In the last chapter, we have tried to study the organisations and working of specialised bodies promoted by business and industry like export promotion councils and local productivity councils. These bodies cater to only one aspect of business and develop in their organisations specialised knowledge and expertise regarding these subjects. Similarly business and industry have come together and promoted cooperative research associations to carry on technical and economic research. In this chapter it is proposed to undertake a study of such organisations in Maharashtra State.

9.1 Growth of Research Associations

In the technological development of any industry, the order of development is usually (a) control and improvement of existing processes, (b) development of new processes and (c) development of new products. The relative emphasis that is given to these three areas depends on the level of sophistication of the industry, the needs of the consumer and ability and willingness of the industry to invest money in research. But there is no doubt that research and development along these lines
is necessary for any industry for its competitive survival.

Besides this type of industrial research, economic and commercial research also becomes equally important. It provides very useful data for long term and short term planning, tools for economic evaluation and assists in taking important decisions in the areas of capital investment and marketing.

Research costs lot of money and therefore individual small business units can hardly afford spending on research. However, large business houses have their own R and D departments and they can carry out independent research for their own organisations. In this connection mention may be made of CISA Research Centre, Sarabhai Technological group, Hindustan Lever Research Centre, Jyoti R and D Centre, Central Design and Development Centre of HSL, Central Machine Tool Institute of IMT, ACC Research Centre etc.

But such research oriented concerns are very few in our country and therefore the most effective way by which small and medium scale units can reap advantages of research is to form cooperative research associations by coming together and pooling their resources. This is being done in many advanced countries like Germany, Netherlands, Belgium and U.K. In U.K. alone there are about 50 such research associations carrying on research in different branches of industry.
In India, a beginning was made in this field by Ahmedabad Millowners in 1947. They set up Ahmedabad Textile Industries Research Association (ATIRA) to carry out applied and basic research in the field of textile technology. The Council of Scientific and Industrial Research of Government of India subsequently came forward and encouraged setting up of such research associations and also evolved a scheme of financial assistance to these bodies. As a result, during the last twenty-five years a number of such research associations have been established in the country. Important among them are: The Silk and Art Silk Mills' Research Association (SASMIRA), Bombay Textile Research Association (BTRA), Indian Rubber Manufacturers' Research Association (IRMRA), the Indian Jute Industries Research Association (IJIRA), the South India Textile Research Association (SITRA), the Indian Paint Research Association (IPRA), and Tea Research Association (TRA).

From among these associations, the first three i.e. SASMIRA, BTRA and IRMRA are located in Bombay in Maharashtra and it is proposed in this Chapter to examine the organisation, functions and working of these three associations.

As regards economic research, there are two organisations in Maharashtra i.e. Maharashtra Economic Development Council and Association of Indian Industry and Trade. Apart from these two bodies there is an IMC Economic
Research and Training Foundation promoted for the purpose of economic research by Indian Merchants' Chamber. The organisation, finances and working of these bodies have been explained in the latter half of this chapter.

9.2 Lead taken by Industry Associations

All the three associations in Maharashtra i.e. SASMIRA, BTRA and IRMIRA have been promoted by the trade or industry associations of their respective industries. Thus Silk and Art Silk Mills' Association Ltd. took a lead in promoting the Silk and Art Silk Mills' Research Association (SASMIRA). As early as 1947, the members of SASMA resolved in a general meeting to establish a research institute. The Association raised necessary funds for the research institute by a levy on yarn distributed by the Association. By making sacrifices and contributing small sums periodically, the members collected a sum of Rs. 15 lakhs by 1949. This sum was handed over to the Council of Scientific and Industrial Research as the first instalment of Association's contribution to promote a research association. SASMIRA was registered under Societies Registration Act 1860 on 12th January 1950. The SASMA and its members continued to contribute to SASMIRA and by 1957, a sum of Rs. 50 lakhs was contributed by the members to the Research Association.

In case of Bombay Textile Research Association, the Bombay Millowners' Association had taken the lead and the
entire scheme was sponsored by the Millowners' Association. BTRA was registered under Societies Registration Act 1860 in April 1954. The Association took immediate steps to establish a Research Institute. The construction of the buildings commenced in April 1958 at Ghatkopar in Bombay on a 23 acre plot of land. By July 1960 the laboratory buildings were completed and fully equipped with pilot plant and modern laboratory equipment. Thus the scheme envisaged by the Millowners' Association, Bombay, fructified in a record time of about two years and half.

The Indian Rubber Manufacturers' Association was established in September 1959 as a result of the efforts of the Indian Rubber Industries Association, Bombay and Association of the Rubber Manufacturers in India, Calcutta. The IRMA is also registered under Societies Act 1860. Initially instead of setting up its own research laboratory, the Association undertook some research problems at the National Chemical Laboratory, Poona. Then it was proposed that IRMA should establish two research laboratories one at Bombay and another one at Calcutta. The Government of Maharashtra has allotted a plot to IRMA in the Wagie Industrial Estate, Thana, for the purpose of establishing a laboratory. The building of the laboratory is now ready, the chemical section in the laboratory is completely set up and the equipment and machinery required for rubber
processing and physical testing is on the way and planes are ready for their immediate instalment.

This is how all the three associations have been set up in Maharashtra State.

9.3 Organisational Set-up

All the three associations have more or less a similar organisational set up. They have all been registered under Societies Registration Act and the provisions contained in their constitutions are more or less similar except in case of entrance fees or membership subscriptions.

(a) Aims and Objects

The aims and objects for which these Associations have been set up are also more or less similar. SASMIRA's objectives are to undertake, carry on or help to carry on research and other scientific work in connection with the manmade fibres weaving industry and other allied trades or industries, to direct research towards the investigation and improvement of raw materials used in the manufacture, weaving and wet processing of manmade fibres and fabrics, the development of machinery and appliances used in the industry and the improvement of manufacturing process for greater productivity, and to impart technical education in the technology of manmade textiles to the personnel engaged at various levels in the industry and thereby to help the industry to build up a competent, qualified technical cadre.
The aims and objects of BTIA are also similar. According to its Memorandum its main objects are to carry out fundamental research on raw materials comprising cotton and its blends with manmade fibres and the processes involved in converting fibre to the finished product, to undertake applied research on all aspects of technical problems of immediate concern to the industry, to develop research results to the pilot plant stage, to undertake textile machinery research and development and instrumentation, to organise qualitative and operational studies of industrial processes in member mills with a view to increasing productivity and efficiency, to build an up-to-date library and undertake dissemination of knowledge of the latest developments in textile technology to the technicians and management of mills through publication of research results and abstracts of the work done in other parts of the country.

The main objects for which IRMRA has been established are to promote research and other scientific work in connection with the rubber manufacturing industry and other allied trades or industries, and for that purpose to establish, form, equip and maintain laboratories, workshops or factories, and conduct or carry on experiments, and to provide funds for research work and to encourage and improve the education of persons who are engaged or are likely to be engaged in the said trades or industries.
(b) **Membership**

All the three associations admit individuals, associations, firms and corporate bodies as their members. However, the categories of membership, entrance fees to be paid by them, their annual membership subscription differ in case of these associations.

SASMIRA has five categories of membership: Ordinary, Associate, Delegate Members, Members appointed by Government and Honorary members.

Persons, firms and corporations engaged in the industry are termed as ordinary members. Initially 319 such individuals, firms and companies have contributed sums ranging from Rs. 1250 to Rs. 60,000 each and a total amount of Rs. 20,91,600 has been collected in this manner. From among these contributory members, 184 are from Bombay and 135 are from outside Bombay. All these are called original ordinary members and they are not eligible to pay any entrance fees. These members have votes in proportion to their initial contribution as follows:

1 vote for contribution between Rs. 1,250-2,500 to SASMIRA

2 votes  - do -  - do - Rs. 2,501-5,000 to -do-

3 votes  - do -  - do - Rs. 5,001-10,000 to -do-

4 votes  - do -  - do - Rs. 10,000-15,000 to -do-

5 votes for contributions above Rs. 15,000.

The annual subscription for these members was introduced in 1963 and the amount is decided from time
to time by the General Body and there is no provision for fixed annual subscription in the constitution of the Association. Since its introduction, the subscription schedule is changed only once in 1970. Details of the subscription schedule is given in the Appendix I to this Chapter.

Associate members must be scientific workers, press-men and others connected with the said trades or industries, delegate members are delegates of other associations established for similar purposes, members are appointed by Government or local bodies who make substantial contribution to the funds of the Association in the form of recurring or non-recurring grants and Honorary members are those who are elected by the General Body for special services or special causes. From among these members, associate members have to pay annual contribution to the Association while others do not have to pay any contribution. The members from all the above categories do not have any voting rights.

In case of BTRA, there are three categories of membership: ordinary, associate and donor members. Ordinary members are those who are accepted as ordinary members prior to 16th September 1957 and those whose business or part of business is cotton spinning, weaving, processing or finishing and who carries on this business in Zone I as defined by the Cotton Textiles Fund Committee.
This Zone comprises of all mills in Maharashtra, old Hyderabad State, Madhya Pradesh excluding old Madhya Bharat State, Madhya Pradesh excluding old Madhya Bharat portion and south of Billimora of Gujarat. This zonal demarcation is not beyond doubt and the matter is currently being reviewed.

Associate members are those who are engaged partly or fully in cotton spinning, weaving, processing or finishing but who are located outside Zone I.

Ordinary members have voting rights while associate members do not have a voting right.

Donor members are those who donate a sum of not less than ten lakhs of rupees over and above any sum by way of entrance fees already paid or payable after the admission as a member. According to the constitution, a maximum number of five donor members can be enrolled and all of them will automatically be members of the council. Donor members can be enrolled only if a vacancy occurs in the Donor membership.

As regards the annual membership subscription, every year an extra ordinary meeting is called and the amount payable by the mills is decided by the members attending this extraordinary meeting. For the year 1972-73, the share of contribution towards recurring expenditure of BTRA was to be collected from ordinary Members and Associate Members (Mills) on pro-rata basis, i.e. in the
same proportion as the entrance fee paid by the ordinary member mills or the entrance fee that an Associate member-mill would have paid had it enrolled itself as an ordinary member, is to the total entrance fee paid by all the ordinary members and associate members (mills) subject, however, to a minimum contribution of Rs. 3,000 and a maximum contribution of Rs. 12,000 in the case of Associate members (mills) situated outside BTRA zone.

