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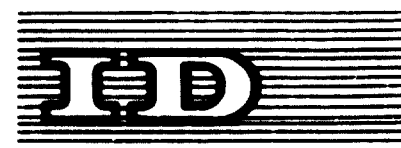
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REPORT ON THE ACTIVITIES  
AND PROGRAMME OF WORK OF UNIDO

	<u>Contents</u>	<u>Paragraph</u>	<u>Page</u>
	<u>Introduction</u>	<u>1-17</u>	<u>5-18</u>
I.	<u>Operational field activities</u>	<u>18-22</u>	<u>19-47</u>
	<u>Table 1</u> 1967 projects programmed under the UNDP/expanded programme of technical assistance	-	21-36
	<u>Table 2</u> Projects under the United Nations regular programme of technical assistance for 1967	-	37-44
	<u>Table 3</u> Projects under UNDP/Special Fund programme	-	45-47
II.	<u>Industrialization surveys and policies, including industrial financing</u>	<u>23-38</u>	<u>48-60</u>
	Industrial surveys	23	48
	Industrial policies, including financing	24-32	48-51
	The Industrialization and Productivity Bulletin	33-37	51-53
	Summary of projects for 1967-1968 (Tables 4 and 5)	-	54-60

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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.

	<u>Contents (continued)</u>	<u>Paragraph</u>	<u>Page</u>
III.	<u>Industrial programming and project formulation</u>	<u>38-52</u>	<u>61-90</u>
	Formulation, evaluation and implementation of projects	39-42	61-62
	Industrial programming data	43-46	62-63
	Industrial plans and programmes	47-51	63-65
	Summary of projects for 1967-1968 (Tables 6-8)	-	66-80
IV.	<u>Industrial location and regional development</u>	<u>53-54</u>	<u>81-82</u>
	Summary of projects for 1967-1968 (Table 9)	-	82
V.	<u>Development of Export-oriented Industries</u>	<u>55-64</u>	<u>83-90</u>
	Summary of projects for 1967-1968 (Table 10)	-	86-90
VI.	<u>Metallurgical and metalworking industries</u>	<u>65-67</u>	<u>91-97</u>
	Summary of projects for 1967-1968 (Tables 11 and 12) -		93-97
VII.	<u>Chemical industries</u>	<u>68-76</u>	<u>98-105</u>
	Petrochemical industries	69-71	98
	Fertilisers and pesticides	72	99
	Plastics, rubbers and synthetic fibres	73-75	99
	Basic chemicals and miscellaneous products	76	99
	Summary of projects for 1967-1968 (Tables 13-16)	-	100-105



	<u>Contents (continued)</u>	<u>Paragraph</u>	<u>Page</u>
VIII.	<u>Consumer industries</u>	<u>77-79</u>	<u>106-110</u>
	Textiles	77	106
	Food processing industries	78	106
	Building materials and construction	79	106-107
	Summary of projects for 1967-1968 (Tables 17-19)	-	108-110
IX.	<u>Industrial standardization and quality control</u>	<u>80-85</u>	<u>111-113</u>
	Standardization	80-82	111
	Quality control	83-85	111-112
	Summary of projects for 1967-1968 (Table 20)	-	113
X.	<u>Industrial training and management</u>	<u>86-101</u>	<u>114-123</u>
	Industrial training	86-92	114-117
	Industrial management	93-101	117-119
	Summary of projects for 1967-1968 (Table 21)	-	120-123
XI.	<u>Institutional aspects of industrial development</u>	<u>102-130</u>	<u>124-134</u>
	Industrial research	104-111	124-126
	Industrial consulting services	111-115	126
	Industrial property	116-118	127
	Industrial legislation	119	127
	Industrial co-operatives	120-121	128
	Dissemination of technological, business and economic information for industrial development	122-130	128-130
	Summary of projects for 1967-1968 (Table 22)	-	131-134
XII.	<u>Small-scale industry</u>	<u>131-140</u>	<u>135-143</u>
	Summary of projects for 1967-1968 (Table 23)	-	138-143

