Chapter - VI

Problems Faced by Sago Industries, Findings and Conclusion
CHAPTER - VI

FINDINGS, SUGGESTIONS AND CONCLUSION

6.1 SUMMARY OF FINDINGS
6.2 PROBLEMS FACED BY SAGO INDUSTRIES
6.3 SUGGESTIONS AND FUTURE STRATEGIES
6.4 CONCLUSION
CHAPTER – VI
FINDINGS, SUGGESTIONS AND CONCLUSION

6.1. SUMMARY OF FINDINGS

This work is an attempt by the researcher to study the working of Sago industries in Salem District and suggest measures for the better performance.

Sago industries play a very important role in the agro-industrial economy of Salem district. They can be made to play a better role than what they do presently. In the study area, the development of sago industry is hampered by various problems. These problems require special attention in order to accelerate the future growth of the industry and that it becomes an extremely potent and effective instrument for bringing about rapid development of the district.

- The number of sago manufacturing units that has been taken for the present study is 60. They are having different years of experiences in this field. Out of 60 units, only 19 units have been in this field for more than 20 years.
- Weather condition, climate, rainfall, soil are the main reasons for the increasing number of sago units in the Salem district. There is a greater demand for the sago products among the people.
- There is no need for the higher qualification and any other technical qualification for running up of this business. However, a substantial number of the sago unit owners had their post graduation and graduation.
There should be some basic knowledge regarding sago and its production process. This can be learnt through their association and it circulates many information to its members. Apart from that, majority of sago units’ owners have rich experiences in this field even though they do not have higher educational qualifications.

It is concluded that there is a significant difference between degree and non-degree holders towards application of new technology in the business.

Some of the units are run by the sole proprietor and some other is run by the partners. This is based on the size and volume of the business. The size of the business and the volume of transactions are the main determinants of the ownership of the units.

Some of the units are engaged in the production of sago powder and some other units are engaged in the production of starch powder. Many units are producing both sago powder and starch. These three categories of business are carried out by the units which are taken up in this study.

Most of the sago units adopt the backward integration strategy for their raw materials. The sago units in the study area cultivate tapioca on their own. Most of the owners of the units have large sized farm and they cultivate tapioca. Raw materials for these units are also supplied by the wholesalers and the retailers. Out of 60 units, 14 unit owners cultivate tuber on their own land. Respondents who are cultivating tuber on the leased land are 21
16 respondents cultivate only tuber on their land and 9 respondents cultivate tuber along with other cultivation.

- All the sago units’ owners have basic knowledge about the business. Some of them acquire their knowledge from their ancestors, some others from their own experiences and they have past experiences.
- They run their business with the help of their own fund as well as fund from the external sources. They get their finance from the various sources like banks, finance companies, money lenders and friends and relatives. Out of 60 units, 11 units in the study area run their business with their own capital and the remaining units run with their own as well as borrowed funds.
- Among the sources of finance, banks play a dominant role in giving loans and advances to the units.
- There has been an increasing trend in both fixed and working capital amounts. As far as the fixed capital is concerned, it was Rs.4996666.67 in 2002-2003 and it rose to Rs.693333.33 in 2005-2006. At the end of 2007-2008, the amount of fixed capital was Rs.7954812.45. Regarding working capital, it was Rs.385000.00 and went up to Rs.741666.67 and stood at Rs.154872.25 in the year 2007-2008.
- By fitting trend line with the use of time series analysis, the average annual growth rate of fixed capital is Rs.68999.998 lakhs and the average annual growth rate of working capital is Rs.161166.7 lakhs.
The major problems in getting finance are insufficient amount, the problem of non availability of funds at the right time, higher rate of interest and the problems of so many formalities in getting finance. These problems in getting the finance are differing from one source of finance to another source. Some respondents face all these problems occasionally.

There are so many varieties of tapioca cultivated and they are used as raw materials for the sago products and starch powder. There are 3 varieties of tapioca as shown in the above table. They are Mulluvadi, Rose and Cross Rose. Both Mulluvadi and Rose are cultivated extensively. The Cross Rose variety is also cultivated but in smaller acres when compared to Mulluvadi and Rose.

