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POLICIES AND PROGRAMMES FOR THE DEVELOPMENT OF SMALL-SCALE INDUSTRY

Presented by the Executive Director
of the United Nations Industrial Development Organization

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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.

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POLICIES AND PROGRAMMES FOR THE DEVELOPMENT OF SMALL-SCALE INDUSTRY

I. THE ROLE OF SMALL-SCALE INDUSTRY IN THE INDUSTRIALIZATION OF DEVELOPING COUNTRIES

1. In any economy, advanced or developing, small-scale industries play an important role. They account for a very large proportion of the number of manufacturing enterprises and for a sizable proportion of industrial employment and of the gross domestic industrial product. In any economy, they pose distinct problems of development because special measures of promotion and assistance are needed to offset or remedy the structural weaknesses and handicaps due to smallness of size and of scale of operation. These weaknesses and handicaps (shortage of financial resources and difficulty in obtaining credit, insufficient technological and managerial knowledge, inadequate skill of labour, antiquated and sometimes primitive equipment, unsatisfactory premises and working conditions, use of poor raw materials, lack of information on markets, and so on) are particularly serious in small enterprises in the developing countries where industries in general, irrespective of their size, are confronted with difficulties arising from limited resources in capital and skilled labour, narrow markets and other obstacles. At the same time, small-scale industries have special advantages, again particularly marked in developing countries, which give them a distinct role in industrial development and justify special policy measures in their support.

2. While it is unquestionable that small industrial enterprises are often ill-equipped, poorly managed and suffer from low productivity and unsatisfactory product quality, it is also evident that inefficiency is not a necessary corollary of smallness. There are, throughout the world, innumerable examples of industries which are modern in every respect, but which are small. These industries use up-to-date equipment, apply scientific methods of processing and management and produce goods, whether complex or simple, of high quality. The achievement of modern standards is the objective of any programme of promotion of small-scale industry, either through the establishment of efficient new enterprises or the modernization of existing ones.

3. It is because modern small-scale industries can contribute to strengthening and diversifying the industrial structure and accelerating industrialization that, in nearly all developing countries, Governments provide for their promotion in their development policies and programmes. There is general agreement that many articles can be produced economically on a small scale and that some articles can be produced more economically on a small scale than on a large one. In such cases, smallness is not a handicap, and may even afford competitive advantages. Efficient small-scale industries may not only co-exist with large undertakings or compete successfully with them but also, in some cases, be linked with them in complementary relationships in which, as subcontractors, they produce for them various parts and components or carry out certain processing or finishing operations.
4. In many other instances, smallness is only a stage in growth: industries may start on a small scale and grow in terms of employment, size of plant and equipment and volume and range of output.
5. Many small industries lend themselves to the use of labour-intensive methods of production, that is, of techniques characterized by a low capital-labour ratio, an important consideration in countries with scarce capital and abundant labour. Some of these techniques may be used, in most establishments, side by side with highly mechanized processes, the over-all efficiency of the undertaking remaining satisfactory. Even when advanced technology is predominantly used in a small enterprise, and its capital-labour ratio is high, the absolute amount of capital required is modest and can be raised out of private domestic resources, without recourse to foreign investment or to Government equity participation. Thus, the promotion of small-scale industries offers an effective way of mobilizing private savings and initiative.
6. Production on a small scale is often the only means of meeting demand when the size of the market for any given item is limited. This is particularly true in the case of relatively isolated local markets such as those of small towns and rural areas. Thus, small industries may play a useful role in programmes of industrial decentralization. They may contribute to the export of manufactures, the promotion of which is a foremost need of industrializing countries requiring

increasing amounts of foreign exchange to finance their imports of capital and other goods.

7. Both in relatively developed and undeveloped areas, small-scale industries permit the tapping of resources which otherwise would remain unused, including entrepreneurship, capital, labour and raw materials. With proper orientation and support, they may attract people who, because of lack of knowledge of technology and management and ignorance of prospects offered by industry, would either remain in their present occupations or engage in competing and presumably less risky activities such as commerce and building. They may mobilize family and other savings which might remain idle, be spent on luxuries or be directed towards non-productive activities. They may utilize materials available in small concentrations, low-grade materials or by-products.

8. Small industries are a training ground for management and labour. Skilled technicians, foremen and workers are induced, and are often able, to set up their own industrial enterprises. More generally, and more importantly, they offer the most promising means of promoting entrepreneurship, that is, of inducing the participation of people from different walks of life, with limited financial resources and scant technical and management experience, in the industrialization of their country. As stressed below, this can only be achieved if guidance, assistance, training and support are given to these people at all stages of the planning, establishment and operation of their enterprises. This role of small-scale industry is of decisive importance in those countries - principally the newly-independent ones - where the industrial structure consists essentially of a few large-scale and medium-sized industries, usually foreign, government-owned or jointly-owned, on the one hand, and of large numbers of traditional industrial undertakings - artisans, handicrafts and cottage industries - on the other. The lack of a middle group of modern small-scale industries is not only a factor of imbalance in the industrial structure, but one of stagnation for the economy as a whole. For obvious reasons, neither the Government nor foreign investors are interested in owning and operating small establishments. To promote small-scale industry is essentially to promote domestic private enterprise. Thus, especially in the countries where few small industries exist, the promotion of

this sector is not only a means of strengthening and diversifying the economy and raising living standards, but also, through the creation of a new class of indigenous industrialists, of achieving major social and political objectives.

9. The relative position which small-scale and large-scale industry should occupy in the industrial structure and therefore the extent of the resources to be allocated to either sector are matters for the planning authority of each country to decide. The scope for the development of industries of different types and sizes varies according to the natural and human resources of the country, the capital, foreign and national, available for investment, the market prospects at home and abroad, and other considerations, both economic and social. In every country, the basic policy should be to develop small industries side by side with larger industrial projects, within the framework of an over-all industrial development plan or programme, and not instead of, or in preference to, large-scale or medium-sized industry.

II. DEVELOPMENT POLICIES

10. Because of their weaknesses and handicaps, small-scale industries are unable to formulate and carry out self-help programmes. Their promotion should therefore be the responsibility of the Government. The Government's action tends essentially to assist small industries to overcome the disadvantages, or to make better use of the advantages, of smallness and to achieve higher levels of efficiency. A prerequisite of such action is that industries which have potential for development and which are in need of assistance be clearly identified and distinguished from others. Herein lies the importance of a definition of small-scale industry based on precise and tangible criteria.

11. Smallness is a relative notion and no generally acceptable numerical definition can even be sought. The definitions of small-scale industry vary considerably not only from country to country, but even, sometimes, within the same country. Such variety is entirely justified since different formulations may be needed to meet different objectives and conditions. Where a measure of uniformity and agreement may be introduced is in the very concept of small-scale

industry, that is, the choice of components of the definition, and the differentiation of industry from other productive activities characterized by a small scale of operation.

12. As regards the components, employment and investment in fixed capital are the most commonly used, either individually or in combination. The employment criterion has some obvious advantages since data are widely available and a definition in terms of a ceiling on the number of workers per enterprise is simple and without ambiguity. But a definition based solely on the employment criterion may not reveal the real size and scale of operation of an establishment. Some industries require high capital investment but only a small number of workers, and it may not be correct to classify such industries as small-scale merely on the basis of employment. The opposite also applies to some extent.

13. The capital investment criterion is more complex. In some countries, capital includes fixed assets and working capital. In most countries, it is limited to investment in fixed capital. The main reason for excluding working capital is that a proper assessment of the size and scale of operation of a firm will not be possible if factors such as the cost of raw materials, direct labour, manufacturing and administrative overheads are taken into account. There are several industries which require only small fixed capital investment, but very high working capital; if working capital is included along with fixed capital, they may fall outside the definition of small industry even though they may be typical small industries. Again, the costs of the elements constituting working capital may vary considerably from firm to firm, depending upon the structure and efficiency of management, turn-over arrangements and other factors which may be unrelated to the size of the industries. Fixed capital provides a more satisfactory criterion for determining the size of the establishment. For the purposes of the definition, it should include the cost of buildings and machinery but not that of land which may vary widely from one location to the other.