ANNEXES

	<u>Page</u>
<u>Annex I</u> UNIDO: Staff and budget resources related to specific sectors of activity	1
<u>Annex II</u> The publications programme of UNIDO for 1967	1-2
<u>Annex III</u> UNIDO: Calendar of seminars and <u>ad hoc</u> meetings, 1967	1-5

## Introduction

1. This report has been prepared in compliance with paragraph 42 of General Assembly resolution 2152 (XXI) which requested the Executive Director to submit to the Board at its first session "a report on the activities so far carried out by the United Nations system in the field of industrial development and proposals for a work programme for the Organization, by sectors and areas of activities".
2. The Second Consolidated Report on the Industrial Development Activities of the United Nations System of Organizations (ID/B/3) together with the first Consolidated Report published last year (E/C.5/125/Add.1) reflect all the reported activities carried out by the United Nations system in the field of industrial development. Since the Consolidated Report has been intended as an annual compilation, the two reports issued so far contain specifically the activities carried out over the last two years plus appropriate references to earlier activities. Thus, taken as a whole, they reflect the extent and scope of the contribution of the United Nations system of organizations to the industrialization of the developing countries.
3. The present document sets out the proposed programme of work of UNIDO for the current year, grouped by areas of activity under each of the major sectors listed as sub-items under item 6 of the provisional agenda. It also includes a list of the operational field activities in respect to the approved projects for 1967 under the UNDP/Expanded Programme of Technical Assistance, the Regular Programme of Technical Assistance and the UNDP/Special Fund.<sup>1/</sup> Many of the activities pursued

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<sup>1/</sup> In respect to the programme of Special Industrial Services see "Report on Programme of Special Industrial Services" (ID/B/7). Full reference to past operational activities will be found in the report on "Summary Data on Operational Activities of the Centre for Industrial Development (ID/B/3, Add.2).

in 1967 will require continuation and follow-up action in 1968, as indicated in the appropriate sections of the report. In addition the programme of work for 1968 will also include such other projects and activities as may be proposed and approved by the Board at its first session. In particular, the follow-up of the International Symposium on Industrial Development will, by necessity, constitute a major aspect of the programme of work of UNIDO in 1968 and may lay the groundwork for the development of a long-range programme of activities.

4. The nature of the activities to be undertaken by UNIDO will be largely conditioned by the purpose of the Organization as set out in Section II of General Assembly resolution 2152 (XXI) and the particular functions outlined therein. The functions of UNIDO are envisaged in terms of operational activities supported by action-oriented studies and programmes designed to meet specifically the requirements of the various fields of activity.

5. In form, the programme of work of UNIDO may be summarized as follows:

- (a) the provision of technical assistance at the request of governments of the developing countries, which will be financed and managed under the different programmes of cooperation;
- (b) the compilation, analyses and dissemination of information concerning the various aspects of the process of industrialization in the developing countries. Action along these lines may assume the form of reviews, surveys, studies or expert and training meetings and workshops. These activities are intended to support directly the assistance and advice rendered to governments as well as to provide a well-considered framework for action;
- (c) the establishment of a network of contacts and consultations with authorities and organizations, both private and public, active and responsible for industrial development both at the national and international levels. Among its purposes would be not only the creation of opportunities to facilitate exchange of views but also the development of approaches to co-operation on specific problems of industrialization and transfer of technology;

- (d) to coordinate and harmonize the activities of the United Nations system in the field of industrial development so as to ensure maximum effectiveness and best utilization of resources. This function entails close relations and joint studies with the agencies and organizations concerned. The clarification of responsibilities in respect to the particular areas of industrialization is one aspect of coordination; another aspect of distinct and positive importance is the development of programmes of joint action to deal with the multi-sided problems of industrialization.

It is obvious that action at these four levels is mutually complementary, and would have to be followed simultaneously within an integrated programme of work, under a frame of reference based on priority to activities of direct assistance.