Mulluvadi and Rose are the famous varieties of tapioca and they give maximum amount of carbohydrates and rich content of starch. The yield per acre is also high. Cultivation of these varieties is a profitable one. They are also profitable to sago units.

During the off season, there is non availability of sufficient raw materials. In order to avoid this, many units cultivate their raw materials on their own.

The sago products and the by-products are exported to the foreign countries. Only 10 units produced more than 750 tonnes of annual production. The demand for foreign countries and the demand from local markets determine the annual production of units.
The mean values of their annual production of 48 units and 12 units are 5758.33 and 3833.33 respectively. It reveals that there is an increasing annual production for the units having less than 10 years of experiences and the annual production for the units having more than 10 years is low when compared with the units having less than 10 years.

Most of the units use electricity as their fuel for the production of sago products and starch. But the units are suffering from frequent power cuts in the study area and it leads to using of alternative fuels such as gas and diesel.

A few units are looking after their work on the basis of hour and the majority of the units have shift methods in their works which is useful to the units to continue their business without any time gap. Only 10 units adopt both the shift systems. During the peak seasons, these systems are adopted and during the off seasons, the units curtail some shifts according to their production volume.

A very few units give bonus to their employees quarterly and whenever the profit increases. There are two units and one unit falls under this category. Sago units that do not give bonus to their employees are three in number. This is because there is a huge volume of labour turnover in these units and therefore the units do not have this kind of practice.

Marketing of sago products are of different kinds. There is an association, by which the marketing is done. This is the common marketing method.
There are 34 sago units that sell their products through their association. More than 50 per cent of the sago units do their marketing in this way. Besides, there are 20 sago units which sell their products through their personnel.

- There are various methods of sales. Of them, direct sales, sales through agents, sales through association, open market sales and on contract sales are very popular sales methods. Sales through association and direct sales are very popular in this production.

- By fitting trend line with the use of time series analysis, the average annual growth rate of sales is Rs.229650 lakhs.

- There are many methods of sales. When direct sale is compared with the other sales it has many advantages to the units. Immediate money transaction is possible in the direct sales.

- It is very important, that the price in direct sales is equal to the price in the sales through association. The association bargains with the buyers and thereby the price would be equal to the price given in the direct sales.

- Government gives financial and non-financial assistance to the sago units. As far as financial assistance is concerned, government gives subsidy and tax incentive to the units. The government’s assistance through the cooperative sector is notable.
All the sago units in the study area are not availing all the services from the government. The assistance to a particular unit is differing from the assistance given to another unit.

Though there are several factors behind the operation of the units, a few important factors create influence on the operation of the units. They are availability of raw materials, demand for the product, profitability and tradition.

Cost of labour, labour productivity, technology, brand name, quality, price are the some of the independent variables determining the amount of profit.

Among them, cost of labour is main factor, which influence on the amount of profit heavily when compared with the other independent variables. This is followed by labour productivity. Both these two factors greatly affect the amount of profit than other independent factors. Next to this, technology is another important independent variable which creates influence on the amount of profit and ‘proper delivery of the sago products to the customers’ comes next.

Price and brand name of the sago products taken under this study are creating influence, on the amount of profit more or less equally. The only independent variable in this model which has negative relationship with the amount of profit is ‘quality of the products’.

The most important difficulty of the business is ‘power shortage’. The shortage of power interrupt the production process and it affects the continuity
in the production. Problems of getting finance and availability of sufficient raw materials are some other difficulties associated with the business. Some units face inadequate machines and tools and existence of severe competition. Government’s intervention is not considered as a severe problem and it does not affect the operation of the units.

6.2. PROBLEMS FACED BY SAGO INDUSTRIES

6.2.1. Raw Material Supply

Among the different tropical roots and tuber crops grown in India, tapioca is one of the most significant ones as it can produce more calories per unit. Its importance in tropical agriculture is due to its drought tolerance and wide flexibility to adverse soil nutrients, and management conditions including the time of harvest. Tapioca can be profitably cultivated throughout the year with irrigation.

The tapioca tuber is available in the industry from July to April but the maximum amount of raw material is available only during the November to February period during which the starch content of the tubers is at its peak. Winter appears to be helpful for the consolidation of starch in the tubers. Maximum crushing activity is being undertaken during this period only.

