INDUSTRIAL DEVELOPMENT NEWS ASIA AND THE PACIFIC

- FOCUS – NEWS IN BRIEF
- INVESTMENT OPPORTUNITIES
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- TECHNOLOGY DEVELOPMENT AND TRANSFER
- INDUSTRIAL STATISTICS

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INDUSTRIAL DEVELOPMENT NEWS — ASIA AND THE PACIFIC

As from this issue, some changes are being introduced with respect to coverage of news as well as the format of the *Asian Industrial Development News*. News will reflect events in Asia and the Pacific and the format will be smaller.

As in the past, the *News* will concentrate upon the following:

— Industrial development plans
— Research
— Investment opportunities
— Trade opportunities
— Market data
— Economic policies
— Trade and economic agreements
— Regional and subregional projects.

The *News* maintains correspondents in each of the regional member countries and authoritative information is obtained regularly with the objective of disseminating such information among policy-makers and administrators. It is intended to serve:—

INVESTORS — BUSINESSMEN — RESEARCH STUDENTS — RESEARCH INSTITUTIONS — AND STUDENTS OF ASIAN AND PACIFIC AFFAIRS

Nevertheless, the data should be useful to businessmen and all interested in Asian and Pacific affairs.

In addition to research papers on economic and technical matters of relevance to industry, the editorial of the *News* will deal with two new areas of importance: (*a*) technology development and transfer; and (*b*) investment.

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Part I.

NEWS FOCUS

THIRTY-SECOND SESSION OF COMMISSION HIGHLIGHTS RURAL DEVELOPMENT AND TECHNICAL CO-OPERATION

The thirty-second session of the Commission held at Bangkok in 1976 called upon all developing member countries and developed countries and international agencies and organization continue to increase to the maximum extent possible their assistance to developing member countries of the region in implementing activities related to rural development. In dealing with technical cooperation among developing countries, the Commission emphasized that the region had within it the material, technological and human resources which would make intensive regional co-operation for development a realizable goal.

With this emphasis, programmes of technical assistance and projects concerned with rural development and technical cooperation among developing countries will receive a new impetus. Basically, these are two aspects of vital relevance to self-reliance. ESCAP projects which are aimed at promoting technical co-operation among developing countries, social development, projects in respect of agriculture-based industries and appropriate technology and several others specific to the improvement of conditions of the rural peasantry and the small farmers will thus assume a new perspective. Among them are the project for the regional network for agricultural machinery, the regional centre for technology transfer, the proposed subregional surveys and pilot projects for non-metropolitan small-scale industries, and the agro-based industry development programmes.

The major preoccupation of developing countries and particularly of those in Asia will be to improve social conditions through provision of employment and bringing about a system of development allowing for participation by all members of society.

The magnitude of the problem of unemployment and underemployment among ESCAP developing countries can be seen from the fact that, of a total of 280 million unemployed and underemployed for all developing countries, 186 million or 66 per cent represent those of the developing ESCAP regional member countries. Roughly 80 per cent of these are in the rural sector[1] and, consequently, poverty is widespread among rural

[1] See *Employment, Growth and Basic Needs*, report of the Director-General of the International Labour Office, Geneva, 1976.

populations. Of a total population of 1,196 million in ESCAP developing countries (excluding Oceania), 853 million (71 per cent), are seriously poor, of whom 499 million (59 per cent) are considered to be destitute.[2]

The imperative of developing and implementing appropriate programmes of integrated rural development is inherent in these alarming statistical indicators. The role of industry is of fundamental importance to the development of manufacturing facilities, the determination and supply of relevant technological needs, the training of people and the organization of types of industrial units specifically suited to the rural sector.

For these reasons, the discussions which followed at the second session of the Committee on Industry, Housing and Technology on rural industrialization were very significant. The Committee on Industry, Housing and Technology, at its first session in 1975, placed the highest importance on development of agro- and allied industries and industrialization in the non-metropolitan areas. It then recommended that further discussions should be held on problems of the organization, development and application of technology to rural industry. These programmes, as well as the programmes oriented to rural needs in the field of technology such as bio-gas utilization and technology, development of dairy industries, agricultural machinery and the proposed surveys regarding rural institutions, will be dealt with on priority bases.

It is, however, urgent that projects be developed and implemented in order to bring about the changes that are required in the rural sector. For this purpose, there is an urgent need to work out an agreed time schedule for the implementation of projects envisaged at the international level, the co-ordination of such projects and preparation of on over-all comprehensive programme for interdisciplinary inputs, and finally the establishment of close links between national authorities dealing with these problems and the international organizations. Co-ordination between national authorities and international agencies is of vital significance. In order to establish such co-ordination, a system of consultations at appropriate levels and joint review of implementation should be institutionalized at the earliest opportunity.

With regard to technical co-operation among developing countries, the Tokyo Declaration of 1970 remains a landmark. Following the recommendations of the Second Asian Conference on Industrialization 1970, several projects involving technical co-operation were developed in the field of industry. TCDC is of unquestionable relevance to developing countries. The capacity for co-operation among developing countries, if fully utilized, could lead to considerable mutual advantages and not least the strengthening of self-reliance. It could make an important contribution to developments in the rural sector by orienting production to meet the basic needs of the people.

[2] *Ibid.*, p. 22.

Elements that are critical to the development of a successful programme of technical co-operation could be summarized as follows:

i) Selection of activities for joint or co-ordinated efforts which cannot be dealt with through national action, for example, processing of commodities, technically intensive large industrial undertakings, technology policies and export programmes, including exports of manufactures and semimanufactures;

ii) The determination of mutual advantages in respect of each of the projects, for example, in working out industrial joint ventures, the sharing of benefits through package deals (see the proposals in the Asian Industrial Survey);

iii) Efforts should be made to avoid projects where the gains are low or the divergence in national interests is considerable.

On the basis of these principles, projects could be developed for greater co-ordination between the agricultural and industrial sectors, which would secure greater collective efficiency. Simultaneously agreements should be arrived at to ensure a progressive liberalization of trade between developing countries, such as the multilateral trade negotiations programme (MTN). For these agreements to be more realistic and practical, they should be supported by actively stimulating the productive sectors in industry and agriculture so as to take advantage of these liberalizations. All this calls for a rapid improvement of the regional technological capability and capacity by strengthening national capacities and internationalizing the process of knowledge creation, adaptation and use.[3]

INTERGOVERNMENTAL MEETING ON CO-OPERATION IN AGRO- AND ALLIED INDUSTRIES

The intergovernmental meeting on co-operation in agro- and allied industries was held at Bangkok in March/April 1976. This meeting, for the first time, dealt with the problems of development of agro- and allied industries on a comprehensive basis.

Apart from dealing with problems pertaining to the regional network for agricultural machinery and co-operation in the field of chemical fertilizer production and bio-gas technology, the meeting drew attention to a number of areas calling for priority attention. Among these, the need to concentrate attention upon integrated post-harvest technology was considered to be a matter of high priority in view of the foodgrain losses of 20 to 30 per cent, arising from the inadequacy of post-harvest technology in the region.

[3] See *What Now*, the 1975 "Hamnerschred Commemoration" report on Development of International Co-operation, U.N., New York, 1975.

Post-harvest technology

Rough estimates indicate that 20 to 30 per cent of foodgrains are lost to harvesters because of inadequacies in post-harvest technology, such as storage, transportation and packaging. The Asian Productivity Organization has estimated that such losses in Thailand amounted to 17 per cent in 1970, which, in terms of money, accounted for $300 million. If more detailed information on such losses were available, the figures might be of staggering proportions. Along with efforts to improve agricultural output, it is an urgent necessity that decisive steps be taken to provide facilities for storage and transport which allow for minimum losses. Efforts to increase productivity of available land and minimization of losses would contribute a great deal to national and regional self-reliance. These measures also have social implications. The development and application of post-harvest technology mean more than minimizing losses and deterioration of foodgrains. It would lead to progressive improvements in food processing and consequently to an upgrading of the value of agricultural products. This could be done with the full participation of the farmers, to whom the additional earnings would be of tremendous relevance. It would also contribute to the development of rural industries and a greater degree of interrelationship between agricultural and industry.

Post-harvest technology ranges from the supply of simple carrying equipment or rodent-tight paddy storage to modernized rice mills and ship loading/unloading systems. Improvements in post-harvest technology also call for improvements in plant breeding and farming technologies. High recovery rates of final products call for standardization in crop maturity. This will also ensure the attainment of quality standards in final products.

REGIONAL CENTRE FOR TECHNOLOGY DEVELOPMENT, ACQUISITION AND TRANSFER

The thirty-second session of the Commission also called upon the ESCAP secretariat to take all necessary steps to implement a proposal for setting up a regional centre for technology transfer. This centre is to be set up in India. Preliminary studies to determine of the feasibility of the project were conducted in 1975 by a group of regional experts convened by the Executive Secretary. The report of this group was endorsed by the Commission. The project was funded by UNDP and the Government of India.

The Governments of India and the Netherlands as well as other international organizations such as UNIDO and UNCTAD, have offered support towards the implementation of the project. It is also expected that a substantial UNDP contribution will be available from 1977 onwards to cover part of the expenses of implementation. The total cost of the project, as worked out by the expert group on the basis of inputs required to meet the envisaged objectives, will amount to nearly $6.5 million for the first five years. A substantial part of the cost is expected to be borne by the host country, India, and by other participating countries.

The major function of the centre would be to assist countries in the establishment/development of national centres for technology transfer. Technology development, among regional countries in general, has been greatly hindered by the non-availability of adequate skills and institutional facilities to ensure the progressive implementation of decisions intended to achieve technological self-reliance. It has been much easier for developing countries to improve technology to support their programmes of import substitution. This has meant not only continuous dependence on technology and repetitive imports of such technology, but also dependence on service facilities in intermediates and on experts from external sources. It has also had an adverse effect in respect of exploration and exploitation of natural resources available within the region. On the other hand, the consequent monopolistic position enjoyed by suppliers of technology has caused a serious drain on the resources of developing countries. It may be correct to assume that one of the causes of the industrial and agricultural backwardness of the developing countries has been this heavy dependence.

In addition to building up national centres and providing assistance to such centres, the regional centre would also assist in training personnel, organizing seminars, providing experts for assessment and evaluation, etc. The interrelationships that would be created through a regional centre would lead eventually to the establishment of a number of centres within the region, which would facilitate a greater intraregional exchange of experiences and know-how. It would also contribute to a rapid growth of expertise in the field of technology assessment and development.

A REGIONAL SURVEY ON AGRO- AND ALLIED INDUSTRIES

At the intergovernmental meeting held at Bangkok from 24 to 28 February 1976, 17 member countries of ESCAP, UNIDO, ILO, FAO and several non-governmental organizations unanimously urged ESCAP to undertake a comprehensive survey on the development of selected agro-industries on a priority basis. The studies were intended for the preparation of schemes for technical assistance at the national level and subsequently for the promotion of further intraregional cooperation in the field. The programme is to be implemented in the course of two years. At the meeting, the Government of Japan offered expert services to strengthen the activities of the secretariat in the field of agro-industries.

The secretariat has commenced preparatory work on this project and steps have been taken for the preparation of country studies. The country studies would provide information on (*a*) national measures taken by Governments for the promotion of agro- and allied industries; (*b*) the situation with regard to agricultural products, markets and commodity prices; (*c*) an examination of present incentives for development of such industries; (*d*) technical problems encountered by Governments and other operational problems, including availability of raw materials and the results of the measures taken. These studies would be evaluated at the secretariat

and a programme of national assistance and intraregional cooperation would be designed for implementation, as recommended by the Commission, which examined the report of the meeting at its thirty-second session.

The meeting also examined the situation with regard to the regional network for agricultural machinery, which is at an advanced stage of implementation (see notes below), integrated post-harvest technology, chemical fertilizer production and distribution, development of employment-oriented agro- and allied industries (sericulture, essential oils, leather and leather products), food industries (integrated dairy industry), developments in the field of bio-gas technology and utilization, and utilization and recycling of agricultural wastes and by-products. A project of major interest, which was initiated at an expert group meeting held on October 1974 on agro- and allied industries, concerns the development of a regional technology network for agro- and allied industries. This activity would supplement the setting up of a regional network for agricultural machinery and the regional centre for technology transfer. The regional project on agricultural machinery to be set up in the Philippines and is expected to commence operations this year. This project would direct its attention to the improvement, development and commercialization of agricultural machinery of specific relevance to the region.

The regional centre for technology transfer would concern itself with an over-all improvement of the situation with regard to the transfer, development and adaptation of industrial technology at all levels. The two institutions, the regional network for agricultural machinery and the regional centre for transfer technology, would work in close co-operation with national research and technology institutions. While the former would concentrate on the technological aspects, the latter would deal significantly with policy and programming aspects.

In order to supplement these developments, the regional technology network on agro- and allied industries would facilitate the exchange of information between national research and development institutes engaged in various areas of agro- and allied industry activities, particularly in respect of the development of industrial sectors which involve not only problems of technology, but also management, planning and programming and other aspects which are of importance.

The exchange of experiences between various institutes and organizations concerned with the development of these industries would eliminate the need for experimental work to be undertaken *ab initio* and also accelerate the process of development of these industries in the region. Collaborative efforts would, in the long run, also promote development of these industries on a more rational basis and provide a necessary framework for intraregional co-operation in the marketing of products as well as for development of a number of basic industries to supply producer goods required in an important area of activity.

UNCTAD IV WELCOMES ESCAP RESOLUTION 164 (XXXII) ON THE REGIONAL CENTRE FOR TECHNOLOGY TRANSFER

Several problems specifically related to the industrial development of the less developed countries were once again the subject of detailed discussions at UNCTAD IV, held at Nairobi, Kenya, in May last year. It is of interest to observe also that more than 80 countries represented at the Non-Aligned Conference at Colombo, Sri Lanka, reiterated once again their call for a radical restructuralization of the international economic order. At both meetings, the project pertaining to transfer and development of technology and the need to take more concrete steps towards establishing self-reliance among the countries of the third world received the highest consideration.

Of particular importance to industry were the decisions taken at UNCTAD IV on the strengthening of technological capacities of developing countries, revision of the industrial patent system and the international code of conduct on transfer of technology.[4] Resolution 87 dealing with the strengthening of the technological capacities of developing countries calls for formation of technology plans as an integral part of national development plans and for coordination of policies in a number of interrelated areas, such as licensing arrangements, transfer, development and adaptation of technology, industrial property laws and practices, foreign investment, research and development, establishment of appropriate institutional machinery, in particular, national centres for development and transfer of technology, which would be closely linked to other national institutions, and elaboration of all measures to ensure optimum utilization of manpower resources.

The resolution welcomed ESCAP's efforts and, in particular, ESCAP resolution 164 (XXXII) on the establishment of a regional centre for technology transfer and called for the highest extent of co-operation among developing countries in order to ensure the development of concrete arrangements for the transfer of technology among themselves and for the establishment of subregional and regional centres for the transfer of technology, which, linked to national centres, could lead to exchange of information on technological alternatives, improvement of negotiating strength and other aspects, such as preparation of common programmes of training and research. The resolution, among other things, calls upon the developed countries to extend their maximum support for the development of technology among the less developed countries.

Manufacturing output of developing countries

With regard to the restructuring of world manufacturing output and trade in order to reach the Lima target, while the target set out for the year 2000 A.D. was endorsed, namely, that manufacturing output of developing

[4] See Resolution 87, 88, 89(IV), UNCTAD, May 1976, Nairobi, Kenya.

countries should account for at least 25 per cent of world industrial production, a number of pertinent issues have been brought out in UNCTAD documents, which are of relevance to the follow-up activities to be undertaken at the regional level.

Major emphasis has been placed on the structural changes involved in production and trade. The analysis carried out by UNCTAD in respect of 22 industrial branches (major groups of the ISI classification), which takes into consideration a number of assumptions that have been generally applicable to the large majority of the developing countries, indicates that output in sectors producing investment goods or input mostly destined for investment goods should rise from $4.46 to about $60 per capita, an increase of 13.4 times. Growth in sectors responsible for consumption goods would be relatively slower, from $12.80 to about $71.00 per capita, an increase of 5.5 times. "The result shows that the output patterns of developing countries, taken together, can be expected to have changed by the year 2000 A.D. to a very marked degree from the output patterns that existed in developing countries in 1972".[5]

The implications of such developments, which call for an enormous expansion in the supply of machinery, capital equipment as well as crude materials and semi-finished input goods, for patterns of trade, are considered to be of importance.

The full implications of the Lima Declaration for the industrial growth of developing countries are matters which have to be closely examined globally, regionally, subregionally and individually. They call for the closest degree of co-ordination in development of industry between international organizations as well as individual countries. The Meeting of Ministers of Industry scheduled for 1977 is likely to be an important step in the direction of formulating a comprehensive programme of action in this connexion.

[5] See "Dimensions of required restructuring of world manufacturing output and trade in order to reach the Lima target", TD185, Supp. 1, UNCTAD IV, Nairobi, Kenya, May 1976.

Pare II.

INVESTMENT OPPORTUNITIES

SECOND SEMINAR ON FOREIGN INVESTMENT AND TAX ADMINISTRATION

The Second Seminar on Foreign Investment and Tax Administration was held at Tokyo, Japan, from 27 September to 7 October 1976. The seminar was attended by 21 participants from 15 member countries. Observers from CAPA-ICC and other international organizations also participated. The seminar was assisted by six international experts in taxation and foreign investment. The technical discussions were principally a continuation of the subjects which had been dealt with at the first seminar in 1974 at Manila, the Philippines. The major topics discussed pertained to foreign investment policies, investment administration, tax policies and tax administration.

Development of appropriate tax systems

The seminar participants as well as discussion leaders concentrated upon development of tax systems in the region and improvement of tax facilities for investment in industry. They urged that efforts should be made to bring about systematic co-ordination of tax policies within the region in order to promote regional cooperation and, in particular, technical cooperation among developing countries.

The seminar observed that "a good tax climate in a country was conducive to both domestic and foreign investment. . . . High rates of taxation were a disincentive to investment". It further observed "that the rate of tax prevailing in some of the regional countries exceeded 60 per cent, which was high". It recommended that steps be taken to reduce the tax burden and maintain it at a reasonable level. The seminar went on to evaluate the impact of direct and indirect taxes, and administrative procedures pertaining to tax assessments with special reference to such aspects as self-assessment and the PAYE system.

In view of the growing importance and relevance of tax and foreign investment, the participants felt that steps should be taken to strengthen activities of ESCAP in the field of investment and tax development.

One of the recommendations was to enhance the status of the seminar to that of a conference, which should meet regularly. The seminar itself would then become part of the training activities.

It was also recommended that the publication of the loose-leaf document on tax systems in Asia, which is to be completed in December this year, be followed by a meeting of high-level tax experts in the region to prepare guidelines on tax policies.

In view of the importance of technical assistance, the seminar recommended the setting up of a panel of tax experts, who could assist the countries with respect to investment promotion, publicity, project appraisals and taxation.

One major recommendation concerned the setting up of an investment promotion unit in the region, which would not only provide technical assistance to member countries to promote investment, TCDC and other development activities, but also undertake direct support in instances where countries were unable to provide such services owing to shortage of technical personnel or resources. The recommendations of the seminar will be considered by the Economic and Social Commission for Asia and the Pacific at its thirty-third session in April.

INVESTMENT OPPORTUNITIES

1. LAMBRETTA CEYLON LTD., P.O. Box 687, 515 T.B. Jayah Mawatha, (Darley Road, Colombo-10; or Factory — P.O. Box 3, Ja-ela, Sri Lanka

This company, which has been in operation for several years in Sri Lanka, inquires with regard to the possibilities of joint collaboration with foreign firms for setting up additional manufacturing facilities, with particular reference to export development. The interests pertain to manufacture of rubber goods (industrial and other), including rubber products for hospital uses etc. All correspondence from interested parties may be addressed directly to the General Manager of Lambretta Ceylon Ltd. at the above address.

2. ANGLO-ASIAN COMPANY LIMITED, P.O. Box 1034, Chartered Bank Building, Queen Street, Colombo-1, Sri Lanka

This company wishes to establish industrial activities in collaboration with foreign firms and/or joint ventures for the manufacture of soap and allied products for export and home markets. The firm, which has had over 25 years of experience in industry and trading activities, both within and outside Sri Lanka, is interested in the manufacture of soap, which it started two years ago. At present, it utilizes labour-intensive processes with domestically fabricated equipment and machinery. Total production amounts to 20 tons per day, which is entirely exported. In view of the growing demand for these products in China and the Middle East countries, the firm wishes to expand its operations in collaboration with foreign capital. For more details, please enquire from the Managing Director of Anglo-Asian Co. Ltd. at the above address.

3. ELASTO LIMITED, Bentota, Ceylon, Sri Lanka (Manufacturers and Exporter of Footwear).

The firm offers technical know-how to other developing countries interested in setting up a low-cost light footwear industry. They have developed components of low-cost light footwear for both men and women. Specifically, the following items have been offered:

(*i*) Buffed 'Nova Fabrik' insoling material;

(*ii*) Buffed microcellular outsoling material;

(*iii*) Folded straps, (PVC cloth) in long lengths or required cut straps with the anchoring; and

(*iv*) Adhesives.

Part III.

MAJOR THEMES

TRADE IN MANUFACTURES BETWEEN DEVELOPED MARKET ECONOMY COUNTRIES AND DEVELOPING ASIAN COUNTRIES[1]

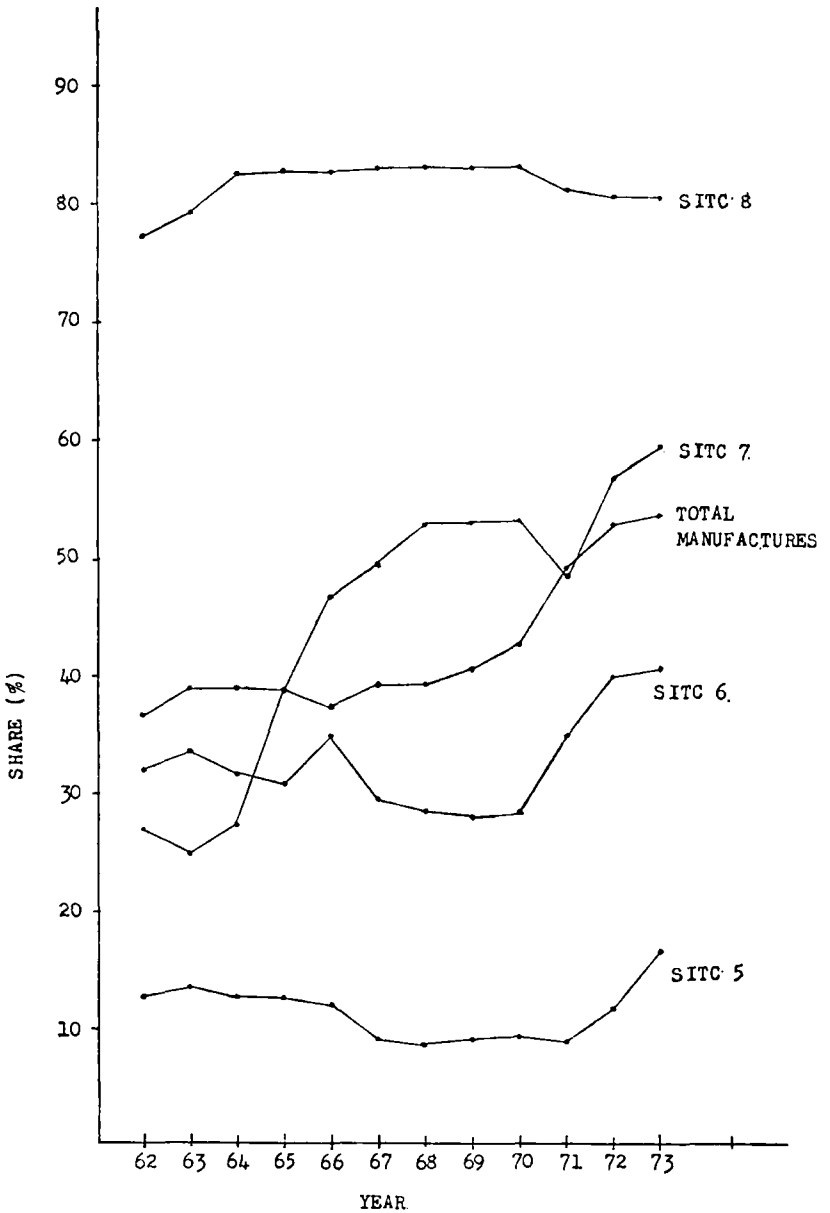
Trade in manufactures and semi-manufactures plays an increasingly important role in providing developing countries with the needed momentum for their economic development. Many developing countries and territories in Asia are among the major developing exporters of manufactures to the developed market economy countries, a situation that may generally be expected to continue. For example, the top 15 developing country exporters of manufactures (excluding refined petroleum and unwrought non-ferrous metals) to developed market economy countries in 1973 included 10 Asian countries or territories (in order of importance, they are Hong Kong, the Republic of Korea, India, Singapore, Malaysia, Israel, Iran, Pakistan, the Philippines, and Thailand). The group of 15 leading developing country exporters of manufactures accounted in 1973 for 89 per cent, and the 10 leading Asian exporters for 60 per cent of the exports of manufactured products from all developing countries to developed market economy countries. At the same time, the group of 15 countries accounts for a dominating share also of the intratrade in manufactures among all developing countries.

Diagram 1 illustrates how the share of developing Asian countries in total exports of manufactures from developing countries to the developed market economy countries has changed over a fairly long period of time, 1962 to 1973. This diagram shows that the Asian countries dominate the exports of miscellaneous manufactures (SITC 8, including for example such products as clothing and footwear, instruments, toys and sport goods) from developing to developed countries, but that there was no significant change in the very high share of about 80 per cent over the period 1962 to 1973. The share of Asia in developing countries' exports to developed countries of manufactures classified by material (SITC 6, including for example textiles, wood products and basic metals) and of chemicals (SITC 5) increased only towards the end of the period. For machinery and transport equipment, the Asian share in this trade increased particularly fast in the first half of the period. For all manufactures (here defined as SITC 5 to 8), the share of developing Asia in the exports from all developing countries to the developed market economy countries increased from about 37 per cent in 1962 to about 54 per cent in 1973.

