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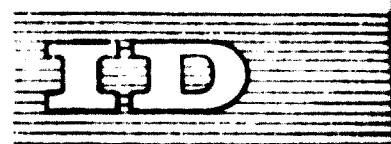
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Industries in Arab Countries of the Middle East  
Beirut, Lebanon, 11-16 November 1968

Agenda item 6

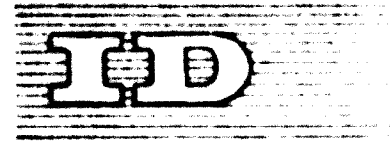
**REPORT OF THE INTERREGIONAL SYMPOSIUM  
ON TECHNICAL SERVICES AND FACILITIES FOR SMALL-SCALE INDUSTRIES,  
Vedbaek, Denmark, 26 June - 8 July 1967<sup>1/</sup>**

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<sup>1/</sup> The attached paper (ID/CONF.2/19 Rev.1) is submitted to the Expert Group Meeting as a background document. This document has been reproduced without formal editing.

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Interregional Symposium on Technical Services  
and Facilities for Small-scale industries  
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REPORT OF THE  
INTERREGIONAL SYMPOSIUM ON TECHNICAL SERVICES AND FACILITIES FOR  
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**REPORT OF THE INTER-REGIONAL SYMPOSIUM ON**  
**TECHNICAL SERVICES AND FACILITIES FOR SMALL-SCALE INDUSTRIES**  
**Vedbaek, Denmark, 26 June to 8 July 1967**

**CONTENTS**

	<b><u>Paragraphs</u></b>	<b><u>Page</u></b>
<b>I. INTRODUCTION</b>	1 - 9	1
<b>II. REVIEW OF THE TECHNICAL SERVICES AND FACILITIES FOR SMALL-SCALE INDUSTRIES IN THE COUNTRIES OF THE PARTICIPANTS AND GENERAL EVALUATION OF EXPERIENCE</b>	10 - 17	4
<b>III. PROMOTION OF ENTREPRENEURSHIP AND ASSISTANCE AT THE PRE-INVESTMENT STAGE</b>	18 - 29	8
<b>IV. TECHNICAL COUNSELLING</b>	30 - 37	12
<b>V. FACILITATION OF FINANCING</b>	38 - 43	14
<b>VI. COMMON SERVICE FACILITIES</b>	44 - 48	17
<b>VII. IMPROVEMENT OF DESIGN, QUALITY AND STANDARDS</b>	49 - 53	19
<b>VIII. MANAGEMENT ASSISTANCE</b>	54 - 59	20
<b>IX. MARKETING ASSISTANCE</b>	60 - 66	22
<b>X. INDUSTRIAL RESEARCH</b>	67 - 75	24
<b>XI. FACILITATION OF SUBCONTRACTING BETWEEN LARGE AND SMALL INDUSTRIES</b>	76 - 79	27
<b>XII. JOINT ACTION PROGRAMMES</b>	80 - 81	29
<b>XIII. SCOPE OF FUNCTIONS</b>	82 - 86	30
<b>XIV. RECRUITMENT AND TRAINING OF SMALL INDUSTRY EXTENSION PERSONNEL</b>	87 - 91	31
<b>XV. SPONSORSHIP, ORGANIZATION, FINANCING AND MANAGEMENT</b>	92 - 103	33
<b>XVI. CO-OPERATION AND CO-ORDINATION</b>		
(1) BETWEEN NATIONAL AGENCIES	104 - 107	37
(2) INTERNATIONAL CO-OPERATION	108 - 129	38

**ANNEXES**

<b>I. List of Participants</b>	44
<b>II. Agenda</b>	52
<b>III. List of Discussion Papers, Country Papers and Background Papers</b>	54

**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**

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**REPORT OF THE  
INTER-REGIONAL SYMPOSIUM ON TECHNICAL SERVICES  
AND FACILITIES FOR SMALL-SCALE INDUSTRIES  
Vejlebak, Denmark, 26 June to 8 July 1967**

**I. INTRODUCTION**

Organization and attendance

1. The Inter-regional Symposium on Technical Services and Facilities for Small-scale Industries was held at Vejlebak, Denmark, from 26 June to 8 July 1967. The Symposium was sponsored jointly by the United Nations Industrial Development Organization (UNIDO), the Bureau of Technical Assistance Operations (now the Office of Technical Co-operation) of the United Nations and the Government of Denmark.
2. The Symposium was attended by 36 participants from 32 countries; by staff members and consultants of the United Nations Industrial Development Organization, staff members and consultants of the Technological Institutes of Copenhagen and of Aarhus, representatives of the International Labour Organisation and the Food and Agriculture Organization of the United Nations; and by observers from the Organization for Economic Co-operation and Development, Paris, the International Federation of Small and Medium-sized Industrial Enterprises, Paris, and the Société d'aide technique et de coopération (SATEC), Paris. A list of the participants is given in Annex I.
3. Prof. P. Nyboe Andersen, Chairman of the Danish Board of Technical Co-operation with Developing Countries, welcomed the participants in the course of his opening address. Mr. O. Rydeng, Director of the National Association of Danish Enterprises, and Mr. I. Krestovsky, Chief, Small-scale Industry Section, United Nations Industrial Development Organization, served as Co-Directors of the Symposium.
4. During the Symposium, the participants visited the Technological Institute at Copenhagen, the industrial estate at Valby and several small-scale industrial enterprises in Denmark. The report was adopted on 8 July 1967. The closing addresses were delivered by the Co-Directors.

**GENERAL DISCUSSION**

5. Also in the period 1960-1967, Prof. P. J. Andersen pointed out that there were good reasons for holding the Symposium in Denmark. Firstly, Denmark had experienced in recent years a rapid growth of manufacturing industry, much of which was taking place in the small-scale and medium-sized sectors. Secondly, Denmark's contribution to international co-operation for the growth of developing countries had been steadily increasing. Denmark's aid to developing countries was the second highest per capita and the sixth highest in absolute terms, amongst all developed countries. This assistance was being increased by 25 per cent every year and it was expected that by 1972 Denmark would contribute one per cent of its national income for aid to developing countries. Furthermore, about one half of the Danish assistance was channeled through United Nations programmes. The present Symposium was one of 43 inter-regional or regional courses, symposia and conferences organized during 1967 under the Danish contribution to the United Nations. Prof. Andersen pointed out that close co-operation between the United Nations Bureau of Technical Assistance Operations and the United Nations Industrial Development Organization, on the one hand, and the Danish agencies, on the other hand, had enabled adequate preparations to be made for this Symposium in the matter of documentation, participation of developing countries and physical arrangements. He expressed the hope that the deliberations of the Symposium would be fruitful not only for the participating countries but also for furthering the technical assistance activities of the United Nations.

6. On behalf of Mr. Abdel-Rahman, Executive Director of the United Nations Industrial Development Organization, and of Mr. Victor Hoo, Commissioner for Technical Assistance of the United Nations, Mr. I. Krestovsky expressed gratitude to the Danish Government for its co-operation in organizing the Symposium, and extended a hearty welcome to all the participants. Mr. Krestovsky stated that the organization of this inter-regional Symposium was a continuing part of the work of the United Nations Centre for Industrial Development and of its successor, the United Nations Industrial Development Organization. During the last six years, considerable attention had been devoted to the problems of planning, organization and management of industrial estates for small-scale industries. Four regional



seminars and conferences had been organized on this subject.<sup>1/</sup> Another regional seminar on the role and problems of small-scale industries including industrial estates had also taken place.<sup>2/</sup> The present Symposium on technical services and facilities for small-scale industries was convened with another important problem in this area. UNIDO proposed to cover other aspects of small industry development, such as financing, sub-contracting and rural industrialization, through research studies and further regional and inter-regional seminars and conferences.

7. Mr. Krestovsky stated that the scope of the Symposium included all technical services and facilities extended within and for the small manufacturing enterprises, whether for establishing new enterprises or for upgrading and modernizing existing ones. The need for integrated programmes for the promotion of small-scale industries was evident, since small-scale industries needed guidance and assistance in all aspects of establishment, operation and management; no single measure could be effective unless it was associated with, and supported by other measures. The Symposium would not, however, be concerned with broader programmes such as technological research, financing, training or industrial estates, but only with the relationships of such programmes with technical services and facilities for small-scale industries. The purpose of the Symposium was to provide guidelines to facilitate and improve the planning, establishment and operation of technical services and facilities for small-scale industries in the developing countries. The Symposium would provide the opportunity for exchange of information and pooling of experience, for assessing the usefulness of different services, their organization, methods, financing and management. It would provide guidance not

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1/ The first seminar on industrial estates, for the Region of the Economic Commission for Asia and the Far East, was held in Madras, India, in 1961; the report of the Seminar and long excerpts from the discussion and information papers submitted to it are published in Industrial Estates in Asia and the Far East (Sales No.: 62.II.B.5). The second seminar, for the Region of the Economic Commission for Africa, was held in Addis Ababa, Ethiopia, in 1964; the report of the Seminar and two of the discussion papers are published in Industrial Estates in Africa (Sales No.: 66.II.B.2). The third regional conference was the consultative group on Industrial Estates and Industrial Areas in Certain European and Other Countries in the Process of Industrialization, held in Geneva, in 1966. The fourth regional conference - the Consultative Group on Industrial Estates and Industrial Areas for the Arab Countries of the Middle East - was held in Beirut in 1966. The reports of the third and the fourth regional conferences, and some papers presented to them, are being published in Industrial Estates in Europe and the Middle East (Symbol No.: ID/4, 1968).

2/ A Seminar on Small-scale Industry for the Region of the Economic Commission for Latin America was held in Quito, Ecuador, in 1966. The report of the seminar and some of the papers prepared for it, will be published during 1968 in Small-scale Industry in Latin America.

only for programmes of individual countries, but also for regional and inter-regional cooperation in this field, including projects under the United Nations technical cooperation programme.

8. Mr. Nyberg stressed two aspects of small industry development in Denmark: firstly, the increasingly rapid transformation of handicrafts into small and medium industries and, secondly, the extent of organization of out-going advisory services for the promotion of small-scale industries. This environment of the Danish economy was propitious for the exchange of ideas on resources and methods for promoting and improving technical services and facilities for small-scale industries in the developing countries.

#### Adoption of the agenda

9. The provisional agenda was adopted. The agenda is given in Annex II. A list of discussion papers, background papers and country papers presented to the Symposium is given in Annex III.

### **II. REVIEW OF THE TECHNICAL SERVICES AND FACILITIES FOR SMALL-SCALE INDUSTRIES IN THE COUNTRIES OF THE PARTICIPANTS AND GENERAL EVALUATION OF EXPERIENCE**

10. The Symposium had before it 32 country papers prepared by the participants. Each paper gave the definition of small-scale industry adopted in the country, described the various measures for the development of small-scale industries, such as technical assistance, financial assistance, tax and tariff concessions, industrial estates, training facilities and so on, and assessed the place of technical services and facilities in over-all programmes for the development of small-scale industries. The papers described the agencies providing services and facilities, their functions and operating methods and procedures, the co-operation and co-ordination between agencies and the relationship between technical services and other programmes of small industry development. Some papers contained an evaluation of the experience gained in the country and described problems, solutions and lessons learned from the experience and their application to future projects.

