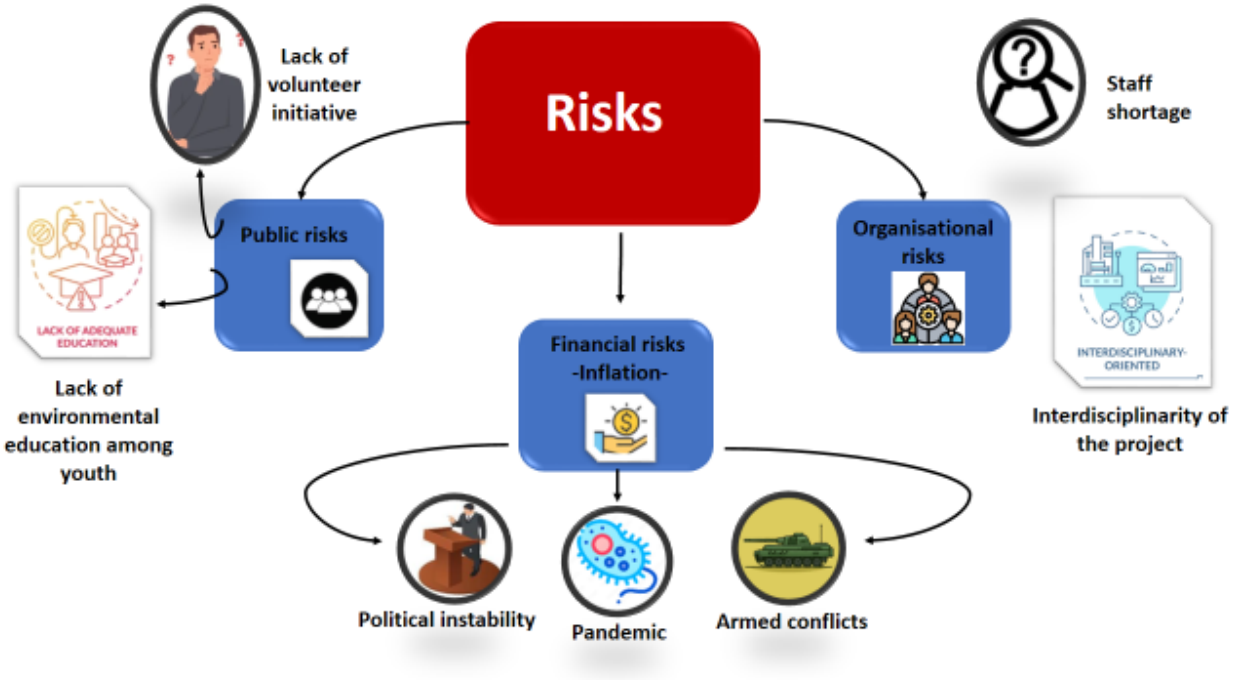
Non-involvement of students and pupils: students and pupils may not be sufficiently motivated to actively engage in the project due to lack of awareness or interest in environmental issues.

Resistance of the local community: there is a possibility that the local community may be resistant to the proposed changes in the Botanic Garden, either due to lack of information or due to constraints related to the change of the familiar landscape and may not understand the need for such a project or may consider other situations and issues as more urgent; there is also a possibility that part of the target audience may not be educated in ecology and may not be familiar with the concept of ecological reconstruction.

b) Capacity of the team to implement the project: due to the interdisciplinary nature of the project, the implementation team may have difficulties in coordinating technical and economic aspects. In order to minimise the risks presented, a plan will be put in place, based on an integrated strategy, to involve the community through the development of education campaigns (seminars and workshops, public consultation sessions) which, in addition to the educational impact, will facilitate better communication and actively stimulate community involvement. At the same time, partnerships with educational institutions will be envisaged in order to involve and raise awareness of the importance of the environment among students. At the same time, the project team will

benefit from continuous professional training in order to constantly update their technical and scientific knowledge. It will also consider the implementation of a system for constant monitoring of the project's impact.

c) Financial risks due to an increase in the price of goods purchased from the project following an armed conflict in the vicinity of the country, a health crisis (pandemic).



XIII.How we plan to continue this project, or develop it in the medium term

For example, the establishment of a programme of ecological reconstruction of the area between the two lakes where wild flora will be allowed to develop, developing a specific nesting habitat for certain species of birds whose particular habitat is meadows.

This area will be demarcated with signs to warn visitors so as not to disturb the development of the habitat and to avoid a possible distancing of the species from it. Evaluation of the local fauna of the Botanical Garden and reintroduction of animal species characteristic of the ecosystem but which are in short supply at the time of the evaluation.

Rehabilitation of the island on the large lake, both ecologically and for tourism purposes, by placing nesting sites for aquatic bird species (duck, sandpiper) and by providing nature recreation areas (gazebos) and benches.