[1] Article contributed by UNCTAD Secretariat, Geneva.

Diagram I

Developing Asia's share of developed country imports of manufactures from all developing countries 1962 - 1973



Imports of manufactures into developed countries from developing countries in Asia increased from about 2.7 per cent of the developed countries' total imports of manufactures (including their intratrade) in 1962 to 5.3 per cent in 1973.

Table I illustrates what has happened over the much shorter period 1972 to 1973. During this period, boom conditions in the developed countries led to a maximum amount of growth in imports of manufactured products from developing countries. The Asian group, usually the leading force in this trade, experienced only a feeble increase in the share of total developing country exports to the developed countries. The share actually declined in the following product groups: drink and tobacco products, rubber goods, leather and footwear, textiles, clothing, road motor vehicles, refined petroleum products, and unwrought non-ferrous metals. The Asian share increased in the following areas: food products, wood products and furniture, chemicals, pulp, paper and paper-board; non-metallic mineral products, iron and steel, worked non-ferrous metals, and other engineering and metal products. The share remained the same in the group "miscellaneous light industry products".

In the imports of manufactures into the three Asian developed market economy countries (Japan, Australia, and New Zealand) from all developing countries, the share of Asian developing countries remained unchanged between 1972 and 1973 at the high level of 80 per cent. As the table shows, the development varied between the individual product groups, with reduced shares in 8 groups and increased or unchanged shares in 10 groups.

In value terms, developing Asia's exports of manufactures and semi-manufactures to developed market economy countries increased by 57 per cent between 1972 and 1973 while their exports to the three developed Asian countries (Japan, Australia and New Zealand) increased by as much as 95 per cent. In the exports from developing Asia to all developed market economy countries, the following product groups showed the fastest growth between 1972 and 1973: worked non-ferrous metals (20 per cent); pulp, paper and paper board (182 per cent); rubber products (116 per cent); iron and steel (88 per cent); engineering and metal products (85 per cent); and non-metallic mineral products (84 per cent).

Table I. Trade in manufactures and semi-manufactures of 21 developed market economy countries with developing countries in Asia in 1973 by product group[a]

Value = 1973 in million dollars
Change = percentage change between 1972 and 1973
Share = developing Asia as per cent of all DC in 1973

Product group	*Imports from developing Asia*						*Exports to developing Asia*			
	Into all DMEC			*Into 3 Asian DMEC*			*From all DMEC*		*From 3 Asian DMEC*	
	Value	*Change*	*Share*	*Value*	*Change*	*Share*	*Value*	*Change*	*Value*	*Change*
Food products	374	51	27	87	89	70	569	27	126	19
Drink and tobacco	19	46	8	1	—50	9	255	29	8	33
Wood and furniture	1,120	116	63	281	256	96	118	28	18	—25
Rubber products	39	39	71	10	233	91	260	29	143	23
Leather and footwear	464	43	52	62	130	89	101	36	39	39
Textiles	1,875	52	79	622	160	94	2,116	44	1,345	36
Clothing	2,451	48	82	346	293	99	142	15	28	—13
Chemicals	218	76	29	84	115	61	3,047	46	864	35
Pulp, paper and board	31	182	26	15	400	83	616	45	171	38
Non-metallic minerals	57	84	41	20	233	87	293	30	108	17
Iron and steel	152	88	23	31	210	48	2,378	58	1,558	66
Worked non-ferrous metals	67	205	28	55	267	62	305	48	104	30
Road motor vehicles	4	33	3	1	...	33	2,062	45	703	56
Other engineering and metal products	1,715	85	61	170	204	84	9,252	31	2,700	40
Miscellaneous light manufactures	1,126	42	84	163	109	98	738	36	288	31
Total above	9,712	61	61	1,948	182	88	22,252	39	8,203	42
Petroleum products	1,530	48	35	1,126	32	98	153	26	44	38
Unwrought non-ferrous metals	509	21	13	170	47	25	207	51	127	57
Total	11,751	57	49	3,244	95	80	22,612	39	8,374	42

Source: Special tabulations by the UNCTAD secretariat of the trade statistics of DMEC.

[a] The classification of manufactures into product groups is the one regularly used in the UNCTAD publication: *Trade in manufactures of developing countries and territories, Annual Review*, the latest of which refers to 1973: TD/B/C.2/140/Rev.1.

The more recent developments are far more difficult to analyze, given the incomplete data available. Import statistics of nine major developed market economy countries for the period January to September 1974 show, however, that the value of their imports of manufactures (SITC 5 to 8 less 68) from all developing countries was 38 per cent higher than during the period January-September 1973.[1] Their imports of manufactures from the 13 major developing exporters of manufactures increased by 36 per cent and the imports from the 9 Asian developing countries, included in the group of 13, increased even less, or by 30 per cent. See text-table below:

Imports of manufactures (SITC 5 to 8) into 9 developed market economy countries[a] from 9 developing countries in Asia[b] in Jan.-Sept. 1973 and Jan.-Sept. 1974

	Value in million dollars Jan.-Sept. 1974	*Percentage change over Jan.-Sept. 1973*	*13 developing Asian countries' share in imports from all developing countries*	
			Jan.-Sept. 1973	*Jan.-Sept. 1974*
Chemicals (SITC 5)	162	88	16	18
Manufactures classified by materials[c] (SITC 6)	2,443	8	63	55
of which:				
textiles (SITC 65)	1,119	12	71	67
non-ferrous metals (SITC 68) . . .	355	47	12	11
Machinery and transport equipment (SITC 7)	1,418	57	53	54
Miscellaneous manufactures (SITC 8) . . .	3,429	36	74	73
Total (SITC 5 to 8, less 68)	7,096	30	63	59

[a] United States, Japan, Fed. Rep. of Germany, United Kingdom, France, Canada, Sweden, Switzerland and Denmark.

[b] Hong Kong, Rep. of Korea, India, Singapore, Malaysia, Israel, Pakistan, Philippines and Iran.

[c] Excluding non-ferrous metals (SITC 68).

[1] See TD/B/C.2/154 (21 May 1975).

Thus the share of developing Asia in total imports of manufactures from developing countries into developed market economy countries, which had increased spectacularly between the mid-1960s and 1972 and had increased marginally also in 1973, in 1974 actually fell. Judging from trade data of 8 developed countries there occurred a decline in that share also between the first quarter 1974 and the first quarter 1975. See text-table below:

	Value in million dollars Jan.-March 1975	*Per cent change over Jan.-March 1974*	*Developing Asia's share in imports from all developing countries*	
			Jan.-March 1974	*Jan.-March 1975*
Chemicals (SITC 5)	66	—	24	21
Manufactures classified by material (SITC 6) .	813	—21	44	42
of which: textiles (SITC 65)	267	—37	70	58
non-ferrous metals (SITC 68) . . .	159	8	16	25
Machinery and transport equipment (SITC 7)	522	—12	52	57
Miscellaneous manufactures (SITC 8) . . .	1,400	5	—	—
Total (SITC 5 to 8, less 68)	2,642	—8	68	61

Source: OECD Statistics of Foreign Trade, Series B.

The generalized system of preferences: Possibilities for Profit

Trade in manufactures and semi-manufactured products is playing an increasingly important role in the economic development strategy of many developing countries. Trade in these products, however, often requires the exporters in these countries to master many of the marketing techniques which are prevalent in the developed countries, which usually are the most attractive markets for their goods. Many barriers exist, however, which hinder the fullest development of this trade. The very size, complexity, and vast amount of competition found there, as well as tariffs and other trade barriers limit the volume of imports from developing countries which can reasonably be expected in the near future. As an answer to this, UNCTAD, at its first general conference in 1964, proposed that developed countries compensate exporters in developing ones by offering tariff preferences on a wide range of manufactured and semi-manufactured products. The result of this, after many years of discussion, is a generalized system of tariff preferences (GSP) for products coming from developing countries, which was not fully implemented until 1976. Each developed market economy country and some socialist countries, presented exporters in developing countries with a different scheme containing a different set of covered products and limitations. These schemes are complicated in the sense that

preferential import restrictions are often imposed on a product-line and/or country-product basis. Thus, products may or may not be eligible for preferences, depending upon their import volume or upon their status under complex rules of origin. Each scheme is not only different but also periodically changing, so that information costs alone are substantial. Despite such shortcomings, GSP offers developing countries something positive and substantial. Each year, UNCTAD holds a meeting to discuss improvements in the schemes and as time passes definite refinements as well as a generally more liberal interpretation of the rules governing such schemes have been offered by developed country governments. Over a period of time, it is possible that most of the limitations currently imposed, which reduce the benefits offered by GSP schemes, will be eliminated. In addition, it is hoped that, where preferential treatment has been accorded to products not currently exported by GSP beneficiaries, they will diversify and expand their production and exports to take advantage of the potential benefits.

While it is still too early to assess the extent of these potential benefits, UNCTAD now prepares a set of statistical reports on the trade presently covered by the major GSP schemes. The table below contains figures for the Asian region only from two such reports. The scheme of Japan and of the European Common Market for the year 1972 are analyzed. Looking at EEC, it may be seen that only a little over 10 per cent of total imports from Asia were dutiable and about 50 per cent of these were eligible for preferences before quantitative limits were imposed. Of the eligible imports, however, only about half actually are estimated to have received preferential treatment once these limits are taken into account (in the case of EEC, most Asian countries face limits on textile exports). Thus, only about 22 per cent of all dutiable goods actually received preferences.

Schemes of EEC and Japan with regard to developing countries in Asia
(in million $)

BTN	Total trade	Dutiable	Eligible	Preference receiving (estimate)	Eligible/ dutiable (%)	Preference receiving (eligible) (%)
			EEC			
1–24	511	317	12	12	3.9	100.0
25–99	6,267	493	404	165	82.0	41.0
1–99	6,779	810	416	178	51.4	42.7
			Japan			
1–24	607	445	30	27	6.8	91.2
25–99	7,183	4,640	508	171	11.0	33.8
1–99	7,791	5,086	538	199	10.6	37.0

Source: EEC scheme (TD/B/C.5/34/Add.1) and Japanese scheme (TD/B/C.5/35).

In the case of Japan the associated percentages are even lower. Thus, only 11 per cent of all dutiable goods are actually eligible, and of these only 37 per cent actually received preferences. Both Japan and EEC, surprisingly,

granted preferences to only about 2.6 per cent of their total imports in categories BTN 1-99. Thus, the present benefits of GSP to Asian exporters are quite small, and only if preferential tariff margins are preserved and the life of GSP extended beyond the initial 10 years envisaged can we expect GSP to make a significant contribution to the development of exports, production, employment and income in beneficiary countries.

The future scope for manufactures in moving towards the Lima Targets for industrial development

The Lima Target of 25 per cent share of world production and a corresponding percentage of world trade in manufactures is an ambitious goal for developing countries. UNCTAD has estimated that the required annual growth for developing countries taken as a group is upwards of 10 per cent per year starting in 1975 and continuing through the year 2000. Most developing countries lack a wide enough range of products or a large enough domestic market to reach the implied goals in raw materials, consumer products, and capital goods that such a fast pace would normally require. Thus, trade must grow at a fast pace to keep up with this high rate of real growth in total output. If developing countries were to depend solely upon rapid growth in product demand coming from the developed countries (as a result of a faster rate of growth in their total product), this would force them to attain an even higher than 10 per cent growth rate in order to reach the targeted percentage share of world output. Intra-developing country trade offers one sure method of achieving this without increasing the dependence upon developed countries for pacing developing country growth.

UNCTAD has proposed two new approaches to help facilitate the fullest development of this type of trade (intra-trade in manufactures). The first is a proposal, to be presented at UNCTAD IV, for a system of generalized preferences to be granted by developing countries to other developing countries. A second is a proposed study project on the feasibility of establishing multinational export credit and financing agencies to facilitate developing country exports of manufactured products. Such multinational agencies would offer insurance where no national schemes exist, as well as reinsurance to existing national programmes when national programmes are available.

Manufacturing, and especially trade in manufactured products, is one possible method of furthering the goals of economic development idealized by the Lima targets and Programme of Action. By processing raw materials further, developing countries may begin to reverse the decline in their commodity terms of trade (estimated at over 2 per cent per year). Trade in manufactures is an especially dynamic element since it offers these countries, each with a different resource and industrial base, a chance to maximize their joint welfare by taking advantage of their natural comparative advantages between one another.

EXPANSION OF TRADE IN SEMI-MANUFACTURES AND MANUFACTURES AMONG DEVELOPING COUNTRIES OF THE ESCAP REGION[1]

Introduction

The ESCAP region, which comprises one of the largest markets in the world, offers immense possibilities to the countries situated within its confines of developing their natural resources and raising the living standards of their peoples through joint and determined efforts towards co-operation at the regional and subregional levels. Nevertheless, the region is characterized by marked differences among member countries in many essential respects, including economic structure and degree of economic development. There are two developed and industrialized countries, Japan and Australia, while New Zealand is a developed but largely non-industrial country. Some developing countries, such as India, China, the Republic of Korea and Pakistan have achieved an appreciable degree of industrial development and have a certain potential for exporting manufactured goods. Many other countries are at an earlier stage of industrial development, while the four land-locked countries are often classified as the least developed among developing countries. Hong Kong and Singapore are entrepot and manufacturing areas. Several countries are largely dependent on the export of a limited number of commodities.

There are large variations in geographical size, resource endowment and economic potential. As a consequence of geographical location, which has sometimes a powerful impact on transportation costs and also of historical ties with certain countries within and outside the region, there are equally large differences with regard to the importance of intraregional trade for individual countries as compared with their total trade. The variation ranges from about 90 per cent of intraregional trade (imports plus exports) for Nepal down to 25-27 per cent in the case of Sri Lanka and New Zealand. In between are countries such as Thailand, Malaysia, the Philippines and Indonesia, for which intraregional trade represents 40-60 per cent of total trade.

A majority of the regional member countries require marked structural changes in their economies in order to ensure better living standards for their peoples. It can be expected that any scheme for reducing trade barriers will be acceptable only in so far as it can be integrated into such national endeavours. The difficulties are increased by the balance-of-payments difficulties encountered by several of them.

One of the most serious and protracted recessions of the post-war period, coupled with world-wide inflationary trends, has had damaging effects on the foreign trade of most of the developing countries of the ESCAP region; the prospects for the immediate future do not seem encouraging. These coun-

[1] Article contributed by the International Trade Division, ESCAP.

tries, faced with more severe trade and payments deficits in the next few years, will find their efforts towards economic growth seriously stifled. While in the short run some of the developing countries may be able to have recourse to external financial assistance, in the long run, all developing countries should be assisted in meeting the situation by an increase in their export earnings.

Further measures are therefore called for which would enable developing countries to expand and develop their trade, improve their productive capacities and productivity and increase their export earnings. With this end in view, ESCAP will intensify its efforts in promoting trade co-operation among States at subregional, regional and interregional levels.

Problems encountered by developing countries in their exports of manufactured and semi-manufactured products, with special reference to ESCAP

As a general rule, the tariffs of importing countries tend to favour raw materials as against manufactured and semi-manufactured products. The tariff and non-tariff barriers in industrialized market economies tend to relate to certain categories of product imported by them. There are products which are not produced by them but are mainly commodities produced in the tropics; there are then commodities produced in developing countries and in developed countries as well; there is a third group of products consisting of unsophisticated processed or manufactured goods produced in both sets of countries; and lastly, there are sophisticated manufactured goods produced in developing countries only.

Tariff duties are either revenue-raising or protective. Generally, tariffs on the first two groups of products tend to be lower than the tariffs on the latter two groups in developed markets, although in many developed countries, revenue-raising duties are levied on some commodities which are not produced by them, such as coffee, cocoa, tea, bananas and spices. Certain other primary commodities which are produced in both groups of countries are also subject to taxation in developed countries. These would include tobacco, petroleum, wine and sugar, but in these cases, even the locally produced items are taxed at more or less the same rates.

On processed or manufactured goods, tariffs tend to take on an element of protection in developed markets in order to cushion locally established industries, which are generally high-cost producers, against low-cost imports from the developing world.

An effort has been made to alleviate the difficulties experienced by developing countries in exporting their processed and semiprocessed products to developed markets in the GSP schemes established by most of the developed market-economy countries.

However, while developing countries are appreciative of the magnanimity of donor developed countries, some developing countries feel that, because of the temporary nature of the system, where it can be withdrawn by donor countries anytime, producers cannot make long-term plans for development and expansion.

Perhaps more important than tariffs in keeping out the processed and semiprocessed products of developing countries from markets in developed countries are the non-tariff measures practised by developed countries.

Studies carried out by UNCTAD and GATT indicate that a sizable percentage of exports of semiprocessed and processed agricultural products falling within BTN chapters 1-24, and manufactured and semi-manufactured products falling within chapters 25-99, which are of interest to developing countries, are affected by non-tariff measures adopted by developed countries.

Perhaps the most commonly practised non-tariff measure is discretionary, and therefore often discriminatory, licensing of imports. Another non-tariff barrier which is often used to restrict imports is quotas. Import quotas restrict imports *per se*, which is not the case with high tariffs. Import quotas may also be discriminatory if they are bilateral quotas instead of global quotas.

Other widely practised non-tariff measures which tend to distort trade are exchange controls, application of 'voluntary' export restraints, import embargoes or prohibitions, variable levies and import surcharges, advance deposit requirements, anti-dumping regulations and duties, countervailing charges, credit restrictions, direct and indirect subsidization, quantitative marketing obstacles, packaging and labelling requirements, safety standards and health requirements, tax measures, and customs practices (including clearance, valuation, classification and related practices). There are many other administrative practices which are difficult to identify, and it is difficult to determine precisely to what extent they affect imports.

Another fairly common difficulty, which is faced by potential exporters of processed or semiprocessed products in developing countries, is the inadequacy of knowledge regarding requirements in the developed markets in respect of such matters as safety regulations, sanitary regulations, labelling and packaging, permitted food additives, etc.

As regards the trade in industrial products between developing countries, it will be found that certain categories have to surmount high tariff walls in addition to non-tariff measures. These affect the industries which developing countries tend to set up in the process of development, such as textiles, leather and leather products, paper products, ceramics, processed agricultural products and the like. The reason for the restriction is, in general, to protect of recently established industries, which, it is felt, would not be viable if their products had to face competition from cheaper sources, and also to assure these industries of a ready local market.

Another difficulty faced by developing countries in exporting their industrial products to each other is the inadequacy of shipping, both as regards tonnage and frequency of sailings. Many developing countries without national shipping lines face this problem, particularly in exporting their industrial products, because the parcels tend to be small, and it does not pay the shipping conferences to call at ports regularly for small consignments. This is particularly true of exports to other developing countries.

The Bangkok Agreement

Pursuant to the recommendation of the Intergovernmental Committee on the Asian Trade Expansion Programme, set up in November 1971 under the Kabul Declaration of December 1970, a Trade Negotiations Group was organized among interested developing countries of ESCAP to take action, among other things, in the implementation of the recommendation of the said Committee in the field of trade development and expansion programme through trade negotiations.

The Intergovernmental Committee recommended that the participating countries of the Group should determine by themselves the methods and means of conducting the negotiations on a mutually advantageous basis and with a view to providing increased access to their markets for products of other participating countries, taking into consideration their existing commercial policies and national development plans. It further suggested that the countries participating in the programme would also be at liberty to do so by any means at their disposal within the framework of the over-all trade and development policies, including such measures as tariff quotas, adjustments of tariff and non-tariff barriers, bulk purchases, state trading, government purchases, joint ventures, industrial co-operation and trade-cum-investment.

Thirteen developing countries of the ESCAP region attended the organizational meeting at Bangkok in February 1972. The countries were Hong Kong, India, Iran, Republic of Korea, the former Khmer Republic[1], Malaysia, Pakistan, Papua New Guinea, the Philippines, Singapore, Thailand and the former Republic of Viet-Nam[2].

The Group adopted a work programme and time-table for the implementation of the Asian Trade Expansion Programme. The ESCAP secretariat was made a focal point for the exchange of information among the participating countries and it was also requested to undertake the necessary research and studies to ensure fruitful negotiations and speedy implementation of the project.

After 11 months of preparatory work, a second meeting was convened in January 1973. Ten countries attended the meeting, namely, Hong Kong,

[1] Now Democratic Kampuchea.
[2] Now forming part of the Socialist Republic of Viet Nam.

India, Iran, Pakistan, Philippines, Republic of Korea, Singapore, Sri Lanka and Thailand. The Group adopted the ground rules and the procedure for the negotiations.

In July 1974, bilateral talks commenced and exchanges of request lists were made. A total of 461 products ranging from raw materials (both agricultural and industrial) to finished products were involved. Classification of the types of products requested by the countries for tariff concessions reveals that 30.80 per cent belongs to manufactured goods classified chiefly according to material (leather, rubber, wood, paper, textile yarn, non-metallic minerals, iron and steel, non-ferrous metals); 15.84 per cent belongs to machinery and transport goods; 16.27 per cent to inedible crude materials, except fuel (such as hides and skins, oil seeds, nuts and kernels, crude rubber, wood, lumber, pulp and waste, textile fibres, crude fertilizers, metalliferous ores, metal scrap and crude animal and vegetable materials); 16.05 per cent belongs to food and live animals; 10.20 per cent to chemicals; 6.72 per cent to miscellaneous manufactured articles such as sanitary ware, tableware, furniture, travel goods, clothing, footwear, scientific and controlling instruments, optical goods and other manufactured articles not elsewhere specified; 2.60 per cent falls under the category of beverages and tobacco; and 1.52 per cent under animal and vegetable oils and fats. No product belonging to the category of mineral fuels, lubricants and related materials was requested for tariff reduction by any country. (table I).

Analysis of the products of the countries reveals that the composition of their respective sets of products differ in types or categories. Six of the countries requested sets of products composed mainly of manufactured goods classified chiefly by material. These countries were Bangladesh, Republic of Korea, former Laos[3], Philippines, Sri Lanka and Thailand. Two of the negotiating parties, India and Pakistan, requested sets of products, mainly machinery and transport equipment. On the other hand, the former Khmer Republic requested mostly crude inedible materials while the request list of the former Republic of Viet-Nam consisted mainly of food and live animals.

After the submission of request lists, followed by a number of meetings and bilateral talks, seven countries, namely, Bangladesh, India, Republic of Korea, former Laos, Philippines, Sri Lanka and Thailand agreed to reduce their tariffs on some of their products. Subject to ratification by their Governments, the representatives of the above-mentioned countries signed in July 1975 the First Agreement on Trade Negotiations among Developing Member Countries) of ESCAP (also referred to as the Bangkok Agreement). Upon the entry into force of the Agreement, each participating country will apply tariff and non-tariff concessions in favour of products coming from other participating countries as enumerated in the national list of the preference-giving country. Among the participating countries, 146 products were listed in their national lists of concessions. More than two fifths (43 per cent)

[3] Now Lao People's Democratic Republic.

fall under manufactured products; 18 per cent machinery and equipment; 16 per cent food and live animals; 12 per cent chemicals; 7 per cent inedible crude materials, except fuel; 3 per cent beverage and tobacco; and 1 per cent animal and vegetable oils and fats (table 2).

The average of the offered tariff rates of the 146 products is about 36 per cent or a reduction of 17 percentage points below the present average of 53 per cent (table 3).

Average tariffs on beverage and tobacco received the highest percentage point reduction of 92 per cent in the negotiations; manufactured goods, 13 per cent; miscellaneous manufactured articles, 7 per cent; machinery and transport, 7 per cent; inedible crude materials, except fuel, 7 per cent; food and live animals, 5 per cent; and chemicals, 1 per cent.

The Agreement also provided for the granting of special concessions to a participating country which the United Nations considers to be a least developed country. Accordingly, special tariff concessions were extended to Lao People's Democratic Republic by the participating countries.

Special concessions comprised a total of 27 products; one third (33 per cent) covered manufactured products; 26 per cent food and live animals; 26 per cent inedible crude materials except fuel; 11 per cent beverages and tobacco; 4 per cent chemicals; and 4 per cent machinery and transport. (table 4)

The average of the offered tariff rates of the 27 products under special concession to Lao People's Democratic Republic is about 12 per cent or equivalent to about a 3 percentage point reduction below the average prevailing rate of 15 per cent. Miscellaneous manufactured articles was given a 40 percentage point reduction (ppr) below the present tariff rate of 80 per cent; food and live animals, 31 ppr; manufactured goods classified chiefly by materials, 11 ppr; chemicals, 2 ppr and inedible crude materials except fuel almost nil. No tariff concessions were given to mineral fuels, animal and vegetable fats and oils and machinery and transport goods. (table 5)

The participating countries also agreed, through further negotiations, to take steps in expanding the coverage and value of concessions on the products of export interest to one another. Accession to the Agreement is open to all developing member countries of ESCAP.

The Bangkok Agreement paves the way for a new era in trade and development in the ESCAP region. It demonstrates the determination of the Asian developing countries to seek mutual benefits from trade expansion through regional co-operation. Although it has been a modest beginning, it has made a concrete contribution towards the objectives set forth in the new international economic order of the United Nations.

Table 1: Number of products by categories and by countries requested for tariff concessions

(1974)

Category	Requesting countries												Total products	Per cent of total
	BGL	*IND*	*IDS*	*IRN*	*KHM*	*ROK*	*LAD*	*PAK*	*PHI*	*SRI*	*THA*	*ROV*		
0) Food and live animals . .	3	0	—	—	10	1	7	0	11	15	14	13	74	16.05
1) Beverages and tobacco . .	1	1	—	—	0	0	4	1	2	2	1	0	12	2.60
2) Crude materials, inedible, except fuel	2	1	—	—	18	8	10	0	11	10	8	7	75	16.27
3) Mineral fuels, lubricants, and related materials	0	0	—	—	0	0	0	0	0	0	0	0	0	0
4) Animal and vegetable oils and fats	0	0	—	—	0	0	0	0	3	4	0	0	7	1.52
5) Chemicals	2	9	—	—	1	6	1	0	7	11	10	0	47	10.20
6) Manufactured goods classified chiefly by material . . .	6	20	—	—	3	36	14	10	15	8	26	4	142	30.80
7) Machinery and transport equipment	3	37	—	—	0	15	0	3	6	4	3	2	73	15.84
8) Miscellaneous manufactured articles	3	5	—	—	0	6	3	2	4	2	6	0	31	6.72
Total products requested .	20	73	—	—	32	72	39	16	59	56	68	26	461	
Per cent of total	4.34	15.82	—	—	6.94	15.62	8.46	3.47	12.80	12.16	14.75	5.64		100.00

Source: Secretariat reports on bilateral meetings during the 22 July to 4 August 1974 session.