6. A proper understanding of the problems of industrialization is, at any level, an essential prerequisite for the practical field work. Thus, the analysis and study of the various problems of industrialization lead not only to a more adequate picture of the whole range of governmental and non-governmental actions involved in stimulating industrial development, but have a direct impact on the search of solutions for specific problems. On the other hand, the analysis and review of particular problems may be of direct concern of individual field projects. It must be borne in mind, however, that the relationship between action at a general level and its impact on specific problems is not always equally apparent. For example, the work on programming data designed to provide readily available sets of technological and production benchmarks for application to specific projects within the context of an overall industrialization programme is of clearly discernible application to field projects. The formulation of adequate industrial planning techniques may seem less directly relevant. However, there can be little doubt that sound over-all programming techniques are as important for the ultimate success of both the individual industrial project as well as the over-all industrialization programme.

7. The development of work in a particular field follows normally a certain sequence. At the early stages the predominating activity may be mostly in the form of research and surveys designed to gather pertinent data, analyse the main problems encountered in that particular field and the methods used in various countries to deal with these problems. The results may be a series of practical alternatives that become tools readily available to the authorities in the developing countries and to experts and other international staff rendering assistance to them. Subsequently, the preliminary conclusions may be tested either through formal meetings such as seminars, symposia etc., or through informal consultations with those directly concerned with the particular problems in the developed and developing countries. Thus, when the research findings are put to practical application in the field they contribute not only those findings based on an up-to-date examination of the latest technical know-how but also the tested experience of those who have been most directly concerned with the problems in question. Furthermore, field experience in turn poses certain problems which may call for analysis in depth of specific aspects so as to ensure more successful subsequent field applications. In building up the programme of work of UNIDO, a number of specific activities are first identified in such a manner as to reflect the "process of industrialization" in its various aspects. For each specific activity a number of basic problems, drawn up from actual experience and reflecting alternative approaches to actual fieldwork, would have to be selected for closer study.

8. The programme outlined is largely a continuation of activities which have been initiated earlier under the guidance of the Committee for Industrial Development. The need for this approach is based partly on the continuity of the programme as a whole and the fact that individual projects which have been initiated earlier have to be brought to their completion with existing resources. Furthermore, and as mentioned before, a large part of the efforts of the secretariat in 1967 will be devoted to the preparatory work

for the International Symposium on Industrial Development. At this early stage of the existence of UNIDO it seemed advisable to limit the proposals to an appropriate programme for the immediate future, based on the natural continuity and expansion of activities which have already been initiated. Thus, rather than attempting to launch from the outset a final blueprint, it is felt that the formulation of a longer term programme should evolve more gradually as the result of well considered action by the Board, taking into account such factors as the establishment and functioning of the Organization in its headquarters, the recommendations and discussions of the International Symposium on Industrial Development and the basic policy principles that the Board itself may establish as a result of its deliberations and considered action towards the establishment of a basic modus operandi for UNIDO.

9. Throughout the last few years and under the guidance of the Committee for Industrial Development, the Economic and Social Council and the General Assembly, a pattern for the activities in the field of industrial development has emerged. This pattern can readily be seen in the agenda of the International Symposium as well as in the functional classification of the Consolidated Reports on the Activities of the United Nations System of Organizations in the Field of Industrial Development. The same pattern is also to be found in the present report and in the organization and functions of the different units of UNIDO. The pattern appears to be a three-dimensional

approach. First, industry is considered as a number of branches or sectors. Each branch is characterized by a number of products and the body of technology and specialization used in its operation. Second, for industrialization as a whole, a number of specific aspects drawn essentially from the relation of industry to other areas of economic and social activities are determined. They include problems of financing, employment, programming, location, planning, trade etc. These specific aspects are determined for each country on the basis of its socio-political system and in relation to the balance and inter-action of public and private authorities in the decision-making process for industrialization. Third, industrial development requires the establishment and functioning of a number of institutions and organizations which guide and service industry without, however, direct responsibilities in production activities.

