

**RURAL INSTITUTIONS FOR DEVELOPMENT OF
APPROPRIATE FORESTRY ENTERPRISES :**

A Case Study of the Traditional Reed Industry in
Kerala State, India

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S U M M A R Y

This case study was done, with the objective of generating information regarding the role of selected rural institutions in undertaking and promoting forestry activities. Although a minor forest product, bamboo reeds (Ochlandra spp.) form an important raw material for both traditional and modern industries in Kerala. Mat-weaving and basket-making are the major traditional uses of reeds. For a large number of households reed-based industries form an important source of livelihood. Institutions such as co-operative societies and the state-owned Bamboo Corporation were set up with the social objective of enhancing the income accruing to traditional workers by eliminating intermediaries. Production of baskets and mats requires little capital input and is appropriate to the resource endowments of household producers. Financial and economic viability and social desirability of the activities and institutions have been examined. Internal organisation of the institutions involved in the collection, processing and marketing of reeds have been studied focusing attention on workers involvement in decision-making. The

Bamboo Corporation is characterized by a vertical structure providing little scope for workers participation. Even in the case of co-operative societies the involvement of workers in decision-making is limited. Performance of the institutions under these conditions becomes primarily dependent on the commitment and ability of the leadership. How an institution interacts with other institutions is also an important factor. Social, economic and cultural characteristics of reed workers have been briefly discussed. An analysis of the interaction between society, institutions and technology indicates that reliance on market signals for decision-making would, in due course, compel institutions to deviate from their initial objectives and a tendency towards adoption of inappropriate technologies develops. This study indicates the conditions that favour the development of appropriate institutions and suggests measures for enhancing their effectiveness under the social environment that prevail in the state.

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CHAPTER 1

I N T R O D U C T I O N

Ever since the relevance of planning in the process of economic development has been understood, the importance of choice of appropriate techniques has become a seriously debated issue among planners. However, in all discussions pertaining to choice of techniques the role of institutions seldom gets the attention it deserves. How decision-making institutions are organised determines production relations and this will markedly influence technological choice, appropriation of benefits, etc. Appropriateness of techniques and institutions has become a focal point of study in forestry in the context of the role assigned to the sector in local community development. It is in this context that FAO initiated the preparation of a conceptual framework and guidelines for development of appropriate forestry enterprises aiming at strengthening and improving the role of rural institutions in forestry activities. The present study is undertaken to provide illustrative material for this purpose.

1.1 The background

Kerala is the most densely populated state in India with a density of 654 persons/Km². Industrially it is one of the most backward states in the country, The contribution of secondary sector to state domestic product was only 21 percent in 1980-81. The industrial sector in the state is dominated by small scale units with low level of technology. There were about 16,000 small scale units in the state in 1980-81, most of them agro-based, forest-based and clay-based units. One of the significant features of the factory sector in the state is that, a third of the small scale units do not use power: they primarily depend upon human labour for different activities. Kerala's traditional industries like coir, cashew handlooms and tiles account for major share of industrial employment.

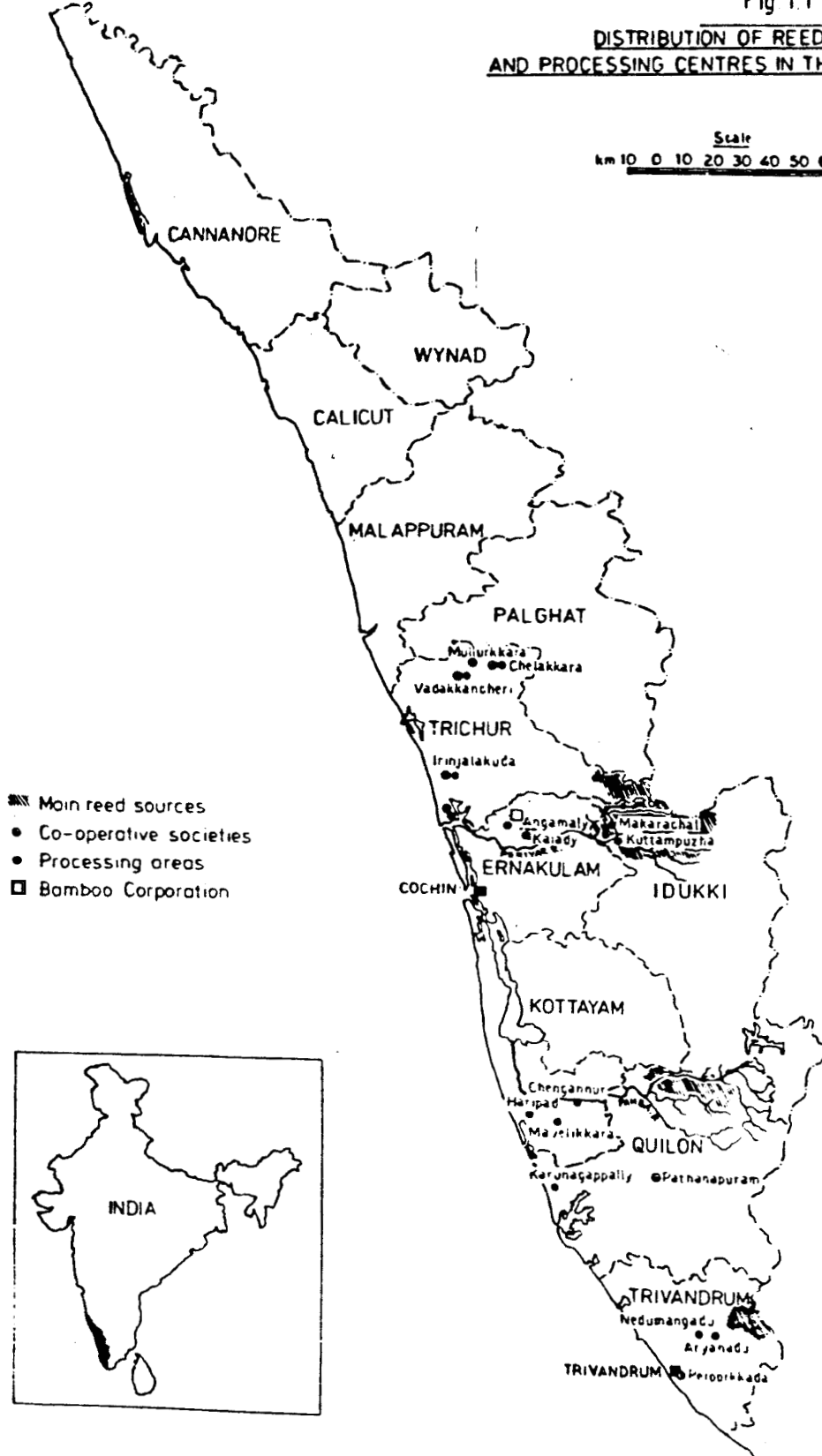
1.2 Reed-based industry in Kerala

Forests and forest-based industries play an important role in the economy of Kerala (Chandrasekharan, 1973; Nair, 1981). There are several forest produce-based enterprises in the state. However, for the present study reed-based enterprises have chosen for the following reasons.

Fig 1.1

DISTRIBUTION OF REED SOURCES
AND PROCESSING CENTRES IN THE STUDY AREA.

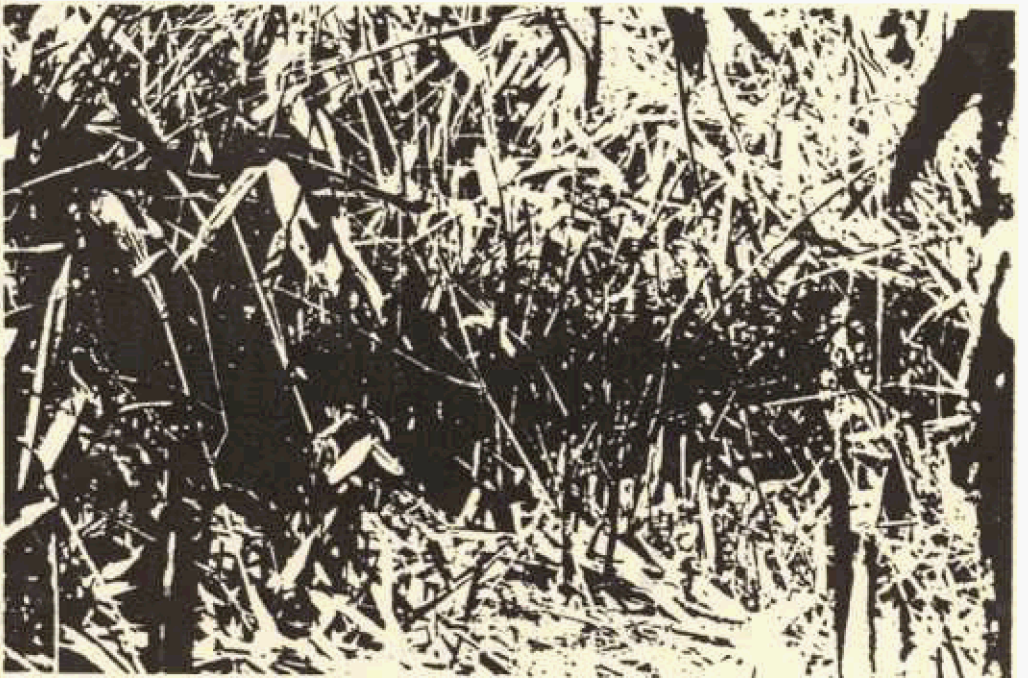
Scale
km 10 0 10 20 30 40 50 60 70 km



Plate



Undergrowth of reeds (Ochlandra spp)



Reed clumps after extraction

- (i) Though conventionally grouped as a minor forest product, reed is an important product having both traditional and non-traditional uses.
- (ii) Reed based production is widespread in the state and is listed as a major household activity.
- (iii) A large number of items catering to different markets and requiring different skills are produced from reeds.
- (iv) Several institutions, differing in their structure and organisation are involved in reed based activities.

No other forest based activity offers scope for a detailed study of the different aspects simultaneously.

1.2.1 The study area

The study is based on information gathered in respect of enterprises located in the former Travancore-Cochin area of the state now comprising the districts Trichur, Ernakulam, Idukki, Quilon, Alleppey, Kottayam and Trivandrum (see Fig. 1-1).

1-2.2 Reeds and their uses

Bamboo reeds (Ochlandra travancorica and Ochlandra scriptoria) occur as undergrowth in the ever-green and semi-evergreen forests in the state (see Plate 1). Often it occurs almost as pure patches, especially along stream banks. The growing stock of reeds in the Travancore-Cochin region of the state and the annual yield therefrom has been estimated as 1.0 million and 0.3 million tonnes respectively.

Like other bamboos available in the state, reeds form an important raw material catering to traditional and modern industries. Of the latter, the most important is pulp and paper industry. Currently about 93 percent of the annual yield is earmarked for supply to the pulp and paper industry.

1.2.3 Reed-based traditional industries

Although pulp and paper industry obtains a major share of the reed resources available in the state, in terms of employment, traditional cottage industries producing mats, baskets, dining table mats, wall hangings, etc., play an important role. The techno-economic survey of Kerala (NCAER, 1962) lists reed industry as one of the major household activities

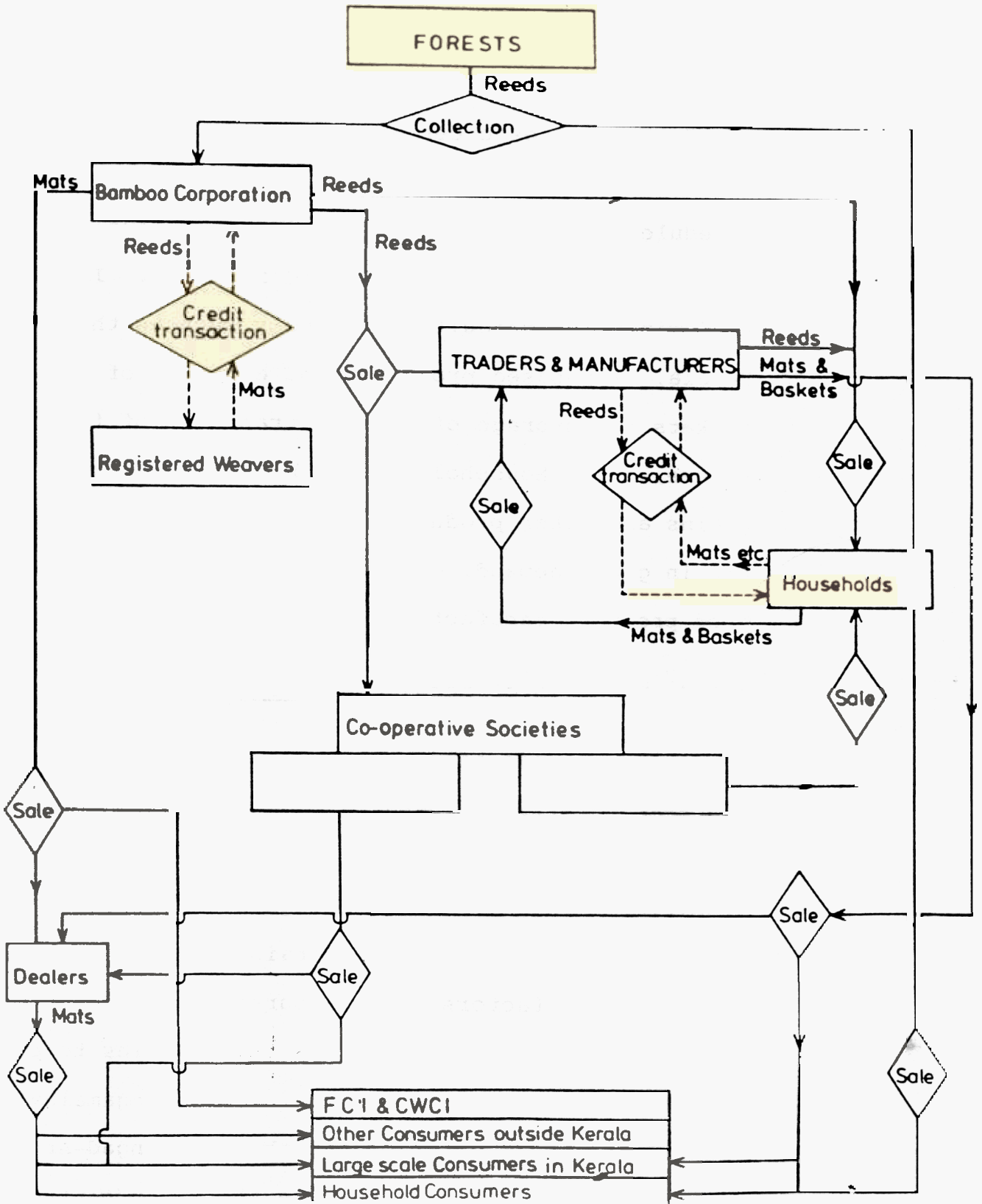
included in the non-factory sector. Existence of abundant reed resources and the seasonal nature of agricultural employment (especially among the landless scheduled castes) might have led to the development of reed-based cottage and household industry. In a predominantly agricultural economy such as that of Kerala, reed-based products find a number of uses. Baskets for storage of grains, transport of farmyard manure, soil, household items, mats for drying food grains and other products such as pepper, copra, etc. are in great demand. Appendix I lists the various reed products manufactured in Kerala.

1-2.4 Location of reed-based industries

About 300,000 workers belonging to the socially and economically backward sections in society, particularly the scheduled castes, are engaged in reed based traditional industries. Although as a household activity it is widespread, certain economic, social and technical factors have favoured its concentration in certain areas. Particularly this applies to products catering to markets outside the state. Anqamalay-Kalady area in Ernakulam district and the Nedumangad-Aryanad area in Trivandrum district, are the major centres of

Fig.1. 2

REED INDUSTRY IN KERALA



reed mat production in the state. In the former area, the industry is more than a century old and reed mats were being shipped from Cochin to Bombay on a large scale (Government of Travancore, 1884). About 12,000 families are engaged in mat-weaving in this area. Almost all weaver families in the area work for the Kerala State Bamboo Corporation, a government undertaking. Production from here primarily caters to the demand from outside the state and to the requirements of government undertakings such as the Central Warehousing Corporation and the Food Corporation of India

A major portion of mats produced in the Nedumangad-Aryanad areas is utilised within the state, particularly in the rice and pepper growing areas. Apart from the large number of intermediaries who purchase mats directly from the producers, a substantial quantity is also traded through the weekly market at Nedumangad. Mat production also takes place in areas such as Pathanapuram, Punalur and Parakkode on a smaller scale. Primarily such production caters to local requirements.

Production of fruit baskets, another important item traded on a large scale, is concentrated in the Talappilly taluk of Trichur district. About 15,000 workers, all harijans, are reported to be employed in

basket making in the area. The number of workers enrolled as members of co-operative societies is about 1500; the rest work mostly under private entrepreneurs. Instances of employing cheap migrant labour from Tamilnadu is also noticed.

Fish basket production is concentrated at Vidura in Trivandrum district and the coastal area of Karunagappall; and Haripad in Quilon and Alleppey districts respectively. If availability of reeds within short distance is the reason for emergence of fish basket production in the former case, proximity to markets is the reason for concentration of production in the latter area. Most of the basket weavers in the coastal area are migrant workers from Nedumangad in Trivandrum district. No information is available on the number of total workers engaged in fish basket production. Production is primarily aimed at markets in the coastal belt between Cochin and Trivandrum.

Distribution of reed-based activities in the study area is given in fig. 1.1.

The entire gamut of activities, agencies and institutions involved in the collection, processing and marketing of reeds and reed products is indicated in fig. 1.2.

To sum up, institutions such as the Kerala State Bamboo Corporation (hereafter referred to as Bamboo Corporation), co-operative societies, etc. occupy a pre-eminent position in reed industry in the state. A study of these institutions with respect to their objectives of formation, mode of functioning, achievements, etc. will give useful insight into their suitability for undertaking forestry activities.

1.3 Plan of study

The background in which institutions such as Bamboo Corporation and co-operative societies were established is discussed in Chapter 2. Processes involved in the production of mats, baskets and dining table mats are dealt with in Chapter 3. Survival of the enterprises depends on their economic viability. This aspect is examined in Chapter 4. An attempt is made there to indicate the associated social costs and benefits. Chapter 5 gives an account of the organisation of the different institutions. The environment in which these institutions operate and their interaction with other enterprises are discussed in Chapter 6. Chapter 7 deals with the social characteristics of the people involved in reed-based activities and its implications on the functioning of the institutions. Chapter 8 examines

the appropriateness of various activities and institutions on the basis of certain pre-determined criteria. The concluding chapter discusses important aspects to be taken into account in establishing rural enterprises.

CHAPTER 2

THE SETTING

Institutions such as the Bamboo Corporation and the various co-operative societies have come into existence under a given set of conditions. At understanding of the origin of these institutions is essential to a proper appreciation of their role in the industry.