Note: Classification by Standard International Trade Classification, revised (1974).

Table 2: Number of products by categories and by countries offered for tariff concessions in the Bangkok Agreement *(1975)*

Category	Offering countries							Total products	Per cent of total
	BGL	IND	LAO	PHI	ROK	SRI	THA		
0) Food and live animals	2	4	2	—	6	5	4	23	15.75
1) Beverage and tobacco	—	—	2	—	1	—	2	5	3.42
2) Crude materials, inedible, except fuels	3	2	—	1	—	1	3	10	6.85
3) Mineral fuels, lubricants and related materials	—	—	—	—	—	—	—	0	0
4) Animal and vegetable oils and fats	1	1	—	—	—	—	—	2	1.37
5) Chemicals	4	1	2	2	3	3	2	17	11.65
6) Manufactured goods classified chiefly by materials	6	4	11	2	8	15	9	55	37.67
7) Machinery and transport equipment	4	—	8	5	4	5	—	26	17.80
8) Miscellaneous manufactured articles	3	—	3	1	1	—	—	8	5.48
Total products offered	23	12	28	11	23	29	20	146	
Per cent total	15.75	8.22	19.18	7.54	15.75	19.86	13.70		100.00

Source: National lists of concessions of signatory countries to the Bangkok Agreement, 31 July 1975.

Note: The classification of the products in the national lists of concessions is in accordance with Standard International Trade Classification Revised (SITC), United Nations, 1961.

Table 3: Table showing the average percentage points reductions for each product category in the Bangkok Agreement *(1975)*

Category	*Number of products*	*Present tariff range*	*Average present tariff rate*[a]	*Average offered tariff rates*[b]	*Average percentage points reduction*
0) Food and live animals	23	Free–100	23.96	18.60	5.36
1) Beverage and tobacco	5	50–150	139.55	47.94	91.61
2) Crude materials, inedible, except fuels	10	3–65	35.26	28.62	6.64
3) Mineral fuels, lubricants and related materials	0	—	—	—	—
4) Animal and vegetable oils and fats	2	60	—	—	—
5) Chemicals	17	Free–100	23.09	21.84	1.25
6) Manufactured goods classified chiefly by materials	55	Free–150	54.50	41.33	13.17
7) Machinery and transport equipment	26	Free–100	31.32	24.44	6.88
8) Miscellaneous manufactured articles	8	20–300	40.93	33.94	6.99
Total	146				
Average			52.97	36.38	16.59

Source: National lists of concessions of signatory countries to the Bangkok Agreement, 31 July 1975.

[a] Weighted average of the present tariffs of the countries, 1974 imports as weights.

[b] Weighted average of the offered tariff rate of the countries, using 1974 imports as weights.

Table 4: Number of products by categories and by countries offered for tariff concessions to Laos by signatory countries in the Bangkok Agreement *(1975)*

Category	Offering countries							Total products	Per cent of total
	BGL	IND	LAO	PHI	ROK	SRI	THA		
0) Food and live animals	3	1	—	—	2	—	1	7	25.93
1) Beverage and tobacco	3	—	—	—	—	—	—	3	11.11
2) Crude materials, inedible, except fuels	2	—	—	1	—	2	2	7	25.93
3) Mineral fuels, lubricants and related materials	—	—	—	—	—	—	—	0	0
4) Animal and vegetable oils and fats	—	—	—	—	—	—	—	0	0
5) Chemicals	—	1	—	—	—	—	—	1	3.70
6) Manufactured goods classified chiefly by material	—	2	—	1	3	—	2	8	29.63
7) Machinery and transport equipment	—	—	—	—	—	—	—	0	0
8) Miscellaneous manufactured articles	—	—	—	—	—	—	1	1	3.70
Total products offered	8	4	0	2	5	2	6	27	
Per cent total	29.63	14.81	0	7.41	18.52	7.41	22.22		100.00

Source: National list of special concessions to Laos of signatory countries to the Bangkok Agreement, 31 July 1975.

Note: The classification of the products in the special list of concession to Laos is in accordance with Standard International Trade Classification Revised (SITC), United Nations, 1961.

Table 5: Table showing the average percentage points reduction for each product category in the special list of concession to Laos of the Bangkok Agreement

(1975)

Category	*Number of products*	*Present tariff range*	*Average present tariff rate*[a]	*Average offered tariff rates*[b]	*Average percentage points reduction*
0) Food and live animals	7	40–150	44.18	13.58	30.60
1) Beverage and tobacco	3[c]	—	n.a.	n.a.	n.a.
2) Crude materials, inedible, except fuels . .	7	Free–65	6.48	6.31	0.17
3) Mineral fuels, lubricants and related materials	—	—	—	—	—
4) Animal and vegetable oils and fats . . .	—	—	—	—	—
5) Chemicals	1	10	10	8	2
6) Manufactured goods classified chiefly by material	8	10–100	41.06	30.27	10.79
7) Machinery and transport equipment . .	—	—	—	—	—
8) Miscellaneous manufactured articles . .	1	80	80	40	40
Total	27				
Average			14.65	11.70	2.95

Source: Special lists of Concessions to Laos in the Bangkok Agreement 31 July 1975.

[a] Weighted average of the present tariffs of the countries, 1974 imports as weights.

[b] Weighted average of the offered tariff rate of the countries, using 1974 imports as weights.

[c] No import figures available.

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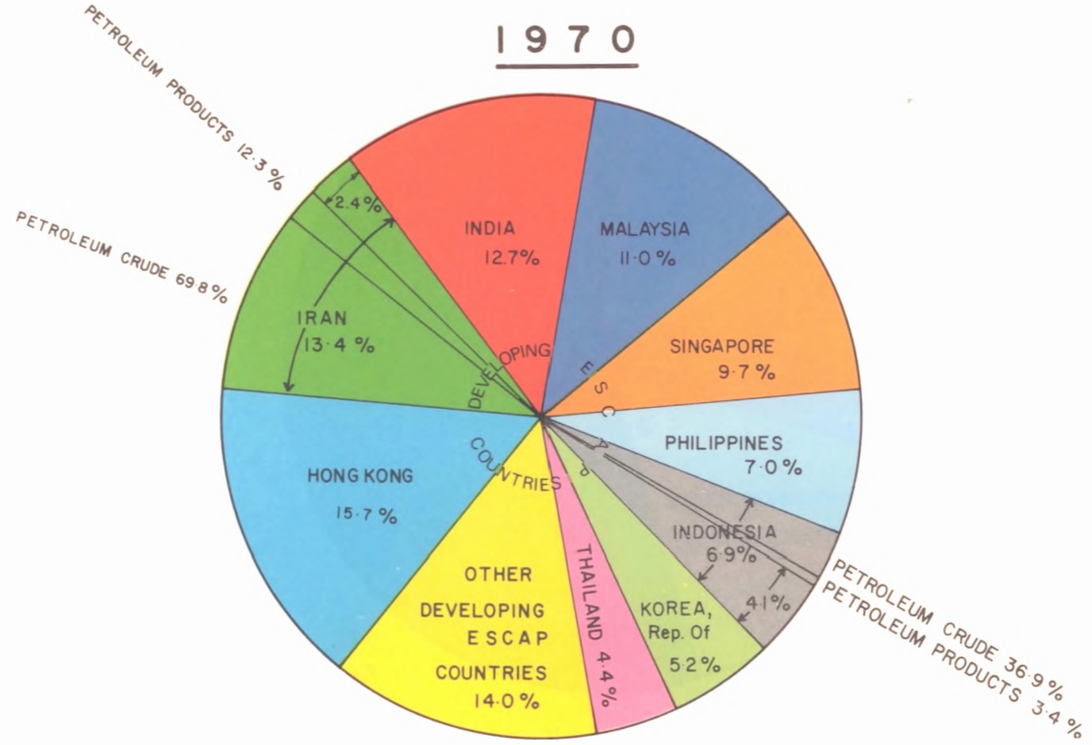
PERCENTAGE SHARE OF EXPORTS
MAJOR EXPORTS OF MANUFACTURED PRODUCTS



Source : UNCTAD Hand Book of International Trade & Development Statistics, 1976

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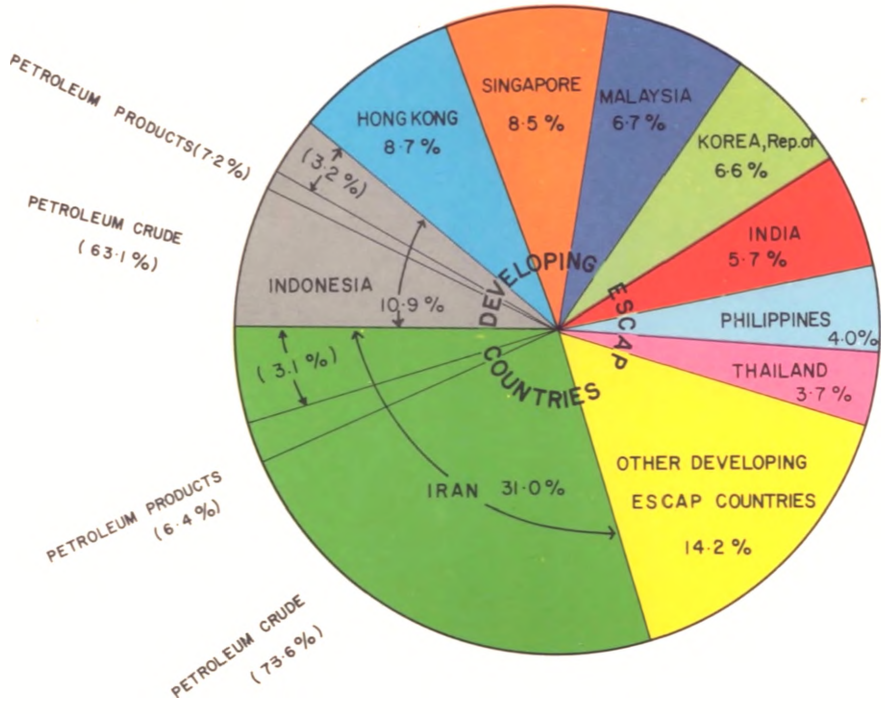
PERCENTAGE SHARE OF EXPORTS
MAJOR EXPORTS OF MANUFACTURED PRODUCTS

1974



Source : UNCTAD Hand Book of International Trade & Development Statistics, 1976

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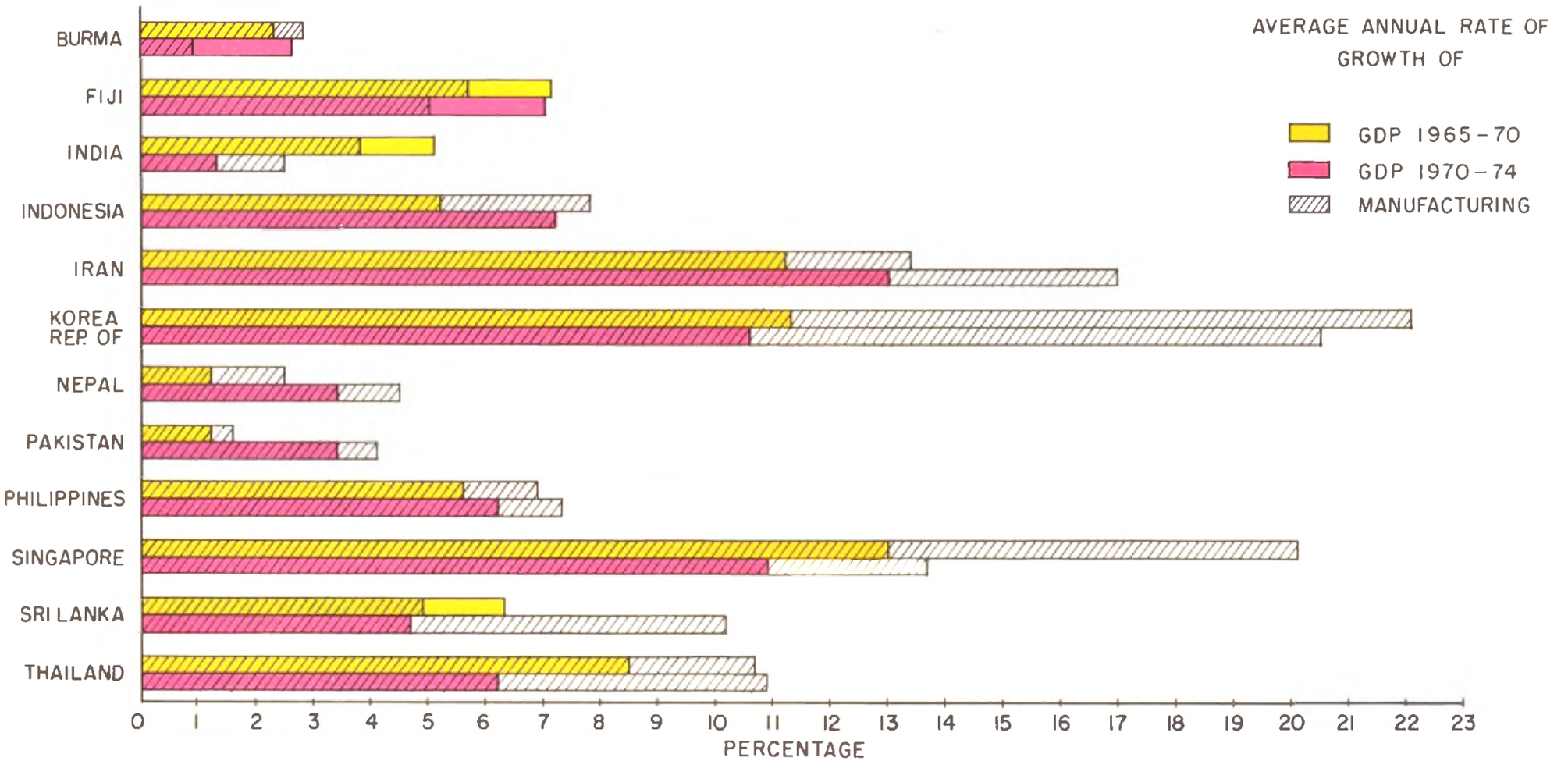
AVERAGE ANNUAL RATE OF GROWTH OF GDP AND MANUFACTURING

1965-1970 AND 1970-1974



SOURCE: UN YEARBOOK OF NATIONAL ACCOUNT STATISTICS, 1975

Part IV.

TECHNOLOGY DEVELOPMENT AND TRANSFER

TECHNOLOGY TRANSFER: CASE FOR AN INVENTORY OF TECHNOLOGY[1]

Transfer of technology is one of the accepted methods of promoting rapid industrialization in developing countries. It provides proven technologies without the cost of research and development and reduces the risk to the entrepreneur. It has thus assumed an added significance as it can promote indigenous "entrepreneurship" by giving the entrepreneur opportunities for training in technology and management.

Technology transfer is not just transplanting "technology" from one place to another with all its frills, but the process of adaptation of technology to suit the new environment. Adaptation could be in terms of reducing the degree of sophistication of plant, reducing the size of plant, design of product etc. Technology is adapted to suit the needs of the entrepreneur, so that it matches his skills and the demands of the market.

Transfer of technology can be at the national or international level, i.e., within the same country or between different countries. The essential requirements of the transfer of technology are: the willingness of the entrepreneur to receive and adapt the technology; availability of suitable technology for transfer; and social and economic conditions favouring transfer.

1. National level transfer of technology

Industrialization in developing countries has centred in and around metropolitan areas. This has created problems of rapid population increases in the metropolitan centres, resulting in the failure of civic amenities, law and order and transportation. Some urban pockets specially endowed with resources and infrastructure have also been industrialized to a limited extent. Nearly 90 per cent of such a country remains unindustrialized.

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[1] This paper has been prepared by V. K. Chebbi, Director of Small Industry Extension Training Institute (SIET), Hyderabad, India, for *Guidelines for Development of Industrial Technology in Asia and the Pacific*. Copies of this document along with other monographs (*Planning the Development of High-Level Technological and Administrative Skills*, by Harold E. Hoelscher, *Economic and Social Framework for Technology Development in Asia*, by Ashok V. Desai, and *Regional Co-operation in Industrial Research and Development*, by Woodward and Trussel) can be obtained from the ESCAP secretariat upon request.

The countryside is being constantly eroded of its resources of skilled manpower and capital. Studies conducted in India have shown that savings from the rural areas are invested in urban centres. This drains the rural areas and further increases the disparities between rural and urban incomes and developed and underdeveloped regions.

In India and in many other developing countries as well, deliberate attempts are being made to industrialize backward and rural areas. A restrictive policy in respect of metropolitan areas is coupled with promotional policies for rural areas, in the hope that industries will be dispersed away from the metropolitan centres to the backward regions.

The metropolitan centres are mostly the capitals of States. All the promotional agencies are located there and it becomes easy for the entrepreneur to obtain governmental assistance. These cities have a well-developed infrastructure which makes them natural distribution centres for manufactured goods in the whole State. This marketing facility and State patronage attract industries in the initial stages. Existing industries attract new industry, and this has a multiplier effect. Industrial consultants, equipment and raw material suppliers and extension agencies also locate themselves there.

Transfer of technology within a country could be based on the technologies available in its metropolitan centres. A restrictive-cum-promotional policy is used in India to force the industries to move out from these centres. This means that new industries are not permitted in the metropolitan area of Bombay, for example, and existing industries are not allowed to expand. In backward regions, growth centres having locational advantages are selected, industrial areas are developed and infrastructure is provided. Developed land and factory sheds are given at subsidized rates to attract industries from metropolitan areas. In addition, capital is made available at very low rates of interest. Power subsidies and tax holidays are given. In specially selected backward areas, an outright capital subsidy attracts industries. This "carrot and stick" policy has helped in developing a number of growth centres in Maharashtra State and industries have emerged in these centres, which have linkages with Bombay.

Many developing countries have set up scientific industrial research laboratories to strengthen their technological base. The Government of India has established a network of national and regional laboratories which are engaged in industrial research. The processes they work on are available to the entrepreneurs to exploit. The laboratories establish pilot plants and give the technological know-how for starting the plant on a commercial scale, for which service they charge a small fee. A share of the fee is given to the scientists working on this project. Under a new scheme, a scientist working on a project is given leave of absence to commercialize the work he has done. The regional laboratories conduct research on regional problems and resources. All these laboratories are administered by the Council of Scientific and Industrial Research, an autonomous body of the Government of India.

Entrepreneurship in developing countries is confined to a small group of people from the trading or business community. In some countries, most of the large industries are owned and managed by a few families. Entrepreneurship development programmes are being undertaken in these countries to widen the ownership base by inducing people engaged in rural, agricultural and service employment to set up small industries. In India, a new group of entrepreneurs is being formed from among the educated unemployed, particularly engineers and technologists.[2] They undergo a programme of motivational training, project preparation and management training. They are also given the opportunity to work as trainees in industries (in-plant training), after which they establish their own enterprises. Very often, they enter into agreements with the units in which they received training. The entrepreneurs receive special financial and other assistance from institutions and banks. They are given sheds in industrial estates, and if they are ancillary units, are helped to enter into contracts with parent firms. In special cases 100 per cent finance is given by banks. In other cases the entrepreneur has only to invest a small amount of money, say 10 per cent, the State contributes 10 per cent, the financing institution paying the remaining 80 per cent financing. Training costs are borne by the State. The entrepreneurs are also given stipends during training.

Technology transfer at the national level can take one of the following forms:

(*a*) From a metropolitan city to a backward region/hinterland. This is a diffusion of technology from a place of concentration into backward areas. Entrepreneurs in the metropolises have a need to expand, the facilities for such expansion being provided in the backward areas;

(*b*) From a developed region to a backward region in the same country;

(*c*) From an existing entrepreneur to a new entrepreneur through in-plant training, collaboration etc. In this process a new entrepreneur is trained and helped to establish an industry;

(*d*) Through consultants, machinery suppliers and extension agencies;

(*e*) Through the efforts of research laboratories.

In the developing countries, the consultants, machinery importers and manufacturers and research laboratories provide technologies. Consultants usually get trade literature and information about machinery from abroad and help the local entrepreneurs to establish the industry by arranging collaboration or through import of equipment. Similarly, research work done at the industrial research laboratories is made available to the entrepreneurs.

[2] Many of the technologists and engineers working in industries are leaving their jobs to start an industry on their own and are taking advantage of the opportunities offered.

2. International level transfer of technology

Transfer of technology from a developed country to developing countries has been an ongoing process for quite some time. The transfer of technology before independence mainly utilized the local resources for producing semi-finished goods which fed industries in the developed country. The industries established in the developing countries through technology transfer mainly supported the industries abroad or exploited local colonial resources. Established, financed and managed by foreigners, these industries did not develop any local entrepreneurial, supervisory and managerial talent. Local people were only engaged as unskilled workers. This type of technology transfer did not help dispersal: industries were established only in places where the foreigners preferred to live and where infrastructure was well developed.

The developing countries, having attained their independence, have begun a number of large industries based on technology from the developed countries. Technology for starting basic industries, such as steel, aluminium, cement and copper, is being obtained from the developed countries. The technologies from the developed countries tend to be capital-intensive and not labour-intensive. They are based on research and development carried out by the developed countries. Such capital-intensive technologies, though essential for basic industries, are not necessary for light industries. The need of the developing countries is not only for technology, which is a means, but is to create employment by the use of capital and to accelerate economic development.

In recent years, emphasis on the transfer of technology between developing countries has been growing, particularly in the area of light industry. Labour-intensive industry, based on technology developed or adapted by one developing country is more suited to the conditions of another.

The international transfer of technology could be of the following two types:

(*a*) Transfer of technology among developing countries;

(*b*) Transfer of technology from a developed country to a developing country.

Transfer of technology in the international field is concerned itself with adaptation rather than mere transplantation. Adaptation is attempted, though to a limited extent, even in the transfer of technology for basic industries from developed countries.

On the transfer of technology, Gunnar Myrdal has written:

"In the first place it had to be learned that scientific-industrial technology, to be maximally useful in the under-developed countries, cannot simply be transferred but must be adapted to the conditions prevailing there. The tropical and subtropical zones where these countries are mostly located have a different climate, and the importance of climate among all the problems besetting their economic development has been, in my view, grossly underestimated. The factors of production, capital and labour are locally available in quite different proportions. Educated, experienced, and skilled managers, engineers and workers are relatively scarce. Domestic markets are small, depriving new industries of economies of scale, unless they can rapidly find large export markets. The external economies provided by a diverse surrounding industrial system are, of course, also absent and take time to develop".[3]

Technology transfer, whether it is within a country or from one country to another, has the following elements:

(*a*) (*i*) Type of technology;

(*ii*) Source of technology;

(*b*) Mechanism of transfer or linkage mechanism between the sources with the potential adapter.

(*c*) Potential adapter — receiver of technology;

(*d*) Environmental factors influencing the process of transfer/adaptation.

3. Type of technology

The developing countries are searching for suitable technologies from developed and other developing countries. The developed countries are equally anxious to sell their technologies. One basic objective of industrialization in most developing countries is to support the activity of their primary sector, which contributes more than 50 per cent of the GNP and provides employment to more than half their work force. Industrial activity has to support this primary sector by providing agro-service facilities, agro-inputs and agro-processing facilities. It has also to provide non-farm employment opportunities for the growing work force, because agriculture is too saturated to support any more of the growing work force. Infrastructure in the developing countries is not well developed. Markets are small,

[3] *Scientific American*, September 1974, vol. 231, No. 3, p. 173.

capital is scarce and the developing countries do not favour massive capital investment and control from developed countries. Many of these countries are also endowed with rich forest and mineral resources and cheap but unskilled labour is also available and exploitable. The developing countries need heavy and light industries, but these must be based on the minimum use of capital and the maximum use of labour. The concept, though applicable in large measure to light industries, has limited application in heavy industry. The concept of "appropriate technology" varies with each country's industries. What is appropriate for one country may not be so for another. Some of the underlying aspects of appropriate technology are:

(*a*) Technologies which can use the available surplus of cheap labour and economize on the use of expensive capital would help in deploying the labour force from the primary sector;

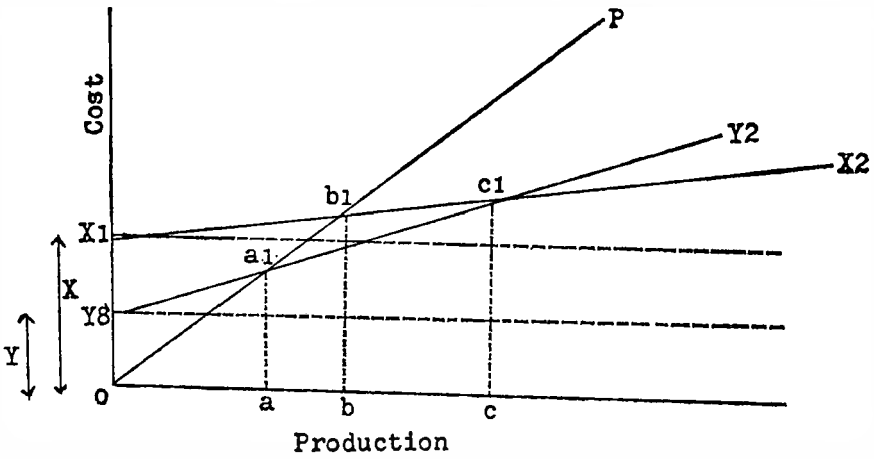
(*b*) The markets in developing countries are small, and technologies based on small-sized less sophisticated plants appropriate;

(*c*) Plants that do not need excessive infrastructure and which can be located in small towns.

Though these are the ideal technologies for the developing countries, they are not possible for all products. Products such as basic metals, petro-chemicals, fertilizers, synthetic rubber and synthetic fibres, cannot be produced on these considerations alone. The degree of dependence on infrastructure, capital and skill is high, so the concept of appropriate technology could be used in these cases only to a limited extent. Except for these heavy industries, appropriate technology has relevance in the case of most of the light industries (classified as small and medium industries). Light industry in any industrial setting accounts for 90 — 95 per cent of the total number of factories.