As regards members whose business does not relate to cotton spinning, weaving and/or processing they were required to pay annual contribution for the year 1972-73 at the rate of Rs. 1,100 per rupees one crore of gross turnover during the respective preceding year of their accounting subject to a minimum contribution of Rs. 750 and a maximum of Rs. 7,000.

BTRA has prescribed three schedules of entrance fees: two for ordinary members and one for associate members.

For ordinary members whose business or part of his business is cotton spinning and weaving entrance fees are to be calculated on installed productive capacity at 30 times the undermentioned rate.

<table>
<thead>
<tr>
<th>Productive capacity</th>
<th>Basic rate applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Greater Bombay</td>
</tr>
<tr>
<td>1. For every 1000 Mule spindles or part thereof</td>
<td>17.50</td>
</tr>
<tr>
<td>2. For every 500 Ring spindles or part thereof</td>
<td>17.50</td>
</tr>
<tr>
<td>3. For every 50 looms or part thereof</td>
<td>40.00</td>
</tr>
</tbody>
</table>
For ordinary members whose business is dyeing or bleaching and/or printing or finishing entrance fees are to be calculated at 30 times the undermentioned basic rate applicable.

<table>
<thead>
<tr>
<th>Basic rate applicable</th>
<th>Greater Bombay</th>
<th>Upcountry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rs. P.</td>
<td>Rs. P.</td>
<td></td>
</tr>
</tbody>
</table>

For every Rs. 10,000 or part of Rs. 10,000 of the value at the cost as shown in the last Balance Sheet (without depreciation) of the plant, buildings and land appropriated for the said business.

5.00 4.00

The constitution also prescribes minimum entrance fees at Rs. 22,500 where Greater Bombay site is applicable and Rs. 15,000 where Upcountry site is applicable.

For Associate members entrance fees will have to be paid as follows:

(a) For those whose business is outside zone I and for those whose business is not cotton spinning, weaving, processing or finishing entrance fees are Rs. 5,000.

(b) Those whose business is cotton spinning, weaving, processing or finishing and those who are in Zone I but who are admitted as associate members at their own specific desire have to pay entrance fees of Rs. 25,000 if their business is in Greater Bombay and Rs. 15,000 if their business is outside Greater Bombay. This category of members can become an ordinary member at any subsequent
date by paying the difference between the entrance fees payable by an ordinary member and the entrance fees already paid by them as associate members.

In case of IRMRA, there are four categories of membership: Life members, Ordinary members, Members appointed by Government or Semi-Government bodies making contributions to the funds of the Association and Honorary membership elected by the General Body for special service or special cause. Only Life and Ordinary members are entitled to vote at the meetings.

Life members of the Association are only two: The Association of Rubber Manufacturers in India, Calcutta and the Indian Rubber Industries Association, Bombay. They have contributed Rs. 50,000 each to the IRMRA and they have not to contribute any amounts by way of annual membership fees.

Ordinary members are individuals, firms or associations engaged in the manufacture of rubber products and whose establishments are registered under the Factories Act. Two different rates of subscription are fixed for ordinary members. Those members who send their application through a Life member and whose annual consumption of rubber is 50 tons per year or above has to pay Rs. 500 annually and if consumption is below 50 tons, Rs. 250 annually. In case of other ordinary members whose annual consumption of rubber is 50 tons minimum per year or above have to pay
Rs. 750 annually. If consumption is below 50 tons, they have to pay Rs. 300 annually. The admission fee for all members is Rs. 500.

The constitutions of SASMIRA and IRMIRA lay down that any foreigner or foreign corporation or corporation under foreign control cannot become member of the Association. These constitutions also define the words foreigner, foreign corporation and corporation under foreign control in a detailed manner.

(c) Council

The business of all the three associations have been managed by councils elected by the members.

In case of SASMIRA, the council consists of not more than 25 and not less than 10 members. Out of these members four members are to be nominated by the Council of Scientific and Industrial Research, 5 members are to be coopted who may not be members of the Association and the remaining members are to be elected by the ordinary members of the Association. Every year one third of the members of the Association retire and elections are held to fill in these vacancies.

The constitution of BTRA makes a provision for a council of 24 members. Out of these eight are elected members, three directors of the Regional Institute at Bombay,1 Coimbatore and Ahmedabad are ex-officio members,

1 The research associations at Ahmedabad i.e. ATIRA and at Coimbatore i.e. SITRA render services of similar nature

Continued/....
three representatives are appointed by the Council of Scientific and Industrial Research, five donor members automatically become members of the Council and the Secretary of the Association is ex-officio member of the Association. The Council can also coopt three scientifically or technically qualified persons to act as members of the council and may also coopt one Associate member or his representative on the council. The term of the council is three years and every third year, one third of the elected members retire and the vacancies are to be filled in by elections by ordinary members of the Association.

The IRMRA constitution provides for a council of not more than 14 and not less than 5 members. This council comprises of 3 representatives of each of the two life members of the Association, 2 representatives to be elected by ordinary members and one representative each of the Ministry of Education and Scientific Research, Ministry of Commerce and Industry, Council of Scientific and Industrial Research, Development Wing of the Ministry of Commerce and Industry, National Chemical Laboratory, Indian Standards Institution, and Rubber Board. The

and in the interest of the textile research and coordination, the Directors of the respective associations are made ex-officio members in other associations. SITRA and ATIRA also have similar provisions in their constitutions for ex-officio membership of the Director of BTRA. But all the three associations are independent societies.
Director of Research of the Association is an ex-officio member of the Council. The Council of Scientific and Industrial Research has also a right to appoint three additional members on the council. The term of office of each council is one year and every year one third of the elected members of the council retire and the vacancies are filled in by elections by ordinary members.

The President and Vice-President are elected every year by the council. This provision is common in case of all the three Associations.

The councils have sole control in regard to all matters relating to the management and organisation of the respective Associations. They can prepare bylaws, rules and regulations for the administration and government of the Associations and for carrying its objects into effect. They can appoint officers and staff, take all decisions in regard to financial management of the Association, can enter into negotiations and contracts with any other organisations and take all such decisions with a view to carrying out the day to day activities of the Association.

(d) Research

The constitutions of all the three councils provide for a full time Director of Research who is responsible for the general direction and supervision of the research work undertaken by the Association. This Director is appointed by the council of the respective Association and
this appointment is generally subject to the confirmation by the Government of India.

No member of the Association is entitled to seek disclosure of or any information in respect of any such research work or make use of any such information except in strict accordance with the rules and regulations made by the council of the Association.

All the three constitutions also provide provisions relating to undertaking to be signed by the staff of the council as to the secrecy regarding the work carried on in the Association. Every member of the council, director of research, officer or any other responsible person employed in the Association, before entering upon his duties, sign an undertaking to observe strict secrecy respecting the progress and results of all researches of which he shall obtain knowledge during the course of his duties.

Another important provision is regarding the contract to be signed by employees of these associations. Every employee of these associations engaged on research or other scientific work has to sign a written contract that he will, in consideration of his employment, hold exclusively for the benefit of and assign to the association at the cost of the association all rights and ownership of any discovery, invention, design, or other result arising in the course of such employment upon such research or other scientific work.
The clauses regarding research as mentioned above are the same in case of all the three associations.

### 9.4 Finances of Research Associations

Out of the three associations accounts were available of SASMIRA and BTRA. In spite of the best efforts the accounts of IRMRA were not made available. Hence the accounts of only two associations have been analysed here. The analysis is based on their accounts of 1970-71.

Table 9.1 presents the income and expenditure in a consolidated form.

**Table 9.1. Income and Expenditure of SASMIRA and BTRA**

<table>
<thead>
<tr>
<th>Name of organisation</th>
<th>Income</th>
<th>Expenditure</th>
<th>Surplus or Deficit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1969-70 SASMIRA</td>
<td>4,75,136</td>
<td>9,72,822</td>
<td>- 4,75,136</td>
</tr>
<tr>
<td>BTTRA</td>
<td>17,80,048</td>
<td>17,07,152</td>
<td>+ 72,896</td>
</tr>
<tr>
<td>1970-71 SASMIRA</td>
<td>9,47,946</td>
<td>10,64,623</td>
<td>- 1,16,677</td>
</tr>
<tr>
<td>BTTRA</td>
<td>19,45,513</td>
<td>19,07,728</td>
<td>+ 37,785</td>
</tr>
</tbody>
</table>

The total budget of BTTRA is considerably larger than that of SASMIRA. For both years 1969-70 and 1970-71, BTTRA had a surplus budget while SASMIRA had a deficit budget. In 1969-70 SASMIRA has a deficit of Rs. 4,75,136 and in 1970-71 a deficit of Rs. 1,16,677. In 1970-71, there is a sudden rise in the income of SASMIRA. This is
because of the additional grant received from C.S.I.R. In 1969-70, a recurring grant of Rs. 1,46,200 was received while in 1970-71, a recurring grant of Rs. 4,82,875 (which included a sum of Rs. 1,02,875 relating to previous year) was received by SASMIRA.

Both the Associations had large fixed assets and their details are presented in Table 9.2.

Thus SASMIRA had a total investment of Rs. 67.60 lakhs and BTRA had a total investment of Rs. 85.05 lakhs in fixed assets. The largest investments are in buildings - Rs. 45.12 lakhs in case of SASMIRA and Rs. 28.50 lakhs in case of BTRA. SASMIRA has two buildings of its own. One is SASMIRA building on Dr. Annie Besant Road, Worli, Bombay (value Rs. 37.08 lakhs) and another one, Resham Bhavan on Veer Nariman Road, Bombay (value Rs. 8.03 lakhs), where the offices of Silk and Art Silk Mills' Association are located. In machinery and laboratory equipment, large amounts have been invested - Rs. 9.18 lakhs by SASMIRA and Rs. 20.67 lakhs by BTRA. BTRA has built staff quarters and has invested therein an amount of Rs. 9.55 lakhs, while SASMIRA has not done so.