11. The country papers and the complementary statements made by the participants indicated that in all countries, irrespective of the levels of development, there were striking similarities in the problems faced by small-scale industries and in those confronting the promotion and servicing agencies. At the same time, there were broad differences in the institutional set-up and in the methods and scope

of action of the agencies. In countries at early stages of industrialization, the main problem was to promote entrepreneurship in new industrial undertakings. This problem was also very important in relatively more advanced countries, but these had also to meet urgent needs in respect of modernization of plant, equipment and processes, improvement of productivity and product quality and upgrading of management practices. In all countries, the financing of small-scale industries was regarded as an extremely difficult problem having the highest priority, the provision of technical and managerial assistance being very close to it in importance. In development priorities emerged from the discussion in regard to the other needs - training, marketing, export promotion, research, quality testing, provision of land, plant and machinery, subcontracting and so on - all of which appeared to be pressing.

12. One statistic on national experiences was that, in the majority of countries, small-scale industries accounted for an overwhelming proportion of the total number of manufacturing enterprises and for an appreciable proportion of total employment and total value added in industry. However, in a number of the countries at the earliest stages of industrial development, especially in the underdeveloped countries of Africa, industrial structure consisted essentially, on the one hand, of a few large-scale and modernized industries owned either by foreign or expatriate interests and/or by the government, and, on the other hand, of large numbers of artisans and hand-craft undertakings and cottage industries, where a few small manufacturing concerns existed, they were invariably owned and managed by foreigners. Except for some types of industries in the relatively more industrialized developing countries, small-scale industries were generally weak, ill-managed, poorly equipped and produced goods of uneven quality. Everywhere, many small entrepreneurs were unaware of, or unable to identify, their needs and were reluctant to request and even to accept assistance for reasons ranging from ignorance and prejudice to fear that information would be channeled to the tax authorities or to competitors.

13. In some countries, the promotion of small-scale industry was an important policy objective and government responsibility for the development of this sector was fully recognized. This was not the case, however, in other countries, where there was some confusion regarding the respective role of artisans, handicrafts, small-scale industries and large-scale industries in overall industrialization plans. Every participating country had adopted some measures of promotion and a number of countries had set up one or several agencies to carry out these measures.

Everywhere, however, it was acknowledged that whatever was being done was not enough. Even in India which had set up the largest small industry development organization in the world, services could be provided to only a small fraction of a large and continually growing number of small industrial enterprises. Most of the agencies suffered from inadequate financial resources, difficulties in recruiting and keeping staff with the necessary qualifications and abilities and were subject to restrictions in their procedures - usually because they were government departments bound to civil service budgeting, administration and personnel management - with consequent lapses in initiative and action.

14. All countries recognized that, since small industries needed guidance and assistance in all aspects of establishment, management and operation, measures of support, promotion and assistance should be integrated in a comprehensive development programme, but, with some exceptions such as Argentina, Ceylon, China, Cyprus, India, Israel, Pakistan and Thailand, most countries had taken action on a piece-meal basis; most of them, however, intended, in the course of time, to develop the necessary services and facilities. Lack of expert knowledge - national and foreign - appeared to explain this gap as much as lack of financial resources. In all countries, responsibility for small industry development was borne by the Ministry of Industry, but special small industry service institutes, industrial extension centres or equivalent agencies providing technical and managerial assistance as a major function were in operation or in the process of establishment in less than half of the participating countries - Argentina, Ceylon, Chile, China, Cyprus, Ecuador, Greece, India, Indonesia, Israel, Korea, Pakistan, Thailand, Turkey, Uganda and the United Arab Republic.<sup>3/</sup> In other countries, technical and managerial assistance was provided, as one among other functions, by technological or industrial research institutes (Colombia, Central America) and industrial studies and development centres (Saudi Arabia, Tanzania). While 260 industrial estates were in operation in India, 25 in Pakistan and 4 in the Republic of China, a few projects only were functioning, or being constructed, in Ceylon, Cyprus, Iran, Israel, Kenya, Mexico, Nepal, Peru, Turkey, the United Arab Republic and Venezuela. Some industrial estates were at the planning stage

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<sup>3/</sup> Although some countries - Iran, Senegal and the United Arab Republic - were not represented at the Symposium, papers on their experience had been submitted to the conference.

in Colombia, Ecuador, Greece, Korea, Saudi Arabia, Senegal, Tanzania, Thailand and Uganda. While a number of vocational training and apprenticeship centres were set up in all countries, facilities for training of managers and supervisory personnel existed only in a few. Some common service facilities were planned or established on industrial estates, but only rarely outside of these. Mostly for lack of knowledge of techniques, but also because of lack of initiative and of co-ordination with other agencies, new entrepreneurship was not promoted in a systematic and sustained way by service institutions, with the exception of India where "intensive promotion campaigns" had recently been undertaken. Only in a few countries was industrial extension closely linked to financial assistance. Special credit schemes at liberal conditions for small-scale industries were exceedingly rare and among the participating countries, hire-purchase of machinery existed in India only. Tax and tariff concessions were rarely granted especially for small industries; in a few cases, such concessions discriminated against them. Special measures of export promotion of small industry products were in effect only in China, India and Korea. The organization of co-operative associations of small producers appeared to meet, in the participating countries, with the same obstacles as in other countries. The promotion of sub-contracting was seldom undertaken in a systematic way; subcontractors' exchanges did not exist in the developing countries participating in the Symposium.

15. There were considerable differences in the definitions of small-scale industry adopted in the various countries, both as regards the criteria used - investment and/ or employment - and the quantitative levels adopted for these. For example, in Ecuador, the ceiling on fixed investment was set at the equivalent of \$11,000 and, in the Republic of Korea, to the equivalent of \$200,000. Elsewhere, the ceilings on investment varied from \$40,000 to \$100,000. The Symposium recognized that definitions could vary from one country to another, but felt that, since their objective was to identify a segment of the industrial structure entitled to special benefits, the value assigned to the criteria should be such as to encourage, on the one hand, the raising of employment and, on the other hand, the use of modern machinery. The Symposium felt that, in some countries, revisions of the definitions would be in order.

16. The role of small-scale industry was considerable in Poland, and its importance was increasing in Yugoslavia. In the former country, a whole machinery of institutions, laboratories, construction units, technological and design units was set

up to assist small-scale industries. In the latter country, interest for small industry promotion was awakening and some assistance was given in the form of consultative services in management and marketing. In both countries, large industries provided some help to their small sub-contractors. In both countries consideration was being given to the adaptation of the principles of industrial estates to the conditions of socialist economies.

17. There was a consensus that, in countries where no promotional and servicing institutions for small-scale industries existed, there was an urgent need for their establishment. In most other countries, the existing machinery was either at an early stage of establishment or operation or suffered from inadequate resources in funds, personnel and expert knowledge. The Symposium felt that, in most cases, a greater awareness on the part of the Government of the need to create, expand and strengthen technical services and facilities for small-scale industry was an essential prerequisite to any progress in the development of this sector. In many countries, assistance from technical co-operation organizations for the establishment and early operation of these services and facilities would be another fundamental condition.

### III. PROMOTION OF ENTREPRENEURSHIP AND ASSISTANCE AT THE PRE-INVESTMENT STAGE

18. The Symposium considered that, for the purposes of the discussion, promotion of entrepreneurship covered the provision of direct services to individual entrepreneurs, both prospective and established. In the former case, it was aimed at attracting and steering people towards industrial activities and assisting them, through counselling, training and other means, in setting up new enterprises. In the latter case, it was aimed at helping existing industrialists in expanding or diversifying their undertakings.

19. There was a consensus that measures for the promotion of entrepreneurship and assistance at the pre-investment stage were of crucial importance in developing countries, particularly in the newly-industrializing ones lacking ready sources of industrial entrepreneurship. A number of interconnected measures should be taken to motivate entrepreneurship and to build the necessary climate to attract people and induce them to assume the risks of manufacturing industry. The most important elements of such a programme were: the building up of an industrial extension agency for providing economic, technical and management advisory services; the provision

of training facilities; the undertaking of surveys and studies pinpointing techno-economic possibilities of small-scale industries in specific areas; and the availability of financing. It was essential that the promotional agency should have an active rather than a passive attitude. Once the interest of people in engaging in industrial activities had been aroused, it was indispensable to give them continuing assistance from the stage of pre-investment to that of operation.

20. Certain types of surveys and studies should be carried out in many developing countries in order not only to provide national orientation to prospective entrepreneurs, but also to draw up programmes of development of small-scale industries and to plan industrial estates and common service facilities. The following studies and surveys should take into account the availability of capital, labour, raw materials, domestic and foreign markets, import substitution and export promotion possibilities, etc., as well as the objectives, priorities and requirements of a country's over-all industrial development plan:

- (i) Surveys to study the industrial potential of a given area which may be the country as a whole, a region, a province, a district or a town. The area survey provides the basis for a planned programme of industrial development pinpointing short-term and long-term industrial possibilities and necessary measures of promotion and assistance.
- (ii) Industry feasibility studies to determine the techno-economic possibilities of establishing and expanding a particular industry or manufacturing a specific product or group of products. These studies provide conclusions and recommendations on number and size of enterprises to be encouraged and their location; production, marketing and financing possibilities; investment requirements; anticipated cost of production and profitability; and policies and measures for the establishment or expansion of industries.
- (iii) Market surveys to provide information on the outlets for given products which are open to existing and potential entrepreneurs, not only to improve distribution and to expand sales but also to assess the feasibility of candidate industries. The market survey also provides information on the potential size of the market, the long-run effect of substitute products and the elasticity of demand.
- (iv) Model schemes or industry fact sheets for industries offering good prospects of development. These are short pamphlets which contain basic information for establishing and operating an industrial unit and manufacturing a product: size of plant, type of equipment, production processes, prospective markets, requirements of fixed and working capital, estimates of income, expenditure and profitability.

21. The preparation of area surveys, feasibility reports, market studies and model schemes, and the formulation of "bankable" projects should be a continuing activity which should be carried out either by an extension agency, a development bank or a development centre. When the studies are carried out by agencies other than the industrial extension centre there should be close co-ordination with the centre in the preparation and use of the data. Broad dissemination of the information was essential.
22. The establishment of financing facilities by the Government for meeting the long-term and short-term capital and credit requirements of small-scale industries, either through allocation of Government funds to existing institutions or through the setting up of new institutions, was considered to be another essential pre-requisite for the stimulation of entrepreneurship.
23. The methods and techniques of "intensive promotion campaigns" jointly undertaken by extension, financing and other public and private agencies in India were discussed by the participants. In that country, intensive campaigns were carried out in medium and small towns, since technical counselling and consultancy services were readily available to entrepreneurs through small industry service institutes and industrial extension centres located in the main urban areas.
24. The most important sources of new entrepreneurship in small-scale industries in India were skilled factory workers and foremen of industrial enterprises, merchants, artisans and graduate engineers. Similar experience was reported by participants from some other countries, for example, Ceylon, the Republic of China, Pakistan and Turkey. The Symposium expressed its conviction that similar sources of new entrepreneurship existed in even the least developed countries and could be activated through extension programmes and the provision of pre-investment assistance.
25. The Symposium recognized that the intensive campaign was a new technique of industrial extension which, under certain circumstances, could accelerate and expand entrepreneurship. It felt, however, that not all countries needed or were able to organize such campaigns. In some of the larger and relatively more advanced countries, especially in those where industrial decentralization was a high priority objective, there was some scope for undertaking them. It was evidently desirable to mobilize, bring together and co-ordinate, within the framework of a campaign, the whole range of measures of promotion of small-scale industry - area



surveys, feasibility studies, model schemes, technical and managerial counselling, supervised credit, demonstration equipment, mobile vans and so on. However, the availability of all of these measures was not a prerequisite. The minimum institutional machinery to permit the undertaking and follow-up of a campaign was an industrial extension centre having carried out techno-economic surveys of prospects of development of small-scale industries in a given locality and having on its staff technicians able to assist entrepreneurs in establishing and operating new factories or in expanding or diversifying their production; and a financial institution providing credit at liberal conditions and working in close relation with the extension centre. In the smaller countries or in countries where small industry development could take place in a limited number of localities, there was little scope for launching such campaigns. In a few countries, the upgrading and modernization of existing enterprises was an objective of higher priority than the creation of new industries and the organization of a promotional campaign of the type under consideration would be unnecessary.