Appropriate technology is different from the traditional technology of the artisan. In the latter case, the artisan consumes what little surplus is generated, leaving nothing for investment. His activity remains stagnant. This is more like a "substance industry". Appropriate technology should save capital, but be sufficiently productive to form capital too.

To a large extent, are appropriateness of a particular technology depends on the two factors of production, namely the cost of both capital and labour, and the output required. This assumes that a number of technologies are available and the quantity requirements of the end products are the same. The concept can be illustrated graphically as follows:



If X is a capital-intensive technology,

Y is a labour-intensive technology.

ox_1 is the fixed cost of operation technology X.

x_1x_2 is the total cost of operation technology X.

oy_1 is the fixed cost of technology Y.

y_1y_2 is the total cost of operation technology Y.

OP is the sales line.

a, b and c are the different volumes of production.

a and b are two break-even points for the technologies.

It will be seen from the graph that below production level a, none of these is appropriate; between a and b, technology Y is appropriate and not X; between b and c, X and Y can be used but Y is better; beyond c, X and Y can be used but X is more appropriate.

In addition to these variables, those in actual practice are the ready availability of equipment, basic infrastructure, skill required for operation etc. The selection of technology will have to take into account all these factors, in addition to the capital cost, labour cost and volume of production. Innovative entrepreneurs have been developing low-cost technologies to save on capital cost, while machine builders and research laboratories have been developing low-cost-low-volume technologies.

An approach to the development and adaptation of technologies appropriate to local conditions could be any of the following:

(*a*) Upgrading the traditional technologies to increase the productivity to build in an element of "capital formation". In India, village industries, handicrafts and the handloom industries are adopting this approach: the us of power-operated oil-crushing units, conversion of traditional handlooms to improved fly shuttle looms or to power looms, and power-operated tools for production of handicrafts is increasing;

(*b*) Simplifying the modern or imported technology by eliminating or reducing automation. This has been done successfully for hand-operated plastic moulding and plastic forming machines, simple automats to manufacture brass parts for electrical accessories, buttons etc. These adaptations are made by entrepreneurs and local machine manufacturers. These machines are very cheap, and operate at a lower speed than fully automatic machines. While it would be necessary to have a few such machines instead of one, the total production costs would still work out lower as these can use unskilled labour and tools that are locally made. The machines and equipment could be repaired locally;

(*c*) The local equipment manufacturers have also been scaling down the plants to serve small markets or to process raw materials available in small quantities;

(*d*) Industrial and technological research laboratories and extension agencies are exploring ways of using local raw materials. The plants they develop are simple and not capital-intensive.

4. Technology: degree of sophistication

A product can be manufactured by one of several technologies, depending on the scale of operation, type of raw material to be processed, capital intensity required etc. For example. oil may be extracted from oil seeds in the following ways:

(*a*) Traditional bullock-driven oil mill used in the villages. The equipment is made by the local blacksmith and carpenter and no motive power is required;

(*b*) Expeller or screw-press. Equipment fabricated in a factory, needs power and boiler for steam;

(*c*) Hydraulic press, for certain type of oilseeds and capacities;

(*d*) Solvent extraction. High capacity, high capital cost. Degree of skill required is high;

(*e*) Combination of expeller and solvent extraction or any other combination is used to increase output and oils processed by different methods have different marketability.

Factors that increase from (*a*) to (*e*) are the cost of the plant, its capacity and the degree of extraction of oil from the seed. Solvent plants extract the maximum out of the oilseeds while the village *ghanis* leave a considerable amount of oil in the seed. After pressing in the village oil mill or the screw press, oil can be further extracted from the oil cake detained in the solvent extraction plant demonstrating the co-existence of traditional and modern technology.

A process of manufacture may employ technology of different degrees of sophistication, e.g. solvent extraction of oilseeds:

(*a*) *Batch plant.* The process is very simple. Oil cakes or processed seeds are fed into an extractor and solvent poured from above. This requires a large quantity of solvent. Solvent loss is high and the extraction is not complete. The cost of the plant is low but it is open to fire hazards.

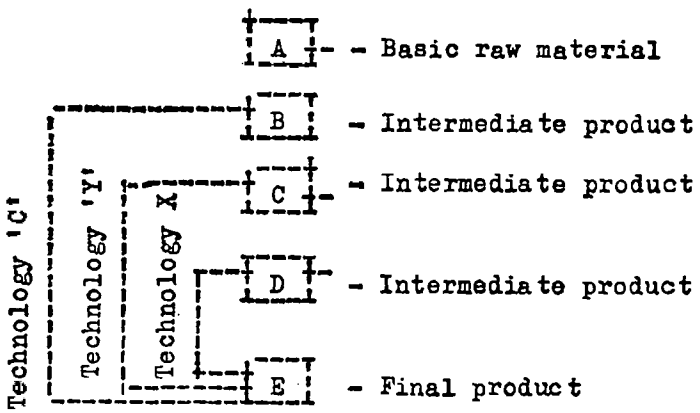
(*b*) *Semi-continuous plant.* This is the same as a batch plant, but there are several extractors: solvent is passed from one to the other in a counter current way. Extraction is better than in the batch plant;

(*c*) *Continuous plant.* The oil cake is fed to a belt conveyor when the solvent is sprayed into an extractor in a counter current way. The extraction is nearly complete and there is very little loss of solvent. The plant is expensive, but requires less labour.

The third variation would be in the size of the plant. Solvent extraction (continuous) plants are available in the range of 10 to 200 tons capacity per day. So are the expellers and the hydraulic presses. The extracted oil is sold or further refined, hydrogenated and converted into products such as margarine, hydrogenated fat, refined oil, fatty acids etc.

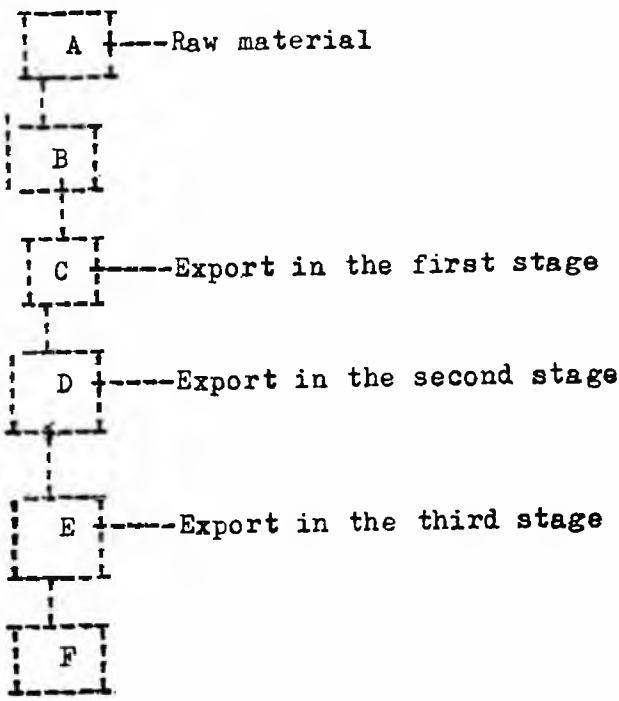
5. Raw materials

The starting raw material determines the technology to be adopted. If a process has five stages as shown below:



it is possible to start manufacturing by getting the intermediate product D, and use technology X to manufacture. Once technology X is established, it is possible to start from C and manufacture E by technology Y. Technology Y would be more complex than technology X. In this way, technological competence is built up in stages. This is being done in India in the case of a number of chemicals, dyestuffs and pharmaceuticals. The manufacture of intermediates from basic raw materials is large-scale capital-intensive and technology-intensive and until the market is built up it is not feasible to start from basic chemicals. Technology for processing from intermediates is usually given by the firm selling the intermediate products. This method is also being used for manufacturing engineering items by importing semi-processed items such as tubes, circles, strips and, extrusions.

When processing raw materials available is the country, the reverse process could be adopted:



Instead of exporting the raw material A, the semi-finished goods at stages C, D, E could be exported. This helps in earning foreign exchange, increasing the value added by manufacturing in stages. This technique of building technological capability is used in the case of processing of hides and skins, mineral products, forest products etc.

Assembling plants of several types have already been established in the developing countries. The process of phased manufacturing with or without collaboration has become one of the accepted methods of industrialization. How fast one could go in indigenization of components is a decision which would have to be taken by the Government in consultation with the parent assembling unit. This process was used to build technological capability for the manufacture of cycles, sewing machines, radios, automobiles etc. This is known in India as the "phased production programme method".

The manufacturer makes an application that he be given an import licence in the initial stages for importing components and gradually reduces the number and value of imports. This saves foreign exchange, as otherwise the country would have to import the assembled product. This process is of relevance even to pharmaceutical preparations, pesticide formulations etc. In the case of a pharmaceutical preparation, the simple ingredients could be manufactured in the first instance and complicated chemicals in subsequent stages. In the case of pesticide formulation, paints etc., many of the ingredients can be obtained locally, so only a limited number of active ingredients or pigments need be imported.

Studies conducted by the SIET Institute tend to indicate that the entrepreneur requires assistance in the area of technology. Enquiries concerning this account for nearly 70 per cent of the total. The other enquiries are directed to such areas as the industry to start with the limited resources available in the area, the industry to start with the limited capital the investor holds etc. The entrepreneur needs:

(*a*) Technological information if he has already thought of the industry;

(*b*) Information about what industry to start with the available resources;

(*c*) Knowledge of what can be started at a particular place with the capital and skill available to him;

(*d*) Estimates of the chances of success and of profit-ability.

These are some of the interests of the potential entrepreneur in a developing country. The information agency does not make decisions for him but exposes him to the various possibilities of utilizing the resources and the source of proven technology so that the information is useful to him in making an investment decision. The role of the information agency is not to make decisions on behalf of the entrepreneur but to help him with the data to make investment decisions based on economic considerations. This means that the entrepreneur should know what alternative methods of manufacture are available and the capacities, costs and profits for each alternative. An "inventory of technology", classified according to industry, investment range, resource and process, would be required for an effective "transfer of technology service". Such an inventory would also be useful for equipment manufacturers so that they could bridge the gaps in the technology range.

6. Technology hardware

Technology has two main components. The first consists of the physical assets namely, the plant and equipment. The elements of this component are:

(*a*) Degree of automation;

(*b*) Speed of operation;

(*c*) Precision;

(*d*) Capacity;

(*e*) Dies, jigs and fixture requirements;

(*f*) Motive power of requirements;

(*g*) Life of the plant;

(*h*) Availability from ready stock/time for delivery;

(*i*) Availability in the country;

(*j*) Cost of installation and erection.

Other considerations that could be included are the availability of repair and service facilities, the extent to which the plant is free from break-down etc. These comprise the "hardware" of technology.

7. Technology software

Equipment or plant and machinery by itself is not sufficient to start the industry. One needs to have the know-how, the designs and the skills for operating the plant. These are the "software" of technology. Software could also include the management aspects for running the enterprise, such as finance, marketing, production and personnel management etc. The elements in software include:

(*a*) Know-how for manufacturing a product. This may be covered by patent or published or unpublished process;

(*b*) Engineering designs for the manufacture of the product;

(*c*) Training of operators;

(*d*) Quality control;

(*e*) Marketing "brand name";

(*f*) Production planning;

(*g*) Financial management;

(*h*) Personnel management;

(*i*) Research and development needs.

8. Transfer of hardware and software

Based on the skills and manufacturing facilities available to him, the entrepreneur decides the extent of transfer of hardware and software requirements. If the process has been developed in the laboratory, and is available for exploitation, then he needs only the equipment to manufacture and skills for transferring the process from the laboratory to the plant scale. A scientist may have developed a process, but to commercialize it he needs a plant. Likewise, an entrepreneur may have the equipment or the knowledge to operate the equipment. He may need only the formulations, patent rights and training. Some entrepreneurs in the developing countries prefer turn-key plants and package plants i.e. the entire plant is transferred in a working condition along with the know-how. Even the first runs on the plant are made at the adapter's place. Such package plants tend to be expensive, but the risk is reduced and the technicians from the company supplying the package plants are often retained by the adapter for some time. Package plants also tend to be capital-intensive and employ less labour.

With the development of technology, a growing tendency is to ask for "unpackage" plants so that the parts of the plant that can be obtained locally need not be imported. This also helps in building the necessary degree of automation and in building the technological capability in the adapter's firm which is of great value in operating the plant, especially after the technicians who have come to commission the plant leave the country. Repairs and replacement of compact package plants are difficult. Training of technicians is an important aspect in these plants and the supplier of the plants takes the responsibility for this: he trains technicians either in his plant or in the plant that he has supplied.

The decision regarding the type of hardware and software to be acquired is crucial for the success of the infant industry in a developing country. In-plant studies conducted in India and other developing countries show that the capacity utilization of plants is less than 50 per cent — a waste of scarce capital.

This increases the cost of manufacture for the internal market and considerably reduces export potential. The other reason attributed to the high cost of manufacture is the need to keep high inventories on account of uncertain supplies of raw materials and components. Several reasons have been attributed to the low utilization of capital equipment. Some of them are:

(*a*) Purchase of over-sized plant. The demand for the product is not adequate to use the plant fully, either due to non-availability of a suitable plant or over-estimating future demand;

(*b*) Proper balancing of the plant has not been made. Some machines work only 10 per cent of their capacity while others work 80 per cent. Since

there are no subcontracting facilities, the industry has to have all the machines and make all the parts. There is no information on availability of components;

(*c*) Spares not available for repairs;

(*d*) No servicing and repair facility;

(*e*) Lack of raw materials;

(*f*) Lack of working capital;

(*g*) Lack of skilled workers;

(*h*) Lack of power.

Since the major constraints in the developing countries are the lack of capital, skill and large markets, a careful selection of plant and process is vitally important. Location should be chosen with equal care, because the necessary infrastructure and supporting facilities do not exist every where.

There are various possibilities for obtaining the hardware and software of technology:

(*a*) They can be obtained together or separately, i.e. the technology for operating the plant can be obtained from the source supplying the plant and machinery, or the two can be obtained from different sources; and

(*b*) Hardware can be obtained from outside the country and software developed locally, or vice versa. It is not necessary that both should be obtained: if the adapter has one or part of one, the remaining part can be obtained separately.

Information on the availability of technology is not enough to enable the entrepreneur to choose a particular process or size of plant. The environment in which the technology operates, the demand for the product, the availability of raw materials and skill and infrastructure requirements, are some of the factors that have to be considered in the choice of technology. Given a particular demand for the product, the choice and degree of automation will be governed by the capital cost, labour cost and several other factors, such as availability of skill, power, raw materials etc. Technology alone does not help the entrepreneur in making a decision.

In other words, the entrepreneur would like to know what would be the profitability of the undertaking for a given volume of demand, taking the various factors into consideration. He must know how the profitability will be affected with variation in demand, i.e. what would be the break-even point for the particular technology — this will help him to try to operate above the break-even point and also understand the impact of price variations. He would like to know the life of the plant so that he can calculate the pay-back period, the cash flows etc.

Choice of technology is an entrepreneur's decisilon. To make a rational and economic decision he will have to be exposed to the alternatives in degrees of sophistication and automation, as well as the cost implication of technology and its operation. A combination of economic and technical information forms the basic primary data, based on which he can go in for feasibility studies or project reports. These primary data, to some extent, serve as a pre-feasibility study. This is being compiled by various promotional agencies in different countries under the titles of pre-investment studies, pre-feasibility studies, industry fact sheets, model schemes etc. UNIDO calls them "industry profiles". Though the technology is the same, the profiles differ in content between regions. They also need to be altered and updated periodically. Some profiles only give the technical requirements for the project, so that the profitability calculation will have to be done by the entrepreneur. Others calculate the profitability on certain assumptions. Profiles have too objectives:

(*a*) To provide an entrepreneur with a fair idea of the factors to be taken into consideration in establishing and operating an industry;

(*b*) To enable the entrepreneur to select and pursue the idea to make a detailed feasibility or project report. These profiles do not claim to substitute feasibility studies which take into consideration the location and other local factors, such as existing competition.

An inventory for the purposes of technology transfer should also comprise a list of prospective industries. This list has to be based on the resources, the demand and the skills. The potential of the candidate industry will have to be identified through a survey of natural resources, such as minerals, forest, marine, agricultural and animal husbandry resources. Demand-based industries will depend on the market study for consumer products, inputs for the other sectors, institutional demands and demand of large industries etc. Such surveys exist in most countries. What is required is to link up the industry with resources and demands, indicating the industry prospects.

The other approach to the identification of the potential industries is to make a study of imports and exports. Industries could be based on trying to substitute imports, or trying to process raw materials going out through imports. Instead of exporting raw materials, it may be possible to process them to some stage and then export.

A list of potential adapters would be required to effect the transfer of technology. Several theories have been propounded for identifying and motivating entrepreneurs. The identification of prospective entrepreneurs is a necessary step in this process and one way is to publicize the programme so that the people interested register for the programme. Extension agencies in the course of their work are also in a position to identify entrepreneurs who have shown interest in starting industries.

Inventory technology will have five aspects:

Technology — Hardware (TH)

Technology — software (TS)

Industry profiles (IP)

Prospective or candidate industries (CI)

Prospective or candidate entrepreneurs (PE)

There is a certain amount of overlap as IP may cover a part of TH and TS. Likewise, CI may infringe into the area of IP. This can be taken care of in classifying and storing the information.

9. Approach to the compilation of an inventory

It is suggested that a selective approach be taken in compiling the inventory. While TH and TS are concerned with processes, IP and CI are concerned with the end product. Technologies and candidate industries selected for inclusion in an inventory could be based on national priorities of industrialization. Criteria could include:

(*a*) Processing agro-resources, forest, fishery and mineral resources;

(*b*) Input industries for agriculture and allied activities;

(*c*) Import substitution industries;

(*d*) Export-oriented industries;

(*e*) Mass consumption items required by the rural/urban people;

(*f*) Ancillaries and service industries to support existing industries;

(*g*) Industries for infrastructure development, housing and transportation.

About 500 to 1,000 technologies could be used in preparing the first inventory. A dual approach is possible: that of selecting technologies and collecting related data, or collecting all available data and processing them. Both these approaches are being tried. In the first case, the industries selected could be based on growth criteria and national priorities. Data pertaining to technologies can be collected and processed, economic data could also be added, and industry profiles compiled. This is being done by the Small Industries Service Institute of the Government of India. These industry profiles, known as model schemes, are printed and sold at a nominal price. SIET has also prepared several industry and business profiles as consultancy assignments. These profiles, along with others collected from different agencies, have been catalogued and stored in a computer-based information system in the Small Enterprises National Documentation Centre (SENDOC) at the Institute. A single product has up to three profiles

collected and classified which represent different levels of technology and output. SENDOC is also storing information on TH in the form of trade literature, and information about different areas in the form of area literature.

Another approach is a "spin off" from the census of small industries undertaken by the Government of India in 1973. The census covered more than 200,000 small industries. The main objective of the census was to find out existing capacities and resource requirements of small industries. The census covers information about equipment used, process adopted, raw material and power requirements, skilled worker requirements, etc. Questionnaires sought information on the following points:

I. Identification particulars:

1. Name, location (state district, *tahsil*, town etc.)
2. Type of organization (proprietory, partnership etc.)

3 and 4. Nature and description of industrial activity

5. Year and month of establishment
6. Location: in estate, own shed, rented building etc.

II. Employment

Average employment and emoluments (salaries) of self-employed, skilled, unskilled, supervisory, etc.

III. Capital

Land, building, machinery and equipment and other fixed assets.

IV. Borrowings

Medium and long-term loans: Sources of borrowings
Short-term loan: Government, banks, corporations etc.

V. Fuels

Electricity, lubricants, water etc. consumed.

VI. Capacity and actual production

VII. Particulars of important (main) machinery and testing equipment

VIII. Materials and bought-out industrial components

IX. Exports

The responsibility for the collection and analysis of the data was taken by the Small Industries Development Organization (SIDO) of the Government of India, through their state level organisation i.e., Small Industries Service Institute. It is anticipated that the computorized data should provide information regarding the wide range of technologies available for a single product, complete with technical coefficients of labour, power and other requirements. The industries have been codified using the National Industrial Classification (1970), which is the same as the International Standard Industrial Classification of the United Nations (1968).

10. Organization for technology inventory

Agencies that promote small industries, cottage industries and local entrepreneurship have been established in many developing countries. These extension agencies are manned by engineers, technologists and management specialists, and have outposts or branches in different parts of the country. It is suggested that such an agency should take up this task of making an inventory for technology as it has the necessary field staff for collecting the data. The Technology Transfer Inventory provides the agencies with an effective instrument for promoting industries and local entrepreneurship.

At the central office of the extension centre, the staff has to be strengthened for processing the data fed from the field office/field officers. The central staff (TT Cell) should possess technical qualifications and/or experience to handle the technological data and if necessary must be trained in information storage and retrieval systems. The number of specialists will depend on the different broad technology groups that are being handled. Fields of specialization may include such areas as mechanical, chemical, electrical engineering, ceramics, and leather.

Data must be collected both by the field staff and the central TT cell. Field extension personnel will collect information from existing industries willing to participate in the technology transfer operation. Some industries having standardized processes may not have reservations about giving information while others may. The latter may not want to pass full details to the extension agent, but indicate their willingness to transfer technology, giving only the broad parameters of the project. A third possibility could be that the unit is willing to transfer technology a distant place but not in the same town or region. There could be others who would give broad parameters about their industry but would be neither willing to give detailed information nor participate in transfer of technology in the same country, though willing to collaborate outside the country.

Field extension agents can also collect data from the consultants and machinery manufacturers and dealers. The central technology transfer office which has to collect and process the data from the field can also collect data from these sources: (*a*) published material available from books and periodicals, newspapers etc.; (*b*) other extension agencies and information and documentation centres; (*c*) research laboratories; (*d*) large industries willing to give information on processing, their input materials, components etc., or their output material and by-products and industrial wastes.

The data collected by the field agencies would probably be fragmented and would have to be processed and integrated. Field data may have the following elements:

(*a*) Name of manufacturer;

(*b*) Product manufactured;

(*c*) Investment in machinery, details (if willing to give);

(*d*) Process of manufacture (if willing to give);

(*e*) Employment;

(*f*) Infrastructure requirement;

(*g*) Willingness for technology transfer, if so, to what extent.

The central TT cell will have to process the information it collects and that collected by the field agency. The points the inventory must cover are industry/commodity manufacturer — and for each technology the various items of information have to be listed thus:

Technology: Capacity

1. Capital cost — plant and machinery sources of supply
2. Year of establishment
3. Land and building requirement and cost
4. Raw material
5. Skilled and unskilled workers
6. Power, water and other requirements
7. Break-even point
8. Profile or feasibility study, if available.

Economic data

1. Prospects of the industry in the country
2. Training facilities
3. Any testing facilities, etc.

The data have to be constantly updated. Data on machinery has to be collected from time to time. Industry profiles may have to be prepared from the operating date of the units, coupled with the latest data from the machinery manufacturer. Economic data might also be used to indicate the prospects of the industry.

A list of prospective entrepreneurs interested in starting the industry would be compiled both at the field level and at the central technology transfer level.

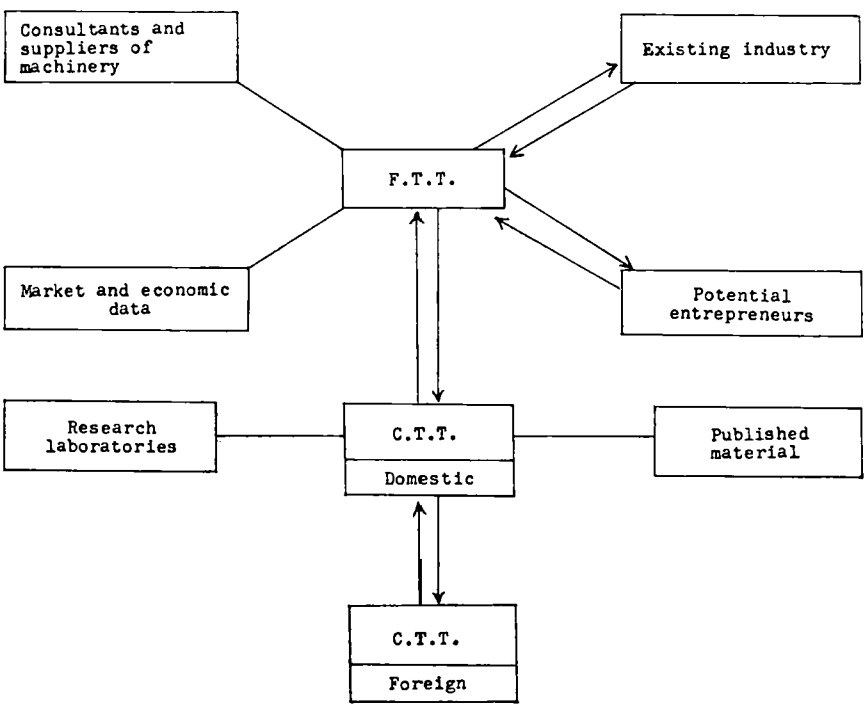


Figure shows the linkages between the central and field technology transfer cells; potential entrepreneurs and information sources; domestic and foreign.

Transfer of technology and exchange of information between countries can be bilateral but needs policy support and agreements between the countries.

An international clearing-house of technologies established in one member country can store information and disseminate it to other developing member countries. It can also evaluate and monitor the programme.

