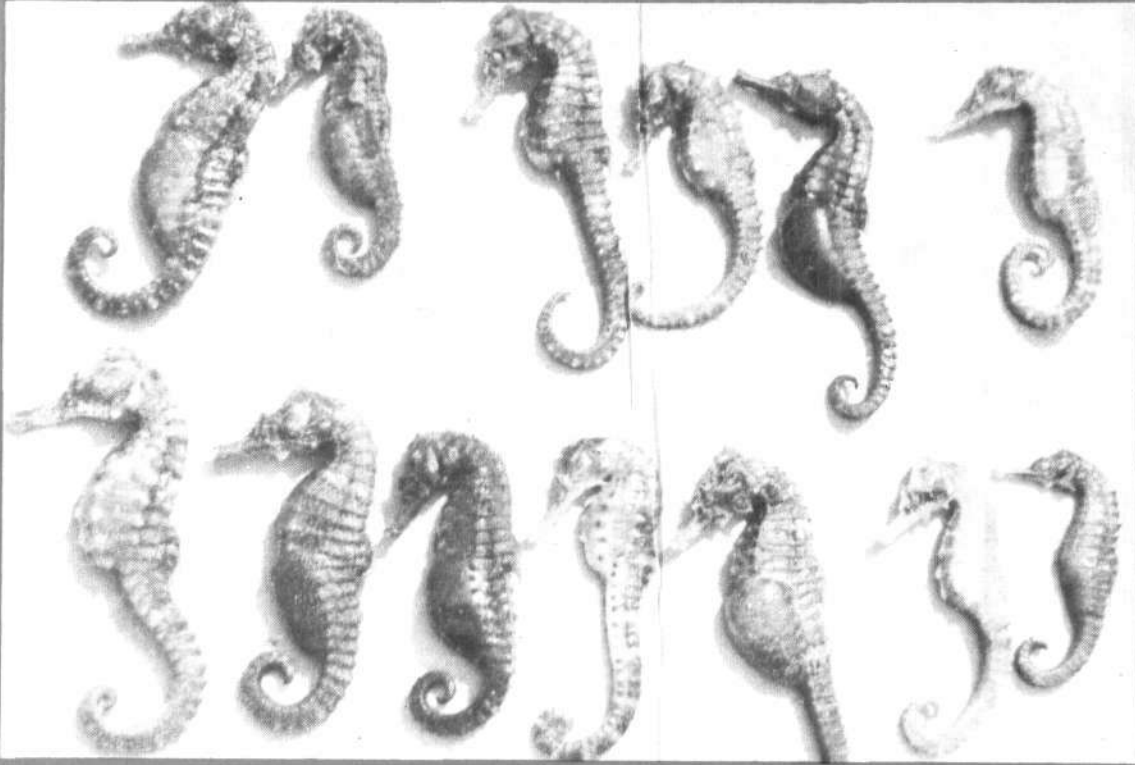




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IMPACT OF RING NET ON THE MACKEREL FISHERY AT CALICUT

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In Calicut, the pattern of indigenous fishing is undergoing fast changes ever since the introduction of outboard engines in 1984-'85 season. The reports by Yohannan and Balasubramanian (*Mar. Fish. Infor. Serv., T & E Ser., 95, 1989*) and Sivasdas and Balasubramanian (*Ibid., 96, 1989*) have given an overall picture of the changes in the craft and gear. With the introduction of outboard engines, the traditional dug-out canoes were replaced by plank-built boats with transom stern for effective use of engines. Subsequently, many of these boats were coated with fibreglass. In September, 1988, ring nets were introduced here which slowly made other important gears, that were in operation, obsolete. The effect of these changes in the mackerel fishery is discussed based on the data collected from Vellayil, Calicut, for the period from 1984-'85 to 1991-'92.

Effort : Fig. 1 shows the annual effort by different gears at Vellayil. *Pattenkolli* dominated the scene till 1987-'88 followed by *Ayilachalavala* and *Nethalvala*. In 1988-'89 ringnet operations started, resulting in gradual reduction in effort by other gears. *Mathichalavala* and *Nethalvala* almost disappeared from the scene by 1989-'90. *Pattenkolli* which was dominating the mackerel fishery before 1988-'89 also disappeared after some sporadic operations in 1989-'90. Only *Ayilachalavala* remained though their operations were seasonal. Ring net operations which started in 1988-'89, reached a peak in 1989-'90. But subsequently it also showed a declining trend.

