

**Environmental Impact Assessment
on the
Restoration of the Most Heavily Impacted Parts of the Coastal Walking
Path of Dojran Lake using nature-based solutions
(project activity 2.5.1)**

**Date
25.08.2020**

CEPF Grant 109162

Milieukontakt Macedonia

*Enhancing Dojran Lake unique biodiversity through engagement of all stakeholders
and implementation of ecosystem-based approaches*

Municipality of Dojran – Dojran Lake

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Grant Summary

1. Grantee organization: Milieukontakt Macedonia
2. Grant title: Enhancing Dojran Lake unique biodiversity through engagement of all stakeholders and implementation of ecosystem-based approaches
3. Grant number: CEPF-109162
4. Grant amount (US dollars): 147,735.30
5. Proposed dates of grant: 01.07.2019 – 30.06.2021
6. Countries or territories where project will be undertaken: The Republic of North Macedonia
7. Summary of the project: The project aim is to strengthen the governance of the catchment management zone and to achieve sustainable management, conservation, and restoration of the lake through engagement of all stakeholders and implementation of ecosystem-based approaches.
8. Date of preparation of this document: 25.08.2020
9. **Status of area to be impacted:** This section should describe the applicant's understanding of the site.

In the last couple of decades Dojran Lake has experienced substantial fluctuations in the water level. In the period 1999 - 2002, the Macedonian government had to build a channel to bring water from the near town of Bogdanci, in order to save the lake and offset the diminishing volumes of water that have been abstracted for agriculture use. However, in the past couple of years due to heavy rains the water level has increased significantly and has caused large damages to the coastal infrastructure near Star Dojran. In order to avoid future damages to the coast and the lake biota, the water level of Dojran Lake needs to be actively managed. This can only be achieved with controlled input and outlet of water and through an active collaboration between the two countries that are sharing the lake i.e. North Macedonia and Greece. The objective of another activity of this project is to address this issue and initiate a dialog for proper water abstraction between the Greek and North Macedonian authorities responsible for the management of Dojran Lake.

The latest substantial increase in the water level of Dojran Lake has caused large damages and flooding of parts of the existing coastal walking path, constructed over the masonry lake bank (Figure 1). The coastal path is located in the southern part of the lake, stretching from the town of Old Dojran and up to the Greek-North Macedonia border. The segment of the coastal path that will be restored as part of this project activity is located outside of the town of Old Dojran, in the area called Sretenovo (Cadastral Parcel CP1511/1 and CP1067; please see Figure 2). The scientific assessment undertaken for the preparation of the Valorization Study on Dojran Lake (2018, during a previous CEPF funded project) has designated this area as a zone for sustainable management, because no habitats or species of significant importance are been found at this location. The planed restoration works on the coastal path will cover an area of 2300 m², including a 10 m wide stretch that is now sank in the lake water. Due to the damages and flooded parts, large segments of the current walking path cannot be used. The proposed restoration and planting of native trees and shrubs will encompass clearing of all debris in the water and on land, and stabilization of the walking path using vegetation. The expected outcomes of this project activity are the following: restored walking path that can be used for recreation, enhanced stability of the walking path, improved filtering capacity for land water runoff, enhanced local diversity and added esthetics and natural values to the surrounding.



Figure 1 Photos of damaged and flooded coastal walking path. (Courtesy of M. Velchev; 22.07.2020)