11. Classification and storage of information

Four types of enquiries are attended to at the information centres of the extension agencies. They are:

(*a*) Technical and economic information for a particular industry the entrepreneur has in mind. This is usually related to the knowledge the entrepreneur already has about the industry. If, for example, the entrepreneur is a trader, he may want technical information, and if he is a technically qualified person, then he seeks market information;

(*b*) Technological information about a particular process in which an entrepreneur is interested;

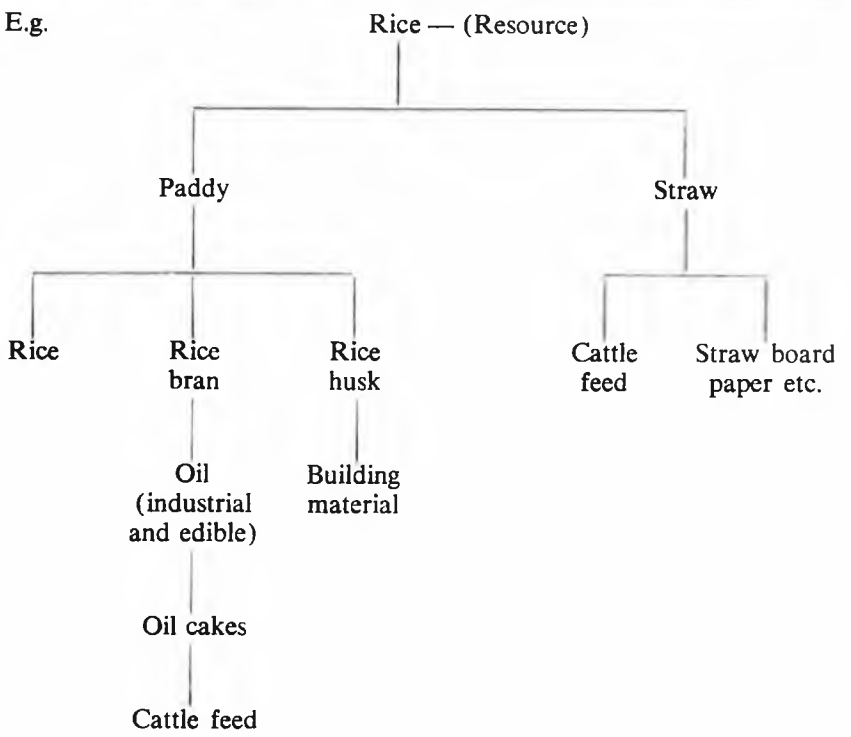
(*c*) Entrepreneurs wanting information to process a particular resource available in the region;

(*d*) Entrepreneurs wanting an industry in a particular capital cost range, and in a particular area and town.

Since the transfer of technology is being viewed in the national and international context, the three-digit International Standard Industrial Classification may be used and for other categories only cards and cross references need be kept.

A technology transfer centre may provide information about types of technologies, capacities and costs in a tabular form for each industry so that identification of an appropriate technology becomes easy. The centre may also indicate the gaps in the range of technology available so that the equipment manufacturers/industrial research organizations can take up the manufacture for the missing range of technology. TH, TS and IP may all be stored industry-wise.

Reference cards may also be kept covering the resources available in the country and what are the industrial possibilities based on the locally available resource.



Linking of resources with the industry is an important task of the centre so that technology transfer based on locally available resources can be stimulated.

A list of potential entrepreneurs indicating the location where they want to start, and the industries they are wanting to start should also be maintained, either industry-wise or location-wise.

Field technological transfer centres (FTT) could be located in each of the main regions of the country. These centres could also keep a list of potential industries, information on technologies and potential entrepreneurs so that they take concrete steps in establishing new industries.

12. The mechanism of transfer of technology

Depending on the complexity of the product, and the competence of the adapter, technology transfer can take many forms. The donor may charge a fee or royalty, or just recover the cost of the know-how by the sale of equipment, components or intermediate products. For simple products, or products which have a wholly local market, the donor may not charge a fee except to cover his costs. Ultimately, it depends on the skill of the

adapter, and the extension agency which is helping him to secure the best terms. The government policies in the donor and adapter countries will go a long way to stimulate the process of technology transfer. The different kinds of technology transfer are:

(*a*) Technology transfer by information exchange;

(*b*) Technology transfer by a visit of the adapter to the donor's unit for training and discussions;

(*c*) Technology transfer by the donor actually helping the adapter to establish the unit and operate it;

(*d*) Technology transfer by purchasing the intermediates produced in the donor's factory;

(*e*) Technology transfer by supply of components and intermediate products;

(*f*) Technology transfer by supply of equipment and know-how by manufacturer of equipment;

(*g*) Continuing collaboration for the first few years to supply the research and development results in the donor's factory;

(*h*) Technology transfer to help in marketing and management aspects;

(*i*) Technology transfer from consultants, research organizations etc.

Technology transfer efforts are aimed at bringing the donor and the adopter together. The role of the extension agency is to aid the process and help the adapter to modify the technology to meet the local need.

13. Training of entrepreneurs for technology transfer

It has been mentioned that the entrepreneurs who have shown interest in starting industries have to be trained to:

(*a*) Select the product keeping in view the potential for the industry;

(*b*) Prepare a feasibility report to understand the viability of the project, and to obtain financing from institutions;

(*c*) Learn from the inplant training in the industry which they want to establish;

(*d*) Undertake management training to help them manage the unit efficiently.

The entire programme may be preceded by motivational training for the entrepreneur. A suitable selection procedure will be adopted if the number is very large so that promising entrepreneurs may be selected in the first attempt. In the case of inplant training, this may be within or outside the country.

Conclusions

1. Inventory of technology is a prerequisite for a systematic attempt at transfer of technology either within the same country or between countries. This also helps to locate and develop "appropriate technologies".

2. The agency connected with industrial promotion in each country should be responsible for this task of technology transfer and should compile the inventory. It should have field agencies.

3. The same nomenclature should be used for the inventory in different countries.

4. Technology transfer is effected bilaterally between two countries. It is ultimately the linking of the adapter with the source of technology.

5. An international centre on technology transfer would help in developing a composite inventory and also serve as a clearing-house for technology transfer policies and programmes. It could monitor and feed back information on this subject.

6. An international workshop on the methodology of keeping inventories of technology and on the mechanism and policy aspects of technology transfer should be organized.

Annex I

Development of industrially backward areas

The Government of India, state governments, autonomous corporations nationalized banks are giving a number of incentives and nationalized banks are giving a number of incentives and concessions for locating industries in backward and hill areas.

Central outright grant or subsidy scheme

A list of selected backward areas is drawn up on certain economic indicators. Industries (new) set up in these areas are eligible for an outright capital subsidy of 15 per cent of the value of fixed capital investments. Existing industries are given subsidies for their expansion.

Financing institutions such as the Industrial Development Bank, the Industrial Finance Corporation and the Industrial Credit and Investment Corporation give concessional financing directly or through refinancing to be located in the backward districts. Nearly two thirds of the country has been declared as backward for this purpose.

Transport Subsidy Scheme

Transport Subsidies are given to units located in the hill areas, to overcome the additional expenditure they may have to incur towards transportation costs of finished goods and raw material. The government of Maharashtra (one of the States in India) has also offered a package of incentives for dispersal of industries as follows:

1. Sales tax refund: sales tax collected will be refunded to units located in specified backward areas with certain stipulations
2. Lower electricity tariff
3. Exemption from octroi duty "with certain stipulation"
4. Water royalties need not be paid by the units located in backward areas
5. Guarantee of loans
6. Contribution towards cost of feasibility study
7. Contribution towards cost of industrial housing
8. Preferential treatment in government purchase
9. Assistance in technical training
10. Provision of developed areas and industrial shed
11. Speedy disposal of claims through a state agency.

In addition to these, the SICOM (state government undertaking) extends substantial financial assistance in the form of:

1. Underwriting/direct participation in equity capital
2. Term loans
3. Loans under capital participation
4. Guaranteeing of loans under capital participation, etc.

Annex II

Training of young entrepreneurs at the Small Industry Extension Training Institute (SIET)

(Extract from the brochure of the training programme conducted at SIET)

The Small Industry Extension Training Institute is conducting a 12-week training programme for young engineers, technologists and scientists, sponsored by the Government of India, state governments and other organizations. Engineers may also join the training programme on their own by paying the fee.

The main emphasis of the programme is to raise the participants' motivational level, promote their capacity to launch an enterprise and manage it profitably. With this broad objective in view, priority has been given in the design of the training course to developing the spirit of enterprise of the participant, to enable him to take rational decisions on starting an enterprise, duly considering the alternative choices and risks involved, preparation of the project (feasibility) report and to promote his managerial and technical ability.

The course is divided broadly into three areas, consisting of six weeks of theoretical inputs, three weeks of inplant study and three weeks for preparation of project reports and proposals for financing for presentation to the banker.

The six weeks of theoretical inputs are organised into three sections: the first section of one week is devoted to small industry, its scope, development, and assistance available. The aim is to open up to the participants the new avenues of industrial opportunities, their scope and various forms of assistance available to them. The next two weeks are devoted is section II. During this period, the participants concentrate their attention on how to prepare a feasibility report. They are helped to identify the product to be manufactured and test their choice and the feasibility by interviewing the raw material suppliers, existing manufacturers, if any, and actual and potential customers. The participants will also make detailed cost estimates and learn the tools and techniques of preparing a feasibility report.

The participants are by now painfully aware of the many difficulties and constraints that beset the path of a small industrialist. So as to strengthen his determination to proceed with the project, a few sessions on entrepreneurial motivation are woven into the programme at this stage.

The topics to be covered under this section are:

(*a*) Pre-feasibility studies;

(*b*) Feasibility studies;

(*c*) Financial estimates;

(*d*) Limits to feasibility studies.

It is not enough if the participants are made aware of small industry and prepare a project: they should also understand and be able to apply the techniques of managing an industrial unit.

Section III covers inputs on techniques of industrial management for a period of three weeks.

The programme of sessions is set out in detail below:

1. Functions of management
2. Marketing
3. Export marketing
4. Production planning and control
5. Inventory management
6. Work study
7. Plant layout and material handling
8. Costing
9. Financial management
10. Legal obligations for small industry
11. Personnel management.

The next three weeks are devoted to inplant study. The participants will study, in a plant manufacturing product similar to the one chosen by them, the economics of working of the unit. As a preliminary to the study, some sessions are conducted to give an idea to the participants on methods of field study.

The study should enlighten the participants in finalizing the type of organization, machinery, manpower, techniques of production, marketing etc., which they require for their line of manufacture. They should also be able to understand the basic problems of a working unit and the possible ways in which the working may be improved.

In the last phase of the training programme the participants prepare their project reports. The inplant study enables them to assess the various requirements of the project.

Annex III

The Small Industry Extension Training Institute

A number of organizations and agencies were set up at different levels to support and sustain small industry development in India. The Small Industry Extension Training Institute (SIET) was one such body, established in 1962 by the Government of India, to ful-ful the following objectives:

(*a*) Plan, provide and supervise training for persons engaged in small industry development, extension, management, consultancy and information;

(*b*) Undertake, sponsor or plan research on development of small industry;

(*c*) Collect, store and disseminate information useful for technological and managerial advancement of small industry;

(*d*) Extend consultancy services to central and state governments, organizations — national and international — in the field of small industry development.

SIET functioned in the initial years primarily as a training centre for personnel of the Small Industry Development Organization (SIDO) and State Directorates of Industries. The Institute was made autonomous in 1962 for greater flexibility in its functioning. In keeping with its objectives, the Institute's activities have been both expanded and diversified. SIET now serves a wide and varied clientele.

Training

Training has been a major function of the Institute since its inception. In the last 13 years, there has been considerable diversification in the programme offered and also in the clientele coverage. Programmes of shorter duration, of one to two weeks, have now been organized and most of them are specially designed to meet the specific needs of the clientele. The increasing emphasis on creating self-employment opportunities has induced SIET to train young engineers and technologists with a view to developing latent entrepreneurship, especially in industrially backward areas.

Workshops and seminars

Organization of workshops and seminars is an equally important area of the concern of SIET. Such meetings provide a forum for the exchange of information, ideas and techniques so essential for healthy industrialization. Participants in seminars and workshops include chief executives of developmental agencies, training, banking and financial institutions, academic bodies, research laboratories and the governments.

International programmes

SIET organized its first international training programme in 1967. Since then, 25 programmes, including a workshop, have been exclusively designed and offered to 390 officer-participants from Asia, Africa and Latin America. The principal topics on which training is offerd are industry promotions, management, consultancy, financing, industrial estates planning and promotion, industrial extension and entrepreneurial motivation development. That the participants from 41 developing nations have regularly attended the programmes testifies not only to the popularity of the programmes but to the fact that India has considerable experience in small industry development to share with the developing nations. International organizations such as ESCAP, and bodies such as the Ford Foundation have sponsored candidates to the various programmes. The Institute conducted a special course in small industry development for the 25 engineer-officers of SIDO, United Republic of Tanzania, in 1974. The programme is being repeated this year for another batch of engineers from that country. The Asian Productivity Organization (APO) the International Labour Organization (ILO), the International Development Research Centre (IDRC) and the United Nations Industrial Development Organization (UNIDO).

SIET, through its several training programmes, attempts to stimulate promotion and modernization of small industry by upgrading the skills and moulding the attitudes of the personnel of development agencies and entrepreneur-managers of small enterprises. This goal is always kept in view in designing new programmes.

Research

SIET undertakes research and surveys as an essential tool to strengthen its training inputs and also to enhance the effectiveness of its faculty as trainers. Some of the areas in which it has done a good deal of study are entrepreneurial development, small industry promotion techniques, industrial dispersal and growth centres, regional development, appropriate technology and management.

Research studies have greatly aided policy formulation and action programmes for small industry development. Such policy and action-oriented research is done both on its own initiative and for the central and state governments and agencies involved in small industry development.

Annex IV

Small Scale Industries Development Organization (SIDO)

In order to carry out various programmes and policies of the Government of India relating to the development of small-scale industries, and on the strength of the recommendations of the International Team of the Ford Foundation on Small Scale Industries in India, an organization at the

national level with the Development Commissioner, Small Scale Industries, at its head, was set up in 1954 under the then Ministry of Commerce and Industry, Government of India.

It is both a co-ordinating and executive agency. It maintains close liaison with the state governments and different organizations and institutions at the central and the state levels concerned with the development of small-scale industries. It functions through 16 small industries service institutes, 7 branch institutes, 55 extension centres, 2 training centres and 3 production-cum-training centres.

The main functions of SIDO include (*i*) co-ordination, (*ii*) industrial development, and (*iii*) industrial extension service.

Co-ordination

The Organization co-ordinates the work relating to the development of small-scale industries on an all-India basis by:

(*a*) Evolving an all-India policy and programme for the development of small-scale industries;

(*b*) Co-ordinating the policies and programmes of various state governments;

(*c*) Acting as a liaison between different states and between the states and central Ministries, Planning Commission and Reserve Bank and State Bank;

(*d*) Co-ordinating the programme for development of large and small-scale industries; and

(*e*) Co-ordinating the programme for the development of industrial estates and ancillaries all over the country.

Industrial development

For the development of ancillary industries, SIDO establishes liaison with public and private undertakings and the Director General of Technical Development, etc., to ensure proper utilization of the existing production capacity in the small-scale sector.

An important function of SIDO is to suggest a pattern of small-scale industries development for the country as a whole. This involves responsibilities for indicating the lines of manufacture which are suitable for the small-scale sector and giving it all assistance in the form of promotion, procurement of raw materials and machinery and other technical advice from time to time.

SIDO is represented on different licensing committees, development councils and other bodies and seeks to safeguard the interests of the small-scale sector.

Technical service

This involves provision of (*i*) technical know-how; (*ii*) know-how on machinery process, costing and other ingredients; (*iii*) problem-oriented technical consultancy; (*iv*) intensive studies in depth; (*v*) designs and drawings; (*vi*) prototypes; (*vii*) workshop and laboratory services; and (*viii*) training in technical trades and through mobile workshops.

Economic investigation and information service

The organization currently conducts (*i*) area potential studies; (*ii*) industry surveys; (*iii*) market surveys; (*iv*) industry information service; (*v*) intensive development campaigns; (*vi*) evaluation studies; (*vii*) topic research; (*viii*) feasibility studies, and also prepares (*ix*) financial assessment reports on small industries applying for loans to the commercial banks.

Management services

The management services comprise management training; management consultancy; diagnostic studies; integrated plant studies; open house discussions and seminars; and training in entrepreneurship.

Marketing services

Market surveys have been mentioned above under "Economic investigation and information services". The same assistance is rendered to small industrialists through the Government Stores Purchase Programme; export marketing; and trade centres and exhibitions.

Annex V

Small Enterprises National Documentation Centre (SENDOC)

The Small Enterprises National Documentation Centre was set up in 1971 at SIET with the following objectives:

(*a*) To collect, collate and store information, data and documents useful for the technological and managerial advancement of small industries;

(*b*) To disseminate information to persons or organizations engaged in activities related to small industry development; and

(*c*) To be the national centre for co-ordinating and collaborating with the information activities of other national institutions and effecting liaison with similar centres in other countries.

SENDOC is thus envisaged as a clearing house of information for the specialized agencies connected with the development and promotion of small industries. With the setting up of the documentation centre, the library and the communications section (comprising audio-visual, publications, organizational communications and data Processing.

Library

The SIET library has a very specialized collection in the field of small industry development. Since the establishment of the documentation centre, its collection has been considerably augmented. The library has, at present, 12,000 books and reports. It subscribes to more than 600 periodicals in the field of social sciences, management and technology. The UDC system is followed to organize the books in the library. As all training courses conducted by the Institute are residential, the library is kept open for the participants from 9 a.m. to 9 p.m. The research scholars, small industrialists and others are welcome to use the library, with the permission of the librarian. However, books are not issued to outsiders.

Documentation

The centre collects and organizes information on small industry development in all its ramifications: management — production, personnel, finance, marketing; technology — chemical, engineering; techniques and skill; machinery and equipment; governmental and institutional programmes and policies; statistical data regarding types of industries, value added, production, export, employment, capital investment etc.

The documents received in SENDOC are organized into the TRAILS system. This is a filing system based on the nature and content of the documents, each letter of the acronym standing for a specific type of documents,

e.g. T — trade literature; R — report literature; A — area literature; I — institutional literature; L — library literature; and S — sundry literature.

All the literature received is systematically scanned and index cards are made for relevant information. These cards are then kept in a central information file which acts as a base for all documentation activity.

A comprehensive documentation service, SENDOC Bulletin, has been started from January 1973. A bi-monthly publication at present, the Bulletin has the following five sections: new products and processes, industrial profiles and prospects, technical notes, SENDOC services, and current literature. The current literature section creates a demand for microfilm or photocopies of the documents listed. Another service for which there is great demand is the technical enquiry service. The enquiries pertain to such diverse topics as processes of manufacture, suppliers of machinery and raw material, export potential of products manufactured, industrial profiles etc.

A training programme in the field of "Information storage and retrieval" has been conducted by the centre since 1974.

Annex VI

Seminar on computer based information systems

(Extract from pre-investment information and computers)[1]

Information concerned with the technology and economics of setting up a particular small industry, as well as factors in the environment which have a bearing on the industry and its future growth, is required by entrepreneurs as an aid in making investment decisions. Such information is designated as pre-investment information in this paper. This kind of information is also important to industry promotion agents in the counselling of small entrepreneurs and to financing agencies in the evaluation of loan proposals. The high demand for such information is evidenced by experience at the Small Enterprises National Documentation Centre (SENDOC). The assistance programmes in the Fifth Plan to technically qualified persons in setting up small industries and the physical targets set indicate that the demand for such information will remain high in the foreseeable future.

Ideally, the provision of pre-investment information should serve two purposes:

(*a*) It should provide the entrepreneur with a fair idea of the considerations he must take into account in establishing and operating a small industry;

(*b*) It should help the entrepreneur to pursue his project and aid him in preparing a feasibility report. The feasibility report is a pre-investment report, tied to a location, seeking to establish the technical, economic and financial viability of a project.

In practice, however, the widely used medium to provide pre-investment information, namely the industry profile, serves, at best, the first purpose.

The extent to which the second purpose can be served depends upon the range and quality of data that can be provided to aid investment decisions. Data on the installed capacities for the product, the number of existing units, their spatial distribution, major consumers of the product, demand estimates, technology available, raw material availability, industry performance, locational factors, know-how availability, etc. are undoubtedly important inputs in a feasibility study. Much of these data, even if collected by various organizations, is not available to promotional agents, much less to entrepreneurs. The "on-line" availability of such data to promotional agents, financing agencies, planners and policy-makers will perhaps be the long-range objective of a data bank for industrial programming. However, until such time as this can be made possible, the provision of such data on an "off-line" basis in published form can perhaps be achieved with the help of information networks connecting important primary sources of data such

[1] By L. J. Haravu and N. Seetha Rambai, SIET, Hyderabad, India.

as the DGTD, SIDO, CSO and State Directorates of Industries. The usefulness of secondary sources of data such as survey reports and articles in periodicals and newspapers cannot be under-estimated. Data carefully culled from secondary sources together with those obtainable from primary agencies could form the input to a computer system for the storage, processing, and production of hard copy for data bulletin apart from producing selective, batch processed, retrieval in response to specific queries for data. The operational mode could be similar to that of a conventional information centre which receives queries, and provides response after searching the literature. The advantage of using computers is that computations ranging from simple arithmetic to complex modelling is possible to suit a variety of needs. The application of statistical forecasting techniques to time-series data that would become available in such a computer system would be a tremendous advantage over the mere availability of such data in files or data bulletins.

The index

The index to the pre-investment report, it is hoped, would serve two purposes:

(*a*) Provide any user, in one source, with the wide range of possibilities in the small-scale sector; and

(*b*) Serve as a reference source for entrepreneurs, promotional agents etc. to the collection of data available at SENDOC.

The index is envisaged as consisting of a main part and several supporting indices.

The main part is organized by product names and is alphabetically ordered. Each entry in the main part represents one pre-investment report and consists of:

(*a*) Main product cited according to specific indexing procedures described under the indexing policy;

(*b*) Production capacity envisaged in the pre-investment report;

(*c*) By-products, if any, and production capacities, envisaged in the report;

(*d*) Investment required in machinery and equipment for the industry;

(*e*) Investment in working capital required for three months;

(*f*) Essential raw materials required for the industry;

(*g*) The source that has produced the pre-investment report, and year of the report;

(*h*) The location symbol of the report in SENDOC holdings.

The above information, it was felt, contains the essence of a pre-investment report.

Part V.

FACTS AND FIGURES

Afghanistan: Import and export of manufactures and semi-manufactures

('000 Afs.)

SITC No.	Manufactures (M) or semi-manufactures (SM)		21 March 1970 — 20 March 1971				21 March 1971 — 20 March 1972			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
		0. Food and live animals								
012	M	Meat, dried, salted or smoked	—	—	(kg.) 1,092	139	—	—	—	—
013	M	Meat in airtight containers n.e.s.	('000 cl.) 719	40,351	(kg.) 1,699	36	('000 cl.) 3,973	208,252	—	—
046	SM	Flour and meal of wheat or meslin	—	—	('000 kg.) 59,639	413,284	—	—	('000 kg.) 216,503	1,751,208
047	SM	Flour and meal of cereal	—	—	('000 kg.) 52	314	—	—	('000 kg.) 29	245
048	M	Cereal preparation	—	—	(kg.) 8,176	544	—	—	(kg.) 7,351	613
052	M	Dried fruit	('000 kg.) 32,272	993,607	('000 kg.) 805	1,701	('000 kg.) 28,799	631,220	('000 kg.) 259	1,675
053	M	Fruits, preserved and preparations	—	—	(kg.) 10,016	650	—	—	(kg.) 26,352	3,729
055	M	Vegetables, preserved and prepared	('000 kg.) 867	8,934	('000 kg.) 3	66	('000 kg.) 517	8,480	('000 kg.) 438	33,970
062	M	Sugar confectionery	—	—	('000 kg.) 32	2,006	—	—	('000 kg.) 8	1,518
073	M	Chocolate and preparations	—	—	('000 kg.) 42	3,485	—	—	('000 kg.) 49	4,363
099	M	Food preparations	—	—	('000 kg.) 199	4,882	—	—	('000 kg.) 95	5,987
		1. Beverages and Tobacco								
111	M	Non-alcoholic beverages	—	—	('000 Btl.) 186	486	—	—	('000 Btl.) 106	438
112	M	Alcoholic beverages	('000 Btl.) 3	994	('000 Btl.) 78	934	('000 Btl.) 5	665	('000 Btl.) 41	1,731
122	M	Tobacco manufactured	—	—	...	42,608	—	—	...	73,714

Afghanistan: Import and export of manufactures and semi-manufactures *(continued)*

('000 Afs.)

SITC No.	Manufactures (M) or semi-manufactures (SM)		21 March 1970 — 20 March 1971				21 March 1971 — 20 March 1972			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
		2. Crude materials, inedible								
—		. . . . .	—	—	—	—	—	—	—	—
		3. Mineral fuels, lubricants and relating materials								
313011	M	Auto gasoline	—	—	('000 gal.) 29,336	267,624	—	—	('000 gal.) 27,573	274,218
313019	M	Gasoline n.e.s.	—	—	('000 gal.) 2,984	30,166	—	—	('000 gal.) 6,181	73,010
313020	M	Kerosene	—	—	('000 gal.) 849	18,949	—	—	('000 gal.) 1,266	26,788
31303	M	Diesel oil	—	—	('000 gal.) 18,936	194,045	—	—	('000 gal.) 22,062	234,819
31307	M	Lubricating oils and greases .	—	—	('000 gal.) 873	53,684	—	—	('000 gal.) 3,411	93,952
31305	M	Petroleum products n.e.s. .	—	—	('000 kg.) 88	1,595	—	—	('000 kg.) 322	4,995
*317	Primary	Gas, natural (from USSR) .	('000 cum.) 2,500,000	1,213,360	—	—	('000 cum.) 2,500,000	1,226,265	—	—
		4. Animal and vegetable oils and fats								
—		. . . . .	—	—	—	—	—	—	—	—
		5. Chemicals								
511	SM	Inorganic chemicals . . .	—	—	('000 kg.) 333	3,526	—	—	('000 kg.) 1,278	21,022
512	SM	Organic chemicals . . .	—	—	('000 kg.) 387	8,723	—	—	('000 kg.) 787	25,429
521	SM	Mineral tar and crude chemicals from coal	—	—	—	—	—	—	(kg.) 1,825	139
531	SM	Synthetic organic dyestuff .	—	—	—	—	—	—	—	—

Afghanistan: Import and export of manufactures and semi-manufactures *(continued)*

('000 Afs.)

