THE INLAND FISHERIES IN SRI LANKA:
A HISTORICAL PERSPECTIVE

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July 1986

AGRARIAN RESEARCH AND TRAINING INSTITUTE,
114, Wijerama Mawatha, Colombo 7.
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W I SIRIWEERA

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114, Wijerama Mawatha
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The Agrarian Research and Training Institute undertook an evaluation of the socio-economic impact of improved inland fisheries methods introduced under the Inland Fisheries Project implemented by the Natural Resources, Energy and Science Authority of Sri Lanka and funded by Swedish Agency for Research Co-operation with Developing Countries. The improved fishery method which was the centre of ARTI study, was introduced by experiment-based feasibility studies conducted in some perennial reservoirs of Southern Province of Sri Lanka by the Zoology Department of Ruhunu University and the Fresh Water Research Station, Drottningholm, Sweden. The ARTI survey covered the reservoirs in which the above experiment-based feasibility study was done.

The interest raised on issues brought out by the ARTI study which is published under the title 'Socio-economic Conditions of Inland Fishermen in Sri Lanka' led the ARTI Board Sub-committee on Agricultural Planning and Evaluation to suggest a study reviewing the socio-cultural antecedents of Inland Fisheries in Sri Lanka down the ages. Dr. W.I. Siriweera, of the Department of History, University of Peradeniya was commissioned to undertake this task. This historical review of Inland Fisheries covering a period of over two millennia would, I hope, be of assistance in eliminating current misconceptions in certain quarters on the relationship between inland fishery industry and the socio-cultural history of Sri Lanka.

My special thanks are due to Dr. Siriweera for undertaking this assignment and completing it in time.

T.B. Subasinghe
Director
Acknowledgements

I am grateful to Dr. R. D. Wanigaratna and Mr. J. K. M. D. Chandrasiri of the Agrarian Research and Training Institute and to the Director of the Institute Mr. T. B. Subasinghe for initiating this study. Had it not been for their keen interest and enthusiasm this study would never have got off the ground. I also express my gratitude to Dr. P. D. Premasiri and Mr. C. Withanachchi who helped me to understand some of the Pali passages in the commentaries and to Dr. Mangala Silva who rendered assistance in identifying some of the varieties of fish mentioned in ancient literary texts. Mr. A. M. Piyatissa helped me to obtain information on fishing habits in the V anni Hatpattu region. Finally, I would like to record my indebtedness to Mr. K. Selvaratnam who read the original draft of this essay and made valuable comments and criticisms.

W.I.S.
<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOREWORD</td>
<td>iii</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>iv</td>
</tr>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Sources</td>
<td>2</td>
</tr>
<tr>
<td>The Historical Setting</td>
<td>5</td>
</tr>
<tr>
<td>Inland Fisheries</td>
<td>10</td>
</tr>
<tr>
<td>Techniques of Fishing</td>
<td>16</td>
</tr>
<tr>
<td>Sale of Fish</td>
<td>22</td>
</tr>
<tr>
<td>Varieties of Fish</td>
<td>23</td>
</tr>
<tr>
<td>Fish Culture</td>
<td>29</td>
</tr>
<tr>
<td>Ownership of Fish</td>
<td>31</td>
</tr>
<tr>
<td>Fish in Sri Lankan Culture</td>
<td>34</td>
</tr>
<tr>
<td>APPENDIX I</td>
<td>40</td>
</tr>
<tr>
<td>APPENDIX II</td>
<td>41</td>
</tr>
</tbody>
</table>
THE INLAND FISHERIES IN SRI LANKA:
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Introduction

In many writings on the 'ancient' history of Sri Lanka, it is political events like wars, foreign invasions, palace intrigues and the construction of large religious monuments that have tended to gain prominence. Though the construction of stupendous irrigation works has merited the attention of writers, that alone does not, by any means, complete the picture of the economic life of the country. Thus, in a sense, the history of the Island has been viewed in the main as the history of the activities of kings, while the life of the ordinary people and their economic pursuits have only attracted cursory attention. Not surprisingly, this over-emphasis on political and religious history has led to the neglect of social history in general and economic history in particular. As Trevelyan has pointed out, the social scene grows out of economic conditions, to much the same extent that political events in their turn grow out of social conditions. Without social
history, economic history is barren and political history unintelligible. (1)

The object of this study is to correlate and analyse data available on an important sphere of economic activity of the ancient people of the Island, that has been neglected in historical writings. Inland fisheries seem to have played a considerable role in the subsistence and self-sufficient economy of Sri Lanka throughout history. The period covered by the study extends from the earliest times up to the present but greater emphasis has been placed on the era of the tank-based civilization in the Island, i.e. approximately the period from the third century B.C. to the middle of the thirteenth century A.D. The history of inland fisheries in the colonial and the modern eras has been included in a summary form for purposes of continuity.

Sources

The sources for a study of this nature are extremely meagre. A large segment of data available on the pre-historic period has not been published or properly analyzed. Even in very recent excavations skeletal remains of fish have been found at places like Anurādhapuṟa, but archaeologists have paid greater attention to articles

such as ornaments, pottery, ceramic ware and icons. In the historical period, beginning approximately from the third century B.C., there are thousands of inscriptions but only a very few refer to matters connected with fisheries. This is understandable because the purpose of a large majority of inscriptions was to record land or other grants made to religious institutions and individuals.

The chronicles, mainly the Mahāvamsa and the Cūlavamsa are primarily concerned with political and religious developments and have neglected the day to day affairs of the ordinary people. Most of the Pali commentaries and Sinhala and Pali literary works can be regarded as religious treatises which extol or idealize the Buddhist way of life. Therefore, the evidence obtainable on the subject in commentaries and literary texts is also limited but not to the same extent as in the case of chronicles and epigraphic sources.