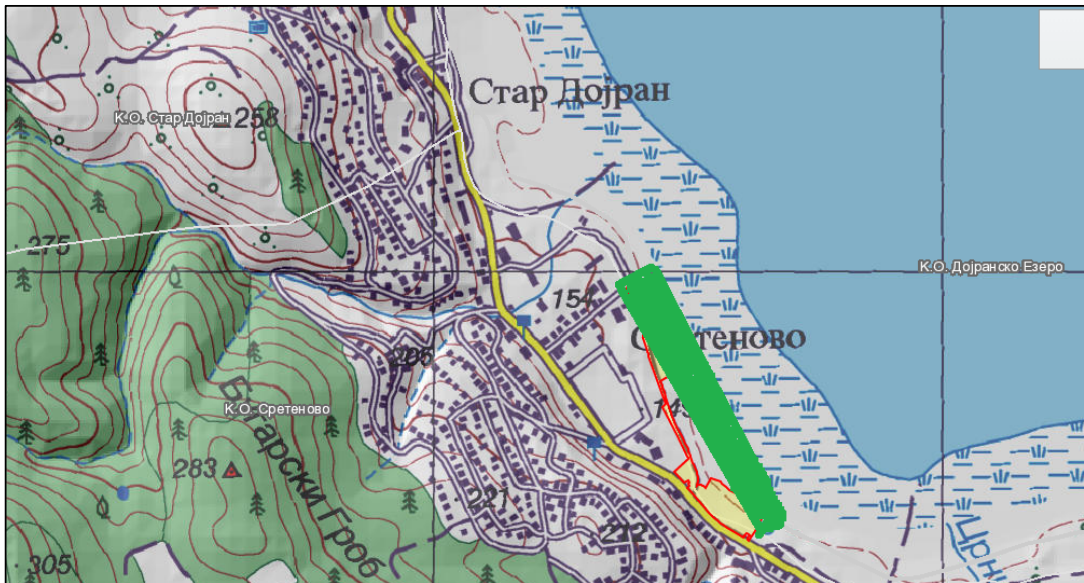


Figure 2 Graphical illustration of the cadastral municipality, where the damaged coastal walking path is located.

10. **Approach:** This section will describe proposed actions during the project. Specifically, what do you intend to do and how will you do it?

This Environmental Impact Assessment is developed for the following project activity:

Restoration and stabilization of the most heavily damaged coastal walking path of Dojran Lake, using nature-based solutions.

Planning of this activity and the selection of the part of the damaged coastal path has been done in close collaboration with the Municipality of Dojran. Shortly, the sector for urbanism and spatial planning at the municipality has prepared and provided the technical plan for reconstruction of the coastal path. According to this document, the following actions will be undertaken:

1. Mechanical clearing of debris in the lake, originating from the flooding of the walking path;
2. Mechanical clearing of debris on land, originating from the flooding of the walking path;
3. Manual dismantling of damaged pavers;
4. Embankment, using river gravel;
5. Disposal of damaged construction material of the flooded walking path.

The construction work will be performed by a professional company specialized for construction works. In addition, the Municipality of Dojran will provide a professional supervision during the entire construction phase.

To further improve the stability of the coastal path, planting of native trees and low-stemmed shrubs is planned. The addition of vegetation will provide further protection against flooding, filtering capacity for land water runoff, absorption of excess of nutrients, mitigation of climate change, enhancement of the local diversity, improvement of the water quality of the lake, and will also bring esthetic values to the surroundings. The selection of autochthonous flora and the landscaping has been done by an expert specialized in forest engineering/landscaping. The following autochthonous trees will be planted *Betula pendula* and *Salix babylonica Pendula*, along with low-stemmed shrubs.

11. **Anticipated impact:** this section will describe the impact and how this impact has been determined.

The planned activities under the activity Restoration of the coastal walking path with nature-based solutions are expected to have an environmental impact.

According to the Law on Environment and the Decree on the activities that require preparation of an elaborate for environmental protection, the planned activity - reconstruction of the existing coastal walking path is not specified and identified for the preparation of elaborate or study for environmental impact assessment (EIA).

Having in mind that Lake Dojran is a monument of nature, Milieukontakt Macedonia has prepared a letter of intention regarding implementation of the abovementioned activity. This letter includes a project description, identification of environmental impacts, as well as measures for prevention or mitigation of negative impacts. Also, in accordance with the EIA procedure, a checklist was filled to determine the need for an environmental impact assessment. The letter of intent was submitted to the Sector for Environmental Impact Assessment at the Ministry of Environment and Physical Planning.

During the reconstruction/rehabilitation of the coastal walking path, the following negative effects on the environment media are expected: air, water and soil, as well as changes in the noise level. All these negative impacts will be limited to the location of the project activities. The impacts will be short-termed, as the activities planned for the restoration of the walking path will finish in a month. The impact is anticipated to be very minimal, as it will only affect locally and temporarily.

The reconstruction of the coastal walking path is expected to have an overall positive impact, especially in the operational phase. The restoration of the damaged walking path on the coast of Lake Dojran will improve the appearance of the surroundings and the lake. The repaired walking path will be used only for recreation, such as hiking and cycling.

Nature-based solutions i.e. planting of vegetation, are planned to be applied in order to stabilize the walking path, to mitigate flooding and wave impact, as well as to promote local biodiversity.