The income and expenditure of SASMIRA and BTRA under different heads have been shown in Tables 9.3 and 9.4.

The main sources of income of both the associations are membership subscription and grant-in-aid from the Council of Scientific and Industrial Research. In case
Table 9.2. Fixed Assets of SASMIA and BTRA as on 31-3-1971

<table>
<thead>
<tr>
<th>Assets</th>
<th>SASMIA (value Rs.)</th>
<th>BTRA (value Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Land</td>
<td>4,01,912</td>
<td>6,87,025</td>
</tr>
<tr>
<td>2. Buildings</td>
<td>45,12,090</td>
<td>28,50,050</td>
</tr>
<tr>
<td>3. Lifts</td>
<td>1,92,119</td>
<td>-</td>
</tr>
<tr>
<td>4. Gas and Vacuum Installations</td>
<td>-</td>
<td>9,324</td>
</tr>
<tr>
<td>5. Air-conditioning Plant Machinery</td>
<td>-</td>
<td>6,25,639</td>
</tr>
<tr>
<td>6. Machinery, Laboratory Equipment</td>
<td>9,18,409</td>
<td>20,67,524</td>
</tr>
<tr>
<td>7. Electrical Installation</td>
<td>2,68,375</td>
<td>4,13,226</td>
</tr>
<tr>
<td>8. Office Equipment</td>
<td>47,534</td>
<td>69,735</td>
</tr>
<tr>
<td>9. Furniture and Fittings</td>
<td>3,36,340</td>
<td>2,56,614</td>
</tr>
<tr>
<td>10. Vehicles</td>
<td>45,318</td>
<td>97,878</td>
</tr>
<tr>
<td>11. Workshop</td>
<td>-</td>
<td>1,83,559</td>
</tr>
<tr>
<td>12. Library</td>
<td>38,269</td>
<td>86,682</td>
</tr>
<tr>
<td>13. Staff Quarters</td>
<td>-</td>
<td>9,55,419</td>
</tr>
<tr>
<td>14. Drainage and Water Supply</td>
<td>-</td>
<td>2,02,288</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>67,60,369</strong></td>
<td><strong>85,05,165</strong></td>
</tr>
</tbody>
</table>
### Table 9.3. Income under different heads of SASMIRA and BTRA (1970-71)

<table>
<thead>
<tr>
<th>Name of organisation</th>
<th>SASMIRA</th>
<th>% to total income</th>
<th>BTRA</th>
<th>% to total income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Membership Subscription</td>
<td>77,190</td>
<td>8.14</td>
<td>10,08,860</td>
<td>52.10</td>
</tr>
<tr>
<td>Government Grants</td>
<td>4,82,875</td>
<td>50.93</td>
<td>8,20,748</td>
<td>41.20</td>
</tr>
<tr>
<td>Testing Fees</td>
<td>1,25,322</td>
<td>13.22</td>
<td>56,286</td>
<td>3.11</td>
</tr>
<tr>
<td>Interest on Deposits</td>
<td>11,406</td>
<td>1.23</td>
<td>18,233</td>
<td>1.19</td>
</tr>
<tr>
<td>Income from Surveys</td>
<td>58,000</td>
<td>6.12</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Technical service charges</td>
<td>45,600</td>
<td>4.84</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Income from Training courses</td>
<td>24,615</td>
<td>1.50</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>1,32,933</td>
<td>14.02</td>
<td>41,383</td>
<td>2.50</td>
</tr>
<tr>
<td>Total</td>
<td>9,47,946</td>
<td>100.00</td>
<td>19,45,513</td>
<td>100.00</td>
</tr>
<tr>
<td>Head of Expenditure</td>
<td>SASMIRA</td>
<td>BTRA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>----------</td>
<td>-------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Salaries</td>
<td>5,69,058</td>
<td>12,16,779</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Contribution to staff Provident Fund</td>
<td>37,428</td>
<td>56,246</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Contribution to Staff Gratuity</td>
<td>15,000</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Staff Medical Aid</td>
<td>9,387</td>
<td>19,180</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Rates and Taxes</td>
<td>9,626</td>
<td>24,344</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Insurance</td>
<td>8,208</td>
<td>28,833</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Auditors' Fees</td>
<td>1,000</td>
<td>3,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Electricity charges</td>
<td>12,433</td>
<td>44,339</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Printing and Stationary</td>
<td>31,284</td>
<td>21,736</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Postage and Telegrams</td>
<td>7,757</td>
<td>5,626</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Travelling and Conveyance</td>
<td>58,236</td>
<td>60,910</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Advertisement</td>
<td>2,477</td>
<td>4,901</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Subscription</td>
<td>19,621</td>
<td>27,201</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Laboratory Expenses</td>
<td>20,006</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Pilot Mill (Plant Expenses)</td>
<td>27,520</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Telephones</td>
<td>10,610</td>
<td>7,308</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Repairs and Maintenance</td>
<td>44,179</td>
<td>91,025</td>
<td></td>
<td></td>
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<tr>
<td>18. Consumable Stores</td>
<td>-</td>
<td>85,621</td>
<td></td>
<td></td>
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<tr>
<td>19. Gas to laboratories</td>
<td>-</td>
<td>1,263</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Furnace oil to boiler</td>
<td>-</td>
<td>11,549</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. Uniform and Laundry</td>
<td>-</td>
<td>4,738</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. Publications</td>
<td>-</td>
<td>13,287</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. Symposia, Conferences etc.</td>
<td>-</td>
<td>10,795</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. Rent on Premises</td>
<td>-</td>
<td>16,167</td>
<td></td>
<td></td>
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<tr>
<td>25. water Charges</td>
<td>-</td>
<td>3,475</td>
<td></td>
<td></td>
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<tr>
<td>26. Garden Expenses</td>
<td>1,055</td>
<td>-</td>
<td></td>
<td></td>
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<tr>
<td>27. Museum Expenses</td>
<td>1,281</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. Depreciation</td>
<td>1,59,791</td>
<td>1,31,862</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Rs.</strong></td>
<td>10,64,623</td>
<td>19,07,728</td>
<td></td>
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</table>
of SASMIRA, the membership subscription accounted for only 8.14% of the total income, while in case of BTRA, subscription amount was 52.10% of the total income. The grant from CSIR amounted to 50.93% in case of SASMIRA while it amounted to 42.2% in case of BTRA of their total income. CSIR gives 50% grants on the recurring cost of these Associations. In case of SASMIRA, testing fees amounted to 13.22% of its total income while these fees amounted to a mere 3.11% in case of BTRA. Interest on deposits account for almost same percentage of the total income in case of both the associations. Income from surveys, technical services charges and income from training courses together accounted for 12.36% of the total income in case of SASMIRA, while no income has been earned under these heads by BTRA. The income from miscellaneous sources accounts for about 14.02% of the total income in case of SASMIRA, while it accounts for hardly 2.50% in case of BTRA. The SASMIRA in 1970-71 has earned Rs. 94,633 by way of rent from its property "Resham Bhawan". For merit awards, merit scholarships and freesthips for students it has instituted two funds: Technical Institute (Diploma Course) Account and Technical Institute (Certificate Course) Account. Excess balance of income over expenditure under these accounts amounted to Rs. 11,852. All these sources of income have been added in miscellaneous income and hence the amount under this head has become unduly large.
On expenditure side, most of the items are of routine administrative type. The technical research staff is the main backbone of any research organisation and therefore the expenditure under the head of salaries is the largest item of expenditure in case of both the associations. SASMIRA has spent 52% of its total expenditure on staff, while BTHA has spent 63% of its total expenditure under this head. If we include the expenditure incurred on staff provident fund, gratuity, staff medical aid, etc. then the proportion of expenditure on staff salaries and welfare will be still larger. The other items of expenditure such as telephone, postage, stationery, travelling, auditing, etc. are mainly for carrying day to day administration of the association. There is hardly anything to comment on these items of expenditure.

9.5 Activities of Research Associations

These three research associations carry scientific and technological research work pertaining to their industry. They develop new raw materials, new processes, new machinery and are also engaged in the improvement of the existing production methods and the existing machines used for production. They carry routine testing and analysis of raw materials and finished products, give technical advice to the member firms, organise technical courses, undertake surveys in the factories of their members and so on. In the following paragraphs an attempt has been made to
summarise the important activities of all the three associations.

(a) Silk and Art Silk Mills' Research Association

SASMIRA has so far undertaken activities in many directions and is playing a useful role in rendering scientific and technical assistance to the members of the association and industry. The laboratories and pilot plant of SASMIRA are well set up and equipped with up-todate instruments and appliances for research, investigation and testing purposes. Following are the broad areas in which SASMIRA has done significant work:

(i) Research Work

SASMIRA has carried out scientific technological research on different problems pertaining to manmade textile industry and technology and has concluded a number of research projects. Investigation of properties of indigenous man-made fibre, yarns and fabrics has helped in standardising quality of products by the industry and has further enabled the industry to improve the fabric construction. SASMIRA has successfully carried out a research project on improving the resistance of polyamide fabrics to sunlight. A study of abrasion and tensile strength characteristics of fabric to evaluate durability constant was completed. Similarly the research work on the following subjects was completed during the year: study of fabric assistance factors in nylon cloth, influence on denting on the porosity of
nylon fabric, development of heat calendered light weight closely woven fabrics from indigenous nylon yarn, techno-economic aspects of high density polyethylene slit film weaving etc. Study of indigenous textile auxiliary materials such as cationic softness, resins, sizing materials etc. by SASMIRA has helped the industry to utilise indigenous products.

SASMIRA is at present engaged in research on projects like effect of twist variation on dyeing characteristics of indigenous 120 denier viscose rayon yarn, development of foam backed textiles and coated fabrics, development of multifunctional finish for different synthetic fibres etc.