Fortunately one of the most famous dignitaries of the Buddhist Sangha - Buddhaghosa - the much respected Pali scholar and commentator of the fifth century has not considered inland fisheries to be beneath his notice. The authors of Sinhalese texts such as Jātaka Atuvā Gatapadaya written in the tenth century, Dhampiya Atuvā
Gatapadaya written towards the end of the twelfth century, Saddharmaratnāvali of the thirteenth century and those of a few other literary works referred to in the text of this study also had a similar attitude. For example in elaborating the details of the pārājika offence of theft, Buddhaghosha deals in detail, inter alia with the theft of fish in reservoirs and channels. The authors of Jātaka Atuvā Gatapadaya and Dhampiya Atuvā Gatapadaya in explaining some of the terms found in the original Jātakatthakathā and the Dhammapadatthakathā refer to techniques of catching fish and varieties of fish in inland waters. Thus by utilizing incidental notices found in some of these texts and also in epigraphy an outline picture of inland fisheries in ancient Sri Lanka could be drawn but the nature of the sources is such that it is difficult to paint a complete picture of the subject.

The history of inland fisheries after the thirteenth century has been reconstructed with the help of secondary sources as well as original sources, the more important original sources being Robert Knox's Historical Relation of the Island of Ceylon and the Government Sessional papers. For the most recent trends in inland fishing, publications of the Fisheries Department have been freely used.
The Historical Setting

The pre-historic people of the Island belonging to the mesolithic age lived in isolated areas both in the Dry Zone and the wet Zone and established their dwellings mainly in caves and rock shelters closer to rivers, streams and springs. They lived by hunting, fishing and food gathering and contributed very little to ecological changes. But the ecological and demographic patterns of the Island began to change drastically with the arrival of megalithic Indian migrants around the sixth and fifth centuries B.C., the period which laid the foundations for the historical age.

The settlements of these migrants expanded along the course of rivers and streams and in the process irrigated rice techniques became increasingly important. Except in a few coastal areas like Jambukōlapattana in the Jaffna Peninsula, Mahātittha opposite Mannar, Gokanna or present Trincomalee and Kelaniya; most of these settlements developed in Inland areas in general and in the Dry Zone hinterland in particular. Population clusters in the Wet Zone increased after the tenth century to some extent but to a great extent after the abandonment of the tank-based Dry Zone civilization in the thirteenth century A.D.
The Dry Zone settlers which comprised the bulk of the population developed means for the local storage of water by damming streams and rivers or building embankments to retain water in natural depressions. These small village tanks brought into being a society based on "one-tank-one village" ecological pattern. A large number of village irrigation works was constructed using communal labour and was the collective property of the villagers. The ownership of irrigation works by individuals too is evident from the occurrence of the term vapihamika in inscriptions at least from the first century onwards.\(^{(2)}\)

The population growth in the capital city of Anurādhapura also necessitated the construction of tanks of medium size to enhance the supply of water to the city. Thus by the first century B. C. three medium scale reservoirs; Tissa Wewa, Basavakkulama or Abhayawewa and Nuvara Wewa which were of course enlarged subsequently, had been constructed. During this early phase of history the control of water supply in the Wet Zone was achieved by the simple method of diverting water from small streams along little channels skirting valley slopes under paddy cultivation.

In the first century A.D. clear changes in the irrigation development are discernible with large scale state enterprise in the utilization of water resources. In the reign of Vasabha (65 - 109 A.D.) the first steps were taken towards the construction of large reservoirs. In the course of time the size of the state-owned reservoirs was expanded and canals and anicuts were used to develop complex feeder systems. By the end of the fifth century A.D. two complexes of irrigation works had developed, one based on the Malvatu Oya and the Kalâ Oya and the other drawing on the waters of the Mahaveli river and its tributaries. In the subsequent centuries, these two main complexes of irrigation works were further developed and they achieved their last and most important stage of development during the reign of Parâkramabâhu I (1153 - 1186). The two major hydraulic complexes Kalâ - Malvatu and Mahaveli rivers, as well as the reservoirs in Ruhuna and small village tanks were spread over most parts of the Dry Zone. They provided both a backdrop to, and a foundation for a civilization which flourished in the period from approximately the fourth century B. C. upto about the thirteenth century A.D.

By the middle of the thirteenth century, the great cities of Anurādhapura and Polonnaruwa had almost been abandoned, the Rajarata kingdom had fallen and the efficiency of the major hydraulic system and thousands of small reservoirs scattered all over the Dry Zone had declined. Those who remained in the Dry Zone pursued their economic activities under irrigation schemes in decline. By the end of the fifteenth century only the ruins of the old cities and the silted reservoirs remained as stark reminders of the once flourishing civilization of the Dry Zone.

The earliest map available of the Portuguese connection with Sri Lanka drawn by the Spaniard Cypriano Sanchez and published by Petrus Plancius, some time before 1606, contains a note which states that the kingdom of Yala was devastated by sickness three hundred years previously. Certain northern areas in the map are described as "Deserto Per Doenea" or "desert through sickness". A later map which can be dated soon after 1638 with the title "Insula Zeilan Olim Taprabana Nune incolis Tenarism" which appears to be a Dutch edition of Plancius' map shows a remarkable improvement in the configuration of the Island, but retains the original letter press. The same note appears on it regarding Yala.\(^4\) The topographers of the Portuguese,

\(^4\) E. Reimers, Constantine De Sa's Maps and Plans of Ceylon, Colombo, 1929, pp. IV, V.
Dutch and early British periods found only occasional densely populated spots in the Dry Zone outside the Jaffna and Batticaloa regions and these too were in the coastal tracts of Kottiyar, Trincomalee, Mannar and Puttalam. Until about 1931 the interior of the Dry Zone was desolate. According to the Census of 1871, Nuvarakalaviya had only 21 persons per square mile while Tamankaduwa had only 4 persons per square mile. There were of course villages surrounded by jungle which had been ruled by Vanni chiefs or the fendatories of the Kandyan kings. These villages were grouped mainly around irrigation tanks and the economic life of the villagers revolved round paddy and chena cultivation and other economic pursuits such as fishing.

However, after 1931 the Dry Zone colonization, the restoration of irrigation works and the development of economic activities connected with them were recognized as essential for the economic growth of the Island. Of the economic activities the cultivation of paddy was the primary concern until recently. But in the recent past, planners have paid attention to the expansion of the cultivation of subsidiary food crops like chillies and sugar cane and also to the development of the inland fishing industry.
Inland Fisheries

The artificially created small and large irrigation works and the natural rivers, streams and ponds in addition to their primary function of providing water for agricultural operations and human use were good grounds for inland fishing. As stated earlier, in the historical age beginning approximately from the third century B.C. the majority of the population lived in villages far away from the sea-coast. The communications system at the time was very weak. Therefore, fresh sea fish could not have been brought into such villages in a condition fit enough for consumption without special arrangements for preserving fish and for transport being made at great expense. The fish for the average villagers consumption must have been obtained from the rivers, streams, reservoirs and channels which irrigated his rice field.