Air emissions

Construction phase

During the phase of realization of the planned project activities, the following impacts are expected to appear in the air:

- fugitive dust emission during construction activities;
- emissions of exhaust gases from transport machinery for delivery of construction materials;
- generation of dust from the transport mechanization and the combustion of fuel machines, during the construction works;

The nearby population, the employees as well as the biodiversity, i.e. the fauna in Dojran Lake will be most exposed to air emissions during the construction activities.

The impact on air quality can be categorized as short-termed (not more than one month), localized and as a low intensity environmental impact.

Operational phase

No negative impacts on air quality are expected in the operational phase, as the coastal walking path will only be used for recreational activities such as walking and cycling.

Water pollution

Construction phase

Pollution of water in the lake can be caused as a result of soil and sand debris generated from ground-construction works during the clearing of the path. Pollution of the lake water could also be potentially caused as a result of leakage of liquids, fats and oils from the construction machinery. Groundwater and soil pollution can also occur as a result of potential accidents and disasters. Concrete waste or waste from other construction materials during the construction activities can also potentially cause pollution of water. The intensity of the potential impacts will depend on the physical characteristics of the site as well as the composition of the potential pollutants.

Operational phase

No negative impacts on the surface waters of Lake Dojran are expected in the operational phase, except for potential littering by the users of the walking path.

Waste generation

Construction phase

The following types of waste are expected to be generated during the construction phase: communal waste from the engaged workers, construction waste from the activities during the reconstruction of the path, waste from excavation (soil materials) and plant/garden waste. Waste generated by workers and other inert waste, will be disposed at a location intended for waste disposal in the Municipality of Dojran. Generation of hazardous waste is not expected in this phase, however should this type of waste be generated, it will be collected and transported by a company licensed for hazardous waste management.

Operational phase

After the reconstruction of the walking path, in the operational phase, generation of communal waste is expected. This type of waste originates from the tourists/users of the walking path and it should be disposed in waste bins placed along the path. The Public Utilities "Komunalec - Polin" will collect the communal waste and transport it to the local landfill.

Soil emissions

Construction phase

In this phase, the following impacts could be expected:

- leakage of fuels and oils from construction machinery, which could affect the groundwater;
- non-adequate disposal of generated waste;

Operational phase

No soil emissions are expected in the operational phase.

Noise and vibration

Construction phase

Increased noise levels are expected to occur during the construction works. The walking path is located in a populated area and because of that the local population as well as the fauna that lives on the coast and in Dojran Lake could be disturbed by this noise.

The limit values for the basic indicators for environmental noise are defined in the Rulebook on limit values for noise level. According to the Rulebook on the locations of monitoring stations and measuring points, the location of the coastal walking path is in the area with 1st degree of noise protection, which encompasses places that are intended for tourism and recreation, areas near medical equipment and hospitals, national park areas and nature reserves. In the area with 1st degree of noise protection, allowed noise level ranges from 50 dB (A) during the day and up to 40 dB (A) during evenings.

Operational phase

In the operational phase, noise is possible due to the increased frequency of visitors and tourists, but this noise is not disturbing and will be short-termed.

Biodiversity (flora and fauna)

Construction phase

Impacts on the biodiversity might occur as a result of the use of construction machinery, such as: noise generation, fugitive dust emissions and exhaust gases emissions.

The walking path that will be restored as part of this project is located in a zone that was proposed for sustainable management, and thus no important habitats or species are going to be impacted by the construction work.

Operational phase

No impacts on biodiversity are expected during the operational phase.

Impacts on human health

During the execution of the planned activities, some impacts on the local population may occur as a result of the work of the construction machinery, increased noise, fugitive dust emission etc. These impacts will

be short (max. one month), localized and present only in the phase of construction/restoration of the existing walking path.

12. **Mitigation measures:** Describe measures that will be taken to mitigate negative impacts.

No long-term negative impacts are expected from the reconstruction of the coastal walking path on the environment.

The potential short-term negative impacts during the construction phase will be mitigated with on time planning, professional supervision during construction, implementation of proposed measures for prevention and mitigation of negative impacts and site cleanup.

Air quality

In order to minimize the negative impact on air quality during construction works, the following measures are proposed:

- occasional spraying of the construction site with water in order to reduce the dust;
- avoidance of earth-construction works in dry periods;
- citizens and tourists will be informed about construction activities and working hours;
- regular maintenance and servicing of the construction machinery.

