CHAPTER - III  PART II

3. PROCESSING
CHAPTER III

PART - II

3. PROCESSING:

It is well known that India is one of the most populous countries of the world and the need for increased food production has become imminent. This led to the Green Revolution. The production of hybrid varieties of seeds in wheat and paddy was taken up on a large scale along with increased use of modern technological inputs. The extension agencies all over India were given the responsibilities for transferring the technology from the lab to the land. However, due to the lack of commitment on the part of the government extension personnel and the vastness of the rural areas of the country, the illiteracy and ignorance among the remote rural farmers, the transfer of technology was rendered difficult.

1. Personal Interview with the former Secretary of
TUCS. Thiru S. Karuppanmani on 13. 8. 91
The opportunity is given to the members of the co-operatives. This gives them the benefit of modern technology. The results of the laboratory are transferred for application to the farmers' field. The TUCAS was the pioneer in this regard and started production of hybrid varieties of seeds under cereals, pulses, etc.  

While there is a National Seeds Corporation at the federal level and the States Seeds Corporations in many of the states, there was no such Corporation in Tamil Nadu State. TUCAS though of a federal structure for this purpose founded a consortium of co-operative societies in Coimbatore District and this was known as the Kovai Seeds Consortium. The Kovai seeds known for the quality became popular household name not only among the farming community of Tamil Nadu State but also in the neighbouring Andhra Pradesh, Karnataka, Gujarat and other States.

2. Personal Interview with Seeds Manager, TUCAS on 30.6.91
M.C.U.5 variety of cotton seeds were covering almost the entire cotton belt of the Andhra Pradesh State. In spite of there being no publicity and advertisement, Kovai seeds were preferred to other seeds under cotton varieties because their quality and popularity were the subject of discussion among farmers.  

Indian farmers are aware of the importance of improved seeds in cultivation, for good seeds make for a possible increase of 10 to 20 per cent in production. But they generally use seeds of very indifferent quality either because the special good quality seeds kept for saving purposes are consumed away during the off-season or because good seeds deteriorate through bad storage.

3. Ibid
The cheapest and the best input in agriculture is seeds. The quality of seeds sown in the farm decides the quality and quantity of yield. This fact has attracted the keen attention and active consideration of TUCAS. Therefore, it has undertaken a separate project for the supply of quality seeds to the farmers at a reasonable price with assured genetic purity and germination percentage. Under the seed development project, the Kovai Seeds Co-operatives' Consortium (hereinafter referred to as KSC) is the first venture in co-operative sector in India for the production and marketing of good quality of seeds.

**KOVAI SEEDS CO-OPERATIVES' CONSORTIUM**

**ORIGIN:**

The Kovai Seeds Co-operatives' Consortium plays an important role in agricultural production.

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5. Personal Interview with Office Manager, TUCAS on 16.12.89.
It is not a sudden development but is the result of many factors necessitating seed production.

The formation of KOVAL SEEDS CONSORTIUM under the auspices of Tudiyalur Co-operative Agricultural Services Limited led to increased yields in members' fields.

Many seeds producing companies sold seeds with very poor germination standards and genetic purity but at high cost. This naturally did not result in high yield and purity.

As a result of research work by eminent agro scientists of Agricultural University, new breeder seeds of high yield variety were introduced. So introduce commercial productions of seeds, a co-operative agency viz., Tudiyalur Co-operative Agricultural Services was proposed.

For seed production, certain precautionary measures should be taken. Multiplicity of seed production in the same area is avoided. Seed production was made
location specific depending upon nature and infrastructure needed for particular varieties of seeds.

Agricultural Department, State and Central Farms were the only governmental agencies involved in seeds (certified) production.

After careful assessment of irrigation potentialities, soil conditions, monsoon, seasonality, etc., it was confirmed that certified seeds produced by the above agencies were not adequate when compared to the total requirements of our State.

Therefore, the need for starting one more agency in Government or Quasi Government sector was felt in the field of high yield varieties seeds production.

6. Seed Section Correspondence File
ESTABLISHMENT OF KOVAI SEEDS CONSORTIUM:

It is said that necessity is the mother of invention. The "Kovai Seeds Consortium" was started on 24-4-77 with its headquarters at Tudiyalur since there was no proper organisation to supply good quality of seeds to the farmers. 7

On mutually agreed terms, Five Co-operative Marketing Societies in Coimbatore and Periyar Districts and Tudiyalur Co-operative Agricultural Services Limited came forward to participate in the seed multiplication scheme implemented by the Consortium. This is not a statutorily registered body. 8


OBJECTIVES OF THE CONSORTIUM:

The main objectives are

To act as an advisory body to participating societies as well as individual farmers.

To supply certified quality seeds of high yield varieties in all crops to the farmers for commercial production.

To maintain genetic purity and germinations standards and to achieve maximum yield per acre.

To assist the selected farmers in applying the modern scientific techniques in seed production.

To provide to farmers parent seeds obtained from Agriculture University, Department of Agriculture, Research Stations and State and Central Seeds Farms.

To assist the farmers in the farm and keenly supervise the processing aspects in the seeds
processing units till the seeds are certified by Seed Certification Department.

To provide all needed infrastructural facilities to seed growers and to participating societies.

To have a well equipped cadre of qualified and trained field staff.

To arrange for the finance for capital and revenue expenditure relating to this scheme; and

To arrange for the marketing of the seeds produced by the centres. 9

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9. Annual Report for the Year 1977-78
BACKGROUND FOR THE ESTABLISHMENT OF THE CONSORTIUM:

The Tudiyalur Co-operative Agricultural Services Limited under the then able President of the society, T.N. Palaniswamy Gounder submitted a proposal on 21-07-1973 to National Co-operative Development Corporation to set up a Seed Development Project with a capital outlay of ₹3.15 lakhs.\(^\text{10}\)

After analysing the importance of the seeds development scheme, the National Co-operative Development Corporation suggested to the Government of Tamil Nadu to implement this scheme in two phases with the total project cost of ₹170 lakhs. The first and the second phase project costs were ₹93.60 lakhs and ₹76.40 lakhs respectively.\(^\text{11}\)

The following was the pattern of assistance suggested by the National Co-operative Development Corporation.