14. In some countries, definitions are based only on fixed capital, the employment criterion being excluded on the grounds that one of the roles of small-scale industry is to promote employment and that a ceiling on this factor might inhibit entrepreneurs from hiring additional labour in order not to lose the benefits of

Government assistance programmes. However, this may be avoided if the ceiling on employment is set at a sufficiently high level. The ceiling on fixed capital should also be at a level which would not discourage small entrepreneurs to equip themselves with modern machinery and equipment. As a rule, whether the two criteria are used in combination or separately, the maximum actual values assigned to them should be high enough to encourage, on the one hand, the raising of employment and, on the other hand, the use of modern productive machinery. Sometimes, both objectives may be simultaneously pursued in the same enterprise; in other cases, small units may use predominantly either labour-intensive or capital-intensive techniques. Whatever the technologies adopted, these enterprises would remain in need of guidance and assistance and should be distinguished from larger ones which could forgo such help.

15. The distinction between small industries and other productive activities characterized by a small scale of operation, such as handicrafts, artisan undertakings and cottage industries, is based mainly on the types of organization, equipment and techniques and also the types of products involved. In all these traditional occupations, which are usually limited to a few branches such as carpentry, blacksmithy, pottery, weaving etc., there is little or no division of labour and a minimum of machinery is used, hand-crafting being a predominant method of processing; in the case of handicrafts, artistic skills and artistic and ornamental value of the products are distinguishing characteristics. The promotion of the traditional sector calls for programmes and measures of assistance different from those devised for the development of modern small-scale industry. For that reason, the definition of the latter should distinguish it from the traditional sector. Besides the qualitative features mentioned above, numerical maximum limits on fixed capital and if need be, employment in traditional undertakings will also be necessary; these will be appreciably lower than for small-scale industry. When separate definitions are adopted for the modern and traditional sectors, that of the modern sector, especially if based on fixed capital, may include not only a ceiling but also a lower limit. This lower limit or a slightly higher figure (overlapping would be of no serious consequence) may be the ceiling of the definition of the latter.

16. In all developing countries, the future of the traditional industrial sector is, or should be, an important policy problem. In some countries, there is a confusion between the traditional and the modern sectors and development policies focus on upgrading handicrafts and artisan enterprises rather than promoting modern manufacturing establishments. More often, modern industry is being developed but little attention is paid to the role and place of the traditional sector in a modernizing economy. Sometimes, it is believed that the whole traditional sector can be transformed into modern manufacturing.

17. There are, no doubt, many traditional crafts which have become obsolete and wasteful through the emergence of modern technology, changes in social structure and rising income levels. Factories are steadily replacing artisan workshops in the supply of such products as textiles, shoes, furniture, agricultural tools. It is a paradox of industrialization in developing countries that the only group of people with background and experience in industrial activities becomes its first victim. There are also certain fields where the artisan workshop can co-exist with the factory and even function in complementarity with it; there is, in particular, increasing scope in any economy for artistic handicraft productions, the demand for which seems to grow with the increase in affluence of the society, the expansion of tourism and other factors. Such skills and crafts should be identified and assisted so that they would develop further. The difficult problem is that of the obsolete and declining trades which, though inefficient, are a source of income for large segments of the population and, in certain countries, are the predominant element in the industrial structure. Some traditional activities, probably fewer than commonly believed, lend themselves to transformation into small-scale industrial undertakings in the same line of business. Many others do not lend themselves to such a transformation, but should be steered towards small-scale manufacturing in different lines of business, service and construction industries and other promising activities. In either case, programmes of conversion, retraining, technical assistance and special incentives are called for.

18. Artisans are only one of the sources of entrepreneurship in small-scale industry. Prospective entrepreneurs may be found among educated young men, merchants, foremen and skilled workers from large enterprises, Government officials,

and so on. These people should be steered towards industrial occupations offering good prospects of development and corresponding to the priority areas of the over-all industrialization programmes. Promotion of small-scale industries - and this applies also to artisan enterprises - should therefore be selective, taking into account their viability, competitive strength and growth potential. The Government's policies should not be aimed at giving rise to, or artificially maintaining weak, vulnerable and inefficient industries. The identification of the types of industries which are economic on a small scale, which can sustain the competition of larger firms, or which can be linked with these by complementary relationships, and which have prospects of expansion and diversification, has a decisive bearing on the coverage, scope and orientation of promotion programmes. Hence the importance of surveys of prospects of development of small-scale industries in various regions or localities of a developing country, and of measures of assistance to small industrialists at the pre-investment stage. These aspects will be considered in more detail in the next section.

19. Selectivity in location of small industries should be an equally important policy as selectivity in the types of manufacturing activities. As stressed earlier, small-scale industries may, on account of their locational flexibility, play a substantial role in decentralization programmes. In most developing countries, however, the lack or inadequacy of infra-structure in vast regions limits the choice of location of industry. Outside of a few "islands" where basic conditions for industrial development are fulfilled, it may often be impracticable to set up even small establishments. These need a minimum of infra-structure facilities, skilled labour, raw materials, and market outlets. The prospects in this regard would be revealed by the surveys referred to earlier, which assume therefore a considerable importance in the formulation of any decentralization or regional planning programme. The special advantage of small-scale industries is that most of them can be operated in locations where the supply of basic facilities is limited and where larger firms could not be economically set up. In a general way, the development of small-scale industry should be closely co-ordinated with programmes of construction of power plants or of power distribution, road building, water supply and provision of other infra-structure facilities.

20. The industrial estate may be of value inter alia in facilitating the establishment of industries in less developed or backward areas, since it provides an economic justification for the development of basic facilities and services - power, water, transport, factory buildings, extension services, training etc. Yet even the location of an industrial estate presumes the existence of a minimum of basic resources and facilities and of favourable prospects of industrial development and should be decided on the basis of thorough surveys.
21. Since small-scale industries are in need of help in all aspects of their planning, establishment and operation, the various measures of promotion and assistance - financial, technical, managerial etc. - should be part of an integrated development programme. Individual measures may remain ineffective if unsupported by complementary action. For instance, credit funds may remain unused, standard factories on industrial estates may remain unoccupied if no steps are taken to stimulate entrepreneurship. Equipment may not be modernized if financing is not provided. Vocational training will not suffice to improve productivity if industrial extension services to managers are not available. Guidance, advice and support are needed at every step in each operation, over a relatively long period of time. Such integrated and sustained assistance can be provided only by the Government through appropriate institutions, often with the help of foreign experts. The main purpose of these measures is to support small industrialists through the initial stages and to lead them towards effective, self-reliant management; high-quality, low-cost production; and self-sustained growth.
22. While the Government has to draw up general development policies and programmes and to provide, through public institutions, many and sometimes most of the measures of promotion and assistance, there is usually scope for some co-operation on the part of semi-public and private agencies. The Government should then facilitate and co-ordinate their action. As a rule, private agencies will not come forward to provide free of charge, or even at cost, such services as technical counselling, technical facilities and training of workers and managers. With the exception of services supplied by common-facility workshops (which are in the nature of operating costs and should be charged for), counselling services and training are forms of education which, in most countries, are considered to

be a Government responsibility and are provided free. In view of the shortage of industrial extension personnel, Governments of developing countries might sometimes consider using the services of chambers of commerce and industry, industrial associations and private consultant firms, and support, in full or in part, the costs of their operations. The Government need not undertake a programme of direct credit assistance to small entrepreneurs if commercial banks can be induced, through guarantee or insurance schemes, interest rate subsidization and similar supporting measures, to advance loans at liberal conditions to small industries. Quite often, the Government's role need only be that of "pump-priming", its initiative being aimed at encouraging private agencies or groups of small entrepreneurs to take up promotional action in due course. For instance, certain common service facilities on an industrial estate, and even the estate itself may eventually be turned over to private ownership and management. While the first industrial estates should nearly always be set up by the Government - private initiative being not forthcoming as a rule - one of their purposes is, through demonstration of what can be done through Government assistance, to induce local bodies, private groups and co-operatives to follow suit and to set up, with some public support, their own industrial estates. Again, the facilitation of self-help programmes by private groups, usually in the form of co-operative associations, is a major responsibility of the public authorities. In all cases, it is the duty of the Government to ensure that small entrepreneurs get integrated measures of support, whether these are provided by public institutions or private agencies or by voluntary efforts of the entrepreneurs themselves.

