# MINUTES OF THE MEETING

OBJECT:

Resuming artificial reproduction to restore the Lake Sevan population of keystone species, endemic fish Capoeta capoeta sevangi de Filippi – Implementation program

Date:

06/02/2020

Attendees:

- Karen Jenderedjian – Ramsar repres:ntant in Armenia – Ministry of Nature Protection
- Garik Arabyan - E&S consultant - Energy Advisory
- Cyril Perrotey – Head of Project Development - FRV

A- Program Summary:

Capoeta capoeta sevangi de Filippi, 1865 (hereinafter Sevan Koghak, following transliteration of Armenian name Սևանի կողակ) has its keystone role in Lake Sevan ecosystem, being almost exclusively feeding detritus1 with feed ratio 162 and more. In this regard, the role of Sevan Koghak in the process of self-purification of Lake Sevan is difficult to exaggerate. Hence, the stronger will be the population of Sevan Koghak, the higher will be the resilience of Lake Sevan ecosystem to eutrophication. The role of Sevan Koghak will increase even more, as a natural adaptation factor, under the conditions of climate change (temperature increase).

Once one of the main commercial fish of Lake Sevan with annual catches up to 700 tons and utilization of up to 12000 tons of detritus, Sevan Koghak has lost its significance in 1990's and eventually appeared in the Red Book of Armenia as Vulnerable subspecies. The main cause of population decline is destruction of riverine spawning grounds, aggravated by poaching.

Koghak spawns from mid-May during 2 months, mainly in the tributaries but also in the lake. The conditions necessary for the development of Koghak's embryo and larvae are siltless gravel, high transparency of the water and temperature over +15ºC.

In the 1970's, the Lichk fish breeding factory was constructed to reproduce Sevan Koghak artificially, as their spawning rivers were continuously deteriorating due to increasing uptake of water for irrigation purposes. Mature specimens were collected using 'tarps', a type of fishing gear from wicker, placed in a fence across the river bed. After the intake of eggs and sperm, fertilization and incubation, the hatched larvae were released in river, and grown up fry – in river or lake, depending on size. The last release of Koghak larvae has been done in 2006. Later artificial breeding was suspended due to difficulty in collection of mature specimens in situ and lack of financing.

Taking into account the keystone role of Sevan Koghak, it is necessary to rehabilitate its position in Lake Sevan ecosystem. To do so, it is important to resume artificial reproduction of Sevan Koghak as long as required for restoration of natural reproduction conditions in the spawning rivers. The possibility of involving in the process of artificial reproduction the populations of Sevan Koghak from other water bodies should be considered, provided that their genetic identity and similarity in food consumption is confirmed.

The strategic goal of this initiative is the recovery of keystone role of Sevan Koghak to combat eutrophication and thus, adaptation of the Lake Sevan ecosystem to climate change.

The particular goals of this project are renewal of artificial breeding and releasing of Sevan Koghak's fry into natural conditions, and creation and conservation of ex situ genetic fund of Sevan Koghak.

B- <u>Provisional schedule where FRV support is under discussion:</u>
1- Preparatory work for collection of Sevan Koghak (preparation of river bed, construction of fence across the river bed, making the 'tarps' and ripening cages for unripe individuals) – May-July 2020
2- Keeping of mature Sevan Koghak's specimen in the ground ponds until the next breeding season, egg and sperm intake and fertilization – July 2020 and November 2021

C- <u>Budget:</u>
1- USD20,000
2- USD6,000

D- <u>Implementation agency:</u>

Sevan National Park state non-commercial organization Address: 178 Nairyan, Sevan, Gegharkunik region, Armenia

E- <u>Next steps:</u>
- Karen Jenderedjian to provide information about entity which will implement the program and liaise with Ministry of Nature Protection for deployment
- FRV to launch approval
- Drafting of the convention which will rule the implementation of the program