Brokers play a major role in supplying the raw materials for the sago and starch units. They have a wide network of sub brokers who help in fetching the tubers even from the far-off places and ensure a continuous supply of tubers to the sago and starch units. 90% of the raw materials sold by the
farmers are being routed through the brokers only. Mostly the main brokers are operating in Attur, Salem, Namagiripet, Chellappampatti and a few other areas.

The major problems faced by the owners of the sago units with regards to procurement of raw material are as below:

- Non-availability of quality raw material of adequate quantity.
- High fluctuation in prices of the raw material.
- Availability of raw material only for a short period.

The availability of quality raw material, tubers with rich starch content is restricted to the winter period (November to February). The sago factory owners try to purchase maximum amount of raw material during that period and process it into starch. However, only a part of the starch thus produced is converted into sago while the rest of it is stored in tanks under water. After the crushing period is over the stored starch is taken out from the storage periodically and then washed and used for sago making.

During the last season as the prices of sago had fallen below the prices of stored raw material and as a result many sago factory owners incurred huge losses. In case the prices of tuber are very low during a season the sago factory owners tend to purchase maximum tubers and store it in the tanks underwater. But due to wide fluctuation in prices nowadays the sago factory owners are adopting a cautious approach in storing the starch.

The major problems faced by the farmers of the sago units with regard to supply of raw material are as follows:
- The yield of tapioca is getting reduced year by year.
- Diseases like Cassava Mosaic virus, tuber rot, phoma leaf fall are affecting the crop badly.
- Good quality seed material is not available. The existing varieties of H165, H226, and Mulluvadi had been released by C.T.C.R.I. and T.N.A.U. long ago and their yield potential have come down. New varieties like CO₂ and CO₃ has not spread among most of the farmers.
- The farmers are not aware of the modern methods of cultivation practices which are cost effective and environmentally sustainable.
- Depleting soil fertility.
- Depleting water table.
- Monsoon failure requiring drought tolerant varieties and cultural practices to withstand drought.
- Escalating cost of cultivation.
- Fluctuating cost of Tubers. Sometimes the cost of tubers falls below the level of cultivation expenses.

Another problem between the farmers and the sago factory owners is the determination of scale for measuring the starch content in the tubers and fixing the price according to the starch content. The same quantity of tuber is first weighed in air and then immersed in the water and then the difference is shown as percentage of starch calibrated in the scale itself.
Once the problem of applying a scale for the purchase of raw material is settled to mutual satisfaction of both the farmers and Sago factory owners, it will be a major break through for the industry.

### 6.2.2. Finance

Almost all the sago factories are family owned and most of them are farmer turned entrepreneurs. These owners get their equity from the surplus fund that they generate from agricultural income. Many of the sago factory owners were also previously brokers doing business as raw material suppliers to the industry. They all usually maintain a current account in a commercial bank or a co-operative bank to en-cash the cheques received from ‘SAGOSERVE’ or traders.

Around 50% of them are availing credit from commercial or co-operative banks. The rest of them manage with their own funds or borrowed money from relatives or money lenders for a short period. Availing of credit facility for working capital is more prevalent than availing of credit for term loan. Most of them feel that their real incomes have reduced over the years due to the escalation of cost and competition. Most of them tend to plough back their profits into improving their factories. However, some are even investing in transport business and other local businesses. The sago factory owners situated in semi-urban and urban centres are able to obtain credit from the banks easily than those situated in the rural areas.
The following problems are expressed in financing the sago industry by the bankers.

- The bankers feel that the sago factory owners do not route their transactions through their bank accounts.
- Multiple finance
- It is a seasonal business and therefore fixing credit limit is difficult.
- Non maintenance of proper accounts.
- Difficulty in measuring the starch stored in the tanks.
- Highly fluctuating price of sago and starch.

Though most of the sago factory owners who have availed credit facilities from the banks expressed satisfaction with their services yet some are disillusioned with the behaviour of the bankers. They feel the credit limits offered by the banks are not adequate, are unrealistic and not sanctioned in time. They generally feel their cash credit facilities should be enhanced when the raw material prices are low so as to enable them to purchase enough material for the entire season.