SITC No.	Manufactures (M) or semi-manufactures (SM)		21 March 1970 — 20 March 1971				21 March 1971 — 20 March 1972			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
532		SM	Nonsynthetic dyeing extracts	—	—	(kg.) 4,532	226	—	—	(kg.) 3,005	175
533.1		SM	Coloring materials	—	—	('000 kg.) 72	9,529	—	—	('000 kg.) 48	5,985
533.2		SM	Printers ink	—	—	('000 kg.) 12	2,238	—	—	('000 kg.) 2	459
533.3	M		Prepared paints enamels etc.	—	—	('000 kg.) 421	18,449	—	—	('000 kg.) 472	33,295
541	M		Medicinal and pharmaceutical products	—	—	('000 kg.) 1,632	297,349	—	—	('000 kg.) 3,379	376,046
551		SM	Synthetic perfume and flavour materials	—	—	(kg.) 227	14	—	—	(kg.) 187	19
552010	M		Toilet articles excluding soaps	—	—	('000 kg.) 143	10,799	—	—	('000 kg.) 303	29,027
552020	M		Soaps etc.	—	—	('000 kg.) 6,715	126,623	—	—	('000 kg.) 6,469	138,519
55203	M		Leather polishes and wax polishes	—	—	('000 kg.) 230	7,370	—	—	('000 kg.) 167	6,863
561		SM	Fertilizers, manufactured	—	—	('000 kg.) 14,762	123,847	—	—	('000 kg.) 63,324	337,224
591010	M		Explosives and ammunition	—	—	...	8,938	—	—	...	4,287
591020		SM	Fuses, primers and detonators	—	—	...	712	—	—	...	2,858
599010		SM	Synthetic plastic materials	—	—	('000 kg.) 202	15,564	—	—	('000 kg.) 752	19,893
599020	M		Insecticides, fungicides etc.	—	—	('000 kg.) 32	774	—	—	('000 kg.) 1	9
599040		SM	Casein glue etc.	—	—	('000 kg.) 43	3,279	—	—	('000 kg.) 73	1,800
599099		SM	Chemical materials n.e.s.	('000 kg.) 102	488	('000 kg.) 78	940	('000 kg.) 127	1,069	('000 kg.) 197	9,500

Afghanistan: Import and export of manufactures and semi-manufactures *(continued)*

('000 Afs.)

SITC No.	Manufactures (M) or semi-manufactures (SM)		21 March 1970 — 20 March 1971				21 March 1971 — 20 March 1972			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
		6. Manufactured goods classified chiefly by materials								
611		SM Leather	—	—	('000 kg.) 350	17,976	(No.) 17,496	2,095	('000 kg.) 247	14,781
612		SM Manufactures of leather	—	—	(kg.) 1,769	293	—	—	(kg.) 766	237
613		SM Fur skins, tanned or dressed	—	—	—	—	—	—	—	—
621		SM Materials of rubber	—	—	—	—	—	—	—	—
629	M	Articles of rubber	—	—	...	251,224	—	—	...	418,679
631		SM Plywood	—	—	(kg.) 4,045	53	—	—	(kg.) 3,037	58
632	M	Wood manufactures	—	—	('000 kg.) 82	2,185	—	—	('000 kg.) 160	3,391
633	M	Cork manufactures	—	—	('000 kg.) 92	2,605	—	—	('000 kg.) 59	1,210
641		SM Paper and paper boards	—	—	('000 kg.) 563	20,725	—	—	('000 kg.) 1,664	47,129
642	M	Articles made of paper pulp	—	—	('000 kg.) 1,036	19,891	—	—	('000 kg.) 297	9,168
651010	M	Silk yarn thread	—	—	(kg.) 940	99	—	—	—	—
651020	M	Wool yarn thread	—	—	('000 kg.) 121	20,856	—	—	('000 kg.) 103	28,329
651030	M	Cotton yarn or thread unbleached	—	—	('000 kg.) 213	9,784	—	—	('000 kg.) 185	10,729
651040	M	Cotton yarn or thread bleached	—	—	('000 kg.) 467	28,693	—	—	('000 kg.) 360	22,903
651050		SM Flax or hemp yarn or thread	—	—	('000 kg.) 8,428	772,165	—	—	('000 kg.) 5,587	553,738

Afghanistan: Import and export of manufactures and semi-manufactures *(continued)*

('000 Afs.)

SITC No.	Manufactures (M) or semi-manufactures (SM)		21 March 1970 — 20 March 1971				21 March 1971 — 20 March 1972			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
651060	SM	Synthetic yarn thread	—	—	(kg.) 3,161	590	—	—	(kg.) 8,650	2,037
651070	SM	Yarn of textile fibre mixed with metal	—	—	('000 kg.) 12	2,973	—	—	('000 kg.) 24	4,517
651099	SM	Textile fibre yarn n.e.s.	—	—	('000 kg.) 16	2,124	—	—	('000 kg.) 9	1,260
652	SM	Cotton fabric woven	('000 mtr.) 5	73	('000 mtr.)23,485	319,710	(mtr.) 177	31	('000 mtr.)13,477	198,462
653	SM	Textile fabrics woven	('000 mtr.) 10	1,838	...	667,890	(mtr.) 275	133	...	540,766
653010	SM	Silk fabrics	—	—	('000 mtr.) 77	898	—	—	('000 mtr.) 34	1,573
653020	SM	Woollen fabrics	—	—	('000 mtr.) 846	69,753	—	—	('000 mtr.) 406	83,767
653030	SM	Linen or hemp fabrics	—	—	('000 mtr.)21,589	455,288	—	—	('000 mtr.)13,331	327,529
653040	SM	Jute fabrics	—	—	('000 kg.) 1,175	16,761	—	—	('000 kg.) 266	6,328
653050	SM	Synthetic fabrics including rayon, nylon etc.	—	—	('000 mtr.) 2,968	117,452	—	—	('000 mtr.) 1,805	76,812
654	SM	Tulle, lace, ribbon etc.	—	—	('000 kg.) 50	6,227	—	—	('000 kg.) 34	4,983
655	SM	Special products of textiles	—	—	('000 kg.) 47	1,428	—	—	('000 kg.) 71	2,299
656	M	Made-up articles wholly or chiefly of textile materials	—	—	('000 kg.) 1,335	23,438	('000 sqm.) 495	679,115	('000 kg.) 300	18,457
657	M	Floor covering etc.	('000 cqm.) 395	550,597	('000 kg.) 60	1,831	—	—	('000 kg.) 41	1,505
661020	SM	Cement	—	—	('000 kg.) 76	296	—	—	('000 kg.) 109	274
661010 +661099	SM	Lime and building materials n.e.s.	—	—	('000 kg.) 298	14,558	—	—	('000 kg.) 70	8,251
662	SM	Glazed tiles and bricks etc. of baked clay	—	—	('000 kg.) 33	459	—	—	('000 kg.) 66	686

Afghanistan: Import and export of manufactures and semi-manufactures *(continued)*

('000 Afs.)

SITC No.	Manufactures (M) or semi-manufactures (SM)		21 March 1970 — 20 March 1971				21 March 1971 — 20 March 1972			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
663	SM	Minerals manufactured	(No.) 1	...	('000 kg.) 42	2,259	—	—	('000 kg.) 28	2,618
664	SM	Glass	—	—	('000 kg.) 2,135	27,776	—	—	('000 kg.) 1,935	23,596
665	M	Glassware	—	—	('000 doz.) 2,243	71,999	—	—	('000 dzn.) 1,334	76,101
666	M	Pottery	(No.) 9,279	751	('000 doz.) 657	67,037	(No.) 2,186	261	('000 dzn.) 440	45,105
671	SM	Platinum	—	—	(kg.) 508	95	—	—	—	—
673	M	Jewelery	('000 kg.) 42	25,829	...	728	('000 kg.) 6	36,435	(kg.) 692	163
681010	SM	Pig iron	—	—	('000 kg.) 48	831	—	—	('000 kg.) 514	5,498
681040	SM	Steel girders joists angles etc.	—	—	('000 kg.) 171	2,234	—	—	('000 kg.) 142	1,699
681060	SM	Iron and steel spring strips	—	—	('000 kg.) 54	938	—	—	('000 kg.) 165	3,252
681070	SM	Iron and steel plates and sheets	—	—	('000 kg.) 3,898	66,867	—	—	('000 kg.) 2,285	34,859
681120	SM	Iron and steel wire	—	—	('000 kg.) 3,735	46,014	—	—	('000 kg.) 7,696	82,353
681130	SM	Steel pipes and pipe fittings	—	—	('000 kg.) 363	4,223	—	—	('000 kg.) 197	4,096
681140	SM	Cast iron pipe and fittings	—	—	('000 kg.) 480	6,505	—	—	('000 kg.) 813	9,199
682	SM	Copper	—	—	('000 kg.) 195	2,649	—	—	('000 kg.) 64	1,700
685	SM	Lead	—	—	(kg.) 2,003	129	—	—	(kg.) 728	100
686	SM	Zinc	—	—	(kg.) 3,000	113	—	—	—	—
687	SM	Tin	—	—	('000 kg.) 24	5,526	—	—	('000 kg.) 21	5,813
689	SM	Miscellaneous non-ferrous base metals	—	—	—	—	—	—	—	—
691	SM	Ordnance	—	—	('000 kg.) 30	19,630	—	—	('000 no.) 8	11,609
699010	SM	Finished structural parts	—	—	(kg.) 1,610	20	—	—	(kg.) 7,875	358

Afghanistan: Import and export of manufactures and semi-manufactures *(continued)*

('000 Afs.)

SITC No.	Manufactures (M) or semi-manufactures (SM)		21 March 1970 — 20 March 1971				21 March 1971 — 20 March 1972			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
69903-05	M	Wire products and ropes and cables	—	—	('000 kg.) 64	2,044	—	—	('000 kg.) 67	3,073
69907-08	SM	Nails, nuts, bolts, needles, pins etc.	—	—	('000 kg.) 1,692	44,324	—	—	('000 kg.) 1,399	39,755
69911-12	M	Strong boxes and hand tools etc.	—	—	...	6,756	—	—	...	10,207
69913-15, 16	M	Household equipments of base metals	—	—	('000 kg.) 847	20,748	—	—	('000 kg.) 247	18,186
699141	M	Pressure cookers	—	—	(No.) 15,869	3,978	—	—	(No.) 30,444	9,812
69917	M	Cutlery n.e.s.	—	—	('000 kg.) 151	33,048	—	—	('000 kg.) 70	92,123
69918	M	Metal hardware	—	—	...	18,429	—	—	...	27,531
69921	M	Metal containers	—	—	...	1,167	—	—	(dzn.) 139	1,387
69922	M	Cooking stoves, space heaters etc.	—	—	(No.) 44,907	5,336	—	—	(No.) 13,377	5,331
69929	M	Manufactures of metals n.e.s.	—	—	('000 kg.) 144	8,140	—	—	('000 kg.) 212	9,239
		7. Machinery and transport equipments								
712	M	Agricultural machinery	—	—	(No.) 6,077	8,533	—	—	(No.) 190	3,719
713	M	Tractors	—	—	(No.) 8	2,087	—	—	(No.) 3	442
714	M	Office machinery	—	—	(No.) 819	7,086	—	—	(No.) 661	5,803
715	M	Machine tools	—	—	('000 kg.) 53	11,528	—	—	('000 kg.) 48	6,071
716010	M	Pumps for liquids	—	—	(No.) 22,278	26,590	—	—	(No.) 4,827	33,301

Afghanistan: Import and export of manufactures and semi-manufactures *(continued)*

('000 Afs.)

SITC No.	Manufactures (M) or semi-manufactures (SM)		21 March 1970 — 20 March 1971				21 March 1971 — 20 March 1972			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
71604-07	M	Machines for special industries	—	—	(No.) 64	2,511	—	—	(No.) 481	2,522
716080	M	Textile machinery . . .	—	—	(No.) 723	17,281	—	—	(No.) 181	13,135
716110	M	Sewing machines and parts .	—	—	...	32,487	—	—	...	11,530
716139	M	Nonelectrical machinery and appliances n.e.s. . . .	—	—	...	71,931	—	—	...	237,726
72101	M	Electric generators, motors etc.	—	—	...	19,653	—	—	...	24,325
72102	M	Batteries primary . . .	—	—	('000 kg.) 1,508	70,899	—	—	('000 kg.) 1,109	59,812
72103	M	Bulbs and tubes of electric lighting	—	—	('000 No.) 445	12,059	—	—	('000 No.) 224	8,054
72104	M	Radio receivers and apparatus	—	—	...	81,741	—	—	...	66,609
729	M	Other electrical machinery and apparatus	—	—	...	36,456	—	—	...	36,148
732	M	Motor vehicles	—	—	('000 kg.) 3,576	592,165	—	—	...	777,612
733	M	Bicycles	—	—	...	43,676	—	—	...	44,328
734	M	Aircraft	—	—	—	—	—	—	—	—
735	M	Ship and boats	—	—	—	—	—	—	—	—
		8. Miscellaneous manufactured articles								
812	M	Sanitary, plumbing etc. . .	—	—	...	77,719	—	—	...	63,003
821	M	Furniture	—	—	(No.) 825	101	—	—	(No.) 61	72
831	M	Travel goods, handbags etc. .	—	—	...	3,281	—	—	...	3,618

Afghanistan: Import and export of manufactures and semi-manufactures *(continued)*

('000 Afs.)

SITC No.	Manufactures (M) or semi-manufactures (SM)		21 March 1970 — 20 March 1971				21 March 1971 — 20 March 1972			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
841	M	Clothing (except fur clothing)	(Pr.) 667	66	...	102,270	(Pr.) 1,084	180	...	72,931
842	M	Fur clothing	('000 No.) 148	137,046	...	2,624	('000 No.) 1,325	278,015	...	2,859
843	M	Used clothes	—	—	('000 kg.) 3,169	133,975	—	—	('000 kg.) 2,921	125,038
851	M	Footwear	(Pr.) 2,357	401	('000 pr.) 3,281	173,672	(Pr.) 7,467	1,266	('000 Pr.) 2,334	131,488
852	M	Used footwear	—	—	('000 pr.) 446	12,196	—	—	('000 Pr.) 329	6,905
861	M	Opticals	—	—	...	19,521	—	—	...	25,350
862	M	Cameras	—	—	...	6,917	—	—	...	4,775
864	M	Watches	—	—	(No.) 32,140	7,079	—	—	(No.) 41,145	6,894
891	M	Musical instruments	—	—	(No.) 29,112	20,753	—	—	(No.) 10,477	27,785
892	M	Books	—	—	...	5,646			...	6,146
899	M	Manufactured articles n.e.s.	...	64,377	...	215,392	...	75,535	...	139,351
		Total imports		7,160,107		9,271,124		8,427,188		14,155,284

Source: Government of Afghanistan, *Imports of Merchandise into Afghanistan* (Kabul, Ministry of Commerce, Statistical Department).

Brunei: Import and export of manufactures and semi-manufactures

('000 Brunei dollars)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1971				1972			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
		0. Food and live animals								
012	M	Meat, dried, salted or smoked	—	—	('000 lb.) 74	186	—	—	('000 lb.) 86	247
013	M	Meat in airtight containers and meat preparations	—	—	('000 lb.) 180	1,203	—	—	('000 lb.) 203	1,674
032	M	Fish, in airtight containers and fish preparations	(lb.) 1,661	3	...	1,019	(lb.) 3,267	6	...	1,177
046	SM	Meal and flour of wheat or meslin	—	—	(ton) 2,130	722	—	—	(ton) 2,049	739
047	SM	Meal and flour of cereals	—	—	...	26	—	—	...	36
048	M	Cereal preparations	...	...	...	2,541	—	—	...	3,164
052	M	Dried fruit	—	—	(ton) 381	346	—	—	(ton) 171	271
053	M	Fruits preserved and preparations	—	—	...	1,821	—	—	...	2,370
055	M	Vegetables etc. prepared and preserved	—	—	...	919	—	—	...	1,208
062	M	Sugar confectionery and other sugar preparations	—	—	(cwt.) 6,239	774	—	—	(cwt.) 7,899	891
071.3	M	Coffee extracts, essences etc.	—	—	('000 lb.) 27	243	—	—	('000 lb.) 44	407
072.2	SM	Cocoa powder	—	—	(lb.) 2,462	5	—	—	(lb.) 3,066	5
072.3	SM	Cocoa butter and cocoa paste	—	—	(lb.) 30	...	—	—	(lb.) 398	1
073	M	Chocolate and other food preparations	—	—	('000 lb.) 159	309	—	—	('000 lb.) 156	376
091	M	Magarine and shortening	(ton) 6	6	(ton) 190	267	...	...	(ton) 193	284
099	M	Food preparations	...	1	...	857	(lb.) 7,343	2	...	1,001

Brunei: Import and export of manufactures and semi-manufactures

('000 Brunei dollars)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1973				1974			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
		0. Food and live animals								
012	M	Meat, dried, salted or smoked	...	...	('000 lb.) 86	274	...	...	('000 lb.) 87	294
013	M	Meat in airtight containers and meat preparations .	—	—	('000 lb.) 237	1,514	—	—	('000 lb.) 340	2,069
032	M	Fish, in airtight containers and fish preparations . .	(lb.) 4,380	11	...	1,085	(lb.) 4,141	10	...	1,695
046	SM	Meal and flour of wheat or meslin	—	—	(ton) 2,056	1,131	—	—	(ton) 1,925	1,677
047	SM	Meal and flour of cereals . .	—	—	...	70	—	—	...	63
048	M	Cereal preparations . . .	...	...	...	3,507	(cwt.) 13	1	...	5,216
052	M	Dried fruit	...	...	(ton) 202	299	—	—	(ton) 227	505
053	M	Fruits preserved and preparations	—	—	...	2,520	—	—	...	2,573
055	M	Vegetables etc. prepared and preserved	—	—	...	1,100	—	—	...	1,492
062	M	Sugar confectionery and other sugar preparations . . .	—	—	(cwt.) 7,068	1,016	—	—	(cwt.) 8,367	1,257
071.3	M	Coffee extracts, essences etc. .	—	—	('000 lb.) 41	291	—	—	('000 lb.) 37	305
072.2	SM	Cocoa powder	—	—	(lb.) 1,680	2	—	—	(lb.) 2,766	6
072.3	SM	Cocoa butter and cocoa paste	—	—	(lb.) 310	1	—	—	(lb.) 62	...
073	M	Chocolate and other food preparations	—	—	('000 lb.) 155	329	—	—	('000 lb.) 240	584
091	M	Magarine and shortening .	...	1	(ton) 210	348	(ton) 1	1	(ton) 198	393
099	M	Food preparations . . .	(lb.) 8,000	2	...	1,255	...	5	...	1,210

Brunei: Import and export of manufactures and semi-manufactures *(continued)*

('000 Brunei dollars)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1971				1972			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
		1. Beverages and tobacco								
111	M	Non-alcoholic beverages	—	—	('000 gal.) 317	1,248	—	—	('000 gal.) 363	1,414
112	M	Alcoholic beverages	—	—	('000 gal.) 377	2,737	—	—	('000 gal.) 413	2,852
122	M	Tobacco manufactures	—	—	('000 lb.) 549	3,686	—	—	('000 lb.) 528	3,705
		2. Crude materials inedible								
233.2	SM	Rubber and latex synthetic	—	—	...	...	—	—	...	...
243	SM	Wood shaped or simply worked	(TCF) 1,007	214	...	100	(TCF) 800	1	(TCF) 192	94
251	SM	Pulp and waste paper	—	—	(ton) 271	79	—	—	(ton) 310	91
266	SM	Synthetic and regenerated fibres	—	—	(ton) 2	5	—	—	...	...
267	SM	Waste materials from textiles fabrics	—	—	(cwt.) 1,222	66	—	—	(cwt.) 1,120	67
		3. Mineral fuels, lubricants and related materials								
332	M	Petroleum products	(ton) 36,230	2,519	...	4,583	...	3,140	...	5,162
332.101	M	Motor spirit refined	(ton) 34,122	2,224	(ton) 4,496	1,150	(ton) 47,483	2,890	(ton) 5,832	1,716
332.102	M	Aviation spirit	—	—	—	—	—	—	(ton) 8	3
332.2	M	Kerosene	(ton) 183	25	(ton) 950	271	(ton) 66	11	(ton) 1,287	300
332.3	M	High speed diesel fuel	(ton) 1,925	270	(ton) 2,331	173	(ton) 2,052	237	(ton) 2,172	157
332.5	M	Lubricating oil and grease	—	—	...	1,800	—	—	...	2,044
341.2	M	Coal water producer and similar gases	—	—	...	2	—	—	...	...

Brunei: Import and export of manufactures and semi-manufactures *(continued)*

('000 Brunei dollars)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1973				1974			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
		1. Beverages and tobacco								
111	M	Non-alcoholic beverages	—	—	('000 gal.) 422	1,721	—	—	('000 gal.) 395	1,687
112	M	Alcoholic beverages	—	—	('000 gal.) 410	3,362	—	—	('000 gal.) 453	3,797
122	M	Tobacco manufactures	—	—	('000 lb.) 543	4,121	—	—	('000 lb.) 543	4,184
		2. Crude materials inedible								
233.2	SM	Rubber and latex synthetic	—	—	(ton) 19	2	—	—	...	1
243	SM	Wood shaped or simply worked	(TCF) 2,254	523	...	140	(TCF) 27	7	...	179
251	SM	Pulp and waste paper	—	—	(ton) 362	141	—	—	(ton) 396	212
266	SM	Synthetic and regenerated fibres	—	—	...	...	—	—	...	...
267	SM	Waste materials from textiles fabrics	—	—	(cwt.) 899	58	—	—	(cwt.) 1,361	120
		3. Mineral fuels, lubricants and related materials								
332	M	Petroleum products	...	18,626	...	6,808	(ton) 317,212	86,579	...	7,016
332.101	M	Motor spirit refined	(ton) 201,568	18,292	(ton) 8,260	2,146	(ton) 313,767	86,035	—	—
332.102	M	Aviation spirit	(ton) 16	2	(ton) 5,755	1,563	—	—	(ton) 9,319	2,470
332.2	M	Kerosene	(ton) 231	37	(ton) 853	255	(ton) 142	19	(ton) 229	75
332.3	M	High speed diesel fuel	(ton) 2,274	296	(ton) 319	26	(ton) 2,876	451	(ton) 1,306	315
332.5	M	Lubricating oil and grease	(gal.) 322	1	...	2,097	—	—	...	3,317
341.2	M	Coal water producer and similar gases	—	—	...	1	—	—	—	—

Brunei: Import and export of manufactures and semi-manufactures *(continued)*

('000 Brunei dollars)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1971				1972			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
		4. Animal and vegetable oil and fats								
431	SM	Animal and vegetable oils and fats, process	—	—	...	6	—	—	...	7
		5. Chemicals								
512	SM	Organic chemicals . . .	—	—	...	363	—	—	...	1,034
513	SM	Inorganic chemicals . . .	...	2	...	837	...	3	...	1,405
514	SM	Other inorganic chemicals (chlorate, sulphate etc.) .	—	—	('000 cwt.) 27	423	—	—	('000 cwt.) 18	828
515	SM	Radio active and associated materials	—	—	...	7	—	—	...	12
521	SM	Mineral tar and crude chemicals from coal etc. . . .	—	—	(ton) 86	32	—	—	(ton) 5	13
531	SM	Synthetic organic dyestuffs etc.	—	—	(lb.) 1,930	5	—	—	(lb.) 2,848	4
532	SM	Dyeing and tanning extracts and synthetic tanning materials	—	—	('000 lb.) 90	67	—	—	('000 lb.) 16	18
533.1	SM	Colouring materials, n.e.s. .	—	—			—	—	(cwt.) 180	18
533.2	SM	Printing inks	—	—	(cwt.) 160	44	—	—	(cwt.) 170	49
533.3	M	Prepared paints, enamels, lacquers, varnished etc. .	—	—	...	3,399	—	—	...	2,735
541	M	Medicinal and pharmaceutical products	...	...	...	1,767	—	—	...	1,929

Brunei: Import and export of manufactures and semi-manufactures *(continued)*

('000 Brunei dollars)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1973				1974			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
		4. Animal and vegetable oil and fats								
431		SM Animal and vegetable oils and fats, process	—	—	...	3	—	—	...	14
		5. Chemicals								
512		SM Organic chemicals . . .	(gal.) 220	...	...	1,387	—	—	...	2,278
513		SM Inorganic chemicals . . .	—	—	...	887	...	2	...	4,836
514		SM Other inorganic chemicals (chlorate, sulphate etc.) .	—	—	...	1,455	—	—	('000 cwt.) 83	3,347
515		SM Radio active and associated materials	—	—	...	4	—	—	...	61
521		SM Mineral tar and crude chemicals from coal etc. . . .	—	—	...	23	—	—	(ton) 2	2
531		SM Synthetic organic dyestuffs etc.	—	—	(lb.) 3,365	4	—	—	(lb.) 8,930	35
532		SM Dyeing and tanning extracts and synthetic tanning materials	—	—	('000 lb.) 11	28	—	—	('000 lb.) 30	42
533.1		SM Colouring materials, n.e.s. .	—	—	(cwt.) 77	9	—	—	(cwt.) 127	19
533.2		SM Printing inks	—	—	(cwt.) 210	77	—	—	(cwt.) 248	85
533.3	M	Prepared paints, enamels, lacquers, varnished etc. .	—	—	...	2,863	—	—	...	3,654
541	M	Medicinal and pharmaceutical products	—	—	...	1,841	—	—	...	2,904