(ii) Surveys

SASMIRA has been conducting surveys on the various techno-economic aspects of the industry. So far following surveys have been concluded: problems of marketing of man-made fibre fabrics in India, market survey on the availability and consumption of nylon crimped yarn, consumer preferences for different types of fabrics in Bombay, sizing practices, maintenance of weaving machinery, tension and tension control, fugitive tinting, need for spare-parts in the knitting industry, marketing practices in the man-made fibre industry in India etc. SASMIRA also undertakes special research survey projects sponsored by individual companies. During the last two years about ten such sponsored research surveys were completed and in 1970-71,
three such surveys were in hand. Recently SASMIRA has carried out surveys on market potential of various synthetic fibres and estimated the demand for these fibres by 1973-74.

(iii) Development work

SASMIRA has also been engaged in developing different types of manmade fibres for defence purposes as well as for industry. Among the fabrics developed for defence are, acetate map cloth, nylon wind breaker fabric, nylon bullet proof cloth, foam backed fabrics, nylon parachute cloth of indigenous yarn, dual shade nylon fabric, light weight coated nylon fabrics, heat calendered nylon fabric etc. For industrial applications fabrics developed include, nylon filter fabrics for tea industry, viscose yarn cord yarn fabrics, viscose tyre cord/jute union fabrics for furnishing etc. Indigenous automatic loom for weaving of high density polyethylene has also been modified.

(iv) Instrumentation

SASMIRA has developed a number of testing instruments required by the industry for testing of textiles. They include crimp tester, yarn examining machine, thermal conductivity apparatus, crease recovery tester, stiffness tester, perspirometer, crockmeter, wash wheel, pilling tester, water proofing tester for canvas fabrics, laboratory padding mangle, laboratory coating equipment, cold crack tester, etc. Every year SASMIRA fabricates a number of these instruments for its own use as well as for the use
of others. SASMIRA was awarded a Silver Shield by the Invention Promotion Board for developing an indigenous Perspirometer.

(v) Technical Service

SASMIRA offers a comprehensive technical and testing service in order to help the industry to solve its day to day problems and trouble shootings that arise in production. It assists the industrial units in improving current methods of yarn preparation and fabric manufacture and advice is given on the spot to the members in their own plants. During the year 1970-71, about 107 such problems were referred to SASMIRA. They were concerning warpway, weftway, fabric construction, tendering, stains and spots, dyeing and printing, finishing, etc.

(vi) Testing

SASMIRA's laboratories undertake testing and analysis of various textile materials. Testing of manmade fibre fabrics for exports and testing of natural fibres as well as analysis of dyes, chemicals and auxiliaries is done at these laboratories. During the year 1970-71, 8,428 samples of manmade fibre fabrics and 1636 samples of textiles and allied material were tested during the year. This brings the total of so far tested samples of manmade fibre fabrics to 1,66,461. SASMIRA's laboratories are recognised as a neutral testing house by the International Bureau for Standardisation of Manmade Fibres (BISFA) for carrying out
tests as per BISFA rules and therefore, enjoy international status as far as testing is concerned.

(vii) Technical Education

Along with research and development SASMIRA has also taken interest in technical education. It promoted a Technical Institute in 1961 to impart training at various levels in the manmade textile industry. SASMIRA conducts, on behalf of this Institute Diploma courses in Manmade Textile Technology (D.M.T.T.), Manmade Textile Chemistry (D.M.T.C.) and Post Graduate course in wet-processing in Manmade Textiles. The first two are three year full time diploma course while the third one is of 18 months' duration.

SASMIRA also conducts part time evening courses of two years' duration in weaving of manmade fibre fabrics and wet-processing of manmade textiles.

SASMIRA conducts part time day courses in Hindi for training of unskilled or semi-skilled workers in weaving of manmade fibre fabrics. During the year 1970-71, seven such short term courses were conducted on weaving, textile testing, warp-knitting, fabric structure etc.

SASMIRA is a recognised research centre for post-graduate degree by research of the University of Bombay. During the year 1970-71, three students were doing research work at SASMIRA for M.Sc. Degree in Fibre Chemistry and one student for Fibre Physics.
(viii) Seminars and Conferences

Technical Seminars and Conferences are organised by SASMIRA from time to time as per the requirements of the industry. Every year a technological conference is also organised.

(ix) Other Services

SASMIRA maintains a well-equipped reference library of books (about 6597 books) and periodicals (192 were received in 1970-71) on various disciplines of textile science. It publishes a monthly journal 'Silk and Rayon Industries of India' in which technical articles and information on various aspects of the industry are given. It also publishes 'Sasmira's Bulletin' every month which keeps the members informed of the various activities of the Association. It has also built a technical museum of the silk and manmade fibres and their products to disseminate technical information to the members. It also maintains a close liaison with Indian Standards Institution for formulation of standards for manmade textiles and allied products.

(b) The Bombay Textile Research Association

Like SASMIRA, BTRA has so far undertaken many activities to render technical and scientific assistance to the cotton textile industry. It has built a modern laboratory on a 23 acre plot of land at Ghatkopar in Bombay and these laboratory buildings are fully equipped with modern laboratory
equipment and a pilot plant. Following important activities are being carried out by BTHA.

(i) Research and Development

During the last ten years BTHA has carried out successfully many research projects in the field of spinning, weaving, chemistry and chemical processing, textile physics, basic studies etc. During the last ten years i.e. from the year 1960-61 to 1970-71, BTHA has undertaken and completed about 223 research projects. Out of these, 81 projects were relating to problems in spinning, 53 relating to weaving, 60 were from the fields of chemistry and chemical processes, 22 projects pertained to textile physics and 7 projects were relating to basic studies. During the year 1970-71 about 34 projects were undertaken for research. The subjects of research in different areas were as follows:

Spinning

1. Effect of card settings and associated factors on yarn quality.
2. Grinding Frequency of Metallic Card Clothing.
3. Irregularities in high speed within drawframes and their influence over yarn quality and fabric appearance.
4. The effect of disorientation and direction of hooks in the input silver on drafting irregularities and yarn supply.
5. Effect of drawframes parameters on silver irregu-
larity and yarn quality.


7. Yarn quality from long staple Indian Cottons under different combing conditions.

8. Contribution of piecings during spinning processes towards yarn defects and winding breaks.

9. Effect of properties of cotton on upgrading in combing.

10. Effect of various factors in carding and combing upon yarn appearance.


**Weaving**

13. Study of the performance of different knots.


15. Comparative performance of shuttles from imported and indigenous wood blocks.


17. Assessment of sized warp with dummy loom technique.

**Chemistry and Chemical Processing**


19. Process for production of cross linked cellulotic textiles with improved wrinkle resistance and DP appearance after line drying or tumble trying.
20. Preparation of peracetic acid using various catalyst systems.


22. Processes for the bleaching of Polyester/cotton blended fabrics.

23. Process for complete substitution of Mngalite in Printing.

24. Treatment of cotton textiles for durable improvement in overall quality.

Textile Physics

25. Dynamic mechanical properties of cellulosic fibres.

26. Yarn irregularities as factors of quality.

27. Dependence of cloth strength on yarn strength.


29. Studies on abrasion resistance of yarns.


Basic Studies


32. Lattice perfection in native cellulose fibres.

33. The location of sites in the cotton fibre structure for the improvement of the elastic properties of the fibre.

34. Improvement of yarn strength by swelling treatment.
Thus BTRA has done a significant work in the field of research and development of the textile industry.

(ii) Textile Machinery and Instrumentation

BTRA has developed new instruments and has also introduced important modifications in the existing textile machinery. Rotating lappet with air bearings, beaterless scutch, fluid logic devices, conversion unit for in situ resin finishing, fibre retriever, automatic doffing trolley are some of the developments undertaken successfully by BTRA. In the field of instrumentation, fibre length tester, loom turning indicator, torque motor, loom stop motion, Elco Al sorter, stackmeter, toproller load meter are some of the instruments developed by BTRA. In 1970-71, three such instruments were developed.

(iii) Patents

Some of the new processes/devices of outstanding nature developed at BTRA have been patented and in case of some others, the applications for patents are in process. So far BTRA has secured patents for following processes/devices.

1. A new process for imparting crease resistant finish to fabrics made of cotton or of viscose or of their blends, or of their blends with any other fibre.

2. A device for reducing end breakages on a cotton ring spinning frame.

3. A new process for imparting durable press finish
to fabrics made of cotton or viscose or of their blends or of their blends with other synthetic fibres.

4. A device to get oscillatory motion for the doffer comb of a carding machine.

5. A device for signalling the direction of twist in textile goods collapsed into rope form.

6. An electronic capacitance instrument for the evaluation of fibre length of natural fibres, regenerated and synthetic staple fibres.

7. Twist sensing device.


9. One stage bleaching process.

10. A capacitance transducer for the measurement of leased warp sheet tension during sizing and weaving.

11. Treatment of cotton textiles for durable improvement in overall quality.

12. A process for improving colour yields in reactive dyeings on cotton or viscose or their blends or their blends with other synthetic fibres.

Out of these for Twist sensing device, an application for patent has been filed in U.K. During the year 1970-71, BT&A secured 5 patents, and applications were made for patents for another two products. This is a significant achievement of the Association.
(iv) Technical Consultancy

BTRA has been engaged in solving day to day problems which crop up in running the mills. BTRA staff visits the mills, investigates into the problems and as far as possible gives advice to them on the spot. The amount of technical consultancy extended to mills can be seen from the number of reports sent on ad hoc problems referred to BTRA by member-mills during the last six years.

Table 9.5. No. of Technical Reports submitted by BTRA to member-mills on various problems

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Mechanical Processing</td>
<td>67</td>
<td>41</td>
<td>81</td>
<td>59</td>
<td>101</td>
<td>96</td>
</tr>
<tr>
<td>2. Chemistry and Chem. Processing</td>
<td>46</td>
<td>48</td>
<td>36</td>
<td>51</td>
<td>49</td>
<td>29</td>
</tr>
<tr>
<td>3. Operation Studies</td>
<td>16</td>
<td>21</td>
<td>21</td>
<td>22</td>
<td>80</td>
<td>60</td>
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<tr>
<td>4. Ind. Psychology</td>
<td>-</td>
<td>-</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5. Text. Machinery Research and Dev.</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>11</td>
<td>27</td>
<td>6</td>
</tr>
<tr>
<td>6. Technical Economy and Quality Control</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>131</td>
<td>112</td>
<td>147</td>
<td>149</td>
<td>265</td>
<td>197</td>
</tr>
</tbody>
</table>

BTRA also attends to technical enquiries referred to it by member-mills. During the year 1969-70 it attended to 248 such enquiries and in 1970-71 it attended to about
298 such enquiries. BTMA has also provided assistance to many member mills in regard to specific problems concerning modernisation and/or rationalisation of departments, in raising the quality of their products and in improving the distribution of work, systems, methods and work loads in member-mills.