26. In countries at the earliest stages of industrialization, the emergence of a new class of entrepreneurs, especially from the indigenous sector of the population, was a major economic, social and political objective. There were doubts, however, that the organization of occasional intensive campaigns would be effective in achieving it. What was needed was a persistent effort on the part of the authorities in charge of industrial development in seeking out prospective entrepreneurs among likely sources - skilled workers and supervisory personnel, wholesalers, importers, artisans and handicraft workers, civil servants, successful agriculturalists, graduate students - with a view to steering them towards industrial occupations. In these countries, the initial creation even of a relatively small number of indigenous entrepreneurs through such efforts could have a demonstration effect which might set in motion a cumulative development.

27. Quite often, technical assistance to established industrialists led to recommendations for expansion, modernization or diversification of production which might entail such changes in accommodation, equipment, processes, management and product that they might be tantamount to the creation of new units. The Symposium considered that, to the largest extent possible, efforts in this direction should be undertaken by extension agencies on their own initiative.

28. There was a brief discussion of the scope for organizing "intensive modernization campaigns" such as those carried out in a few Latin American countries.

In such campaigns, extension, finance and other officials visit small enterprises in certain industrial fields, examine their plant and methods and make recommendations for their modernization. Credit applications for purchase of new machinery are frequently submitted on the spot. It was felt that this method was of interest and deserved further study.

29. In a general way, the Symposium stressed the need for an industrial extension agency to adopt an active attitude and to undertake work on its own initiative. Such work should be patterned on that which had successfully been applied for the promotion and modernization of agriculture, and which rested largely in visits to producers, on-the-job training and demonstration and similar field work. It was felt that these efforts not only required a progressive outlook on the part of the leaders of the industrial extension agency, but often depended also on the availability of sufficient funds and personnel, the absence of statutory limitations, the avoidance of bureaucratic procedures and the maintenance of co-operation and co-ordination with other agencies, especially with financial institutions. Leadership and a central co-ordinating role should be assumed by the extension agency.

#### IV. TECHNICAL COUNSELLING

30. Technical counselling includes advice and guidance on the selection and utilization of materials, machinery and auxiliary equipment, on plant layout, production processes, production planning and control, maintenance, inventory control, cost reduction, and general house-keeping. Technical counselling provided in connexion with financial assistance was considered separately.

31. The methods of providing technical counselling include visits and consultations, in-plant studies, on-the-job or class-room training and demonstration, question-and-answer service, issue of brochures and bulletins, etc. There was agreement that the measures most likely to be successful in assisting a particular industry, as distinct from an enterprise, were seminars, training courses and the establishment of pilot plants. In respect of an individual undertaking, the most effective tools were consultations, visits, in-plant studies and demonstrations. Where there was more than one organization involved in technical counselling, for example an extension service and a research institute, their respective efforts should be co-ordinated.

32. It was recognized that, apart from the shortage of financing, the principal obstacles to the modernization of small-scale industries were the persistence of a low level of technology, the shortage and inadequate skill of operatives, and the absence of effective management techniques. Many participants referred to the measures taken in their respective countries to remedy this situation. While the extent and nature of problems arising from these obstacles were not identical in all countries, the most important and urgent requirement appeared to be the introduction of sound quality control and cost accounting methods.

33. Many participants referred to the reluctance of small entrepreneurs to avail themselves of existing developmental facilities, either because of complacency or suspicion of the government's motives. These obstacles could be overcome only through educational efforts. Several participants thought that once an entrepreneur was convinced of the soundness and disinterested nature of the proffered advice, he would be likely to welcome further assistance. To surmount the barriers of self-satisfaction and suspicion, initiative should be taken by the development agency; progress could not be made by waiting for the entrepreneur to bring his problems, the existence of many of which <sup>he</sup> might be unaware of. In many cases, a gradual approach was advisable whereby simple and relatively inexpensive reforms would be recommended first. As confidence was established, more important changes could be introduced. The necessity for both speed and accuracy in dealing with the problems of the small enterprises was stressed. More than one speaker advocated the advantages of practical demonstrations of improvements in processes and techniques in this connexion. It was agreed that the ultimate objective of any extension agency should be to help the small industrialist to help himself.

34. In many developing countries, a serious problem was under-utilization of plant in small-scale enterprises. When this was not due to shortage of raw materials, it was due to bad planning of production in relation to the market. It was appreciated, however, that there were instances of markets so limited that the output of even the smallest, currently available production unit could not be absorbed.

35. Another problem was the continuing use of obsolete or unsuitable machinery, which was attributed - leaving aside the lack of financing - to the reluctance of certain small entrepreneurs to move with the times. Yet "obsolescence" was a relative concept which should refer to the average level of technology and the

relative costs of capital and labour in a particular country. A related question was that of use of second-hand machinery. Most of the participants felt that second-hand plant should often be considered but only after a thorough investigation into the economics of the proposed operation, and reliable assurances on the condition of the machinery and the continuing availability of spare parts.

36. It was desirable that the co-operation of foreign manufacturers (and local agents) of imported machinery and equipment be secured in the provision of training and after-sales service. It was believed that reputable manufacturers would, in their own interest, provide such services and cases were mentioned where training and service facilities had been obtained in commercial transactions. In some developing countries, the manufacturers and even the governments of machinery-exporting countries had set up technical agencies to provide such services. Whenever possible, provision of after sales service should be included in contracts for import of machinery.

37. As regards the role of training in technical counselling, the general view was that an extension service should not be concerned with basic vocational education. In any country, vocational training should be provided by special institutions. Specialized short-term training to upgrade the skills of the operatives, particularly in connexion with the introduction of new processes and new machinery should, however, be carried out by the extension service, and would be particularly effective if provided in common facility centres. The Symposium discussed the effectiveness of production-cum-training centres where training is carried out as an integral part of the production process in conditions close to actual industrial operation. There was much evidence that such centres operated neither as efficient production centres nor as efficient training centres, that they were expensive to equip and to operate, and that they often competed with private small industrial enterprises. Most participants felt that a realistic introduction to industry could be given more effectively to young workers graduating from vocational training centres through apprenticeship and in-plant training schemes.

#### V. FACILITATION OF FINANCING

38. The Symposium discussed the role of industrial extension agencies in facilitating the financing of small-scale industries, and stressed the need for closer

association between financial and technical assistance in small industry development programmes. Mere advice on the use of improved machinery and equipment or the adoption of new techniques of production would be of little avail to small industries in developing countries, unless it was backed by financial support to translate the advice into practice. Similarly the facilitation of credit to small industrialists would by itself be of little help unless it was supported by guidance and advice on the proper utilization of the funds. The Symposium recommended that programmes of technical services and facilities and of credit for small-scale industries should be closely integrated in all developing countries.

39. The Symposium recognized the obstacles to the financing of small-scale industries, and noted that because of high risks and costs, commercial credit institutions were reluctant to grant loans to weak and often inefficient enterprises having inadequate accounting systems and little collateral or security to offer. As a rule, commercial banks could not meet the requirements of small-scale industries for long-term capital and equipment financing. On the other hand, in several developing countries, the provision of short-term credit did not raise unsurmountable difficulties. In general, however, for reasons stated earlier, commercial banks tended to adopt a conservative attitude in assessing the credit-worthiness of the small industries applying for loans. The Symposium recommended that special credit institutions or special departments of industrial development banks be organized, wherever necessary, to meet the needs of small-scale industries, particularly as regards their long-term capital requirements.

40. In order to encourage commercial banks and industrial development banks to advance credit on liberal terms to small-scale industries, it might be necessary for the Government to provide supporting facilities and services. Financing institutions were often unable to undertake the technical operations relating to the scrutiny of applications or the supervision of the use of funds. Commercial banks, in particular, could not afford the overhead costs of a permanent technical staff to undertake such activities, in view of the large number of applications involved and the high costs of servicing small loans. In such circumstances, government technical service agencies should assume the responsibilities for technical scrutiny and credit supervision. The improvements in productivity, product quality and management, which could be brought about by the technical service agency, would enhance the eligibility of the small industrialists for further loans from credit institutions and thus generate a healthy chain reaction which would be beneficial to the credit institutions as well as to their clients.

41. The Symposium noted that in a few countries the Government had set up an industrial development bank but had not established a separate technical servicing agency such as an industrial extension agency or a small industry service institute. It was the general view that, especially in small countries and countries at early stages of industrialization, the proliferation of institutions should be avoided. An industrial development bank, appropriately strengthened with technical and extension staff was often an appropriate agency for small industry development. Initially it could limit its services to borrowers not only by evaluating their applications for loans, but also by providing them with pre-investment services and post-loan supervision. In the course of time it could extend its services to small industries in general, borrowers or not. As a rule, the cost of the extension services rendered by a development bank should be subsidized by the Government.

42. A tangible form of support to commercial credit institutions would be for the Government to introduce credit guarantee or insurance schemes. It was noted that some developing countries had already introduced such schemes and that these had led to liberalization and facilitation of financing of small industries.

43. The Symposium stressed the importance of integrating technical and financial assistance schemes not only in programmes for improving the efficiency of existing small industries, but also in those for the stimulation of new entrepreneurship. Especially in countries at early stages of industrial development, where the basic problem was to stimulate the creation of new entrepreneurship, advice on the prospects of starting new industries should necessarily be backed by financial schemes providing the entrepreneur with the means of acquiring machinery and equipment, factory accommodation and working capital. It was noted that in many countries, funds earmarked for loans to small industries remained unused for a variety of reasons such as lack of sound projects, irksome procedures or exceedingly strict conditions for grant of loans, or because the small industrialist is unaware of, or unable to identify, his needs. In such cases, promotion of entrepreneurship and technical counselling through industrial extension are the only means of making effective use of the available financial resources. In this connexion, the Symposium drew attention to the schemes of supply of machinery on hire-purchase implemented in a few developing countries. It felt that such schemes were a good example of integrated technical and financial assistance and

might well be adopted in the developing countries. In India, the scheme of supplying machinery on an instalment payment basis was operated on commercial lines by a government-owned corporation. Such schemes could also be administered by industrial development banks and similar credit institutions, but close co-operation between government technical service agencies and credit institutions was a pre-requisite for their effective operation. Such close co-operation was also essential for carrying out "intensive promotion campaigns" and "intensive modernization campaigns" (See Section III).