10. These three approaches have to be combined together to represent adequately industrial activity as a whole. The programme of work of UNIDO will have essentially this multi-dimensional approach. The present activities within the available resources have not yet covered all the essential elements in this multi-dimensional structure. Some very important gaps in the programme of work would have to be quickly filled so as to create the necessary continuity and effectiveness of action. Among the priority areas to which increasing attention would have to be devoted in 1967 and the following years are the activities by individual branches of industry; activities in the



field of industrial property, industrial information and transfer of technology; promotion of industrial financing, including the bridging of the existing gap between investment and preinvestment; development of export oriented industries within the framework of the joint efforts of UNIDO, UNCTAD and the regional economic commissions. Furthermore, there is a need to develop a more comprehensive programme of publications, which will be of particular importance for the dissemination, at technical levels, of the studies completed and conclusions of the International Symposium on Industrial Development, and the establishment of a network of public information, through periodicals, bulletins and other media designed for use by professional and industrial sectors and organizations. To achieve the proper impact it will also be necessary to develop fully direct contacts with the developing countries and the regional economic commissions as well as a set of relationships with the advanced countries, involving eventually adequate liaison machinery. Within the United Nations family of organizations, there is a need to develop machinery and procedures for co-ordination of the activities of the United Nations system based on the Consolidated Report and direct contact with the organizations concerned. The follow-up activities of the International Symposium on Industrial Development which will be undertaken mostly in 1968 should serve as a framework to strengthen these approaches in the way of contributing towards the building of a long-range programme for UNIDO.

11. It has frequently been recognized that the complex nature of industrial development makes it necessary to deal with a number of issues simultaneously from various points of view such as programme and policy aspects, technological problems, training and manpower needs, market considerations, institutional requirements, etc. In each particular instance a high degree of co-ordination among diverse activities is frequently required. The need for co-ordinated treatment of the problems of industrialization has been highlighted at the regional symposia on industrial development. In examining the full range of problems of industrial development in the developing countries of the various regions, the symposia have shown not only the variety and complexity of the underlying problems but also an awareness for the need of a many-sided approach to industrialization. The common work undertaken for the regional symposia on industrial development has strengthened the practical co-operation with the regional economic commissions and helped to establish much needed contacts between the international staff and the industrial authorities in the developing countries. In no small measure, these close working relationships have contributed to larger efforts in the field of industry under the programmes of technical co-operation in the various regions.

12. The preparatory work for the International Symposium for Industrial Development - which is expected to focus on the problems and prospects of industrial development as a prelude to further action - represents an example of broad co-operation with the regional economic

commissions and the specialized agencies. At the recent meeting of the Executive Secretaries of the Regional Economic Commissions, it was felt that co-ordination between UNIDO and the regional economic commissions should be developed in the context of action-oriented projects and programmes in the field of industrialization. It was agreed that one such practical measure would be to combine activities and resources in a United Nations programme for the promotion of exports from the developing countries, a field in which joint action by UNIDO and UNCTAD has been developed.<sup>2/</sup> The programme was conceived as an open co-operative effort in which it was hoped other organizations of the United Nations family may join. Practical steps were devised for the immediate co-ordination by all concerned of activities being currently pursued or envisaged in this field and for ensuring a proper response to the increased demands of the developing countries in this field. (For details see E/4301.) As to inter-secretariat co-operation, the meeting felt that the Executive Director of UNIDO should be able to make flexible bilateral arrangements for inter-secretariat co-operation with the executive secretaries concerned in order to carry out effectively the regional industrial development programmes.

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<sup>2/</sup> See "Report on Joint UNCTAD/UNIDO meeting on assistance to Exports of Manufactures and Semi-manufactures from Developing Countries" (ID/B/11).