2.1 General background

Traditionally reed-based activities are carried out in the household sector as a leisure time/off season activity to supplement income from other sources. Being an arduous work, reed collection is carried out by men. Mat and basket weaving is mostly done by women, with assistance from men in cutting reeds into pieces. As markets are local, household members could go round the village for door to door sale of products. Local availability of raw material and easy access to local markets enabled the household units to thrive independently. For a large number of reed workers who live close to the forest area with easy access to markets in towns and villages this holds

good even today. Limited access to markets or sources of raw material adversely affects the independent operation of household production units. Transport cost 'becomes a major item of expenditure when raw material/products are to be taken to distant places. Being a product with low value/bulk ratio, profitable operation is possible only if economies of scale in transport are taken advantage of. A household operating independently has inherent limitations in increasing the scale of activity and hence is unable to realise economies of scale. Increased demand from bulk markets provide an ideal situation for the operation of intermediaries. The intermediaries undertake the important function of marketing in the production-distribution chain. However, illiterate and unorganised producers become an easy target for exploitation. Institutions-such as the Bamboo corporation and the co-operative societies have been established to free workers from exploitation by intermediaries and to enhance their employment opportunities. Conditions that favoured the emergence of various institutions are discussed below.

2.2 The setting

2.2.1 Kerala State Bamboo Corporation

Reed mat production is one of the earliest household industry in the Angamaly-Kalady area in Ernakulam district. Easy access to reed resources, particularly through river Periyar, made procurement of raw material a simple affair. Although reed collection and mat-weaving were being carried out by households, they were unable to undertake marketing in distant consuming centres such as Bombay. Household producers were forced to rely upon traders to market the mats in far-off markets. Oligopsony over procurement and trade of mats enabled traders to manipulate markets to the detriment of reed-mat producers. Social and economic backwardness coupled with their indebtedness to traders forced weavers to accept the prices offered. In 1970 the State Government appointed a commission to examine the operation of the industry and to suggest measures for streamlining the activity with the primary objective of enhancing the well-being of the traditional workers. The two alternatives considered were, (1) constitution of co-operative societies for reed mat workers in different localities and co-ordination of the

activities of these societies through an apex society and (2) formation of state-owned corporation. The commission favoured the second alternative, leading to the establishment of the Kerala State Bamboo Corporation in 1971. Support from various political parties, particularly the local member of the legislative assembly, seems to have been an important factor in the decision to set up the Bamboo Corporation. The union of employees of mat traders also supported this to safeguard their interest.

Functioning of the Corporation in the initial years revealed several deficiencies. Since the corporation had no control over procurement and distribution of reeds, taking over marketing alone did not eliminate traders. Since supply of reeds to household was linked to the sale of mats to traders, the latter could thrive well despite the establishment of the Corporation. As long as the Corporation had no control over reed supply, it could not compete with the established traders in procuring mats. From 1977 onwards the right to collect and remove reeds from the forests in the former Travancore-Cochin area was given to the Corporation. Along with this the Corporation was also assigned the responsibility for supplying reeds to co-operative societies, and traditional users such as small-scale industries and bonafide consumers.

Angamaly is the main centre of activity of the Corporation. The corporation employs about 2,700 reed cutters and these reeds are transported and stocked at the collection depots. There are about 55 reed distribution centres in the Angamaly-Kaladi area. Reeds are supplied to registered mat weaving families from these depots. There are about 15,000 families of mat weavers registered with the Bamboo Corporation. Mats produced by these families are collected in the depots of the Corporation. The Corporation has been able to establish a marketing net work. Government organisations such as Food Corporation of India and Central Warehousing Corporation of India are the main consumers of mats. A substantial quantity is supplied to sugar factories in Maharashtra state also.

Supply of reeds to other consumers is effected through depots maintained by the Corporation in different parts of the state. The State Government has fixed the following order of priority for supply of reeds by the Corporation.

- (i) Mat producers registered with the Corporation
- (ii) Harijan and other co-operative societies
- (iii) Charitable institutions engaged in reed-based cottage industries
- Registered small-scale and cottage industries
- (v) Others**

2.2.2 Co-operative societies

The co-operative movement has a fairly long history in Kerala. Ever since the co-operative societies regulation was passed in, 1912, the number of societies and activities taken up by them have steadily increased. Societies have been formed either to cater to the needs of specific social groups or to undertake specific activities. Agriculture being the major activity and credit being a crucial need, majority of the societies in the state cater to agricultural credit requirements. Constitution and management of societies are guided by the rules and regulations prescribed by government and administrative control of societies vests with the Department of Co-operation.

About 40 co-operative societies are involved in the reed industry in the study area. A majority of them are oriented towards specific communities, particularly harijans, who are traditionally dependent on reed mat and basket production. As in the case of Bamboo Corporation, most of the co-operative societies have been established with the objective of eliminating intermediaries and thereby enhancing benefits accruing to the reed workers. When production is aimed at bulk markets, traders exert a powerful control over marketing. In addition to elimination of intermediaries, co-operative societies have

certain broader aims such as encouraging thrift and entrepreneurship among members, promoting self-reliance and working for the overall welfare of the communities or groups concerned. Most of the harijan co-operative societies were once under the administrative control of the Harijan Welfare Department, but now the control vests with the Co-operative Department.

Production of dining table mats, wall hangings, etc. is an important activity in which co-operative societies are involved in. In Kerala, production of these items is concentrated in Irinjalakuda in Trichur district. The technique of producing table mats and wall hangings was introduced to the area by an entrepreneur in 1968 and since then many such units have come up. At present there are 20 such units, of which 3 are run by co-operatives. One of this is organised by the local women's group (Mahila Samajam) and all members and office bearers of the society are women. The society was formed to enhance employment opportunities to women, and they were not specific about choosing reed mat production. The choice was made by Industries Department, taking into account availability of raw material and local skills. In the other case an existing production unit affiliated to a church group was constituted as a society, primarily to avail the facilities extended by government such as share' capital contribution, building grant, managerial subsidy, etc. Here the initiative came not from the workers, but from the church management.

Appendix 11 gives the names of co-operative societies surveyed during the present study, the nature of activities undertaken by them and their present position.

2.3 Conclusion

The conditions that favoured the emergence of intermediaries in traditional reed industry have been described in this chapter. Institutions such as the Bamboo Corporation and the co-operative societies were established with the objective of minimising the exploitation by intermediaries and to enhance benefits accruing to workers. Achievement of these objectives depends on a number of factors such as production techniques adopted, organisational aspects and above all the social and economic environment in which the enterprise operates. These aspects will be dealt with in the subsequent chapters.

CHAPTER 3

TECHNOLOGICAL ASPECTS

Collection, transport and processing are the important activities involved in the production of reed mats, baskets, etc. Techniques adopted at different stages and the factors that have favoured the adoption of such techniques are discussed below.

3.1 Harvesting of reeds

Among the traditional users the Bamboo Corporation has monopoly over collection and transport of reeds from the Central, High Range and Southern Forest Circles (Travancore-Cochin area) in the state. None of the co-operative societies in the region is directly involved in organising collection of reeds. Supply to societies is made by the Corporation from the latter's sale depots.

Judging by the conventional definition of factor intensity (Morawetz, 1974), the method of harvesting reeds now followed can be categorised as a labour-intensive technique (See plate 2). No mechanical devices are used and the implement used is a simple bill hook. The reed cutters clear the undergrowth around the reed clump and culms are selectively removed by cutting at a height of 45 to 60 cm above the ground level. Diameter of the

culms seldom exceed 6 cm and with a few slashes the culms can be severed from the base. It is then pulled out of the clump and the thin tip at the top is cut off with the bill hook. The following factors have contributed to the evolution of labour-intensive technique in harvesting.

1. The technique has evolved in a capital scarce situation and traditionally workers are accustomed to simple, locally developed techniques. Reed cutters belong to economically backward sections in society and naturally, harvesting methods developed by them tend to be labour-intensive. Successive generations learn the technique through close association with the harvesting activity.
2. Hitherto not much work has been done to develop mechanised techniques to harvest reeds. Although the feasibility of using a modified bush cutter to fell bamboos has been studied (FAO, 1975), its use in felling reeds has not been explored. Even in the case of bamboos, which are difficult to harvest, mechanised methods are not in vogue,



Harvesting reeds



Harvesting transport

3. Locality factors such as topography, stocking of the species, silvicultural requirements and above all availability of supporting infrastructure, have an overwhelming influence on the choice of techniques. Evergreen and semi-evergreen forests, where reeds occur, are less accessible. Reed areas are worked on a selective felling system with a felling cycle of 3 to 4 years. To ensure growth of new culms, felling rules prescribe the retention of at least 50 percent of the culms in a clump and clearfelling is totally prohibited. Further reed culms used for mat-weaving should be of a special quality and must be selectively felled from a clump. Generally 2 to 4 year old culms yield good quality slivers, while tender and over mature culms are unsuitable. A selective felling system rules out the adoption of capital-intensive harvesting techniques. In comparison with wood, market value of reeds is low and expected increase in production due to the use of modern techniques may not be commensurate with the additional cost.

Choice of techniques is largely guided by economic considerations, particularly the relative costs of various factors of production.. Even when reed collection was controlled by private traders, manual techniques were being adopted. Large scale industrial units such as Gwalior Rayons, Hindustan Paper Corporation

and Punalur Paper Mills, who utilise reed as a raw material for pulp production, continue to adopt the technique described earlier. There is no dearth of labour for reed cutting and despite trade union activity, relative cost of labour has not registered any increase. Further, even if alternative techniques are known, it will be very difficult for the Bamboo Corporation to introduce such techniques on account of labour resistance. It will be contrary to the objective of providing employment to traditional reed workers envisaged at the time of establishment of the Corporation.

3.2 Transport of raw materials and products

Since both raw material and finished products are bulky, transport is a major item of cost in reed industry. For some of the production units located away from the major raw material producing areas, transport accounts for about 25 to 40 percent of the cost of reeds. Systems adopted for the transport of reeds and final products at different stages are shown in fig. 3.1.

Evidently there are several systems of transport adopting different modes at various stages. Simplest of these involves use of labour at all stages, from dragging reeds, taking by headloads to household production units, and finally marketing finished products by door to door sale. Existence of raw material and markets in close

proximity is a necessary condition for adoption of the system. Lorry transport is resorted to move both raw material and products when source of raw material and markets are located far away from manufacturing centres. The need to realise economies of scale in transport has been primarily responsible for the introduction of capital-intensive methods such as lorry transport.

Due to their small size, reeds available from the forests in Trivandrum district are unsuitable for weaving fine mats. Most of the mat weavers in the Nedumangad and Aryanad area are therefore dependent on reeds from the Periyar Valley, especially Kuttampuzha, Adimaly and Idamalayar. Necessarily this involves transport over a distance of about 200 km and lorry transport is the only feasible method.

3.2.1 Dragging

Immediately after harvesting, culms are transported to a convenient point on the river or road side for onward transport (See plate 2). As in the case of felling, dragging is also carried out manually. Butt end of three to six reeds are held together and pulled along foot paths. Although sophisticated methods such as use of winches are possible, for reasons indicated earlier they are not used. Dragging is carried out by those engaged for felling. Adoption of a labour-intensive



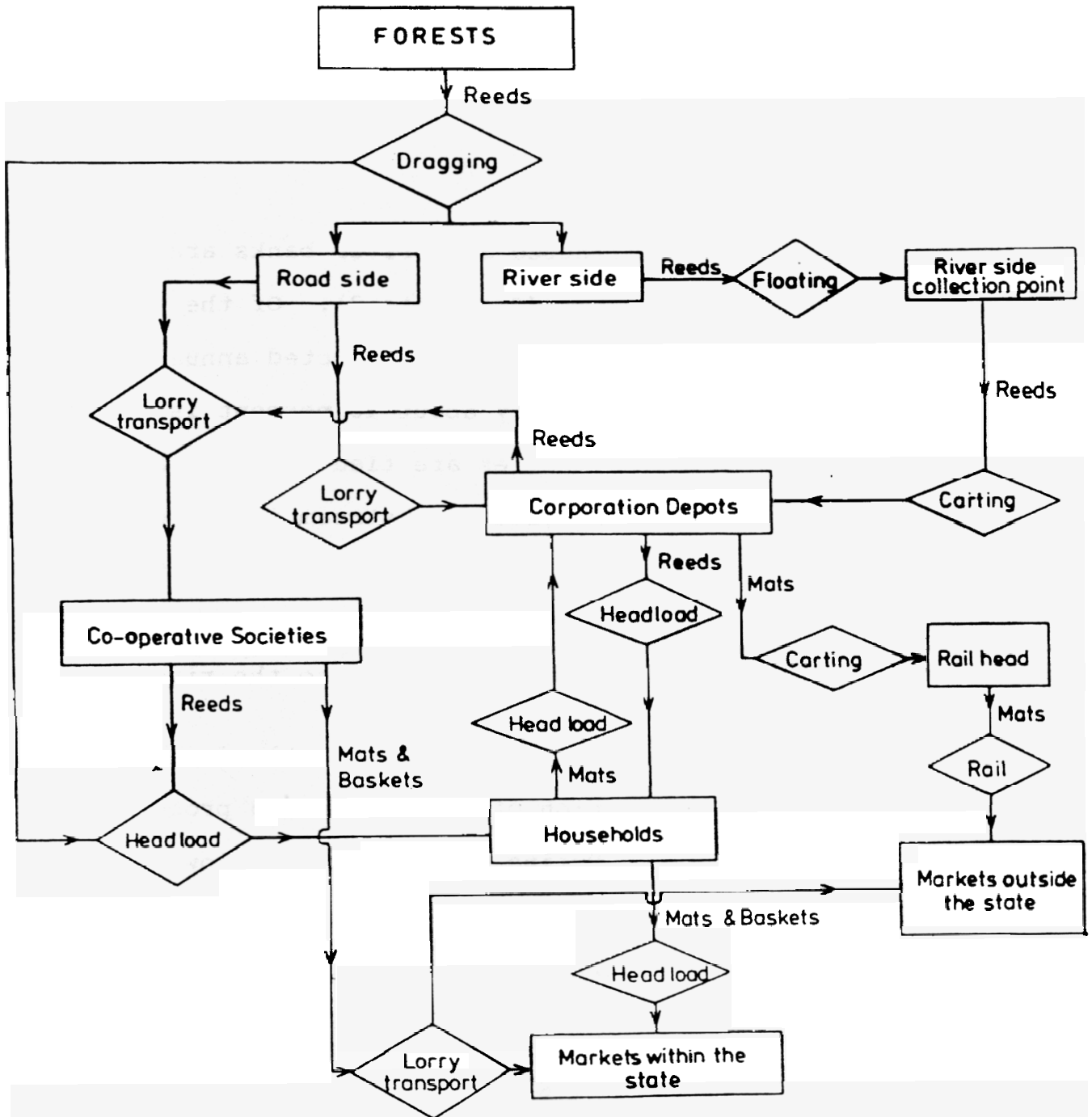
A truck transporting reeds



Reed rafts in Periyar river

Fig. 3.1

MODES OF TRANSPORT OF REEDS AND REED PRODUCTS



technique at one stage results in the choice of a technique with similar factor intensity at succeeding stages too, especially when the operations are closely linked.

3.2.2 Rafting

Reeds collected from river banks are usually transported by water (See plate 3). Of the total quantity of 15 million reeds collected annually by the Bamboo Corporation, only about 20 percent is transported by rafting. Reed bundles are tied together as rafts and they are allowed to float downstream in the water current. Two or three persons may travel on the raft to control its movement. At the collection points they are brought to the shore and bundles are dragged to the river side.

Feasibility of floating greatly depends on river flow and the location of reed areas and processing centres on river banks. During the peak water flow season, in July and August, floating is extremely difficult. Similarly, from March till the onset of monsoon, floating is numberless as the water level will be very low. In shallow stretches the rafts will have to be dismantled and each bundle will have to be carried across the sand bed.

Floating is the cheapest and most traditional form of long distance transport. According to Bamboo Corporation officials, floating plus carting from river side collection centres to depots of the Corporation costs about 75 percent of the expenditure on truck transport from comparable distances.

3.2.3 Cart transport

Bullock carts are used for short distance transport upto about 25 kms (See plate 4). The Bamboo Corporation uses carts for transporting (1) reeds from river-side collection centres to distribution depots and (2) mats from sub-depots to the Central Warehouse at Angamaly.

Motive power is provided by bullocks which form part of the agricultural economy. During non-agricultural season, animal power remains idle and no opportunity cost is involved in their use for reed/mat transport. Further, the animals thrive mainly on agricultural residues and hence use of scarce inputs is not involved. Most of the components in bullock carts are made from locally available material utilising local skills. Choice of any particular mode of transport will depend upon the relative cost of inputs, infrastructure facilities, distance involved and the speed required. Where the distance involved is short and speed is not an important consideration, cart transport will continue to be adopted.

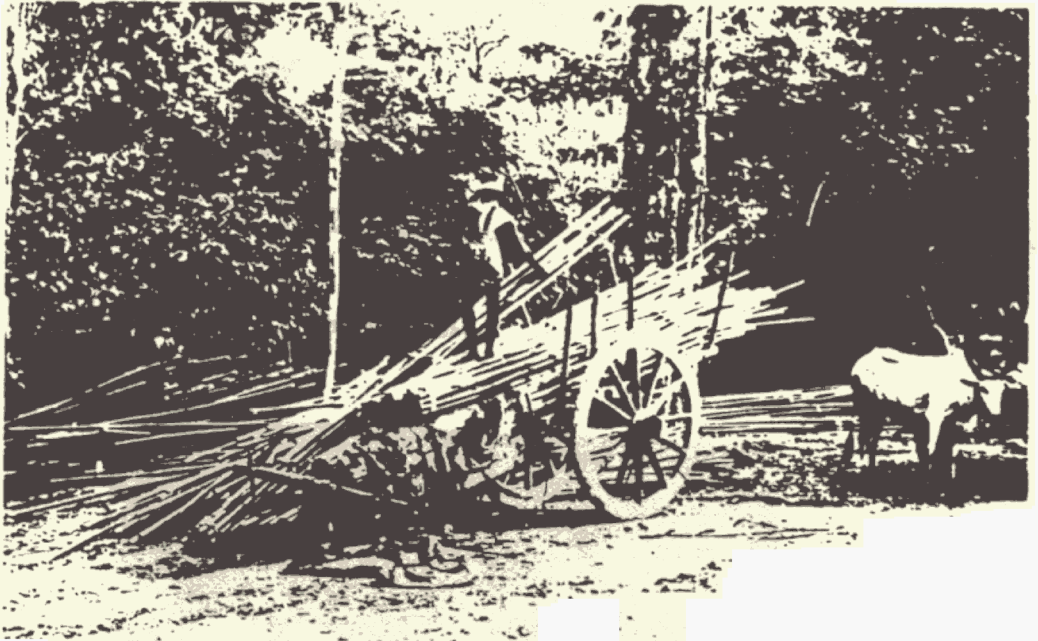
3.2.4 Lorry transport

Lorry transport (See plate 3) is employed at the following stages:

- (i) Transport of reeds:
 - (a) From road side depots in the forest to distribution depots Over a distance of about 50 to 100 kms.
 - (b) From depots of the Bamboo Corporation to depots or worksheds of co-operative societies and private traders, the distance of which varies from 25 to 250 kms.
- (ii) Transport of finished products such as baskets, mats,, etc. over a distance of about 25 to 500 kms.