#### VI. COMMON SERVICE FACILITIES

44. The Symposium considered the scope for establishing common service facilities, such as tool room; testing and quality control laboratory; heat-treatment; electroplating and finishing workshops; forging and die-casting units; foundry; specialized workshops for certain industries; leasing of machinery and equipment; maintenance and repair workshops, and so on. Such facilities were set up in areas of concentration of small-scale industries, in particular on industrial estates, and within the premises of industrial extension agencies.

45. The main reasons for setting up a common service facility as a promotional device were that certain types of machinery and equipment could not be economically operated by any individual small enterprise because of capacity and skill limitations, though there was a demand, current or prospective, for items to be produced with such machinery; that no private initiative for setting it up on a commercial basis was forthcoming; and that the provision of the services was a means of improving productivity and product quality and reducing costs of small-scale units. The Symposium felt that the existence of the first two conditions should be ascertained by careful surveys; these would also provide the data necessary to plan the facility, in particular the proper selection of its machinery and equipment. In no case should a publicly-sponsored facility be set up if similar services were available on a commercial basis in the locality. Whenever possible, encouragement should be given to its establishment as a private undertaking. Most participants agreed that publicly-sponsored facilities should be turned over as soon as possible to private or co-operative ownership, management and operation.

46. The tool room and the testing and quality control laboratory were considered to be particularly useful. They could serve many types of small-scale industries and seldom met with private competition. The tool room, properly equipped, could also serve as a maintenance and repair workshop for general engineering industries and other industries, such as plastics, rubber goods and leather goods, which required large varieties of dies and press tools. The Symposium noted that these and other common service facilities were considered to be key elements in the success of industrial estates in India and that they were particularly effective when set up on an industrial estate. Some participants felt that a promotional testing and quality control laboratory should not engage in quality certification, the reason being that no institution or service of this type should at the same time be judge and party. Some other participants felt that quality certification is an incentive for the use of testing facilities and thus has a promotional value. These participants felt that a public or semi-public testing laboratory should provide both testing facilities and quality certification. The use of the facilities for training and demonstration was approved, provided this was made only a secondary function.

47. Certain other common facilities, such as a machine lease shop - where specialized or expensive machines could be used by small enterprises on payment at machine-hour rates - leasing of power tools and inspection equipment, leasing of installation and hauling equipment, were considered useful to a variety of small industries, provided these facilities were set up after an adequate assessment of the demand for them and provided they were operated on a commercial basis, or a no-profit no-loss basis, without the need for subsidization of operating costs.

48. Mobile vans with machinery and equipment were considered as most useful instruments for promotional campaigns, training and demonstration and servicing in scattered locations, and it was considered desirable that they be part of the facilities of an extension agency. Noting the high capital and operating costs of mobile vans, the Symposium recommended that the selection of the type of vehicle and the type of equipment be done carefully and that sufficient portability and flexibility of the equipment be ensured. For instance, the vehicle should be able to travel on unmetalled roads; the machinery should be adaptable to electric or oil engine drive, or sometimes even to manual drive; it should be possible to install temporarily the machinery in a semi-urban or rural location for a period. The optimum utilization of mobile vans should be ensured through careful preparation and planning of their travel and operation.



## VII. IMPROVEMENT OF DESIGN, QUALITY AND STANDARDS

49. In all countries, the demand of the consumer tends to become more and more sophisticated and exacting as the levels of industrial development and the standards of living rise. If the producer, and particularly the small producer, is to secure, retain and increase his share of the market, it is essential that he should cater to the current trend in demand in his particular line, and should manufacture at a price the consumer is prepared to pay. Such a policy may pose problems that the small entrepreneur is unable to solve by his own unaided efforts. The consensus of opinion was that small-scale industries were in real need of guidance in the matter of design and quality of their products.

50. Design improvement was influenced by such factors as local materials, manufacturing facilities available and the level of skills. Assistance in this connexion could be provided through an extension service, as was being done in some of the countries participating in the Symposium. Some doubt was expressed on the advisability of referring all these problems to a research institution. While some problems, such as use or adaptation of local materials, could be solved by a research institution, most design problems of small-scale industries needed quick solution and early adoption. With regard to determining consumer preference, it was felt that in many developing countries private counselling services would not be available and this task would need to be undertaken by the extension centre.

51. Many of the participants felt that there was scope for improvement in the quality of the goods produced by small-scale enterprises in their respective countries. They held the view that the low quality of many indigenous manufactures made it impossible to implement satisfactorily policies of import substitution, that it made the building up of an export market extremely difficult, and that this was responsible for the reluctance of the larger industrialists to make use of locally made materials or components. It was imperative to introduce quality control in small manufacturing undertakings. Quality was a matter of complying with a pre-determined standard or specification. The extension service could advise on the specifications, which should be in accordance with the needs, and could assist the entrepreneurs to achieve them. The successful compliance with the accepted specifications might depend, among other things, on the availability of raw and intermediate materials of a known and

consistent quality. Since the testing needed to determine that quality was beyond the resources of most small-scale entrepreneurs, it was necessary to provide it. This could also be a function of the extension service.

52. It was felt that statistical quality control was too complicated to be accepted by the average small industrialist, although it had been introduced in a few instances. However, simpler procedures based on standardized sampling techniques and control charts were available, and the extension service should assist in their introduction.

53. It was agreed that a system of national standards was necessary. In respect of certain items international specifications might be accepted; in other cases these could be adapted to suit the needs of the country. Several participants were of the opinion that the standards for certain articles should have legal backing, and that assistance should be given to small manufacturers to produce goods conforming to legal standards. There was agreement that wherever possible a system of certification marking should be introduced to show that the marked goods were of the requisite quality. Periodic inspections would be necessary to ensure that the quality was maintained. Most of the participants felt that quality certification should be the task of an independent body and not a function of an extension service.

#### VIII. MANAGEMENT ASSISTANCE

54. Management assistance to small-scale enterprises includes advice on such matters as diagnosis of the operational and financial position, organizational structure, personnel policies, industrial relations, budgeting and cost control, as well as management training. The Symposium felt that management assistance should be carried out through the provision of both advisory services and training courses. A continuing long-term effort by the industrial extension agency was required to bring about a significant modernization of management methods and practices and an improvement in productivity in small-scale industries. Special methods of training combined with extension work in the factories had to be devised for that purpose.

55. The small industry entrepreneur/manager should be helped to take an integrated view of the management of his enterprise. Courses of a short duration, for instance part-time or evening courses, in which attention would be devoted to solving practical problems, especially those with which the participants were

confronted, should be organized. The small industrialists' interest should be kept alive through periodic plant visits by the extension officer to help the entrepreneur solve his problems himself and through periodic evening meetings of groups, spread over a long period. In this connexion the organization of what are known in western Europe as "self-training groups" or "exchange-of-experience groups" by industry associations, with the assistance of a trained co-ordinator from the extension agency, for discussion of mutual problems and solving actual cases, was considered useful. Such groups usually comprised 10 to 12 entrepreneurs each and met once in a fortnight for three hours in the evening, over a period of a year or two.

56. Because of the lack of specialization in management in small-scale industries, it was felt that, at the initial stages, there was a greater need for "generalist" than for "specialist" extension officers. There was also a need for devising simple vocabulary and simple language to communicate complex ideas, tools and techniques. Also, the "generalist trainer" required not only a thorough and comprehensive knowledge of management problems and methods, but also abilities in extension and communication and in generating the confidence of small industrialists. These extension trainers should therefore be properly oriented in their work.

57. In view of the close relations between technical and management problems in small-scale industries, one participant expressed the view that management courses should be organized separately for different product or process groups, such as, carpenters and wood workers, foundry units, leather footwear units and so on. The Symposium agreed that management techniques and tools of cost accounting, production planning and control, could be introduced more effectively in such homogeneous groups.

58. It was recognized that in some developing countries which had either a large number of small-scale enterprises or which had made some progress in the development of small-scale industry, there was a need for specialists both to solve specific problems of the enterprises and to provide training in specialized management fields. In newly industrializing countries, the need for specialists would be increasingly felt as progress was made in small industry development. As regards training in specialized management fields such as production planning

and control, cost accounting and inventory control, courses should be of longer duration and could in many cases be profitably given to prospective entrepreneurs and to intermediate management employees where these existed.

59. The need for close inter-relationship between management improvement and technological improvement in small-scale enterprises, and hence the dovetailing of management training with technical advisory services, was emphasized. It was recommended that management improvement and management training should form an integral part of the functions of an industrial extension agency for small-scale industries.

#### IX. MARKETING ASSISTANCE

60. The Symposium felt that assistance in the field of marketing was extremely important for small-scale industries, especially in newly-developing countries where there was a strong consumer preference for imported products and at times even unwarranted consumer prejudice against indigenous products. The small entrepreneur himself had little time to devote to the specialized function of marketing and sales promotion. The diseconomies of small size could be overcome in this field through joint action by groups of manufacturers, by industry associations, by eliciting the co-operation of wholesalers, and other means.

61. Campaigns for making known indigenous products in national markets, organized by industry groups or associations, were considered necessary. One effective method was the organization of national fairs and exhibitions. Marketing consultants in extension agencies could provide advice on advertising methods, marketing channels, mark-ups and other information. They would organize and assist in conducting market surveys and in disseminating marketing information.

62. The Symposium noted that some countries had adopted procedures to facilitate procurement by government purchasing agencies from small-scale industries. In India, a list of articles had been established for exclusive purchase from small-scale industries on a competitive tender basis. Another list had been drawn up for the procurement of articles from both small-scale enterprises and large-scale enterprises through competition in tendering, but small-scale manufacturers were entitled to price preference. Government and institutional agencies provided such facilities as issue of certificates of competence, technical assistance, testing of materials and products, information on tenders and tendering

procedures, and credit on liberal terms. This system had worked to the benefit of small-scale enterprises by improving the quality of their products, diversifying their production and opening up new marketing channels and outlets. The Symposium felt that there was scope for similar programmes in other countries since in most of these government purchases absorbed a significant proportion of total output.

63. The Symposium considered that measures to protect indigenous manufacturers, such as tariffs, restricted markets, differential excise duties and so on, were often justified in the earliest stages of development. However, such restrictive measures should be temporary and should not be an obstacle to the long-run competitiveness of small industry products in internal and international markets.

64. In most developed countries and in some developing ones, there was a nucleus of wholesalers and middlemen experienced in marketing methods and in foreign trade. The establishment of direct links between large-scale manufacturers and retail marketing outlets, on the one hand, and the restrictions on import trade and operation of state trading organizations, on the other hand, had reduced the activity of some of these wholesalers and middlemen. In the developing countries where this was the case, expertise and know-how of these specialists could be utilized with advantage by small industry groups and associations for promoting the sale of their products, both in internal and in export markets.

65. The experiences of Denmark and France in organizing groups of small industries for domestic and export marketing of related and complementary products were noted with interest. The Symposium felt that there was scope in developing countries for such collective and co-operative action by small industries, actively assisted by the extension agency. Such joint action might include advertising, product improvement, quality labelling and negotiations with wholesalers and department stores.