In a few inscriptions dating from the third century B.C. to the first century inscribed on rocks at Bovattegala in the Ampara District and Kottadamuhela and Henanegala by the river Mundeni Aru the symbol of the fish has been marked. (5) Some of the ancient

punched-mark coins too contain the symbol of the fish. These are only indications of the importance attached to fish but the earliest reference which indicates that fishing in reservoirs and canals was an important economic activity of the ancient Sinhalese people is found in the Perimiyankulam Rock Inscription of king Vasabha (65 - 109 A.D.). This inscription is indited on a rock just outside the present urban limits of Anuradhapura. It states that the revenues from water and the share of fish caught in the channels of the tanks Polonakaraka and Ketavalaka*(6) in the district of Tihalaka were granted to the village assemblies at Tiragama and Amara*(7) for the purpose of spreading antelope skins in the meditation hall of the temples in respective villages.*(8) The original 

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(6) These would have been village tanks

(7) Obviously two place names

had made no provision for such eventualities like accepting gifts of land, share of tax on fish for the good reason that the monks of the early days did not accept these gifts. But the Order had compromised subsequently in these matters to suit the social conditions of given situations. The term used in the Perimiyankulam inscription for the tax on fishing or the share of fish caught in the reservoirs is matera-majibaka. This tax in variant forms such as matera-majibika, matara-majibika, matira-majibika and majibika is referred to in several other inscriptions in the period from the first century A.D. to the end of the third century.

(9) See below, p. 37

(10) There are two interpretations of this term. The first one by D.M. de Z. Wickramasinghe and the later one by Paranavitana. Paranavitana in the article cited in foot note 8 has convincingly rejected the interpretation of Wickramasinghe and has argued that the term has been used to indicate the tax on fishing in reservoirs and channels.

This indicates that fishing in reservoirs and channels besides natural streams and rivers was widespread in the early Anurâdhapura period. The fifth century Pali treatise Panâcasudâni, the commentary of Buddhaghosa on Majjima Nikâya refers to the term maccabhâga (12) which means the share of fish caught in the reservoirs and canals. This share was claimed undoubtedly by the owners of irrigation works; the king in the case of large irrigation works, village assemblies in the case of village irrigation works and individuals in the case of privately owned small reservoirs and channels.

The tax on inland fisheries seem to have continued until the twelfth century perhaps with occasional interruptions and sometimes with limited prohibitions. For example the Basavakkulam Pillar Inscription of Sena II (853-887) furnishes us with evidence to the effect that in the ninth century fishing in that reservoir situated by the side of the Mahâvihâra (the monastery of that name) at Anurâdhapura was prohibited. (13) This means that fishing in other reservoirs was approved of by the king, but there is no clear evidence to suggest that the tax on fishing in approved reservoirs was in existence.

(13) E. Muller, op.cit., No. 111.
at this particular period. But subsequently the tax had been enforced at least until the reign of Nissankamalla (1187-1196) of Polonnaruwa. Nissankamalla in several of his inscriptions claims to have abolished the levying of an impost called pisamburuvata or visamburuvata. According to D.M. De Z. Wickramasinghe this was a tax on fallow or barren land. But since this levy was associated with great reservoirs (mahavātanin) his view cannot be supported. In the Vanduruppe slab inscription of Nissankamalla, it is stated that the pisamburuvata levied from mahavātanin (mahavātanin ganna pisamburuvata) was abolished by the king. Godakumbure renders the term mahavātanin as "from the great tanks" and states that pisamburuvata was a tax levied on fishing in reservoirs. Paranavitana too agrees with this interpretation. As Nissankamalla also refers to a tax on land in the same inscriptions, in which the terms pisamburuvata or

(14) EZ. II, P.93, P.105, PP.138-139; P.144; P.147, P.154, P.285
(15) EZ. II, P.117, Note 11
(16) EZ. V, No. 42
(17) EZ. V, No. 42, P. 429.
visamburuvata occur the latter cannot be a reference
to a tax levied from the areas irrigated by the
great reservoirs. The word pisamburu occurs in Medieval
Sinhalese literature with the meaning of "moss" or
"weeds that grow in water".\(^{(19)}\) and Paranavitana
assumes that this was a reference to fish.\(^{(20)}\) In
this context it is of interest to note that pāsi in
Tamil means fish.\(^{(21)}\) In Southern India at this time a
levy charged on fishing in reservoirs was called
pāsi-pāttam or mīn-pāttam.\(^{(22)}\) Thus all the evidence
points to the fact that until the end of the twelfth
century a tax on fishing in state-owned reservoirs was
levied by the king which indicates that inland fisheries
were part and parcel of the life of the ordinary people.

After the hydraulic civilization had declined,
the people in the isolated pockets of settlements in the
Dry Zone as well as those who lived closer to rivers and
streams in the Wet Zone would certainly have continued
fishing in inland waters to supplement their diet. Knox
in the seventeenth century and several other British
writers subsequently have referred to inland fishing in
various forms but there are no references to taxes charged
on inland fishing from the thirteenth century onwards.

\(^{(19)}\) Butsarana, ed. Labugama Lankananda, Colombo, B.E.
2497, p. 254.