(v) Testing of Samples

The laboratories of BTMA, as a part of their regular work, test the samples and issue reports of the tests carried out of such samples. The tests include physical testing, chemical testing, and tests in the fields of spinning and engineering. The number of samples tested and reports issued from 1965-66 to 1970-71 is consolidated in Table 9.6. From this one will be able to imagine the large volume of work done by the laboratories of BTMA in this field.

(vi) Training Programmes

Like SASMIRA, BTMA also conducts training programmes for mill technicians. Apart from technicians from member-mills, technicians from defence and other laboratories as well as from some foreign countries have so far participated in the training programmes. Subjects on which these training programmes are conducted are statistical quality control, textile testing, machinery maintenance, spinning and weaving, yarn preparation for weaving, chemical processing, dyeing, printing, resin finishing, durable
Table 9.6. No. of Tests carried on Cotton, Yarn and Fabric Samples by BTHA from 1965-66 to 1970-71.

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of samples tested</th>
<th>Test reports issued</th>
<th>Physical Testing</th>
<th>Chemical Testing</th>
<th>Spinning (Shirley Analys-er and Miniature Spinning Plant)</th>
<th>Engineering</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1965-66</td>
<td></td>
<td></td>
<td>2360</td>
<td>2033</td>
<td>450</td>
<td></td>
<td>4853</td>
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<td></td>
<td></td>
<td></td>
<td>289</td>
<td>222</td>
<td>-</td>
<td>-</td>
<td>511</td>
</tr>
<tr>
<td>1966-67</td>
<td></td>
<td></td>
<td>2332</td>
<td>1078</td>
<td>421</td>
<td></td>
<td>3831</td>
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<td></td>
<td></td>
<td></td>
<td>274</td>
<td>156</td>
<td>-</td>
<td>-</td>
<td>430</td>
</tr>
<tr>
<td>1967-68</td>
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<td></td>
<td>2795</td>
<td>1332</td>
<td>450</td>
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<td></td>
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<td></td>
<td>396</td>
<td>111</td>
<td>-</td>
<td>-</td>
<td>507</td>
</tr>
<tr>
<td>1968-69</td>
<td></td>
<td></td>
<td>3308</td>
<td>740</td>
<td>398</td>
<td></td>
<td>4946</td>
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<td></td>
<td>434</td>
<td>160</td>
<td>-</td>
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<td>1969-70</td>
<td></td>
<td></td>
<td>5918</td>
<td>652</td>
<td>1394</td>
<td></td>
<td>7964</td>
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<td></td>
<td></td>
<td></td>
<td>595</td>
<td>156</td>
<td>-</td>
<td>-</td>
<td>731</td>
</tr>
<tr>
<td>1970-71</td>
<td></td>
<td></td>
<td>4066</td>
<td>1038</td>
<td>773</td>
<td>4</td>
<td>5881</td>
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<td></td>
<td></td>
<td>668</td>
<td>246</td>
<td>-</td>
<td>-</td>
<td>914</td>
</tr>
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</table>
press finishing etc. STRA also conducted technical management training for key personnel in cooperative spinning mills in Maharashtra. During the last six years it has also trained several batches of technicians on Auto Coner with the help of experts from west Germany. In 1970-71, STRA organised an intensive training course in durable press finishing, a three day orientation course in testing of finished goods and a training course on auto coner. It also trained six technicians from master-mills, five trainees from Ceylon and a few trainees from defence laboratories in physical testing, chemical testing and in sample weaving room.

(vii) Surveys

STRA has carried out many surveys for the individual mill as well as on an industrywide basis. Following are some of the important surveys:

1. Periodic surveys of labour and machine productivity in spinning and weaving.

2. Survey of the doffer gaiter’s job in the ring department.


5. Fabric defects survey.


7. Inter-Firm comparison of financial aspects.

8. Consumption of chemicals in bleaching and mercerising.

10. Survey of auto coner winding machines.

These surveys have provided very valuable data and have found much favour with the mills as these pinpoint not only the defective areas of working but also enable the individual mills to compare its performance with that of the other comparable units.

(viii) Other Services

BTRA has a well-equipped library of about 4000 technical books, patents, Indian Standards etc. It receives 200 periodicals regularly. It organises technological conferences and seminars on subjects relating to textile technology from time to time. BTRA Bulletin and BTRA Abstracts are brought out on a bi-monthly basis, the former contains BTRA activities and the latter contains abstracts of the latest researches carried out the world over and in well-known journals. Besides these BTRA has put out its own publications which number over 100 in addition to 140 papers which were presented at different textile conferences and over 70 technical and scientific papers contributed in the well-known Indian and Foreign journals.

(ix) Post Graduate Research Centre

BTRA is recognised as a research centre for postgraduate studies of the Bombay University. Members of BTRA staff are also invited to deliver lectures to university students. In 1970-71, 4 students had undertaken in BTRA for post-graduate degrees.
Indian Rubber Manufacturers' Research Association

As compared to SASMIRA and STRA, IRMRA is a new organisation and it has yet to start its work on an organised scale. Initially it decided to collaborate with the National Chemical Laboratory, Poona, instead of setting up its own laboratory. In National Chemical Laboratory the following four problems were taken in hand:

1. Rubber Base Adhesives.
2. Processing of indigenous china clays.
3. Identification of Antioxidants, Antiozonants, Antiozonants and Copper Inhibitors in Vulcanised Rubbers.

Considerable work was done at National Chemical Laboratory on these problems. Now the Research Laboratory of IRMRA at Thana has been erected, partly equipped and has started functioning recently.

(i) Technical wing of the Laboratory

The technical wing of the IRMRA laboratory at Thana is divided into three sections: Physical Section, Processing Section and Chemical Section. The operations and activities of this unit are guided by a technical committee comprising of members from Bombay region. Physical section and processing sections are yet to be organised as the equipment and some of the machinery are on the way to be received. In 1970-71 IRMRA had received no objection
certificate from DGTD for the import of 10 machines from abroad. Arrangements for foreign exchange were being made during the year. In processing section, a B&D.CO rubber moulding press, a Foxing Extruder and a boiler was installed in 1970-71 and the Association was looking out for a suitable person to take charge of this section.

The chemical section of the laboratory was properly equipped and was functioning properly. The work on evaluation of magnesium oxide was completed in 1970-71 and the investigations on non-black reinforcing agents were in an advanced stage of development.

Research work on the following subjects was being carried out during the year 1970-71: Improvements in methods of preparation of Calcium Silicate, Improvements in methods of preparation of Precipitated Silica, Standardisation of indigenous magnesia for neoprene curing, fast curing natural rubber compounds having good shelf life, utilisation of card phenol in rubber Industry, Stearic Acid, Chlorinated Rubber, investigations on the standardisation of Natural Rubbers with respect to copper content etc.

(ii) Routine Testing at the Laboratory
The INMRA Laboratory offered facilities to its members as well as non-members for carrying out standard tests for various rubber compounding ingredients and vulcanizates in accordance with ISI Specifications. Regular schedule of charges for this work has been prepared and non-members are
charged double the rates charged to members of the Association.

(iii) Seminars and Conferences

IRMAA organises Technical Seminars from time to time. The first such seminar was held in 1964 and so far five such seminars have been held. In these seminars so far several technical papers have been submitted on such subjects as polymers and polymer science, statistics management and productivity, testing — physical and chemical aspects, chemical compounding, technology and techniques, latex, fibres and fabrics, instruments and machinery etc. The exchange of thoughts on these and other technical subjects at these seminars have considerably helped the technicians in the rubber industry.

9.6 Conclusion

The cooperative research associations, thus have played an important role in the technological development of their industries. They are rendering immediate service to their members by tackling their ad hoc problems, by their technical consultancy services and testing facilities, by disseminating knowledge on the latest technological developments in their respective industries, by carrying out exclusively for an industry or a group sponsored research projects and so on. They have also been responsible in introducing new methods and processes, in training the personnel in the industry and in translating scientific
knowledge into practice through their journals, newsletters and technological conferences. They have also become an authoritative source of technical information in a particular industry.

The industries in the membership of these research associations have benefitted most from the guidance, consultancy service and advice which these research organisations have provided. Through these organisations only the industries have been able to participate in technical and scientific research. These associations have also made the industry aware of the importance of research and technical services and now the industry, instead of relying on its traditional experience, prefers to refer many of its difficult problems to these associations for scientific investigation and solution. This must be regarded as a significant change in the attitude of Indian industry.

The establishment of these research associations is also a landmark in the history and development of trade associations in our country. This is an area of concrete activity which the associations have entered into. In a way these research organisations also therefore symbolise the forward looking attitude of our trade associations.

These research associations have opened up a new area of Government and private industry collaboration. At present the Council of Scientific and Industrial Research gives financial assistance to these associations.
It provides financial assistance to the extent of 50% of the capital investment of non-recurring type in these laboratories and gives 50% on the recurring costs of such associations. The representatives of CSIR are on the Executive Councils of these associations and the CSIR also provides guidance to these associations in undertaking and organising their research work. This government assistance has considerably helped these associations in setting up their laboratories and in carrying out their activities.

The research work carried on in the different national laboratories set up by the Government of India has been more academic in character and sometimes of little practical use for the needs of industries. But the cooperative research associations have largely concentrated on applied research the results of which could be of immediate use for industrial application. Thus a big need for applied industrial research has been met by these research associations.