Smaller trucks are utilised when the quantity involved for transportation is small and the distance is short (See plate 5).

When compared to other methods, lorry transport is a capital-intensive alternative, requiring substantial fixed investment on roads, bridges, culverts, lorries, etc. It is also dependent on imported fossil fuels. Despite these drawbacks, lorry transport is preferred to on account of its ability to move goods in bulk faster over long distances. Where the necessary infrastructure is already available, lorry transport becomes particularly advantageous.



16



transport from



Mat - weaving



Transport of mats from collection depots



mats stacked in the goods yard of Angamaly railway station

All institutions dealt with in the present study entrust transport of raw materials and products to contractors who own one or more lorries. Removal service is efficient due to the existence of a large number of lorry owners who hire them out on a regular basis. Investment on trucks is profitable only if full capacity utilisation can be ensured. Institutions involved in reed industry find it uneconomical to invest in trucks on account of the seasonality in their use.

3.2.5 Head load transport

Reeds obtained from the Corporation/Society depots are carried by head load to households by members of weaver families. The following factors have led to the adoption of head load transport.

- (i) The distance involved is short and seldom exceeds 5 kms.
- (ii) As the weaver families usually take home only one or two bundles of reeds at a time, no other form of transport is suitable.
- (iii) Houses of mat and basket weavers are located in areas without easy access and often narrow foot paths are the only means of communication.

Head load transport is also adopted in the case of transport of finished goods from households to Corporation/Society depots. Either due to the poor purchasing power of household producers or due to the restricted reed supply by agencies such as the Bamboo corporation or due to the limited number of workers available, the scale of household production cannot be increased. This directly influences the mode of transport.

3.2.6 Rail transport

Most of the mats procured by the Bamboo Corporation are marketed in places such as Bombay, Nagpur, Hyderabad and Calcutta and on account of the long distance involved, transport by rail is the cheapest. Wholesalers from these markets purchase mats in large quantities and therefore it is advantageous to send the products by rail.

To summarise, although several modes of transport are available, the method chosen is determined by (1) the quantity of material to be transported which will depend upon the scale of activity in the preceding and succeeding stages, (2) the topography, (3) the distance involved and (4) the relative cost of various inputs.

3.3 Processing of reeds

3.3.1 Plain mats and baskets

Since processes involved in the production of mats and baskets are quite identical, technological aspects of their manufacturing are dealt with together.

3.3.1.1 Stages in processing

Processing of reeds into plain mats and baskets is labour-intensive and the tools used are simple and commonly available. Stages involved in the production of mats and baskets and the implements used are given in table 3.1.

Table 3.1

Processes and tools involved in mat and basket production

Process		
Mats	Baskets	Implements
1. Cutting reeds into pieces	Trimming ends	Bill hook
2. Splitting	Splitting	
3. Taking slivers	Taking slivers	Small sharp knives
Weaving slivers	i. preparation of frame ii. weaving slivers around the frame	

Skill required for both mat and basket production are simple and can be learnt easily. Even children learn the technique at a very early age on account of their continuous association with the production process.

3.3.1.2 Systems of production

Although the technique involved is the same, two systems of production, namely (1) household production and (2) workshed production, can be seen. .

1. Household production

Under this, members of the household transport reeds from supply depots, process them at home, and take back the products to collection depots or to local markets. Reeds are supplied to workers either on credit or on cash payment. When supply is on credit it is necessary to ensure that processed material is delivered to the reed supplier.

Household production has the following advantages:

- (i) It enables women, who form the major workforce in reed industry, to combine mat/basket weaving with household chores and is hence least disruptive of the traditional family system, division of labour, etc.

- (ii) For cultural and social reasons, not all women are inclined to work outdoors: the system enables them to take up a productive activity within such constraints.
- (iii) Household production obviates the need to invest on worksheds and other facilities.
- (iv) Household workers obtain reeds either on credit or on cash payment and they have, therefore, an incentive to minimise waste and to utilise reeds in the best possible manner. When workshed system is adopted, raw material is supplied to workers as and when required. As earnings/day is based on production, there is no incentive to economise the use of resources.

The major disadvantages of the system are:

- (i) Raw material and products have to be transported from depot to household and back which is difficult when long distances are involved.
- (ii) When reeds are supplied on credit, it is necessary to evolve a system which ensures repayment either in cash or in finished products. Household production is less amenable to supervision and control. There are instances where co-operative societies have gone bankrupt on account of their inability to ensure repayment.

2. Workshed production

On account of the poor purchasing power of members, co-operatives are compelled to supply raw material on credit. But they are often helpless to recover it either in cash or in kind. Organising production in worksheds helps them to overcome this problem (See plate 6).

Although there are no technical compulsions, workshed production is resorted to sometimes to avoid the unnecessary transport involved in household production.

Despite these advantages, private entrepreneurs generally; prefer the household production system. Firstly, under workshed system, weavers get an opportunity to interact and form trade union, which is disadvantageous to the employer. Secondly, production in a workshed could attract the provisions of labour laws which stipulates hours of work, remuneration, etc. Household production helps to circumvent labour laws. Although the risk of non repayment/non delivery of products is high, private entrepreneurs are able to exert considerable economic and social pressures to overcome this.

3.3.1.3 Markets and product characteristics

There are two distinct types of mats, namely coarse mats and fine mats. Coarse mats are produced in the Angamaly-Kalady area and its major markets are outside the state. It is primarily used in the

construction of temporary sheds and as dunnage material in warehouses. The important characteristics required for such use are (1) reasonable strength, (2) durability and (3) low cost. Coarse mats are produced by loosely weaving wider slivers of 15 to 20 mms. There are about 8 different sizes of mats with length varying from 152 cms to 244 cms and width varying from 91 to 122 cms.

With adequate care in splitting, about 1 to 1½ reeds of 4 metres length are required to produce a standard mat of 152 x 122 cms. An experienced worker can weave about 5 to 8 mats per day. The work commences from early morning and continues till about 7 to 8 PM, interspersed with other household activities.

Fine mats are produced by closely weaving thin slivers of 10 to 12 cms. These are primarily used for sun drying rice, pepper, copra, etc. and are sold mostly within the state. The characteristics required for fine mat's are durability, lightness and absence of pores. It should be pliable so that it can be rolled and stored conveniently.

Baskets are produced in different sizes and shapes and are used for a variety of purposes, especially in the transport of goods. Fish baskets are used for transporting fish in lorries from fishing centres to

Plate 6

DIFFERENT STAGES IN BASKET-MAKING



1) A typical workshop



2) Division of labour is minimal

consuming centres and by fish vendors for door to door sale. Concentration of fish basket making in coastal areas adjoining major fishing centres in the state is partly due to this. To facilitate air circulation baskets are to be flat with a depth not exceeding 30-40 cms, Fish being heavy, to avoid damage in transit baskets are to be woven closely with a larger number of ribs than fruit baskets. Coir rope is wound to strengthen the baskets further and to facilitate easy holding of the basket.

The major markets for fruit baskets are in Tamilnadu and Andhra Pradesh. Some quantity of baskets is also required by local fruit dealers. These baskets are produced in different sizes and the characteristics required are (1) strength and stability, (2) low durability, and (3) low cost. Usually for sale within the state, fruits except grapes, arrive at the wholesalers in lorries and baskets are required when retailers purchase them from wholesalers. To avoid damage, grapes are despatched to all areas in baskets. When fruit producers despatch fruits to other urban consuming centres where baskets are not locally available, they are sent in baskets. This avoids the problem of procurement of baskets and their separate transportation.



Traditional skills are picked up early



Participation of the family is total



Fruit baskets stacked for transport

3.3.2 Production of table mats

Production of table mats was introduced to Isinjalakkuda in 1968 by an entrepreneur. In addition to demonstrating the technical feasibility of producing mats from reeds, the first unit also gave on the job training to a large number of workers some of whom were able to establish new production units later.

3.3.2.1 Stages in table mat production

The various operations involved in the production of table mats and the implements used are given in table 3.2.

Table 3.2

Processes involved in the production of
table mats

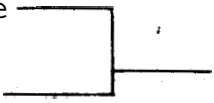
Processes	Implements/facilities
1. Cutting reeds into pieces	Bill hook or hand saw
2. Splitting	Sharp knife
3. Preparation of slivers	Sharp knife and blade
4. Preparation of ribs	Blade fixed on a wooden block
5. Preservative treatment	
6. Dyeing	
7. Drying	Open yard
8. Bundling	...
9. Weaving	Looms
10. Trimming	Scissors
11. Cleaning	Spirit lamp

Plate 8

PRODUCTION OF TABLE MATS



a) Splitting reeds and preparation of slivers



b) Preparation of ribs

When compared to production of baskets and plain mats, production of table mats is complicated involving a series of distinct but closely inter-related activities. Weaving is the critical stage and the number of looms and skill in weaving decides the speed of other activities. However, operations 1 to 8 can be carried out as and when reeds are available and treated and dried ribs can be stored for a long period. Usually most of the units procure as much reed as possible in the reed collecting season and convert them into ribs for use during the rainy season when reed supply will be poor.

Although table mat production is investment-intensive in comparison with other reed processing industries, it still employs a lot of labour. Reeds are cut into pieces using a bill-hook or a hand-saw, the latter being preferred as it gives even cuts. Some of the private entrepreneurs are using small circular saws for cutting reeds. Installing a circular saw costs about Rs 4,000* and it is said to displace about three workers. Co-operative societies engaged in mat production however desist from introducing circular saws on account of (1) the high initial investment, and (2) its adverse effect on employment. Since wages are low and production is carried out by small scale units, use of circular saws cannot be considered an innovation.

*The currency used is Indian rupees. At current exchange rate 1 US\$ = Rs 10.30

Splitting and preparation of slivers and ribs are carried out manually using simple hand tools (Plate 8). There are no known capital-intensive techniques available for these processes. Although improved tools have been developed for the preparation of incense sticks from bamboos, the technique is yet to be modified to produce mat ribs from reeds.

Ribs are treated with copper sulphate solution to prevent discolouration due to fungal attack. This is carried out by keeping them immersed overnight in a small treatment tank. The process of dyeing is also similar. After these treatments ribs are dried in the open by spreading them in the courtyard. Since drying is difficult during rainy season, manufacturing units hold a stock of treated and dried ribs, to avoid interruption in production.

Weaving looms are manufactured locally and costs about Rs 1,000 per piece. The major input for fabrication of looms is timber which is available locally. Weaving technology is quite familiar to local people on account of the existence of textile and coir-mat industries (See plate 9) Workers are able to master the technique in about a month's time.

Trimming is done manually with scissors.

Although a machine has been fabricated for this, the high cost rules out its introduction to the study area, especially when cheap labour is available. Cleaning of mats is done by burning the projecting threads in a spirit lamp flame. Spirit lamp is used to avoid discolouration of mats.

As indicated earlier, the pace at which a loom works determines the pace of other activities. With an eight hour shift, about 1,500 to 2,000 cm of mat of a width 27.5 cm can be produced in a loom. There is considerable variation depending upon the weavers' skill. To keep a loom working, 5 to 6 workers are to be employed on the various stages indicated before. Size and scale of table-mat making units are related to the number of looms. The Kodungallur Women's Industrial Co-operative Society has a 6 looms unit, the smallest in the area. Some private units have as many as 20 looms. Since labour supply is highly elastic, availability of funds seems to be the most important factor that determines the scale of the production unit. In the case of co-operatives, constitutional regulation stipulates a minimum of 25 members and this indirectly influences the minimum scale of activity.

3.3.2.2 Systems of production

Table mat production is carried out in worksheds and the scope for taking it up on a household scale is limited. Workshed production is necessitated due to the inter-linked nature of various processes. Establishment of even a small unit requires high investment which is beyond the means of any single household. Being a low wage industry it cannot form the main source of income of the household.

Some of the works such as preparation of slivers and ribs can, however, be done at home. as payment is based on outturn and quality differences are not appreciable, private entrepreneurs generally favour this system. Considerable working space in the production unit can be saved by resorting to this.

3.3.2.3 Markets and product characteristics

Markets for table mats are primarily in the urban areas, both in Kerala and outside. Private entrepreneurs send fheir products as far as Bombay and Calcutta. Essentially it is a non-basic good and the characteristics required are heat resistance and desirable appearance. Till recently coloured mats were in great demand. However, now their demand has declined and there has been a shift in preference towards undyed mats.

Production of these mats is profitable only if good quality defect free reeds can be obtained in abundance. Fungal attack during storage of reeds results in discolouration. Dyeing mats helps in concealing these defects. The shift in demand has therefore an adverse effect on a large number of producers. Availability of competing products based on wood, plastics, etc. has necessitated diversification and production of table mats has been curtailed. Instead, wider mats are produced for painting and artistic work for their ultimate use as wall hangings. Use of mats as covers for diaries is also becoming popular.

3.4 Conclusion

Stages involved in the production of plain mats, baskets and table mats and the techniques adopted at different stages are described in this chapter. Production techniques are dependent on (1) nature of the product and markets, (2) scale of the activity and (3) factor prices. Any one of the above may have an overwhelming influence on the choice of techniques. Plain mats and baskets have end uses requiring simple characteristics and minimal transformation of raw material. This facilitates household production which in turn results in the choice of a technique

appropriate to the resource endowments of the household. Table mats require characteristics which can be obtained after slightly complicated processing and the technique required for this rules out household production. The complex nature of interaction between technology, institutions and society will be dealt with in detail later.

CHAPTER 4

ECONOMIC ASPECTS

Institutions such as the Bamboo Corporation and co-operative societies have been established with a social objective, namely, promoting the welfare of socially and economically backward traditional reed workers. Fulfilling this objective depends on financial and economic viability of the activity and the ability of institutions to promote self-reliant development. An attempt is made here to examine whether these objectives are being fulfilled or not.

4.1 Kerala State Bamboo Corporation

Memorandum of association of the Bamboo Corporation identifies the following principal objectives, namely,

1. to develop and promote industries based on bamboo, reed, cane and rattan,
2. to undertake manufacture and trading of bamboo, reed, cane and rattan products,

3. to provide financial, technical, marketing, development or any other assistance and guidance to any establishment, undertaking or enterprise of any description whatsoever which is likely to facilitate or accelerate the development of cottage industries based on bamboo, reed, cane or rattan in the state of Kerala,

a n d

4. to promote, establish and operate sales offices, such as emporia, show rooms, publicity offices, stalls and centres with the object of improving the marketability of bamboo, reed, cane and rattan anywhere within and outside India.'

(K.S.B.C. , 1972).

At present the activity of the Bamboo Corporation is restricted to supply of reed to traditional mat-weavers in the Angamaly-Kalady area and to institutions such as co-operatives and other small-scale units, procurement of mats from weavers in the Angamaly-Kalady area and their marketing. Financial viability and economic desirability of these activities are examined below.

4.1.1.1 Financial viability

The costs and benefits arising from the activities of the Bamboo Corporation are given in table 4.1.

4.1.1.1.1 Source of investment funds

Authorised share capital of Bamboo Corporation at the time of its formation in 1972 was Rs 0.2 million. To expand the scale of activities, in 1980 this has been increased to Rs 5.0 million comprising 50,000 shares of Rs 100 each. By the end of March 1981 Rs 4.9 million have been paid up (K.S.B.C., 1981). As it is a fully government owned company, the entire share capital has been contributed by the Government of Kerala.

Working capital requirement is met through borrowing, and the Government of Kerala continues to be the major lender. During 1980-81, the Government of Kerala has granted an unsecured loan of Rs 23,89,000- In addition, Rs 33,299 was obtained from Government of India as loan secured on the assets of the corporation. The working capital loan bears an interest of 5 percent.

Table 4.1
Financial costs and benefits of the
Bamboo Corporation

Activity	costs	Benefits
1	Collection and supply of reeds to weavers and other traditional users (i) wages to reed cutters (ii) salary to supervisory staff (iii) transport and storage (iv) payment of stumpage	(i) income from sale reeds to co-operatives, and private entrepreneurs (ii) income from the sale of reeds to weavers registered with the corporation
2	Procurement and marketing of mats (i) cost of mats (ii) transport and storage (iii) wages and salary to supervisory staff (iv) packing and forwarding costs	Income from the sale of mats

4.1.1.2 Profitability

Table 4.2 below gives the profit/loss statement pertaining to the Corporation for various years.

Table 4.2Financial performance of the Bamboo Corporation

(Rs. in 000)

Year	Share capital	Turnover	Net profit (+) loss (-)
1971-72	200	188	- 31
1975-76	1,500	5,270	+ 347
1978-79	2,000	13,735	- 454
1979-80	3,400	14,142	- 837
1980-81	4,900	18,146	+ 403

Source: K.S.B.C. Report and Accounts for various years.

From table 4.2 it is evident that performance of the corporation is rather mixed; in some years it has earned a profit while in certain other years it has incurred a loss. Considering the fact that the Corporation has incurred an average loss of Rs 2,96,000 during the last 3 years, the venture cannot be regarded

as financially sound. The average share capital for the last 3 years has been Rs 3.4 million. Even if a 5 percent return on capital is considered as reasonable, the Corporation should have earned a profit of Rs 1,70,000 before taxes.

4.1.1.3 Subsidies

Financial performance as indicated by table 4.2 is, however, without taking into account the subsidy involved in the supply of reeds. Procurement of reeds accounts for about 35 percent of the annual expenditure incurred by the Corporation. Of this about 7.5 percent is incurred on payment of seigniorage value to the Forest Department and the cost of transit permits. Reeds are supplied to the Corporation at a subsidised rate of Rs 25/1000 numbers. Seigniorage rate fixed as per the Forest Products Price Fixation Act, 1978 is Rs 80 per 1000 numbers (applicable for 1980-81). Annually the Corporation collects about 15 million reeds and at the rates applicable for 1981, the amount of subsidy involved due to concessional supply will be about Rs 825,000- Payment of seigniorage rate as per the price fixation act will drastically affect the financial viability of the Corporation and the trading loss will be enhanced considerably.

Subsidised supply of reeds is being justified on the argument that benefits from this accrue to the socially and economically backward sections in society. The Corporation is now pressing the Government to completely waive payment of seigniorage value and to supply reeds free of cost. Whether subsidised supply is justifiable on account of the positive social contribution of the Corporation will be dealt with in the next section.

Social objectives being paramount, evaluating performance entirely on financial viability would be inappropriate. It is important to evaluate the social desirability taking into account the social costs and benefits.