\(^{(20)}\) S. Paranavitana, \textit{op.cit.}, p. 7

\(^{(21)}\) Concise Tamil Lexicon, Madras, 1955, p. 120

\(^{(22)}\) A. Appadurai, \textit{Economic Conditions in Southern India},
Techniques of Fishing

The ancient Pali and Sinhala literature contain some interesting references to the common techniques used in inland-fishing. The Samantapaśādikā refers to the hook (bali), net (jāla) and the long basket (kumīna) as the most common methods used in inland fishing in the fifth century A.D. The long basket (kumīna in Pali and kemana in Sinhala) was an instrument which was placed in flowing water in small streams. The fish that were trapped in this basket had no means of escape and the fisherman could catch them by hand at any time he desired. The samantapaśādikā also states that the practice of using the bare hands to catch fish in inland waters was in vogue at the time. Furthermore, it states that during times of drought some people used to place poisons obtained from various inedible fruits (madanaphala visādīni) in certain water holes in order to stupefy the fish so as to catch them easily. (23) The Dhampiya Atuvā Gatapadaya indicates that fishermen while catching fish hung the fish already caught on strings (valā) to

carry them away. (24) A similar practice is referred to in the Medieval literary works Saddharmaratnavali and Saddharmālankāra. (25)

Most of the techniques of inland fishing prevalent in the early Anuradhapura period have continued throughout the centuries until the present. The Jātaka Atuvā Gatapadaya refers to the techniques of fishing with the long basket (kemana) (26) while the Saddharmaratnavali refers to the methods of fishing with the hook, the net and by means of poisoning. (27) A subsequent literary text the Saddharmālankāra refers to the instrument karaka which may be translated as the basket; in addition to the net (dala) the long basket (kemana) the hook (biliya) and to the techniques of poisoning. (28) The karaka was made of small sticks which was broad at the


(27) SDHRV, p. 92, p. 363, p. 530, p. 766, p. 925

(28) Saddharmālankāra, op. cit. p. 648
bottom and narrow at the top. It was shaped like a funnel and the hole on top was big enough for a man to thrust his arm in and was about two or three feet wide at the bottom. This text also mentions three main parts of the hook namely biliya, bili ipila and bili liya. (29)

Most of the techniques of inland fishing which were referred to in ancient Sri Lankan literature have also been observed by the seventeenth century English writer Robert Knox. But he has stated that the practice of using the net was little known in the regions of the Kandyan kingdom and has not mentioned poisoning and the hook as techniques of fishing in that region. The following observations of Robert Knox will give an indication of the continuity of traditional techniques of fishing in the Island.

"They have no want of fish, and those good ones too. All little Rivers and Streams running thro the valleys are full of small fish, but the Boyes and others wanting somewhat to eat with their Rice, do continually catch them before they come to maturity. Nay all their Ponds are full of them, which in dry weather drying up, the people catch multitudes of them in this manner. They have a kind of a Basket made of small Sticks, so close that fish cannot get thro; it is broad.

(29) Ibid.
at bottom, and narrow at top, like a funnel, the hole big enough for a man to thrust his Arm in, wide at the mouth about two or three foot: these baskets they jobb down, and the ends stick in the mud, which often happen upon a fish: when they do, they feel it by the fish beating itself against the sides. Then they put in their hands and take them out. And revive a Rattan thro their gills, and so let them drag after them. One end of this Rattan is stuck in the fisher's girdle, and the other knotted, that the fish should not slip off: which when it is full, he discharges himself of them by carrying them ashore. Nay every ditch and little plash of water but ankle deep hath fish in it.

The great River, Mavela ganga abounds exceedingly with them. Some of them as big as Salmons. But the people have little understanding in the way of taking them. In very dry weather, they stretch a With over the River, which they hang all full of boughs of Trees to scare the fish. This With thus hung they drag down with the stream, and to leeward they place fish-pots between the Rocks, and so drive the fish into them. Nets or other wayes they have few or none". (30)

Although Knox does not refer to techniques of poisoning fish and using the net for inland fishing, these techniques too have continued until the recent past. There are records of a fishery which took place around 1898 in the Barawe forest zone about eighteen miles from Colombo and around Manampitiya a few miles east of Polonnaruwa. At these fisheries several types of nets and traps were reported to have been in operation indicating that fishing was a well established practice in these areas at the time. (31)

According to Henry Parker the Sinhalese and Tamils of jungle villages and the Veddas were accustomed to capture fish in the dry seasons either by bailing the water out of shallow pools, or by stupefying the fish by means of poisonous leaves, fruits or roots thrown into the water. The crushed leaves of the Timbiri tree (*Diospyros embroypteris*) or the crushed fruit of the Kukuru-Mahan bush (*Randia dumetorum*) and the roots of a species of creeper

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called kala vael (*Derris Scandeus*) were especially used for this purpose. (32)

Thus it seems that the traditional techniques of fishing in rivers, reservoirs, pools and ponds have continued up to the present in different areas of the country. But with the increasing importance attached to inland fishing, most of the traditional techniques are insufficient to capture fish on a commercial basis. Therefore for fishing in large reservoirs boats have been introduced recently and the main fishing gear used by fishermen in these large reservoirs are (a) gill nets, (b) shore seines - known as Mā-del and (c) cast nets. (33)

(32) H. Parker, *Ancient Ceylon*, First published in 1909, First AES Reprint 1981, Delhi, pp. 51-52. The techniques of poisoning fish among the Veddas in the recent past have been lucidly illustrated by R.L. Spittel in *Vanished Trails, The Last of the Veddas*, Oxford University Press, 1950, pp. 81-84. The following is worth quoting. "The boys disappeared once more, soon they spotted what they sought, a spiny shrub full of yellowish ovoid fruit. With sticks they struck down about a dozen of these and brought them back. Having crushed the fruit with stones, they cast them into the pool. They had not long to wait before they saw, to their delight, the stupefied fish float belly upwards in large numbers. The haul consisted of a variety of small fry, averaging about three to four inches, very bony but savoury enough to stomachs more concerned with quantity than quality".

Sale of Fish

Those who fished sold their excess fish and perusing the sporadic evidence in sources it may be assumed that there was a ready demand for fish. According to the Čulavamsa king Aggabodhi VIII (804-815) forbade among other things the bringing in of fish into the city of Anurādhapura on Uposotha or Poya days. (34) This would mean that under normal circumstances fish was sold in the city of Anurādhapura in ancient times. The Saddharmaratnāvali refers to various weights of fish hung on strings for sale to the value of one aka two akas and one kahāpana. (35) Some times, river fish was sold at the bank of the river itself. (36)

Although there was money circulation in pre-colonial Sri Lanka, the barter system was probably more important in the village economy. Therefore, those who fished, besides selling their fish exchanged their excess fish for other commodities. The Saddharmaratnakara refers to a fisherman who exchanged two thirds of his fish daily for rice, ghee, milk and

(34) Čulavamsa, XLIX, 48
(35) SDHRV. P. 530; Aka and Kahāpana were two types of coins used ancient Sri Lanka.
The situation was probably similar in the interior of the Island until about the nineteenth century.