9.7 Economic and Industrial Research

The cooperative research associations studied so far are mainly engaged in the technical research. SASMIRA and BTRA have a wing for carrying on economic research and they have carried on studies on the impact of union excise duties, market surveys for individual products and some cost studies. But these associations are preoccupied mainly with technical research and economic research forms a very
small area of their activity.

However, in Maharashtra some attempts have been made to undertake cooperative economic research and two such organisations are in existence in the State at present. One is Maharashtra Economic Development Council promoted in 1956 by the leading chambers of commerce in the state and another one is Association of Indian Industry and Trade promoted in 1949 by a few industries. The Indian Merchants' Chamber has set up a Training and Research Foundation to undertake research in 1959. This is not an association but since this was founded by a leading chamber of commerce in our state, a very brief reference to the activities of this Foundation is made in the foregoing paragraphs.

I. Maharashtra Economic Development Council

Maharashtra Economic Development Council is an organisation promoted and financed by business associations and chambers and industries in Maharashtra to undertake economic research work. Thus it can also be grouped under cooperative research association. But the Council can be distinguished in a number of ways from the other research associations which we have discussed earlier in this chapter. In the first instance, unlike the other associations, it does not receive any financial support from the Central or State Government for carrying on its research activities. The Council is entirely financed by the member industries, chambers of commerce and other business associations.
The nature of research projects undertaken by the Council is also different. Unlike the other research associations, the Council does not undertake research projects suggested by individual members. Neither its results are directly beneficial to the industries as in the case in the other research associations. The research projects are mainly relating to subjects concerning regional development of Maharashtra and no individual industry or business house is likely to be directly benefited by sponsoring such a project or by its results.

9.9 Origin and Growth of the MEDC

In 1956, the Maharashtra Chamber of Commerce, Bombay, had arranged Maharashtra Commercial and Industrial Conference to discuss problems relating to the economic development of the Marathi speaking regions of the then Bilingual Bombay State. The Conference came to the conclusion that some kind of a permanent organisation should be created to follow up the work of the Conference in the years to come. As a result, the Maharashtra Economic Development Council was constituted immediately after the Conference to coordinate activities of various chambers of commerce in Maharashtra, to undertake surveys and studies for preparing new schemes of development and to prepare comprehensive memoranda on various problems pertaining to the economic development of Maharashtra. The Maharashtra Chamber of Commerce, Bombay, the Mahratta
Chamber of Commerce and Industries, Poona, the Nag- Vidarbha Chamber of Commerce, Nagpur, the Mahavidarbha Chamber of Commerce and Industries, Nagpur and the Marathwada Chamber of Commerce and Industries, Jalna, were the founder members of the council. Later on the Indian Merchants' Chamber, Bombay, the Bombay Chamber of Commerce and Industry, Bombay, and the Association of Indian Industries joined the Council and participated in its activities.

Right from the beginning the Council avoided any duplication of the work normally carried out by its constituent members. The work of the Council was regarded both complementary and supplementary to the work carried on by its members in different regions. The Council tried to bring collective views of these bodies on a number of economic issues before the State Government.

Since 1956, a number of changes have taken place in the organisational set up, membership, finances and the tasks performed by the Council.

For instance, till 1964, the chamber of commerce and trade associations in Maharashtra could only become members of the council. But on 6th May 1964, the constitution of the Council was amended and a special category of associate membership for individuals, firms and joint stock companies and similar other institutions was created. This was mainly to create more revenues for the Council.

The fees for founder members were also increased from
Rs. 250 per year to Rs. 500 per year in 1964.

As a result of these amendments, the revenues from membership subscription have gone up from a bare Rs. 2,500 per year in 1961-62 to Rs. 29,400 in 1970-71. The number of members has also gone up from 5 to 110 in the same period.

Earlier the main source of finance for the Council was conferences. The financial surplus left at the end of each Maharashtra Commercial and Industrial Conference - five such conferences have been arranged so far - used to provide necessary finances to carry on day to day activities of the Council. But this used to put severe financial limitations on its activities. Now with the increase in the membership subscription, the Council is financially in a better position. Moreover, the Council on special occasions brings out special publications, arranges conferences on different subjects from time to time and tries to bring out souvenirs on such occasions. This gives the Council some income. It has also been able to secure financial support to one special project from one Business House. Thus the House of Mafatlals have agreed to finance the cost of the entire research project on the evaluation of the man-power potential and assessment of the requirements of the Thana Belapur area. This report has recently been completed.

There has been some changes in the frequency of con-
ferences arranged by the Council during the last decade. Earlier it used to arrange conferences at the interval of four years and in the intervening period, it used to appoint study groups and undertake special studies. Now this is being done, but conferences are being arranged even on special subjects such as agro-industries in Maharashtra, ancillary industries in Maharashtra, Twin Cities of Bombay, etc. The emphasis of the research reports is just not on the discussions carried on by the members of the study group, but how considerable effort is being made to collect original data from the field for the preparation of these reports.

9.10 Finances of the Council

Table 9.7 summarises the growth of membership and finances of the Council from 1961-62 to 1970-71.

As is said in the preceding paragraphs, earlier only Chambers of Commerce were allowed to be members of the Council and by an amendment in 1964, associate members were accepted. Till 1964-65 there were only 5 members of the Council and now this membership has gone to 110. Membership subscriptions were never an important source of revenue. The Council was collecting only Rs. 1500 per year earlier by way of membership fees. In 1970-71, it collected Rs. 29,400 by way of subscriptions. This was 25% of the total income during the year. Conference, Delegation fees and advertisement revenue from the souvenir
Table 9.7. Membership and Finances of the Council (Accounts of Maharashtra Economic Development Council)

<table>
<thead>
<tr>
<th>Year</th>
<th>Members</th>
<th>Income</th>
<th>Expenditure</th>
<th>Surplus (+) or Deficit (-)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961-62</td>
<td>5</td>
<td>11,233</td>
<td>12,240</td>
<td>+ 1007</td>
</tr>
<tr>
<td>1962-63</td>
<td>5</td>
<td>2,025</td>
<td>17,127</td>
<td>- 15,102</td>
</tr>
<tr>
<td>1963-64</td>
<td>5</td>
<td>1,890</td>
<td>19,016</td>
<td>- 17,126</td>
</tr>
<tr>
<td>1964-65</td>
<td>5</td>
<td>83,658 ≠</td>
<td>29,581</td>
<td>+ 54,077</td>
</tr>
<tr>
<td>1965-66</td>
<td>28</td>
<td>29,653</td>
<td>33,597</td>
<td>- 3,944</td>
</tr>
<tr>
<td>1966-67</td>
<td>28</td>
<td>14,126</td>
<td>31,975</td>
<td>- 17,849</td>
</tr>
<tr>
<td>1967-68</td>
<td>71</td>
<td>77,246</td>
<td>81,843</td>
<td>- 4,597</td>
</tr>
<tr>
<td>1968-69</td>
<td>83</td>
<td>1,02,373</td>
<td>52,686</td>
<td>+ 49,687</td>
</tr>
<tr>
<td>1969-70</td>
<td>83</td>
<td>1,52,497</td>
<td>99,282</td>
<td>+ 53,217</td>
</tr>
<tr>
<td>1970-71</td>
<td>110</td>
<td>1,18,350</td>
<td>1,18,270</td>
<td>+ 80</td>
</tr>
</tbody>
</table>

≠ Includes revenues collected from the Maharashtra Commercial and Industrial Conference.
has been an important source of income for the Council. Earlier, surpluses of each Conference were utilised to carry on day to day administration of the Council. Over a period of years the financial position of the Council seems to have considerably improved. The income has gone up from Rs. 12,240 in 1961-62 to Rs. 1,18,270 in 1970-71 and continuous deficits which was a common feature of M.E.D.C. accounts has been now changed. Now during the last three years since 1968-69, the Council has shown surpluses in its accounts. This is because it has developed new sources of income - membership subscription amounts have gone up, conference revenues have also become an annual feature and it has also started receiving some private grants.

9.11 Organisation of M.E.D.C.

The constitution of M.E.D.C. has undergone many changes since its inception. It was an unregistered association from the beginning and it was only in 1968 that the Council was registered under Societies Registration Act, 1860, and Public Trusts Act. The constitution was amended in 1964 and it was decided to accept associate members. In 1966, the Constitution was once again amended and the annual fees were fixed at Rs. 500 for public limited companies and Rs. 300 for individuals, firms and private limited companies. The original members of the Council i.e. Chambers of Commerce and Associations were called founder-members instead of
Constituent Members. In 1971, the Constitution was once again amended and the aims and objects were completely redrafted.

At present the Council has three categories of members.

1. Founder Members are the seven Chambers of Commerce in Maharashtra and All India Manufacturers' Organisation (Maharashtra State Board), which are the original members of the Council. The annual membership subscription for them is Rs. 500/-.

2. The Council can admit other similar organisations working for the economic development of Maharashtra and they are called constituent members of the council. The annual membership subscription for them is also Rs. 500/-.

3. Individuals, firms, joint stock companies and similar other institutions can become associate members of the council. The annual subscription in this category for public limited companies is Rs. 500 and Rs. 300 for others.

The Council does not have provision for an Executive Committee. Each founder member can send five representatives and other members two alternate delegates on the Council. This constitutes general body and from this general body the office bearers of the Council i.e. a President, a Chairman and two Honorary General Secretaries are elected. These office bearers look after the day to day work of the Council, including the selection of members on different study groups, arranging finances, solving
organisational problems etc.

9.12 **Functions of the Council**

The Council conducts following activities in furtherance of its objects.

(a) **Conferences** : The Council holds conferences and discussions from time to time. Every four years holds Maharashtra Commercial and Industrial Conferences to discuss problems of economic development of Maharashtra. So far five such conferences have been held in 1956, 1960, 1964, 1968 and in 1972.