4.1.2 Economic and social profitability

Conventionally cost-benefit analysis is used to appraise the economic and social desirability of a venture and to assist in decision-making. Although several methodologies are available, the basic principle remains the same, namely, estimating the net social benefits from the marginal social benefits the marginal social costs. Constraints in availability of data, however, preclude a detailed cost-benefit analysis. An attempt is made here to indicate broadly the various social costs and benefits involved in mat weaving.

An economic and social appraisal of mat weaving can be carried out at two levels, namely, (1) with and without the activity and (2) with and without the Bamboo Corporation. The former helps to evaluate the net profitability of the activity as such, while the latter enables to assess the contribution of the institution. Trade of mats was initially controlled by intermediaries and this situation would have continued but for the establishment of Bamboo Corporation. Net social benefit attributable to the Bamboo Corporation will be equal to the sum of social value of additional gains and losses to various groups directly and indirectly involved with the activity.

4.1.2.1 Costing of resources

(i) Labour

Labour component in activities such as harvesting, dragging, loading and unloading, rafting, weaving and stacking, etc. are very high. Wages to reed cutters, handling charges, procurement of mats from weavers, payment of incentive bonus, etc. account for about 80 percent of the Corporation's annual expenditure, Considering the surplus labour condition that prevails in the area, use of labour in reed industry would have no adverse effect

on activities in the rest of the economy, except in so far as it alters the balance between consumption and investment. When investment is sub-optimal, a unit of income invested now is socially more valuable than a unit of income consumed now, But from the intra-temporal distribution point of view, social benefit from a unit of income accruing to low income groups is more valuable than the same accruing to high income groups. The net social cost of employment of labour will, therefore, be very low.

(ii) Supervisory and managerial staff

Collection, transport and supply of reeds and procurement and marketing of mats and supervised by regular staff of the Corporation. Since unemployment is very high among the educated in Kerala, opportunity cost of their employment in reed industry is close to zero. It could, however, be argued that many of them belong to better-off social groups and hence income accruing to them is less valuable. Social cost of employing them arises not due to loss of production elsewhere in the economy, but due to change in the pattern of allocation of income between savings and consumption. In the case of managerial staff, their salary can be regarded as the relevant opportunity cost.

(iii) Material inputs

Of the various material inputs that go into the industry, reeds are the most important, Manufacture of pulp and paper is a major alternative use for reeds. Social cost of reeds has to be estimated on the basis of the potential loss of production on account of its use in traditional industries such as mat weaving. Non-availability of long fibre material such as reeds has been a major bottleneck in the full capacity utilisation of the pulp and paper industry. It is difficult to say whether the additional production that may materialise by enhanced availability of reeds will be consumed within the country or exported. In the case of certain items such as newsprint, the country continues to depend upon imports, If use of reeds in the traditional sector leads to enhanced imports of finished products or ,raw material of comparable quality, social cost can be estimated from the border price and converting it into its domestic equivalent using a shadow price for foreign exchange (see UNIDO, 1972).

Generally both production capacity in vehicle manufacturing and freight capacity of vehicles now on the road are underutilised. Use of vehicles, either purchased or hired, for transport of reeds and mats may not involve high social costs, Fuel is an important item in the variable cost involved in reed transport. Although

India produces about 40 percent of the oil consumed in the country, on account of the limitations in expanding production it can be assumed that additional consumption has to be met through imports. Social cost of this can be estimated adopting the procedure prescribed for that of reeds. The few buildings used by the Corporation as offices, warehouses, etc. are constructed using locally available material and labour and hence their real resource cost is lower than what is indicated by the market price.

(iv) Mats and reeds

Mats and reeds are the main products from the activity of the Bamboo Corporation. Although the Bamboo Corporation has a near monopoly in procurement and marketing of mats, on account of the availability of substitute products, markets can be regarded as competitive and ruling prices can be taken as a rough approximation of social benefits. Prices at which the Corporation sells reeds to co-operative societies and other producers cannot be taken as the real price that will exist under a perfect competitive situation. Open market prices are distorted on account of the fact that only a small proportion of reeds harvested in the state are sold in the market. Probably a price in between that of the open market price and the price at which reeds are supplied to co-operative societies and other institutions will be a reasonable approximation of the social benefits.

Since unskilled labour is the major resource utilised in mat weaving, net social benefit from the industry is likely to be substantially higher than the financial benefits.

4.1.2.2 Gainers and losers

Mat industry was existing long before the establishment of the Bamboo Corporation and most of the weavers now in the rolls of the Corporation were working for private traders. Therefore, real contribution of the Bamboo Corporation is limited to the additional gains and losses for the various social groups involved in the activity. Four major social groups involved in mat-industry are (1) workers, (2) government (corporation), (3) private mat traders, and (4) consumers of mats and reeds. Establishment of the Corporation has some way or other affected these groups.

1. Workers

As a group, workers - weavers, reed cutters and those employed in loading and unloading, transport, etc. - have gained on account of the establishment of Bamboo Corporation. Those who were working in the reed industry have benefitted by a regular and assured income. A survey conducted among the mat weavers in the Angamaly-Kalady area indicated that they are better off now on

account of regularity of employment and higher wages. Welfare programme such as education scholarships, house construction grant, accident relief, incentive bonus, etc. initiated by the Bamboo Corporation have benefitted the workers .

About 60 percent of the supervisory staff now working in the Bamboo Corporation were employees of private traders prior to the formation of the Corporation. Income of this group has increased due to the establishment of the Corporation. As this group belongs to comparatively higher income categories, additional gains to them may not be socially as valuable as gains to ordinary workers.

2. Government (Corporation)

Government has invested about Rs 4.9 million as share capital: Further a working capital loan of Rs 2.9 million has been granted to the Corporation during 1980-81. Investment in the Corporation necessarily diverts funds from other activities such as government consumption or investment elsewhere. Social value of government funds depend on alternative use to which they would have been put to.

Subsidised supply of reeds involves a cost to government at the rate of Rs 55/1000 reeds. Total annual subsidy for 15 million reeds will be Rs 8,25,000. If the Corporation was not established, this amount would have accrued to government and would have been available for investment and/or consumption.

3. Private traders

The major group adversely affected by the establishment of Bamboo Corporation is private mat merchants. Prior to 1971 there were about 35 mat dealers in the Angamaly-Kalady area. Presently there are only 4 mat merchants in the locality. Some of them have taken up new activities and the funds utilised earlier for investment in reed industry have been utilised for other purposes. But many of the agents and other intermediaries have suffered a substantial loss. However, social loss due to this is very low on account of the low social value of income accruing to this better-off groups.

4. Consumers of mats and reeds

Changes in the consumer's surplus on account of the take over of mat trade by the Bamboo Corporation cannot be estimated easily. Standardisation of products brought about by the Bamboo Corporation has been beneficial to the consumers. A negative aspect is that the Corporation has directed its supply to large scale dealers and hence availability of mats to small scale dealers has declined. Prior to the establishment

of the Corporation, traders were able to cover almost every consuming centre. The net effect of this on consumers is assumed to be negligible.

Another major group that has benefitted by the Bamboo Corporation is the bona fide consumers of reeds, particularly co-operative societies, charitable institutions, etc. involved in reed processing. When reed trade was controlled by private traders, cost of reeds was prohibitive and supply was erratic. Although even now there are occasional disruptions in supply on account of strikes by workers, there is a marked improvement in the availability of reeds to institutions such as co-operatives. No attempt is made to quantify this social gain.

Since both private traders and consumers of mats are neither better off nor worse off, net social benefits attributable to Bamboo Corporation will depend upon the additional gain to workers vis a vis the loss of income to government. It is therefore necessary to see whether gain to workers is at least commensurate with loss incurred by the government. Assuming that the investment of Rs 4.9 million yields a return of 5 percent in alternative ventures, the loss to government will be Rs 245,000. In addition, subsidised supply of reeds results a loss of Rs 825,000. The benefit that should

have accrued to workers in order to justify this will vary depending upon the social value of government income. If social value of a unit of income accruing to government and workers is assumed to be the same, additional gains to workers should be at least Rs 1-07 million. During 1980-81 total wages and other benefits received by various categories of workers amounted to Rs 14 million. It is, however, difficult to estimate what proportion of this represents addition to workers' income due to establishment of the Bamboo Corporation- Sample survey conducted in the area indicate that workers are much better off now. Even if there is an increase in wages and other amenities by about 10 percent as compared to the situation that existed prior to the establishment of the Corporation, existence of the Corporation is sufficiently justifiable.

To summarise although the achievement of the Corporation is far from what has been envisaged at the time of its establishment, it has been able to more or less eliminate intermediaries from mat trade. Financially the venture is a loss, and this would have been much more but for the subsidised supply of reeds. However net social benefits from the Corporation seems to be quite high on account of its positive income redistribution effect.

Hitherto the Corporation was not directly involved in the production of reed based products, Recently work on establishing a unit for the manufacture of resin-bonded bamboo board has commenced. Feasibility studies indicate that the project is financially viable. However, no economic or social analysis of the venture has been carried out. Possible effects of board production on employment and fulfilment of basic needs have been indicated in Chapter 8.

4.2 Co-operative societies

There are about 40 co-operatives involved in reed industry in the study area and they differ from each other in terms of activities taken up, economic performance, contribution to social objectives, etc. During the present study, data were collected from 10 societies and the details given below are based on this.

4.2.1. Objectives and activities

For convenience, societies involved in reed industries can be categorised into two, namely (1) Harijan Co-operative Societies, primarily dealing with production of mats and baskets and where membership is restricted to persons belonging to scheduled castes,

particularly sambavas, and (2) industrial co-operative societies involved in the production of table mats, wall hangings, etc. in which membership is open to all.

A number of objectives, aimed at the welfare of members, have been identified in the memorandum of association of the various societies. Primary objectives of most societies is promotion of traditional industries through organising procurement of raw-materials, undertaking production, marketing products and extending financial assistance wherever necessary. Other objectives include, (1) promotion of thrift and self-reliance in members, (2) popularisation of modern production techniques in agriculture and allied activities and (3) organising supply of consumption items through consumer stores.

Involvement of co-operative societies in reed industry varies considerably and they may undertake any one or more of the activities from procurement of raw material to marketing of products (see Appendix II). None of the societies directly undertake harvesting of ireeds, but obtain their supply from the Bamboo Corporation. There are only few societies involved in all the ties. Units directly involved in the production of baskets and mats are compelled to organise procurement

of raw material and marketing of products as well. In marketing itself, there are different stages. Only a few societies market the products direct to final consumers. In most cases they rely upon dealers and other intermediaries. Performance of co-operatives in the long run depends upon their control over the multifarious activities. This aspect will be dealt with later.

4.2.2 Financial viability

4.2.2.1 Sources of funds

The major source of funds for the co-operative societies are, (1) shares subscribed to by members and institutions and (2) loans, deposits and grants from government and similar institutions.

There are two classes of shares namely, A class shares owned by individuals and B class shares subscribed to by government, co-operative banks, and other institutions, In the case of Harijan Co-operative Societies A class's shares are of the value of Rs 10. Due to high initial investment required for table mat making, A class's shares of the societies producing table mats have a face value of Rs 100. Government investment in the share capital of Harijan Co-operative Societies is very high. In one case this is about 5 times that of

the share contribution of members. However, there are instances in which societies have not been able to obtain any assistance from government. Co-operative banks are another important investor in the shares of co-operative societies.

Share capital contribution from members and institutions alone is inadequate, especially when the co-operative is involved in a number of activities. There are several sources of funds such as working capital loan from government and government undertakings such as Kerala State Scheduled Castes and Scheduled Tribes Development Corporation, Co-operative Banks, etc. The interest charged on working capital loans from co-operative banks varies from 5 to 6 per cent and the Reserve Bank of India subsidises the co-operative bank the difference between this and the minimum lending rate. Other assistance extended by government to the societies include the following.

1. Grant for purchase of land subject to maximum of Rs 250,000
2. Building grant subject to a maximum of Rs 100,000

3. Grant to meet the expenditure on pay and allowances of managerial staff in the initial years as follows:

- (i) 1st and 2nd year = 100 percent of the actual expenditure subject to a maximum of Rs 8,000
- (ii) 3rd and 4th year = 75 percent of the actual expenditure subject to a maximum of Rs 6,000
- (iii) 5th year = 60 percent of the actual expenditure

It can thus be seen that financial dependence of co-operatives on government is very high. Based on this, two categories of co-operative societies can be recognised. Firstly, there are societies which due to the commitment and dynamism of leadership are able to utilise the assistance provided by government. Secondly, some societies due to their inability to take advantage of these, are forced to obtain finance from intermediaries and traders. Although no interest is charged on such loans, there is an unwritten commitment as regards supply of finished products to traders, most often at prices far lower than the ruling market prices. It is possible to recognise a third category also, namely, those sponsored and controlled by private entrepreneurs with the objective of availing the financial assistance from government.

4.2.2.2 Profitability

Financial performance of co-operative societies varies considerably and success is an exception rather

than the rule. Of the 10 societies studied, detailed audited accounts could be obtained in the case of only one society namely Chelakkara Harijan Welfare Co-operative Society (hereafter referred to as Chelakkara Society) which operates in the Pazhayannur Block of Trichur District. This is a fairly big society with 832 members and which earned an income of Rs 950,000 during 1981-82 from the sale of baskets. During this period the society has earned a net profit of Rs 43,000 and was able to repay the loans obtained from government and other institutions. Further the society was able to pay workers a production bonus of 15.5 percent of the wages. Recently this has been enhanced to 20 percent.

In contrast to this, the Trivandrum District Harijan Reed Workers Multipurpose Co-operative Society, although had obtained all the assistance from the government, has incurred a loss of about Rs 140,000 during 1981-82 and the society is on the verge of liquidation. As no audit has been carried out during the last 3 years, detailed accounts could not be obtained. Unlike the Chelakkara Society, activity of this society is limited to procurement of reeds from the Bamboo Corporation and its sale to members through agents. It is not involved in organising production or marketing products. Enquiry revealed that the present financial crisis is due to non-realisation of sale value of reeds from members as well as agents employed for the purpose.

Most of the other societies occupy a place between the two extremes indicated above, The Kodungallur Wornens' Co-operative Society just manages to operate on a no-profit no-loss basis. Shortage of working capital is a major problem faced by the society. Table mats are marketed through the Kerala Handicrafts Development Corporation, a government undertaking, and usually there is a delay of about 1 to 2 months to obtain payment, Often this delay leads to temporary suspension of work. The Deepthi Handicrafts Industrial Co-operative Society makes a nominal profit primarily due to their affiliation to other commercial enterprises controlled by the CMI Church. In most other cases functioning of the societies are far from satisfactory, and due to heavy loss and non-availability of reeds many of them are presently defunct,

4.2.3 Economic and social profitability

As in the case of the Bamboo Corporation, economic and social profitability can be examined firstly for the activity *per se* and secondly on the basis of benefits and costs attributable to the institution as such, Table 4.3 below gives the distribution of operating cost of various inputs in the cost of basket and table mat production.

Table 4.3Distribution of Cost of Production in Basket and Table mat Manufacturing*

Item	(In percentages)	
	Distribution of costs	
	Baskets	Table mats
1, Raw materials		
(i) Reeds	40	26
(ii) Other inputs	2	19
2. Wages	52	45
3. Establishment and overheads	6	10

Total	100	100

*Based on the figures furnished by the Chelakkara Society, The Kodungallur Womens Handicrafts Industrial Society and Deepthi Handicrafts Industrial Co-operative Society.

Wages to workers account for about 52 percent and 45 percent of the total cost of production of baskets and table mats respectively. As in the case of mat production, workers employed in basket and table mat manufacture have no alternative employment and hence the social cost of labour is negligible. Costing of inputs/products has to be carried out as discussed in para 4.1.2.1. The real resource cost of non-labour inputs has not been estimated on account of non-availability of data,

Even if it is assumed that market prices more or less represent the real resource cost of all non-labour inputs and products such as mats and baskets, reed-lased manufacturing will continue to be an economically ,viable proposition. This is primarily due to the high labour component in the production process. Once the indirect employment of labour in reed collection and transport is also taken into account, net economic benefits will be substantially high.

However, the crucial question is whether there are any social gains on account of the involvement of institutions such as co-operative societies in the activity. This, to a great extent, depends on how far the co-operative societies have been able to eliminate intermediaries, and to enhance the workers income. Of the various societies studied only one society, namely, the Chelakkara Society has been able to eliminate the intermediaries and consequently the workers have gained substantially. All the workers interviewed during the survey have indicated that their wages have registered an increase. In most other cases societies are directly and indirectly dependent on intermediaries, particularly for marketing of products. The condition of workers have not registered any appreciable improvement. Financial assistance provided by government tends to be indirectly beneficial to traders and other intermediaries rather than the workers. Thus not only expected social gains are not realised, but also there is definite social loss.

4.3 Conclusion

When the scale of an activity increases, it necessitates very high investments. Traditional household production units are unable to enhance the scale of activities on account of their low income and low propensity to save. Savings of individual households being very low, formation of co-operatives by itself may not generate the necessary investment funds.

Financial, economic and social performance of the institutions involved in traditional reed-based industries was examined in this chapter. The Bamboo Corporation is a government-owned organisation and both the share capital and working capital requirements are met from government funds. Being a public sector undertaking it was able to obtain subsidised supply of reeds from government forests. Even with this, the Corporation's financial performance cannot be considered as satisfactory. Once subsidised supply is stopped, the loss to the corporation will be very high.

From the social point of view, however, the Corporation plays an important role, particularly by enhancing the income to traditional mat-weavers. On account of its positive effect on income redistribution, net social benefits attributable to the Corporation is high.

Performance of the co-operative societies varies considerably. The principal objective of eliminating the intermediaries and enhancing the workers income has been achieved only in exceptional cases. In majority of the cases, functioning of the societies has been far from satisfactory and exploitation of workers by intermediaries continues. Sometimes intermediaries act as promoters of societies and misappropriate the financial assistance provided by government.

Differences in the performance of co-operative societies and institutions such as the Bamboo Corporation are largely attributable to the internal structure and the involvement of various groups in decision-making. These aspects are examined in the next chapter.