23. The measures referred to so far tend to strengthen and support small-scale industries by inducing them to benefit from economies of agglomeration: this is the case when they are located on industrial estates with standard factories, common service facilities and industrial extension services, and when co-operative and complementary arrangements among them enable them to undertake programmes of self-help. Another means of strengthening them is to encourage the establishment of subcontracting relationships with large firms. The institutionalization of servicing through the creation of permanent public agencies such as small industry service institutes, industrial extension centres, management development centres, special departments of industrial development banks

etc., and recourse to the co-operation of semi-public and private agencies are other major forms of promotion and support of small industries. There is another type of action, which is necessarily the responsibility of the Government - the adoption of legislation to facilitate the growth of small establishments as part of the over-all industrialization effort, and of certain preferential schemes and special measures of protection. In most developing countries, tax and tariff concessions are used as an instrument of industrial development. Sometimes, industries may benefit from these advantages only if their investment and/or employment exceeds a given minimum which may be set at a relatively high level; this encourages large-scale industry. In other cases, incentives are provided only to industries whose investment and employment do not exceed a relatively low level; this is an incentive to artisans or very small industrial establishments. In either case small-scale industry is disadvantaged. Thus, the revision of existing laws or the enactment of special incentive laws for small-scale industry is often called for. Preferential schemes include procurement programmes of small industry products by public authorities, priority procurement of scarce raw materials, concessional rates on freight and utilities etc.

24. The role of the Government in the promotion of small-scale industries as outlined in the preceding paragraphs has sometimes been criticized as too protective. Small-scale industries have been called a "spoon-fed" group which cannot survive without Government support and the Government itself has been criticized for interfering too much with private initiative. But these criticisms are based on an incorrect understanding of the nature of the Government's role in this field. As stated earlier, one of the principal objectives of small industry development is to promote the emergence of a healthy group of private entrepreneurs. The Government's role is limited to the extent and time needed to help these entrepreneurs to stand on their own. While Government measures of assistance may continue over a long period - and for this reason should be institutionalized - it will not be the same industrial units which will receive such assistance. As far as individual industries are concerned, assistance is given only until and for such time as it is needed. Experience shows that most small industries outgrow the stage of needing Government assistance very quickly. But new entrepreneurs will need such assistance and thus the Government's role

of providing assistance continues. The promotional role of the Government will be progressively reduced as the country advances and private agencies and institutions come forward to provide the services and facilities needed by industries.

25. Smallness does not confer any privileges or advantages in development programmes, but it is the duty of the Government to ensure also that smallness does not perpetuate handicaps.

III. OUTLINE OF AN INTEGRATED DEVELOPMENT PROGRAMME

26. In the following paragraphs, an outline is presented of a "maximum" programme of promotion of, and assistance to, small-scale industry. The development of this sector covers, in a different context and a different perspective, all the major problems confronting the establishment and growth of industry in general. The measures listed below therefore encompass a broad field. Not only is much to be done to promote small enterprises, but more is to be done for them than for the larger ones because their need for support is greater. Some measures of promotion and assistance are required by all industries, irrespective of size: planning, surveys and feasibility studies, financing, provision of sites and infra-structure, training of manpower, technological research, marketing and export promotion, fiscal and other incentives; but the programmes required by small industries in these areas should be specially adapted to their needs. Other measures are necessary only for the promotion of small-scale industry. This is the case of industrial estates, common service facilities, co-operatives, hire-purchase and other supervised credit schemes, Government store procurement programmes etc. In general, technical and managerial counselling is needed only by small industries. According to the needs, prospects and targets of development of small-scale industry in a given country, most and sometimes all of these measures should be provided. The programmes may be implemented by one or several agencies - a department of a ministry, small industry development institutes, extension centres, industrial estate authorities and so on.

27. To carry out comprehensive programmes of this type, appreciable resources of expert personnel and finance are needed. The scarcity of specialists in small

industry development - industrial economists, engineers in various fields of specialization, management development experts, industrial estate planners, market researchers, and so on - is a major obstacle and recourse to foreign experts is frequently required, the training of national counterparts being one of their main duties.^{1/} Certain projects involve large investments. This is the case of industrial estates, the establishment of which calls for land, infra-structure development, factory construction, equipment of common facilities and provision of other services and amenities. It is also the case of industrial extension centres, training institutes etc. which require workshops and laboratories, with their equipment, class-rooms, libraries, and so on. Though some of this investment may be recovered - for instance, installations on industrial estates may be turned over to the occupants - the over-all costs of an integrated small industry development programme may be high. There is abundant evidence that many developing countries consider that the achievement of the economic, social and political objectives of such a programme fully justifies the allocation of scarce resources for building up a permanent development machinery.

28. An integrated programme of development of small-scale industry will include measures under the following three main headings: A. Promotion and assistance; B. Industrial estates; C. Financing, training and special incentives. The part of the programme under the first two headings should be formulated under the responsibility of a special Government agency or a department of a ministry, and implemented either by this agency or by specialized institutions. For the sake of convenience, reference will generally be made, in the following paragraphs, to a single promotion and assistance agency. The agency would also contribute to the formulation of the programmes under the third heading, and would play a role in their implementation and co-ordination; however, the responsibility for carrying out this part of the programme would usually be borne by other institutions or government departments.

^{1/} Technical assistance is beyond the scope of the present report. For a detailed description of the types of assistance which may be provided by the United Nations, see Technical Co-operation for the Development of Small-scale Industries (United Nations publication, Sales No.: 67.II.B.3).

A. Promotion and assistance

Stimulation of entrepreneurship

29. In order to stimulate entrepreneurship and orient prospective entrepreneurs towards industrial activities offering good prospects and consonant with the objectives, priorities and requirements of the over-all development plan, technical and economic studies of the types of industries which can be set up in various localities of the country should be carried out. These surveys would indicate, in the light of the availability of raw materials, power, water, transportation and other utilities, capital, labour, markets and so on, the prospects open to industries producing goods which, to the extent possible, would use local materials and substitute for imports. The surveys, the scope of which would necessarily be broad, would not only describe the prospects of small industry development but would also give indications on the possibilities of industrial decentralization.
30. Once the feasible and desirable types of small industries have been determined, "model schemes" or "industry fact sheets" should be prepared for each of these industries or, at any rate, for those of the highest priority. The "model schemes" would describe, in simple and clear terms, the requirements in capital, plant and equipment, employment, raw materials, processes, marketing prospects, and estimate turnover and profitability.
31. The promotion and assistance agency should not limit itself to giving consultations to persons approaching it. It should, as far as possible, seek out prospective entrepreneurs with a view to steering them towards industrial occupations and providing them with all the necessary information and advice. Intensive development campaigns, organized jointly by industrial extension and financial agencies, may be undertaken: groups of technicians may go from place to place with mobile demonstration vans, convene meetings and discussion groups, and formulate projects for which technical, managerial and financial assistance will subsequently be provided.
32. Upon request from prospective or established entrepreneurs, the agency would undertake feasibility studies, including marketing surveys, for new industrial projects and would evaluate projects already prepared by the entrepreneurs.

33. It would assist prospective and existing entrepreneurs in formulating "bankable" projects for financing by credit institutions, commercial or public.

