

# Fishes and fisheries of Asian inland lacustrine waters

John F. Craig

Upali S. Amarasinghe<sup>1</sup> and Sena S. De Silva<sup>2</sup>

Published Online: 12 SEP 2015

DOI: 10.1002/9781118394380.ch31

## Keywords:

- climate change impacts;
- culture-based fisheries;
- ecosystem approach to fisheries;
- fish biodiversity;
- fisheries enhancement;
- lacustrine fish;
- riverine fish;
- tropical inland fisheries;
- yield predictive models

## Summary

In tropical Asia, there is a general paucity of natural lakes that are mainly located in the island states of the Philippines and Indonesia. Reservoir construction is extensive in the region primarily for irrigation, flood control and hydroelectricity generation, and fish production is essentially a secondary use of these reservoirs. Although the degree of endemism can in no way be equated to those in the great lakes of rift valley region of East Africa, familial diversity of fishes in Asia, but not species diversity, is considerably higher than in African lakes. Asia has a significant contribution to the world inland capture fisheries production of  $11.5 \times 10^6$  t that is c. 69%. In most countries in Asia, the bulk of inland fisheries for food fish production occur in lacustrine waters, albeit productive riverine fisheries occur in the Lower Mekong Basin. Nevertheless, fisheries in multipurpose reservoirs are not fully appreciated compared to their other economic uses. Fisheries enhancement in lacustrine waterbodies in Asia through culture-based fisheries (CBF) is considered environmentally friendly due to low external inputs such as provision of supplementary feeds. There is a great potential for food fish production through CBF development in many parts of Asia. Hitherto, deterioration of water quality due to anthropogenic activities is less frequent in Asia than in other regions as local authorities are active in maintaining water quality in reservoirs used for multiple purposes. As reservoir water levels range from highly stable systems to highly fluctuating systems, a combination of flood pulses and mean depth can be used as a fish yield predictor in lakes and reservoirs. Approaches directed towards addressing both human and ecological well-being, in the lake and reservoir fisheries development strategies, are useful to combine the important aspects that are of ecological and societal interest. There is a paucity of studies on climate change impacts on inland fisheries, although some isolated studies are reported on specific aspects. Hence, there is a need to step up research on climate change impacts on inland fisheries for enabling adoption of mitigation and adaptive measures.