

Terms of Reference

for Fisheries Expert

to perform Fish Inventory/Assessment of Fish Stock of Dojran Lake (North Macedonia)

Project name:	Enhancing Dojran Lake Unique Biodiversity through Engagement of all Stakeholders and Implementation of Ecosystem-Based Approaches
Location:	Dojran Lake, Republic of North Macedonia
Description of the agreement:	Fisheries Expert
Period of duration of agreement/services:	4 months after signing of the Agreement
Application Deadline:	20.11.2020

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 20th 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 km² of which 27.2 km² 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

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 it is expected from the contractor/expert to convey:
 - **Comprehensive fish inventory and assessment of the fish stock of the Macedonian part of Dojran Lake.** This includes conveying **fisheries campaigns** and consequent **analyses of fish catch data**, focusing on: species occurrence, total quantitative abundance and biomass of fish species, standardized catches (catch per unit effort – CPUE i.e. BPUE and NPUE), size structure of fish communities, and relative abundance of piscivorous and planktivorous fish.
 - The main objective of this engagement is to provide quantitative data and hence better knowledge on the structure of the fish community of Dojran Lake according to their feeding behavior i.e. piscivorous, planktivorous and benthivorous species.
- As part of the engagement, the Fisheries Expert will have the following responsibilities:
 - To provide a work plan for fish inventory/assessment of the fish stock of Dojran Lake, comprising: identification of fishing locations (coordinates, depth), timeframe for field work, methodology for the assessment of the fish stock, fishing gear that will be used, details about the organization of the fishing campaigns (boats, assistance etc.)
 - The fish inventory and fishing campaigns need to be organized and executed in accordance with the requirements of the Water Framework Directive of the European Union (2000/60/EC).
 - The Fisheries Expert is responsible to organize and provide all gear and equipment for the fishing campaigns, as well as to cover potential expenses related to the fishing campaigns.
 - To provide analyses of the total catch: identification of species i.e. species composition, number of specimens, catch per unit effort (CPUE) expressed as biomass and individual species, as well as assessment of the abundance of planktivorous, benthivorous and piscivorous species.
 - To prepare a final report on the fish inventory/fish stock assessment that includes: introduction on the current and previous state of the fish populations of Dojran Lake, analyses and interpretation of fish catch data from the fisheries campaigns, analyses of the abundance of the different types of fish populations according to their feeding behavior, state of autochthonous and allochthonous fish, and recommendations for sustainable management of the fish stock of Dojran Lake. The report will be developed in close collaboration with the project coordinator.
 - To take part in meetings with the project team and stakeholders;
- As part of this assignment the contractor/expert is expected to deliver the following documents/deliverables on the assessment of the fish community of Dojran Lake:
 - **Work plan for conveying fish inventory/assessment of fish stock and fishing campaigns;**
 - **Documentation of field campaigns i.e. photos and field raw data;**
 - **Analyses of fish catch;**
 - **Final report on the fish inventory/assessment of fish stock of Dojran Lake.**

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 Fisheries Expert shall work in a close interaction with the project team and shall report to the project coordinator;
- The Fisheries Expert shall consult and work in close collaboration with key stakeholders i.e. fisherman and lake concessionaire at Dojran Lake, and the Municipality of Dojran;
- The Fisheries Expert shall develop the plan for fish inventory and the fisheries campaigns in compliance with EU Water Framework Directive (2000/60/EC).

Working Schedule – Timeframe

The period of consultancy should be completed with the period of four (4) months upon signing of the contract.

Step	Deliverables	Timeline	Total duration of activity
1.	<ul style="list-style-type: none"> • Work Plan for conveying fish inventory and fishing campaigns. • Analyses of fish catch • Final report on fish inventory/assessment of fish stock of Dojran Lake. 	25 working days	4 months

Required Qualifications and Experience

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

- A university degree in Fisheries, Aquatic Ecology, Limnology or other thematic discipline relevant for this assignment. Please provide documentation accordingly;
- At least 5 (five) years of relevant working experience in fisheries/ecology of limnological ecosystems;
- Skills and experience to develop, organize and perform whole-lake fish inventory/assessment of fish stock;
- Knowledge to effectively analyze and interpret fisheries data;
- Experience in providing consultancy;
- 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
<u>CV, Reference letter,</u> including the years of relevant expertise; experience and skills required for this consultancy.	30 points max
<u>Work methodology, Technical approach,</u> demonstrating an understanding of the scope of work and a proposal how the work will be accomplished.	30 points max
<u>Financial offer</u>	40 points max
Total	100

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 for the engagement to the e-mail address: info@mkm.mk using the subject line: **“Fisheries Expert”**.

Deadline for submissions of documents is 20th November 2020 (Friday), 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 or petra@mkm.mk
E-mails sent only during three (3) days upon the announcement of the vacancy will be replied to.