\(^{10}\) TUCAS Letter No.3656/72/02 dt.30-07-1973
TUCAS D.O. Letter No.3656/75,02 dt.14-08-1976
NCDC Letter No.5-1/74 dt.24-02-1976
NCDC Letter No.6-1/74 dt.25-06-1976
NCDC Letter No.9-1/78 dt.26-03-1980

\(^{11}\) Ibid
(a) National Co-operative Development Corporation : 70%
(b) Participating societies : 20%, and
(c) State Government : 10%

I PHASE:

The National Co-operative Development Corporation sanctioned this scheme on 25-6-1976 and released its share of Rs.65.45 lakhs. The Government of Tamil Nadu approved this scheme on 08-10-1976.12

12. Ibid
In that I phase of this scheme, the following societies were the partners:

Tudiyalur Co-operative Agricultural Services Limited
Tirupur Co-operative Sale Society Limited
Coimbatore Co-operative Marketing Society Limited
Pollachi Co-operative Marketing Society Limited
Udumalai Co-operative Marketing Society Limited, and
Gobi Co-operative Marketing Society Limited.¹³

The actual project cost of the I phase is detailed in Appendix No. XXIV.¹⁴

As per the original sanction, I phase work should have commenced from 1-7-1976 and completed

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¹³ Registrar of Co-operative Societies, Madras
Letter No. 77384/3 PI dated 17-5-1973;
Registrar of Co-operative Societies, Madras
Letter No. 77384/73 PI dated 15-6-1976;
Letter No. 163920/80-P4 dated 8-9-1980

¹⁴ Kovai Seeds Co-operatives' Consortium File
Vol. I & II
on or before 30-6-1978. But actually the work was started on 1-8-1977 and completed on 31-3-1980.

The Chief Project Officer and Executive Engineer deputed for this work from Government joined later due to non-availability of qualified and experienced persons. There was also delay in the supply of processing machinery. 15

II PHASE:

Soon after the completion of the first phase work, it was decided to take up the second phase work with a project cost of ₹76.40 lakhs with the participation of the following societies:

Erode Co-operative Marketing Society Limited,
Lharapuram Co-operative Marketing Society Limited,
Avinashi Co-operative Marketing Society Limited,
Palladam Co-operative Marketing Society Limited, and
Tudiyalur Co-operative Agricultural Services Limited

15. Ibid
There was difficulty in getting parent seeds. The cost of seed produced by the Consortium was high compared to state farm seeds as Government produced seeds as a service function and did not take into account all the cost. Therefore, there was marketing difficulty. Consequently there was resistance from participating societies of the II phase. Marketing and promotional cells were not constituted in the Consortium. Due to very slow progress, the result of the I phase was not encouraging. Therefore, the second phase could not be implemented.\textsuperscript{16}

**IMPLEMENTATION OF THE SCHEME:**

In the beginning, National Co-operative Development Corporation fixed norms for crop pattern and for coverage of minimum acreage every year to each participating society as indicated below:

\textsuperscript{16} Ibid
<table>
<thead>
<tr>
<th>Society</th>
<th>Crops</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) TUCAS</td>
<td>Cotton</td>
<td>2000</td>
</tr>
<tr>
<td>b) Tirupur</td>
<td>Cotton</td>
<td>2000</td>
</tr>
<tr>
<td>c) Gobi</td>
<td>Paddy</td>
<td>2000</td>
</tr>
<tr>
<td>d) Pollachi</td>
<td>Groundnut</td>
<td>2000</td>
</tr>
<tr>
<td></td>
<td>Sunflower</td>
<td>1000</td>
</tr>
<tr>
<td>e) Coimbatore</td>
<td>Millets</td>
<td>2000</td>
</tr>
<tr>
<td>f) Udumalai</td>
<td>Pulses &amp; Millets</td>
<td>2000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13000</td>
</tr>
</tbody>
</table>

These norms could not be achieved due to the following reasons.

There was no market thrust for the societies to market the entire production of tagged seeds.

17. *Seed Multiplication Scheme Implementation*, *Vol. I, II & III*
during the production year. The carry over stock of tagged seeds was increasing every year. This is mainly due to lack of experience of "Marketing" staff and comparatively higher price of seeds. The participating societies did not identify the area and quantity of seeds to be produced before commencing commercial production. The marketing avenues of co-operative net work has not fully exploited.

The entire finance provided for this scheme was utilised to create permanent assets like buildings. Provision was not made for working capital in this scheme.

At the beginning of the scheme, the farmers were reluctant to use these scientifically produced seeds of hybrid varieties. This is mainly due to lack of publicity and propaganda.\textsuperscript{18}

\textsuperscript{18. Ibid}
The production process from breeder seeds to certified seeds will take about two years. Meanwhile some new effective varieties would have been released. With the result, lot of practical difficulties were experienced in marketing and production.

Many a time, the Consortium had to face inadequate supply of breeder and foundation seeds.

From the beginning itself, Pollachi and Udumalai Co-operative Marketing Societies could not implement this scheme effectively, mainly due to lack of working capital and lack of marketing potentialities.

Owing to drought in certain pockets in Coimbatore District, seed production was affected during 1981-1982.

Later on, the societies followed the easy method of producing seeds under "Truthful Label".

19. Personal Interview with Seeds Manager on 30. 6. 91
But this mode of production gradually spoiled the name of "Kovai Seeds" and affected existing and further market avenues.

The participating societies had no knowledge about the varying demands for the seeds due to adverse seasonal conditions and surplus productions in the nearby areas and consequential impact on demand for a particular variety of seeds. So, they had to revise this production pattern to make it profitable. National Co-operative Development Corporation also gave its consent to this change. But it insisted to cover the area originally targeted.

The Consortium fixed the target every year for the area. The target of 15 years was 68,548 acres. This is between 1977-78 and 1991-1992.

But 31,900 acres were only covered. This total achievement works out to 46.54% of the target.\(^{21}\)

The anticipated area of production according to original planning should be 1,60,000 acres. From 1977-78 to 1991-92 the achievement was only 31,900 acres. This achievement works out to 19.94% of the area originally planned.\(^{22}\)

Details of infrastructural facilities, quantity of unsold stocks, the marketability and the existing and further market avenues should have been taken into consideration before fixing the target. But this was not done for the year 1977-78 to 1981-82 (5 years).\(^{23}\)

\(^{21}\) Annual Reports for the years 1977-78 to 1991-92
\(^{22}\) Ibid
\(^{23}\) Ibid
PRODUCTION OF SEEDS:

The following important points in the production process are taken into account:-

Suitable lands with adequate irrigational facilities alone are selected. The breeder seeds supplied by the Tamil Nadu Agricultural University and State Seed Farms are multiplied, first as foundation seeds and then as certified seeds. The staff of the Seed Certification Department take up periodical inspections to assess whether the end seeds are free from mixing etc. Processing, grading and certification works are completed systematically and scientifically according to the norms prescribed. The services rendered by the field staff to the farmers from sowing to harvesting are free of cost. After certification, the seeds are released for sale i.e. to the farmers for commercial production.
Seasonality differs from crop to crop. For example, for paddy there are three seasons in Tamil Nadu namely, Khariff (Kuruwai) (1st June to 30th September), Rabi (Samba) (1st October to 31st January) and Summer (Thaladi) (1st February to 31st May). For Cotton, Millets, Pulses, Oil Seeds, Vegetables etc., seasonality differs.