Successive governments after independence have tried to develop the inland fishing industry on a commercial basis. It should be noted that in the efforts made towards supplying more fish for the market, the existing inland fisheries development strategy, which was conceived in the 1950's has had a very significant impact on the catch of fish since 1980. According to the Ministry of Fisheries, in the Parākramasamudra alone the average catch for the year 1966 was 500 tons. It had increased to an annual average of 900 tons in 1986. This increase is a clear indication of the commercial viability of the inland fisheries in the Island.

Varieties of Fish

The authors of some of the ancient Sinhala and Pali literary texts display a knowledge of the varieties of fish found in the inland waters of the Island. It must be noted that most of the authors of these texts were Buddhist priests and therefore their knowledge and

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information on fish and fishing must have been limited. Still, the fact that a considerable number of varieties of fish was known to them indicates the importance of fishing in the subsistence economy.

The most common fish referred to is kudamasu or kudamassa (39), i.e. common rasbora (Rasbora daniconius). A poor person's meal is at times referred to as consisting of cooked unpolished rice and a curry made with kudamassa (40). The kudamassa is a small fish which often has a large yellow blotch on the back while it is in the water. This fish is found in streams, ponds and reservoirs in Sri Lanka and also in India, Burma and Andaman Islands (41).

Petiyo (42) or Puntius (Barbus spp.) were also a kind of common inland fish. Deraniyagala refers to six varieties of this fish namely Dankola petiya, Handa petiya, Katu petiya, Kotapetiya, Maspetiya, and Velankolapetiya (43).

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(39) SDHRV, p. 92, 123, 187, 301, 363, 366, 443, 530, 766, 1030 Saddharmālankāra, op. cit. p. 705
(42) Jātaka Atuva Gātapadaya, op. cit. p. 32, Butsarana, op. cit., p. 104
The literary text Butsarana states that the ventral side of the petiya was white\(^{(44)}\) but this reference does not help to identify the variety referred to in ancient literature. The belly and the ventral side of all varieties of petiyas are either silvery or whitish in colour. Perhaps all varieties of this fish were identified by the general term petiyo in ancient Sri Lanka.

Lūlā or Luhula\(^{(45)}\) or Snakehead (Ophicephalus striatus), would have been one of the most important fresh water fishes of Sri Lanka. This is so even today. The luhula usually does not exceed 360 mm in length but it is found in large numbers in fresh water ponds, streams and reservoirs and does not have numerous intermuscular bones. This fish is prescribed as a diet for invalids owing to its digestibility and the absence of cloying fat. The luhula is also much esteemed when dried in the sun\(^{(46)}\).

Valā or Valai referred to in ancient Sinhala literature\(^{(47)}\) is the present valaya and is known as fresh water shark in English (Wallago attu). This fish

\(^{(44)}\)Butsarana, op.cit., p. 104

\(^{(45)}\)Jātaka Atuvā Gatapadaya, op.cit., p.32, p.789, p.225

\(^{(46)}\)P.E.P. Deraniyagala, op.cit. pp. 122-124

\(^{(47)}\)Jātaka Atuvā Gātapadaya, op.cit., p. 32, p. 225
contrary to its Sinhala name Valaya, the one who lives in the pit, is chiefly found in deep flowing water in rivers and sometimes in reservoirs. Besides Sri Lanka, they are found in India, Burma, Siam, Java and Sumatra. (48)

Meda, Modu-vaha or Gangaru (49) referred to in the Jātaka Atuvā Gatapadaya may be identified with the fish presently known as gangarā, gang āra or Giant Snakehead (Channa marulius). It is a large fresh water fish growing up to a length of over two and a half feet. It is sometimes pale olive and sometimes yellow in colour and has a diffuse violet lateral band. It is found in streams, rivers and irrigation reservoirs up to an elevation of 1,500 feet and is a popular food fish among the people living in inland districts. (50)

Sunga referred to in ancient texts (51) is presently known by the Sinhala term hunga and in English; stinging cat-fish (Heteropneustes fossilis). When grown it is dark brown in colour with two lateral yellow bands but the ventral side is lighter. It is mainly found in low country ponds and reservoirs and is much dreaded by people as it can inflict painful wounds by means of its pectoral spines. (52)

(48) P.E.P. Deraniyagala, op. cit., pp. 50-51
(49) Jātaka Atuvā Gatapadaya, op. cit. p. 32, 189, p. 225
(52) P.E.P. Deraniyagala, op. cit., p. 57
Teliya mentioned in the Jātaka Atuvā Gatapadaya (53) cannot be identified with certainty because there are at least five kinds of this fish in inland waters of the island. In English usage it is called the spine eel (Masetacembulus). This variety of fish inhabits all kinds of inland waters ranging from ponds, reservoirs and streams with muddy bottoms to flowing or sedentary water up to an elevation of four thousand feet. (54)

References are also made to āndā or eel (genus Auguilla) in ancient literature and Pāneru which may be identified with the present gal pānduruvā or stone sucker (Garra Ceylonesis) and Korala presently known as Koraliya (Etroplus suratensis). Another fish referred to as remas or rohitamacca (55) i.e. red fish, cannot be identified with any degree of certainty. Probably all varieties of red fish were known by the term remas.

Prawns and shrimps (Carridina spp. and Macrobrachium spp.) are also referred to in ancient literature. The

(53) Jātaka Atuvā Gatapadaya, p. 189
(54) P.E.P. Deraniyagāla, op.cit. p. 73, pp. 132-133
(55) Jātaka Atuvā Gatapadaya, op.cit., p. 32, p. 189
Dhampiyā Atuvā Gatapadaya, op.cit., p. 140.
Vesaturndāsannaya, op.cit. p. 68
present Sinhala term isso was used in ancient times and the Pali terms used were āli and nalapi. Rivers and reservoirs would have been good breeding grounds for prawns.

The Samantapāsādikā indicates that the consumption of tortoises and terrapins was a practice in the fifth century, perhaps among a few people. However as terrapins and tortoises belong to the group of reptiles and not fish, we are not directly concerned with them in this study.