**6.2.3. Competition from Maize Starch**

Tapioca starch is facing stiff competition from Maize starch, Maize starch which had its entrance only about two decades ago is today in a position to outstripping tapioca in respect of quantity and quality mainly due to accelerated process of hybridization and higher productivity. Further, there is a marked improvement in the quality of Maize starch which is manufactured
under rigid quality control, in organised large scale sectors whereas tapioca starch is largely manufactured in unorganised small scale sectors, where there is no system of quality control. Maize starch has also got certain superior qualities the major one being a longer retention of viscosity. In the case of tapioca starch, its utility in natural form is limited due to non-stability in paste.

6.2.4. Excise Duty and Taxation

While sago is exempted from taxation, starch production attracts General Excise Duty if the value of production exceeds Rs.5,000. This had created a situation where most of the units stop starch production just before the production value reaches the above figure. Introduction of duty above Rs.5 thousands production level has motivated large scale suppression of actual production. The producers are afraid that after paying the duty, their produces would not be able to compete with those manufactured by the organised sector. Moreover, payment of excise duty by some manufacturers, and non-payment by others could contribute to a destabilization process in the industry leading to closure of many units producing above Rs.5,000 worth of products. It is the view of many producers that Central Excise Duty is a clear disincentive to higher production and productivity due to its discriminatory nature.

6.2.5. Power

The progress of electrification has not been slow and halting but power shortage and frequent power cuts played with the small sago units. The
availability of cheap, regular and adequate supply of electric power is essential, for the smooth functioning of the industries. Power cuts cause inconvenience to entrepreneurs. Unnoticed power cuts result in wastage of raw materials. Another problem is related to voltage fluctuations. Machinery had been damaged due to power fluctuations. Service connection charges are also high. Severe power shortage has forced the industry to shut their factories or stoppage of work. Diesel generators have been in use by some of the processors to overcome power interruptions. But it is somewhat costly, since diesel generated power is three to four times costlier compared to hydroelectric energy. New licences are required to pay heavy deposits to the Electricity Board if power connections are to be sanctioned, and this constrains the resources of the entrepreneur making power costlier.

6.2.6. Waste Disposal and Pollution

Two types of wastes from sago units contribute to some degree of pollution. The first one is the fibrous residue left after starch is removed and the second is the effluent water coming out of the settling tanks.

The peeled skin and the residue after extraction of sago constitute the solid waste. The peelings are computable and thus have manure value. The residue including fibres, knots, like is known as “Thippi”. Often, Thippi is allowed to stay in wet condition near the rasping section and in due course, they start developing foul odour, due to microbial action. This can be
prevented easily by prompt removal of wet Thippi and drying it separately with least delay so that it can be subsequently ground and used as cattle feed component.

Effluents from the settling tanks contain small amounts of starch and very little amount of sugar. But they have some pollution potency. When the raw waste water is discharged into water bodies, it will deplete the dissolved oxygen content affecting the aquatic life, including flora and fauna. In addition, the impairment of the water quality renders unsightly appearance. The colour of water is initially brown and finally becomes black. Most of the sago units are located near the banks of rivers or lakes and it has become customary to discharge the effluent from the industry to the river or lakes. These effluents pose a serious threat to the environment and quality of life in the rural areas.

6.2.7. Premises

The sago and starch factories are mainly situated in semi urban and rural areas with an exception of Salem city where in many units are situated. Most of the sago factories are housed in large areas ranging from three to seven acres in rural areas and one to acres in urban areas. In the city of Salem paucity of space restricts the expansion of the factory. The sago factories are usually situated in formal structures.
6.2.8. Marketing

The traders of sago usually have to make payment through immediate cash or within a reasonable period to the sago factory owners. However, in their run they have to sell the produce to the wholesale dealers at credit. Non-realisation of money in time poses a major problem for these traders.

As the competition for the low end products is high, the traders are not able to concentrate on quality and also the payment for their products often gets defaulted or is either not received in full or in time. Most of the time, disputes between the trader and the wholesale dealer is settled at the cot of the trader. The reason for the fluctuating cost is often attributed to the supply and demand position of the sago. However this aspect requires close scrutiny and detailed market surveys.