Every year the Consortium has to fix the target for production from 1977-78 to 1991-92 (15 years). The Consortium fixed production target of 56,187 tons of seeds. But 15,302 tons of seeds alone were produced. This total achievement works out to 27.23% on the total target fixed. The production target fixed for the period 1977-78 to 1981-82 (5 years) is wrong, because the production (tagged) of cotton seeds was fixed taking into account the yield from standing crop at the close of the previous year. But paddy yield from the

24. Seed Multiplication Scheme Production File
standing crop at the close of the previous year + I & II crop of the current year were taken into account. Similar variations were noticed in respect of other crops like pulses, millets, oil seeds etc. Therefore, the production does not directly correlate with the actual area covered. With the result the percentage of achievement on production target is poor.  

MARKETING OF SEEDS:

The seeds produced are sold in Tamil Nadu, Karnataka, Andhra Pradesh, Maharashtra, Gujarat and Rajasthan, according to the conveniences of the individual societies. The trade mark "Kovai Seeds" has been registered and the patent rights are reserved. This brand name is being used by all participating societies. Department of Agriculture buys seeds from private dealers and

25. Ibid
Consortium. There is no tie-up arrangements with Co-operative Banks for supply of seeds as kind component of crop loan. The marketing potential in Co-operative outlets is not fully exploited. No provision for marketing cell is made in the scheme. Consortium did not fix the sales target till 1990-91. In the year 1991-92 sales target has been fixed. 13,111 M.T. of Kovai Seeds were sold by Consortium Societies.

Average sales per year is Rs.58.64 lakhs
Average sales per year is 874.06 Matric Tons

CONSTITUTION:

Consortium is administered by Central Co-ordination Committee from its inception and this Committee is constituted by the Tamil Nadu Government every year. The Committee meets periodically and examines all activities in general
and production programme in particular. So far 114 meetings have been convened from 24-4-1977. An executive wing headed by the Administrator is managing the day-to-day affairs of the Consortium. 27

AUDIT AND INSPECTION OF CONSORTIUM:

For the purpose of audit, the Kovai Seeds Co-operatives' Consortium is being treated as a "Unit of TUCAS". As per G.O.Ms.No.537 Co-operative Department dated 15-9-1987, the Registrar of Co-operative Societies inspects once a quarter. 28

VARIOUS PROBLEM IN PRODUCTION AND MARKETING AND WORKABLE SOLUTIONS:

The scheme contemplates the coverage of 2,000 acres of each participating society. In practice, it has not been achieved. If the production is based on assessment of market, carry over stock

27. Seed Multiplication Scheme Establishment File
28. KSCC Audit and Inspection File
can be reduced. The target for area and production has to be fixed taking into account the availability of parent seeds, market conditions and processing capacity besides financial position of the societies.

The problems faced in production and marketing are as follows:

It is difficult to get parent seeds for millets.

In many cases seeds produced are carried over to next season consequent on poor demand and higher price.

In case, when the crop season is once a year, the seeds produced cannot be marketed without revalidation for the next season.

There is competition in the market from reputed concerns like Parrys, Stanes and hundreds of
private dealers and Agriculture Department. It is difficult to sell unless the production cost is reduced. TUCAS gets supply of breeder and foundation seeds from Tamil Nadu Agricultural University, State and Central Farms and Agricultural Department. Consortium is of the opinion that Agriculture Department should be compelled to purchase their seed requirements from the Consortium and sell at subsidised rate to the farmers.

This Consortium is facing problems in marketing their products. High cost competition in seed business, lack of market intelligence, inadequate number of retail outlets and insufficient storage facilities are some of the problems which stand in the way of marketing the Kovai seeds.

29. KSCC - Production and Marketing Files
See also: Seed Multiplication Scheme Quarterly
Review Marketing Minutes
Establishment of the headquarters of the Consortium in the premises of the Tudiyalur Co-operative Agricultural Services Limited is an administrative problem. The technical, advisory and marketing services of the Consortium are fully utilised by TUCAS alone. Common leadership for both TUCAS and Consortium is also a problem. Though Consortium has not been registered under any law, it functions as a fullfledged registered co-operative body. Consortium has to depend on TUCAS for almost all its activities. Therefore, it cannot take any independent decision on any matter. Consortium never aims at its foremost object of arranging the marketing facilities to all the societies. Assets, movable and immovable properties have been created to the unregistered Consortium with the financial assistance of the Government and the
National Co-operative Development Corporation. Working capital assistance is not provided by Government or National Co-operative Development Corporation. The funds of the societies have already been locked up in creating immovable assets. Therefore, lack of funds is the severe handicap of the participating societies to implement seed project. Inclusion of Udamalpet and Pollachi Co-operative Marketing Societies with no infrastructural facilities rendered difficult for them to implement. The payment of interest on Government loans and borrowings for creation of fixed assets, depreciation on such assets, salary of the staff appointed for this scheme have been added to the cost of production which resulted in high prices of seeds than the price of seeds produced in Government farm. The higher prices result in difficulties of marketing and consequent accumulation of unsold stocks. The
Consortium was not registered as a Co-operative society to avoid party politicians not interested in the welfare of seed farmers being nominated by Government as members of the first Board of Directors. Such non-registration rendered it difficult to borrow funds for working capital resulting in the above problems.

PROBLEMS FACED IN EXECUTION OF THIS SCHEME:

The accounts of the Consortium are not audited as it is not a registered co-operative society. Therefore, the value of properties, liabilities, losses, balances under sundry debtors and sundry creditors cannot be correctly assessed. The employees of the Consortium apprehend an uncertain future as it is not a registered society.
This results in the lack of commitment on their part. Therefore, the responsibilities of repayment of Government dues and the proportion thereof among participating societies are uncertain. This results in differences of opinion among participating societies. The movable and immovable properties created out of Government finance are in the premises of the TUCAS. The headquarters of the Consortium is not equipped with adequate number of staff for technical supervision and marketing resulting in difficulties of technical supervision and marketing.

The following solution can be offered to the above (administrative and enforcement) problems:

All basic needed infrastructures as well as staff have to be provided, if necessary by borrowing from Government. The present Consortium should be

31. Seed Multiplication Scheme Implementation File
merged with TUCAS. Thus all properties, losses, liabilities and staff can be absorbed by TUCAS. After such absorption, TUCAS can levy charges on participating societies for services rendered. 32

SEED PROJECT ADMINISTRATION:

TUCAS obtains the breeder seeds from the Tamil Nadu Agricultural University, Coimbatore and the foundation seeds from the Agricultural Department. It supplies breeder or foundation seeds to selected seed farmers. The entire operations from sowing to harvest are supervised by its fieldstaff. A premium of 10 to 15½% over and above the market price is paid to the seed farmers as an incentive. The harvested crop procured from the selected members is scientifically processed under the direct supervision of TUCAS.