Although only a few varieties of fish are mentioned in ancient literature, it is likely that there were more varieties of fish in the inland waters of Sri Lanka in ancient times. According to Deraniyagala and Mendis fifty six species of indigenous fresh water fishes have been recorded from Sri Lanka. There is no reason to believe that any of the indigenous varieties are of recent origin. Some varieties would have been rare and some very common. Perhaps only the common varieties were noticed by the authors of literary texts in ancient Sri Lanka.

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(56) Jātaka Atuvā Gatapadaya, op.cit. p. 189, Vesaturudāsannaya, op.cit., p. 68.
(57) Samantapāsādikā, op.cit., pp. 330-31
(58) P.E.P. Deraniyagala, op.cit.; Mendis, op.cit.
Fish Culture

While several varieties of fish were known to the priestly authors of ancient Sinhala and Pali literary texts the practice of breeding of fish was also not unknown to them. The fifth century commentator Buddhaghosa expressly states that some people brought fish from state-owned large irrigation works and village irrigation works; bred them in small ponds in the back gardens of their homesteads; and daily caught two or three for their meals. In another instance too, Buddhaghosa refers to the rearing of fish by individuals in small streams and reservoirs.\(^{(59)}\)

Nearly twelve centuries thereafter Knox stated that fish had been nourished and fed by the king's order at a "passage-place" near the city of Kandy for the pleasure of the King but not for consumption.\(^{(60)}\) Knox may be referring here to the small passage of water in front of the Temple of the Tooth. Perhaps that explains the breeding of fish for pleasure and not for consumption for Knox in discussing the dietary habits in the Kandyan kingdom categorically states that "the great ones"\(^{(61)}\) have always five or six sorts of food at one meal, and of them not above one or two at most of flesh\(^{(62)}\) or fish.\(^{(63)}\)

\(^{(59)}\) Samantapāśādikā, op.cit.

\(^{(60)}\) Robert Knox, op.cit., p. 29

\(^{(61)}\) Obviously the king and the nobles excluding beef

\(^{(62)}\) Knox, op.cit., p. 87
There have been attempts to develop inland fish culture from the end of the nineteenth century by means of expanding the habitats of the fresh water fish and also by introducing exotic varieties of fish into the inland waters. Ponds were constructed in Kalutara in 1908 for the raising of freshwater Etroplus (koraliva) but the experiment failed when the ponds went under water during the following year. Attempts were made in 1928 and 1932 to transplant brackish water species into a fresh-water pond but the numbers involved were too small to be of any significance. (64)

The introduction of exotic varieties of fish although unsuccessful at the beginning has contributed a lot to the development of the inland fisheries industry in the recent past. Exotic varieties of fish have been introduced because there were no indigenous fish species of rapid growth and prolification and of commercial significance. Two varieties; Trout and Gourami were introduced in 1882 and 1910 respectively. (65) Gourami was first introduced into a pond at the Royal Botanic Gardens at Peradeniya but within a year these fish escaped into the Mahaveli river during the floods. (66)

(64) A Guide to the Fisheries of Ceylon, Department of Fisheries, Colombo, 1958, p. 32.


However, subsequently Trout and Gourami have established themselves in the inland waters of the Island. A new era in the inland fisheries industry began with the introduction of two hybrid varieties of fish namely Tilapia Mosambica and Snake-skin gourami in 1951. A shipment of 2,500 Tilapia were imported from Malaya in this year and stocked in the ponds of the Fisheries Research Station in Colombo. Tilapia is now common in inland waters up to an altitude of 4,000 feet above sea-level. Over 9,000 snake skin gourami were imported from Java in the same year. They were introduced into the ponds of the Fisheries Research Station in Colombo and later into the fresh waters of the low country. (67) Subsequently another exotic variety, i.e. the common carp has been introduced into the Island.

Ownership of Fish

Due to the fact that inland fisheries was recognized as an important economic activity it is of interest to examine various proprietorships that prevailed regarding fishing in ancient Sri Lanka. The state, village assemblies and private individuals had proprietorship over fish in different situations.

(67) A Guide to the Fisheries of Ceylon, pp. 32-33
The fish in large reservoirs and channels constructed by the king were owned by the state and as stated earlier those who were allowed to fish in them had to pay a tax in most instances. Paranavitana is of the opinion that on certain occasions in the case of large irrigation reservoirs which belonged to the king the rights of fishing were farmed out to individuals by the government. (68) A tax on fishing in rivers is never mentioned in either literature of epigraphy and perhaps it may be owing to the fact that it was difficult to have a check on fishing in such places.

The village assemblies had proprietorship of fish in village irrigation works considered to be common village property. Sometimes these assemblies were granted various rights of fishing as indicated in the Perimiyankulam Rock Inscription of Vasabha. (69) As Paranavitana has pointed out, in this inscription the grant of a share of fish was not made direct to the Buddhist sangha, but to a village assembly with the stipulation that the income should be utilized for a religious purpose. When the income from this source was for made use of/the benefit of the sangha or a religious institution, the bhikkhus who benefitted by it were

(68) Paranavitana "Some Regulations ... op. cit. pp. 6-7
(69) See above.
expected to be unaware of its precise source. The village committee thus acted as kappiyakāras\(^{70}\) or "those who performed the appropriate act".

Private individuals were the third category of proprietors of fish. The Samantapāśādikā specifically refers to privately owned (sassāmika) fish in small reservoirs, ponds and channels\(^{71}\). These small reservoirs were held by individual owners (vipihamika) and channels were those individually owned small ones that branched off from the main channels to lead water into private paddy fields. Most of these individually owned channels passed through the paddy fields and some skirted around the paddy fields. The ponds were those constructed by individuals in their homesteads for purposes of obtaining water and for breeding fish. The Samantapāśādikā clearly states that catching fish in these privately owned streams, ponds and reservoirs by outsiders was a theft and those found guilty of such theft were to be punished in accordance with the value of the fish caught.\(^{72}\) Similar kinds of ownership regarding fish would certainly have been in existence in the Island until the recent past.

\(^{70}\) S. Paranavitana, "Perimiyanikulam Rock Inscription", op.cit., p. 135

\(^{71}\) Samantapāśādikā, op.cit.