13. The meeting of executive secretaries also noted that UNIDO had the central co-ordinating responsibility for the activities of the United Nations system in the field of industrial development. In this connexion a close relationship between UNIDO, the regional economic commissions and appropriate specialized agencies was envisaged on the basis of specific industrial development projects in order to achieve the maximum impact on the aid-receiving countries concerned. It was suggested that it would be most helpful for UNIDO and the regional economic commissions to have the opportunity to participate in the formulation and implementation of the specialized agencies' programmes having relevance to industrial development. The formal participation of UNIDO in the preliminary work on the proposed food production resources programme, which originated in a decision of the FAO Council at its 47th session in October 1966, is a recent example of such an approach.

14. In respect to over-all co-ordination, the annual Consolidated Report on Industrial Development Activities of the United Nations System of Organizations (ID/B/3) represents an effort to classify the far-flung activities of the various organizations within a uniform functional framework which reflects the full spectrum of industrialization. The analysis of the activities reflected in the consolidated report will require close consultations with the agencies and organizations concerned. UNIDO will also have to participate actively in the joint meetings on

problems of co-ordination. In addition, the establishment of continuing contacts with the organizations concerned for this purpose should lead to improved reporting and presentation as well as the harmonization at an early stage of the future programmes of the United Nations system in the field of industrial development.

15. Simultaneously, close contacts with the Member States are required. As regards the developing countries, previous recommendations indicated the advisability of seconding staff members as industrial advisers to offices of the resident representatives. Such a procedure would help to develop the operational activities of UNIDO as required by the developing countries and in harmony with the other operational activities both multilateral and bilateral in the developing countries. Consultation had been initiated with the United Nations Development Programme to support such a programme, with due consideration to the fact that industrial advisers working with the resident representatives should be drawn essentially from the staff of UNIDO and should have the varied experience and intimate knowledge of the operational procedures so as to create effective links between UNIDO and the developing countries. As regards the liaison with the advanced countries, the preparations for the International Symposium have created an opportunity for a number of senior officials of UNIDO to visit about twenty countries in Europe and North America. Though the visits were specifically related to the

preparations for the Symposium, they were helpful in initiating such contacts on a regular basis and the establishment of appropriate channels of consultation with the public and private authorities of the industrialized countries. Such contacts would be essential to improve the recruitment process particularly for the SIS programme; they would also lead to better co-ordination of bilateral and multi-lateral programmes and would help in establishing co-operation activities such as training and research with the interested academic, research, and industrial institutions of the industrialized world. It may be noted, in this connexion, that in many countries there is no single focal point for contacts with UNIDO. Questions related to the activities of UNIDO find corresponding interest in a number of departments of industry, commerce, labour, planning, foreign trade, co-operation and technology. It is possible that adequate institutional arrangements through which contacts could be channelled would contribute to closer co-operation with UNIDO. Temporary arrangements for liaison in connexion with the Symposium are already functioning in many countries and they may prove useful in any transition to a more permanent liaison machinery with UNIDO. In this respect it may be noted that the establishment of UNIDO Headquarters in Vienna, in accordance with the decision of the General Assembly, will enable the Organization to establish closer contacts with the European countries. At the same time there will be a need to assure the continuity and strengthening of UNIDO's relationships to countries and international institutions in the Western Hemisphere.

16. The programme of work as presented in this document has been divided into a number of particular areas. It should however be clear from the preceding discussion that all of them are interrelated elements within an over-all programme of action. In this connexion it is worth noting that the professional staff of UNIDO, even though attached to a particular field of technical work is not narrowly limited to research and analytical activities but is primarily engaged in supporting operational activities of direct assistance to the developing countries. To facilitate consideration by the Board of the programme outlined in the Report, certain additional information of a global nature has been added in the following Annexes:

- Annex I UNIDO: Staff and budget resources related to specific sectors of activity
- Annex II The publications programme of UNIDO for 1967
- Annex III UNIDO: Calendar of seminars and ad hoc meetings, 1967

17. The effort to summarize the programme of work within the framework of a single document offers the obvious advantage of ease of handling and reference for the purposes of its review. But it also has some disadvantages, notably that of restricting its scope to the limitations of the physical requirements of presentation. Thus, the outline that follows offers, in some respects, only a partial picture of the full scope and flexibility of the Organization's activities in its efforts to cover the combined requirements extending over a fairly

large number of diverse areas of work. In an attempt to meet this difficulty references have been made, where appropriate, to the documentation submitted to the Board under other items of its provisional agenda.