TUCAS has the following infrastructural facilities to process seeds. 33

32. Ibid
33. Seed Section Files
Ginning Factory - 10 Gins
Seed Processing Units - 6 Units
Seed Testing Lab - 1 Number
Godown - 5 Numbers

The technical wing of the project is headed by an Assistant Director of Agriculture as Project Officer. He is helped by a number of Field Assistants who are knowledgeable in production and processing. After testing the germination percentage and genetic purity standards in the laboratory, the seeds are tagged and distributed to the farmers for further propagation.

The details of production and sale of seeds for the last three years are given in Appendix No. XXV. 34

Good quality of seeds, timeliness of their supply and proximity of source of supply are the various reasons for the popularity of Kovai seeds. 35

34. Personal Interview with Project Officer on 10-9-91
35. Seeds Production and Sale Register
TUCAS is a pioneer in introducing seed technology for the benefit of the farmers. Though seed production could be confined to TUCAS area, it wanted to work in co-operation with other co-operatives so that different varieties of seeds suitable to different areas could be produced. Thus cotton seeds are produced by TUCAS and in Tirupur, paddy seeds in Gobichettipalayam, millets and pulses in Pollachi and Udumalpet and vegetables in all the society's areas. The processing was centralised so that the quality could be ensured by monitoring the operations closely. This also helped in the testing of seeds and their tagging and certification without loss of time. Thus the contribution of TUCAS in the production and marketing of seeds is immense. Though there are problems in co-ordination, TUCAS hopes to overcome them successfully with its variety and depth of interest and long experience.
4. PRODUCTION
4. PRODUCTION:

In any scheme for boosting agricultural output, the use of chemical fertilisers has an important role. India's soil though varied and rich is deficient in nitrogen and phosphorus - two plant nutrients which together with organic manure influence crop return. With population rising at a fast rate, the use of larger and larger doses of chemical fertiliser is the only way to augment our foodgrains production.

Indian farmers have been using very little of manure. Traditionally, urine of cattle is wasted and dung is dried and used as fuel. Further, the average farmer is so poor that he cannot afford to buy chemical manures, even if he knows how to apply them.¹

The farm residues such as paddy and wheat-straw which were set fire to and the ashes were incorporated into the soil. Such natural and farmyard manures supported a sustainable agriculture. But yields were not high. The population growth was explosive. Therefore, the need for increasing agricultural production in the short run became compulsory.

Modern chemical fertilizers were imported and used by farmers and they realised that such use increased production in the short run. The extension agencies were asked to propagate the fertilizers. Many fertilizer manufacturing companies came into existence. The co-operatives also started selling chemical fertilizers. Soon there was need for mixtures of fertilizers. The farmers could not apply the fertilizer in correct quantities due to communication gap between the
extension agencies and the farmers as also the illiteracy and ignorance of the farmers themselves. Coimbatore and Nilgiris are neighbouring districts. The Nilgiris grew potatoes, tea, coffee, etc. on a large scale due to the higher altitude and suitable climatic conditions.

The farmers growing these crops are in need of manure mixtures. But there were no organisation or co-operative to arrange for production of manure mixtures and their supply. Consequent to the increased demand for fertilizers, shortage in supplies and the prevailing high prices, there was a-dulteration on a large scale for profiteering by some of the private traders. Therefore, farmers were put to hardships due to high prices, adulterated fertilizers, their non-availability and hoarding. This enables the TUCAS to enter into the market and come to the
rescue of not only for its members but also for the farmers in the other districts. Thus the Board of Directors resolved that TUCAS not only buy and sell straight fertilizers but also produce manure mixtures needed for different crop varieties. Thus the fertilizer and manure mixture department of TUCAS came into existence. Straight fertilizers are produced by big fertilizer factories. These include Urea, Ammonium Sulphate, Muriate of Potash etc. TUCAS does not produce these fertilizers. These fertilizers are purchased by TUCAS and mixed to suit the needs of different crops. These are called manure mixtures and sold by the brand name of 'Asoka'. So TUCAS does not produce straight fertilizers but sells them. TUCAS produces manure mixtures.

2. Personal Interview with Special Officer Thirumal Bhaskaran on 17.8.90.
TUCAS wanted to supply all farm inputs under one roof to its members. The knowledgeable farmers demanded supply of good quality of fertilizers and manure mixtures from the society.

Therefore, TUCAS started supply of straight fertilizers in 1956. It also started producing manure mixtures in 1961. The brand name of the manure mixture produced by TUCAS is 'Asoka'.

The 14 varieties of manure mixtures were produced to meet the needs of its members, plantations cultivating different crops. These mixtures are being distributed throughout Coimbatore District through a network of 85 co-operative societies functioning as its agents.

5. Ibid
The Government ordered that Tamil Nadu Co-operative Marketing Federation would be the sole agency for the purchase and distribution of chemical fertilizers to all co-operatives in Tamil Nadu State. Therefore, the manure mixtures produced by TUCAS was also entrusted to TANFED for sales to co-operatives. Special mixtures for tea plantation are also prepared and supplied through TAN TEA (Tamil Nadu Tea Plantation Corporation Limited) and INCOSERVE, Coonoor.\(^6\) (The Tamil Nadu Small Tea Growers Industrial Co-operative Tea Factories Federation Ltd.).

The following are the income realized by way of sale of fertilizers:—

<table>
<thead>
<tr>
<th>Year</th>
<th>Income (Rs. in lakhs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988-89</td>
<td>18.28</td>
</tr>
<tr>
<td>1989-90</td>
<td>18.42</td>
</tr>
<tr>
<td>1990-91</td>
<td>18.50(^7)</td>
</tr>
</tbody>
</table>

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6. Fertilizer File

7. Ibid
Fertilizers are very essential for agricultural farming. Therefore, we have to boost the fertilizer production in India. The fertilizer production depends on availability of raw material and development of productive units. Therefore, the Government is making efforts to provide all the raw materials and modern machinery to the all productive units. In India the problem of selling the fertilizer product does not exist due to unsaturated condition of the agricultural inputs.

A number of steps have been taken to promote consumption of fertilizers. Large amount of short-term credit are being provided to enable farmers to purchase fertilizers and other inputs.8

8. Tamil Nadu Journal of Co-operation, April 1992 Vol.84, p.723
Particulars of manure mixtures produced by TUCAS for application to different varieties of crops and the manure mixture numbers are detailed in Appendix No. XXVI. In addition, special manure mixtures are also prepared for supply to tea and coffee plantations in the Nilgiris. These plantations also buy urea, ammonium sulphate, calcium ammonium nitrate, superphosphate, neem cake, and gypsum from TUCAS. Progress in the sale of manure mixture for over a decade are detailed in Appendix No. XXVI.

PESTICIDES:

The use of hybrid varieties of seeds and chemical fertilizers led naturally to increased agricultural production. But this, in the course of time, led to a number of pests and diseases.

