

Fishery and Aquaculture in the Kyrgyz Republic (GCP/KYR/003/FIN)

Part I: Technical Report on Fish Stock Enhancement and Fishing Gear Regulations for Inland Fisheries Development in Kyrgyz Republic

Upali S. Amarasinghe

(Senior Professor Department of Zoology University of Kelaniya
Kelaniya GQ11600 Sri Lanka)

International Consultant on Fish Stock Enhancement and Fishing Gear Refgulation
July 2012



Upali S. Amarasinghe

(Senior Professor Department of Zoology University of Kelaniya
Kelaniya GQ11600 Sri Lanka)

International Consultant on Fish Stock Enhancement and Fishing Gear Refgulation

July 2012

FAO Project Support to Fishery and Aquaculture Management in the Kyrgyz Republic
GCP/KYR/003/FIN



Executive Summary

This report is based on the International Consultancy on Fish Stock Enhancement and Fishing Gear Regulations under the project, Fishery and Aquaculture in the Kyrgyz Republic (GCP/KYR/003/FIN). During the visit to Kyrgyz Republic from 22 April to 05 May 2012, baseline information was gathered by interviewing government officials, Local administrative officials and rural community members. Relevant published and unpublished information was also consulted. The specific tasks of the consultant include preparation of a series of guidelines, bringing the consultant's experience and examples from elsewhere, to develop a practical fish stock enhancement/restocking programme applicable in Kyrgyzstan for inland fisheries development with special emphasis on Issyk-Kul lake and Toktogul Reservoir.

In Toktogul reservoir, fish stocking is essentially for fisheries enhancement. However, these stocking strategies have been carried out in ad-hoc manner without any scientific reasoning. Some information is available on stocking in Kyrgyz inland waters together with yield data. Nevertheless, available data are insufficient for evaluating the performance of stocking strategies. As evident from many parts of the world, Stocking is more effective in small reservoirs. In large reservoirs, it is impracticable to apply high stocking densities and as such, yields of stocked fish in larger reservoirs are insignificant. This further suggests that fisheries enhancement through stocking in Toktogul reservoir (284 km² at full supply level) is unrealistic.

There are two fisheries associations in Toktogul and Ush-Terek Local Administrative divisions. They should be empowered for fisheries co-management. There should be management units within the two fisheries associations. Local administration institutions, Environmental Agency, Department of Fisheries and fisheries associations should be the stakeholders of the co-management system.

Major species stocked in Toktogul reservoir are white fish (*Coregonus lutokka*), crussian carp (*Carassius carassius*), grass carp (*Ctenopharyngodon idella*) and peled (*Coregonus peled*). Fishermen prefer white fish due to its fast growth. However, monitoring of impact of stocking is not carried out at present. For monitoring of impact of stocking, it is imperative that data are gathered regularly on stocking of different fish species and annual yields of stocked fish species. Specimen data recording sheets are given for the purpose.

With a view to conserving endemic fish populations such as Issyk-Kul dace (*Leuciscus bergi*) and Schmidt dace (*Leuciscus schmidtii*), a fishing moratorium has been implemented for a period of five years commencing August 2008. According to the moratorium, catching all species including introduced predatory fish species such as pike-perch is forbidden. The incidence of illegal fishing has also increased in the lake using harmful nets such as Chinese mono-filament gillnets. Furthermore, under the fishing moratorium, it is impossible to introduce selective fishing for predatory fish species such as Pike perch (*Stizostedion lucioperca*). Common bream (*Abramis brama*) is known to prey on fish eggs and eggs of threatened endemic species. Pike perch (*Stizostedion lucioperca*) is reported to prey on all other life stages of fish including threatened endemic fish species. Although it is impossible to eradicate these fish species completely, through selective fishing, their populations can

be controlled so that predatory pressure on endemic species can be reduced. It is recommended that longlines with the hook sizes of No. 9-10 should be permitted for selective fishing of pike perch and common bream to reduce their predatory pressure on endemic fish species. For common bream, selective catching using seine nets is also possible.

Instead of stocking of Schmid's dace and Issyk Kul dace, spawning areas of these two species should be carefully protected during the peak spawning periods of these two species in May-June. This can be implemented by imposing closed areas and closed seasons for the fishery. The ongoing fisheries co-management activities in Issyk-Kul Lake should be strengthened so that proposed management and conservation strategies which involve selective fishing of predatory fish species and imposing closed areas and closed seasons to protect spawning areas of endemic fish species can be effectively implemented.