The major problem faced by the owners of sago units is the highly fluctuating prices of sago and starch and sometimes even the mismatching of the purchase price of the tubers. Some owners of sago units feel that as the traders have to analyse large number of samples within short time at ‘SAGOSERVE’ and as a result a proper classification on the grade of sago / starch is not being done. This, according to them gets them a lesser price for their product than they deserve. Some manufacturers also feel that despite their undertaking of hand peeling operations, their product does not get an adequate price to compensate the additional expenses they have incurred or the quality they maintain.
The traders also have association of their own but the association is not very active and rarely arranges a meeting of the members. Also the lack of awareness amongst the factory owners about the quality standards affects the market.

6.2.9. Higher Transportation Cost

Since tapioca is bulky, it is very difficult to transport at a cheaper fare. Many small sago units cannot afford the transportation which will enhance the price of the product.

Most of the machinery which is presently used by a majority of the sago factory owners like tapioca crusher are not efficient. However some innovative sago factory owners with the help of some machinery manufacturers at Salem and Erode have introduced several new machines in their factories. The machinery manufacturers are highly innovative and keep gathering information through different sources like internet.

Problems faced by the sago factory owners with regards to technology

- Getting the skilled mechanics to install the equipments on time is very difficult. Instead the factory owners have to oblige to the convenience of mechanics. The mechanics are also not technically highly educated and hence the efficiency of machinery and equipments is below the expected level.
- The average annual amount spent on repairing and replacement of machinery ranges from Rs.50,000 to Rs.1 lakh.
- The sago factory owners do not get adequate technical advance for machinery and the equipments from any formal institutions.
- There is a mistrust prevailing among the sago factory owners and machinery manufactures hampering the rapid technological advancement of the cluster.

**Problems faced by machinery manufacturers with regards to technology**

The sago factory owners often hesitate to offer the price quoted by the machinery manufacturers and are not considerable to the establishment costs of the latter. They also do not even pay the entire amount in lump sum. There is a feeling among the machinery manufacturers that the sago factory owners often try to copy their equipments and neglect them afterwards.

**6.2.11. Infrastructure, Policies regulations**

The Government is providing with all the necessary infrastructure for the growth of the industry. The electricity board is providing the necessary power supply and is also giving advice on economising electricity charges.

The Government through the pollution board controls and monitors the pollution control efforts taken by the sago factory owners. However, the units feel difficulty in getting clearances from the board.
6.3. SUGGESTIONS AND FUTURE STRATEGIES

6.3.1. High Starch varieties in Cassava for Industrial Utilization

Selection made from recombinant lines developed from crosses of better combining and potential lines will be subjected to on farm trials in industrial areas with farmers participation. High performing lines having stability in high starch content (more than 25%) and yield over different locations and seasons will be selected. The programme is meant for providing different cassava varieties to the farmers cultivating the crop under varying conditions of soil, topography and climatic conditions.

6.3.2. Integrated Weed Management in Tuber Crops

Weeds are a serious menace in tuber crop production especially in low lands. The present practice of hand weeding is time consuming, labour intensive and involves drudgery. The magnitude of the problem is more serious in industrial areas, where heavy doses of fertilizers and intensive irrigation are resorted. In such areas studies to develop suitable mechanical and chemical control measures will be taken up. Apart from this integrated weed management practices in tuber crops involving cost effective eco friendly practices are also envisioned.

6.3.3. Partial Mechanization of Cassava Cultivation

Presently cassava cultivation is not mechanized and field operations such as land preparation, breeding, drainage, harvesting etc involves drudgery,
are tedious and time consuming. Hence development of suitable agricultural implements or machinery for land modulation, deep drainage and other farm operations for cassava production in industrial areas is imperative.

6.3.4. Field and Storage Pest Management

The programme envisages identification of biotypes / races in major pests, nematodes, viruses and fungi, damaging tuber crops both in field and in storage, characterization based on the basis of biological, serological, molecular and electron microscopy techniques, biotypes of insect pests / nematodes of economic importance, strains / races of viruses / fungi of economic importance.