Brunei: Import and export of manufactures and semi-manufactures *(continued)*

('000 Brunei dollars)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1971				1972			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
551		SM Essential oils, perfume etc. .	—	—	...	159	—	—	...	185
553	M	Perfumery and cosmetics etc.	—	—	...	613	—	—	...	795
554	M	Soap, cleansing and polishing preparations	—	—	(cwt.) 18,172	1,501	—	—	(cwt.) 21,327	1,643
561		SM Fertilizer manufactures . .	—	—	(ton) 219	66	—	—	(ton) 71	55
571	M	Explosives and pyrotechnic products	—	—	...	129	—	—	...	83
571.2		SM Fuses, primers and detonators	—	—	...	7	—	—	(ton) 444	2
581		SM Plastic materials, regenerated cellulo and artificial resins	—	—	...	3,275	—	—	...	3,566
599.2	M	Insecticides, fungicides etc. .	—	—	...	487	—	—	...	562
599.5		SM Starches, inulin, gluten . .	—	—	(cwt.) 1,081	146	—	—	(cwt.) 518	98
599.6		SM Wood and resin-based, chemicals products	—	—	(gal.) 4,579	9	—	—	(gal.) 5,960	21
599.7		SM Organic chemical products n.e.s.	—	—	(cwt.) 7,406	851	—	—	(cwt.) 3,684	463
599.9		SM Chemical products and preparations n.e.s. . . .	—	—	(cwt.) 26,068	2,918	—	—	(cwt.) 19,597	2,462
		6. Manufactured goods classified chiefly by materials								
611		SM Leather	—	—	...	5	—	—	...	9
612		SM Manufactures of leather . .	—	—	...	9	—	—	...	4
613		SM Fur skins, tanned or dressed	—	—	...	2	—	—	...	7

Brunei: Import and export of manufactures and semi-manufactures *(continued)*

('000 Brunei dollars)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1973				1974			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
551		SM Essential oils, perfume etc. .	—	—	...	148	—	—	...	95
553	M	Perfumery and cosmetics etc.	—	—	...	970	—	—	...	453
554	M	Soap, cleansing and polishing preparations	—	—	(cwt.) 22,558	1,753	—	—	(cwt.) 23,708	2,074
561		SM Fertilizer manufactures . .	—	—	(ton) 2,674	841	—	—	(ton) 4,010	1,898
571	M	Explosives and pyrotechnic products	—	—	...	288	—	—	...	262
571.2		SM Fuses, primers and detonators	—	—	...	100	—	—	...	17
581		SM Plastic materials, regenerated cellulo and artificial resins	—	—	...	3,866	(lb.) 1,142	2	...	6,449
599.2	M	Insecticides, fungicides etc. .	—	—	...	799	—	—	...	881
599.5		SM Starches, inulin, gluten . .	—	—	(cwt.) 5,632	561	—	—	(cwt.) 13,597	1,102
599.6		SM Wood and resin-based, chemicals products	—	—	(gal.) 5,948	14	—	—	(gal.) 4,582	26
599.7		SM Organic chemical products n.e.s.	—	—	(cwt.) 15,810	1,620	—	—	...	28,266
599.9		SM Chemical products and preparations n.e.s. . . .	—	—	(cwt.) 25,427	3,430	—	—	...	1,860
		6. Manufactured goods classified chiefly by materials								
611		SM Leather	—	—	...	3	—	—	...	4
612		SM Manufactures of leather . .	—	—	...	5	—	—	...	20
613		SM Fur skins, tanned or dressed	—	—	...	4	—	—	...	2

Brunei: Import and export of manufactures and semi-manufactures *(continued)*

('000 Brunei dollars)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1971				1972			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
621		SM Materials of rubber . . .	—	—	...	1,043	—	—	...	642
629	M	Articles of rubber n.e.s. . .	—	—	...	1,474	—	—	...	1,349
631		SM Veneers, plywood boards etc.	—	—	...	710	—	—	...	782
632	M	Wood manufactures, n.e.s. .	...	...	...	299	—	—	...	151
633	M	Cork manufactures . . .	—	—	(cwt.) 98	21	—	—	(cwt.) 100	22
641		SM Paper and paper board . .	—	—	...	1,281	—	—	...	1,215
642	M	Articles made of paper pulp, of paper or paper board .	—	—	...	1,827	...	...	...	1,527
651.2	M	Yarn of wool and animal hair	—	—	(lb.) 4	4	—	—	(lb.) 3	...
651.2(5)		SM Yarn of wool and animal hair, put up for retail sale . .	—	—	(lb.) 556	4	—	—	(lb.) 227	2
651.4		SM Cotton yarn and thread, put up for retail sale . . .	—	—	...	141	—	—	...	143
651.5	M	Flax or ramie yarn, put up for retail sale	—	—	(lb.) 50	...	—	—	...	...
651.6		SM Yarn and thread of synthetic fibre	—	—	(lb.) 3,717	4	—	—	(lb.) 1,469	3
651.6(3)		SM Yarn of continuous fibres, for retail sale	—	—	(lb.) 50	...	—	—	—	—
651.7		SM Yarn and thread of regenerated fibres	—	—	(lb.) 1,401	4	—	—	(lb.) 2,466	3

Brunei: Import and export of manufactures and semi-manufactures *(continued)*

('000 Brunei dollars)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1973				1974			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
621		SM Materials of rubber	—	—	...	720	—	—	...	801
629	M	Articles of rubber n.e.s.	—	—	...	1,592	—	—	...	2,144
631		SM Veneers, plywood boards etc.	—	—	...	1,134	...	...	...	1,022
632	M	Wood manufactures, n.e.s.	—	—	...	188	...	...	...	203
633	M	Cork manufactures	—	—	(cwt.) 61	20	—	—	(cwt.) 62	18
641		SM Paper and paper board	—	—	...	1,602	—	—	...	2,187
642	M	Articles made of paper pulp, of paper or paper board	—	—	...	1,847			...	2,395
651.2	M	Yarn of wool and animal hair	—	—	(lb.) 250	2	—	—	(lb.) 106	...
651.2(5)		SM Yarn of wool and animal hair, put up for retail sale	—	—	(lb.) 245	2	—	—	(lb.) 351	3
651.4		SM Cotton yarn and thread, put up for retail sale	—	—	(lb.) 16,486	236	—	—	...	284
651.5	M	Flax or ramie yarn, put up for retail sale	—	—	(lb.) 560	1	—	—	(lb.) 3	...
651.6		SM Yarn and thread of synthetic fibre	—	—	(lb.) 877	2	—	—	(lb.) 1,703	3
651.6(3)		SM Yarn of continuous fibres, for retail sale	—	—	(lb.) 21	...	—	—	(lb.) 1	...
651.7		SM Yarn and thread of regenerated fibres	—	—	(lb.) 7,392	8	—	—	(lb.) 2,652	5

Brunei: Import and export of manufactures and semi-manufactures *(continued)*

('000 Brunei dollars)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1971				1972			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
651.7(5)	M	Yarn of discontinuous regenerated fibres, for retail sale	—	—	(lb.) 683	3	—	—	(lb.) 1,411	5
651.8	SM	Yarn of glass fibres . . .	—	—	(lb.) 394	...	—	—	(lb.) 2,128	2
651.9	SM	Yarn of textile fibres, n.e.s. .	—	—	(lb.) 1,108	4	—	—	(lb.) 600	1
652	SM	Cotton fabrics, woven . .	—	—	('000 sq.yd.) 1,265	787	—	—	('000 sq.yd.) 1,307	662
653	SM	Textile fibre, woven . . .	—	—	('000 sq.yd.) 449	497	—	—	('000 sq.yd.) 557	649
654	SM	Tulle, lace, embroidery, ribbons etc.	—	—	...	16	—	—	...	76
655	SM	Special textile fibres and related products	—	—	...	804	—	—	...	699
656	M	Made-up articles, wholly or chiefly of textile materials, n.e.s.	...	2	...	561	—	—	...	657
657	M	Floor covering, tapesties, etc.	...	...	('000 sq.yd.) 116	549	—	—	('000 sq.yd.) 144	613
661.1	SM	Lime	—	—	(ton) 79	15	—	—	(ton) 40	9
661.2	SM	Cement and clinker . . .	—	—	(ton) 65,005	5,209	—	—	(ton) 78,481	6,677
661.3-8	SM	Fabricated building materials	—	—	(ton) 4,054	1,348	—	—	(ton) 2,832	1,135
662	SM	Clay construction materials etc.	('000) 111	14	(ton) 1,349	702	('000) 601	50	(ton) 620	467
663	SM	Mineral manufactures, n.e.s. .	—	—	...	1,499	—	—	...	1,399
664	SM	Glass	—	—	...	1,754	—	—	...	650
665	M	Glassware	—	—	...	364	—	—	...	525
666	M	Pottery	—	—	...	299	—	—		

Brunei: Import and export of manufactures and semi-manufactures *(continued)*

('000 Brunei dollars)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1973				1974			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
651.7(5)	M	Yarn of discontinuous regenerated fibres, for retail sale	—	—	(lb.) 2,832	14	—	—	(lb.) 150	1
651.8	SM	Yarn of glass fibres	—	—	(lb.) 1,120	1	—	—	(lb.) 311	1
651.9	SM	Yarn of textile fibres, n.e.s.	—	—	(lb.) 760	1	—	—	(lb.) 508	1
652	SM	Cotton fabrics, woven	—	—	('000 sq.yd.) 1,025	691	—	—	('000 sq.yd.) 1,099	1,126
653	SM	Textile fibre, woven	—	—	('000 sq.yd.) 513	717	—	—	('000 sq.yd.) 571	1,168
654	SM	Tulle, lace, embroidery, ribbons etc.	—	—	...	79	—	—	...	48
655	SM	Special textile fibres and related products	—	—	...	593			...	1,124
656	M	Made-up articles, wholly or chiefly of textile materials, n.e.s.	...	2	...	737	—	—	...	1,073
657	M	Floor covering, tapesties, etc.	—	—	('000 sq.yd.) 149	621	—	—	...	962
661.1	SM	Lime	—	—	(ton) 132	18	—	—	(ton) 508	96
661.2	SM	Cement and clinker	—	—	(ton) 59,625	5,685	—	—	(ton) 81,792	14,849
661.3-8	SM	Fabricated building materials	—	—	(ton) 2,664	1,436	—	—	(ton) 3,520	2,229
662	SM	Clay construction materials etc.	('000) 38	3	(ton) 1,131	1,216	—	—	(ton) 992	1,328
663	SM	Mineral manufactures, n.e.s.	—	—	...	1,450	(ton) 1	1	...	805
664	SM	Glass	—	—	...	652	—	—	...	710
665	M	Glassware	—	—	...	488	—	—	...	565
666	M	Pottery	—	—	...	345	—	—	...	429

Brunei: Import and export of manufactures and semi-manufactures *(continued)*

('000 Brunei dollars)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1971				1972			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
667	M	Pearls and precious and semi-precious stones, unworked or worked	—	—	...	...	—	—	...	2
671	SM	Pig iron, spiegeleisen, sponge iron, iron and steel powders etc.	—	—	(ton) 11	11	—	—	(ton) 3	8
672	SM	Ingots and other primary form	—	—	('000) 102	33	—	—	(ton) 17	24
673	SM	Iron and steel bars, rods etc.	—	—	(ton) 9,694	5,248	—	—	(ton) 5,974	2,994
674	SM	Universals, plates and sheets of iron and steel	—	—	(ton) 6,653	4,195	—	—	(ton) 1,411	1,276
675	SM	Hoop and strip of iron and steel	—	—	(ton) 32	85	—	—	(ton) 7	44
676	SM	Rails and railway track-construction materials of iron steel	—	—	(ton) 421	237	—	—	(ton) 19	11
677	SM	Iron and steel wire	—	—	(ton) 338	222	—	—	(ton) 319	194
678	SM	Tubes, pipes and fittings of iron and steel	—	—	(ton) 70,926	74,226	...	...	(ton) 31,340	34,951
679	SM	Iron and steel casting and forging, unworked	—	—	(ton) 343	163	—	—	(ton) 285	416
681	SM	Silver, platinum	—	—	—	—	—	—	(lb.) 880	10
682	SM	Copper	—	—	...	1,037	—	—	...	408
683	SM	Nickel	—	—	(cwt.) 1,686	365	—	—	(cwt.) 426	93
684	SM	Aluminum	—	—	...	839	—	—	...	422

Brunei: Import and export of manufactures and semi-manufactures *(continued)*

('000 Brunei dollars)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1973				1974			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
667	M	Pearls and precious and semi-precious stones, unworked or worked	—	—	...	...	—	—	...	1
671	SM	Pig iron, spiegeleisen, sponge iron, iron and steel powders etc.	—	—	(ton) 4	9	—	—	(ton) 1	1
672	SM	Ingots and other primary form	—	—	(ton) 14	25	—	—	(ton) 60	88
673	SM	Iron and steel bars, rods etc.	—	—	(ton) 5,993	4,980	—	—	(ton) 7,883	8,326
674	SM	Universals, plates and sheets of iron and steel	—	—	(ton) 2,266	1,260	—	—	(ton) 3,803	4,578
675	SM	Hoop and strip of iron and steel	—	—	(ton) 8	49	—	—	(ton) 1	5
676	SM	Rails and railway track-construction materials of iron steel	—	—	(ton) 50	33	—	—	(ton) 1	2
677	SM	Iron and steel wire	—	—	(ton) 439	369	—	—	(ton) 348	376
678	SM	Tubes, pipes and fittings of iron and steel	—	—	(ton) 31,135	33,401	—	—	(ton) 73,071	102,358
679	SM	Iron and steel casting and forging, unworked	...	1	(ton) 553	753	—	—	(ton) 1,281	1,409
681	SM	Silver, platinum	—	—	(lb.) 230	2	—	—	(lb.) 1,048	53
682	SM	Copper	—	—	...	210	—	—	...	448
683	SM	Nickel	—	—	(cwt.) 407	170	—	—	(cwt.) 2,616	511
684	SM	Aluminum	—	—	...	749	—	—	...	610

Brunei: Import and export of manufactures and semi-manufactures *(continued)*

('000 Brunei dollars)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1971				1972			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
685		SM Lead	—	—	...	94	—	—	...	57
686		SM Zinc	—	—	(ton) 16	20	—	—	(ton) 3	8
687		SM Tin	—	—	...	53	—	—	...	33
689		SM Miscellaneous non-ferrous base metals	—	—	...	...	—	—	(ton) 2	14
691		SM Finished structural parts and structures	—	—	(ton) 7,421	10,653	—	—	(ton) 2,216	4,183
692	M		Metal containers for storage and transport	...	2	...	5,445	...	11	...	1,669
693	M		Wire products	—	—	(ton) 1,693	1,721	—	—	(ton) 21,996	2,055
694		SM Nails, screws, nuts etc of iron, steel and copper	—	—	...	2,120	—	—	...	891
695	M		Tools for use in the hand or in machines	—	—	...	1,440	—	—	...	2,099
696	M		Cutlery	—	—	...	177	—	—	...	241
697	M		Household equipment of base metals	—	—	...	915	—	—	...	904
698	M		Manufactures of metal, n.e.s.	—	—	...	5,017	...	1	...	3,651
			7. Machinery and transport equipment							
711	M		Power generating machinery (other than electric)	—	—	...	24,499	—	—	...	8,550
712	M		Agricultural machinery and implement	—	—	...	306	—	—	...	380
714	M		Office machinery	—	—	(No.) 3,622	349	—	—	(No.) 2,903	1,597
715	M		Metalworking machinery	—	—	...	1,104	—	—	...	623

Brunei: Import and export of manufactures and semi-manufactures *(continued)*

('000 Brunei dollars)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1973				1974			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
685	SM	Lead	—	—	...	70	—	—	...	108
686	SM	Zinc	—	—	(ton) 22	54	—	—	(ton) 17	72
687	SM	Tin	—	—	...	53	—	—	...	117
689	SM	Miscellaneous non-ferrous base metals	—	—	(ton) 1	3	—	—	(ton) 1	20
691	SM	Finished structural parts and structures	(ton) 8	8	(ton) 2,426	4,191	...	1	(ton) 2,321	3,156
692	M	Metal containers for storage and transport	(cwt.) 4	2	...	3,779	...	...	...	678
693	M	Wire products	(ton) 11	16	(ton) 1,539	2,039	(ton) 55	80	...	2,805
694	SM	Nails, screws, nuts etc of iron, steel and copper	—	—	...	1,230	—	—	...	1,230
695	M	Tools for use in the hand or in machines	...	...	...	3,024	—	—	...	2,242
696	M	Cutlery	—	—	...	286	—	—	...	346
697	M	Household equipment of base metals	...	1	...	954	—	—	...	1,771
698	M	Manufactures of metal, n.e.s.	...	1	...	2,048	...	3	...	17,165
		7. Machinery and transport equipment								
711	M	Power generating machinery (other than electric)	—	—	...	9,190	—	—	...	4,332
712	M	Agricultural machinery and implement	—	—	...	331	—	—	...	482
714	M	Office machinery	—	—	(No.) 2,376	526	—	—	...	825
715	M	Metalworking machinery	—	—	...	339	—	—	...	183

Brunei: Imports and export of manufactures and semi-manufactures *(continued)*

('000 Brunei dollars)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1971				1972			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
717	M	Textile and leather machinery	—	—	...	291	—	—	...	415
718	M	Machines for special industries	—	—	...	5,521	—	—	...	4,053
719	M	Machinery and appliances and machine parts	—	—	...	116,418	—	—	...	58,994
722	M	Electric power machinery and switchgear	—	—	...	10,537	—	—	...	6,671
723	M	Equipment for distributing electricity	—	—	...	7,370	—	—	...	3,567
724	M	Telecommunications apparatus	—	—	...	11,395	—	—	...	3,340
725	M	Domestic electricity equipment	—	—	(No.) 13,377	1,348	—	—	(No.) 16,576	1,515
726	M	Electric apparatus for medical purposes	—	—	...	352	—	—	...	250
729	M	Other electrical machinery and apparatus	—	—	...	13,778	—	—	...	6,264
731	M	Railway vehicles	—	—	(No.) 102	122	—	—	...	14
732	M	Road motor vehicles	—	—	...	12,418	—	—	...	15,389
733	M	Road vehicles other than motor vehicles	—	—	(No.) 72,597	247	—	—	(No.) 62,292	167
734	M	Aircraft	—	—	...	1,149	—	—	...	868
735	M	Ships and boats	...	625	...	7,660	(ton) 21	90	...	479
		8. Miscellaneous manufactured articles								
812	M	Sanitary, flumbing, etc.	—	—	...	1,439	—	—	...	921
821	M	Furniture	...	4	...	1,725	...	3	...	1,506
831	M	Travel goods, handbags etc.	—	—	...	400	—	—	...	527
841	M	Clothing (except fur)	—	—	...	1,912	—	—	...	2,395

Brunei: Imports and export of manufactures and semi-manufactures *(continued)*

('000 Brunei dollars)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1973				1974			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
717	M	Textile and leather machinery	—	—	...	310	—	—	...	306
718	M	Machines for special industries	...	...	...	1,728	—	—	...	5,521
719	M	Machinery and appliances and machine parts	—	—	...	66,805	...	1	...	51,102
722	M	Electric power machinery and switchgear	—	—	...	10,565	—	—	...	3,777
723	M	Equipment for distributing electricity	—	—	...	3,211	—	—	...	3,151
724	M	Telecommunications apparatus	—	—	...	3,172	—	—	...	3,419
725	M	Domestic electricity equipment	—	—	(No.) 19,482	1,892	—	—	(No.) 21,028	2,434
726	M	Electric apparatus for medical purposes	—	—	...	47	—	—	...	118
729	M	Other electrical machinery and apparatus	—	—	...	4,324	—	—	...	5,566
731	M	Railway vehicles	—	—	...	15	—	—	...	72
732	M	Road motor vehicles	—	—	...	12,435	...	...	...	24,480
733	M	Road vehicles other than motor vehicles	—	—	(No.) 108,486	254	—	—	(No.) 110,630	552
734	M	Aircraft	—	—	...	1,136	—	—	...	3,202
735	M	Ships and boats	...	...	...	1,036	(No.) 10	1	...	3,668
		8. Miscellaneous manufactured articles								
812	M	Sanitary, flumbing, etc.	—	—	...	1,451	—	—	...	1,908
821	M	Furniture	...	2	...	1,950	...	13	...	1,754
831	M	Travel goods, handbags etc.	—	—	...	461	...	...	...	571
841	M	Clothing (except fur)	—	—	...	2,308	—	—	...	3,226

Brunei: Imports and export of manufactures and semi-manufactures *(continued)*

('000 Brunei dollars)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1971				1972			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
842	M	Fur clothing	—	—	...	...	—	—	...	1
851	M	Footwear	—	—	(doz. pr.) 38,325	955	—	—	(doz. pr.) 40,200	1,126
861	M	Scientifics, medical, optical, measuring instrument and apparatus	...	...	...	7,266	—	—	...	6,546
862	M	Photographic and cinematographic supplies	—	—	...	297	—	—	...	354
863	M	Developed cinematographic film	—	—	(lin. ft.) 6,808	4	—	—	(lin. ft.) 6,120	2
864	M	Watches and clocks	—	—	...	250	—	—	(No.) 2,838	189
891	M	Musical instruments etc.	—	—	(No.) 29,002	528	(No.) 2	...	(No.) 25,082	626
892	M	Printed matter	...	4	...	1,733	...	15	...	2,561
893	M	Article of artificial plastic materials	—	—	...	728	—	—	...	716
894	M	Perambulators, toys, games and sporting goods	—	—	...	1,194	—	—	...	1,330
895	M	Office and stationery supplies	...	...	...	504	—	—	...	394
896	M	Works of art, collections etc.	...	1	...	231	—	—	...	40
897	M	Jewellery and goldsmith and silversmith wares	—	—	...	1,593	—	—	...	1,757
899	M	Manufactured articles n.e.s.	—	—	...	1,057	—	—	...	1,111
		Total	...	310,678	...	456,554	...	469,691	...	300,206
331	Primary	Petroleum crude	('000 ton) 5,700	304,815	...	...	('000 ton) 9,183	462,054	...	...

Brunei: Imports and export of manufactures and semi-manufactures *(continued)*

('000 Brunei dollars)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1973				1974			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
842	M	Fur clothing	—	—	...	...	—	—	...	2
851	M	Footwear	—	—	(doz. pr.) 32,659	1,279	—	—	(doz. pr.) 35,102	1,683
861	M	Scientifics, medical, optical, measuring instrument and apparatus	—	—	...	4,814	—	—	...	5,053
862	M	Photographic and cinematographic supplies	—	—	...	346	—	—	...	303
863	M	Developed cinematographic film	—	—	(lin. ft.) 20,633	7	—	—	(lin. ft.) 14,459	11
864	M	Watches and clocks	—	—	(No.) 3,028	184	—	—	...	182
891	M	Musical instruments etc.	(No.) 24	...	(No.) 20,848	705	(No.) 17	1	(No.) 44,418	983
892	M	Printed matter	...	36	...	1,900	...	89	...	2,631
893	M	Article of artificial plastic materials	—	—	...	872	—	—	...	1,024
894	M	Perambulators, toys, games and sporting goods	—	—	...	1,405	—	—	...	1,192
895	M	Office and stationery supplies	—	—	...	381	—	—	...	569
896	M	Works of art, collections etc.	—	—	...	58	...	5	...	69
897	M	Jewellery and goldsmith and silversmith wares	—	—	..	337	—	—	...	377
899	M	Manufactured articles n.e.s.	—	—	...	1,228	—	—	...	1,307
		Total	...	830,724	...	323,229	...	2,352,678	...	450,897
331	Primary	Petroleum crude	('000 ton) 11,156	762,376	...	...	('000 ton) 22,160	1,970,248		

Source: Sultants of Brunei, *Statistics of External Trade*.