In these conferences background papers are prepared on transport, banking, agriculture, labour and technical education, developing regions, mineral industries and many other subjects and in the various Sub-Committees these subjects are discussed in detail. In 1972, a departure was made from the old practice and a conference was arranged only on one subject i.e. 'Development through Employment'. The recommendations of these conferences are then sent to the respective departments of State Government and necessary follow up is also undertaken. Eminent persons from Maharashtra preside over the conference and leading persons from different fields are selected as Chairmen of different panels or Sub-Committees. So far late Dr. D.R. Gadgil, Dr. C.D. Deshmukh, Shri Naval H. Tata, Shri Lalchand Hira-chand and Shri B.D. Garware have presided over these conferences.
Apart from these conferences, since last few years, the Council is organising seminars and discussions on specific subjects. So far three such conferences have been arranged on Agro-Industries in Maharashtra, Twin City of Bombay and Development of Ancillary Industries in Maharashtra. On these three subjects the Council had prepared study-reports and on the basis of these reports discussions were held in the conferences.

(b) Studies undertaken by the Council: The Council, from time to time appoints study-groups for undertaking studies on various aspects of economic development of Maharashtra. These groups undertake detailed studies and publish their reports from time to time. So far studies on the following subjects have been undertaken and reports published: Economic and Industrial Development of Marathi Speaking Districts in Maharashtra State (1957), Industrial Finance in Maharashtra (1962), Organisation and Structure of Industries Department (1962), Free Trade Zone in Maharashtra (1963), Transport Problems in Maharashtra (1963), Problem of Water Shortage affecting the industries in Bombay (1964), Accommodation for Small Scale Industries in Greater Bombay (1965), Economic Problems of Marathwada (1965), Industrial Estate in Maharashtra (1966), Rural Employment in Maharashtra (1966), Technical Education in Maharashtra (1967), Development of mainland across the Harbour and its communications with Bombay (1967), Traffic

The Council has not only prepared these reports but has tried to undertake follow up of these reports. All these reports have been submitted to the State Government and on many of the recommendations, the Government has initiated action. For instance, the contents of the very first report on 'Economic Industrial Development of the Marathi Speaking Districts of Bombay State' were incorporated in the Master Plan of Industrialisation prepared by the State Directorate of Industries. Again the Council made a representation for the establishment of free trade zone at Sheva Kheva and the State Government have been vigorously pursuing the matter further. As a result of the recommendations of the council and the necessary follow up with the Mayor of Bombay and with the Chief Minister of Maharashtra State, the Government has appointed an Action Committee on Secretariat Level to watch and report on the progress in the supply of water to Bombay. At the instance of the Chief Minister, the Council prepared a note on 'Measures to decongest Bombay City' and Government thereafter evolved a scheme of incentives on a package basis so as to encourage the growth of industries outside the over-congested zones. After the preparation of the report on
Sconomic Problems of Marathwada' the office bearers of the council had detailed discussions with the Chief Minister on the findings of the report. A separate note on the establishment of an Industrial Development Corporation for Marathwada and facilities and incentives required for the development of the region was also sent to the Chief Minister. As a result of this a separate Marathwada Industrial Development Corporation was announced by the State Government. Similarly separate Industrial Development Boards were appointed for different revenue divisions of the State.

As a result of the report and conference on Industrial Estates in Maharashtra, the Directorate of Industries took actions on the various recommendations contained in the report. Now before considering any proposal for starting a new industrial estate, the Government is insisting on a techno-economic survey of the area for assessing the potentiality and practicability of developing different types of industries.

Thus many of the studies undertaken have resulted in some action on the part of the Government. The necessary follow up has been undertaken by the Council with the State Government and these efforts have produced the desired results.

(c) Special Studies: The Council has also undertaken special studies on special occasions. To commemorate the
first decade of its service, the Council published a commemorative volume 'Maharashtra - an Economic Review'. This volume contained articles by eminent industrialists, economists and executives on various aspects of the economy of the State, lot of statistical information and a large number of maps on the different aspects of the State. It was a very useful reference volume and a valuable source of information. In 1972 at the time of the Fifth Conference, Council has published another reference volume on Maharashtra by name 'Maharashtra, Facts, Figures and Opportunities'.

(d) Monthly Reviews: Since 1972, the Council has started publishing review of economic situation. The main object is to review in brief and with practical bias the economic situation in India with special reference to Maharashtra for the benefit of the members of the Council. This monthly review of economic situation contains information on the state of economy, agriculture, industry, banking and finance, exports, prices and price-level, and important events in Maharashtra. This is a very useful service to the member-industries and in years to come will be a very useful source of information.

(e) Special Surveys: Because of the limitations of finance, the Council was not able to carry out independent surveys. But since last few years it has been conducting investigations and surveys on its own. Thus in 1970, a
survey of 93 ancillary units in Bombay was carried out and important information regarding the capital investment, volume of production, labour, raw material, credit, export, marketing was collected. The report was presented to the Conference on 'Development of Ancillary Industries in Maharashtra'.

The Council is at present carrying on an investigation into the 'pattern of consumption and savings of the farmers in South Western Maharashtra', with a view to finding out the growth of rural incomes, distribution of this income, spending and growth of savings. A sample of 600 cultivators has been taken for the purpose of this survey.

The Council has recently completed a study about the detailed evaluation of the man-power potential and assessment of the requirements of the Thana-Belapur area on the basis of a Pilot study of 1000 households in the area. Detailed schemes of development of this area are also being worked out by the Council. This project has been entirely financed by a leading industrial house of Bombay. This report has also been recently released.

(f) Maharashtra Commerce and Industries Rehabilitation Society: Apart from these studies in 1961, after the Panshet Dam Disaster in Poona, Council took a lead and promoted Maharashtra Commerce and Industries Rehabilitation Society to assist industrial and commercial units in Maha-
9.13 An assessment

During the last fifteen years the council has done a good work in the field of economic research. It has produced very useful study reports, has collected information on hitherto neglected fields, and has succeeded at least in a limited way in influencing the economic policies of the State Government. But one cannot deny the fact that as compared to other business associations, chambers of commerce and also similar research institutions, the Council is organisationally and also from the point of resources, not a strong organisation. It has very limited resources. The staff of the council is very limited. Much of the work that is done so far is because of its enthusiastic secretary. But this cannot go on far long. It has to be properly staffed and unless it has a sufficient number of professional research workers, statisticians and other expertise, the Council will not be able to undertake research work on a continuous basis. The quality of its work will also suffer. Take for instance the compilation of monthly report. This can be improved and brought at least to the level of the monthly report compiled by Commerce Research Bureau only if some original sources of information are developed and specialists in the respective fields compile the information and present an analysis. The Council can also think of developing a
regional commercial information centre and can build up a good source of information on all economic aspects of Maharashtra State. But these things can be done only if its present finances are improved. So far, only the Chambers of Commerce and private industries have contributed their share towards the expenditure for undertaking these activities. But now efforts may be made to obtain some financial assistance from the State Government to carry on the activities of the Council. The work done by the Council is of general social interest and therefore it should not be difficult for the State Government to consider such a request from the Council. The Council can also consider of approaching other organisations like Research Programmes Committee of the Planning Commission, Indian Social Sciences Research Institute, and others for financial assistance. This will enable the Council to undertake and develop its work in many more fields and thus be of more use for influencing policies of the State Government in the desired direction.

The work done by the Council has attracted the attention of similar business bodies in other parts of the country. For instance, I was told that during the year 1970-71, many enquiries from business organisations in Gujarat, Madhya Pradesh, Rajasthan and Bengal regarding the constitution and functioning of the Council were received. These organisations propose to start similar
councils in their States. Thus the Council has become a model to carry on policy oriented research at the State level. This itself is not a small achievement. But instead of stopping at this stage only, there is a necessity to improve the finances, add many activities and expand this organisation considerably.

9.14 Association of Indian Trade and Industry

This Association was promoted in 1949 by a few industries in Bombay in order to undertake research and publication on subjects relating to economics and industry. This body is registered under the Indian Companies Act and at present has 17 members. It has its headquarters at Bombay. The Board of Management consists of seven members who are all leading industrialists from Bombay.

The main sources of income of this Association are membership subscription, reimbursement for cost of research work carried out and donations. In 1970-71, the Association had an income of Rs. 68,796 and an expenditure of Rs. 83,713. Out of this Rs. 37,500 were from membership subscription, Rs. 18,196 by way of reimbursement towards cost of research and Rs. 12,500 were collected through donations. The main item of expenditure was salaries and allowances (Rs. 72,950) and other items were rent, printing etc.

The Association has so far published following reports:
1. Cost of Living Index.

2. Wholesale Price Index.


5. Income Tax Rates compared.

6. Taxation of Bonus Shares.


9. Case for Relief on Direct Taxation.


These research projects are sponsored either by individual trade associations or by individual companies. Thus for instance in 1970-71, M/s. Synthetics and Chemicals, Ltd. entrusted to the Association a study and financial analysis of synthetic rubber and related industries. This was for the purpose of submitting a memorandum on the problems of fair prices of synthetic rubber which was being examined by the Tariff Commission. Similarly at the request of the Deccan Sugar Factories Association a financial
study of the sugar industry was undertaken in 1970-71. A similar study on the finances of the silk and art silk mills' industry was brought up to date at the request of Silk and Art Silk Mills' Association. The Association is planning to undertake a major study on 'Entrepreneurial Growth and Management Styles'.

The Association is almost a one-man show and it has done a good work within the limited sources at its disposal. It has also met the requirements of industries of research work of this type in presenting a memorandum or a particular point of view. But there are obvious limitations to such an organisation which has a very limited resources and therefore unless there are enough resources adequate manpower and it has at its command all the available reference material for carrying on research and investigation, the Association may not be able to create any impact on the Society by its research.

9.15 IMC Economic Research and Training Foundation

This Foundation has promoted by the Indian Merchants' Chamber, Bombay in 1959 to undertake and encourage scientific research on all economic problems and to provide facilities and to arrange for training in practical business management. Sir Purushottamdas Thakurdas Research Wing of the Foundation has so far brought about eight research studies on problems in applied economics such as Inflation in a Developing Economy, Resources for the Third Five Year
Plan, National Income of India, Union Budgets, Price Fixation in Indian Industries, Direct Taxation in India, Taxation of Agriculture in India, Chambers of Commerce and Business Associations in India. At present it is engaged in the study of industrial policy and of road transport. The Foundation also arranges lectures under the auspices of the B.F. Madon Memorial Scheme on monetary, banking and fiscal policies and they are later published in a book form.