6.3.5. Pest and Disease Resistance through Biotechnology

Identification of resistant crops and development of induced resistant crops / transgenic crops in tuber crops against major pests and diseases like ICMV, SLCMV, and others, identification of resistant lines / hybrids against major pest, nematodes and diseases, development of induced resistance in tuber crops against major pests and diseases especially cassava tuber rot, development of transgenic cassava against ICMV / SLCMV.

6.3.6. Diversification for Pharmaceutical Sector through Extraction and Characterization of Phytochemicals

The large spectrum of variability available among the different tuber starches makes it a potential candidate for the pharmaceutical industries. Native
and modified starches can find use in tablet and capsule making. Cold water miscible starch made from cassava tubers, besides textile use, can also find application as a food thickener, in shampoos and body lotions.

6.3.7. Byproduct Utilization of Thippi

Thippi is the solid fibrous waste discharged from the cassava starch factories, which contains around 55 percent unextracted starch. It is a major pollutant to the flora and fauna. Being a starchy low cost product, this can be used for the economic production of commodity chemicals like ethanol and liquid glucose isomerase. Incorporation of thippi in fish feed is another innovative area where collaboration with Fishery Institutes can help in a big way to perfect the feed production technology.

6.3.8. Storage Pests and Management

Survey carried out in cassava chips storing godowns in Kerala revealed that the chips are infested by around 21 insects. Due to the infestation, chips are turned into a powdery form and lose their nutritive value for food or feed and lead to discolouration of starch, when used for starch extraction. Araecerus fasciculatus, Dinoderus bifoveolatus, Rhyzopertha dominica, Sitophilus oryzae and Tribolium castaneum are the most important among them. Detailed studies on the biology and bionomics are warranted on these insects. It is also necessary to devise safe storage techniques to prevent the infestation.
Measures

♣ Selection of disease – free planting material.

♣ Use of field tolerant varieties like H-97, H-165 and Sree Visakham.

♣ Selection of disease-free meristem-derived planting material, followed by clonal multiplication with periodical screening and roughing of freshly infected plants, will be useful to raise a good disease-free crop.

♣ Disease-free planting material can be multiplied on a large scale at higher altitude where the whitefly population is low or nil.

♣ Raising the plants in the nursery at closer spacing prior to transplantation into the main field is an useful step to prevent the primary spread of the disease in the main field.

Adherence to strict sanitary practices such as timely harvest and prompt disposal of crop residues and eradication of self-sown plants and weeds which may harbor both the disease and vectors.

6.3.9. Development of Information and Communication Materials on Cassava

The merging information and communication technologies have immense potential in tuber crops extension and training. With their abilities of interaction demassification and asynchronization, they define the modes of human communication. Hence there is an urgent need to develop appropriate applications of information communication technologies in tuber crops.
extension and training. The programme envisages preparation of leaflets, pamphlets, multimedia communication system including video films, slide stories, radio programmes, information retrieval services through CDROMS agriculture research information systems (ARIS).

6.3.10. Development of Seed Village for Cassava

Lock of availability of quality planting material in tuber crops continues to remain as a major stumbling black in the mass scale transfer of improved varieties of cassava. As these group of crops suffer from the inherent weaknesses of slow rate of multiplication, bulkiness, rapid scale multiplication to cater to the demand for them is rather found very difficult. Moreover, problems in bulk transport of material from the place of multiplication to the places of cultivation also pose a great challenge.

Hence during the coming 15-20 years, in major cassava growing regions of the country, appropriate locations and cooperative farmers will be selected for developing cassava seed village and these will form the major source of planting material production in future.

6.3.11. Commercialisation and costing of cassava technologies

Techno – Economic feasibility report act as a base material for any entrepreneur to venture a new project / industry. CTCRI has been developing many technologies for producing value added products from tropical tuber crops for the past three decades. Commercialization of viable technologies is
important aspect after developing the technologies. A large number of training programmes both at the Institute and at outreach location are conducted for the benefit of women Self Help Groups. Training is routinely offered on food production technologies, processing equipment and industrial technologies, to Agricultural officers, assistants and farmers under programme sponsored by the Regional Agricultural Technology Training Centre.