Man power : On an average, the manpower employed per trip by *Pattenkolli* and *Nethalvala* is 16 each, in *Ayilachalavala* and *Mathichalavala* it is 3 each and in ringnet the manpower is 20. Total manpower employed by different gears during different years is shown in Fig. 2. During the pre-ring net period, *Pattenkolli* employed maximum manpower followed by *Nethalvala*. Though the number of *Ayilachalavala* operations exceeded that of *Nethalvala* during almost all the years, the manpower employed was much less than that of the latter. In the post-ring net

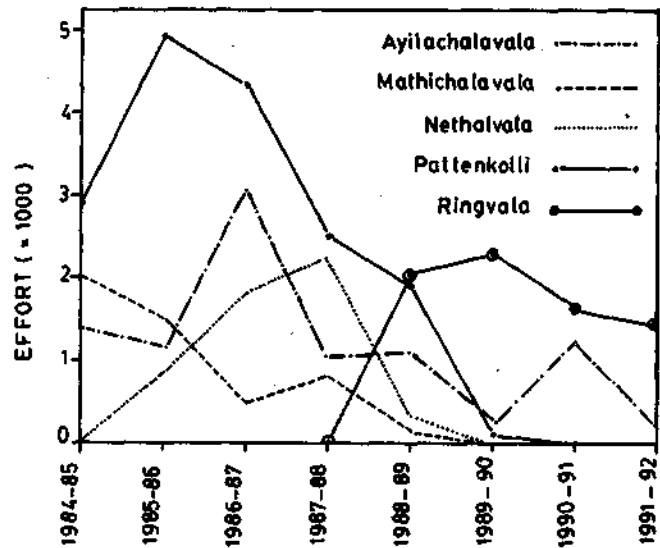


Fig. 1. Effort in the mackerel fishery at Vellayil.

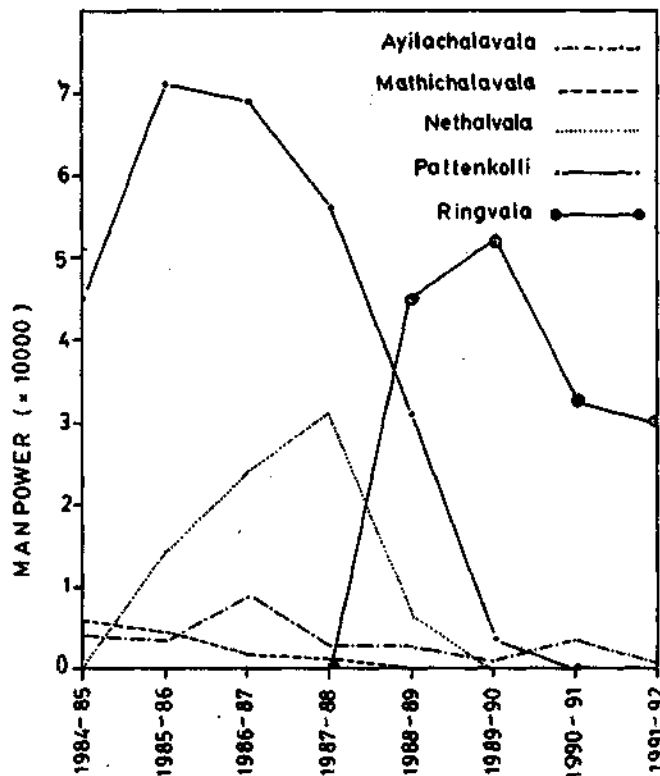


Fig. 2. Manpower employed by different gears at Vellayil.

period, the maximum manpower was employed by ring net even though it was less than that of *Pattenkolli*. The manpower employment by other gears became very insignificant. Changes in the manpower employment by all the gears together is shown in Fig. 3. It is interesting to note that the manpower employed by the gears at Vellayil decreased sharply from 1986-'87 with the lowest figure in 1991-'92. In 1985-'86, *Pattenkolli* employed the maximum manpower (71280) whereas during 1989-'90 when there was peak effort by ring net, the manpower employed was only 47360.

Mackerel catch

Total mackerel catch by all the gears together during different seasons is shown in Fig. 3. It ranged from 250 tonnes in 1984-'85 to 1698 tonnes in 1989-'90. The sharp increase in the catches after the introduction of ring net is evident. But after the peak in 1989-'90, there was a steady decrease till 1991-'92.

The mackerel catch by different gears is shown in Fig. 4. During the pre-ring net period, *Pattenkolli* was the dominant gear in the mackerel fishery. With the introduction of ring net,