Enclosing the island with reeds. We will also maintain the lakes to reduce eutrophication.

Brief description of the project team members

Nicolae Crăciun

Nicolae Crăciun, a man dedicated to environmental conservation and nature protection. He has a wealth of experience in ecology and scientific research. In July 1974, he was involved in the declaration of a private scientific reserve, a joint property of his family, covering an area of 6 hectares of forest in the village of Plutonița, town of Frasin.

Between 1983 and 1990, Nicolae Crăciun founded an NGO for the conservation and rescue of scientific reserves, focusing on rare species of flora and fauna. He coordinated volunteering in the Commission of Natural Monuments, having 273 new curators of the CMN.

In 1993, he founded the Ecological Society for the Study and Protection of Wild Flora and Fauna Aquaterra, where he served as president and initiator. In this capacity, Nicolae Crăciun coordinated scientific activities in collaboration with Acad.prof.dr.doc. Petru M. Bănărescu until 2009.

With a significant impact in the field of fisheries and aquaculture, he contributed to the drafting of legislation in this field in 1996. Nicolae Crăciun has been involved in research projects, policy coordination for Romania's accession to the European Union in the field of aquaculture and fisheries.

In 1998, he initiated the "Animal Planet Club" project for professional education. Later, Nicolae Crăciun was involved in the elaboration of the National Strategic Plan for Fisheries and in coordination activities for Romania's accession to the EU in the field of aquaculture.

Founder of the Aquaterra Ecological Educational Complex, which operated between 1993 and 2012, Nicolae Crăciun has had a significant impact in the professional training of students and in ecological and ethological research.

In 2007, he was the initiator of the research, ecological reconstruction and breeding station for rare fish species of Romania's fauna, called "Noah's Little Ark".

Since 2017, Nicolae Crăciun has been the initiator of the development of two laboratories in the Faculty of Biology and other projects in the field of ecology and conservation. In parallel, his academic career included PhD registration at the Institute of Biological Sciences, Department of Aquatic Ecology, under the supervision of Academician Petru Bănărescu, subsequently obtaining the title of PhD in Zoology-Zoogeography.

Later, Nicolae Crăciun taught at the Faculty of Biology, University of Bucharest, on subjects such as fish ethology, zoogeography, ichthyology and ornithology, earning the position of assistant professor by competition at the Department of Animal Biology.

All of these educational and professional experiences have combined perfectly with his initiatives in environmental conservation and scientific research in the field of ecology, thus contributing to his holistic development and significant contribution to various biodiversity and nature conservation projects.

Matache Răzvan

Razvan Matache is a dedicated and passionate environmental professional with extensive experience and expertise in biodiversity, aquatic ecology, ichthyology and genetic studies. With a significant presence in the public and private sector, he has contributed to multiple projects and initiatives that have had a positive impact on the environment.

Since the beginning of his career at the Ministry of Environment, Water and Forests and the National Agency for Environmental Protection. Through his activities, he managed crucial external relations and drafted national and international technical bids and projects.

As a Scientific Researcher at the National Institute for Research and Development for Environmental Protection, Razvan has conducted extensive research in the field of biodiversity, ecosystem dynamics, ichthyology and genetic studies. He was responsible for active monitoring of sturgeon species and ichthyofauna, as well as processing and interpreting the data obtained. Răzvan has also held key positions, including Deputy Head of the Biodiversity and Ecosystem Dynamics Department.

Experienced and educated, Razvan has been and is involved in higher education, contributing to the training of future generations of biology specialists. As an assistant professor at the Faculty of Biology, University of Bucharest, he shared his knowledge in fish ethology, zoogeography, ichthyology and ornithology. In addition to his involvement in research projects, Răzvan has been an environmental expert for various appropriate assessment studies and environmental impact reports, focusing on projects on de-pollution and monitoring of environmental parameters.

From 2019 to 2021, Razvan has successfully completed Master's studies in Biodiversity Conservation and Molecular Genetics, bringing a strong academic perspective to his environmental work.

In conclusion, Razvan Matache stands out as a complex and dedicated professional with a rich experience in environmental protection, scientific research and education. His extensive contributions in various projects and roles recommend him as a promising candidate for financial support in the environmental field.

Hanganu Dorin

Lucian-Dorin Hanganu is a physical engineer with extensive experience in quality assurance of nuclear products and services for the Cernavodă Nuclear Power Plant, having made a significant contribution during this period. He further turned his expertise to the field of chemical-pharmaceutical research, focusing on IR and UV-VIS spectroscopy, as well as biochemical engineering, with emphasis on applied microbiology, tissue and animal cell culture, and modern separation processes.

