

# Small-Scale Fisheries in the Cradle of Himalayas Nepal: Why Small-Scale Fisheries Matter?

By Tek Gurung, Nepal

## Introduction & Summary

The major characteristic features of Nepal's small-scale fisheries is its small holding, littleness but boutifulness, benevolence and charitableness as supplying vitamin and micronutrients rich food to far remote placed societies. Nepal is the most centrally located country of the Himalayas, with world renowned eight highest mountain peaks of the world encompassing >8000 meters in altitude with the highest peak of Mt. Everest (8848 m) in Nepal (Photo 1). These highest peaks, mountain and hills covering almost 87% of Nepal form "water tower" having slope towards the southern plains. Nepal, thus structured like a cradle on the Himalaya especially in southern slopes where human settlement goes up to the 4080 meters elevation, one of the highest altitude hamlets in the world known as Do Tarap in Dolpa district, while the lowest settlement area is at around 59 meters. Thus a total of around 30 million people are settled on the slope, valleys, gullies, and floodplains on the cradle of Himalayas.

Nepal has three major river basins and one river system, namely Koshi, Gandak and Karnail River basins, and a Mahakali River system. These all rivers drain into the Ganges River, and then into the Bay of Bengal. There are altogether 6000 rivers covering approximately 3,95000 ha, serving as the 'lifeline' for the people living in the cradle of Himalayas Nepal. Besides the rivers, many reservoirs, ponds, raceways, wetlands, canals, rice-field altogether offer the basis of small-scale fisheries opportunities in Nepal. The small scale fisheries is exclusively inland, depending on rivers, lakes, swamps, wetlands, ponds, rice-field and raceways. According to the Wikipedia, the total area of Nepal is 147,181 km<sup>2</sup> (56,827 sq miles), land occupying 92.94% and water coverage is 7.06% of total area of the country.

In captured fisheries the small-scale fisheries is fully artisanal involving highly marginalised, low income minor ethnic communities throughout are involved in Nepal regardless of southern flood plains, midhills or mountains. IUCN (2004) showed there were about 10.8% of total population belonging to 13 ethnic communities involved in capture fisheries in the country. In small-scale fisheries mostly traditional ethnic fishers, women, are involved for their food security, livelihood and employment opportunities. So the small-scale fisheries in the cradle of landlocked of Himalaya matters for food, nutrition and livelihood, job, income to marginalized ethnic communities especially women. The small-scale fisheries matters much for Nepal, as the country does not share the oceanic boundaries as it has been sandwiched in between India from three sides and China from north.

Fish is often considered as one of the cheapest sources of protein, vitamin and minerals diet. The small-scale products those rich in dietary mineral resources includes finfish, shellfish and aquatic plants such as water chest nut and makhana (*Euryale ferox*, or Prickly water lily or Fox nuts). The water chest nut and ‘makhana’ are considered healthiest and holiest food as “Prasāda” typically to the God as an edible food, that is first offered to a deity, saint, most respected ones, *guru*, or an avatār, and then distributed followers or others as a good sign. These products are not only valued in Nepal, but are treated in similar spirit and health benefits in India, Korea, Japan, Russia and other countries, thus possess high export potential.

Thus, the small-scale fisheries products are not only the sources of nutrition and food to those marginalized ethnic groups, but the unquestionable and most acceptable food sources to all Nepalese regardless of age, gender, religion, ethnicity and race etc. No one in the society ask any question, if someone consumed fish, contrarily many animal meat if consumed there are taboos in the society, some kind of meat may be not acceptable to all ethnic groups. Sometimes pig meat or beef could be a reason of social conflict, agenda of the political parties, communal fights, matter of law and justices. However, the fish rejoices to be the free of these all burdens, a rich source and ‘brain food’ of all the religion, communities, children, oldies and everyone. This is probably one of the reasons of its fastest growing food sector in Nepal having about 8-9% percent growth every year. Despite of such importance the per capita consumption is far below, only nearly 3 Kg suggesting the small-scale fisheries has to grow and contribute more in near future.

To offer such nutritious diet therefore, there should be more appropriate small-scale fisheries in Nepal. A number of 6000 rivers trespassing the cradles offer inland water fisheries with approximately more than 232 fish species. The small-scale fisheries occur in all three agro-ecological region of the country. More small-scale fisheries direct beneficiaries are scattered in the flood plains while towards the mountain the number of dependent reduces down (Photo 2 to 10).



Photo 1. Mt. Everest | Khumbu region of Nepal



Photo 2. Rainbow Trout farming in mountain area of Rasuwa (A) and Nuwakot districts (B).  
Photo by TBG.