9. Manure Mixture File
10. Ibid
which affected the crops seriously. The local varieties of crop were not affected by pests and diseases. To secure the benefits of higher technology and inputs, the crops had to be protected from the pests and diseases. The farmers resorted to buy pesticides on a large scale. Many of these pesticides were expensive. There were cases of retailers selling adulterated pesticides at exhorbitant rates. So TUCAS wanted to save the farmer's crops from destruction and farmers themselves from economic ruin. So it purchased and distributed pesticides and also sprayers and dusters. But the supply from companies was erratic and sometimes not forthcoming. Therefore, there was a need for manufacture and distribution of pesticides by TUCAS.

Thus a pesticides formulation unit along with a testing laboratory were put up by TUCAS in 1971.
TUCAS was already buying pesticides from the Agricultural Department and selling to its members. It got government permission to sell pesticides with subsidy. The values of pesticides sales are given in Appendix XXVII.

There were difficulties in the purchase of pesticides from the Government and private traders and their distribution. The difficulties included sale of sub-standard pesticides by many in the trade, non-availability and time. Adequate quantities of pesticides were also not available.

TUCAS set up the first pesticides formulation unit in the co-operative sector in Tamil Nadu in 1970. Financial assistance for this purpose was provided by National Co-operative Development Corporation and the State Government.

12. Ibid
It produced pesticides in different forms such as dusts, wettables and liquids. The formulation unit followed the standards of I.S.I. (Indian Standard Institution).

The varieties of pesticides produced by TUCAS are detailed in Appendix No.XX.13

The qualities of pesticides are tested in the laboratory set up for this purpose by this society.

TUCAS pesticides are being marketed through the net work of co-operatives in Tamil Nadu and Pondicherry. TUCAS responds to the tenders called for by the Agricultural Department and supplies pesticides ordered by the Department. TUCAS pesticides are also marketed in Kerala through

13. Ibid
co-operatives. As TUCAS maintains the quality of its pesticide, they are very popular among farmers.  

The particulars of sale of different varieties of pesticides for five years are given in Appendix No. XX.X.  

The annual installed capacity of the unit is 5,000 tons of dusts, 200 tons of wettables and 1,09,000 litres of liquids. Production during the last 16 years are detailed in Appendix No. XXXI.  

TUCAS is the only co-operative in the state offering the full range of pesticides with a licence to handle poisonous chemicals. These chemicals are sold to its 'A' class members at

14. Personal Interview with the Pesticides Lab Technician  
50% cost. Particulars of sale of insecticides by TUCAS for five years are given in Appendix No.XXXI. 17

Though the farmers used farmyard manure for long, the use of chemical fertilizer increased with the advent of green revolution in India. The Directors of TUCAS were able to understand the circumstance of the use of chemical fertilizers and started selling them to the farmers. They also realised the need for the preparation of manure mixtures suitable for different crops. The farmers do not have sound knowledge of chemical nutrients. The preparation of manure mixture and their sales by TUCAS enable the farmers to buy the particular manure mixture suitable to their crop. Thus TUCAS was able to make the farmers' needs for fertilizing all their crops.

17. Insecticides File
The introduction of formulation and marketing of pesticides by TUCAS helped the farmers to protect their crops from attacks of pests and diseases. As TUCAS ensured quality of the pesticides, the farmers had immense faith and their application of pesticides resulted in increased production and income.

TUCAS has a stock of 150 sprayers and rents them out at cost to its farmer members. On an average, they apply plant protection chemicals to cover about 10,000 acres per year. This society has also set up a service station for repairs and services.\(^{18}\)

**CATTLE FEED:**

The planners in India have now realised that Green Revolution alone cannot meet the basic nutritional needs of the country and they should
simultaneously bring about white revolution for stepping up the production of animal protein. Dairying is the most ancient occupation established in the rural setting of India. Land and cattle have traditionally been the two basic income yielding assets of Indian peasants. These cattle should be properly fed so that the yield would be increasing.19

TUCAS realised that it is absolutely necessary to diversify farming to increase income. So it made provisions in its credit portfolio for issue of loans for milch animals such as cows, sheep etc. This gave them income throughout the year unlike agricultural production whose income is seasonal. But these animals have to be high yielding varieties. Usually such animals are the off-spring of native animals crossed with exotic breeds. Supply of hybrid is not alone sufficient.

The animals have to be fed properly with adequate quantity of protein, fat, minerals etc. The quantum and the ingredients of their feed differ from animal to animal and vary with seasons. The farmers find it difficult to procure the correct quantity, quality and variety of milk but also to maintain the animals during the dry period. Therefore, TUCAS thought over the problems of the farmers and started producing animal feed not only for dairy but also for poultry.

It produces 300 tons of cattle feed and 100 tons of poultry feed per month. Both the poultry feed and cattle feed are distributed to its members and others throughout the district and also to government institutions.  

20. Sales Register
Confining farmers' activities to growing of crops is found insufficient and diversification of farming became necessary. Dairy, poultry and other allied activities became subsidiary occupations and sources of additional income to the farmers. TUCAS found it necessary to sustain these subsidiary occupations of its members and to nurture them. For this purpose, the cattle feed unit is started and the quality of the feed is such as to ensure high milk yield and sufficient strength to work animals (oxen etc.). TUCAS also hopes to produce the poultry feed and others (rabbit and piggery).
Consequent to the scarcity of labour and increased quantum of payment of wages to the labour by big industrialists, the workers started joining big industries in large numbers ignoring farm work. So there was a compulsion to use the machine instead of man. The engineering divisions of Agricultural Universities started bringing a large number of machines to do large scale farm operations. These machines increased in number and variety and required very small number of men to operate them. So the manufacture of machinery to replace the human labour became inevitable. Already the farmers enjoyed the services of repair, maintenance, servicing etc. of TUCAS equipment hiring division. And now the farmers demanded machines from TUCAS. Therefore, TUCAS obtained the designs from the Tamil Nadu Agricultural University and started
manufacturing agriculture machinery according to the designs and thus agro-tools industry of TUCAS came into existence.

A factory is an institution which is concerned with the manufacturing of raw materials into finished products by modifying, shaping and ultimately converting them into saleable form.

The organisation of a factory i.e. organisation of everything connected with its construction, management and plant, is as complex as the roundabout system of modern production itself. Its aim is to produce, in the best methods, with the greatest speed and at the cheapest cost. 21

There is a need for co-operatives to acquire and utilise technology in order to keep abreast with modern developments. Most of the technology

belongs to large corporations and multinationals who make money through its licensing, manufacture and sale.

Co-operatives can effectively facilitate the transfer of modern technology to the people since co-operatives are generally perceived to be working for the people's interest and welfare. Modern technology increases productivity and incomes and co-operatives are, therefore, quickly convinced of its merits.  