Between 2000 and 2009, he was director of SC AQUALAND EXIM SRL, where he contributed to the design and execution of aquaria, freshwater and marine fish imports, and the implementation of RAS aquaculture systems. At the same time, he was involved in the breeding and rearing of Koi fish species and the design of public aquariums.

From 2009 to 2021, he was the director of SC CENTRU PISCICOL S-H SRL, where he continued his activity in aquarium design and execution, fish import, as well as in the development and implementation of complex aquaculture projects.

Lucian-Dorin Hanganu has a solid education, graduating from the University of Bucharest, Faculty of Physics, with a specialization in Interaction of Radiation with Substance. In addition, he has extensive digital skills in information processing, communication, content creation, security, and problem solving in both hardware and software.

Throughout his career, he has been involved in a number of biodiversity impact projects, focusing on collaborative studies with various institutes and organisations. He has played an active role in environmental impact assessment for various projects, including in protected areas and in the implementation of management plans for special natural areas.

In the field of aquaculture, he has been involved in notable projects such as the Tulcea Public Aquarium and the Drobeta Turnu Severin Public Aquarium, contributing significantly to the

development of these facilities. Lucian-Dorin Hanganu is also fluent in English, Japanese and French, making him a team member with an international outlook and extensive communication skills.

Gaftonianu Stefan

Stefan Gaftonianu is a dedicated environmental student with a solid background in project management leadership. As a Project Manager at the Aquaterra Ecological Society in Bucharest, he started successfully coordinating and implementing sustainable environmental initiatives. His role involved collaborating with the team in research, monitoring and evaluation activities to improve the impact of environmental programs.

In addition to project management, during high school he served as President of the Student Council at Ion Luca Caragiale High School in Moreni. He represented Dâmbovița County at the National Education Partnership Competition in Sulina, where he won 2nd place and received a merit scholarship. This experience strengthened his leadership, communication and resource management skills with young people, essential for his path to becoming a sustainability manager.

He was also an Ambassador at the Leadder Foundation for 3 years, participating and promoting the Authentic Leadership program. This program provided him with valuable skills in leadership, effective communication, persuasion and mobilization. The experience strengthened his self-confidence, improved his negotiation skills and taught him to work effectively in dynamic environments.

Academic achievements include entering the Master's degree in the Faculty of Biology, University of Bucharest, where she ranked 3rd out of 27 students. He also obtained a Bachelor's degree in Plant Genetics at the same educational institution.

During her academic journey, she has been actively involved in various extracurricular activities, including debates, Model NATO conferences and leadership courses. She also participated in the Erasmus programme in Italy, broadening her perspectives.

With a strong foundation in leadership, effective communication and environmental expertise, Stefan Gaftonianu is ready to contribute to sustainability initiatives. His goal is to positively

influence change and achieve sustainable results in the field of environmental conservation. As a dynamic team member and trusted collaborator, he brings a unique combination of skills and experience, making him an ideal candidate for implementing Environmental Platform projects.

Raischi Natalia

Education: Educational institution: Polytechnic University of Bucharest, Field of study: Environmental Engineering in Energy, Qualification level: ISCED7.

Experience:

She is currently a Senior Advisor in the National Agency for Environmental Protection, Directorate for Nature Conservation, Biodiversity. Previously, from 2013 to 2021, she worked as a Scientific Researcher grade III at the National Institute for Research and Development for Environmental Protection Bucharest-INCDPM.

He has participated as project manager/responsible/team member in more than 10 national/international funded projects in the field of environmental protection and is author/co-author of more than 10 ISI/BDI indexed papers and 3 published books. He has participated in numerous national and international scientific events. Recent relevant experience is highlighted by participation in the development of the National Action Plan for the Hucho hucho species, which has now been approved by the Ministry of Environment, Water and Forests. He also contributed to the development of the Best Practice Guide on the mapping and assessment of wetland ecosystems and their services, published by UNIVERSITAS; Petroșani, ISBN: 978-973-741-533-2.

Since 2015, he has completed qualification courses as Project Manager and Quality Auditor, COR Code 214130. He has skills in communication at individual and group level, knowledge of the cepts of the environmental protection project financing programs, skills in organizing, coordinating and executing the implementation activities of projects developed in the field of environmental protection.

ANNEXES

1. Partnership Contract Botanical Garden, Bucharest

2.1. Secondary School No. 112, Bucharest

2.2. Miguel de Cervantes Bilingual High School, Bucharest

2.3. Secondary School No. 20, Bucharest

2.4. Nicolae Labiș Secondary School, Bucharest

2.5. Gheorghe Lazăr National High School, Bucharest

2.6. Secondary School No. 80, Bucharest

Signature

President of the Aquaterrra Ecological Society

Lect. Dr. Nicolae Crăciun