CHAPTER 5

ORGANISATIONAL ASPECTS

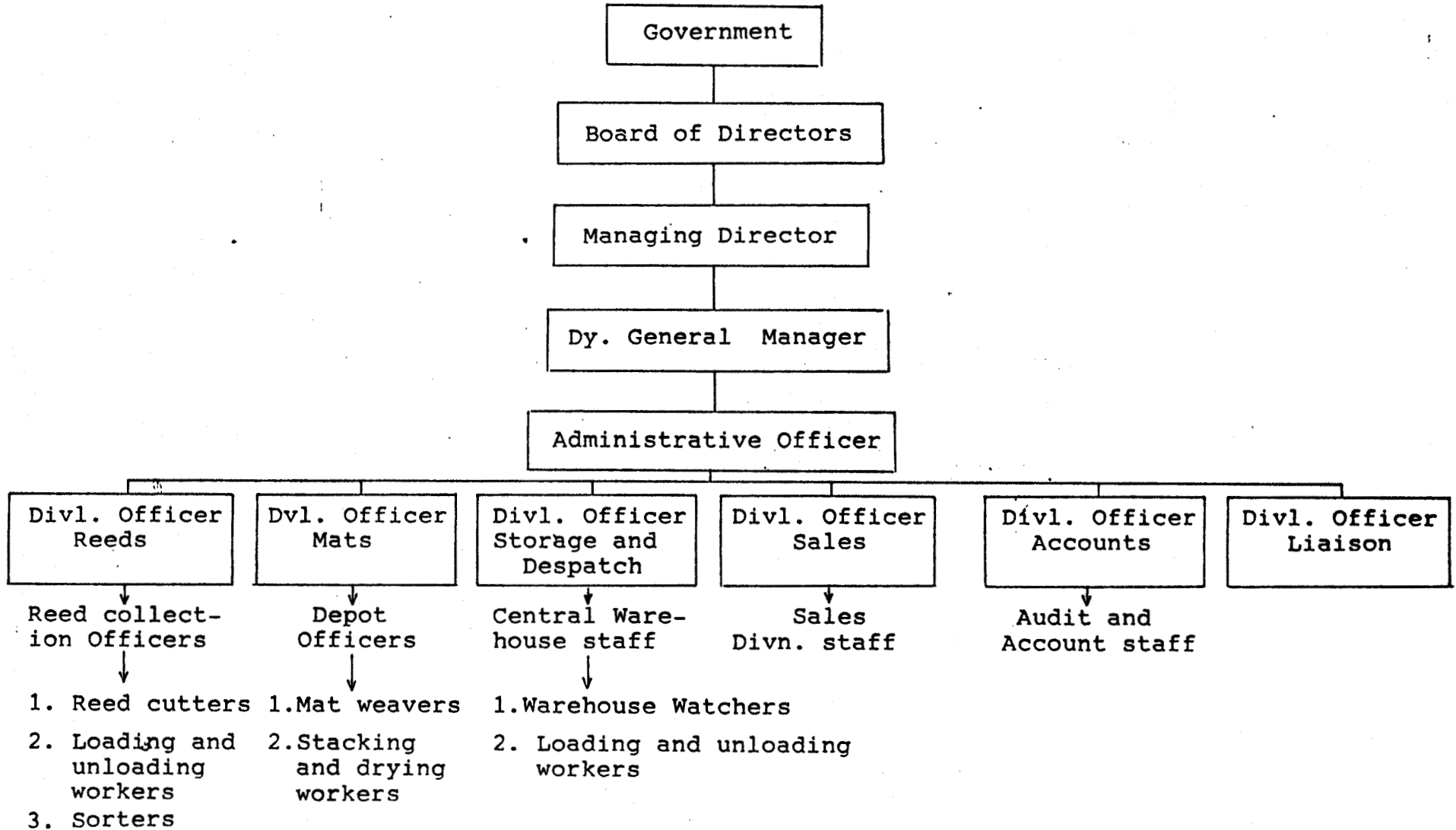
Decision-making by an institution is primarily influenced by the nature of its organisation.. Choice of techniques, appropriation of benefits, etc. are influenced by the nature of organisation and the formal and informal relations between individuals directly and indirectly associated with the institution. Salient organisational aspects of institutions involved in reed industry are discussed below.

5.1 Kerala State Bamboo Corporation

From fig. 5.1, it can be seen that the Bamboo Corporation has a vertical structure with the government forming the apex and the various categories of workers forming the base. The board of directors (including the managing director) and the deputy general manager are appointed by government. Of the 9 members in the board, 4 are ex-officio members and the rest are nominated by government. Ex-officio members in the board are (1) the Chief Conservator of Forests, Forest Department, (2) the Secretary, Industries Department, (3) the Managing Director,

Fig. 5.1

Organisation of Bamboo Corporation



Kerala Handicrafts Development Corporation and (4) the Managing Director, Bamboo Corporation. Non-official members including Chairman, are nominated by government and political considerations play an important role in their selection. Changes in the political composition of government influence the management and usually each time a new government comes into power the board is reconstituted involving changes of non-official members. Due to the existence of a large number of political parties and their frequent shifts in allegiance, changes in the constitution of the board are rather too frequent. Normally the chairmanship goes to a prominent person from one of the parties in the ruling coalition.

5.1.1 Decision-making

Powers, duties and responsibilities of the major functionaries, namely chairman, board of director's and managing director, are well defined. Most of the policy decisions are taken by the board. However it cannot deviate much from the general policies of the government. In a number of matters, such as appointments to posts for which the minimum scale of pay exceeds Rs 850, foreign collaboration, revision of pay and allowances of employees, changes in rules relating to service and provident fund, creation of capital and reserve funds, travel abroad by employees of the company, programme of capital expenditure which exceed Rs 1 million, etc., prior approval has to be obtained from the government.

Inclusion of non-official members in the board is intended to provide a broader base in decision-making and to ensure that views of the workers and other groups involved in mat-making are taken into consideration. However, the fact that members of the board are appointed by government and not elected by workers reduces their effectiveness in this respect.

- Implementation of policy decisions and day to day administration are the responsibility of the managing director and his staff. The deputy general manager assists the managing director in administration. Duties and responsibilities of the various functionaries in the corporation have been clearly defined.

5.1.2 Worker's participation

In a vertically structured organisation such as the Bamboo Corporation, the scope for worker's participation in decision-making is extremely limited. Generally an employer-employee relationship prevails between the management and the various categories of workers. Absence of a formal system for providing an opportunity for workers involvement has led to proliferation of trade unions. There are more than a dozen unions, representing reed cutters, loading and unloading workers, cart-men, rafters, weavers, etc. and in some cases there are more than one union for a given category of workers. Collective

bargaining is the major means by which trade unions influence the policies and they have been instrumental in enhancing the wages, initiating various welfare measures, etc. Trade unions have been able to ensure that workers interests are taken into account in the formulation and implementation of policies. However, imperfections in the political system permeate the activities of trade unions also. Most of the workers unions are organised on political lines and strikes and agitations are often resorted to achieve short term political objectives.

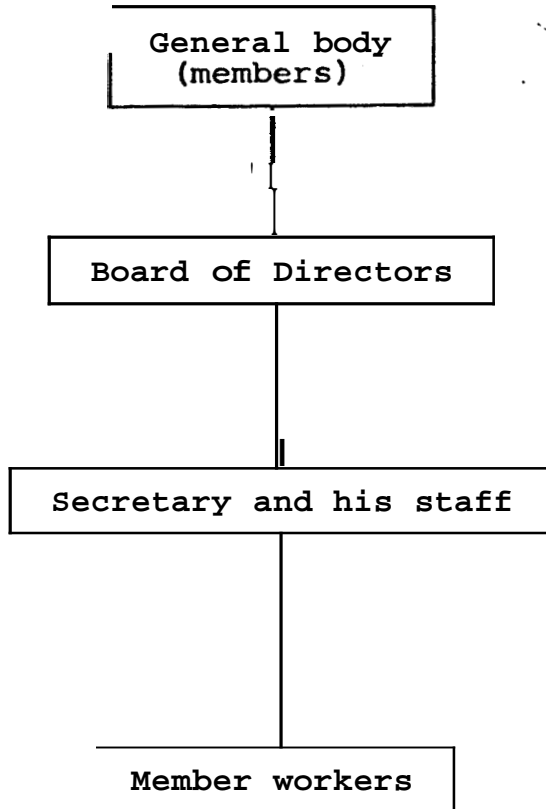
5.2 Co-operative societies

At least in theory, co-operative societies have a horizontal structure and are organised in such a way as to enhance participation of members in decision-making. Fig. 5.2 gives the organisation of a typical co-operative society.

The general body consisting of all members is the supreme authority in a co-operative. The general body elects a board of directors, which with the help of the secretary, looks after the general administration and is responsible for the implementation of decisions made by the general body. Unlike government-owned Corporations, workers have a decisive role in the management of co-operatives.

Fig. 5.2

Organisation of a Co-operative Society



5.2.1 Decision making in theory

The general body is empowered to, (1) appoint and remove members of the board of directors, (2) scrutinise the accounts and audit report, (3) apportion

profit in accordance with the co-operative regulations, (4) approve the annual budget, (5) review the progress of work and (6) effect changes in bye-laws.

The board of directors looks after the day-to-day administration of a society. Number of members in the board varies from 7 to 11, of which usually 3 are nominated by government and the rest elected from among the members. The tenure of elected members is usually three years: a member of the board can be removed from office if two-third members present during a general body meeting vote against his continuation. The state co-operative rules, empower the Registrar of Co-operative Societies to nominate all members in the board at the time of the formation of a society. Initial tenure of such a board is three years: however, if necessary it can be extended for a further period of three years. ^

The board of directors is empowered to (1) enrol members and to accept resignation of members, (2) remove a person from the membership of the society, (3) grant permission for transfer and withdrawal of shares, (4) incur expenditure in accordance with the budget approved by the general body (5) determine the contingency expenditure that can be incurred by the president and the secretary, (6) sanction loans to members as per the rules in force,

(7) enquire whether loans sanctioned are being utilised properly, (8) operate accounts on behalf of the society, and (9) appoint committees to supervise activities of the society and if required delegate powers of the president and the secretary to such committees.

The Chelakkara Society has 7 members in the board of directors of which 4 are elected and the rest nominated by the Registrar of Co-operative Societies. Government nominees in the Society are (1) the Regional Manager, Kerala State Scheduled Castes and Scheduled Tribes Development Corporation, (2) the local Block Development Officer and (3) the local Co-operatives Inspector. Government nominees need not always be government officials. In the case of Trivandrum District Harijan Reed Worker's Co-operative Society, government representatives are nominated from among members of the community. This has several merits and demerits. Unlike nominees from other backgrounds, in theory, those belonging to the same community are in a better position to understand the problems of the members. However, this doesn't imply that interests of the members are better taken care of. Often support from the community tends to be utilised for personal gains and not for the benefit of the whole group.

The board of directors elects a president from among its members. Responsibility for all financial transactions vests with the president. He also presides

over the meetings of the general body and that of the board. The secretary is usually a full time employee of the society and is responsible for the overall management including financial transactions and maintenance of accounts. In the case of large societies in which government involvement is substantial, the secretary is appointed on deputation from the Co-operative Department. Although this enables the societies to obtain services of experienced persons conversant with rules and regulations, there are certain demerits also. Since deputation is usually for a period of 3 to 5 years, they lack interest in the long term development of the institution. Neither the board of directors nor the general body are able to take action against the secretary's lapses.

Decision-making in practice

Thus, in theory, the structure of co-operative societies would permit democratic functioning. However, in practice very few societies function in these lines. Despite the fact that ultimate control vests with the general body, most often it functions as a rubber stamp and the real power is exercised by the board of directors and the secretary. Illiteracy and the lack of understanding of rules and regulations pertaining to the management of co-operative societies limit the active participation of members. They are thus dependent on the more erudite functionaries in the co-operative and accept their decisions

uncritically. Generally most members have little commitment to the co-operative movement, Individual gains are given priority over gains to the group as a whole and participation, inco-operatives is considered as an easy way of obtaining financial assistance from government in the form of grants, Further, most co-operative societies are susceptible to factionalism that prevails in the community as a whole, Rivalry between local party bosses and division of members on political basis, undermine their effectiveness. Control over co-operatives is seen as an easy means to distribute benefits and patronage to party supporters and sympathisers (Oommen, 1974).

Under such conditions performance of co-operatives largely depends on the commitment and ability of the president and the secretary. Theoretically, they should be guided and controlled by members of the co-operative: in the absence of such guidance and control they tend to be influenced either by their own value judgements, or by forces external to the system. In exceptional cases, officials such as the secretary and the president are committed to co-operative movement contributing to the efficient functioning of the society. Success of the **Chelakkara** society is primarily attributable to this. **Most often co-operative societies are instruments for self-aggrandisement** of important functionaries. The office bearers have no commitment to the general cause,

and are influenced by affinity towards their own family and relatives, The heavy loss incurred by the Trivandrum Co-operative Society is entirely due to this. Although bye-laws of the society forbid board members from working as sales agents of the society, this has been violated. Many have failed to pay the amount due to the society.

Often due to lack of expertise, officials of the society tend to be guided by outsiders in whom they place all confidence. Transactions are thus carried out by outsiders and in some cases office bearers do not even know what is being done (Government of Kerala, 1964). Even if aware, they remain helpless accomplices. A large number of societies involved in reed industry are in fact controlled by outsiders, especially traders.

5.3 Conclusion

Structure and organisation of institutions involved in reed industry have been described in this chapter. The Bamboo Corporation has a vertical structure and there is a distinct polarisation of interests of management and workers. The system of nominating non-official members to the board of directors is intended to take into account workers opinion in decision-making. Appointment of directors in the board on the basis of political patronage adversely affects this. Workers interests are largely

safeguarded by activities of trade unions. Effectiveness of trade unions is, however, reduced on account of inter-union rivalries.

Although co-operative societies have a horizontal structure facilitating workers involvement, in effect, it functions as a vertical structure in which power is concentrated in the functionaries such as the president, board of directors and the secretary. Illiteracy of members and their inability to understand the various rules and regulations pertaining to co-operatives are the primary reasons for this. Performance of societies largely depends on the attitude of those who exercise effective control. Thus it is a conflict between private gains of the dominant group and gains to the members as a whole. As long as the former gets priority, the institution fails to fulfil the objectives.

CHAPTER 6

INSTITUTIONAL ASPECTS

Performance of rural institutions such as the Bamboo Corporation and the co-operative societies is greatly influenced by the external environment. Attitude of society towards such institutions is expressed through the interaction of other social institutions - such as government, other public and private institutions, and social groups - and individuals and their impact may be positive or negative. Rules and regulations which affect the establishment and management of the various institutions reflect the attitude of government. Inter-institutional relationship is also to a great extent influenced by government policies. Nature of forces in the external environment and their positive and negative effects on institutions involved in reed industry are discussed in this chapter.

6.1 Kerala State Bamboo Corporation

Although the Bamboo Corporation was established only in 1971, it owes its origin to the continuing pursuit of the earlier policy adopted by the central and state governments as regards the involvement of public sector in the planned development of the country.

6.1.1 Government policy and legislation

Involvement of public sector undertaking in the various activities in the economy has a long history. Prior to independence in 1947, public sector involvement was limited to the field of transport and communications, particularly railways and posts and telegraphs. The role of public sector was clearly indicated in the government's industrial policy resolutions of 1948 and 1956. The objective of transforming society to a socialist pattern and the need to achieve⁴ rapid development necessitated public sector control over all industries of basic and strategic importance. Development of heavy and basic industries such as iron and steel, coal, became a focal point of public sector activity during the second five year plan (1956-61). Commercial undertakings require considerable flexibility of operation and to provide this, corporations were formed with financial and administrative autonomy. Formation of such Corporations also helped them to obtain investment funds from non-governmental sources.

During the subsequent five year plans, public sector activities expanded into the consumer goods industries and later into social services. At the end of 1982, in Kerala alone there were 75 Corporations/Boards under the control of the state government (Government of Kerala, 1983). Appendix I11 indicates the involvement of public

sector undertakings in various activities. There are very few activities which have been left out of the purview of government Corporations. The pre-eminent, position envisaged for the public sector by government in pursuing various activities has contributed to the formation of Bamboo Corporation also.

There are two categories of public sector undertakings namely, statutory corporations, constituted on the basis of an enactment of parliament or the state legislature, and Corporations and other undertakings registered under the Indian Companies Act of 1956. In the latter case at least 51 percent of the share capital should be held by the government. The Bamboo Corporation is a company registered under the Companies Act of 1956.

Although most Corporations enjoy a fair amount of autonomy in financial and administrative matters, the government exercises adequate control over their working through its powers to appoint and remove chairman and members of the board, to choose auditors, to decide allocation of profits, etc. The nature of control exercised by government over the working of Bamboo Corporation has already been dealt with.

Interaction with the Forest Department

In procuring reeds from forests the Bamboo Corporation has to abide by the various rules and

regulations prescribed by the Forest Department. Extraction of reeds is regulated by the prescriptions contained in the working plans. Reed areas in each forest division are constituted into a reed working circle. To ensure even distribution of work in different regions, each working circle is subdivided into a number of felling series. Area under each felling series is divided into annual coupes equal to the number of years in the felling cycle. Felling cycle varies from 3 to 4 years. As pointed out earlier, a selective felling system is adopted for extraction of reeds. Important rules regarding felling of reeds are given below:

- (i) No culm less than 2 years should be cut and removed.
- (ii) In addition to all new culms at least 25 percent of the old culms should be left in a clump.
- (iii) No clump should be clearfelled except after flowering and seeding have been completed.
- (iv) A culm should be cut as low as possible leaving only one internode above the ground.
- (v) Cutting should commence from the side opposite to where new sprouts are emerging.

Due to ineffective supervision, compliance to the above rules cannot be ensured. Payment to reed cutters is based on a piece rate system and this often leads to over exploitation disregarding silvicultural prescriptions.

Apart from the working plan prescriptions, the Bamboo Corporation has to abide by the provisions of the Kerala Forest Act, 1961 and the rules pertaining to the transport of forest produce. The Bamboo Corporation maintains a number of collection depots in the forests. These depots are to be opened and maintained according to the provisions of the Forest Act and the regulations issued from time to time. Every consignment of reeds transported from these depots should be covered by a transit permit issued by the Forest Department. Transport of reeds without a valid permit is an offence under the Kerala Forest Act.

6.1.3 Interaction with other institutions

The nature of relationship between institutions may be complementary or competitive. Interactions between institutions is primarily determined by the nature and scale of activities undertaken. A small institution on account of its inability to control the multifarious activities tend to be more dependent on other institutions

than a larger institution. Internalising the various activities/processes helps to achieve a fair amount of self-reliance: but this would require expansion of activities which may in turn enhance dependency on credit institutions, raw material suppliers, etc.

Being a public sector undertaking, all investment funds required by the Corporation are obtained from government. Hence its dependency on other financing agencies is negligible. Weaver families registered with the Corporation, however, require credit facilities, especially for the purchase of reeds from the Corporation. Those who are not covered by the credit scheme of the Corporation utilise the credit facility provided by the State Bank of India. About 4000 families are benefited by the scheme,

Further, the Corporation has been able to obtain monopoly over the collection of reeds and its supply to the traditional sector, Competition from private traders is thus more or less eliminated. However, the growth of industrial use of reeds, especially the pulp and paper industry, seems to have an adverse effect on reed supply to the Corporation. This has become particularly acute with the establishment of a newsprint unit by the Hindustan Paper Corporation, a public sector undertaking of the Government of India. To attract industries to the state, the government of Kerala has made firm commitments to the Hindustan Paper Corporation (HPC)

on the supply of reeds. The Bamboo Corporation officials consider the entry of HPC as the most important factor in curtailing the supply of reeds. Attempts being made by the Forest Department to resolve the conflict by allotting separate area to different users have not been effective for various reasons. .