9.15 Conclusion

The present study of cooperative research associations, leaves one with the impression that the associations undertaking technical and industrial research are far stronger and well-organised bodies than those undertaking pure economic research. The latter bodies have very limited financial resources, they have been poorly manned and as a result they have not been able to create any impact on the business community. The government assistance which is forthcoming on such an extensive scale to the technical research associations, is completely absent in the organisations carrying on economic research. This puts severe limitations on their resources and consequently on their activities. Hence it is necessary for these bodies to try to get government assistance or devise some ways to improve their financial resources. One new area which can be thought of for economic research associations is
undertaking specific research projects in which industrial units are interested. These may be in the nature of a market survey of a particular product, studies on inter-firm comparisons, organisational studies, studies on trends in the market, research on finances of other units in the same industry etc. These studies may not be published but can be made available only to those units which sponsor such studies. Fees can be recovered from the individual companies for undertaking such studies. Even compilation of statistical information on a particular subject or product can be undertaken by such bodies. These and similar other areas of economic research are at present being handled by Institutes of Management, Commerce Bureau and the private consultancy firms. The MEDE or the Association of Indian Industry can fruitfully enter these areas and thereby improve their resources and develop their organisations.
APPENDIX I. SCHEDULE OF MEMBERSHIP SUBSCRIPTION OF THE
SILK AND ART SILK MILLS' RESEARCH ASSOCIATION

There are at present two broad categories of membership available in SASMIRA. Ordinary membership and Associate membership. The former is open to the silk and art silk weaving and/or wet processing units; while the latter to the man-made fibre knitting units, man-made fibre embroidery units, man-made fibre twisting and doubling units, man-made fibre crimping units, garment manufacturing units and organisations and individuals.

1. ORDINARY MEMBERSHIP

1.1 The Annual Subscription for existing members of the Association.

1.1.1 The annual subscription of ordinary membership in the case of silk and man-made fibre weaving units shall be Rs. 5.00 (Rupees five only) per powerloom, provided however the minimum amount of the annual subscription shall not be less than Rs. 250/- only.

1.1.2 For the purpose of calculation of the annual subscription of membership, the number of powerlooms as registered with the Office of the Textile Commissioner, Government of India for the time being, shall be taken into account by the Association and such calculation by the Association shall be final, conclusive and binding on all.

1.1.3 In the case of silk and man-made textile wet processing units, the annual subscription of the membership shall be Rs. 500/- only.

1.1.4 Annual subscription of such membership shall take into effect from 1st April of each year.

1.2 Admission Fee, Annual Subscription and Contribution Fund for new membership:
1.2.1 In case of silk and man-made fibre weaving units:

1.2.1.1 An applicant shall pay a sum of Rs. 100/- (Rupees one hundred only) per powerloom towards the Contribution Fund of the Association provided, however the minimum amount payable by the member shall not be less than Rs. 2,500/- (Rupees two thousand and five hundred only.)

1.2.1.2 An applicant shall further pay an admission fee of Rs. 1,000/- (Rupees one thousand only) for being enrolled, as a member of the Association.

1.2.1.3 The annual subscription of membership shall be Rs. 500/- (Rupees five only) per powerloom, provided, the annual subscription shall not be less than Rs. 250/- only.

1.2.1.4 For the purpose of calculation of contribution fund and the annual subscription of membership, the number of powerlooms of applicant registered with the Office of the Textile Commissioner, Government of India, for the time being shall be taken into account by the Association and such calculation by the Association shall be final, conclusive and binding on all.

1.3 In case of silk and man-made textile wet processing units having no powerlooms or knitting machines or twisting, doubling and crimping or embroidery machines.

1.3.1 An applicant shall pay a sum of Rs. 2,500/- (Rupees two thousand and five hundred only) towards the Contribution Fund of the Association.

1.3.2 An applicant shall further pay an admission fee of Rs. 1,000/- (Rupees one thousand only) for being enrolled as a member of the Association.

1.3.3 The annual subscription of the membership shall be Rs. 500/- (Rupees five hundred only).
ASSOCIATE MEMBERSHIP

2.1 The annual subscription for existing members of the Association:

2.1.1 The annual subscription of Association membership shall be Rs. 1,000/- (Rupees one thousand only).

2.1.2 The annual subscription of such membership shall take effect from 1st April of each year.

2.2 Admission fee, Annual Subscription and Contribution Fund for new membership:

2.2.1 In case of silk and man-made fibre knitting units.

2.2.1.1 An applicant shall pay a sum of Rs. 500/- (Rupees five hundred only) per knitting machine towards the Contribution Fund of the Association provided, however, the minimum amount payable by the members shall not be less than Rs. 2,500/- (Rupees two thousand and five hundred only).

2.2.1.2 An applicant shall further pay an admission fee of Rs. 1,000/- (Rupees one thousand only) for being enrolled as a member of the Association.

2.2.1.3 The annual subscription of membership shall be Rs. 100/- (Rupees one hundred only) per knitting machine provided, the annual subscription shall not be less than Rs. 500/- only.

2.2.1.4 For the purpose of calculation of Contribution Fund and the annual subscription of membership, the member of knitting machines of applicant registered with the Office of the Textile Commissioner, Government of India, for the time being shall be taken into account by the Association and such calculation by the Association shall be final, conclusive and binding on all.

2.3 In case of silk and man-made fibre embroidery units:
2.3.1 An applicant shall pay a sum of Rs. 500/- (Five hundred rupees only) per embroidery machine towards the Contribution Fund of the Association provided however, the minimum amount payable by the member shall not be less than Rs. 2,500/- (Rupees two thousand and five hundred only).

2.3.2 An applicant shall further pay an admission fee of Rs. 1,000/- (Rupees one thousand only) for being enrolled as a member of the Association.

2.3.3 The annual subscription of membership shall be Rs. 250/- (Rupees two hundred and fifty only) per embroidery machine provided, the annual subscription shall not be less than Rs. 500/- only.

2.3.4 For the purpose of calculation of Contribution Fund and the annual subscription of membership, the number of embroidery machine of applicant registered with the Office of the Textile Commissioner, Government of India, for the time being shall be taken into account by the Association and such calculation by the Association shall be final, conclusive and binding on all.

2.4 In case of man-made fibre twisting, and doubling units:

2.4.1 An applicant shall pay a sum of Rs. 100/- (Rupees one hundred only) per 25 spindles towards Contribution Fund of the Association provided, however, the minimum amount payable by the member shall not be less than Rs. 2,500/- (Rupees two thousand and five hundred only).

2.4.2 The annual subscription of membership shall be Rs. 2.50 (Rupees two and paise fifty only) per 25 spindles provided the annual subscription shall not be less than Rs. 250/- only.

2.4.3 An applicant shall further pay an admission fee of Rs. 1,000/- (Rupees one thousand only) for being enrolled as a member of the Association.
2.4.4 For the purpose of calculation of Contribution Fund and the annual subscription of membership, the number of spindles of twisting and doubling of applicant registered with the Office of the Textile Commissioner, Government of India, for the time being shall be taken into account by the Association and such calculation by the Association shall be final, conclusive and binding on all.

2.5 In case of man-made fibre crimping units:

2.5.1 An applicant shall pay a sum of Rs. 100/- (Rupees one hundred only) per spindle towards Contribution Fund of the Association provided, however, the minimum amount payable by the member shall not be less than Rs. 2,500/- (Rupees two thousand and five hundred only).

2.5.2 An applicant shall further pay an admission fee of Rs. 1,000/- (Rupees one thousand only) for being enrolled as a member of the Association.

2.5.3 The annual subscription of membership shall be Re.1/- (Rupee one only) per spindle provided the annual subscription shall not be less than Rs. 500/- only.

2.5.4 For the purpose of calculation of Contribution Fund and the annual subscription of membership, the number of spindles of applicant registered with the Office of the Textile Commissioner, Government of India, for the time being shall be taken into account by the Association and such calculation by the Association and such calculation by the Association shall be final, conclusive and binding on all.

2.6 In case of garment manufacturing units:

2.6.1 An applicant shall pay a sum of Rs. 100/- (Rupees one hundred only) per power driven sewing machine towards the Contribution Fund of the Association provided, however, the minimum amount payable by the member shall not be less
than Rs. 2,500/- (Rupees two thousand and five hundred only).

2.6.2 An applicant shall further pay an admission fee of Rs. 1,000/- (Rupees one thousand only) for being enrolled as a member of the Association.

2.6.3 The annual subscription of membership shall be Rs. 2.50 (Rupees two and paise fifty only) per power driven sewing machine provided, the annual subscription shall not be less than Rs. 250/- only.

2.6.4 For the purpose of calculation of Contribution Fund and the annual subscription of membership, the annual subscription of membership, the number of sewing machines of applicant registered with the Office of the Textile Commissioner, Government of India, for the time being shall be taken into account by the Association and such calculation by the Association shall be final, conclusive and binding on all.

2.7 In the case of organisation and individuals:

2.7.1 An organisation applying for the Associate Membership shall pay a minimum sum of Rs. 5,000/- (Rupees five thousand only) towards the Contribution Fund of the Association.

2.7.2 The applicant organisation shall further pay an admission fee of Rs. 1,000/- (Rupees one thousand only) for being enrolled as a Member of the Association.

2.7.3 The annual subscription of the Associate Membership shall be Rs. 1,000/- (Rupees one thousand only) for an organisation.

2.7.4 In case of individuals, the admission fee however, shall be Rs. 250/- (Rupees two hundred and fifty only) and the annual subscription Rs. 250/- (Rupees two hundred and fifty only).
2.7.5 Associate Membership can also be applied by Silk and Man-made Fibre Weaving Units having 12 or less than 12 powerlooms silk and man-made fibre knitting units having 2 or less than 2 knitting machines, man-made fibre twisting, doubling and crimping units having 300 or less than 300 spindles garment manufacturing units having 12 or less than 12 power driven sewing machines and man-made textile wet processing units on payment of contribution of Rs.1,250/- and admission fee of Rs. 250/- and annual subscription of Rs. 250/-.