

**Terms of Reference for  
Aquatic Ecology Expert**  
for the purpose of development of a Guidance and Protocols for monitoring of  
Dojran Lake and conveying of Trainings

<b>Project name:</b>	Enhancing Dojran Lake Unique Biodiversity through Engagement of all Stakeholders and Implementation of Ecosystem-Based Approaches
<b>Location:</b>	Dojran Lake, Republic of North Macedonia
<b>Description of the agreement:</b>	Aquatic Ecology expert
<b>Period of duration of agreement/services:</b>	5 months after signing the Agreement
<b>Application Deadline:</b>	22.04.2020

### Introduction

Dojran Lake is one of the most important biodiversity spots in North Macedonia, which is also highly valued because of its natural beauty, hydro(bio)logical and geomorphological characteristics, and its importance to science. The lake hosts several endemic species and subspecies of fish as well as eleven endemic invertebrates and many protected bird species.

Dojran Lake has been also recognized internationally for its rich biodiversity and abundance of species, and thus has been proclaimed as an important area for the conservation of European species and habitats. To date, Dojran Lake has been included in many different international networks and initiatives for the conservation and protection of nature, such as: the Emerald network of areas of special conservation interest (2002; Bern Convention), North Macedonian important plant areas (2004), the Balkan Green Belt (2004; IUCN), Ramsar site - Wetlands of International Importance (2008; Ramsar Convention), Important Bird Area (2010; BirdLife International), candidate Natura 2000 site (EU Birds and Habitat directives). Since 1977 Dojran Lake has been protected with national law and holds a protected status of a Monument of Nature (Official Gazette of SRM N° 45/1977, Official Gazette of NM N° 51/2011).

Today, Dojran Lake's ecosystem and biodiversity are under big threat mainly from anthropogenic activities (enhanced by climate change) that cause pollution, eutrophication, habitat loss and fragmentation, species disturbance and loss, depletion of fish stocks and introduction of invasive species, deterioration of the water quality and excessive water fluctuations. The degradation of the lake ecosystem has started in the late 80's of 20<sup>th</sup> century when excessive quantities of water were abstracted, which put the whole lake system out of its natural balance. As a consequence of this ecological catastrophe as well as the continuous increasing anthropogenic pressures, today the lake is highly eutrophic and has completely lost its ecological resilience and the capacity for self-recovery.

The system will face irreversible and fatal damages to its biota unless conservation actions are undertaken and a proper sustainable management focusing on restoration and protection of the lake is established. Inaction will further have large negative consequences on the tourism, fisheries, and the regional economic situation as well as the livelihood of the local communities.

### Location of the project

Dojran Lake is one of the three natural tectonic lakes in North Macedonia and is located in the southeastern part of the country (41°23' N 22°45' E). The lake occupies an area of 43.2 km<sup>2</sup> of which 27.2 km<sup>2</sup> belong to North Macedonia, while the smaller part lays within the territory of Greece. Dojran Lake is a shallow lake with the deepest point of 10 m found in the southeastern part. The lake is located in a topographic depression (148 m altitude) surrounded by the mountains Belasica in the north, Krusha in the southeast and Mehek in the west. The project activities will take place in the North Macedonian part of the Lake Dojran.



Figure 1 Location of Dojran Lake. Source [www.google.com/maps](http://www.google.com/maps)

## Background

Municipality of Dojran is the responsible authority for the management of the Monument of Nature Dojran Lake. However, so far neither conservation actions to save the lake have been undertaken nor a management plan has been developed, leaving this protected area under no active management. This is a result mainly of the lack of knowledge, managing capacities and financial means.

## Expected results of the project

The Project focuses on achieving two main results: (1) Strengthening governance of the catchment management zone, and (2) Achieving sustainable management, conservation and restoration of the lake through implementation of ecosystem-based practices.

Within the project all relevant stakeholders, such as the local management authority, local community, land owners and the lake concessioner will be engaged to develop the first Protected Area Management Plan with Action Plan for Dojran Lake. During this process the stakeholders will be informed of the most pressing issues that negatively impact the lake ecosystem and will receive intensive trainings on best Integrated River Basin Management (IRBM) practices with the aim to ensure long-term sustainable provision of ecosystem services and improvement of the lake status and its biodiversity. In order to achieve continuous sustainable management of Dojran Lake, the project will focus on capacity strengthening of the responsible authority for planning, implementation, monitoring and review of management activities that influence the lake.

The project encompasses also conservation activities that aim to directly mitigate the anthropogenic impacts on the lake, to stabilize the shoreline, improve the water quality through biomanipulation by fish removal and restore the ecosystem balance through ecosystem-based approaches.

## Specific Objectives of the Project

1. Strengthen capacities for sustainable lake management
2. Develop a lake management plan
3. Develop monitoring protocols and guidance for lake protection and sustainable management
4. Initiation of trans-boundary lake basin governance
5. Improvement of water quality of Dojran Lake through ecosystem approaches
6. Develop a plan for prevention of anthropogenic pollution of the lake water
7. Rehabilitation and stabilization of the lake shoreline
8. Education on sustainable agricultural practices

The project is funded by the Critical Ecosystem Partnership Fund (CEPF). The Critical Ecosystem Partnership Fund is a joint initiative of l'Agence Française de Développement, Conservation International, the European Union, the Global Environment Facility, the Government of Japan and the World Bank. A fundamental goal is to ensure civil society is engaged in biodiversity conservation.