66. Some participants felt that there were good opportunities for small-scale industries in export markets for certain types of products having both a high element of labour costs and a high added value. Aggressive marketing and sales promotion efforts were required in export markets, through joint efforts of government trade representatives, trade associations and export groups. Without such co-operative efforts it would be impossible to meet the competition from the developed countries and the sophisticated requirements in respect of constantly

changing design and quality and large volume, on the markets of the rich countries. Trade associations and industry groups should be able to engage marketing consultants and market research experts. Export credit facilities should be provided on liberal terms.

#### X. INDUSTRIAL RESEARCH

67. The scope of the discussions covered the utilization of industrial and technological research facilities by small industry extension services in such matters as (a) industrial use of local agricultural, mineral and forest products, of waste materials or by-products, (b) investigation of problems of processing, of machinery and equipment and evolving of appropriate technologies; (c) testing of raw materials and products, and providing laboratory standards of measurement, and calibration services; and (d) collection and dissemination of industrial, technical and scientific information of interest to small-scale industries.

68. It was the view of the Symposium that a close relationship should be maintained between industrial research and industrial extension. On the one hand, much of the research carried out by technological research institutes in developing countries - particularly research on local raw materials - was of special interest to small-scale industries, though it was generally undertaken for industry irrespective of size. It should be one of the functions of an industrial extension agency to inform itself of achievements in science and technology, to screen out what was particularly relevant to small-scale industries in the region which it served, and to apply it as part of the technical assistance which it provided to small enterprises. On the other hand, extension work could reveal areas in which research should be undertaken and projects could be referred by extension agencies to research institutes. Some research projects could be of exclusive concern to a particular industrial enterprise. Some others could be of interest to a whole industrial sub-sector.

69. The Symposium noted that small-scale industrialists in general did not avail themselves readily of the services of industrial and technological research institutes. This was due to a variety of causes such as their unawareness of the existence of such institutes and of their potential value to small industry; their awe of the research worker and a personal embarrassment and reluctance to bother him with their requirements; their lack of technical capability to

determine and describe their problems; their difficulty in visiting institutes separated by great distances in large countries; and, of considerable importance, the small industrialist's lack of time to seek assistance from the research institute. This lack of communication should be overcome through positive action by both research institutes and the extension agencies. Research institutes and extension agencies might co-operate in organizing lectures, seminars and discussion groups, either for exchange of information and experience, or for dissemination of knowledge of problems and developments. One important condition for establishing the necessary relationship was that the results of research work be expressed in a technical language intelligible to small industrialists. Assistance by extension agencies was essential to promote the understanding and co-operative effort required.

70. This intermediary role could also be assumed by an advisory field service set up as an integral part of a research institute. Qualified technical personnel would visit small enterprises, diagnose their problems and carry out the necessary research work. However, it was recognized that in many cases practical considerations related to organization, staff and finances would make this difficult and the co-operation of an industrial extension service would be called for. In such a case, positive, firm and clearly defined measures should be taken to co-ordinate closely the activities of the institute and of the extension service. These would include the careful selection and training of advisory personnel to ensure communication between the institute and small industry.

71. It was noted that in some countries technological research institutes had been planned to serve also as counselling agencies for small-scale industry. This was the case, for instance, of the Central American Research Institute for Industry, the National Institute of Industrial Technology of Argentina, the Institute of Technological Research of Colombia and the Danish Technological Institutes. The Symposium felt that this combination was desirable where no industrial extension agency had been set up.

72. It was noted that, in most developing countries where commercial testing facilities were not available, industrial and technological research institutions could play a useful role in testing of industrial products and materials, and in making available standards and calibration services to industry. In one developing country, where testing facilities were installed in the laboratory of a technological research institute, the experience was that small industries were not able to avail themselves of the services, because the personnel staffing the laboratory handled mostly research problems and laboratory technicians and assistants were not available in adequate numbers to carry out routine analysis and testing. Co-operation between industrial extension services and research institutions would

help solve such problems. While the Symposium was not in favour of unavoidable duplication of facilities, it felt that in many cases the establishment of a testing and quality control laboratory as a common service facility for small-scale industries, would be justified, especially in an industrial estate or in an industrial extension centre.

73. The Symposium recognized that developing countries promoting manufacturing industry had a wide range of technologies to choose from and that quite often the most up-to-date modern technology was not necessarily appropriate to the scale of operations, the factor endowments, and the skills and raw materials available in any particular country. Industrial research institutions had a role to play in the selection of these technologies - including, in some instances, the very latest - which were best suited to the structure of resources and needs of a developing country. The choice of the appropriate technology involved both economic and technological research, and included investigation of means to adapt modern technologies to the conditions of developing countries; the use of modern knowledge to improve on traditional methods; and the development of new methods and technologies based on an analysis of the economic and technological problems of manufacturing in a country in the process of industrialization. Related problems covered the adoption of policies for the optimum utilization of existing machinery and capital equipment, and for the pricing of factors of production so as to ensure their use in optimum combinations, particularly in economies having a surplus of employable labor and a scarcity of investment capital. The co-operation of industrial extension agencies with industrial research institutes was necessary in this task. On the one hand, industrial extension officials would be able to pinpoint problems of technology in small-scale industries requiring research by research institutes. On the other hand, the extension officials could themselves provide solutions in the field, for instance, in the design and development of simple jigs, fixtures and tools; it would also be their task to disseminate and assist in the application of technological modifications and innovations or new processes evolved by research institutes.

74. In connexion with the development of appropriate technologies for small-scale industries, the Symposium noted the establishment of proto-type production and training centres in India. Three such centres had been established with the objective of developing and producing proto-types of machines, implements, accessories and component parts which could be manufactured by small-scale industries, and providing training to the operatives of small enterprises in



manufacturing such machinery and equipment. The Symposium noted that although the work of these centres was still experimental and sufficient experience was not yet available, their basic work of proto-type development appeared to have suffered on account of diversified demands upon their facilities for broadbased specialized training of skilled workers and supervisors of small industries, for commercial production and for machine servicing. The Symposium approved the establishment of proto-type development centres, but suggested that such institutions should concentrate on proto-type development rather than on other functions. Once a proto-type was developed, it should be handed over for manufacture by private industry. The proto-type centre should not have responsibility for auxiliary activities such as training.

75. In most developing countries, small-scale industries made little use of technical, economic and legal information. In this area too, there was scope for close co-operation between extension agencies and industrial research institutes. The industrial extension agency responsible for small industry development in a country should, in co-operation with research institutes, build up library, information and reference services, and one of its essential functions should be the dissemination of technical information through publication of illustrated brochures written in simple language; through the preparation of films, film scripts and other audio-visual aids; and through the organization of courses, seminars, conferences and discussions groups. These should be devised for small groups and for short periods, and should be concerned with specific technical or managerial improvements in a particular branch or sector of industry. Dissemination of new information and of improved methods could also be undertaken by encouraging groups of entrepreneurs to engage a consultant from an extension centre or a research institute, to assist in organizing such conferences and meetings.

#### XI. FACILITATION OF SUBCONTRACTING BETWEEN LARGE AND SMALL INDUSTRIES

76. The Symposium observed that the establishment of subcontracting relationships between large and small industries required all or most of the following conditions: the existence of large plants in certain fields of manufacturing - the metal industry was particularly suitable - and of efficient and usually highly specialized small industries; an effective machinery for bringing together supply and demand; technical and managerial assistance facilities; a legislation to protect small establishments; and, in certain cases, a favourable tax system -

taxation on value added being especially appropriate since it avoided cumulative tax payments. In all countries, subcontracting was a means of remedying the inadequate utilization of machinery and equipment, which was a serious waste of expensive and sometimes scarce productive resources. In the developing countries, it was also a means of promoting small-scale industry and of strengthening the industrial structure. Another advantage was that technical assistance from the large to small firms could usefully complement the limited facilities of the industrial extension centres.

77. The Symposium recommended that, in countries where the above conditions were fulfilled, active consideration be given to the establishment, with technical assistance if necessary, of subcontractors' exchanges such as those recently created in certain European countries. The exchanges were clearing houses of information on demand for parts and components and processing and finishing operations on the part of large industries and on supply facilities, in particular of machines of different types, productive capacity and skill and trade specialization in small-scale industries. The information obtained through regional surveys was kept on card-index and was continuously brought up to date. An exchange was headed by an engineer, with one or several assistants. The staff was often able to give technical assistance and some training to small industrialists, and to counsel them on investments and types of production corresponding to the needs of the large industries.

78. In the absence of subcontractors' exchanges, industrial extension agencies should provide information on subcontracting opportunities, facilitate the negotiation of contracts and help in carrying out the orders, mostly as regards the achievement of good product quality, timely delivery and reasonable price which were pre-requisites for the contribution of small-scale industries to the production of large ones. Other methods and facilities were the organization of subcontractors' fairs in which parts and components required by large industries were exhibited, and ancillary industrial estates set up for small subcontractors, usually in the vicinity of the large plant.

79. The Symposium noted that there had been some experience - limited to India and Japan - in the establishment of ancillary industrial estates. In Toyama, Japan, thirty-nine small and medium enterprises work in an industrial estate as subcontractors to a large steel company. In Bangalore, India, a large public sector machine-tool factory set up an industrial estate where fifty small-scale

enterprises manufacture castings, forgings, parts and components for the large factory. It was the general view that the establishment of an ancillary industrial estate required careful study and should be considered only if it was demonstrated that an estate would, on balance, be more beneficial than other arrangements. For instance, existing small-scale enterprises in scattered locations might not always benefit from sub-contracting orders, if an estate were centrally located near a large plant. On the other hand, it might be advantageous to plan simultaneously a new large industry complex and an estate for small-scale industries. In any event, regulatory measures to prevent abuse and exploitation of small-scale enterprises by the parent large firms, and promotional measures by the extension service to upgrade technology and skills, to ensure quality control and to facilitate financing were considered to be essential for facilitating sub-contracting between large and small industries.

## XII. JOINT ACTION PROGRAMMES

80. There was agreement that some of the diseconomies of small-scale industries arising from size could be overcome through collective or co-operative action in undertaking joint programmes. It was noted that in France 150 groups of ten enterprises each had been organized in various parts of the country, for the provision of common purchasing, sales, export marketing, management, training, financing and other services. The provision of such services on a joint basis had resulted in considerable savings in costs and consequently in increased turnover of the enterprises to the extent of 25 to 30 per cent per annum. The Government of France had promoted the establishment of such common groups by providing tax incentives and liberal credit facilities. The Symposium agreed that such co-operative and collective action through industry associations and other industry organizations should be encouraged by the promotion authority in each country, by direct action as well as by indirect incentives.

81. One form of co-operation and joint action which would be particularly useful in newly-industrializing countries, was the establishment of what are known as "functional" industrial estates, in which the functions of one industry are subdivided among a number of small-scale units located in one place, each functioning according to a co-ordinated manufacturing programme. The functional estate is particularly suitable for co-operatives of small industrialists, venturing into new fields of manufacture. When properly organized and managed, a functional

States can ensure that small-scale units derive the economies and efficiencies of specialization and large-scale production. In Japan, a number of functional industrial estates are set up in such fields as wood-working, ready-made clothing, machine-tools etc., and, in India, functional estates for radios, clocks and time pieces, ceramic products, automobile ancillaries, electronic components, scientific instruments and electric motors are at various stages of planning and implementation. While commending the principles and objectives of the functional industrial estate, the Symposium suggested that before organizing such an estate, the structure of market relationships, the compatibility of different producers and so forth, should be carefully weighed; and the provision of technical and financial assistance, quality control and market promotion measures should be ensured.