TUCAS has known the necessity of starting an industry. So it has established an Agro Tools Industry for fabrication of farm implements. Agricultural implements such as Power Sprayers, Hand Sprayers, Seed Drills, Hand operated groundnut decorticators, iron ploughs, bund formers, levelling

22. Tamil Nadu Journal of Co-operation, March 1990
Vol.81, p.497
boards, ridge ploughs, seed cleaner-cum-graders and other type of implements required by the farmers, are fabricated and supplied to them throughout the State.

TUCAS power sprayers are fitted with J.L.O.L. 35 engines or Villiers L.34 engines. A separate tank is also attached with the regular tanks for those who use kerosene as fuel. The technical applications of the power sprayers are given in Appendix No.XXXII.

TUCAS CULTIVATORS:

TUCAS makes cultivators to suit the requirements of all tractors. They are of robust construction. The frames are made out of channels or tabular square bars. The cultivator gives good performance even if the soil is clay or rugged with stones.

23. Sprayers File
Specifications of cultivators are given in Appendix No.XXXIV.:

TUCAS RIDGER:

TUCAS Ridger is made out of mild steel frame of 8 feet long and 1½ feet wide with adjustable wings from 1½ feet to 2 feet. They are made to suit Hindustan Fergusan, Kirloskar and Escort Tractors and are suitable to all kinds of soils, sandy or clay or rugged with stones. Specifications of the ridger are given in Appendix No.XXX\textsuperscript{IV}.:

TUCAS THRESHERS:

TUCAS Threshers are made out of quality timber. They are suitable to thresh all grains with 3 or 4 straw walkers, oscillating with one set of 3 sieves, winnower for cleaning and winnowing, fitted an axle and tyre wheel. Draw bar or yoke...
is fitted to facilitate drawal of bullocks or tractors. An electric motor with suitable switch and starter is fitted as a prime mover. Details of output per hour are given in Appendix No.XXXVI.  

TUCAS CHAFF CUTTERS:

TUCAS Chaff Cutters are made to cut all fodder crops both green and dry into bits of varying lengths. They are fitted with a flywheel having two knives for cutting fodders. They are also fitted with four fan blades for removing the cut feeders by blowing air. A clutch arrangement is also provided to control the feeding, which is caused by a set of feeding wheels. The whole arrangement is mounted on a sturdy M.S.Frame. A suitable electric motor, switch and starter are fitted for prime moving. Specifications of Chaff Cutters are given in Appendix No.XXXVI.  

26. Thresher File  
27. Chaff Cutters File
TUCAS SEED GRADERS:

TUCAS undertakes the fabrication of seed processing machineries. The crippen model seed cleaner-cum-grader designed by Tamil Nadu Agricultural University and fabricated by TUCAS can be used by seed growers for grading their seeds. It is suitable to clean and grade paddy, maize, jowar, sunflower, bajra, cotton, etc. Specifications of seed graders are given in Appendix No. XXXVII*.

The Tamil Nadu Agricultural University provides the society the latest developments in the farm implements. The society is fabricating the 'Paddy Harvester' designed by the University and sells to the farmers. This obviates labour shortage during harvest season.

28. Seed Graders File
The value of implements sold during last ten years are given in Appendix No. XXXX.29

TUCAS grants 50% subsidy to farmers who buy agricultural implements. Balance 50% is paid by the Agricultural Department as subsidy. For example, the cost of plough is ₹.320/-, the farmer has to pay ₹.160/- which he can get from Agricultural Department and the balance amount of ₹.160/- will be paid by the TUCAS. On the basis of a certificate issued by the Agricultural Department, TUCAS produces the implements. Because of the subsidy most farmers buy TUCAS agricultural tools.30 Department of Agriculture and TANFED directly place orders for agricultural implements with the TUCAS. Its

29. Agricultural Implements File, Administration Reports from 1982-92

30. Subsidy File
implements are sold all over Tamil Nadu. When compared to private parties, the cost of production of the agricultural tools of the TUCAS is cheap. Therefore, there is always great demand for TUCAS' implements.31

On receipt of bulk orders and in order to reduce the time limit, TUCAS entrusts some contractors with fabrication work at fixed rate. For example, for making a plough a contractor gets ₹37/- per unit.32

Though farm implements are given on hire to the farmers, some of the bigger farmers like to own the agricultural machinery. For this purpose, TUCAS started manufacturing agricultural machinery of various types with the latest designs obtained from the Agricultural University and started selling to

31. Personal Interview with the Manager, Agro Tools Section on 24.6.90
32. Ibid
the farmers. These are helping the farmers owning the machinery to do their operations at the right time and they did not have to wait for machinery. They also let out their own machinery to other farmers and earn additional income. TUCAS, therefore, has done yeomen service not only to the farm operations of all the farmers but also facilitated additional earnings to bigger farmers. More agricultural machinery in TUCAS area resulted in more mechanisation of farm services and labour savings as also additional crop and income.

'A' class members of 13 revenue villages in the area of operation get benefits from tractor hiring. Particulars of sale of manure mixtures, pesticides, agro-tools and seeds are given in Appendix No.XXX.X. 33

33. Manures, Pesticides, Seeds and Agricultural Sales File

Administration Reports for the years 1988-89, 1989-90, 1990-91
Coimbatore is called 'the Manchester of South India', as a large number of cotton spinning and weaving mills are located there due to the advantageous climate. The raw material, cotton, was required in large quantities. Cotton used to be purchased locally at Tirupur or imported from other states such as Guntur in Andhra Pradesh, Raichur in Karnataka as also from Maharashtra and Gujarat. These involved high transport cost and consequent increase in cost of the finished product. As Coimbatore, ideally suited for growing cotton due to its climate and soil, a number of good varieties of cotton such as M.C.U.5 and SUVIN are grown in this region. It was necessary to increase the production of cotton per unit of land and labour. It was, therefore, necessary to supply cotton to farmers with hybrid varieties of seeds along
with their required farm inputs and the requisite technology. The government extension agency are handicapped as they cannot supply all inputs under one roof and some of them lacked commitment. Therefore, TUCAS took up the responsibility for increasing cotton production as it is well equipped due to the functioning of its divisions in charge of seeds, pesticides and farm implements. So, the TUCAS formulated an intensive cotton cultivation project for this purpose.