Photo 3. Artisanal poor fishers of Nuwakot district with their fishing craft (A) and (B).  
Photo by TBG



Photo 4. Sports fishing with world renowned *Tor putitora*, golden mahseer (A) and *Acrossocheilus hexagonolepis*, copper mahseer (B) in Himalayan Rivers, Nepal. Photo by Subhash Sunuwar



Photo 5. Small holders involved in carp cultivation in mid-hills pond fish farming. Photo by TBG.



Photo 6. Small-scale fish farmers in southern terai injecting carp brood for seed production (A), Mr. Chhote Lal Chauhan with his daughter and son in Bara district, Nepal. Photo by TBG.



Photo 7. Artisanal inland water small-scale fishers in southern terai (A), a boy fisher selling fish (B). Photo by Suresh Wagle.



Photo 8. Shell-fish gathering from inland waters in southern terai (A, B, C) gastropod, bivalve and shrimp, shell-fish n fish bazar in Nawalpur (D). Photo A, B D by TBG and C by Suresh Wagle.

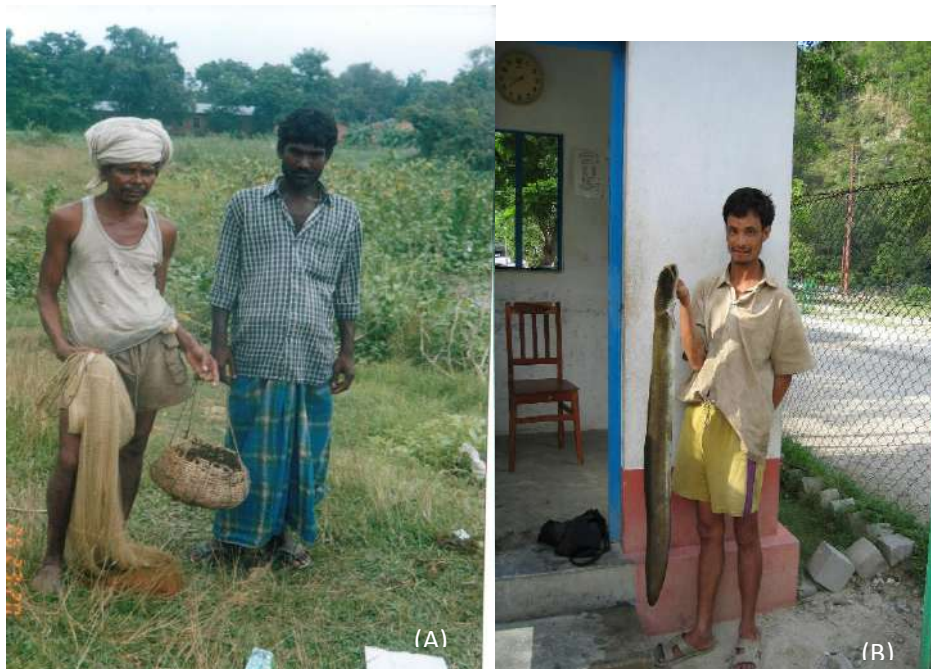


Photo 9. A small-scale artisanal fisher (A) and a man holding a migratory *Anguilla bengalensis* (B) fish from Bay of Bengal in southern Terai. Photo by Suresh Wagle.



Photo 10. Post harvest fish product (A) and (B) ready to be transported for remote hills as a mean of vitamins and nutrients supply from down plain areas to hill communities as the dry products are lighter and having longer life for keeping than the fresh fish. Photo by Subhash Sunuwar (A) and TBG (B).

In Nepal's Gross Domestic Production the fisheries sector contributes about 1.13% which is nearly 4.22% of agricultural gross domestic production of the country. Nepal is known to some of the world renowned species having enormous value in recreation, sports, food. Such as *Shizothorax* spp (snow trout), *Tor putitora*, *Tor tor*, *Anguilla bengalensis*, *Bagarius yarelli* and *Ompok* spp, *Wallago attu*, *Psilorhynchus pseudecheneis* etc. Besides the climate changes other stresses the agro-chemicals, eutrophication, infrastructure like hydropower, irrigation dam, road construction, urbanization, anthropogenic activities, river bed mining and invasion of aquatic plants have been seen as the potential danger for the small-scale fisheries.

Earlier, the open river without any pollutants, physical barrier, and other cross-dams were one of the way to reach the fish towards mid hills and mountains. However, the present time increasing use of agro-chemicals, hydropower and irrigational dams, anthropogenic activities, sand mining and eutrophication has been the main hinderances of fish migration. Thus, the livelihood to many traditional fishers depending on small-scale fisheries resources in those rivers. Thus, special attention will be requiring to conserve and manage the inland water fisheries, so the traditional ethnic communities depending on small-scale fishing in the cradle of Himalaya could proceed ahead in harmonised manner with modern changes and alterations in natural environment.