Research and development is an important field for which the Bamboo Corporation is dependent on other institutions. Existence of government undertakings such as the Indian Plywood Industries Research Institute, All India Handicrafts Board, and Travancore Plywood Industries, has enabled the Bamboo Corporation to develop products such as bamboo boards. It is quite unlikely that this would have been developed in the absence of the above institutions.

Interaction with private institutions

Marketing of reed mats has been an area in which the Bamboo Corporation had a phenomenal influence. Prior to 1971, there were about 35 mat traders in the Angamaly-Kalady area. In about a period of 10 years their number has declined to 4. Currently about 85 percent of the volume of mat trade from the area is controlled by the Corporation. The role of local traders could be minimised only after the Corporation was able to obtain monopoly over collection of reeds. Till then, as a marketing organisation, the Corporation's role

remained rather insignificant. Organisations such as the All Kerala Bamboo Cutters and Bamboo Mat Weavers Unions and the Kerala Bamboo Mats Cottage Industries Association questioned the legality of giving monopoly of reed collection to the Bamboo Corporation. The Corporation was able to overcome these problems on account of it being a government undertaking.

The few traders who operate in the area obtain mats by syphoning of the surplus mats from the weavers by paying a higher price. There are certain areas where traders still exercise considerable influence. On account of flexibility in operations, traders are able to provide consumption loans to weavers and the indebtedness so created is an important factor that helps them in the procurement of mats.

Except in the case of large scale consumers such as the Food Corporation of India and the Central Warehousing Corporation of India, the Bamboo Corporation is dependent on traders for sale of mats to consumers outside the state. Although the influence of local traders in Angamaly-Kalady has been curtailed drastically, at the mat-consuming centres the Corporation has to depend on dealers for marketing the products.

6.2 Co-operative societies

As in the case of Bamboo Corporation, there are several institutions which influence the growth and survival of the co-operative societies involved in reed industries.

6.2.1 Government policy

Foremost of these institutions is the government which, in addition to giving legal recognition through the co-operative societies act, provides financial assistance in different forms. The history of evolution of government policy on co-operative is briefly summarised below.

The economic crisis faced by the country in general and the rural population in particular towards the close of 19th century was primarily responsible for initiating action towards the formation of co-operatives. Import of cheap machine-made goods, unemployment, population growth, and frequent droughts played havoc with the rural economy. Informal credit markets operated by money lenders was the only source of finance and the terms and conditions of borrowing were extremely exploitative. The famine commissions of 1881 and 1902 emphasised the need for establishing credit societies to free agriculturists from the money lenders hold. In 1901 a committee headed by Sir Edward Law recommended suitable legislation and accordingly the first co-operative

act was enacted in 1904. The objectives of the act were to promote thrift, self reliance, and co-operation among cultivators, small scale producers and other fixed income groups. This act, however, dealt with the registration of credit societies only and had no provisions to register other types of societies. This defect was rectified in the enactment of **1912**. The Government of India Act of **1919** gave powers to provincial government to modify the act to suit local conditions.

The directive principles of the state policy identified in the Indian Constitution emphasised the role of co-operatives in the promotion of cottage industries and allied activities. The Rural Banking Enquiry Committee appointed by the Government of India in 1949 examined credit availability for agriculture and recommended the establishment of rural co-operative banks. The Rural Credit Survey Committee appointed by the Reserve Bank of India in **1951** made a number of recommendations for strengthening credit institution and to organise co-operative societies for the development of agriculture and allied activities. These recommendations were incorporated into the various five year plans.

In **1959** the National Development Council, the supreme planning body in the country, made a policy

resolution emphasising the need to organise co-operatives to undertake multifarious activities. The establishment of Agricultural Refinance Development Corporation in 1963 (which, in 1982, was reconstituted as the National Bank for Agriculture and Rural Development) enhanced the credit availability to co-operative societies.

During the 4th five year plan (1969-74) considerable encouragement was given to co-operative societies. The 5th five year plan (1975-80) ensured continuity of policy adopted in the earlier plans. The plan identified the necessity of developing co-operatives as flexible organisations catering to the needs of cultivators, crafts-men, consumers, etc. It can thus be seen that the government has played an active role in the growth of co-operative movement in the country.

6.2.2 Co-operative legislation

Although the erstwhile Travancore and Cochin states, which constitute the present study area, were not under British rule, co-operative movement in these states had a similar history. With the unification of Travancore and Cochin in 1949, a common co-operative act was enacted. The Kerala Co-operative Societies Act, applicable to the entire state was enacted in 1969. Establishment and management of co-operatives in the state are guided by the rules and regulations framed under this act. The rules prescribe a minimum

of 25 persons for the registration of a society. Before registration the Co-operative Department has to ensure that the rules and regulations prescribed for management are adequate to achieve the objectives and that conditions for successful functioning exist. Bye-laws of the society have to be approved by the Co-operative Department and any amendment made subsequently by the general body should be registered. The Act also empowers the Registrar of Co-operative Societies to request a society to make amendments in the bye-laws and in case this is not complied with, the Registrar can suo moto incorporate the changes.

6.2.3 Co-operative societies in Kerala

Ever since the first co-operative society was registered in the state in 1912, the number of societies, membership, and activities pursued have registered a substantial increase. In 1982 there were about 12,000^{*} societies covering a wide range of activities such as distribution of credit, promoting agriculture, live stock, fisheries and industries, housing, etc. (Pillai, 1983). The Co-operative Societies Rules of 1969, group the societies into the following major classes.

1. Co-operative Banks
2. Credit Societies
3. Marketing Societies

4. Consumers' Societies
5. Processing Societies
6. Farming Societies
7. Producers Societies
- 8, Housing Societies
9. Miscellaneous Societies

Societies are further subdivided on the basis of their sphere of activities and the groups or classes of people involved. By 1978 the total membership in the societies was about 6 million and the total paid up capital was Rs 514 million (Government of Kerala, 1980). The high membership figure is due to multiple membership of the same person in different societies.

Most of the primary co-operative societies are linked together by an apex society, a federation of co-operative societies at the state level, which helps member societies in marketing, procurement of raw-material, etc. Apex society for the Harijan Co-operative Societies is the Kerala State Harijan Co-operative Development Federation. Currently, the Federation is undertaking marketing of minor forest products collected by tribal co-operative societies. It also intends to undertake procurement of reeds and their supply to member societies and marketing of finished goods.

6.2.4 Interaction with other institutions

In addition to providing the necessary legal framework for establishment and management co-operatives, government extends generous financial assistance to the co-operative societies. The extent of government involvement in this respect has already been dealt with in Chapter 4. Without such Facilities', most of the societies would not have been formed at all.

The Kerala State Scheduled Castes and Scheduled Tribes Development Corporation and the Kerala State Handicrafts Development Corporation are two public undertakings which complement the functioning of co-operative societies. Some of the co-operative societies obtain short term loans from the former. The State Handicrafts Development Corporation primarily functions as a marketing agent for co-operative societies engaged in table mat production.

The fact that Bamboo Corporation controls reed supply makes it a crucial institution as far as the co-operative societies are concerned. Under conditions of plentiful reed supply, the relationship is complementary. This is especially true in the case of small co-operatives which cannot undertake reed collection independently. Decline in the availability of reeds and the policy of giving priority to the needs of the workers registered

with the Bamboo Corporation have adversely affected supply to societies. Large societies, such as the Chelakkara Society whose requirements are high, are particularly affected by this.

6.2.5 Interaction with private traders

Intermediaries and private traders, whose exclusion is an important objective of the establishment of co-operative societies, have reacted in many ways. Some of them have managed to register societies under their tutelage by patronising a few of the leaders in the community. Not only that this safeguards their interests, but it also enables them to obtain financial assistance from government at concessional rates and supply of reeds from the Bamboo Corporation.

When at least a few societies are functioning satisfactorily in a locality, traders are unable to adopt this strategy and are compelled to pay higher wages. Employment of migrant labour is resorted to overcome this. General wage rates in the adjoining state of Tamilnadu is much lower than that in Kerala and some private traders import labour from Tamilnadu. Language and cultural barriers prevent them from establishing local contacts and hence they continue to remain a submissive group accepting whatever wages paid by employers.

This does not imply that private institutions are always detrimental to the co-operative societies. Association of the Deepthi Handicrafts Industrial Co-operative Society with the Handicrafts Enterprises run by the CMI Church has benefitted the former by the latter's functioning as a marketing agent. The co-operative is considerably benefitted by the managerial talent available in the whole system.. This type of relationship is however an exception.

6.3 Conclusion

The environment in which various enterprises involved in reed industry operate and its influence on the performance of these institutions have been dealt with in this chapter. Without the positive policy of the government, many of the institutions would not have come up. Inter-institutional relationship is also to some extent guided by government policies. Complementary and competitive nature of these interactions are also discussed.

How an enterprise reacts to its environment depends on (1) its strength vis a vis that of the competing institutions, particularly those in its immediate environment and (2) its ability to take advantage of the complementary factors. Developing

a strong link with the complementary institutions - government, other public and private institutions - enables an enterprise to withstand negative influences of competing institutions. The Bamboo Corporation has been able to do this while most of the co-operative societies have failed in this respect. A weak link with complementary institutions, inability of the enterprise to control all aspects of the activity and the presence of competing institutions such as private traders will be detrimental to the functioning of the institution.

CHAPTER 7

SOCIAL ASPECTS

People being the focal point of development, an understanding of the social and cultural-characteristics of the groups and classes involved in traditional reed processing is essential. These aspects tend to have a direct bearing on choosing techniques and institutions appropriate for the groups concerned.

Although workers in traditional reed industries generally belong to the socially and economically backward sections in society, differences in social, economic and cultural features can be observed within this broad category. A sample survey was conducted in the major reed processing areas in Trichur and Ernakulam to identify the socio-economic characteristics of households and workers. In addition to the survey, information was collected from private traders, political party workers, corporation and co-operative society officials, voluntary agencies, etc. Information pertaining to caste and class composition, educational status, land ownership, income, etc. of workers and households are given below separately for each of the major reed-based activities.

7.1 Plain mat weavers

Table 7.1 gives the caste composition of workers involved in various reed-based activities. Although traditionally mat production has been the sole preserve of scheduled castes and scheduled tribes, in the Angamaly-Kalady area other communities, particularly Christians, dominate the industry. No reliable information could be obtained as to how an activity traditionally carried out by scheduled castes especially sambavas, came to be taken up by a different community. Local enquiries revealed that mat production has been in existence in the area for many decades and this is corroborated by other sources (Government of Travancore, 1884). One plausible explanation is that Christians in the area are descendents of sambavas who were converted to Christianity especially during the eighteenth and nineteenth centuries. There are evidences supporting Christian missionary activity in the area and conversion of scheduled castes. Despite the conversion, which was probably aimed at breaking away from the age-old feudal oppression, traditional skills, availability of raw material and absence of other employment opportunities might have favoured continued reliance on mat production.

Sambavas, who are traditionally bamboo and reed workers, are divided into Hindu sambavas and non-Hindu sambavas, the latter primarily consists of

Table 7.1

COMPOSITION OF REED WORKERS

(in percentages)

Industry	Locality	Samba- ¹ vas	Chett- ¹ iars	Nairs ¹	Ezha- ¹ vas	Karu- ¹ vans	Kodu- ¹ mbis	Chri- stians	Mus- lims	To- tal
Plain mats	Angamaly	2	-	2	6	-	-	90	-	100
	Aryanad ² (Luthergiri)	-	-	1	-	-	-	99	-	100
Table mats	Irinjalakuda	3	3	5	33	3	11	28	14	100
Baskets	Wadakkancherry and Chelakkara	100	-	-	-	-	-	-	-	100

1 Are castes in the Hindu religion

2 Source: Wilfred (personal communication)

those recently converted to other religions, particularly Christianity. In certain areas in the Nedumangad taluk of Trivandrum district mat production continues to be the major source of livelihood of the converted sambavas. According to a survey conducted by the Programme for Community Organisation (PCO), of the 107 mat-making households only one belonged to a person from the Nair community while all the rest belonged to different sects of Christianity, the Lutherans accounting for 85 percent of the total households (Wilfred, personal communication).

A clear division of labour between sexes is noticeable in mat production. Weaving is an exclusive activity of women, whereas collection, transport, loading and unloading are carried out by men. In Trivandrum District marketing of mats is also undertaken by women. Collection of reeds is an arduous job and reed cutters have to stay in inhospitable conditions for days together. Weaving mats is primarily a household activity and it can be combined with household chores. Selling mats in the weekly markets can be combined with the purchase of household consumption goods. Average daily earning of women is only about 1/4th to 1/3rd of that of the male workers.

Educational achievement has important implications on account of its contribution to human capital formation and its overall effect on enhancing the social awareness of individuals. As shown in table 7.2, 80 percent of the mat workers are literate. However, more than the literacy rate the level of educational achievement and the quality of education received are important. In the case of plain mat weavers only 2 percent of the sample has received secondary education. Local enquiries reveal that even now parents are not very keen to impart education to their children and very few attend schools beyond the primary level. Especially in the case of mat weavers in the Angamaly-Kalady area, as soon as a boy becomes physically fit to live in the forests he accompanies his father or brothers as a helper and in due course learns the technique of reed collection. Girls of the school-going age also have the same fate and right from a very young age they take up weaving. Low income conditions force the parents to utilise child labour and the whole process is a vicious cycle, low income affecting investment in human capital formation which in turn perpetuates low income conditions. Some of the parents interviewed were pessimistic about the educational system. ,They would rather prefer to have a helping hand in the family rather than an educated unemployed person.

Table 7.2EDUCATIONAL STATUS OF REED WORKERS

(Figures in percentage)

Educational status Industry	Illete- rate	Pri- mary	Middle- school	Seco- ndary	Coll- ege	To- tal
Plain mats	14	66	18	.2	-	100
Baskets	22	67	6	5	-	100
Table mat	-	14	75	11	-	100

Literacy among the reed workers in the Nedumangad area in Trivandrum district is low; however, the level of achievement is rather high. Among a sample of 460 members in 107 households there were 5 graduates, 13 undergraduates and 20 with SSLC, Reeds for mat weaving are obtained from the Periyar valley - Kuttampuzha, Adimaly, etc, - and on account of the long distance to these areas, children cannot take part in the collection. This improves their chance to continue education for a longer period than that possible for children in the Angamaly area.

All households in the sample from Angamaly-Kalady area owned dryland (garden land). However only 14 percent owned any wet land where rice is cultivated (see table 7.3). Size of the dryland holdings is small and 86 percent of sample households possessed holdings less than 0.20 hectares. Dryland which form the homesteads is cultivated with tapioca (cassava) and vegetables interspersed with perennial tree crops such as coconut, mango, and jack. With increasing fragmentation of these holdings, mainly due to population growth, more and more area is being utilised for non-agricultural purposes and in some cases land is just adequate to provide the space for a small hut.

In Nedumangad, only 72 percent of the sample households owned land while 24 percent owned neither land nor a house of their own. They are usually put up in a friend's or relatives house.

No reliable data could be obtained on the household income: women were unable to tell the earnings of their husbands. Most of them informed that only a small fraction of their husband's income is available to meet household expenditure.

In most of the mat producing households in the Angamaly-Kalady area the contribution of men employed in reed cutting towards household income is not commensurate with their earnings. Employment in reed cutting

Table 7.3

DISTRIBUTION OF LAND HOLDINGS AMONG REED WORKERS

Industry	Type of land	Size class (in ha)	Land less	(In percentages)											Total
				0-.040	.040-.080	.080-.120	.120-.160	.160-.200	.200-.240	.240-.280	.280-.320	.320-.360	.360-.400	>.400	
Plain mat	Dryland			24	22	16	18	6	6	2	2	-	2	2	100
	Wet land		86	-	6	4	-	2	2	-	-	-	-	-	100
Basket	Dryland		6	33	44	17	-	-	-	-	-	-	-	-	100
	Wet land		100	-	-	-	-	-	-	-	-	-	-	-	100
Table mat	Dry land		3	17	44	17	8	6	3	-	-	-	-	2	100
	Wet land		92	-	-	3	-	-	-	-	-	-	5	-	100

keeps them away from home for most of the time and women have to shoulder the entire responsibility for managing household matters. Alcoholism is a serious problem among men and when employment in reed cutting is not available illicit distillation of liquor is an important source of income. Dowry system - bridegroom price - is widespread and to marry off a girl even to an agricultural labourer this may be as high as Rs 10,000. Dowry is paid primarily by selling land.

Indebtedness is a common feature. Credit facilities are available from the State Bank of India and the Bamboo Corporation to reed workers in the Angamaly-Kalady area. Mat weavers in other areas are dependent on petty shop keepers, mat traders and sometimes even on money lenders to raise funds for the purchase of reeds. Although weavers are aware of the direct and indirect exploitation involved, they have no alternative. Once money is advanced, lenders go after the weavers and some of them can be seen in the weekly markets forcing weavers to sell mats at low prices to ensure prompt repayment of the amount borrowed. Even formation of co-operative societies has not improved the situation.

Except in the Angamaly-Kalady area, there are no trade unions for mat weavers, and consequently their bargaining power vis a vis that of the traders is very poor. Currently a voluntary agency, Programme for

Community Organisation (PCO), is attempting to organise reed workers in Trivandrum district. Their effort is directed at exerting pressure on government to expand the activities of the Bamboo Corporation to Trivandrum area so that all the intermediaries are eliminated,

7.2 Basket weavers

As in the case of mat weaving, basket making also is primarily carried out by sambavas. Intra and inter-regional migration of basket weavers is a common feature. Throughout the state one can see groups of basket weavers living in towns catering to the local needs. Men seem to dominate fish basket production while both men and women are involved in the production of fruit baskets, Since fish basket production is carried out in areas close to fishing centres, workers have to migrate and this might be a reason why the activity is primarily carried out by men. Where the whole family migrates, as in the case of the 'kavaras' from Wadakkancherry or the 'parayas' from districts of Tamilnadu, women also take up basket-making. Whether the entire family migrates or not depends on (1) the socio-economic conditions of the workers in their place of origin, (2) income expected at the new place of work and (3) the distance involved. On account of the high wages in Kerala, workers from Tamilnadu find it advantageous to migrate. As the distance involved is long, frequent visits by male workers to their homes are not possible, This favours the migration of the whole family. Most of the migrant

workers from Nedumangad in Kerala own houses and they cannot get comparable accommodation at their work place. The short distance between the work place and their homes enables them to pay frequent visits. Thus there are no compulsions for migration of the whole family.

In Trichur district fruit basket production is organised in worksheds run by co-operative societies as well as private traders and this enables both men and women in the family to work together. In comparison with plain mat weavers, illiteracy is high among the basket makers. Among the workers surveyed in Trichur district 22 percent are illiterate and only 11 percent had education beyond the primary school level. This hampers their active involvement in the management of co-operative societies. None of the member workers are conversant with the bye-laws of the society and on the duties and responsibilities of office bearers.