34. It would assist entrepreneurs in all formalities relating to incorporation, licensing, acquisition of site or building, import licenses and foreign exchange authorizations and other prerequisites for setting up, modernizing or expanding an industrial enterprise.

35. The agency would co-ordinate the activities of institutions for training, management and labour, industrial research centres and other bodies such as chambers of commerce and industry, professional associations, co-operatives etc. which contribute to the stimulation of entrepreneurship, the spread of industrial skills and the dissemination of technical information.

Technical and managerial assistance

36. The agency would provide assistance to small industrialists in every aspect of planning, constructing, operating and managing their enterprises.

37. Economic assistance covers principally counselling on industry feasibility and prospects, selection of location, fixed and working capital requirements, information on availability and prices of raw materials, labour, factory space, production costs at different size units, competitive position in relation to other industries, marketing and export opportunities.

38. Technical assistance covers advice and guidance on the choice of materials, machinery and tools and their most efficient utilization in production. It includes advice on plant lay-out, installation, operation, maintenance and repair of machinery, techniques of production, testing, quality control procedures, packaging, storing, selling and shipping goods, and class-room and on-the-job training of workers and supervisors.

39. Management development covers advice, guidance and training in all aspects of the conduct of a business, including the raising of resources, organization, production planning and control, inventory control, cost accounting and marketing techniques. It includes advice on sources of credit, loan regulations, taxes, book-keeping, advertising and publicity. It may include promotion of subcontracting between large and small industries through the provision of information on

opportunities in this field and the facilitation of negotiation of contracts. The promotion of co-operative arrangements, including co-operative associations between small undertakings, is a relevant activity.

40. Product improvement is concerned with design and quality. Existing design may be improved or a new design substituted for an old one so as to enhance performance, quality and appearance. Advice on standardization is also provided.

41. Training is necessarily involved in the above activities, whether it is provided in an industrial extension centre, a special institution or on the job. As an industrial extension activity, the training provided to managers, supervisory personnel and workers of existing enterprises is, as a rule, more in the nature of upgrading of existing skills and more specialized than that given in business administration courses, technical education and vocational training, to students who have not entered yet into industrial employment.

42. Industrial research is an essential supporting activity. Technological adaptation or innovation in respect of processes, equipment and products is often of special benefit to small-scale industries. Some processes result in reductions in input of capital and materials; some types of equipment make it possible to produce economically at relatively small capacity or lend themselves to multiple use; some products may be based on local materials or by-products or may meet special demand requirements on narrow markets. An industrial extension service should evidently make use of the results of such research.

Information and research

43. The agency would disseminate economic, technical and legal information relating to the development of small-scale industries and would undertake research in these areas.

B. Industrial estates

44. The planning and construction of industrial estates should be one of the fundamental components of a programme for the development of small-scale industry.^{2/}

^{2/} See "Policies and Programmes for the Establishment of Industrial Estates" (ID/CONF.1/B-5).

The estate is one of the most effective instruments of promotion. The availability of standard factories for rent or hire-purchase is, for people with small financial means, a major inducement to engage in industrial operations. The existence of facilities providing technical and managerial assistance is another important inducement to entrepreneurship. When an extension centre is part of an industrial estate, the small industrialists may receive sustained assistance in all aspects of their work. Common service facilities, such as a tool-room, maintenance and repair shop, or a testing and quality control laboratory, which may vary in type with the composition of industries on the estate, contribute to improving productivity and product quality and reducing costs. The grouping of small industries on a common site makes it economical to set up other facilities, such as a training institution or an information centre, as part of the estate. Thus, the industrial estate is an effective tool for integrating the various measures of support to small-scale industries.

C. Financing, training and special incentives

45. To be fully effective, the above measures should be supported by complementary programmes. Because of relatively high risks, high costs of lending, and small banking profits, small industries have difficulties in obtaining credit, and special measures for financial assistance are required. The principal feature of financing of small-scale industries is the linking of technical to financial assistance. The raising of productivity through industrial extension services reduce risks and increases the credit-worthiness of small entrepreneurs. Assistance in preparing loan applications also facilitates credit, and "credit supervision", in the case of small-scale industries, is essentially a form of technical assistance aimed at ensuring a proper use of loans through technical and managerial guidance.

46. Supervised credit operations may be jointly managed by financial and industrial extension agencies. Certain forms of supervised credit, for instance, hire-purchase systems for provision of machinery, may be more effectively operated by a special agency. Because of the high cost of credit supervision, special financial institutions often have to be created, through which foreign as well as domestic funds can be channelled. Where small industries have achieved a measure

of development, financing by commercial banks may be obtained through Government guarantee and insurance schemes.

47. The importance of vocational training is evident and need not be elaborated. One of the advantages of establishing training centres in or near industrial estates is that courses may be devised specifically to meet the needs of the industrialists; another advantage is that apprenticeship and in-plant training may be facilitated.

48. Other measures in a maximum programme of development include special tax and customs benefits for small-scale industries, priority allocation of scarce raw materials, preferential purchase of small industry products by Government agencies, reductions in transportation and utility rates, and special export promotion measures.

ANNEX I. THE PLACE OF SMALL-SCALE INDUSTRY IN THE INDUSTRIAL FRAMEWORK^{1/}

I. General Analysis

1. An assessment of the place of small-scale industry in the over-all industrial framework is confronted by two main obstacles: the lack of uniformity of the definitions of small-scale industry used in publications, industry censuses, and other statistical material in different countries; and the limitation of the number of countries for which detailed data are available.
2. A definition of small-scale industry should identify the modern small manufacturing sector, excluding handicraft and artisan undertakings and cottage industry. In many countries, the definitions are based on employment only, with ceilings set at different levels. It happens frequently that enterprises with little or no machinery and employing relatively many workers are classified as small-scale or medium-sized industries, though their activities may essentially be of an artisan or cottage industry type.
3. Investment in fixed capital, combined or not with number of employees, would be a better criterion, the ceilings varying from one country to another. This criterion, however, is seldom found in the statistical literature and, for this reason, the present study uses a definition of small-scale industry based on employment only, the number per enterprise being 100 workers or less.
4. For the purposes of the study, industry is grouped into three broad categories: light industry; metal products industry; and heavy industry.

^{1/} This annex contains a summary of parts of a statistical analysis of the role of small-scale industry in industrial and industrializing countries, prepared by Mr. G. K. Boon, a consultant to UNIDO, which will be published by the United Nations in 1968.

The composition of each category is given in table 1 below.

5. Heavy industries are capital-intensive and, in general, use equipment characterized by relatively large indivisibilities; for this reason, they benefit from economies of scale. The other industrial activities are, however, not necessarily labour-intensive. It is a characteristic of many light and metal-products industries that choices between alternative techniques exist; these range from more to less labour-intensive, or from less to more capital-intensive.

Table 1. Classification of Industry

ISIC ^{a/} No.	<u>Light industry</u>	<u>Metal products industry</u>		<u>Heavy industry</u>	
	Industry group	ISIC No.	Industry group	ISIC No.	Industry group
20-22	Food, beverages and tobacco	35	Metal products	27	Paper and paper products
23	Textiles	36	Machinery except electrical	31	Chemicals and chemical products
24	Footwear, clothing	37	Electrical machinery	32	Petroleum and coal products
25	Wood and cork	38	Transport equipment	34	Basic metal industries
26	Furniture				
28	Printing and publishing				
29	Leather and leather products				
30	Rubber products				
39	Miscellaneous manufacturing				

^{a/} International Statistical Industrial Classification

6. The place of small-scale industry in each of these three groups has been assessed for a sample of fourteen countries: six developed countries: Canada, Finland, Japan, the Netherlands, the United Kingdom and the United States; and eight developing countries: Argentina, Brazil, Chile, China (Taiwan), Colombia, Mexico, Pakistan and Peru.

7. In both the developed and the developing countries, the highest number of establishments is in the light industry group. In the developed countries and in Brazil and Mexico, the average size of establishments in terms of value added per establishment is the smallest in the light industry group. In the other developing countries, it is in the metal products industry group.