### Scope of work

- As part of this assignment the contractor/expert is expected to carry out the following tasks and provide the following deliverables:
  - **Develop a Guidance and Field Protocols for protected area monitoring of Dojran Lake**
  - **Prepare a Training Concept for monitoring of protected area**
  - **Convey a Training for the local administration on monitoring of protected area, including also short introduction on the implementation of the Management Plan of Dojran Lake and development of annual programs**
- In the process of preparation of the abovementioned tasks, the Aquatic Ecology Expert will have the following responsibilities to:
  - Provide **Work Plan**, i.e. time frame for realization of activities at the beginning of the work assignment. *(at least 1 page long)*
  - Develop **Guidance on monitoring of the protected area Dojran Lake**, which should at least comprise: an introduction chapter, objectives and goals of monitoring, identification of reference and endpoints of monitoring, characterization of monitoring sites and timescales, identification of indicators (natural habitats, aquatic and terrestrial biodiversity, ecosystem function, water quality, fisheries, pollution, natural hazards and etc.), monitoring methodology, analyses and display of monitoring data, required monitoring technology, indicators (background, methodology, sampling sites and frequency), reporting mechanisms and submission of data and etc. *(at least 30 pages)*
  - Develop **Field Monitoring Protocols for Dojran Lake for all identified indicators**, which should include: date entry, descriptive and geo-referenced location, observational characteristics, methodology, logging of metadata, monitoring steps and data logging, documentation of the monitoring as well as accompanying excel spreadsheet. Individual Field Protocols should be prepared for all indicators.
  - Develop **Training concept on monitoring of Dojran Lake**, which should contain: a general plan of the training course, day-to-day summaries of the training course and its objectives, as well as the training methodology. *(at least 5 pages long)*
  - Carry out a **Training program for local administration on monitoring**. The training should also include a short introduction how to implement the Management Plan and develop the annual programs. The training will be conveyed with help from a facilitator.
  - Provide **Documentation from trainings**, such as presentation slides, photos, questionnaires, participant lists etc.

### Methodology and Approaches

The scope of this task requires the use of wide variety of methods, tools, instruments and techniques.

The following approaches need to be strictly adhered to:

- The Aquatic Ecology Expert shall report to the project coordinator;

- The Aquatic Ecology Expert shall work in a close interaction with the Municipality of Dojran;
- The Aquatic Ecology Expert shall convey the training in close collaboration with a facilitator;
- The Aquatic Ecology Expert shall develop the Guidance, Protocols and the Training concept in accordance with the Protected area Management Plan with Action Plan for Dojran Lake.
- The Aquatic Ecology Expert shall develop the Guidance and Protocols in accordance with the national Law on Environment (Official Gazette of RNM, no. 53/05), Law on Dojran Lake (Official Gazette of RNM, no. 52/11), the EU Water Framework Directive (2000/60/EC), the monitoring guidance under the Water Framework Directive and the Ramsar Convention on Wetlands and its guidelines on monitoring.

### Working Schedule - Timeframe

The period of consultancy should be completed with the period of five (5) months upon signing of the contract.

Step	Deliverables	Timeline	Total duration of activity
1.	Guidance and Protocols on protected area monitoring of Dojran Lake	May – June, 2020 (6 working days)	2 months
2.	Training concept for monitoring of protected area	May – June, 2020 (2 working days)	2 months
3.	Training of local administration on monitoring of protected area, including also short introduction on implementation of the Management Plan of Dojran Lake and development of annual programs	August – September, 2020 (2 working days)	2 months

### Required Qualifications and Experience

The expert involved into this assignment shall have the following qualifications, skills and competences:

- A university degree in Aquatic Ecology, Limnology, Lake Biodiversity, Management of Ecological Resources, Environmental sciences, Nature Conservation Management or other thematic discipline relevant for this assignment. Please provide documentation accordingly.
- At least 5 (five) years of relevant working experience in lake monitoring, biodiversity conservation and/or ecology of limnological ecosystems.
- Ability to design and convey field-monitoring plans and guidelines for lakes.
- To possess knowledge of up-to-date monitoring techniques and protocols for lake water quality and biodiversity assessment.
- To possess knowledge of relevant national and international legislative concerning nature protection and water resources.
- Experience in providing trainings or teaching.
- Computer literacy (MS Word, Excel, Power point).
- Excellent communication and written skills in English and Macedonian.

- Proven experience in writing reports in English and Macedonian, and evidence or list of publications
- Ability to work independently as well as in cooperation with stakeholders.
- Availability during the term of the contract.

### Evaluation criteria

All applications will be evaluate based on the following criteria:

Criteria	Points
CV, Reference letter, including the years of relevant expertise; experience and skills required for this consultancy.	30 points max
Work methodology, Technical approach, demonstrating and explaining an understanding of the scope of work	30 points max
Financial offer	40 points max
<b>Total</b>	<b>100</b>

### How to apply

To apply, please send an e-mail with your CV, reference letter, letter of interest, work methodology along with the financial offer to [info@mkm.mk](mailto:info@mkm.mk) using the subject line: “**Aquatic Ecology Expert for Lake Monitoring**”.

Deadline for submission of documents is 22<sup>th</sup> April 2020 (Wednesday), 17.00 p.m. We encourage applicants to submit the application well before the stated deadline date.

If you need help, or have queries, please contact: [info@mkm.mk](mailto:info@mkm.mk) or [petra@mkm.mk](mailto:petra@mkm.mk)  
E-mails sent only during three (3) days upon the announcement of the vacancy will be replied to.