TUCAS started this project so as to optimise the yield of cotton in the area, sale of cotton seeds to farmers and market the cotton grown by them at advantageous prices. The Government of Tamil Nadu sanctioned the scheme for one year from September 1965. On the recommendation of the Registrar, the scheme was continued. The staff

34. TUCAS Rural Bank Ltd., President's letter Rc.No. 626/62-63 dated 20-7-1962
35. G.O.Ms.No.1657, Food & Agriculture, dt.22-5-64
sanctioned for this purpose are one Agricultural Demonstrator, 2 fieldmen and 2 demonstration mairstries.\textsuperscript{36}

THE ESSENTIAL FEATURES OF THE SCHEME:

Originally TUCAS Co-operative Rural Bank operated cotton seed farms in 2,000 acres of lands belonging to its members. It increased the acreage to 4,000 acres by the fifth year of the project by increasing at the rate of 500 acres every year.\textsuperscript{37}

The seed farmers were supervised by the technical staff appointed for this purpose.\textsuperscript{38}

The cotton produced by the members are pooled, ginned and the lint stocked in society godown. This is marketed at favourable price. First grade seeds produced under the scheme are

\textsuperscript{36} G.0.Ms.No.3552, Agriculture Department dt.7-11-66
\textsuperscript{37} G.0.Ms.No.3374 Co-operation Department dt.14-10-67
\textsuperscript{38} G.0.Ms.No.3499, Co-operation Department dt.2-12-68
supplied to the Agricultural Department for seed purposes. The second grade seeds are sold to farmers as cattle feed.\textsuperscript{39}

The farmers are paid a cultivation advance of ₹.100/- per acre. The advance includes ₹.35/- per acre paid by the Agricultural Department to seed growers. The advance is recovered with interest from the sale proceeds.\textsuperscript{40}

A sum of ₹.1,00,000/- (rupees one lakh only) was received as financial assistance to set up a ginning unit and a godown. One third of the assistance is subsidy and the balance is loan payable in 20 instalments with interest.\textsuperscript{41}

\begin{flushright}
39. Ibid
40. G.O.Ms.No.112, Co-operation Department, dated 2Q-11-1969
41. Ibid
\end{flushright}
The bank secured the site for the ginning unit and godown (1.25 acres) from its funds. Out of the sum of Rs.1,00,000/-, Rs.45,000/- is the cost of ginning unit. Rs.25,000/- is the cost of godown. The balance of Rs.30,000/- was spent for the construction of office building, purchase of equipment etc.

The bank sanctions cotton cultivation loan of Rs.6.00 lakhs inclusive of Rs.70,000/- given by the Agricultural Department at the rate of Rs.35/- per acre.  

The scale of finance of cotton cultivation is Rs.9,550/- per acre. Members prefer to cultivate long staple cotton varieties like Sujatha and Suvin as they fetch higher prices. 50% of the loan is given as seeds, fertilizers and pesticides.

42. G.O.Ms.No.709, Co-operation Department, dated 8-10-1976
and the balance 50% in cash to meet the cost of labour. Harvested cotton Kapas are pooled and ginned at the factory of the society. The cotton lint is sold to the highest bidder to get the best price.43

A ginning factory with ten gins was established in 1966. A 63 KVA generator is installed to run the factory during the power cut.44

43. Short Notes on the Working of the Institution
44. Ibid
For quite a long time, the question of rural uplift through advancement of rural technology and innovation in indigenous methods did not receive adequate attention. Lately it has been realised that economic development of rural community is closely linked with productivity and availability of technical skill and facilities. Productivity also depends upon rural environ and innovative measures in farm and home practices. It has been realised that the advancement of rural technology should be transferred to the village community, so that they could enjoy the fruits of science and technology. The cow-dung gas plant is a step towards this goal.

The fuel crisis in early seventies necessitated the adoption of a new approach to
explore the non-conventional energy resources. The Fuel Policy Committee of the Government of India recommended the popularisation of Gobar Gas Plant as the alternative source of energy. The Government of India had accordingly decided to go ahead with a programme for installation of many gas plants. It was all agreed that banks should come forward to provide financial assistance to bring a large segment of rural people under their cover of credit and financial assistance. 45

TUCAS has realised the necessity of Gobar Gas Plant and has been given assistance to its members and others.

TUCAS undertakes the fabrication of Gobar Gas Plants of varying sizes from 1 cubic metre as per the specifications of Khadi and Village

Industries Commission. The society also arranges subsidy from the Government. It installs Gobar Gas Plants for domestic use and laboratory purpose.\(^46\)

TUCAS also manufactures and supplies Banking counters to other co-operative societies.

Lathe work, welding and repair works are also undertaken by this section. If there is any repair in the mill or ginning factory, those repair works are also attended to by the Agro-Tool section.

Repairs and servicing of farmers' sprayers are also undertaken by TUCAS. Seven permanent and six temporary workers are employed for these purposes.\(^47\)

Presently India in general and Tamil Nadu in particular suffer acute power shortage and

\(^{46}\) Gobar Gas Plants File

\(^{47}\) Personal Interview with Engineer (Agro-Tools) on 11.3.92.
per capita consumption is low. Therefore, renewable source of energy have to be mobilised for use. Gobar Gas Plant is an innovation suitable to the farmers. It helps farmers to meet the fuel needs of their homes but also spare some to the neighbours. These sources of energy is not season bound but is perennial. Therefore, TUCAS by the introduction of Gobar Gas Plant in the area of operation not only helped supply of energy to farmers but also saved electric power for the state. The other farmers follow the good example and produce and save more energy. The residues continues to be used as farm-yard manure. Therefore, TUCAS endeavours to use everything and waste nothing.
B. PRINTING PRESS:

There are about 35,000 co-operatives in Tamil Nadu under the control of different departments such as credit, consumer, marketing and miscellaneous co-operatives under the Registrar of Co-operative Societies, co-operative sugar mills under the Director of Sugar, Handloom weavers' co-operative societies and co-operative spinning mills under the control of Director of Handlooms and Textiles etc. All these co-operatives for their requirements of books, forms etc. depend co-operative printing press exclusively formed for the purpose. The co-operative society are its members but the printing co-operative are not able to meet the requirements of books and forms to the member co-operative societies. Therefore, some of the bigger co-operatives which are in need of these items on a large scale were permitted
to open printing presses. Such is the case with
Thanjavur Co-operative Marketing Federation and
TUCAS is the only primary co-operative society
in the state which was permitted to have a printing
press of its own. But TUCAS not only prints its
own requirements but also those of the participating
societies of the Kovai Seeds Consortium. The
printing press at TUCAS also does work for the
other co-operative societies and even private
persons. 48

A proposal to establish a Printing Press
was sent to Registrar by the society in 1981. This
is with a view to meet the printing requirements of
TUCAS and other co-operatives. The Registrar
accorded permission to the Kovai Seeds Consortium,
a unit of the TUCAS for the purchase of one
Treadle Printing Machine at the estimated cost of

48. Personal Interview with Thiru S. Kannappaswami, Additional Registrar of Co-operative Societies on 12.4.91
Rs.12,000/-. As it would not be economical to run a Printing Press exclusively to print bags and tags for the Kovai Seeds, it was proposed to undertake all jobs connected with the seeds project and the requirements of participating societies. This proposal was sanctioned by the Registrar in 1983 superseding the earlier sanction. 49

The Board of Directors of the society discuss the setting up of the press. The Board resolved to establish the press in the society's premises. The estimated cost was Rs.50,000/- to be met from the general funds of the society. This is to be recouped in five years. 50 The

49. Registrar of Co-operative Societies, Madras letter No. Rc. 27972/81/P4, dated 16-6-81.

50. Resolutions of the Board of Directors on 27-6-1983
Press was started in December 1983. Inauguration was attended by the Minister of Co-operation. The press made a net profit of Rs. 5,000/- per annum after the payment of interest on investment and providing depreciation. This was reported to the registrar.