8. In all the countries under consideration, with the exception of Argentina and Peru, the smallest number of establishments is in the heavy industry group. In Argentina and Peru, it is in the metal products category.

9. The largest average size of establishment, expressed in value added per enterprise, is in the heavy industry group in all countries with the exception of Brazil, where the average added value per establishment is significantly greater in the metal products group than in the heavy industry group.

10. The average number of persons employed per establishment is the smallest in the light industry group in the developed countries and in Brazil, Chile and Mexico. In the other developing countries of the sample, the metal products industry has the lowest average employment per establishment.

11. The average size of establishment expressed in number of persons employed is, in most countries, largest in the heavy industry group, with the exception of Brazil, where it is in the metal products group and Pakistan where it is in the light industry group.

12. Another indicator of the relative importance of industry is the value added per employee, a ratio which measures the average labour productivity. The value added per employee is positively correlated with the wage rate and the capital-labour ratio.
13. The value added per employee is the lowest in the light industry in all the developed countries (with the exception of Finland) and in Brazil and Mexico. In the other countries the lowest labour productivity is found in the metal products industry.
14. The highest labour productivity figures are found in all countries except the Republic of China in the heavy industry group. In China the highest figure is found in the light industry group. Because of the positive correlation between the value added per employee ratio and the capital-labour ratio, what has been said of the average labour productivity indirectly holds for the capital-labour ratio. The highest capital-labour ratio is found in the heavy industry group while the lowest ratio is found either in the light industry group (mainly in the developed countries) or in the metal products group (mainly in the developing countries).
15. A last characteristic is the average level of wage per person employed. As might be expected, the lowest average wages are paid in the light industry (with the minor exception of Colombia where the wages in the metal products industry are slightly lower). In almost all countries of the sample, the highest wages are paid in the heavy industry group, with the exception of the United States, where the average wages in the metal products category are somewhat higher and in Brazil where they are significantly higher.
16. The statistical analysis suggests that the following pattern observed in the industrially mature countries is the normal one for these countries: the highest number of establishments is found in the light industry category followed by the metal products industry category and the heavy

industry category. The average value added per establishment is the smallest in the light industry category, and so are the average number of persons employed per establishment, the value added per employee (and consequently the capital-labour ratio) and the average wage paid per person. All these ratios have their highest level in the heavy industry category; intermediate values are found in the metal products group.

17. The pattern is different in the developing countries which go through various phases before reaching the industrial structure typical of the advanced countries. In the industrializing countries, the position of light industry and metal products industry appears to be the reverse of that in the industrial countries. An explanation of this deviation is that the process of industrialization often starts with an emphasis on light industry and is followed by the development of the metal products industry. For this reason, the light industry group may be relatively mature, while the metal products industry may still be at an infant stage. It is also for this reason that light industry may be expected to decline in importance in relation to metal products and to heavy industry. This conclusion is strengthened by the analysis of the distribution of value added in industry for the period 1938-1961 given in table 2 on the following page.

18. Table 2 shows that, in the industrializing countries, the share of heavy industry is comparable to the proportion in the industrial countries. This, however, is entirely due to the relatively low contribution of the metal products industry; yet this contribution is rising very rapidly. The share of light industry declines but remains quite high. In 1961, light industry contributed more than three times as much to total value added in manufacturing as the metal products industry.

19. In the industrial countries, the share of the metal products industry is higher than that of heavy industry. The decline in the share of light industry is more rapid in these countries than in the developing ones.

Table 2. Distribution of value added in industry, 1938-1961 (at 1958 prices)

Area	Industry Group ^{a/}	1938	1948	1953	1961
			(Percentage)		
World (excluding USSR and eastern Europe)	Light industry	52.4	44.3	39.3	37.8
	Metal products industry	24.1	30.1	35.2	34.7
	Heavy industry	23.5	25.6	25.5	27.5
Industrial countries	Light industry	50.8	42.2	37.5	35.9
	Metal products industry	25.5	31.9	35.0	36.6
	Heavy industry	23.7	25.9	25.5	27.5
Industrializing countries	Light industry	68.9	67.2	63.1	55.7
	Metal products industry	9.7	10.7	11.9	16.3
	Heavy industry	21.4	22.1	25.0	28.0

Source: Derived from The Growth of World Industry 1938-1961, Table 24 (United Nations publication, Sales No. 63.XVII.5).

^{a/} The light industry group includes ISIC 20-26, 28-30, 39. The metal products industry group includes ISIC 35-38. The heavy industry group includes ISIC 27, 31-34.

20. It may be expected that, in all economies, the share of light industry will decline in relation to that of the metal products industry. In the developing countries, it is probable that the contribution of small-scale industries to the light industry sector will decline but that it will increase in the metal products group - small enterprises being very efficient in many branches of the latter group, either as independent producers or as subcontractors to large undertakings. On the whole, therefore, the relative position of small-scale industry may not necessarily decline in the future; it may remain unchanged or may even increase. In absolute terms, the number of small-scale industries will definitely increase as industrialization proceeds.

21. Another approach to ascertain the role of small-scale industry in manufacturing industry as a whole is to determine its percentage share in total employment and total value added in manufacturing. This has been done for 35 countries for which data are available; the results are presented in table 3 on the following page.

22. Extreme values, that is, employment ratios of more than 50 per cent for small-scale industry, are found in the Central American countries, in Cyprus, Greece, Israel, New Zealand, the Republic of Korea, Surinam and Venezuela; all of these are relatively small industrializing countries. Employment in small-scale industry of less than 20 per cent of the total is found in Ghana, Hungary, Northern Ireland, Romania and Yugoslavia, all of which are also developing countries, three of them with centrally planned economies. In highly industrialized countries, such as Sweden, the United Kingdom and the United States, employment in small-scale industry is, respectively, 38, 16 and 27 per cent of the total. Thus, it appears that the relative role of small-scale industry does not depend on the level of economic development.

23. The share of value added in small-scale industry is, in all countries listed in the table, with the exception of Japan and Pakistan, lower than that of employment in small industry, which indicates a lower labour productivity in small industries as compared with large enterprises, a finding which confirms earlier ones.

Table 3. Relative Position of Small-scale Industry in a Number of Selected Countries
(Percentage Share of Small-scale Industry in Total Manufacturing for
Employment and Value Added)

Country	Year	Percent of Employment		Percent of Value Added		Definition of Small-scale (Employment)
		Small-Scale	Larger Scale	Small-Scale	Larger Scale	
1. Cyprus	1962	78.1	21.9	65.6	34.4	1-99
2. Greece	1961	65.6	34.4	58.2	41.8	10-99
3. Venezuela	1961	62.7	37.4	41.3	58.7	5-99
4. Surinam	1961	61.0	39.0	-	-	1-100
5. Israel	1963-64	59.7	40.3	-	-	1-99
6. Rep. of Korea	1963	56.7	43.3	42.4	57.6	5-79
7. Costa Rica						
8. El Salvador	1962	52.9	37.1	51.7	48.3	5-99
9. Guatemala						
10. Honduras						
11. Nicaragua						
12. New Zealand	1962-63	52.1	47.9	47.4	52.6	6-100
13. Tanganyika	1962	48.4	51.6	-	-	1-100
14. Japan	1951	46.2	53.8	47.4	52.6	4-99
15. Colombia	1952	45.9	54.1	29.2	70.8	5-99
16. Australia	1961-62	43.4	56.6	-	-	5-100
17. Chile	1957	42.8	57.2	25.4	74.6	5-99
18. Philippines	1960	42.1	57.9	23.6	76.4	5-99
19. Brazil	1960	38.9	61.1	32.2	67.8	5-99
20. Sweden	1960	38.4	61.6	-	-	1-100
21. Uganda	1963	37.7	63.3	-	-	1-99
22. India	1962	35.8	64.2	29.7	70.3	1-100
23. Malta	1963	34.6	65.4	25.6	74.4	1-100
24. Canada	1961	34.5	65.5	27.7	72.3	1-99
25. Iraq	1963	31.7	68.3	14.0	86.0	10-99
26. Kenya	1963	31.0	69.0	29.0	71.0	5-99
27. Malaya	1959	27.3	72.7	-	-	1-99
28. United States	1958	27.0	73.0	23.0	77.0	1-99
29. Pakistan	1958	22.2	77.8	24.8	75.2	1-99
30. United Kingdom	1958	15.8	84.2	13.6	86.4	1-99
31. Ghana	1959	8.4	91.6	6.5	93.5	6-100
32. Northern Ireland	1958	8.0	92.0	-	-	1-24
33. Yugoslavia	1961	6.2	93.8	5.3	94.7	1-125
34. Hungary	1963	0.9	99.1	1.0	99.0	1-100
35. Romania	1963	0.5	99.5	-	-	1-100

Sources: See paper by G. K. Boon, table 5.1.1.