Water quality

Dojran Lake is a monument of nature, and the following measures are proposed and should be implemented in order to minimize the negative impacts on the surface water and groundwater:

- regular maintenance of vehicles and construction machinery;
- onsite maintenance and repairs of construction machinery is not allowed;
- deposition of waste from excavation, construction materials and other inert waste at appropriate places
- Prevention of leakage of hazardous waste (e.g. liquid waste, oils and fats from construction machinery).

Soil

Prevention or mitigation of impacts on the soil will be achieved by applying the following measures:

- timely planning and control of execution of construction works in order to reduce the negative effects and avoid soil pollution;
- prevention of leakage of all hazardous materials such as fuels, lubricants, as well as other liquid waste in the water of the lake, through proper storage in appropriate containers, placed on concrete substrates;
- in case of oil leakage from the mechanization, the contaminated soil should be removed, and treated as hazardous waste, in accordance with the bylaws for treatment of hazardous waste.

Noise

In order to minimize the negative impacts of noise during the construction works, the following measures should be applied:

- ground-construction works are recommended to be performed during daytime;
- if possible, ground-construction works are recommended to be performed after the finish of the tourist season;
- the motors from the construction machinery should be switched off during non-working periods.

Waste management

In order to properly manage the waste generated during the construction works, it is necessary to implement the following measures:

- the waste from the clearing of the path, should undergo separation and should be collected in special places that are appropriately labeled (e.g. construction debris in one place, ground, green waste in another place, etc.), in accordance with the law and bylaws for non-hazardous waste management;

- municipal waste generated from employees should be collected, transported and disposed at the municipal landfill for municipal waste;
- waste from excavation, such as stones, earth and concrete slabs should be stored or reused during site restoration;
- in this phase problems with hazardous substances are not expected; however, if hazardous substances are identified in the generated waste, the waste should be removed from the location, classified as hazardous and treated in accordance with the laws and bylaws on hazardous waste management;
- after the completion of the construction activities, all remained wastes along the path or in the vicinity of the path should be removed.

Biodiversity (flora and fauna)

During construction works, temporary impacts on flora and fauna are expected, so it is necessary to apply the following measures in order to prevent and mitigate potential impacts:

- conduct a visual monitoring by an expert (biologist) to determine whether there are any habitats or species of importance in the area surrounding the part of the walking path that will be reconstructed;
- careful performance of the work from the aspect of noise level, in order to prevent disturbance of the animals;
- disposal of any waste in Lake Dojran is not allowed;
- the removal of green areas along the path should be minimized;
- use of proper construction machinery and use of environmentally friendly fuels;
- Lake Dojran is a Ramsar area and an important place for birds, therefore all measures required by Ramsar in consultation with a biologist or ecologist must be respected without any exception;
- if the presence of a protected species (IUCN red book) of animals is determined, the construction works will be stopped and the competent body for nature protection will be informed;
- planting of autochthonous plant species.

After the finish of the mechanical work on the restoration of the walking path, nature-based solutions will be applied i.e. planting of autochthonous flora alongside the walking path, in order to improve the stability of the walking path, enhance the local diversity and to add esthetical values to the surroundings. It is planned to plant the following species *Betula pendula* and *Salix babylonica Pendula* as well as autochthonous low-stemmed shrubs.

13. **Actions to ensure health and safety:** Describe actions that will be taken to ensure the health and safety of workers as well as the site. Include a description of waste management and/or disposal.

A professional company will implement the actions related to the restoration of the walking path. To avoid any safety or health hazards, the company of choice will need to fulfill criteria of having an operational work safety and health procedures as well as trained personal. The waste produced during the stabilization and repair of the walking path will be appropriately disposed off and actions towards reduction of the waste volume and spread will be undertaken.

14. **Monitoring and Evaluation:** This section aims to outline what steps the proponent will take to monitor and evaluate the impact of the proposed intervention.

The reconstruction of the coastal walking path will be well planned such as to avoid unnecessary disturbance of the surrounding environment. Dojran Municipality will provide professional supervision during the entire construction phase. In addition, the project team and representatives from municipality of Dojran will be present on site to supervise and provide guidance during the construction phase.

15. **Permission of the landowner:** Please verify permission of the landowner to undertake actions on the site, and verify that you have the required permits to undertake this work.

Milieucontact Macedonia (MKM) is implementing the project in partnership with the Municipality of Dojran, and we have a permit to undertake all proposed actions. All steps of this activity have been planned together with representatives of the Municipality of Dojran.