Traditionally sambavas are landless labourers and none of the weavers in the sample from Trichur own any wet land. About 6 percent own not even dryland and the average size of holding is only 0.12 hectare. Dependency on weaving as a means of livelihood, varies considerably among basket weavers. Weaving was an off season job: however with the decline in employment opportunities in agriculture, for many households this has become the major occupation. Daily earnings depend upon outturn and to satisfy essential household needs most of the members have to work 10 to 12 hours a day.

7.3 Table mat producers

Table mat production is carried out entirely by women, belonging to all castes (see table 7.1). The literacy rate and overall level of educational achievement are higher than that of basket and mat weavers. This, however, makes them unfit and 'over-qualified' for the work of agricultural labourers. Further they also tend to develop an aversion to such jobs. For various reasons they are unable to continue education and employment in mat weaving is sought as a means to obtain some savings and to engage themselves during the waiting period before marriage. This is evident from the age structure of the workers given in table 7.4. Ninety seven percent of the workers in the sample are below 30 years and 72 percent are below the age of 20. Usually they seldom work in table mat making for more than four years. Due to this, they have no long term interest either in their work or in the institution. About 86 percent of the workers interviewed are not conversant with the bye-laws of the co-operative society while only 25 percent are aware of the rights, duties and responsibilities of various society office bearers. This has important implications on the management of workers' co-operatives consisting entirely of women members.

Table '7.4

DISTRIBUTION OF REED WORKERS IN AGE CLASSES

(in percentages)

Industry	Age class						61 and above	Total
	11-20	21-30	31-40	41-50	51-60			
Plain mats	8	-	30	32	26	4	100	
Baskets	-	11	44	28	6	11	100	
Table mats	72	25	3	-	-	-	100	

In comparison with mat and basket weavers, workers in table mat-units belong to socially better off families. Most of the workers' income is saved to meet their marriage expenses. The co-operative societies and even private entrepreneurs retain a part of the wages as thrift fund, which is repaid either in cash or as jewellery at the time of marriage of the worker;

When a co-operative is managed entirely by women, especially belonging to middle income groups, it encounters a number of deep-rooted social and

cultural problems. This is particularly evident from the functioning of the Kodungallore Women's Handicrafts co-operative Society. Neither by tradition nor by training, women in the rural middle class in Kerala are aggressive marketeers and they are, therefore, dependent on marketing agencies or private entrepreneurs. Developing a product market requires extensive travelling to contact potential customers. The social and cultural background of women who are traditionally accustomed to an indoor life seldom permits this. In a highly competitive world, traditional values thus act as a serious bottleneck. Although in other co-operatives and private units engaged in the production of table mats and allied items, women provide most of the labour, they seldom have a role in managerial decision-making, especially in matters related to marketing of products.

7.4 Conclusion

The salient social, economic and cultural features of the people involved in various reed-based activities are summarised below.

Mat and basket making are carried out primarily by sambavas, while production of table mats and allied items is carried out by workers belonging to other communities also. Land ownership, income, etc. indicate that most of the workers are economically

backward. In all cases women form the main workforce. For various cultural, social and economic factors, alternative opportunities for their employment are limited. This has a direct influence on the wage structure and average daily earnings of women tend to be far lower than that of men employed in related activities,

Although literacy is high among most groups, it is doubtful whether this has any tangible effects, Members of co-operatives are not conversant with the bye-laws, and duties, responsibilities and powers of various office bearers. Performance of such institutions thus depends entirely on the attitudes and ability of the main functionaries, such as secretary and the chairman of board of directors. In the case of table mat production, weavers have no permanent affinity to the enterprise and employment is not seen as an important source of livelihood.

CHAPTER 8

APPROPRIATENESS OF TECHNOLOGY AND INSTITUTIONS

Attributes of institutions such as the Bamboo Corporation and co-operative societies involved in reed industry have been discussed in earlier chapters. Whether these characteristics like organisation, technology, and products, etc. satisfy certain pre-determined criteria of appropriateness is the topic of discussion in this chapter.

8.1 Criteria for appropriateness

A meaningful discussion on appropriateness of technology and appropriateness of institutions is difficult without clearly defining the objectives of development. In the context of developing countries, strategies for and objectives of development have been changing continuously. Growth with trickle down prescribed in 1950s and 1960s has been rejected and direct effort towards fulfilment of basic needs has been advocated (see, Griffin, 1977; ILO 1976; Steeten, 1979). There has been a thorough reappraisal of the

concept of development. Among the several objectives, encompassing material, mental and spiritual dimensions (Galtung, 1980), the following seem to be important.

1. Satisfaction of basic needs, particularly for those most in need,
2. Reduction in dependency through self-reliance on 'national, local and collective levels,
3. Preserving ecological balance,
4. Reducing social, economic and political inequalities,
and
5. Strengthening the social identity of individuals (see, Galtung, 1980; Herrera et al., 1977; Knut, 1981).

Fulfilment of basic needs would require that the activity generates basic needs income and/or produces essential or basic needs goods (Nair, 1981). Self-reliance implies that the activity is based on local resources and local skills and less dependent on infusion of resources such as capital, skill, raw-material from outside. Preservation of ecological balance can be achieved through balanced use of

resources avoiding irreversible changes and depletion. Social, economic and political inequalities can be reduced by evolving horizontal institutional structures so that decisions are more broad-based and democratic. Such a set-up would also facilitate the strengthening of social identity of individuals and prevent alienation.

8.1.1 Development objectives in the Indian context

The Directive Principles of State Policy identified in the Indian Constitution lay stress on uplifting the economically and socially backward sections in society, providing a decent standard of living to all people, self-sufficiency in most respects, and promoting endogenous development through people's participation. Although these objectives have been incorporated in all the development plans, strategies to achieve them have not been consistent. Priorities accorded to the different sectors have varied depending upon the mainstream thinking. Agricultural development was given priority in the first five year plan (1951-56) on the argument that surplus generation from this sector is a pre-requisite for industrial development. Emphasis given for industrial development through public sector involvement in core industries in the second five year plan (1956-61) was justified from the objective of establishing a 'socialist pattern of society'. The

objective of achieving greater equality of opportunity, reduction of disparities in income and wealth and more even distribution of economic power was reiterated in the third five year plan (1961-66). Social justice and equality was one of the cardinal principles that guided the formulation of the fourth five year plan (1969-74). The plan also envisaged the utilisation of rural institutions such as panchayats in planning at the local level. Emphasis on the welfare of economically and socially backward sections continued in the schemes under the 20-point programme and in the later plans. The general approach has been to identify target groups - scheduled castes, scheduled tribes, small farmers, marginal farmers, etc. - and to formulate programmes for their betterment.

Adherence to the concept of mixed economy with private sector controlling a major share of income and wealth has not been conducive to the fulfilment of plan objectives. No concrete long term programmes were identified to achieve the objective of establishing a 'socialist pattern of society' (Banerjee, 1981). Not only did the plans fail to reduce inequalities, but instead concentration of economic power increased.

Considering the contradictions between theory and practice in the Indian Plans, it is advantageous to evaluate enterprises on the basis of the objectives identified under the Directive Principles of State Policy in the constitution. The criteria of appropriateness identified earlier (Knut, 1981) can be regarded as an expanded version of this.

8.2 Appropriateness of technology

Different stages involved in the production of mats, baskets, wall hangings, etc; have been discussed in chapter 4. Economic conditions that prevail in the traditional sector have favoured the development of simple, cheap, adaptable and labour-intensive techniques. Institutional changes such as establishment of Bamboo Corporation or co-operative societies have not materially altered these characteristics-

8.2.1 Fulfilment of basic needs

In terms of the technique employed as well as the nature of activities, reed industry directly contributes to basic needs. Wages account for a major share of value added from mats, baskets, table mats, etc., and this accrue, to workers particularly weavers and reed cutters. The industry enhances employment opportunities of women. Income accruing to women

has an added significance. Firstly, it benefits the weakest section of the weaker groups by providing a regular income. Secondly, income accruing to women is income to the whole family and is utilised entirely to meet household consumption expenditure. On account of various social, cultural and economic reasons often women are the main bread winners in the family (Gulati, 1979) and income to women is socially more valuable than income to men. A larger share of the latter's income is spent outside the family, especially on drinks, films and gambling.

Multiplier effect of income accruing to workers also seems to be substantial. Essential consumption goods such as rice, vegetables, fish, etc., have a high labour component and hence expenditure on these indirectly goes as income to other rural workers.

The nature of end product is an important consideration in deciding the appropriateness or otherwise of technologies (Stewart, 1978). As discussed in chapter 4, reed mats are used for goofing, partition walls, etc., in low-cost construction. It thus forms an important substitute for costly construction materials which are beyond the means of low income groups. Food Corporation and Central

Warehousing Corporation use mats as dunnage material and thus they indirectly contribute to the provision of basic needs goods. Baskets used for transport of fish and fruits also fulfill similar objectives. However, table mats, wall hangings, etc., manufactured by the industrial co-operative societies cater to non-essential consumption and hence cannot be regarded as basic needs goods. Although they contribute to the generation of basic needs income, they add little to the stock of essential goods in society.

8.2.2 Self-reliance

For self-reliant development, technology should be based on local resources and skills and not dependent on imported inputs- Production techniques adopted for basket and mat production are simple, adaptable and depend entirely on local resources- Most of the techniques have low capital output ratios. Even a non-traditional activity such as table mat production is highly adaptable and simplicity of the technique has led to the growth of a large number of units. The social opportunity cost of labour employed in the various activities is very low. This is particularly true as regards women employed in mat production.

Two factors that tend to undermine self-reliant development of reed workers are (1) depletion of reeds

from easily accessible areas and (2) dependence on markets outside the state- Depletion has necessitated tapping of resources from less accessible localities and the increase in transport distance has caused dependence on imported fuels- Extraction of reeds from farther sources also requires investment on roads and other infrastructure. Often reeds are transported 200 to 250 kms before they are processed. Dependence on markets outside the state has enhanced the vulnerability of workers to factors beyond their control. Any drastic increase in energy costs will have serious repercussions on the industry as a whole, particularly on workers in the Angamaly-Kalady area.

8.2.3 Ecological balance

Maintenance of ecological balance requires that the activity does not result in the depletion of resources and has no effect on their future availability. Demand from traditional users has been low in relation to availability and cannot possibly have any effect on future supplies. The scarcity now experienced is attributable to (1) the rapid growth of pulp and paper industry and consequent imbalance between demand and supply (2) conversion of reed bearing forests into farm lands and plantations and (3) submersion of reed areas under reservoirs.

8.2.4 Reduction of social inequalities and improving social identity

Depending upon the socio-economic environment which promotes the development of a technology, it will have a perceptible effect on the distribution of income and wealth and on the social identity of the people. A technology that develops in an inegalitarian environment tends to aggravate the inequalities. Traditionally baskets and mat production were carried out by scheduled castes and scheduled tribes who were agristic slaves in the feudal system. Inequalities were then maintained not through the operation of market forces but through social and religious sanction and the division of society into various castes and subcastes. Since the technique of mat and basket production has evolved in such an environment, the technique *per se* has no built in mechanism for perpetuating exploitation. It is the development of markets and the need to transport raw materials and products over long distances that have led to the adoption of techniques which favoured the emergence of intermediaries and consequent exploitation of workers.

8.3. Appropriateness of institutions

Institutions that control or undertake the various activities represent the relations of production

and they influence the choice of techniques as well as the distribution of benefits among the different groups involved, Strengthening the social identity of individuals also depends on the nature of organisation. Whether these objectives are fulfilled by the institutions involved in reed industry is Examined below

8.3.1 Kerala State Bamboo Corporation

Establishment of the Corporation and consequent elimination of intermediaries have enhanced the share of value added accruing to reed workers, Hence as regards fulfilment of basic needs, the contribution has been positive.

From fig. 5.1 it is evident that the Bamboo corporation has a vertical structure with government at the apex and workers - mat weavers, reed cutters, loading and unloading workers, etc, - forming the base. All major policy decisions are made by government and the board of directors, while day to day administration is dealt with by the managing director who is appointed by government. Non-official members of the board are usually nominees of political parties in power and they are supposed to have a knowledge of the industry, its workers and their needs, etc. This practice seems to have little effect on ensuring that workers' view are taken into account in managerial decision-making. Even

when workers' leaders are nominated to the board, they often lack the will and ability to influence decisions. Dominance of political considerations negates effectiveness of the system. Imperfections in the political process permeate the institution undermining the anticipated benefits.

Failure to provide an opportunity for workers' participation has been responsible for the emergence of trade unions. They influence decision-making primarily through collective bargaining. Unfortunately, this process is also riddled with problems. Multiplicity of trade unions organised by different political parties undermines the effectiveness of collective bargaining. Most often trade unions indulge in strikes to gain political advantage over rival unions.

To summarise, the Bamboo Corporation typifies a structure of state capitalism as opposed to the exploitative merchant capitalist system dominated by traders and other intermediaries. Although emergence of the corporation had a positive effect on employment and wages, the employer-employee relationship has been more formalised now. The very nature of the organisation prevents democratic and collective management.

8.3.2 Co-operative societies

As opposed to the vertical structure of the Bamboo Corporation, co-operative societies have a horizontal structure. Major policy decisions are made by the general body consisting of all members. A board of directors elected by the general body looks after the day to day management;

Although such a framework is ideal for democratic functioning, in practice co-operatives seldom work on those lines. Malfunctioning of these institutions is attributable to the following factors.

1. Majority of the members in the co-operative societies, especially those in the Harijan Societies, are illiterate and their limited knowledge of rules and regulations pertaining to co-operative management hinders active participation in decision-making.

Class and caste stratification in society permeates the co-operatives also. Even in those formed exclusively for the benefit of specified castes, control of various activities vests with the economically and educationally well-off individuals. Their decisions are uncritically accepted by the majority.

3. Quite often motivation to form co-operative is for personal benefit and not due to genuine interest in promoting group welfare. Members of co-operatives are members of other formal and informal groups, and often their commitment to such groups are stronger than that to the co-operative.

However, it is undeniable that when co-operatives are functioning properly, their contribution to the welfare of members is substantial. Exclusion of intermediaries has enhanced workers income. Some co-operatives have contributed to the general welfare of members through encouraging thrift, assisting in educational advancement and promoting subsidiary income-generating activities. Theoretically, the structure of co-operatives is appropriate to reduce social and economic inequalities and to enhance the social identity of individuals. But the structure that actually prevails is entirely different and it is guided by a variety of forces which are external to the system. The few isolated instances of success can be attributed to the commitment of the important functionaries and not due to the collective action of members.

8.4 Technology, institutions and society

Both technology and institutions are dependent on societal characteristics. While responding to social forces they interact, bringing about new technologies and institutions- To start with, a newly established institution uses a technology already available off the shelf. But in the long run, survival necessitates adaptation to market induced changes. This will involve diversification of activities and introduction of new production technologies.

When the Bamboo Corporation was established in 1971, its primary objective was the elimination of intermediaries by taking over marketing of mats. To ensure a continuous supply of mats, it was necessary to control production through controlling raw material supply. Being a government undertaking it was able to more or less monopolise the supply of reeds to the traditional sector. Although even now mat production continues to be the major activity, the declining demand for mats has necessitated the diversification of activities by the Corporation- Cheaper and more durable products are being used increasingly as dunnage by bulk consumers such as Food Corporation of India. The Bamboo Corporation has responded to this by initiating the production of resin-bonded bamboo

boards. Work on the bamboo board factory is in progress and on its completion the traditional activity of mat production will be closely linked to a capital-intensive modern sector.

Judging by the criteria identified in section 8.1, bamboo board production technology has several inappropriate features, Firstly, the product characteristics such as durability, fineness and desirable appearance and the resulting high cost will make it a non-basic good. It will be utilised primarily in commercial establishments, luxury apartments, etc. as a substitute for plywood. In other words, the technology enhances the choice available to the already well-off sections in society. In the context of declining reed supply, diversion of mats for board production will in the long run reduce their availability to traditional low income consumers, affecting basic needs fulfilment. Secondly, bamboo board production is a highly capital-intensive investment with low labour/capital ratio and hence the scope for utilising traditional local skills is limited. Thirdly, its dependence on imported inputs, particularly bonding material, increases vulnerability to world market fluctuations. And lastly, it strengthens the vertical structure and enhances social and economic inequalities.

Workers role in decision-making will be negligible and this will perpetuate the employer - employee distinction.

The claim that bamboo board production will improve the welfare of traditional weavers by providing an assured market for mats cannot be substantiated at this stage. Implicit in this is the assumption that board production technology has no effect on production techniques in the preceding stages. Good quality board requires fine woven mats. Mats currently produced in the Angamaly-Kalady area are of the coarse type and can at best be utilised as the core layer. Since skill requirements for production of coarse and fine mats are identical, it may not be difficult for the workers to effect a change over. But it is quite likely that the need to provide a continuous supply of mats may dictate changes in mat production techniques. Already work is in progress on a mechanical device for preparation of fine slivers. Technically there are no constraints in mechanising mat weaving. When bamboo board production becomes the focal activity, this could be a natural outcome. Possible effects of this on the welfare of traditional weavers need no elaboration.

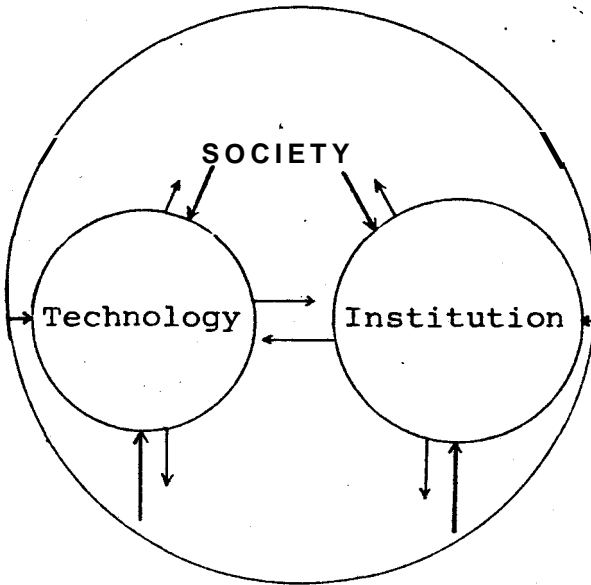
Not that a vertically organised corporation alone is susceptible to such externally induced changes. Even more broad-based organisations such as co-operatives have to adapt to changes. This is particularly noticeable in the case of table-mat producing enterprises. With the proliferation of table-mat units and the competition from substitutes, demand for reed table mats has declined. Product diversification has occurred in the industry in the following lines.

1. Table mats - plain and coloured
2. Wall paintings and wall hangings with artistic work by professional painters
3. Diary covers.

The shift has been in the direction of more non-basic goods. This reflects the existing pattern of demand which is closely linked to the skewed distribution of income. Some of the private entrepreneurs have more or less stopped production of conventional table mats and have switched over to decorative wall hangings, diary covers, etc. These require much finer and uniform material and more specialised skills than that required for conventional mats. An institution which fails to take cognisance of market changes cannot expect to survive long. Survival without change will require substantial support from government or similar institutions.