6.3.12. Empowerment of Women and Gender Issues

Adequate emphasis is given in the perspective plan in developing programmes for the empowerment of women in agriculture. Training for the Self Help Groups, NGOs, women farmers that is on cultivation and utilization aspects of tuber crops is planned to equip them with modern production technologies and for their capacity building to start agri business ventures based on tuber crops. Gender issues are also given thrust under the Institution Linkages Programme where several programmes have been started for the benefit of the women farmers. The Government of India has asked for separate budget on this programme indicating the increasing importance given to it.

STRATEGIES TO BE FOLLOWED

- The main reason for concentration of sago industries in Salem district is there is prevailing favourable climatic condition in that area. Besides, both state government and the local governments have to arrange
necessary activities in order to enhance the level of activities in this business. It will attract the potential entrepreneurs.

- Since the sago unit runners are not highly qualified academically, they have to be given sufficient training and they have to be given some sort of technical knowledge in their business. This will improve their personal knowledge in their business.

- It is suggested that there can be a monthly bulletin or magazine started to circulate information regarding their business. It will help to them to share their ideas and views monthly. It will also serve them to update their knowledge monthly.

- The district agricultural extension centre has to take steps to inform the new technology and developments and they should be given to the sago producers. These new technology and developments will help them to make their business effectively and the scale economy can be ensured.

- There should be a strong association needed even though there is existence of their association to share their excess capacity during greater demand. It will be better, if there is cooperative production of sago products.

- Sago producers should come forward to start the production by-products of the sago which will be supplementary to the existing incomes.
Steps should be taken by the association of the sago producers to run their business round the year since it is seasonal one to the small producers.

In order to avoid the seasonal arrival of the raw materials, farmers can be encouraged to cultivate tapioca throughout the year. Subsidies, financial assistance should be given to them to achieve this.

Seminars. Workshops can be arranged by the district agricultural department along with the government to refresh the practical knowledge in the field of sago production. Steps should be taken to participate, neighbouring district producer of sago in order to have strong association in this field.

Another important suggestion is there should be sound credit system. Many of the sago producers are suffering from the non-availability of the credit from the banks. Cooperative credits can be given to them at the reasonable rate of interest. Banks should come forward to lend liberally to them.

Similarly government can give subsidized loans and advances to procure fixed assets and for the establishment of other infrastructural facilities within the factory.

It is suggested that government should encourage research and developments in this field and it will pave to the introduction of new
variety of seeds in tapioca cultivation and hybrid is possible under this way.

- Steps should be taken by the association of sago units to buy the raw material (tapioca) from the other parts of the state to avoid non-availability of raw materials during the demand season.
- There is need for effective sales method to harvest better profit. Similarly there is need for cooperative marketing for the betterment of the small sago producers.

6.4. CONCLUSION

The contribution of agricultural sector in the nation’s economy is very important. The share of the agricultural and its allied activities are notable one in gross domestic product of India. Agriculture and its allied activities are the way of life to the rural mass. The cultivation of tapioca and sago production is the main occupation in the Salem district. The climatic condition is another factor for it. Both farmers and non-farmers are engaged in the business of sago cultivation in the study area. As far as the sago production is concerned, it is an allied activity of agriculture. There are number of sago units in the study area. Of them, the researcher has taken only 60 units for analysis. Though the functions of the sago units are the same, they differ from one another in terms of volume of business, capacity, investment, employing the labour and other related terms. In spite of this business being seasonal one, some of the sago
units manage to run their business, round the year. Many of the units have their own cultivation of raw materials and other units buy them from the farmers and sellers.

There are number of problems faced by these units like non-availability of sufficient credits, technological backwardness, problems of marketing and sales and the like. These are the common problems, both to the small as well as the big sago units. There is an existence of underdeveloped association for them and it is not rendering the services effectively to the sago units. Therefore, the sago units under this study area are very important in terms of employment generation to the rural mass. People in the rural area find their employment in these units during the off-season of the agriculture. The contribution of these units to the district’s revenue is notable one. As a whole, the sago units in the study area functioning well with some problems and obstacles as said earlier. These problems should be solved and the above suggestions should be taken over by the government and the related machineries. Then only, there will be greater scope for the flourishing of sago units, in the study area. The present research paves the ways for the future research, in the field of production of tapioca and the sago production. A comparative study can also be undertaken by the future researchers in this field.