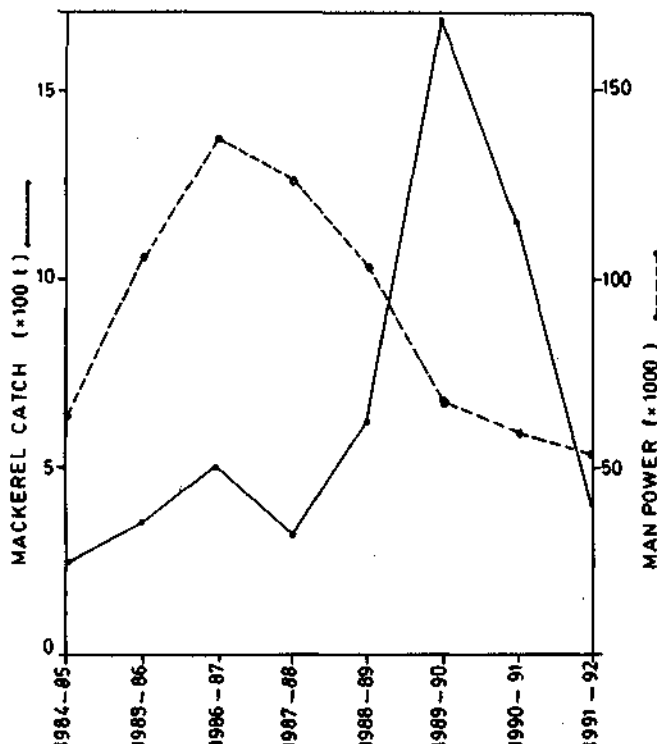


Fig. 3. Total mackerel catch and manpower in all the gears at Vellayil.

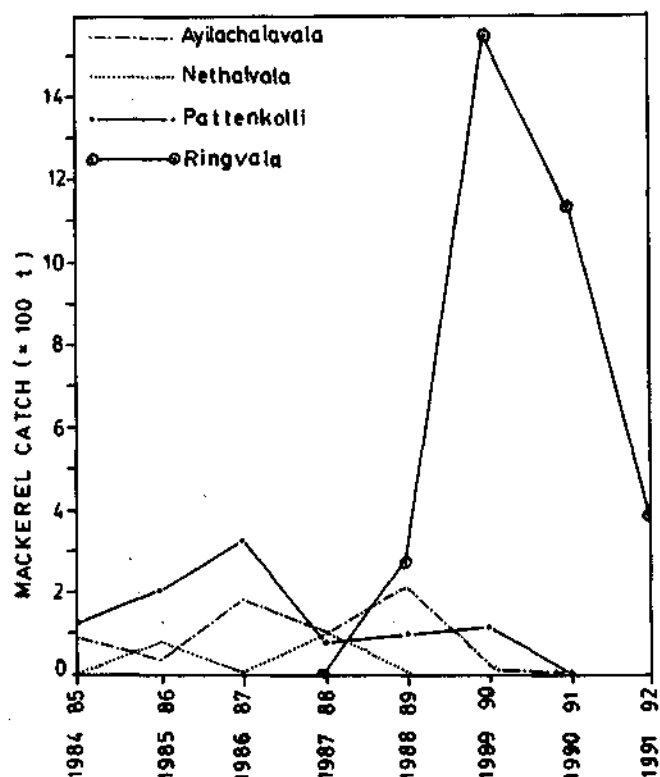


Fig. 4. Mackerel catch by different gears at Vellayil.

Pattenkolli became insignificant and in the post-ring net period, the mackerel landing was almost fully contributed by ring net.

When the average manpower and catch was considered, it was seen that during pre-ring net period, 22757 manpower brought 356 tonnes of mackerel whereas during post-ring net period, 16684 manpower brought 970 tonnes of mackerel with a catch per manpower of 15.63 kg during the former and 58.14 kg during the latter period.

General remarks

With the introduction of ring net, there was considerable improvement in the mackerel fishery especially in 1989-'90. The catch, effort and CPUE of ring net during different seasons are given below :-

Season	1988-'89	1989-'90	1990-'91	1991-'92
Effort	2003	2368	1646	1499
Catch (tonnes)	279	1556.9	1146.9	393.2
CPUE (tonnes)	0.14	0.66	0.70	0.26

From the above, it could be seen that maximum effort was expended in 1989-'90. But in 1990-'91, both the catch and effort were less than that of 1989-'90. However, the CPUE was

the highest. Hence, the decrease in the catches was the result of decrease of effort which was due to a communal clash in 1990 at Vellayil. In 1991-'92, the effort and catch decreased further with a low CPUE indicating poor availability of the fish. Still both the average catch and catch per manpower of ring net is far greater than other gears. Another interesting observation is the reduction in the total manpower in the mackerel fishery. The total manpower employed in the fishery decreased sharply from 1986-'87 and in 1989-'90 when there was peak landing, the manpower was less than half of that employed during 1986-'87. These observations prove that ring net is the most efficient of the gears employed in the mackerel fishery at Vellayil. The disappearance of *Pattenkolli* and *Nethalvala* also support this.

In this connection, it is also pertinent to mention some of the problems associated with the operation of ring net. Since the gear is cumbersome, the fishermen go for fishing only if

they are sure of the catch. The craft, *Chundan vallam* is more prone to capsize in bad weather and hence the operations are restricted to calm weather. These factors are also some of the reasons for the decrease in effort. The gear *Aytlachala vala* being handy and the manpower requirement much less, the operation of this gear still continues.

Another impact after the operation of the ring net is the shifting of landing places according to convenience. Earlier there were specific landing centres for the artisanal gears and the landing time was also more or less constant. Now there is no specific landing place and no particular landing time.

Due to the small mesh size of ring net and their better efficiency, the gear can cause overfishing and hence the fishery has to be watched closely in the coming years. The gradual decrease in the mackerel catch from 1990-'91 is a pointer to this.