### XIII. SCOPE OF FUNCTIONS

82. The Symposium considered the scope of functions of institutions and facilities providing technical services to small-scale industries, under the following four headings: (a) the most rational institutional set-up, taking into account differences in national conditions; (b) the case for general-purpose or specialized institutions; (c) the basis of specialization—type of industry and/or functions of the institutions; and (d) centralization versus decentralization of facilities: extension of services and facilities for the development of small-scale industries in rural and less developed areas.

83. The consensus was that no general principles could be prescribed for the most rational institutional set-up for providing technical services and facilities to small-scale industries. This was a matter for each country to decide taking into account its size, the number and distribution of small-scale enterprises, the development of institutional facilities, the structure of political organization and government policies. In large countries or in countries with a large number of small-scale enterprises the main problem was often to achieve co-ordination between existing different agencies. In newly-industrializing countries where the resources were limited, overlapping of functions and activities should be avoided at the stage of planning the institutions and facilities. The Symposium felt that in countries at initial stages of industrial development, it would often be advantageous to build technical services and facilities for small-scale industries within one existing institution, such as an industrial research institute, an industrial estate, an industrial development bank, a management development centre or a small industry

service institute. Only where no such institution existed or where there were good reasons for not making use of an existing institution, should a new one be established.

84. For similar reasons, general-purpose facilities rather than specialized facilities were usually more appropriate at the earliest stages of development. Specialized institutions and facilities should be established, where required, only after a careful assessment of needs and resources.

85. The Symposium felt that specialisation in the provision of services and facilities would generally be based on functions rather than on types of industries. The provision of technical services and facilities for small-scale industry - as distinct from industry in general - was itself made necessary by the special functional characteristics of this sector of industry. As industrial development progressed and diversification of production took place, some specialized technical consultant services would become necessary.

86. The extent to which facilities should be decentralized would depend upon the size of the country, the concentration and the dispersal of small-scale industries, the transport and communications network and similar factors. Since it was recognized that services to small-scale industries should be carried to the door of the entrepreneur, the principle of decentralization was considered important. In rural and less developed areas decentralized services might be set up or mobile teams and peripatetic facilities employed.

#### XIV. RECRUITMENT AND TRAINING OF SMALL INDUSTRY EXTENSION PERSONNEL

87. The Symposium was of the view that the effectiveness of the extension work for small-scale industry depended to a large degree upon the personal qualities of the extension personnel. Extension officers should have a genuine interest and belief in the positive contribution of small industry towards economic development; they should have above average intellectual abilities, appropriate character and disposition as well as physical fitness. Good powers of expression and aptitude for engaging in training and instruction activities were highly desirable.

88. Proper recruitment and selection procedures were necessary to secure these personal qualities in extension personnel. These procedures should include not only an evaluation of written bio-data but also holding of personal interviews and, whenever appropriate, a period of probation or induction.

89. Programmes of training and career development were essential for recruiting and upgrading. These programmes should take into account the requirements for different levels and categories of staff. Three broad levels of personnel required at the primary, the intermediate and the senior levels were distinguished. The personnel of the primary level should be graduates of secondary technical schools; those of the intermediate level should be university graduates with specialized professional qualifications and some industrial experience; and those at the senior level should have had considerable industrial and administrative experience. Training and induction programmes were required at all three levels, but more particularly at the primary and intermediate levels.

90. In view of the shortage, in developing countries, of qualified personnel and the competing demands for them, the participants felt that special training methods should be devised to make extension personnel available without much time lag. Short induction-cum-orientation courses should be organized for recently recruited personnel. After about two years of working experience in the extension agency, an intensive specialized training of four to six months would be advantageous. Refresher courses should be organized every two or three years and seminars every year to sharpen the tools and techniques of extension and to acquire knowledge of new methods and new experience. Advanced courses and seminars of six to eight weeks' duration should be organized for senior level personnel.

91. In the large developing countries, training programmes for extension personnel should be organized on a national basis. The Symposium felt that many small countries should give consideration to the organization on a regional or sub-regional basis of training programmes along the lines of those carried out at the Research Institute for Management Science, Delft, the Netherlands; the Small Industry Extension Training Institute, Hyderabad, India; and the Asian Productivity Organization, Tokyo, Japan.

#### XV. SPONSORSHIP, ORGANIZATION, FINANCING AND MANAGEMENT

92. The Symposium reviewed the experience of developing countries in sponsorship, organization, financing and management of technical services and facilities according to the type of sponsorship, namely, public, semi-public and private.

93. In many developing countries a common feature was the absence or inadequacy of institutional agencies to provide the technical services needed by small industries. Medium and large industries were often able to secure such services through foreign suppliers and consultants, but there was limited scope for such arrangements in regard to small industries. Small industries were therefore obliged to look up to the government for securing assistance. There was general agreement that, in such circumstances, public agencies should assume the main responsibility in providing services and facilities. Public agencies should play a particularly positive and dynamic role in countries at the early stages of industrial development.

94. The Symposium considered the question of the extent to which public agencies should shoulder the responsibility for providing technical services. It was obvious that, in view of the wide disparities in the development of small-scale industries in the various countries, no guidelines of universal applicability could be laid down in this respect. This was a matter to be decided by each country, taking into account the industrial development policies and objectives and the levels of development of semi-public and private agencies. There was, however, general agreement that it was desirable for the government to play a "pump-priming" role, with a view to stimulating the participation of private institutional agencies. While there was justification for the government to assume full responsibility in sponsoring, organizing and managing such services in the initial stages, its policy should be to encourage private institutional agencies to contribute to, and eventually to take over some of these functions.

95. In view of the slow pace in the growth of private institutional agencies, it would be necessary, in most developing countries, for the public agencies to provide technical services and facilities for a very long time. The immediate problem therefore was to rectify the shortcomings in the operation of public agencies and to make them more effective instruments of service. Some of the defects were inherent to their operation as government departments having to comply with cumbersome procedures and ineffective practices, such as centralized system of recruitment of staff, rigid rules of promotion, frequent transfers of personnel and

inadequacy of training facilities at senior levels. A more serious danger was the tendency on the part of the extension staff to become more bureaucratic in their approach and less service-minded. The chief merit of industrial extension was its "personalized" and "service" approach, and special efforts were therefore called for to ensure that extension work, though organized within the framework of the government machinery, retained its "service" nature.

96. In this connexion, the Symposium endorsed the suggestion made in one of the documents submitted to the conference<sup>4/</sup>, namely that a useful way of improving the efficiency of technical services provided by public agencies would be to associate experts from private industry, research institutes and universities, as part-time consultants. Public extension agencies should retain panels of consultants, whose services could be availed of at short notice on a part-time basis; this system should help greatly in improving the quality of the services rendered and in reducing their costs.

97. The Symposium considered another suggestion contained in this document, namely, that in countries where public agencies had been engaged in providing technical services and facilities over a long period, they should: (a) withdraw from their responsibility for providing those services which could be undertaken in a satisfactory manner by other agencies on a commercial basis, and (b) withdraw from those areas where such services were available or could be made available from other sources. While the stage or extent of such withdrawal from existing responsibilities was a matter to be decided according to the special conditions in each country, this suggestion, it was felt, had the merit to draw attention to the need of conserving the resources available in public agencies for service in depth and in especially deserving areas. Particularly in countries where the number of small industries was very large, the objective of public agencies should be to provide service "in depth" and not total coverage. In such countries, any attempt by public extension agencies to reach all the enterprises would only result in diluting the quality of the service. Instead of spreading the services too thin, attempts should be made to provide concentrated services to a fewer number, which in turn, would have a demonstration or a "spread" effect on other industries. However, some participants felt that in countries at the earliest stages of development, full coverage might be necessary.

<sup>4/</sup> Sponsorship, Organization and Financing of Technical Services and Facilities, in the Light of the Indian Experience (ID/CONF.2/10).



98. Consideration was also given to the problems of recruitment and training of qualified staff for the public agencies. Technical staff should evidently, as far as possible, have sound practical industrial experience, but such a requirement made recruitment difficult especially in countries at early stages of industrial development. It was felt that, in such cases, recruitment should be made among people with adequate technical qualifications who, when no national training facilities existed in the country, should be deputed for intensive practical training in more industrialized countries. This was no doubt a costly form of recruitment and training of extension staff, but it was hoped that after a number of people had been trained in this manner, they in turn would be able to train other national personnel in due course.

99. As regards the question whether public agencies should charge fees for the technical services provided by them and, if so, on what basis, it was noted that the practice in developing countries varied widely. In some countries all services were free; elsewhere charges were levied for services of a commercial type; and in some other countries, charges were levied for all types of services and facilities, though rates varied from one type to another. There was general agreement that purely promotional or developmental services should be provided free. As regards other types of services, two distinct views were expressed. One view was that services should be charged for, even though the rates need not necessarily be on a full cost basis in all cases. The other view was that services should be free to all small industries, whether located in a backward area or not, during the initial period of their operation; after the initial period, charges should be levied on a graduated scale.

100. The Symposium reviewed the role of semi-public agencies in providing technical services and facilities. It noted that, in several developing countries, institutions for technical services organized as autonomous agencies had been functioning effectively. They had a great degree of flexibility and freedom in their operation, particularly in such matters as recruitment of staff. At the same time, government departments in developing countries had also certain distinct advantages of their own. They were able to influence the formulation of policy at high levels in the government. In certain countries, service in government carried higher social prestige and therefore government departments were able to attract qualified technical personnel in spite of comparatively lower salaries. An essential requisite for effective functioning of any organization engaged in technical services was a large measure of autonomy and this should be ensured in planning any organization,

whether public or semi-public.

101. The Symposium also reviewed the role of credit institutions such as commercial banks and industrial development banks, in providing technical services and facilities. In some developing countries, credit institutions were directly responsible for providing all types of technical services to small industries and the role of the government in such cases was limited to giving financial support to such institutions. The Symposium was of the view that, in countries where credit institutions had already gained experience in providing technical services and facilities, there was no need for the government to set up a parallel agency for that purpose. In such countries, the role of the government should be to encourage credit institutions to extend technical services not only to those small industries which applied for or received credit facilities, but to non-borrowers as well. Credit institutions had a vital interest in the economy and technical efficiency of small industries and were therefore quite suitable for providing the technical services required. The Symposium felt that governments should provide financial support to credit institutions in the operation of those facilities and services which could not be set up on a commercial basis in the early stages.

102. It was noted that in most developing countries the role of private associations of industrialists or co-operatives of industrialists in providing technical services and facilities was negligible. Trade associations, wherever they existed, had been mostly engaged in representational activities. The Symposium recommended that such associations should be encouraged to engage the services of specialists and experts to render technical services to member units. They should arrange seminars of technical personnel to review technical problems and to share each other's experiences in solving such problems. They should organize common service facilities and also arrange for the training of workers and supervisors. Governments should give financial support to trade associations which undertook such activities.

103. The Symposium noted that universities and technical institutions in developing countries had not been playing an active role in providing extension services to small industries. In view of the extreme shortage of technical expertise in developing countries, attempts should be made to make full use of the talents and resources available in universities and technical educational institutions to solve the technical problems of small industries. The Symposium recommended that Governments should assist these institutions with suitable grants in order to enable them to undertake technical services for small industries.

