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# U. MANAGEMENT APPROACH FOR CLAM RESOURCES DEVELOPMENT IN INDIA

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## ABSTRACT

Clam resource, both live and subsoil deposits, are categorised under minor minerals and as such the licencing and general policy decisions are being formulated by the Department of Mining and Geology of the respective states. Even though in the states like Kerala, Karnataka, Maharashtra, Tamil Nadu and Andhra Pradesh the meat is consumed, major portion of the live clams are collected for utilising the shell for lime and related industries involving a high wastage of meat. There are co-operative societies functioning in certain parts of the country making the harvest and sale on a co-operative basis. Similarly large scale collection and destruction of seed clams are also observed in some of the areas and if properly conserved the production can be enhanced considerably. The developmental programme in this sector are to be taken up at the state and national levels. The paper deals with these topics in detail and suggests management programmes.

## INTRODUCTION

A proper management approach for judicious exploitation and conservation of natural resources is necessary for all development programmes in a planned way to balance a continuous supply of raw material for the industry as well as for maintaining a uniform level of food production as far as our country's requirements are concerned. Our non-renewable natural resources like minerals and the renewable resources from agriculture, forestry animal husbandry and fisheries require different management systems.

The clam resources of our country have a non-renewable phase as subsoil deposits at some centres and a renewable phase in various low saline water bodies of maritime states where live clams are harvested. Based on this background the C. M. F. R. I. has taken up a case study of one of the major estuaries, the Vembanad lake, to evaluate the situation and suggest management measures which can be taken up by the administrative departments of the respective states to evolve management procedures for conserving the clam resources and simultaneously implement programmes for improving the living standards of the fisherman involved with this resource.

## IMPORTANCE OF CLAM IN THE INDUSTRY

Many Industries like cement, calcium carbide, textile, paper etc. and the manufacturers of lime based chemicals depend on lime shell for their requirements of raw materials, it is worthwhile to mention that those states which are not having deposits of lime stone naturally depend on clam shells for their bulk requirements. It is observed that the production from the Vembanad lake is about 2,00,000 t annually comprising lime shell and live clams. The conversion rate of calcium carbonate by these animals is very high that from a lake area of about 200 sq km a production of more than 25,000 t of shells is achieved by the activities of clams in the Vembanad. Similarly depending upon the size of the estuary and the water conditions, all the estuaries in the country are contributing their share of clam production to the industrial network. Alagarswamy and Narasimham (1973) gave an account of the clam resource of the Indian coast and the earlier studies have been reviewed. Subsequently the studies by Rasalam and Sebastian (1976) on the lima shell fisheries of the Vembanad lake have projected the potentialities of the resource in this locality. Nayar et al (1934) and Narasimham et al (1934) made detailed investigations on the molluscan resource of Kali estuary and Kakinada Bay respectively, while Rao and Rao (1935) have presented the

resource position of some of the Karnataka estuaries. A recent investigation by the author (Achary 1986) on the socio-economic impact of the clam resources of the Vembanad lake form the base of this paper.

The present method adopted by fishermen of many of the states for collection and sale of shell is more or less very much unorganised and a proper organisation of these fishermen will naturally help them to make clam fishing as a regular employment.

#### UTILISATION OF CLAM MEAT : NEED FOR AN ORGANISED NET WORK

Even though clam meat is highly nutritious and is a source of cheap protein food, the meat is shucked only at certain parts of the country and utilised as food. Of late, the meat of *Katilyisia* and *Paphia* are exported to foreign countries. The meat from *Villorita* fished in the Vembanad lake is estimated at 3,300 t and it is locally consumed. Similarly in Karnataka state, the meat of *Maretrix* is very much relished and there is a regular market in Karnataka and Goa for *Maretrix* along with *Katilyisia* and *Paphia*. Huge quantities of *Maretrix* are exploited in live form in Kerala and the fishery is mainly for utilising their shell. A proper processing and marketing system is to be developed for avoiding the wastage of clam meat.

#### CONSERVATION OF SEED CLAMS

It is unfortunate to notice that the young clams below 15 mm length are heavily exploited during certain seasons in almost all areas of Vembanad lake. As high concentration of settlement occurs in clam beds of shallow areas, the fishermen are able to collect them in large quantities by using small mesh sieves. To study the intensity of seed clam collection from a specific area, observations are made on the fishery of clams of Vembanad lake and a comparison is made for the different zones. It is found that more than 50% of the catch from the zones north of Thannirmukkom bund is constituted by seed clams below the size of 15mm. Whereas in southern zones they collect clams above the size of 15 mm using sieves

of larger mesh size and seed clam collection is very rare. In northern estuaries also seed clams are heavily exploited. However, the fishermen are becoming aware of the deleterious effect of this practice and there is improvement in the situation in some localities. If an organised clam culture programme is initiated it will augment the production of clams.

#### ROLE OF CO-OPERATIVES IN VEMBANAD LAKE

There are twelve co-operative societies working around the Vembanad lake, six for live clam fishermen and six for fishermen collecting shells from the deposits. The total membership of these societies is 4699 and except in case of one live clam society the others have a turnover of 3,686 to 4,909 t. The white lima shell societies have a turnover of 5,633 to 18,586 t except for one which is on the northern most part of the lake.