Burma: Import and export of manufactures and semi-manufactures

('000 kyats)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1970				1971			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
		0. Food and live animals								
012	M	Meat, dried, salted or smoked	—	—	(cwt.) 10	5	—	—	(cwt.) 23	6
013	M	Meat, in airtight containers and meat preparations .	—	—	(cwt.) 18	4	—	—	(cwt.) 40	12
032	M	Fish, in airtight containers and fish preparations . .	—	—	(cwt.) 7	1	—	—	(cwt.) 71	7
046	SM	Meal and flour of wheat . .	—	—	(ton) 24,121	14,762	—	—	(ton) 29,984	17,141
047	SM	Meal and flour of cereals n.e.s.	—	—	—	—	—	—	...	...
048	M	Cereal preparations and preparation of flour and starch etc.	—	—	(cwt.) 1,049	36	—	—	(cwt.) 8,470	376
052	M	Dried fruits	—	—	—	—	—	—	(cwt.) 70	8
053	M	Fruit preserved and fruit preparations	—	—	...	204	—	—	...	217
055	M	Vegetables, roots etc. prepared or preserved	—	—	(cwt.) 33,991	729	—	—	(cwt.) 9,811	271
062	M	Sugar confectionary . . .	—	—	—	—	—	—	—	—
071.3	M	Coffee extracts essences . .	—	—	(lb.) 434	7	—	—	(lb.) 1,705	27
072.2	SM	Cocoa powder	—	—	(lb.) 5,840	13	—	—	(lb.) 3,399	5
072.3	SM	Cocoa butter and cocoa paste	—	—	—	—	—	—	—	—
073	M	Chocolate and cocoa preparations	—	—	(lb.) 275	1	—	—	(lb.) 18,761	57
091	M	Margarine and shortenings .	—	—	(cwt.) 31	4	—	—	(cwt.) 29	3
099	M	Food preparations n.e.s. . .	...	2	...	3,061	...	...	...	1,085

Burma: Import and export of manufactures and semi-manufactures *(continued)*

('000 kyats)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1972			
			Export		Import	
			Quantity	Value	Quantity	Value
		0. Food and live animals				
012	M	Meat, dried, salted or smoked	—	—	(cwt.) 21	14
013	M	Meat, in airtight containers and meat preparations .	—	—	(cwt.) 34	10
032	M	Fish, in airtight containers and fish preparations . .	—	—	(cwt.) 30	4
046	SM	Meal and flour of wheat . .	—	—	(ton) 11,816	8,504
047	SM	Meal and flour of cereals n.e.s.	—	—		
048	M	Cereal preparations and preparation of flour and starch etc.	—	—	(cwt.) 10,308	577
052	M	Dried fruits	—	—	(cwt.) 54	6
053	M	Fruit preserved and fruit preparations	—	—	...	193
055	M	Vegetables, roots etc. prepared or preserved	—	—	(cwt.) 4,450	135
062	M	Sugar confectionary . . .	—	—	(cwt.) 8	2
071.3	M	Coffee extracts essences . .	—	—	(lb.) 646	10
072.2	SM	Cocoa powder	—	—	(lb.) 1,162	3
072.3	SM	Cocoa butter and cocoa paste	—	—	—	—
073	M	Chocolate and cocoa preparations	—	—	(lb.) 503	2
091	M	Margarine and shortenings .	—	—	(cwt.) 50	6
099	M	Food preparations n.e.s. . .	—	—	...	391

Burma: Import and export of manufactures and semi-manufactures *(continued)*

('000 kyats)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1970				1971			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
		1. Beverages and tobacco								
111	M	Non alcoholic beverages . .	—	—	—	—	—	—	...	9
112	M	Alcoholic beverages . . .	—	—	(gal.) 3,778	123	(gal.) 72	...	(gal.) 9,702	329
122	M	Tobacco manufactured . .	(lb.) 1,065	57	(lb.) 443	5	(lb.) 7,428	87	(gal.) 1,876	21
		2. Crude materials, inedible								
231.2	SM	Synthetic rubber and rubber substitutes	—	—	(lb.) 389	1	—	—	(lb.) 208	1
231.3	SM	Reclaimed rubber . . .	—	—	—	—	—	—	—	—
231.4	SM	Waste and scrap or unhardened rubber	—	—	—	—	—	—	—	—
243	SM	Wood, shaped or simply worked	(cwt.) 52,251	45,639	—	—	(cwt.) 56,498	43,925	—	—
244.0(2)	SM	Cork in blocks, plates etc. .	—	—	—	—	—	—	—	—
251	SM	Pulp and waste paper . .	—	—	(cwt.) 22,930	983	—	—	(cwt.) 4,899	278
266	SM	Synthetic and regenerated fibres	—	—	(cwt.) 1,527	193	—	—	(cwt.) 5,806	775
267	SM	Waste materials from textile fabrics	—	—	(cwt.) 3	4	—	—	—	—
		3. Mineral fuels, lubricants and related materials								
332	M	Petroleum products . . .	...	6,112	...	16,498	...	5,935	...	19,768
341.2	M	Gas, manufactured . . .	—	—	—	—	—	—	—	—
351	M	Electric energy	—	—	—	—	—	—		

Burma: Import and export of manufactures and semi-manufactures *(continued)*

('000 kyats)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1972			
			Export		Import	
			Quantity	Value	Quantity	Value
		1. Beverages and tobacco				
111	M	Non alcoholic beverages . .			...	28
112	M	Alcoholic beverages . . .	(gal.) 217	1	(gal.) 217	1
122	M	Tobacco manufactured . .	(lb.) 7,086	60	(lb.) 3,085	45
		2. Crude materials, inedible				
231.2	SM	Synthetic rubber and rubber substitutes	—	—	—	—
231.3	SM	Reclaimed rubber . . .	—	—	—	—
231.4	SM	Waste and scrap or unhardened rubber	—	—	—	—
243	SM	Wood, shaped or simply worked	(cwt.) 63,690	58,155	—	—
244.0(2)	SM	Cork in blocks, plates etc. .	—	—	—	—
251	SM	Pulp and waste paper . .	—	—	—	—
266	SM	Synthetic and regenerated fibres	—	—	(cwt.) 3,526	480
267	SM	Waste materials from textile fabrics	—	—	—	—
		3. Mineral fuels, lubricants and related materials				
332	M	Petroleum products . . .	...	11,562	—	—
341.2	M	Gas, manufactured . . .	—	—	—	—
351	M	Electric energy	—	—	...	21,518

Burma: Import and export of manufactures and semi-manufactures *(continued)*

('000 kyats)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1970				1971			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
		4. Animal and vegetable oils and fats								
431		SM Animal and vegetable oils and fats, processed	—	—	(cwt.) 622	294	—	—	(cwt.) 830	366
		5. Chemicals								
512		SM Organic chemicals . . .	...	250	...	6,424	(cwt.) 3,749	223	...	8,366
513		SM Inorganic chemicals . . .	—	—	('000 cwt.) 101	4,057	—	—	('000 cwt.) 142	6,202
514		SM Other inorganic chemicals .	—	—	('000 cwt.) 273	7,679	—	—	('000 cwt.) 237	158,302
515		SM Radioactive and associated materials	—	—	...	74	—	—	(cwt.) 307	35
521		SM Mineral tar and crude chemical from coal	—	—	(cwt.) 184	19	(ton) 32,120	1,713	(cwt.) 7,335	220
531		SM Synthetic organic dyestuffs etc.	—	—	('000 lb.) 623	2,980	—	—	('000 lb.) 560	3,572
532		SM Dyeing and tanning extracts and synthetic tanning materials	(cwt.) 318	39	(cwt.) 654	68	(cwt.) 238	41	(cwt.) 492	62
533.1		SM Colouring materials . . .	—	—	(cwt.) 14,140	676	—	—	(cwt.) 1,927	271
533.2		SM Printing ink	—	—	...	1,277	—	—	...	1,342
533.3	M	Prepared paints, enamels etc.	—	—	(cwt.) 17,674	2,249	—	—	(cwt.) 23,200	4,261
541	M	Medicinal and pharmaceutical products	...	8	...	15,225	...	4	...	15,774
551		SM Essential oils, perfume and flavour materials . . .	—	—	(cwt.) 1,226	1,296	—	—	...	860

Burma: Import and export of manufactures and semi-manufactures *(continued)*

('000 kyats)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1972 Export Quantity	1972 Export Value	1972 Import Quantity	1972 Import Value
		4. Animal and vegetable oils and fats				
431	SM	Animal and vegetable oils and fats, processed	—	—	(cwt.) 78	39
		5. Chemicals				
512	SM	Organic chemicals . . .	(cwt.) 5,005	396	...	9,401
513	SM	Inorganic chemicals . . .	—	—	('000 cwt.) 269	9,312
514	SM	Other inorganic chemicals .	—	—	('000 cwt.) 232	9,356
515	SM	Radioactive and associated materials	—	—	(cwt.) 1,037	111
521	SM	Mineral tar and crude chemical from coal	(ton) 33,007	1,996	(cwt.) 709	37
531	SM	Synthetic organic dyestuffs etc.	—	—	('000 lb.) 389	2,957
532	SM	Dyeing and tanning extracts and synthetic tanning materials	(cwt.) 842	197	(cwt.) 1,503	140
533.1	SM	Colouring materials . . .	—	—	(cwt.) 1,361	190
533.2	SM	Printing ink	—	—	...	1,647
533.3	M	Prepared paints, enamels etc.	—	—	(cwt.) 34,678	3,129
541	M	Medicinal and pharmaceutical products	('000 oz.) 3,520	835	...	13,777
551	SM	Essential oils, perfume and flavour materials . . .	—	—	...	448

Burma: Import and export of manufactures and semi-manufactures *(continued)*

('000 kyats)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1970				1971			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
553	M	Perfumery and cosmetics etc.	—	—	...	87	—	—	...	20
554	M	Soaps, cleaning and polishing preparations	—	—	...	169	—	—	...	462
561	SM	Fertilizers, manufactured .	—	—	(ton) 4,427	1,384	—	—	...	19
571	M	Explosives and pyrotechnic products	—	—	...	155	—	—	...	55
571.2	SM	Fuses, primers and detonators	—	—	—	—	—	—	—	—
581	SM	Plastic materials etc. . . .	—	—	...	4,986	—	—	...	4,105
599.2	M	Insectisides, fringicides etc. .	—	—	('000 cwt.) 27	2,949	—	—	('000 cwt.) 60	5,866
599.5	SM	Starches, inulin, gluten . .	—	—	('000 cwt.) 27	1,882	—	—	('000 cwt.) 15	1,140
599.6	SM	Wood and resin-based, chemical products	—	—	...	2	—	—	...	151
599.7	SM	Organic chemical products .	—	—	...	670	—	—	...	615
599.9	SM	Chemical products and preparations	—	—	...	1,745	—	—	...	1,634
		6. Manufactured goods classified chiefly by materials								
611	SM	Leather	—	—	...	30	—	—	...	122
612	SM	Manufactures of leather . .	—	—	...	219	—	—	...	68
613	SM	Fur skins, tanned or dressed .	—	—	—	—	—	—	—	—
621	SM	Materials of rubber . . .	—	—	...	844	—	—	...	290
629	M	Articles of rubber, n.e.s. . .	—	—	...	11,186	—	—	...	10,987

Burma: Import and export of manufactures and semi-manufactures *(continued)*

('000 kyats)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1972			
			Export		Import	
			Quantity	Value	Quantity	Value
553	M	Perfumery and cosmetics etc.	—	—	...	65
554	M	Soaps, cleaning and polishing preparations	—	—	...	280
561	SM	Fertilizers, manufactured	—	—	...	12,512
571	M	Explosives and pyrotechnic products	—	—	...	177
571.2	SM	Fuses, primers and detonators	—	—	—	—
581	SM	Plastic materials etc.	—	—	...	3,718
599.2	M	Insectisides, fringicides etc.	—	—	('000 cwt.) 83	6,787
599.5	SM	Starches, inulin, gluten	—	—	('000 cwt.) 97	1,803
599.6	SM	Wood and resin-based, chemical products	—	—	...	...
599.7	SM	Organic chemical products	—	—	...	931
599.9	SM	Chemical products and preparations	—	—	...	1,768
		6. Manufactured goods classified chiefly by materials				
611	SM	Leather	(ton) 29	130	(cwt.) 145	52
612	SM	Manufactures of leather	—	—	...	31
613	SM	Fur skins, tanned or dressed	—	—	—	—
621	SM	Materials of rubber	—	—	...	623
629	M	Articles of rubber, n.e.s.	—	—	...	8,639

Burma: Import and export of manufactures and semi-manufactures *(continued)*

('000 kyats)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1970				1971			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
631	SM	Veneers, plywood boards etc.	(ton) 60	242	...	4	(ton) 5	16	—	—
632	M	Wood manufactures . . .	...	26	...	78	...	3	...	137
633	M	Cork manufactures . . .	—	—	(cwt.) 315	94	—	—	(cwt.) 1,361	314
641	SM	Paper and paper board . .	—	—	('000 cwt.) 363	35,736	—	—	('000 cwt.) 567	30,034
642	M	Articles made of paper pulp .	—	—	('000 cwt.) 17	2,428	...	...	('000 cwt.) 17	2,204
651.3	M	Cotton yarn and thread, not put up for retail sale . .	—	—	('000 lb.) 24,170	45,117	—	—	('000 lb.) 9,225	21,440
651.4(1)	M	Cotton yarn and thread, bleached, not put up for retail sale	—	—	('000 lb.) 7,435	45,272	—	—	('000 lb.) 5,156	35,184
651.4(2)	SM	Cotton yarn and thread, put up for retail sale . . .	—	—	('000 lb.) 534	3,050	—	—	('000 lb.) 128	794
651.5(2)	M	Thread flax	—	—	—	—	—	—	—	—
651.6	SM	Yarn and thread of synthetic fibres	—	—	('000 lb.) 325	2,217	—	—	('000 lb.) 729	4,370
651.7	SM	Yarn and thread of regenerated fibres	—	—	('000 lb.) 98	266	—	—	('000 lb.) 31	90
651.9	SM	Yarn of textiles fibres n.e.s. .	—	—	('000 lb.) 3,017	6,372	—	—	('000 lb.) 3,214	9,359
652	SM	Cotton fabrics, woven . .	—	—	('000 s.y.) 69,441	71,207	—	—	('000 s.y.) 47,871	47,541
653	SM	Textile fabrics, woven . .	—	—	('000 s.y.) 6,042	11,077	—	—	('000 s.y.) 2,962	4,513
654	SM	Tulle, lace, embroidery etc. .	—	—	...	1,673	—	—	...	1,358
655	SM	Special textile fabrics and related products . . .	—	—	...	3,975	...	...	...	6,443
656	M	Made-up articles, wholly or chiefly by textile materials	—	—	...	333	—	—	...	14,380

Burma: Import and export of manufactures and semi-manufactures *(continued)*

('000 kyats)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1972			
			Export		Import	
			Quantity	Value	Quantity	Value
631		SM Veneers, plywood boards etc.	(ton) 289	627	...	46
632	M	Wood manufactures . . .	...	2	...	43
633	M	Cork manufactures . . .	—	—	(cwt.) 220	89
641		SM Paper and paper board . .	—	—	('000 cwt.) 426	27,012
642	M	Articles made of paper pulp .	—	—	('000 cwt.) 8	914
651.3	M	Cotton yarn and thread, not put up for retail sale . .	—	—	('000 lb.) 6,873	21,545
651.4(1)	M	Cotton yarn and thread, bleached, not put up for retail sale	—	—	('000 lb.) 2,279	16,570
651.4(2)		SM Cotton yarn and thread, put up for retail sale . . .	—	—	('000 lb.) 33	148
651.5(2)	M	Thread flax	—	—	(lb.) 850	19
651.6		SM Yarn and thread of synthetic fibres	—	—	('000 lb.) 483	2,226
651.7		SM Yarn and thread of regenerated fibres	—	—	('000 lb.) 59	205
651.9		SM Yarn of textiles fibres n.e.s. .	—	—	('000 lb.) 3,116	9,320
652		SM Cotton fabrics, woven . .	—	—	('000 s.y.) 32,040	36,237
653		SM Textile fabrics, woven . .	(s.y.) 8	1	('000 s.y.) 1,580	1,755
654		SM Tulle, lace, embroidery etc. .	—	—	...	1,083
655		SM Special textile fabrics and related products . . .	—	—	...	6,408
656	M	Made-up articles, wholly or chiefly by textile materials	—	—	...	45,814

Burma: Import and export of manufactures and semi-manufactures *(continued)*

('000 kyats)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1970				1971			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
657	M	Floor coverings, tapestries etc.	—	—	(s.y.) 1,582	17	—	—	(s.y.) 232	3
661.2	SM	Cement	—	—	(ton) 1,003	439	—	—	(ton) 2,646	785
661.8	SM	Building materials	—	—	(cwt.) 9,978	323	—	—	(cwt.) 683	42
662	SM	Clay construction materials etc.	—	—	('000 No.) 357	678	—	—	('000 No.) 331	1,066
663	SM	Mineral manufactures, n.e.s.	—	—	...	1,145	—	—	...	1,011
664	SM	Glass	—	—	...	1,610	—	—	...	2,043
665	M	Glassware	—	—	...	3,565	—	—	...	3,707
666	M	Pottery	—	—	.	2,711	—	—	...	1,524
667	M	Pearls, precious stones etc.	...	7,164	...	58	...	12,256	...	123
671	SM	Pig iron, sponge iron etc.	—	—	(ton) 2,553	1,273	—	—	(ton) 2,374	1,486
672	SM	Ingots and other primary forms	—	—	('000 ton) 13	6,444	—	—	('000 ton) 14	7,603
673	SM	Iron and steel bars, rods, angles etc.	—	—	('000 ton) 11	10,110	—	—	('000 ton) 22	14,777
674	SM	Universals, plates, sheets of iron and steel	—	—	('000 ton) 10	9,255	—	—	('000 ton) 12	9,639
675	SM	Hoop and strip of iron and steel	—	—	(ton) 1,202	1,276	—	—	(ton) 1,011	762
676	SM	Rails and railway track construction materials of iron and steel	—	—	('000 ton) 24	16,594	—	—	('000 ton) 24	13,439

Burma: Import and export of manufactures and semi-manufactures *(continued)*

('000 kyats)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1972			
			Export		Import	
			Quantity	Value	Quantity	Value
657	M	Floor coverings, tapestries etc.	—	—	(s.y.) 1,124	36
661.2	SM	Cement	—	—	(ton) 807	315
661.8	SM	Building materials . .	—	—	(cwt.) 45	9
662	SM	Clay construction materials etc.	—	—	('000 No.) 2,512	3,555
663	SM	Mineral manufactures, n.e.s. .	—	—	.	1,324
664	SM	Glass	—	—	...	4,302
665	M	Glassware	—	—	...	3,986
666	M	Pottery	—	—	...	2,111
667	M	Pearls, precious stones etc. .	('000 crt.) 1,705	12,481	(crt.) 3,942	325
671	SM	Pig iron, sponge iron etc.	—	—	(ton) 1,187	557
672	SM	Ingots and other primary forms	—	—	('000 ton) 15	6,768
673	SM	Iron and steel bars, rods, angles etc.	—	—	('000 ton) 25	13,668
674	SM	Universals, plates, sheets of iron and steel	—	—	('000 ton) 7	6,876
675	SM	Hoop and strip of iron and steel	—	—	(ton) 287	300
676	SM	Rails and railway track construction materials of iron and steel	—	—	('000 ton) 14	9,580

Burma: Import and export of manufactures and semi-manufactures *(continued)*

('000 kyats)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1970				1971			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
677	SM	Iron and steel wire	—	—	('000 ton) 6	4,777	—	—	('000 ton) 6	5,519
678	SM	Tubes, pipes and fittings of iron and steel	—	—	('000 ton) 9	10,976	—	—	('000 ton) 17	20,011
681	SM	Silver, platinum etc.	('000 oz.) 1,057	8,985	(oz.) 1,902	7	('000 oz.) 451	3,555	...	2
682	SM	Copper	—	—	(cwt.) 11,773	3,149	—	—	(cwt.) 9,177	3,119
683	SM	Nickel	—	—	(cwt.) 56	62	—	—	(cwt.) 594	39
684	SM	Aluminium	—	—	(cwt.) 43,214	7,070	—	—	(cwt.) 43,420	7,409
685	SM	Lead	('000 cwt.) 53	4,070	(cwt.) 323	201	('000 cwt.) 155	9,842	(cwt.) 960	316
686	SM	Zinc	—	—	(cwt.) 11,847	1,218	—	—	(cwt.) 3,344	296
687	SM	Tin	—	—	(cwt.) 122	48	—	—	(cwt.) 747	161
689	SM	Miscellaneous non-ferrous metals	—	—	(cwt.) 3	1	—	—	(cwt.) 5	6
691	SM	Finished structural parts	—	—	(ton) 5,585	9,141	—	—	(ton) 15,501	19,404
692	M	Metal containers for storage and transport	—	—	...	2,309	—	—	...	5,041
693	M	Wire products and fencing grills	—	—	...	1,805	—	—	...	2,750
694	SM	Nails, screws, nuts, bolts etc. of iron and steel	–	—	(ton) 5,881	5,263	—	—	(ton) 4,049	4,404
695	M	Tools for use in the hand or in machines	—	—	...	7,461	—	—	...	5,357
696	M	Cutlery	—	—	...	279	—	—	...	157
697	M	Household equipment of base metals	—	—	...	127	—	—	...	161
698	M	Manufactures of metal, n.e.s.	...	1	...	5,469	...	1	...	9,533
		7. *Machinery and transport equipment*								
711	M	Power generating machinery, other than electric	—	—	...	13,085	—	—	...	17,456
712	M	Agricultural machinery	—	—	...	4,572	—	—	...	5,548

Burma: Import and export of manufactures and semi-manufactures *(continued)*

('000 kyats)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1972			
			Export		Import	
			Quantity	Value	Quantity	Value
677	SM	Iron and steel wire	—	—	('000 ton) 9	5,419
678	SM	Tubes, pipes and fittings of iron and steel	—	—	('000 ton) 15	18,951
681	SM	Silver, platinum etc.	('000 oz.) 905	8,059	(oz.) 670	2
682	SM	Copper	—	—	(cwt.) 7,409	2,476
683	SM	Nickel	—	—	(cwt.) 384	73
684	SM	Aluminium	—	—	(cwt.) 10,529	1,837
685	SM	Lead	('000 cwt.) 173	15,168	(cwt.) 750	252
686	SM	Zinc	—	—	(cwt.) 6,882	1,489
687	SM	Tin	—	—	...	23
689	SM	Miscellaneous non-ferrous metals	—	—	(cwt.) 5	3
691	SM	Finished structural parts			(ton) 7,664	7,589
692	M	Metal containers for storage and transport	—	—		
			...	3	...	3,647
693	M	Wire products and fencing grills	—	—	...	2,822
694	SM	Nails, screws, nuts, bolts etc. of iron and steel	—	—	(ton) 2,520	2,731
695	M	Tools for use in the hand or in machines	—	—	...	5,272
696	M	Cutlery	—	—	...	179
697	M	Household equipment of base metals	—	—	...	315
698	M	Manufactures of metal, n.e.s.	—	—	...	9,964
		7. Machinery and transport equipment				
711	M	Power generating machinery, other than electric	—	—	...	46,815
712	M	Agricultural machinery	—	—	...	11,203

Burma: Import and export of manufactures and semi-manufactures *(continued)*

('000 kyats)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1970				1971			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
714	M	Office machinery	—	—	...	1,280	—	—	...	1,811
715	M	Metalworking machinery	—	—	...	9,552	—	—	...	16,978
717	M	Textile and leather machinery	—	—	...	7,764	—	—	...	45,135
718	M	Machines for special industries	—	—	...	49,281	—	—	...	30,707
719	M	Machinery and appliances and machine parts	—	—	...	55,121	—	—	...	85,468
722	M	Electric power machinery and switchgear	—	—	...	12,247	—	—	...	17,316
723	M	Equipment for distributing electricity	—	—	...	2,781	—	—	...	10,166
724	M	Telecommunications apparatus	—	—	...	5,471	—	—	...	4,645
725	M	Domestic electrical equipment	—	—	...	947	—	—	...	1,402
726	M	Electric apparatus for medical purposes	—	—	...	374	—	—	...	579
729	M	Other electrical machinery and apparatus	—	—	...	12,086	—	—	...	16,857
731	M	Railway vehicles	—	—	...	9,811	—	—	...	32,114
732	M	Road motor vehicles	—	—	...	34,911	—	—	...	40,393
733	M	Road vehicles other than motor vehicles	—	—	...	778	—	—	...	5,545
734	M	Aircraft	—	—	...	2,512	—	—	...	8,958
735	M	Ships and boats	—	—	...	10,580	—	—	...	8,216
		8. Miscellaneous manufactured articles								
812	M	Sanitary, plumbing etc. fixtures and fitting	—	—	...	926	—	—		1,115
821	M	Furniture	...	6	...	153	...	3	...	484
831	M	Travel goods, handbags etc.	—	—	...	70	—	—	...	45
841	M	Clothing (except fur clothing)	—	—	...	826	—	—	...	464

Burma: Import and export of manufactures and semi-manufactures *(continued)*

('000 kyats)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1972			
			Export		Import	
			Quantity	Value	Quantity	Value
714	M	Office machinery	...	1	...	1,662
715	M	Metalworking machinery	...	1	...	7,159
717	M	Textile and leather machinery	—	—	...	21,578
718	M	Machines for special industries	—	—	...	44,919
719	M	Machinery and appliances and machine parts	—	—	...	69,225
722	M	Electric power machinery and switchgear	—	—	...	24,688
723	M	Equipment for distributing electricity	—	—	...	3,706
724	M	Telecommunications apparatus	—	—	...	3,585
725	M	Domestic electrical equipment	—	—	...	405
726	M	Electric apparatus for medical purposes	—	—	...	602
729	M	Other electrical machinery and apparatus	—	—	...	13,085
731	M	Railway vehicles	—	—	...	31,499
732	M	Road motor vehicles	—	—	...	52,276
733	M	Road vehicles other than motor vehicles	—	—	...	2,252
734	M	Aircraft	—	—	...	1,861
735	M	Ships and boats	—	—	...	6,592
		8. Miscellaneous manufactured articles				
812	M	Sanitary, plumbing etc. fixtures and fitting	—	—	...	1,451
821	M	Furniture	...	2	...	385
831	M	Travel goods, handbags etc.	—	—	...	35
841	M	Clothing (except fur clothing)	—	—	...	268

Burma: Import and export of manufactures and semi-manufactures *(continued)*

('000 kyats)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1970				1971			
			Export		Import		Export		Import	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
851	M	Footwear	—	—	...	252	—	—	...	247
861	M	Scientifics, medical, optical etc. instruments and apparatus	—	—	...	12,324	—	—	...	9,071
862	M	Photographic and cinematographic supplies	—	—	...	3,423	—	—	...	1,988
863	M	Developed cinematographic film	—	—	('000 ft.) 1,337	2,273	—	—	('000 ft.) 1,177	2,416
864	M	Watches and clocks	—	—	(No.) 1,904	44	—	—	(No.) 10,128	115
891	M	Musical instruments etc.	...	1	...	438	...	6	...	75
892	M	Printed matter	...	6	...	6,942	...	9	...	4,229
893	M	Articles of artificial plastic materials	—	—	...	1,095	—	—	...	2,081
894	M	Parambulators, toys, games and sporting goods	...	53	...	1,471	...	44	...	919
895	M	Office and stationery supplies	—	—	...	8,405	—	—	...	13,408
897	M	Jewellery and goldsmiths' and silversmiths' wares	—	—	...	108	...	17	...	52
899	M	Manufactured articles n.e.s.	...	11	...	2,452	...	55	...	1,616
		Total	...	511,611	...	806,980	...	602,903	...	933,281
042	Primary	Rice	('000 ton) 631	254,328			('000 ton) 798	291,426		
242	Primary	Wood in the round or roughly squared	('000 cwt.) 58	68,802			('000 cwt.) 86	95,368		

Burma: Import and export of manufactures and semi-manufactures *(continued)*

('000 kyats)

SITC No.	Manufactures (M) or semi-manufactures (SM)		1972			
			Export		Import	
			Quantity	Value	Quantity	Value
851	M	Footwear	...	...	...	150
861	M	Scientifics, medical, optical etc. instruments and apparatus	—	—	...	10,868
862	M	Photographic and cinematographic supplies	—	—	...	2,465
863	M	Developed cinematographic film	—	—	('000 ft.) 615	1,129
864	M	Watches and clocks	—	—	(No.) 127	16
891	M	Musical instruments etc.	...	6	...	143
892	M	Printed matter	...	7	...	2,622
893	M	Articles of artificial plastic materials	—	—	...	2,060
894	M	Parambulators, toys, games and sporting goods	...	60	...	1,629
895	M	Office and stationery supplies	...	9	...	4,385
897	M	Jewellery and goldsmiths' and silversmiths' wares	...	16,182	...	1,645
899	M	Manufactured articles n.e.s.	...	178	...	2,097
		Total	...	635,584	...	866,633
042	Primary	Rice	('000 ton) 512	222,614		
242	Primary	Wood in the round or roughly squared	('000 cwt.) 96	112,440		

[To be continued in No. 14]

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