## XVI. CO-OPERATION AND CO-ORDINATION

### (1) Between national agencies

104. Most of the participants in the Symposium highlighted two primary difficulties in the promotion of technical services and facilities for small-scale industries in their countries, namely, (i) the inadequacy of financial resources, both in foreign exchange and local currency, for the establishment of promotional agencies, such as extension service centres, small industry service institutes, industrial research institutions, quality testing laboratories, marketing organizations, export promotion centres, management development and productivity centres, and training institutes and workshops, and (ii) the shortage of qualified, trained and experienced staff to carry out promotional work in such agencies. In view of these difficulties, it was imperative that an effective system of co-ordination and co-operation should be established to maximize the combined contribution of such agencies to industrial development.
105. There was a consensus that well-defined objectives should be set forth, and areas of operation should be demarcated before establishing any new agency, public or private, in order to prevent unnecessary overlaps. Pre-planning should take into consideration not only techno-economic but also social factors. The establishment of different agencies under one central national council, at the highest level of authority possible, was considered to be very useful for the promotion of inter-agency co-operation and co-ordination.
106. Human failings, such as professional and personal rivalries, were identified as a common cause for failure of co-ordination and co-operation between national agencies, and it was agreed that in spite of ill-defined objectives initially, and other similar restrictions, duplications could be avoided almost completely, and co-ordination and co-operation greatly fostered, if the heads of the respective agencies made a combined and conscious effort. Personal contacts should be established at all levels, both in public and private agencies, through discussions, conferences, seminars, symposia, radio and television programmes and other similar joint activities, in preference to communication through correspondence and other paper-work.
107. Interchange of staff, and of services and facilities such as workshop, laboratory, library, and so on between the different agencies, would result in maximum efficiency and economy of time and money for the agencies as well as for the industrialist-customer.

(2) International Co-operation

a. Organization of technical services on a regional or sub-regional basis

108. The participants generally approved the conclusions of a report on the conditions for setting up and operating technical services for small-scale industries on a regional or sub-regional basis, in the light of the experience of the Central American Research Institute for Industry (ICMITI)<sup>2/</sup>, which is one of the few existing multi-national centres devoted to industrial research and development and to the rendering of technical services to small-scale and medium-sized enterprises. These conclusions related to the functions of a regional or sub-regional institute; the size, resources, level of development and degree of economic integration of the participating countries; the financial arrangements, the organization, staffing and facilities of the institute, and the agreements and obligations of the participating countries. These conclusions were of particular importance in view of the proposed establishment of several regional or sub-regional centres for the development of small-scale industry, with assistance from the United Nations and its regional economic commissions and offices, for the West African sub-region, Latin America, and the Arab states of the Middle East.

109. There was general agreement that regional or sub-regional centres might play a very useful role in the provision of technical services and facilities for small-scale industries in developing countries, provided they were established to fulfill real needs of the nations concerned and provided, further, that appropriate conditions existed, particularly as regards the degree of economic development, industrial structure and natural resources of the participating countries. Some participants expressed the view, however, that in cases in which the countries were relatively more advanced and had already certain institutions capable of providing the technical services necessary to small scale industries, it might be preferable, instead of creating new regional centres or superimposing multi-national institutions, to strengthen and/or expand the existing national agencies through national efforts or international co-operation. Yet even in these cases the exchange of personnel and of technical information, certain training activities at the higher levels, and some research work on the utilization of natural resources common to several countries, could very well be organized on an international basis.

110. The Symposium agreed that some desirable conditions for setting up regional or sub-regional institutions were: the relatively similar degree of economic development of the participating countries; the similarity of their industrial structure and of

<sup>2/</sup> Document ID/CONF 2/12

their natural resources, their proximity and the existence of communication facilities between them. Similarities in the size of the countries and the composition of populations were considered to be less important. Economic integration and co-ordinated planning among countries were very helpful, but were not considered to be essential requisites for setting up a regional or sub-regional centre.

111. An essential condition was that the governments of the participating countries should take the political decision to undertake such a joint venture, and be fully committed to back up and finance in an appropriate and increasing manner the activities of the new centre.

112. In regard to the functions of regional or sub-regional institutions, it was felt that some activities lent themselves particularly well to be undertaken on that basis. It was felt that techno-economic studies, industrial surveys, regional investigations, market research and industrial feasibility studies were among the activities that could well be performed on a regional scale. Technological research on the utilization of indigenous resources or raw materials, process and product development, analytical work and materials testing, and other similar tasks that required substantial investment in laboratory equipment, pilot-plant facilities and modern library and documentations services, were also activities that could more economically be performed in regional centres, especially when there were no national institutions capable of undertaking such tasks, and when there were limitations in financial and human resources to setting up physical facilities and undertaking research and related activities on a national basis.

113. On the other hand, industrial extension services, in-plant studies and other forms of technical assistance to small-scale industries at the plant level, as well as some measures for productivity improvement were normally best performed by local centres or, in the last instance, by national branches of a regional technical service institution.

114. Some participants felt that certain new technical assistance activities, such as aid for export promotion of manufactured products, could very well be carried out by regional institutions. The same was true of activities designed to promote the industrial integration of countries within the framework of a general economic integration scheme or

the formation of a common market. In this connexion, information was given by some participants from Latin America on efforts made by a group of countries of similar

and comparable economic development to set up a sub-regional centre devoted to industrial studies and development.

116. On the subject of staffing regional or sub-regional centres, it was considered essential that they should have highly-qualified personnel possessing both academic and practical industrial experience, and preferably gifted with the ability to understand socio-economic problems, to overcome cultural barriers and to deal adequately with human relations.

117. In regard to the financial structure of a regional or sub-regional centre, it was considered very important to rely on sound financial sources of support, commensurate with the tasks entrusted to the new institution and provided in such a way as to guarantee its viability and growth. Though institutions of this kind were normally operated on a non-profit basis, many of their services should be provided to industry on a cost basis. Only in exceptional circumstances should the services to small industries be given free of charge or at a nominal cost. Some services, like dissemination of technical information, should be supported from the general resources of the centre.

118. The Symposium stressed that such institutes should not supplant private initiative when it existed, and should complement, rather than compete with, well established services to industry.

#### 12. United Nations Technical Co-operation

120. The Symposium noted with appreciation the work carried out under the United Nations Development Programme (UNDP) and the programme of Special Industrial Services in the field of small-scale industry, a part of which was concerned with the establishment and operation of technical services and facilities. More than one hundred projects set up with the assistance of the Special Fund sector of UNDP were specifically intended to help develop and support industry, the majority of them serving small-scale industry directly or indirectly. Only twelve of these projects - ten small industry service institutes or similar centres, and two industrial estates - were specifically designed to promote small-scale industry through the provision of technical services and facilities. The other projects included sixty-eight management development, training and productivity institutes or centres, forty-two research institutes and six industrial development centres.<sup>6/</sup>

<sup>6/</sup> See document ID/CONF.2/13

119. The Symposium considered that there was much scope for the establishment, with UNDP (Special Fund) assistance, of facilities especially devised for the promotion, assistance and servicing of small-scale industries. The main needs were for the creation of small industry service institutes and industrial extension centres, of industrial estates with common service facilities, especially tool rooms and testing and quality control laboratories, and of centres for the training of extension workers. The Symposium recommended that Governments avail themselves increasingly of the assistance offered under the UNDP (Special Fund) programme for the establishment of such institutions. It noted that assistance in drafting requests to the UNDP (Special Fund) could be obtained from the United Nations Industrial Development Organization (UNIDO) and, in their fields of competence, from the International Labour Office (ILO) and the Food and Agriculture Organization of the United Nations (FAO).

120. The Symposium noted with approval that projects for the establishment of regional or sub-regional centres for the development of small-scale industries were under consideration in Africa, Latin America and the Middle East. These centres, which would provide technical assistance to participating countries in the formulation and implementation of policies, programmes and major projects, train officials in charge of small industry development and undertake action-oriented research, mainly in the form of feasibility studies and pre-investment surveys in the participating countries, would also be of assistance in setting up and operating institutions extending technical services and facilities at the plant level.

121. There was also scope for increased requests for assistance, under the Technical Assistance component of UNDP and, when appropriate, the programme of Special Industrial Services, for expert missions in the above fields and for operations relating to the development of supervised credit schemes including hire-purchase, the establishment of subcontractors' exchanges, the improvement of design, quality and standards, the facilitation of marketing and export promotion, including the establishment of certification marking centres, and the organization of "intensive campaigns". The Symposium noted that governments had relatively little availed themselves of the facilities offered by the United Nations in the field of fellowships, and recommended that the submission of requests for training at the Delft Institute, the Hyderabad Small Industry Extension Training Institute and the Asian Productivity Organization (APO) be increased. It noted with great interest a project to organize, under the fellowship programme of UNDP, group training courses and study tours of industrial estates, for participants from various regions. In general, there was scope for increased

operations in the various fields of small industry development described in a brochure submitted to the Symposium. <sup>1/</sup>

122. The Symposium recognized that because of limited experience, there were greater difficulties in recruiting experts in small-scale industry than in other fields of industrial development. Few engineers and economists from the industrial countries - which supplied the majority of technical assistance experts - had knowledge and experience in industrial estates, common service facilities, supervised credit, subcontractors' exchanges, and so on. It noted with appreciation that a French state corporation for technical co-operation (Société d'aide technique et de coopération - SATEC) had in collaboration with the International Federation of Small and Medium-sized Enterprises, organized three to six months' training courses for young engineers intending to take up part-time or full-time <sup>careers as</sup> technical assistance experts. The training included on-the-job instruction in subcontractors' exchanges, equipment leasing centres, common action groups for purchase, sale and export management, research, financing, etc. Training could be provided to foreign participants, preferably French-speaking. The services of the trained experts could be put at the disposal not only of the French bilateral programme and European multilateral programmes but at that of the United Nations as well.

123. The Symposium expressed its conviction that the developing countries themselves would, in the course of time, become an increasingly important source of experts in small industry promotion and assistance. Some countries were already providing, and many others could supply, some experts to serve under United Nations programmes. The Symposium recommended that lists of experts from the participating countries be submitted to UNIDO. The scarcity of such experts should not be an obstacle: their Government should consider such secondment to United Nations projects as an investment in personnel which would eventually benefit their own country.

124. It was also recommended that Governments requesting assistance in the field of small-scale industry should carefully identify their needs and their relative priorities, and take great care in preparing job descriptions listing the functions of the experts and other relevant information. When in the country, experts should not be used in functions corresponding to those of government officials. In spite of the shortage of competent nationals in many countries, all efforts should be made to provide able counterparts to the foreign experts, even on a part-time basis if absolutely necessary, and to see to it that the counterpart took over the expert's functions after he had left.

<sup>1/</sup> Technical Co-operation for the Development of Small-scale Industries, (Sales No.: 67.II.B.3.)



125. The Symposium noted that there were sometimes duplications in technical assistance operations in small industry development undertaken under bilateral, multilateral and international programmes. It felt that co-ordination of requests for assistance was the responsibility of the Government concerned, and recommended that this problem be given due attention.