15. **Consultation:** This section aims to outline the range of informed consultations that the grantee has had both with experts to optimize the potential for success, and with stakeholders, particularly local communities, who are potentially affected by the proposed actions. Include dates of consultations.

The need for restoration of the complete coastal path has been approved by the Council of Dojran. Residents of the village of Sretenovo and tourists will be informed about the planned activities on the reconstruction of the existing walking path, especially about the time of construction works, the possible noise disturbances and the short change in the ambient air quality.

16. **Disclosure:** CEPF requires that safeguard documents are disclosed to affected local communities and stakeholders prior to project implementation. Please describe efforts to disclose this impact assessment and environmental management plan and provide dates.

According to the Law on Environment and the Decree on the activities that required preparation of elaborate for environmental protection, the planned activity - reconstruction of the existing coastal walking path is not specified and identified for the preparation of elaborate or study for environmental impact assessment.

Having in mind that Lake Dojran is a monument of nature, MKM prepared a letter of intention regarding implementation of the above-mentioned activity. This letter includes project description, identification of environmental impacts, as well as measures for prevention or mitigation of negative impacts. Also, in accordance with the Environmental Impact Assessment procedure, a checklist was filled in order to determine the need for an EIA. The letter of intent has been already submitted to the Sector for Environmental Impact Assessment at the Ministry of Environment and Physical Planning (MoEPP).

Milieucontact will act in accordance with the response from MoEPP. If it is necessary to make a report on environmental protection for the reconstruction of the walking path, the report will be prepared by a certified person for development of EIA reports and it will be submitted for an approval to the responsible authority.

18. **Grievance mechanism:** All projects that trigger a safeguard must provide local communities and other relevant stakeholders with a means to raise a grievance with the grantee, the relevant Regional Implementation Team, the CEPF Secretariat or the World Bank.

This grievance mechanism must include, at a minimum, the following elements.

- Email and telephone contact information for the grantee organization.
- Email and telephone contact information for the CEPF Regional Implementation Team.
- Email and telephone contact information for the local World Bank office.
- The email of the CEPF Executive Director: cepfexecutive@conservation.org
- A statement describing how you will inform stakeholders of the objectives of the project and the existence of the grievance mechanism (e.g., posters, signboards, public notices, public announcements, use of local languages).

- You should include the following text, exactly, in any grievance mechanism: “We will share all grievances – and a proposed response – with the Regional Implementation Team and the CEPF Grant Director within 15 days. If the claimant is not satisfied following the response, they may submit the grievance directly to the CEPF Executive Director at cepfexecutive@conservation.org or by surface mail. If the claimant is not satisfied with the response from the CEPF Executive Director, they may submit the grievance to the World Bank at the local World Bank office.”

Following the guidance above, describe the grievance mechanism that you will use.

The grievance mechanism has been already added to the bulletin board at the Municipality of Dojran. In addition, the contractor that will do the constructional work on the walking path will be notified on the grievance mechanism during signing of the contract. Lastly, a signboard containing all necessary grievance information will be placed at the location of construction.

The mechanism for grievance that we will use for this activity, as well as during the entire project is described below.

The project coordinator will be the first contact person for receiving the grievances. Her details (name: Petra Pop Ristova, email: petra@mkm.mk, address: Kukushka 4A, 1000 Skopje, telephone: +389 77 835 449) along with the contact information of the grantee organization (Milieukontakt Macedonia, address: Kukushka 4A, 1000 Skopje, email: info@mkm.mk, telephone: + 380 2 2460876) the CEPF Regional Implementation Team, the Executive Director and the World Bank local office will be made available to the public and the stakeholders using the abovementioned means. The project coordinator will attempt to resolve the potential issues with the help from the project team, the partner Municipality of Dojran and if necessary with the CEPF Regional Implementation Team. The project coordinator has the obligation to communicate all grievances with the CEPF Regional Implementation Team and the CEPF Grant Director within 15 days. In a case of failed resolve, the issue must be passed along to the CEPF and the World Bank. As suggested, the following text will be included in the grievance mechanism: “We will share all grievances – and a proposed response – with the Regional Implementation Team and the CEPF Grant Director within 15 days. If the claimant is not satisfied following the response, they may submit the grievance directly to the CEPF Executive Director at cepfexecutive@conservation.org or by surface mail. If the claimant is not satisfied with the response from the CEPF Executive Director, they may submit the grievance to the World Bank at the local World Bank office.” The proposed grievance mechanism will be made publically at the Municipality of Dojran, as agreed with the CEPF team.