The particulars of the machineries installed in the Press are given in Appendix No. XXXX.

All the required books, forms, tags and registers are produced by the press. Besides, the work of sister co-operatives are also undertaken. One lakh cloth bags per annum are stitched and printed in the press.

52. Personal Interview with Office Superintendent.
TUCAS as the leader of Consortium of societies was permitted to save its printing press to meet its needs cheaply and in time. It is also able to meet the needs of other co-operative societies in the district. It is also able to supply the needs of the offices of the government and local authorities. Thus the Printing Press of TUCAS is able to help, meet the needs of TUCAS and its Consortium but also other co-operative societies and extend its services to even government organisations outside the co-operative fold.
The project officer of the Small Farmers Development Agency, Coimbatore wanted to assist the farmers. A proposal to sanction share capital to the small and marginal farmers producing seeds was submitted. The Registrar of Co-operative Societies, recommended the proposal. 55

The Government sanctioned this proposal under the Integrated Rural Development Programme. 56

Under this scheme, a small or marginal farmer gets a loan of Rs. 40/- or the value of four shares whichever is less. This loan is repayable in two years. 57

57. Ibid
Though India can boast of a very large number of different kinds of co-operative societies as well as the huge volume of their turnover, the quality of co-operative leaves much to be desired. There is too much of politicisation, officialisation and interference in the day-to-day work of co-operative to their detriment. The members in many cases lack loyalty. There are huge overdues consequent to default of the members. The employees always demand more wages and perks. There are cases of misappropriation of valuables, diversion of stocks to black market and irregular trading activities. All these lead to losses and dormancy. Therefore, it is necessary to educate not only the members but also employees and government servants for the healthy growth of the co-operatives. The co-operative managements
required professionalisation and training in management practices as well as the needed technologies. Therefore, TUCAS realised the prevailing situation and wanted to rectify the mistakes, to promote the healthy growth of the co-operatives. There are two co-operative colleges and a number of co-operative training institutes in the districts. They impart co-operative training to the employees and office bearers. But practical training has to be taken at the field level in the co-operative societies. TUCAS with its diversified activities, comprehensive services and efficient administration serves as a model for practical training and it also serves as the adopted or training society. Those that get the theoretical training are sent to TUCAS for practical training. TUCAS also sends its personnel to different fora for practical aspects of
management training and technology. It conducts members' education classes. Students of co-operative colleges and agricultural universities as well as employees of co-operative societies participate in the training programme. They visit and study its operations.58

The society is conscious of modern knowledge in practical business management and technology. It endeavours to provide training to its staff in modern management practices. Agricultural Project Planning, network techniques, financial and marketing management, problems in fertilizer marketing, technology in extraction of essential oil are some of the areas covered by TUCAS education and training.59

58. Personal Interview with Former Secretary of TUCAS on 13.8.
59. Personal Interview with Special Officer M. Elangovan on 3.9.91
E. PUBLIC RELATIONS:

All the primary co-operative societies in the state were superseeded and special officers from government were posted in the place of the existing elected Board of Directors. Thus the contact between the society management and its members was rendered difficult. The members of the society were not able to know the progress and problems of the society. Therefore, it had become necessary to keep members informed about the activities of the society and keep in regular contact with its members. Therefore, TUCAS created the post of a Public Relations Officer whose duty is to be in regular and frequent contact with its members and keep them well informed about the co-operative in general and the activities of TUCAS in particular. There are number of visitors to the society to study its diversified activities.
There are also study visits by the trainees from co-operative colleges, co-operative training institutes and other colleges and universities work from within and outside the state to study co-operation as a special subject. These people are supplied with all the information relating to the activities of the society. The Public Relations Officer takes them round and keep them well informed. The Public Relations Officer keeps in contact with the Press, All India Radio and Television networks. Handouts are prepared. A film on working of the TUCAS has also been prepared and shown in the villages to educate the rural masses.\textsuperscript{60}

\textsuperscript{60} Personal Interview with Public Relations Officer on 15\textsuperscript{th} 2, 9
TUCAS maintains a large number of vehicles, including cars, vans, tractors, two wheelers etc. TUCAS was buying the fuel requirements of these vehicles from petrol bunks of private dealers. The lubricating oils were also purchased from outside. As the members of TUCAS started owning farm machinery, they also demanded supply of fuels, lubricating oils etc. At times of hardship of supplies, TUCAS and its members had to suffer and the farm operations got delayed. Sometimes the season was lost. Therefore, a petrol bunk was put up in TUCAS premises on the Mettupalayam Road to ensure the needed supplies of fuels, oils etc. not only to TUCAS vehicles but also to those of its members and others.

61. Fuel Consumption and Expenditure Register
A petrol bunk was started in 1972 with the assistance of ESSO Company at the cost of Rs.90,000/-. A service station was also opened to carry out repairs of the tractors, lorries, vans, drillers and motor cycles. The particulars of sale of petrol and diesel for nine years are given in Appendix No. XXXIII.  

The need for the supply station for fuel was felt consequent to the increase in the number of farm machinery in the area of TUCAS. TUCAS is not willing to approach the private dealers for this purpose apprehending adulteration and exorbitant rates. Therefore, it started its own fuel supply unit and put up a petrol bunk not only to meet its own needs but also those of its members.

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62. Petrol Bunk Register, TUCAS Special Short Notes 31-12-1988, General Accounts Register 1980-89
63. Petrol Bunk Register
members and others. This helped supply at cheaper rate as also in time. The scarcity in the area is not felt. Thus TUCAS is able to meet the supplementary needs of the members' farm implements.

Apart from the above services, the society undertakes the supply of essential commodities through ten village ration shops.

Under 'One village, one shop' system of the Tamil Nadu Government, the TUCAS opened village

*"One village one shop" system was formulated and implemented by the Government of Tamil Nadu with effect from 26-11-1978 in order to supply the essential commodities and non-controlled articles to the public in time and at reasonable prices.

G.O.Ms.No.224 Co-operation Department dt.31-3-1978
G.O.Ms.No.568 Co-operation Department dt.16-1-1978
Registrar of Co-operative Societies circular No.
10/78 dt.26-11-1978
shops at Pannimadai and Vellakinar in 1979 for the distribution of essential commodities and non-controlled consumer articles to the public. The Government had already opened eight village shops in 10 revenue villages which are under the jurisdiction of TUCAS. The particulars of sales in two village shops run by the society are given in Appendix No. XXXXXII.

64. Sales Register and Bill Books