

Conservation of Fisheries

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The question of fisheries and its importance in a needy and growing economy is increasingly significant to Sri Lanka. It needs hardly be stated that the nation looks more and more to its fisheries for food and material for export.

Since Independence, the role of fisheries has grown in importance, and whereas earlier, only the Department of Fisheries with a meagre staff handled all matters relating to fishing, now, there is a Corporation, a Harbours Corporation and a greatly expanded Department, all under a separate Ministry.

To the increasing dismay and alarm of conservationists, the subject of the conservation of fisheries has been given little attention, if at all, resulting in the present condition, which can only be described as grave. The fishing resources of the country are still regarded as inexhaustible. This is a most disturbing state of mind, and unfortunately, it is often the slogan of the uninitiated in high places who voice it in public.

More significant is the rapidly expanding fishing population of the country, totally uncontrolled, and all intent on the exploitation of anything and everything of value from our waters, coastal and inland. The existing regulations which could control the more destructive forms of fishing are not only inadequate but almost impossible to enforce. The increase in fishing intensity has not been kept pace with by an increase of preventive staff and more stringent legislature.

Few places exist inland which can be regarded as total sanctuaries for indigenous aquatic fauna. The two great Game Reserves are, unfortunately, in the drier areas and so cannot protect the majority of aquatic fauna and flora. Worse still, the haphazard and hasty introduction of proven competitors of our indigenous fishes has further depleted the variety and numbers of indigenous fishes in these Reserves.

The rapidly escalating cost of fish, and other marine products has served to intensify fishing effort. The lucrative export market which pays premium prices for certain items like lobsters (*Panulirus*) and shrimps (*Penaeus*) is another incentive towards the decimation of existing stocks.

Unless stringent and effective means of conservation are adopted in fresh, brackish and marine waters, in that order of importance, it is certain that a condition of near-extinction of most economically important fauna and flora will result.

Such exploitation is not confined to edible species; the pet fish export business which still flourishes with no restriction whatever on choice of species, threatens to exterminate a few species of endemic fishes and water plants of the Genus *Cryptocoryne*. A law well over 30 years old still exists in the Fisheries Ordinance which requires permits to be issued in respect of the following endemic species of freshwater fishes:

1. *Rasbora vaterifloris*
2. *Puntius titteya*
3. *Puntius nigrofasciatus*
4. *Puntius cummingii*
5. *Belontia signata*

More than 15 years ago, leading exporters fought for and won their right to export these in any numbers. It is reliably known that some or all of these species have disappeared completely, from their haunts and that field collectors now operate in very remote areas for their supplies, even intruding on Forest Reserves (e.g. Kottawa, off Galle).

Since the discovery of the above fishes, a few more endemic species have been named, viz:

Aplocheilichthys wernerii, *Lepidocephalus jonklaasi*, *Gobius jonklaasi*, *Malpulutta kretseri*, and a species of *Puntius* commonly known as the "Asoka barb".

Because of their rarity and endemic status, they fetch higher prices and so are over-exploited.

It is a very real possibility that one or more of these species may face extinction unless measures are adopted to protect them. Under British rule, there existed fairly effective regulations governing the use of certain nets in inland waters. But since the introduction of the over prolific *Tilapia (Sarotherodon) mossambica*, these could not be enforced.

A prolific and competitive introduction, *Tilapia*, speedily overpopulated many tanks and lagoons to such an extent as to almost eliminate indigenous species and then, unable to survive in drought conditions, die and pollute the water. It was found necessary to relax the laws and permit gill-netting and even seining in confined areas. These operations had severe effects on flora, other fauna and bottom conditions and there now exists a completely unnatural condition in our major irrigation tanks.

Hence, it is now a common practice to find professional fishing-camps in any inland body of water which can lend itself to gill netting. The side-effects have yet to be fully determined, such as the greater increase of piscivorous avifauna and diminution of insectivorous and herbivorous species causing imbalances which could have severe future repercussions.

All this points to the immediate and urgent need for a sound Conservation Policy which would cover all forms of fishing and fisheries. And even at the initial stages, unless provision is made for effective enforcement, such laws would be ineffective, as are those recently framed to protect and conserve the Spiny Lobster (*Panulius*).

The most necessary and primary move is to establish sanctuaries in specific areas which could serve to preserve stocks.

Outside of the sanctuaries (which are themselves subject to coastal and offshore professional fishing activity) no bodies of water are protected from fishing and fishermen. The rivers and streams, canals and inland waterways are particularly badly overfished.

In spite of frequent agitation, we have yet to declare as a **Strict Sanctuary** or National Park, any area of our coastline. The Coral Islets Sanctua which exists on paper, covers a mere group of rocks off Hikkaduwa originally intended to preserve sea-birds. For years, attempts have been made, always violently opposed by politically-motivated fishermen, to add to this an area of sea with its corals and fishes. But still nothing really effective has been done.