126. Several participants pointed out that there was considerable delay between the approval of a request by the United Nations for technical assistance and the appointment of an expert or experts. While appreciating the difficulties in recruiting experts - which motivated the suggestions made earlier for training of experts of industrial countries and the secondment of experts from developing countries - it was felt that there was scope for improving recruitment procedures and reducing the time lag between the acceptance of a request and the posting of experts.

127. The Symposium took note with great interest of UNIDO's research programme, including symposia and seminars in the field of small industry, and in particular of the projects relating to technical services and facilities. It felt that the projects on financing, common service facilities, specialized industrial estates, and sub-contracting would be of great value to government officials, extension officers, foreign experts and others involved in small industry development. Much interest was expressed for projects on the contribution of small-scale industries, either as subcontractors to large firms or under joint production programmes, in the production of certain products of great importance to the developing countries. It was felt that a series of studies on the production and assembly of parts and components of producer goods, especially machine-tools, by small establishments, would be particularly useful.

128. The participants recommended that the present report be widely circulated to Governments and small industry promotion and service agencies in all developing countries. Many of them stated that, upon their return home, they would not only inform the interested government agencies but would, with their co-operation, study conditions and needs for improving the provision of technical services and facilities for small-scale industries, including technical co-operation projects in this area.

129. Finally the Symposium recommended that measures be studied and adopted for organizing, with the co-operation of UNIDO and other international agencies, as required, exchange of personnel from small industry agencies, sharing of facilities, organizing training courses and study tours and disseminating information among developing countries, on a bilateral, regional or sub-regional basis, in the field under consideration.

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Observers

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**FEDERATION INTERNATIONALE DES PETITES ET MOYENNES ENTREPRISES  
INDUSTRIELLES, PARIS**

Mr. R. Holtz  
Secrétaire général

**SOCIETE D'AIDE TECHNIQUE ET DE COOPERATION, PARIS**

Mr. Dellé  
Directeur des Services Industrie,  
Artisanat, Construction

Annex II

AGENDA

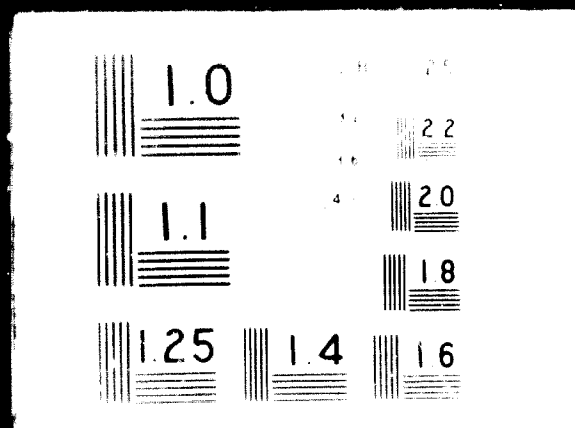
- Item 1 - Opening addresses
- Item 2 - Adoption of the agenda
- Item 3 - Review of the technical services and facilities for small-scale industries in the countries of the participants, and general evaluation of experience
  - (a) Economic, technical and management problems of small industry development
  - (b) The role of technical services and facilities in over-all programmes of development of small-scale industries
- Item 4 - Functions and operating methods and procedures by type of institution
  - (i) Functions and methods
    - (a) Promotion of entrepreneurship and assistance at the pre-investment stage, including facilitation of financing
    - (b) Technical counselling
    - (c) Technical servicing
    - (d) Improvement of design, quality and standards
    - (e) Management assistance
    - (f) Marketing assistance
    - (g) Industrial research and demonstration
    - (h) Facilitation of subcontracting between small and large industries
    - (i) Collection and dissemination of technical, economic and legal information, organization of seminars and discussion groups
    - (j) Other functions and methods
  - (ii) Scope of functions
    - (a) General-purpose facilities or specialized facilities
    - (b) Industry specialization and/or functional specialization
    - (c) Centralization or decentralization of facilities; extension of technical services for development of small-scale industries in rural and less developed areas
  - (iii) Technical services and facilities on industrial estates
  - (iv) Recruitment and training of extension personnel

**31. 1. 72**

2 OF 2

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We regret that some of the pages in the microfiche copy of this report may not be up to the proper legibility standards, even though the best possible copy was used for preparing the master fiche.

**Item 5 - Sponsorship, organization, financing and management**

- (a) Government, private or mixed sponsorship; degree of autonomy of public agencies; provision of technical services and facilities by associations of small industrialists, chambers of commerce and industry and other groups, and by large industries
- (b) Financial arrangements; capital investment and working capital of servicing institutions; free services vs. paid services, subsidization; financial control
- (c) Requirements in staff and equipment by type of facilities
- (d) Administrative and management problems; selection of projects, programme scheduling; contractual practices
- (e) Location of agencies and facilities

**Item 6 - Co-operation and co-ordination**

**(1) Between national agencies**

Inter-agency co-operation in use of staff, workshops, laboratories and other facilities. Exchange and dissemination of information on technical problems and research

**(2) International co-operation**

- (a) Scope for organization of technical services on a regional or interregional basis
- (b) Scope for international co-operation: sharing of facilities, exchange of personnel and technical information, training courses
- (c) United Nations technical co-operation for the establishment, development and operation of technical services and facilities for small-scale industries

Annex III

LIST OF DISCUSSION PAPERS, COUNTRY PAPERS AND BACKGROUND PAPERS

Discussion Papers

- 1) ID/CONF.2/1 Provisional Agenda
- 2) ID/CONF.2/1/Add.1 Annotated provisional agenda and proposed questions for discussion
- 3) ID/CONF.2/2 A summary list of technical services and facilities for small-scale industries and related institutions, by UNIDO
- 4) ID/CONF.2/3 The role of industrial extension services in small industry development programmes, by UNIDO
- 5) ID/CONF.2/4 Short background of the origin of the Danish Technological Institute and Danish handicraft and industry - General description of existing services in Danish Technological Institutes, by the Technological Institute, Copenhagen, the Jutland Technological Institute of Aarhus and the Danish Textile Institute, in collaboration
- 6) ID/CONF.2/5 Problems in the application of technical assistance to small-scale industries in developing countries, by A.Neilsen, industrial adviser, United Nations
- 7) ID/CONF.2/6 Advisory services in management - Recent and present trends in the development of a body of industrial consultants attached to industrial organizations in Denmark, by Erik J.A. Ohrt, Assistant Director, Danish Employers' Confederation
- 8) ID/CONF.2/7 Technological Institute's Wood Department - An example of co-operation with a specific branch, by Morten Knudsen, Head of the Wood Department, Technological Institute, Copenhagen
- 9) ID/CONF.2/8 Technological research and industrial extension in Canada, by R. E. McKinney, Chief, Technical Information Service of the National Research Council of Canada, Ottawa
- 10) ID/CONF.2/9 Training of small industry extension workers, by Yap Kie Han, Director of the Centre for Management and Industrial Development, Rotterdam
- 11) ID/CONF.2/10 Sponsorship, organisation and financing of technical services and facilities in the light of the Indian experience, by P.C. Alexander, Joint Secretary, Ministry of Commerce, New Delhi
- 12) ID/CONF.2/11 Operational problems of small industry service institutes in the light of the Indian experience, by G.Sain, Special Technical Adviser, UNIDO

- 13) ID/CONF.2/12 Conditions for setting up and operating technical services for small-scale industries on a regional or a sub-regional basis, in the light of the experience of ICITI, by M. Noriega Morales, Director of the Central American Research Institute for Industry (ICITI), with the assistance and collaboration of Lic. S. Wittkowsky, Special Assistant to the Director of the Institute.
- 14) ID/CONF.2/13 United Nations activities relating to technical services and facilities for small-scale industries, by UNIDO
- 15) ID/CONF.2/14 Research and extension for small-scale industries in India: The role of the Council of Scientific and Industrial Research, by Baldev Singh, J.C. Srivastava and H.C. Chatterjee
- 16) ID/CONF.2/15 The Development of indigenous small-scale enterprises in Africa by Keith Marsden, I.L.O.
- 17) ID/CONF.2/16 Technical services and facilities for rural industries, by F.O.
- 18) ID/CONF.2/17 Promotion of entrepreneurship: An Introductory Talk by Mr. K.L. Menon, Development Commissioner, Small-scale Industries, Government of India, New Delhi
- 19) ID/CONF.2/18 Summary of the development conditions for the small and medium sized enterprises and their harmonious integration in the market economy by Robert Holtz, Secretary General, International Federation of Small and Medium Industrial Enterprises, Paris



Country Present

1. Argentina	by	R. P. Tjebbes
2. Botswana	by	P. Reardon
3. Colombia	by	H. Young L.
4. Cyprus	by	A. Papatziakou
5. Ecuador	by	G. Espinosa Z.
6. Haiti	by	J. C. Saint Louis
7. Indonesia	by	S. Kusumonogoro
8. Iran	by	K. Sh. Yagvaqi *
9. Korea	by	K. H. Park
10. Senegal	by	L. C. A. Alexandronne *
11. Rep. of China	by	Chi-chang Chao
12. Turkey	by	R. Ozen
13. Israel	by	A. Hekker
14. Mexico	by	A. Navarro Gergely
15. Honduras	by	B. Membreño *
16. India	by	K. L. Nanjappa
17. Peru	by	J. M. Harrison Costa
18. Tanzania	by	N. W. Nshau
19. Sierra Leone	by	S. D. Lamin
20. Yugoslavia	by	L. Blagojevic
21. Ceylon	by	K. Mahadeva
22. Zanzibar	by	M. A. Lakha
23. Kenya	by	Kipng'enc Arap Ng'Eny
24. Thailand	by	J. Divari
25. Uganda	by	E. D. Bewayo
26. Poland	by	W. Spruch and Z. Mikolajczyk
27. Nepal	by	R. N. Rimal
28. Chile	by	E. Ortega R.
29. Venezuela	by	A. Ruiz
30. Pakistan	by	I. M. Idris
31. Saudi Arabia	by	S. Robaisky
32. Greece	by	G. Th. Cambitsis

\* did not attend Symposium

## **Background Papers**

1. **Policies and Programmes for the Development of Small-Scale Industry,**  
by UNIDO (ID/CONF.2/BP.1)
2. **Stimulation of Entrepreneurship and Assistance to Small Industrialists at  
the Pre-investment stage,** by UNIDO (ID/CONF.2/BP.2)
3. **Industrial Extension Services for Small-scale Industries,**  
by P.C. Alexander (ID/CONF.2/BP.3)
4. **Training for Industrial Production of Prototype Machinery,**  
by A.D. Bohra (ID/CONF.2/BP.4)
5. **Services and Facilities for Small-scale Industries in Industrial Estates,**  
by A.D. Bohra (ID/CONF.2/BP.5)
6. **Technical Co-operation for the Development of Small-scale Industries**  
(Sales No.: 67.II.B.3) (ID/CONF.2/BP.6)
7. **Problems of Procedure, Administration and Relationship to be Considered  
in Establishing the United Nations Organization for Industrial Development**  
(ID/CONF.2/BP.7)
8. **Notes on Discussions between the Centre for Industrial Development (CID)  
and the International Labour Office (ILO) regarding Areas in the Field  
of Small-scale Industry of Special Interest to Each Organization**  
(ID/CONF.2/BP.8)





**31. 1. 72**