II. Selected Country Data

24. More detailed data on a number of characteristics of small-scale industry in selected countries are given in the following paragraphs. These countries are India, Japan, Pakistan, the United Kingdom and the United States.

India

25. The analysis of Indian data shows that the larger the number of establishments in a given industry sector, the smaller the average firm size and the lower the average labour productivity. In 57 out of 62 industries, the largest number of establishments is in the small-scale size class (less than 100 workers).

26. The distribution of industry among the light and heavy sectors is shown in the following table.

	<u>Light</u> <u>Industry</u> - Percent of total -	<u>Heavy</u> <u>Industry</u> - Percent of total -
1948	79.7	20.3
1953	74.5	25.5
1958	68.3	31.7
1961	64.3	35.7

Source: Derived from The Growth of World Industry, 1938-1961, Table 13.

27. A special aspect of the subject has been studied for India - the requirements of professional workers. The analysis shows a positive correlation between the above-mentioned ratios and number of professional and technical workers as a percentage of total employment. Smaller firm size and lower labour productivity are positively correlated with lower professional and technical labour requirements. In the light or

non-durable consumer goods industries, the highest percentage of professional and technical workers is in the small industry size class; in the metal products and heavy industry groups, the highest percentage of these workers is in the large industry size class. As with all generalizations, there are some exceptions.

28. Data on the contribution of small-scale industry to manufacturing industry in India for a more recent date (1962) show that small industry plays a substantial role in Indian manufacturing. Small industries, defined as establishments with fixed capital assets not exceeding Rs. 500,000 and employing up to 100 workers, account for 91 per cent of the total number of establishments, 36 per cent of the total employment and 30 per cent of the total manufacturing gross output in manufacturing.

Japan

29. Data on industry in Japan have been analysed by a ranking procedure. A broad sample of 19 industry sectors was grouped in nine size classes in terms of number of employees per enterprise, the smallest size class including 1-9 employees, the largest 1,000-1,999 employees. Because of incompleteness of data in larger size classes, establishments with an employment above 2,000 persons were disregarded. The results of the statistical analysis are summarized below.

30. The correlation between number of establishments and size class is almost perfect; in almost all of the 19 sectors, the smaller the number of employees, the larger the number of firms. The correlation between labour productivity and size of industry is also very close: the smaller firms have almost invariably a lower labour productivity in terms of output per employee. The capital-labour ratio (fixed capital assets per employee) is very strongly correlated with firm size, the smaller the firm, the smaller the average investment per worker.

31. The correlation between size class and capital-output ratio is not strong, the coefficient of concordance being relatively low. It still appears that the larger the average firm size, the higher the capital-output ratio. This relationship is weaker at both ends of the size breakdown: in the large enterprises economies of scale reduce the ratio, while in the smallest size group, owing to under-utilization of equipment, the capital-output ratio is higher than in the next two larger sizes.

32. There is an almost perfect correlation between wage rate level and size class - the larger the firm the higher the average wage; the smaller the firm the lower the wage rate. The ratio of capital income over labour income yields a lower coefficient of concordance than the capital-labour ratio.

Pakistan

33. Pakistan data based on the 1958 census on manufacturing industry show that small-scale industry provides employment to 22.2 per cent of the work-force in manufacturing industry and contributes 24.8 per cent to the value added.

34. In several industrial groups, labour productivity is higher in small-scale industry than in manufacturing as a whole. This is the case in the printing, chemicals, machinery and miscellaneous industries. In the case of non-metallic mineral products, basic metal industry and metal products industry, labour productivity is only slightly below that of the average for all industries in these sectors. The impression is gained that the average labour productivity is higher for small-scale industry than for the manufacturing industry as a whole, which would be a rather striking fact. In Pakistan, because of scarcity of mineral and other raw materials, industrialization may have advanced more

rapidly in light industries than in heavy industry. In more recent years, advances took place in heavy industry, as may be seen in the following table.

<u>PAKISTAN</u>	Light Industry	Heavy Industry
	<u>(Percentage)</u>	
1948	79.2	20.8
1953	79.2	20.8
1958	74.4	25.6
1961	70.2	29.8

Source: Derived from United Nations, The Growth of World Industry, 1938-1961, table 13.

United Kingdom

35. Small-scale industry is rather important in the United Kingdom where, in 1958, it accounted for 15.8 per cent of all employment in manufacturing and 13.6 per cent of the net output. There is a strong positive relationship between average firm size, average labour productivity, average capital-labour ratio and wage per employee (coefficient of concordance 0.762).

36. In sectors in which the average firm size is small (in terms of net output per establishment), labour productivity (net output per employee) is in general lower than in sectors with a higher average firm size. Also the capital-labour ratio (fixed capital per employee) and wages per employee are lower in sectors with a small average firm size.

37. Percentage data relating to the number of establishments, employment and total sales in small firms (employing up to 100 persons) and for

larger firms (employing over 100 persons) show that the sectors in which more than 80 per cent of the number of establishments are small firms are: food, beverages and tobacco, engineering and electrical goods, metal goods, leather goods and furs, clothing and footwear, bricks, pottery and glass, timber, furniture, paper and publishing and other manufacturing industries.

38. The highest figures for all three criteria are in the leather goods industry (number of establishments 93.4 per cent, employment 57.7 per cent and sales 55.2 per cent) followed by timber, furniture, clothing and footwear. The lowest percentage in the vehicles industry (number of establishments 69.5 per cent, employment 4.7 per cent and total sales 4.0 per cent).

United States

39. In 1958, employment in small-scale industry in the United States (establishments with employment of from 10 to 100 persons) represented 23.4 per cent of total employment in industry and contributed 19.7 per cent to value added.

40. In that country the capital-labour ratio is lower in the light and metal products industries than in manufacturing as a whole, while it is higher - and in some cases considerably higher - in the heavy industry group. This corroborates an earlier statement that heavy industry is largely capital-intensive. Small-scale enterprises contribute less to heavy industry than to the two other groups.

41. As regards productivity of capital, heavy industry has the lowest output-capital ratio (2), the metal products industry having a fairly high ratio (between 3.2 and 4.6). The ratio for light industry varies from 2 to 9.3, five out of ten light industries having an output-capital ratio higher than 4. Labour productivity does not show clear trends in

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English

Annex I

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the light industry, two out of ten industries having a ratio close to the average for manufacturing as a whole; in the metal products industry, two out of four of these ratios are above the average. In the heavy industry except the non-metallic mineral products industry, labour productivity is above the average figure of total manufacturing.