\(^{72}\) Ibid.
Fish in Sri Lankan Culture

Most of the above references to taxes or shares in fishing, techniques of fishing, varieties of fish, ownership patterns and the sale and theft of fish indicate that inland fishing was an acceptable economic activity both socially and culturally in Sri Lanka in historical times. Agriculturists and their family members supplemented their diet with fish which contained an important element of protein. All the evidence leads to the conclusion that beef eating was considered by the indigenous people to be abominable. In ancient times those who believed themselves as belonging themselves to high caste considered eaters of beef to be low and unclean. In fact, king Bhatika Abhaya (38-68 A.D.) degraded certain people who had eaten beef in his palace premises to the position of scavengers. The *Jātaka Atuvā Gatapadaya* states that those who eat beef and beat drums belong to the *beravā caste*. Knox referring to the conditions in the Kandyan Kingdom specifically states that beef eating was considered abominable. It must be emphasised that no such stigma was ever attached to the eating of fish.

(76) Knox, *op.cit.*, p. 87
In this context, it may be of interest to briefly touch upon the subject of the dietary habits of the people in ancient Sri Lanka including Buddhist monks. As is well known, rice was the staple diet which was supplemented with vegetables, cereals and milk. Meat was consumed by a few and fish by many. As Geiger has pointed out, fish in various forms including dried fish was eaten with rice but rarely meat. However, a diet which included meat and fish (matsya-māṇsa) was considered a sumptuous one and some people offered the monks such a meal as alms.

There has never been any prohibition on the consumption of meat or fish in Buddhism. In the Jīvaka Sutta or the Discourse to Jīvaka, the Lord Buddha prohibited the eating of meat and fish by monks only if it is seen, heard or suspected to have been killed for the purpose of giving it over to a monk. In the same sutta the Lord Buddha specifically approved of the consumption of fish and meat by monks "if it is not seen, heard, and suspected (to have been killed on purpose)" for a monk.

(77) Wilhelm Geiger, Culture of Ceylon in Medieval Times, ed. Heinz Bechert, Wiesbaden, 1960, p. 42
(78) SDHRV, p. 437, Saddharmālankāra, p. 508, pp. 565-66
It may be pointed out that the condemnation of beef-eating in ancient Sri Lankan society was due to two factors. One was that the cow was a domestic animal which was of immense use. The other was Hindu influence on Sinhalese society. It is well known that the Hindus have always considered the cow to be a sacred animal. However it appears that even beef was eaten during the period 800 B.C. to 100 A.D. (before there were marked increase of Hindu influences) by those who were within the main social framework in Peninsular India and Sri Lanka. Among the animal bones found at Gedige, Anuradhapura in recent excavations there were two specimens of Bos (neat cattle) approximately belonging to the period 400 B.C. and 200 A.D. As these specimens display marks inflicted with metal knives and ash and charcoal deposits are found in association it is reasonable to conclude that these are food remains. Since artefact assemblages at Gedige comprising sophisticated objects indicate that occupants of Gedige possessed a relatively high social status, it looks as if prohibitions on beef-eating were introduced into the Island somewhat later, perhaps after the first century A.D. There were no prohibitions at all on the consumption of fish.

(81) Ancient Ceylon, Journal of the Archaeological Survey Department of Ceylon, No. 2, December, 1972, p. 159
The taking of life, of course, is prohibited in Buddhist teachings. But during the course of the development of society various compromises and arrangements had to be made for the sustenance of human life and social institutions. Even in agricultural operations worms and insects living under earth are destroyed. Therefore monks were prohibited from directly engaging in agricultural pursuits (82) but certainly the prohibition did not apply to laymen. It was seen that the Perimiyankulam slab inscription of Vasabha recording that the income derived from fishing in certain irrigation works were allowed to be utilized for a religious purpose. Similarly, various other instances which were discussed earlier indicate that fishing and fish eating were not considered culturally and socially unacceptable in ancient Sri Lankan society.

However, in certain regions there seem to have been a stigma attached to one aspect of fisheries. That was only regarding the technique of fishing by using the hook. The term bilivadda (83) is often used in ancient literature in a derogatory sense to a jungle man of the Vadda tribe who lived solely by fishing and


(83) *Saddharmālankāra,* op. cit. p. 476, p. 648
killing animals. In the medieval period, Knox has referred to various techniques of fishing in the Kandyan Kingdom but not to the hook.\(^{84}\) Henry Parker, referring to the conditions in the Kandyan areas in the nineteenth century states "unlike low-country Sinhalese they never fish with the hook, a peculiarity that they share with the Wanniyas [People of the Vanni regions in the Dry Zone] and nearly all Kandian Sinhalese, who for some reason unknown even to themselves hold that it is quite improper to do so".\(^{85}\) Parker, in a footnote, further points out that the stigma attached to the hook was not peculiar to inland Sri Lanka but was so even in some parts of the ancient Mediterranean areas. Citing Plutarch, he states that the natives of Oxyrhynchus in ancient Egypt did not eat fish that had been caught with a hook.\(^{86}\)

In present day Sri Lanka there is no general condemnation of fishing with the hook in inland waters but, in certain localities, the disapproval can still

\(^{84}\) Knox, \textit{op.cit.}, pp. 28-29

\(^{85}\) H. Parker, \textit{Ancient Ceylon}, First published in 1909, First A.E.B. Reprint 1981, Delhi, p. 52

\(^{86}\) Ibid, p. 52, foot note 1.
be observed. For example, in villages such as Līkolapitiya, Monnekulama, Giriella, Kirinda, Olupaliyāwa and Vaduressa in the Vanni Hatpattu, the use of the bill hook for fishing is not approved of but most other techniques which come from time immemorial are socially and culturally acceptable. In fact, some people of the Vanni Hatpattu in using these techniques other than the bill-hook, fish in reservoirs and on certain occasions send a quota of fish to the Buddhist monks in the village temple. It may be concluded that there has never been any religious constraint on fisheries in Sri Lankan society.
### APPENDIX I