A similar scheme hopes to preserve Pigeon Island and its environs off Nilaveli, not only subject to excessive fishing, trapping and tropical fish collecting, but also, to explosive-fishing with dynamite.

Any National Parks or Sanctuaries to preserve aquatic life must be **totally** inviolate from **all** forms of fishing and exploitation.

A natural form of relief from fishing is provided during monsoon months, and in the past, with the majority of fishermen operating with simple craft and gear this served to conserve stocks to a great extent. But now with the modernisation of fishing craft and gear, the monsoons are no longer the "close seasons" they used to be and except in areas very close to shore, the seas are increasingly exploited and the lagoons and inland waters, even more than during the inter-monsoonal periods.

It would be beneficial, if not imperative, to impose strict close seasons in some areas and for some species, as is done on land with certain forms of mammalian and avian wild life. For instance, a season during which fish migrate up-river to spawn should be determined and efforts made to prohibit fishing in these specific spots during the critical period in order to ensure a greater harvest.

Many species should have size limits, a system that is very strictly enforced and successful in countries like Australia, South Africa and America. In Sri Lanka, any size of a species which cannot escape through the mesh of a net is taken. Few fishermen ever throw back an undersized fish, and in only a very few areas do the fishermen themselves observe any regulation governing mesh sizes of nets. Consequently, countless undersized specimens, which could well have been left to grow to economical weight are needlessly destroyed. The main offenders are the owners of beach-seines who are increasing steadily, and whose nets with small mesh size in the cod-end gather undersized fishes of *Caranx*, *Scomberomorus*, *Chorinemus* species which venture close to shore in their fingerling stages. Because of the Sprat (*Stolephorus*) fishery, it is impossible to impose any restrictions of mesh size in beach seine nets, but the need for Sanctuary beaches, is all the more necessary because of this.

Over-effective fishing methods need careful appraisal and control. A notoriously effective one is the "Ja-kotuwa", a form of fish-trap which stretches across channels and canals in lagoons and almost decimates fishes which seek to traverse these stretches. Lagoons where "Ja-kotuwas" are still in use after decades, are singularly poor in their fish populations, for example Moratuwa/Bolgoda lake. Although it may be not possible to ban this form of fishing altogether, it may be practical to limit the size and locations of these effective traps and also the mesh-size of the end-chambers.

Another wasteful form of effective fishing is the laying of nets on reefs for Spiny Lobster. Many of the nets are entangled and torn in such spots and left there by the fishermen who get such good prices for what they catch, that they are prepared to sacrifice part of their gear almost every night. The abandoned nets, made of nylon, continue to entrap not only Spiny Lobsters, but also other fishes which simply rot there or are eaten by predators like octopuses. 'Blind netting' for Spiny Lobsters is the most wasteful and destructive form of fishing and should receive immediate attention with a view to control or total ban.

The final form of conservation involves the protection of specific fish, invertebrates or plants

which are endangered. Marine and brackish species are for the most part similar to those found over much of South-East Asia, but freshwater forms in many cases are endemic and can never be replaced.

Until such time as competent observers can declare them safe for **controlled** exploitation, the following species, are in the opinion of the author, deserving of consideration for protection.

- Marine** — *Balistoides niger* (*Conspicillum*)
Chaetodon ornatissimus
Chaetodon ephippium
Chaetodon benetti
Forcipiger longirostris
Pomacanthus imperator
Paracanthunus hepatus
Epinephelus flavocoeuleus
Chaetodon rafflesi

(all the above have been greatly reduced in numbers by intensive and skilled tropical fish collecting and also trapping with wicker traps.)

- Brackish** — *Toxotes chatareus*
Vaimosa balteata
Ethirawa fluviatilis

- Fresh** — *Puntius titteya* (three varieties)
Puntius nigrofasciatus
Puntius cummingii (two varieties)
Puntius sp (Asoka barb)

Belontia signata
Rasbora vaterifloris
Aplocheilus werreni
Gobius jonklaasi
Lepidocephalus jonklaasi
Malpulutta kreiseri
Tor tor
Horadandiya atukorali

There is already legislation to conserve the Spiny Lobsters (*Panulirus*) but a crustacean that may soon become scarce due to over-fishing and capturing of undersized specimens, is the Mangrove crab (*Scylla serrata*) in which case, at least a size-limit is most urgently required.

It is already almost too late to redeem the former potential of many forms of fishes, but, an effort can be made to conserve and increase their diminishing population.

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Prohibition of Inland Fishing during Breeding Seasons

Regulations prohibiting inland fishing during the breeding seasons are expected to be gazetted shortly by the Fisheries Minister Festus Perera. The breeding seasons are between October and December. This prohibition will apply, initially to the Vavuniya and Mulativu districts.

Only persons who have obtained a permit for fishing in the particular fish ponds and tanks, will be allowed to fish. According to Ministry sources, such permits will be issued by the Government Agents of the district under which the particular fish ponds come.