The whole gamut of society - technology - institution-interaction is schematically represented in fig. 8.1. Both technology and institutions are subjected to various forces in society. Without a

*
Fig. 8.1



clear understanding of these forces, it will be difficult to conceptualise the evolution of technology and institutions. As long as market mechanism continues to be relied upon, an inegalitarian set up may not permit the adoption of a technology appropriate to the objectives identified in section 8.1. Nor can an institution, adopting appropriate techniques, be able to survive for long, unless there are countervailing forces such as support from government. If institutions such as Bamboo Corporation and co-operative societies are to

* The arrows indicate the direction and magnitude of influence

survive adhering to traditional techniques, support from government is a pre-requisite. Left to themselves they may respond to market forces or wither away. Ultimate effect of both the options on the initial objectives of establishment are identical, in that they remain unfulfilled.

8.5 Conclusion

Attributes of appropriateness of institutions and techniques have been examined in this chapter. Production techniques currently adopted by the Corporation and co-operative societies satisfy these criteria. Primarily this is due to the fact that mat and basket production have evolved in the rural setting to cater to local requirements and adopted a technique appropriate to local resources and skills.

Emergence of the various institutions has not enhanced the workers role in decision-making. Vertical structure of the Bamboo Corporation promotes an employer-employee relationship which is not conducive for democratic decision-making and for promoting workers social identity. Even co-operative societies fail to provide opportunities for collective decision-making and management is controlled by educationally and economically well-off individuals.

Left to themselves survival of the above institutions depend on their ability to adapt to market induced changes which may often result in the choice of inappropriate techniques. To resist and survive market forces, external assistance is required. Otherwise the institution in itself should be self-contained and self-reliant.

CONCLUSIONS AND RECOMMENDATIONS

Reed based traditional industries such as mat-weaving, and basket-making, play an important role in the rural economy of Kerala. Basket and mat.production is primarily undertaken by socially and economically backward sections, especially scheduled castes. Proximity to raw material sources and markets had provided ideal conditions for undertaking production on a household scale. With the receding of reed-bearing areas and outward shift of the markets it becomes uneconomical for households to undertake procurement of raw material and marketing of products. The producers thus gradually come to rely on intermediaries. Although play an useful role, unorganised workers become an easy target for over-exploitation. Institutions such as the Bamboo Corporation and co-operative societies have been established to free workers from the clutches of intermediaries.

Since these institutions have only the limited objective of replacing intermediaries, production still

continues to be carried out by households. The choice of production techniques largely depends on the nature of product markets, scale of activity and factor prices. Generally all these have favoured the adoption of labour-intensive techniques except in the case of long distance transport of raw-materials and finished products. Increase in the scale of activity arising from the need to realise scale economies necessitates higher investments. Formation of institutions such as Bamboo Corporation and co-operative societies has facilitated the mobilisation of investment funds. Although financial performance of the Bamboo Corporation is far from satisfactory, in terms of net social benefits its contribution is positive. Performance of co-operative societies varies considerably, and success is generally the exception rather than the rule.

A study of the organisational aspects reveals that the vertical structure of the Bamboo Corporation does not provide much scope for workers participation in decision-making. This has led to a polarisation of the interests of management and workers, emergence of a multitude of trade unions and frequent strikes disrupting the efficient functioning of the Corporation. Although co-operative societies have a horizontal structure, in practice decision-making is far from democratic. Due to illiteracy and other reasons,

majority of the members are unable to participate effectively in the management of co-operatives. Efficiency and success of a co-operative thus become entirely dependent on primary functionaries such as president and secretary.

Performance of an-enterprise also depends on the external environment in which it operates, especially the disposition of complementary and competing institutions. Without the necessary patronage and financial assistance provided by government, it is doubtful whether any of the institutions studied here would have come into existence at all. The conclusions that emerge from the study are briefly discussed below;

9.1 Conditions necessary for success of institutions

- (i) Unquestionably, social consciousness and mass participation in decision-making is the most important factor in the success of rural institutions. However, without exception, none of the institutions surveyed during the study fulfil this condition. Even in organisations with a democratic framework such as co-operatives, most of the decisions are made by a few individuals and these are uncritically accepted by the majority.

- (ii) In the absence of (i), a necessary condition for satisfactory performance is the existence of sincere and competent leadership committed to the institution and its objectives.

Unfortunately, the probability of getting persons who combine the necessary technical and entrepreneurial skills and commitment is very low. Those who possess technical knowhow and entrepreneurship may be more inclined to use them for fulfilling personal gains. Organisations such as co-operatives, especially those intended to benefit the weaker sections, particularly suffer from the absence of suitable leadership.

- (ii) Effective control over different activities connected with the enterprise is another necessary condition for success. Other things remaining the same, those institutions which can control the different aspects of production perform better than those who are unable to do this. Control over the related activities reduces an institution's dependence on other agencies and increases its self-reliance and flexibility.

(iv) Even if conditions (i) and (ii) are satisfied, condition (iii) can be fulfilled only if adequate investment funds are available. On account of the low income and low saving propensity of the members, institutions aimed at improving the well-being of socially and economically backward sections are unable to mobilise the required resources internally. They are therefore dependent on assistance from government or other agencies. When such help is not forthcoming, the institution is unable to undertake the activities or intermediaries step in as financiers. In both cases the outcome is the same, namely, the institution fails to fulfil its objectives.

9.2 Transferability and adaptability

From the discussion in the earlier chapters it is clear that neither government undertakings such as corporations nor co-operative societies satisfy the conditions of appropriateness. A public sector enterprise such as the Bamboo Corporation does fulfil some of the social objectives; nevertheless it has several handicaps. The vertical structure of the institution precludes workers participation in decision-making.

Top functionaries are therefore inclined to adopt a paternalistic approach while deciding what is good for the workers. At worst a corporation can degenerate into an enterprise for personal aggrandisement of important functionaries or for achieving spurious political objectives. How it functions depends entirely on the government and the top officials in the management hierarchy.

Despite the structural advantages, functioning of co-operatives is not very much different from that of a Corporation. Although the general body is the supreme authority in all matters, real power usually rests with a small coterie of officials. Performance of co-operatives therefore depends on the attitude of these officials. The organisation fulfils some of the objectives if the leadership is committed to the cause of the members; at the other extreme it ceases to be of any use.

One cannot therefore make any pronouncement regarding the suitability of an institution purely based on the characteristics of the institution *per se*. The fact that it has succeeded in one place does not imply that it will be successful in another situation. Co-operative movement originated in Europe during industrial revolution primarily to protect the interests of the working class. Industrialisation resulted in the emergence of a powerful and fairly homogeneous

class with an identity of economic interests. Homogeneity in composition and identity of interests are important factors in the success of a co-operative movement. In a society stratified on the basis of caste and sub-caste and where vestiges of feudal relations still persist, co-operatives fail to achieve their objectives. Isolated instances of success are due to the coincidence of a number of factors.

If institutions such as co-operatives are inappropriate due to their alien genesis, the other alternative is to adapt institutions that already exist in the system. Unfortunately very few alternatives seem to exist, especially for promoting rural enterprises. The traditional tribal organisations had a number of desirable attributes. However, no vestiges of the tribal cohesion, strength or resilience 'exist due to unfavourable interaction with outside groups. The village panchayat system that existed earlier provided the necessary cohesion to the community and promoted collective action. What exists now is different from this. Notwithstanding the laudable aim of promoting democratic decision-making at the grass root level, panchayats have become battlegrounds for local party bosses and vested interests.

9.3 Recommendations

From the foregoing discussion it would appear that we have reached a stage where none of the existing institutions have inherent strength to meet the challenges and alternative institutions are yet to emerge. The options available now are therefore limited to strengthening the existing institutions by rectifying their defects and providing conducive environment for their proper functioning.

In the case of government undertakings such as the Bamboo Corporation, the major defect arises from the pattern of their organisation which impedes workers' participation in management decision-making. This can be rectified to some extent by including workers' representatives in the board of directors. But in a situation where workers have already been organised into a number of trade unions inclusion of their representatives could be even counter productive. Short term political objectives rather than workers' interest may dominate their choice. Further in a large organisation there is an inherent tendency towards strengthening the hierarchical structure and the employer-employee distinction.

At least in principle, co-operatives have certain inherent advantages. The endeavour should be to strengthen

these and to remedy the drawbacks, The following measures are suggested for this.

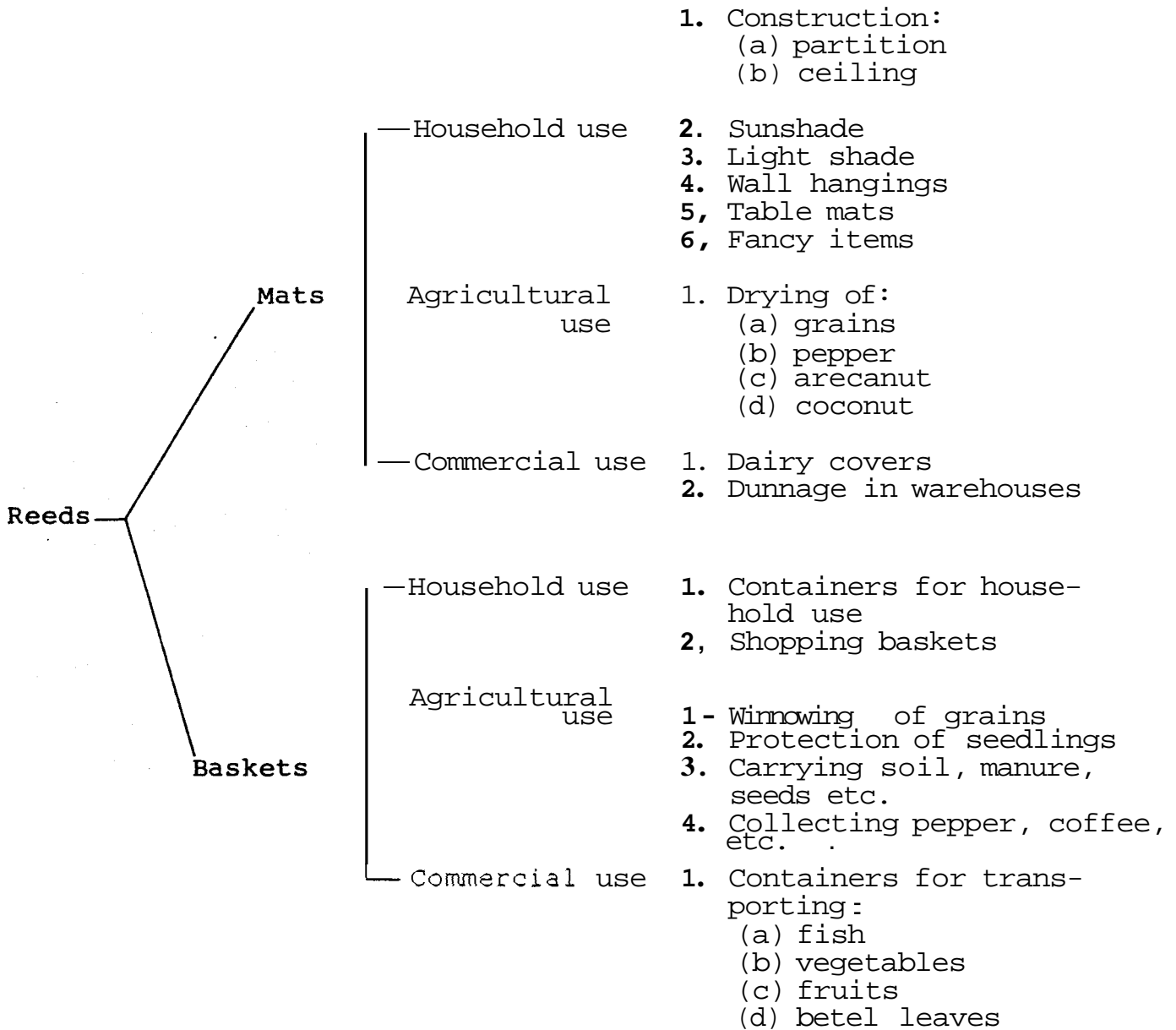
1. While establishing co-operatives, it should as far as possible be a homogeneous group This is likely to reduce the diversity of interests and thus minimise the chances for emergence of vested interests.
2. Most often co-operatives lack technical know-how particularly in identifying suitable activities. Facilities should be established to assist them in carrying out appraisals of different options and in choosing appropriate alternatives.
3. Leaders and other functionaries should be chosen from among the members rather than getting them from outside. Such individuals will have a long term interest in the well-being of the group than persons recruited from outside. Further, important functionaries should be given proper training to improve their technical and managerial skills,
4. Financial assistance should be based on actual needs and as far as possible grants should be restricted to those institutions which are in dire need.

- 5 . In addition to working for the economic interests, institutions should endeavour to promote social and cultural interests of the concerned groups.

These recommendations are expected to improve the functioning of institutions such as co-operatives. However, one cannot be too optimistic about their efficacy as many of the problems pertaining to the institutions arise from the external environment.

Appendix I

REED BASED PRODUCTS



AppendixDETAILS OF CO-OPERATIVE SOCIETIES SURVEYED DURING THE STUDY

Sl. No.	Name	Product	Activities undertaken/were undertaken	Present condition
1.	Chelakkara Harijan Co-operative Society, Chelakkara, Trichur dt.	Fruit baskets	C ₁ , P, M ₂ or M ₃	Very active
2.	Trivandrum District Harijan Reed Workers Multipurpose Co-operative Society, Trivandrum	Mats	C ₁ , S	On the verge of liquidation
3.	Harijan Erathozhilay Sahakarana Sangham, Wadakkancherry, Trichur dt.	Fruit baskets	C ₁ or C ₂ P, M ₁	Active, but dependent on intermediaries
4.	Kuttaneithu Thozhilaly Harijan Sahakarana Sangham, Kanjirakode, Trirhur dt.	"	C ₁ or C ₂ P, M ₁	Active, but dependent on intermediaries
5.	Kuttaneithu Thozhilaly Harijan Sahakarana Sangham, Mullurkara, Trichur dt.	"	C ₁ , P, M ₁	Active
6.	Seraphic Social Centre, Vellikulangara, Trichur dt.	Table mats	C ₁ , P, M ₂	Active, run by a church group
7.	Nadathara Mula Kaithozhil Sahakarana Sangham, Nadathara, Trichur dt.	Mats and baskets for household use	C ₁ , S	Defunct
8.	Harijan Kudil Vyavasaya Sangham, Pathanapuram, Quilon dt.	Mats	c ₂ , S	Defunct
9.	Kodungalloor 'Women's Industrial Co-operative Society, Kodungalloor, Trichur dt.	Table mats	C ₁ , P, M ₂	Active, but suffers from shortages of working capital
10.	Deepthi Handicrafts Industrial Co-operative Society, Irinjalakuda, Trichur dt.		C ₁ , P M ₁	Active on account of its association with the CMI church

Symbols

C_1	=	Procurement of reeds from Bamboo Corporation
C_2	=	Purchase from traders
S	=	Supply of reeds to households
P	=	Production organised directly
M_1	=	Marketing products to local traders and intermediaries
M_2	=	Marketing products to dealers in consuming centres
M_3	=	Marketing direct to consumers

Appendix 111PUBLIC SECTOR UNDERTAKINGS IN KERALA

At the end of 1982 there were 75 public sector undertakings in Kerala. Government-owned corporations/boards are involved in almost all important economic activities. Table 111-1 below gives the sector-wise distribution of public sector undertakings with examples of corporations involved in the different activities.

Table 111-1

Sector	No. of under- takings	Examples
1. Agriculture	4	Kerala Plantation Development Corporation, Kerala Farming Corporation.
2. Fisheries	2	Kerala Fisheries Corporation, Kerala Inland Fisheries Corporation.
3. Livestock	1	Kerala Livestock Development and Milk Marketing Board.
4. Forestry	1	Kerala Forest Development Corporation.
5. Industries	40	Kerala State Industrial Enterprises, Kerala State Industries Development Corporation, Kerala State Bamboo Corporation.
6. Transport	3	Kerala State Road Transport Corporation, Kerala Inland Navigation Corporation.
7. Power	1	Kerala State Electricity Board..
8. Welfare	5	Kerala Labour Welfare Board, Kerala State Scheduled Castes and Scheduled Tribes Development Corporation.
9. Other services	4	Kerala State Civil Supplies Corporation Ltd., Kerala State Warehousing Corporation.
10. Others	14	Kerala Film Development Corporation, Kerala Tourism Development Corporation.
Total	75	

G L O S S A R Y

CASTE: A system of social stratification fundamental to Hinduism. The caste system is said to have originated during the vedic period and it was intended to achieve the objective of division of labour. However, in course of time a person's caste began to be determined hereditarily.

Harijan: Harijans form the lowest rung in the Indian caste system and comprises a number of groups and subgroups who carried out menial jobs forbidden for higher castes. The harijans were being kept away from the higher castes by social rules, particularly, untouchability and pollution. The term harijan was coined by Gandhiji during his struggle to uplift the lower castes. Harijan means God's people. They are included among the scheduled castes.

Kavara: A harijan group chiefly found in Palghat district. Basket and mat-weaving is their main occupation.

Paraya: Another harijan group engaged in mat and basket production.

Sambava: Parayas in Southern Kerala are usually called as Sambavas.

Scheduled Caste: Socially weaker castes, listed in the Schedule under article 341 of the Indian Constitution. To overcome centuries of social handicap, these castes are being given preferential treatment with respect to education, employment in government service etc. Article 46 of the Indian Constitution lays down that the state shall promote the economic and educational interests of the weaker sections, especially scheduled castes and scheduled tribes and protect them from social injustice and exploitation (Syn. Harijan).

Scheduled Tribe: Tribal groups listed in the schedule under article 342 of the Indian Constitution with the objective of extending preferential treatment. These tribes are distinct communities outside the caste framework and are primarily forest dwellers. Like the scheduled castes, they also come under the purview of article 46 of the constitution.

FELLING CYCLE: The interval between successive harvests (felling) in a given area under the selection system.

FELLING SERIES: A forest area forming the whole or part of a working circle and delimited so as to distribute felling and regeneration to suit local conditions and to create or maintain a normal distribution of age classes or age gradations.

SEIGNIORAGE: The value payable for timber (or other produce) as it stands, uncut in a forest (Syn. royalty, stumpage).

TWENTY-POINT PROGRAMME: An economic programme adopted by the Indian Government in 1975. The programme is primarily intended to uplift the weaker sections. It includes speedy implementation of land reforms, raising the minimum wage of agricultural labour, freeing bonded labour, controlling the prices of essential commodities, etc.

WORKING CIRCLE: A forest area organised with a particular objective and under one silvicultural system and one set of working plan prescriptions.

WORKING PLAN: A written scheme of management aiming at continuity of policy and action and prescribing the method of working for a forest tract.

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