The main activity of these societies is collection and sale of shell. There is a co-ordination committee known as Action Council with representatives from each society to formulate general policies like fixation of price and collection of deposits like compulsory deposits, provident fund, medical, festival and other welfare funds etc. from the members. Two societies have their own boats to tow the canoes of fishermen to the fishing area and back to the depot where the shell is stocked. This reduces the manual labour and helps the fishermen to have more time for fishing. There are also facilities for advance payment to the members which is recovered subsequently and also for payments from the reserve funds.

#### RURAL DEVELOPMENT PROGRAMMES AND CLAM INDUSTRY

The self employment and other welfare schemes under the Department of Fisheries, Industries, Agriculture, Animal husbandry, Harijan Welfare, Khadi and Village Industries Commission, Matsyafed etc. could be very well channelised to the clam fishermen if the co-operative societies can function as nodal centres (Flow Chart). For example, the Khadi & Village Industries commission has 25 schemes

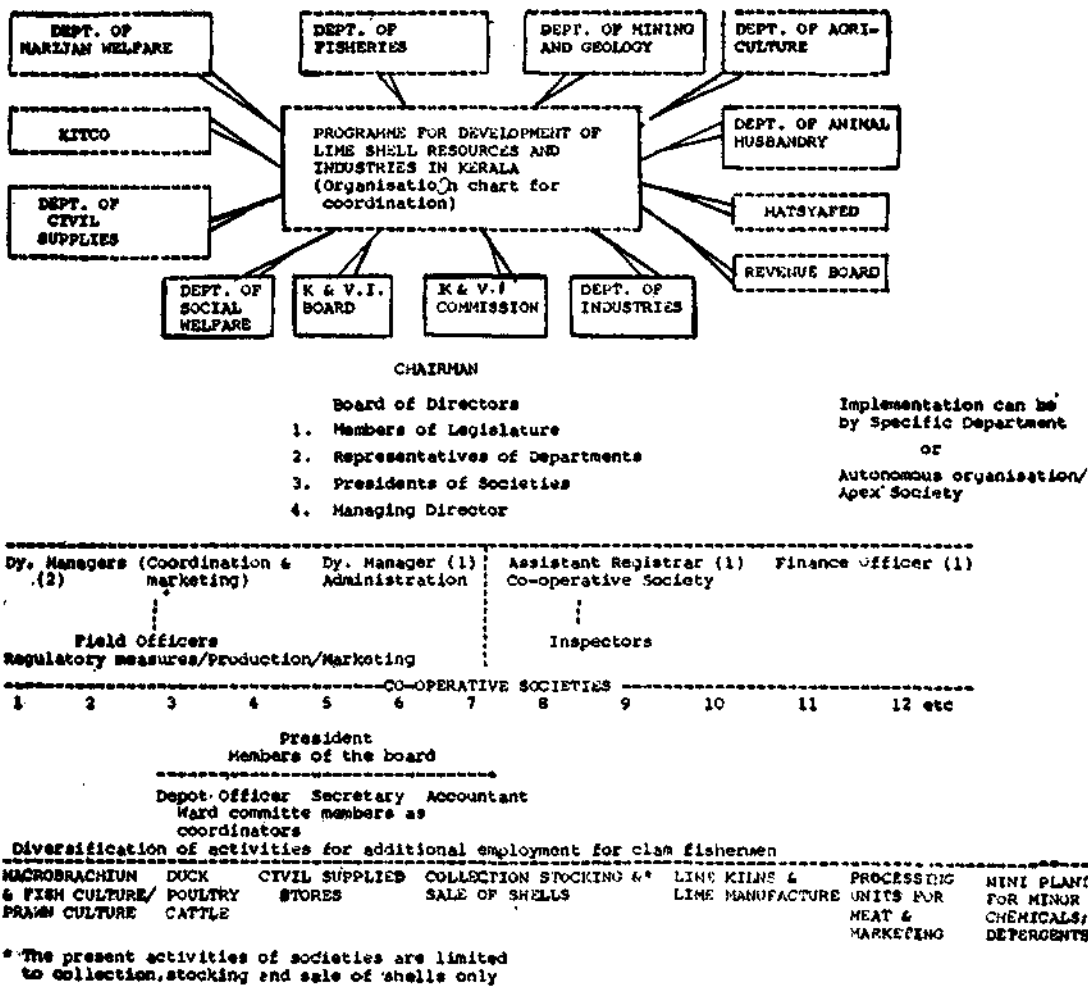


Fig. 1 Flow Chart

to provide self employment opportunities and of these thirteen are functioning at present for lime industry to support individual as well as group activities. It is observed that only very few societies of lime shell fishermen of Vembanad lake have availed this facility. If an agency to co-ordinate and channelise the development programmes through these societies is set up, it will go a long way in improving the living standards of the fishermen.

#### AN APPROACH FOR FUTURE DEVELOPMENT

The clam resource of our country needs immediate attention for conservation and replenishment to meet future demands of the lime based industry. In addition, generation of additional employment opportunities and

welfare programmes for the fishermen also can be simultaneously tackled by establishing co-operatives for these fishermen and the activities can be coordinated by autonomous agencies. Administrative departments. A general programme is presented in the organisation chart which can be suitably modified according to the administrative facilities available for specific localities. The C.M.F.R.I., C.I.F.T., MPEDA and the concerned departments will be in a position to formulate programmes by mutual consultation to make localised area development programmes and the base line studies made by the Institute could be properly utilised, by consulting the specialist scientists in the respective field.

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