ANNEX II. TYPES OF PRODUCTION SUITABLE FOR SMALL-SCALE INDUSTRIES

1. A broad variety of products may be economically manufactured by small-scale industries. In a recent survey^{1/}, five principal types of opportunities are identified:

- (a) Dispersed processing of weight-losing or perishable raw materials. Opportunities depend on the resources, geography, transport network and land ownership patterns of the country or area. Examples of such industries are rice milling, rice bran oil, saw mills, wood drying kilns, vegetable oil extraction, cheese, butter, leather tanning, fruit and vegetable canning, hardboard and strawboard.
- (b) Bulky, weight-gaining and hence market-oriented products, principally in the field of construction, agricultural and household goods. Examples are agricultural implements, sheet metal products, containers, mixed fertilizers, bricks, concrete products, structural metal products, plastic pipe and conduit, bread, soft drinks, ice cream, furniture and truck and bus bodies.
- (c) Simple assembly, mixing or finishing operations. Productions require low investment, have moderate economies of scale, are labour-intensive and have low transfer costs. Examples are: food products, clothing, footwear, leather goods, pharmaceuticals, paints and varnishes, sports goods, plastic products and toys. These are particularly suitable for establishment in urban centres enjoying external economies.
- (d) Service industries lending themselves to quality job work and specialized tasks. Examples are: tool and die making, electroplating, printing, electrical servicing, auto servicing, foundries and machine shops.

^{1/} E. Staley and R. Morse, Modern Small Industry for Developing Countries, Chapter VI, McGraw Hill, New York (1965).

- (e) Separable manufacturing operations in the metal-working industries. These offer potentially the greatest scope for small enterprises. The versatility of machine tool operations, the endless number of products and components to be made, and the interchangeability of standard parts offer great opportunities for craftsmen and engineers to adapt and innovate constantly in response to changing cost and production possibilities.

2. The authors state that the dynamic element in the metal-working industries is well suited for the technically oriented entrepreneur and accounts for the significant role of the small propriety and partnership firms in tool and die making, designing, and precision job work, even in developed countries. Specialization in certain operations makes possible scale economies; versatility and precision working yield high value added in the products manufactured. The possibilities of subcontracting between small and large industries are particularly great in the metal-working sector.

ANNEX III. BIBLIOGRAPHY OF UNITED NATIONS ARTICLES,
PUBLICATIONS AND REPORTS ON SMALL-SCALE INDUSTRY

1. The United Nations studies and reports listed below relate not only to policies, programmes and measures directly concerned with the development of small-scale industry, but also to certain broader issues such as capital intensity, technological research and choice of technology, size of plant and industrial management, which have a bearing on the development of this sector. Studies on the broader aspects are included when directly relevant to the main subject matter of this bibliography. In a few cases, reference is made to studies of more general scope.
2. The following list is arranged by main subjects and, under each heading, by date of publication or proposed publication.

A. DEVELOPMENT OF SMALL-SCALE INDUSTRY

1. "Industrial Development in the United Nations Development Decade" in Industrialization and Productivity, Bulletin No. 6 (Sales No.: 63.II.B.1).

This article, which outlines in some detail certain proposals of the Secretary-General of the United Nations in the field of industrial development during the Development Decade (The United Nations Development Decade - Proposals for Action, Sales No.: 62.II.B.2), refers, among other things, to the role of small-scale industries and industrial estates and to the role of the United Nations in this connexion.

2. Technical Co-operation for the Development of Small-scale Industries (UN publications, Sales No.: 67.II.B.3).

A description of the organization of technical co-operation and the procedures for obtaining assistance from the United Nations. An outline of the types of projects and the types of assistance which may be made available for the development of small-scale industry. Annexes contain a number of typical job descriptions for expert missions and outlines of requests for assistance from the UNDP (Special Fund).

3. Promotion of Small-scale Industry in the Developing Countries.
To be published in 1967.

A collection of studies on the definition of small-scale industry, the role of small-scale industries, pre-investment surveys and measures for the stimulation of entrepreneurship, industrial extension services, industrial estates, etc.

4. The Place of Small-scale Industry in the Industrial Framework,
by G. K. Eoon. To be published in 1968.

A statistical analysis of small-scale industries (number of establishments, value added per establishment, number of persons per establishment, value added per employee, wages per employee) and comparisons with larger manufacturing establishments in a number of developed and developing countries.

5. Small-scale Industry in Latin America. To be published in 1968.

The publication will contain the report of the Seminar on Small-scale Industry in Latin America held in Quito, Ecuador, in November-December 1966 and some of the papers prepared for the Seminar.

6. "The Future of the Traditional Industrial Sector in a Modernizing Economy", by R. Alexander. In preparation for eventual publication.

Guidelines for government policies and measures in respect of artisan, handicraft and cottage industry undertakings, and study of the possibilities for transformation of artisans into small-scale industrialists, the types of traditional activities suitable for modernization, the methods of conversion and programmes of re-training, extension, incentives, etc.

B. TECHNICAL SERVICES AND FACILITIES FOR SMALL-SCALE INDUSTRY

1. "Organization and Operation of Cottage and Small Industries",
Industrialization and Productivity Bulletin, No. 2 (UN publications,
Sales No.: 59.II.B.1).

Recommendations of a Study Group of Small-scale Industry Experts on their visit to Japan.

2. "Training for Industrial Production of Prototype Machinery", by A. D. Bohra, Industrialization and Productivity Bulletin, No.6 (UN publications, Sales No.: 63.II.B.1).

A description and analysis of the functions of the Indian Prototype Production and Training Centres. The major function of these institutions is to facilitate the transfer and adaptation of machine-building technologies developed in the advanced countries for manufacture and use of the machines by small-scale industries.

3. "Promotion of Exports of Small Industry Products from Developing Countries", in Proceedings of the United Nations Conference on Trade and Development, vol. IV (UN publications, Sales No.: 64.II.B.14).

A discussion of national measures to promote exports of small industry products which may be taken by governments, producers and exporters of the exporting countries, and of international action in this field, especially by GATT¹ and the United Nations. A discussion of industrialization policies in respect of import substitution and export promotion, with special reference to the role of small-scale industries, is presented in an annex.

4. Technical Services and Facilities for Small-scale Industries. To be published in 1969.

The publication will contain the report of the seminar on Technical Services and Facilities for Small-scale Industries, Vedbaek, Denmark, June-July 1967 and some of the papers prepared for the seminar.

5. "Government Purchase Schemes for the Promotion of Small-scale Industries", by K. Weddel. To be published in 1968.

A comparative study of policies and practices in the United States and India.

¹/ The Contracting Parties to the General Agreement on Tariffs and Trade.

C. INDUSTRIAL ESTATES

1. Establishment of Industrial Estates in Under-developed Countries (UN publications, Sales No.: 60.II.B.4).

An analysis of the role of industrial estates in policies and programmes of industrialization and industrial location, with special reference to promotion of small-scale industries in the developing countries.

2. "Seminar on Industrial Estates in the ECAFE Region", in Industrialization and Productivity, Bulletin No. 5 (Sales No.: 62.II.B.1).

A brief account of the proceedings of the first regional United Nations seminar on the subject, held in Madras, India, in November 1961.

3. The Physical Planning of Industrial Estates (UN publications, Sales No.: 62.II.B.4).

A study of location, planning, layout and building requirements for industrial estates in the developing countries.

4. Industrial Estates in Asia and the Far East (UN publications, Sales No.: 62.II.B.5).

The publication contains the report of the seminar on Industrial Estates in the Region of the Economic Commission for Asia and the Far East, held in Madras, India, in November 1961, and large excerpts from the discussion and information papers submitted to the seminar.

5. "Seminar on Industrial Estates in Africa", in Industrialization and Productivity, Bulletin No. 9 (UN publications, Sales No.: 65.II.B.6)

A brief account of the proceedings of the second regional United Nations seminar on the subject, held in Addis Ababa, Ethiopia, in December 1964.

6. Industrial Estates in Africa (UN publications, Sales No.: 66.II.B.2)

The publication contains the report of the seminar on Industrial Estates in the Region of the Economic Commission for Africa, held in Addis Ababa in December 1964, and some of the papers prepared for the seminar.

7. Industrial Estates: Policies, Plans and Progress - A Comparative Analysis of International Experience (UN publications, Sales No.: 66.II.B.16).