**Varieties of Fresh Water Fish Mentioned in Ancient Literature**

<table>
<thead>
<tr>
<th>Sinhala and Pali Term</th>
<th>English Equivalent</th>
<th>Scientific Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Kudamassā (S)</td>
<td>Common rasbora</td>
<td>Rasbora daniconius</td>
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<tr>
<td>Pathina (P)</td>
<td></td>
<td></td>
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<tr>
<td>3. Luhulā (S)</td>
<td>Snakehead</td>
<td>Channa (=Ophicephalus) Striatus</td>
</tr>
<tr>
<td>Mahāmukha (P)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sakulā (P)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pāvusā (P)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Valā (S) = Valaya</td>
<td>Fresh water shark</td>
<td>Wallago attu</td>
</tr>
<tr>
<td>Valaja (P)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Mēda, Moduvaha</td>
<td>Giant Snake head</td>
<td>Channa marulius (Ophicephalus)</td>
</tr>
<tr>
<td>Gangaru (S) = Gangarā</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Munja; Gaggarā (P)</td>
<td></td>
<td></td>
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<tr>
<td>6. Sungā (S) = Hunga</td>
<td>Stinging catfish</td>
<td>Heteropneustes fossilis</td>
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<td>Singu (P)</td>
<td></td>
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<tr>
<td>7. Teliya (S)</td>
<td>Spine eel</td>
<td>Mastacembulus</td>
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<tr>
<td>Pāsakā (P)</td>
<td></td>
<td></td>
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<tr>
<td>8. Āndā (S)</td>
<td>eel</td>
<td>genus Auguilla</td>
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<tr>
<td>Satavankā (P)</td>
<td></td>
<td></td>
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<tr>
<td>9. Koralā (S) = koraliya</td>
<td>Pearl spot</td>
<td>Etroplus suratensis</td>
</tr>
<tr>
<td>Kakamacca (P)</td>
<td></td>
<td></td>
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<tr>
<td>10. Pāneru (S)=Galpānduruva</td>
<td>Stonesucker</td>
<td>Garra ceylonensis</td>
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<tr>
<td>Pāsānamacca (P)</td>
<td></td>
<td></td>
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<tr>
<td>11. Remas (S)</td>
<td>Prawns and</td>
<td>Macrobrachium spp.</td>
</tr>
<tr>
<td>Rohitamacca (P)</td>
<td>Shrimps</td>
<td>Caridina spp.</td>
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<td>12. Issā (S)</td>
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<tr>
<td>Āli (P)</td>
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<tr>
<td>Nalapi (P)</td>
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</tbody>
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APPENDIX II

Notices of Buddhagosha on Inland Fisheries in the Fifth Century A. D. (Translated from the Samantapāsādikā, the Commentary on the Vinayapitaka) (i)

"With regard to fish and terrapins (ii) that have owners, the entire water in reservoirs, etc. is the place of theft. Therefore any one who seizes a privately owned fish with hook, net, basket or hand in a place where such fish are reared, commits the pārājika offence of theft. Whenever a fish of the value stipulated for the offence (iii) is taken out of the

(i) Paranavitana has translated a part of this section in his article "Some Regulations Concerning Village Irrigation Works in Ancient Ceylon", CJHSS, Vol. I, 1958, pp. 5-6. However, in certain instances, I have deviated from his translation.

(ii) The word used here is kaccapa which means turtle. But the context refers to inland waters and may indicate terrapins. The terrapin is a fresh water tortoise.

(iii) Paranavitana points out that the theft of an object less than a quarter of a kahāpana in value was not an offence according to the secular or ecclesiastical law of ancient India.
water, even upto a hair's breath. Some fishes, while being caught, move here and there, leap up into the sky, or leap on to the bank: it is a parājikā offence to seize a fish while it is in the sky or on the bank. The same is the case with regard to the stealing of a terrapin that had gone out for food. With regard to a thing that lives in water, the parājikā offence is committed by moving it out of the water.

With regard to large reservoirs which are public property in various districts, the people dig a channel, like a small river, connected with the valve pit: this channel also is public property. They cause smaller channels to branch out from that main channel and, at the end of the smaller channels, they dig pits for their own use. When there is need for water for them, they clear the pits, the smaller channels and the main channel, and open the passage from the valve pit. The fish then set out with the water and, in due course, come to the aforementioned pits and remain therein. They do not prevent the catching of fish in the reservoir and in the main channels. But they do not allow the catching of fish that had gone into the smaller channels and into the water pits that belong to each individual. Therefore if any person catches fish in the reservoir, in the valve pit or in the main channel, he should not be
punished for the offence of theft. In the case of a person seizing fish that had gone into the smaller channels, or the pits, he should be held guilty of theft in accordance with the value of fish caught. If a fish while being caught from those places, leaps into the air or falls on to the bank, there is no offence of theft committed by a person taking such fish that had gone out of the water and are remaining in the sky or on the bank. Why? Because they are the proprietors of such fish remaining in the places that have been appropriated by them. Such is the convention on this matter. The procedure is the same with regard to terrapins.

If a fish, while being caught, moves up from the pit to the small channel, the guilt of theft attaches to the one who seizes it there. There is no guilt of theft for one who catches a fish that had moved up from the branch channel to the main channel or from the latter to the reservoir. If any person by scattering boiled rice entices the fish in the pit to the branch channel, and catches them there, he is indeed guilty of theft. If he entices the fish further from the branch channel to the main channel and catches them there, he is not guilty of theft. Some people bring fish from places of common proprietorship, keep them in pits with water in the backgardens, breed them there and
daily catch two or three for consumption. If any person catches fish of this description in the water, in the sky or wherever the fish are found he is indeed guilty of theft. In the case of terrapins also the same rule is applicable.

During times of drought, when the flow of water in the river is stopped the water remains in certain places. In order to catch fish in such places, people throw poisons obtained from various fruits etc. and go away. The fish having eaten these, die and float in the water upside down. One who goes there and takes them with the intention of appropriating the fish before the owners arrive, should be punished in accordance with the value of the fish taken. If a person takes fish in such instances, with the idea that such fish has no owner, it is not an offence of theft. But, later if the owners make a claim such fish ought to be handed over to them. People who have thrown fish-poison come back with vessels, fill them with fish, and leave the place hoping to come back again: It is an offence to seize such fish. If the owners have relinquished their rights, and if one takes the fish with the intention of theft; that is also considered an offence. If one takes away such fish thinking that it is ownerless: it is not an offence. The law regarding fish and terrapins applies to all species living in the water."(iv)