A survey of objectives and policies, planning and organization, management and financing of industrial estates in a large number of countries of all regions, based on replies to a questionnaire on industrial estates and other relevant information.

8. Industrial Estates in Europe and the Middle East. To be published in 1968.

The publication will include the reports of two Consultative Groups on Industrial Estates and Industrial Areas held, respectively, at Geneva in October 1966 and in Beirut in November 1966, and some of the papers submitted to the Groups.

9. Common Service Facilities on Industrial Estates. In preparation for eventual publication.

A study of the tool room and the testing and quality control laboratory as common service facilities on industrial estates for small-scale industries. Description of the functions, policies, procedures, methods, equipment and staff of these facilities, including economic and engineering data.

10. The Functional Industrial Estate. In preparation for eventual publication.

A study of a specialized type of industrial estate for small industries producing parts and components of certain products as part of a planned production programme. Analysis of the suitable types of production, sponsorship, organization, layout, services, financing etc.

D. FINANCING

1. "Hire-Purchase Loans for the Mechanization of Small Industries", by J. E. Stepanek, Industrialization and Productivity Bulletin, No.1 (UN publications, Sales No.: 58.II.B.2)

A study of methods linking technical assistance to financial assistance applied in Burma to facilitate the procurement of machinery by small industrialists.

2. "Financing of Small-scale Industries in Under-developed Countries", Industrialization and Productivity Bulletin No. 3 (UN publications, Sales No.: 60.II.B.1)

A survey of measures to increase the supply of funds, reduce the cost of credit and reduce the risks of lending.

3. "Hire-purchase Schemes for the Promotion of Small-scale Industries", by K. L. Nanjappa. Prepared for submission to a seminar of Financing of Small-scale Industry, and eventual publication.

A description, analysis and assessment of hire-purchase systems, especially of those in India.

E. INTERRELATIONS BETWEEN LARGE AND SMALL INDUSTRIES

1. "Interrelations between Large and Small Industrial Enterprises in Japan", by T. Ando, in Industrialization and Productivity Bulletin, No. 2 (UN publications, Sales No.: 59.II.B.1).

A study of sub-contracting arrangements in Japan.

2. "The Dual Nature of Industrial Development in Japan", in Industrialization and Productivity Bulletin No. 8 (UN publications, Sales No.: 64.II.B.6).

Problems of co-existence of highly capital-intensive large-scale industries and of labour-intensive, low-wage small-scale industries in Japan.

3. Interrelations between Small and Large Industries - A Study of Sub-Contracting. In preparation for publication in 1968.

A comparative analysis of sub-contracting in the United States and Puerto Rico, France and other western European countries, Japan and India, including a discussion of the major factors influencing the development of sub-contracting, a study of alternative methods of organizing sub-contracting and recommendations for the organization of sub-contracting as a means of promoting small-scale industries in the developing countries.

F. MANAGEMENT

1. "Use of Accounting as an Aid to Management in Industrial Enterprises in Under-developed Countries", by G. Ronson, Industrialization and Productivity Bulletin, No.1 (UN publications, Sales No.: 58.II.B.2).

A study of the application of accounting techniques to problems of industrial management at the policy level and in day-to-day operation.

2. "Round-table Discussion on Industrial Management in Under-developed Areas", ibid.

A brief account of the proceedings of a panel of experts held in 1957.

3. Management of Industrial Enterprises in Under-developed Countries, (UN publications, Sales No.: 58.II.B.5).

A review of problems of management structure and cadres, labour management, management of production facilities, marketing, etc. Some considerations on management service institutes are contained in an annex.

4. "Labour Aspects of Management", by C. R. Wyne-Roberts, in Industrialization and Productivity Bulletin, No.2 (UN publications, Sales Nos.: 59.II.B.1).

A study of some factors affecting the contribution of the worker to the efficiency of industrial operation in under-developed countries.

5. "Business Leadership in Under-developed Countries", by C. N. Vakil, ibid.

A review of certain environmental factors which influence the formation and structure of management.

6. "Some Problems of Industrial Management Reported by Technical Assistance Experts", ibid.

A review of problems relating to management organization, managerial policies and practices, maintenance and repair of equipment and marketing. (A more general study of problems of maintenance, repairs, replacement and obsolescence is contained in "Use of Industrial Equipment in Under-developed Countries", in Industrialization and Productivity Bulletin, No.4 (UN publications, Sales No.: 6C.II.B.2))

G. CAPITAL INTENSITY AND CHOICE OF TECHNOLOGY

1. "Capital Intensity in Industry in Under-developed Countries", in Industrialization and Productivity Bulletin, No. 1 (UN publications Sales No.: 58.II.B.2).

A review and assessment of recommendations made to Governments by technical assistance experts on general industrialization policies, selection of industries and degree of mechanization in individual industries. (Studies on capital intensity in a specific industry offering a wide range of technological alternatives - engineering construction - include: "Capital Intensity in Heavy Engineering Construction", ibid., and "Capital Intensity and Costs in Earth-moving Operations", Bulletin No. 3 (Sales No.: 60.II.B.1))

2. "Choice of Industrial Technology: The Case of Wood-working", by G. K. Boon, in Industrialization and Productivity Bulletin, No. 3 (UN publication, Sales No.: 6C.II.B.1).

Method of appraisal of alternative production processes at different levels of mechanization, including the use of multi-purpose versus specialized machines in the manufacture of wooden window frames and furniture.

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3. "Choice of Techniques", by S. Okita, in Industrialization and Productivity Bulletin, No. 4 (UN publications, Sales No.: 60.II.B.2).

A study of the appropriate combination of factors of production in relation to their endowment, in the light of the experience of Japan. (Studies of broader scope are published in Bulletin No. 1: "Choice of Technology in Industrial Planning", by J. Tinbergen, and in Bulletin No. 6 (Sales No.: 64.II.B.1): "Choice of Capital Intensity in Industrial Planning".)

4. "Adaptation of Processes, Equipment and Products", in Industrialization and Productivity Bulletin, No. 5 (UN publications, Sales No.: 63.II.B.1)

A general review of the problems of transfer and adaptation of industrial technology to the conditions prevailing in the developing countries, some of which are particularly relevant to the requirements of small-scale industries. (Some institutional aspects of the problem are discussed in "Establishment of Technological Research Institutes in Under-developed Countries", in Industrialization and Productivity Bulletin No. 2 (Sales No.: 59.II.B.1), which reviews general problems including those of providing services to small undertakings).

H. SIZE OF PLANT

- "Plant Size and Economies of Scale", in Industrialization and Productivity Bulletin, No. 8 (UN publications, Sales No.: 64.II.B.6).

A study of the relative importance of technical and organizational economies of scale in the cost structure, including a discussion of the benefits which may be derived from these economies by small-scale industries with the assistance of promotion institutions. (Studies of broader scope are published in Bulletin No.2 (Sales No.: 59.II.B.1): "Problems of Size of Plant in Industry in Under-developed Countries", and in Cement-Nitrogenous Fertilizers Based on Natural Gas, Studies in Economics of Industry, No.1 (UN publication, Sales No.: 63.II.B.3)

I. PROGRESS REPORTS AND WORK PROGRAMMES

1. The following documents were submitted by the Centre for Industrial Development to the Committee for Industrial Development at its successive sessions:

E/C.5/17 and Corr. 1 Problems of Small-scale Industries: Note by the Secretariat.

E/C.5/46 and Corr. 1 Development Programmes for Small-scale Industries: Note by the Secretariat.

E/C.5/89 Development of Small-scale Industries: Note by the Secretariat.

E/C.5/108 Activities of the Centre in the Promotion of Small-scale Industries: Note by the Secretariat

2. Information on the activities of UNIDO in the field of small-scale industries is contained in chapter IV document ID/B/3. Data on the work programme in this field are contained in document ID/B/4. These documents were presented by the Executive Director of UNIDO to the First Session of the Industrial Development Board in April 1967.





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