Chapter I OPERATIONAL FIELD ACTIVITIES

18. At present the technical co-operation programme of UNIDO includes operational field activities financed from the following sources:

- (a) The UNDP expanded programme of technical assistance
- (b) The United Nations regular programme of technical assistance
- (c) The UNDP Special Fund
- (d) The Programme of Special Industrial Services
- (e) Projects funded from extra-budgetary resources, mostly funds-in-trust provided by the recipient Governments.

19. The nature of the projects carried out under each of these programmes depends largely on the extent to which a particular project meets the requirements of the programme in question. Therefore, in order to ensure that implementation of each project is taken up within the most appropriate framework for effective action, requests of assistance from Governments have to be considered selectively, not only from the substantive point of view but also in terms of the particular programme under which their financing can be assured. Thus, the existence of a number of alternative programmes for the financing and execution of industrial development projects - which on superficial grounds may appear to lend some confusion to the total picture - offers in effect distinct advantages in terms of flexibility and alternative approaches to suit best the nature of the needs of each project as reflected in the request of the recipient Government.

20. In accordance with the terms of General Assembly Resolution 2152 (XXI), UNIDO is in the process of taking over direct operational responsibility for the field operations involving industrial development projects which have until now been carried out by the Department of Economic and Social Affairs (UN/BTAO and UN/OSFO). Thus, responsibility for the substantive support and the handling of the programming and implementation of technical

co-operation projects will be merged within the secretariat of UNIDO, thereby enhancing the opportunities for the effective use of the alternative programmes mentioned above and ensuring their co-ordinated development as flexible instruments to meet the diverse range of Government requests in the industrial field.

21. A full account of past activities and data on the over-all development of the United Nations operational activities in the field of industry are reflected mainly in the Report on Operational Activities of the Centre for Industrial Development (ID/B/3/Add.2) In as much as the field programmes of technical co-operation are based on requests from Governments - which are frequently amenable to review in the various stages of implementation - it is not possible to anticipate fully the range of projects that will have to be covered in any future period of time. In particular, it is impossible to project the future contents of those programmes, such as the Special Industrial Services and activities financed from extra-budgetary or contingency funds, which are not subject to advance programming. However, the list of projects in the field of industrial development included in the 1967 UNDP expanded programme of technical assistance, which is programmed in advance for every biennium, and in the 1967 United Nations regular programme of technical assistance, which is programmed in advance for every year, are available and are reproduced in the summary (tables 1 and 2 respectively) at the end of this chapter. A summary listing of approved UNDP/Special Fund industrial development projects for which UNIDO will be executing agency is given in Table 3.<sup>3/</sup>

22. In respect to the programme of Special Industrial Services, a full report has been circulated for consideration under item 7 of the provisional agenda (ID/B/7).

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<sup>3/</sup> A description of each project is presented in document ID/B/3/Add.3 "The Second Consolidated Report of the Industrial Development Activities of the United Nations System of Organizations".

Table 1

1967 projects programmed under the UNDP/expanded programme of technical assistance

Project	Experts		Fellowships	
	Category I Expert Months	Category II Expert Months	Category I Fellow Months	Category II Fellow Months
<b>AFRICA</b>				
Algeria	1	6		
Industrial planning				
Cameroon		1	12	
Industrial economist				
Congo (Brazz)				4
Oil refining specialist				24
Dahomey	1	12		
Industrial engineer				
Ethiopia		1	24	
Industrial economist				
Small-scale & cottage industries		1	24	
Ghana	1	12		
Director, industrial production				
Director, marketing development	1	12		
Director, industrial management planning	1	12		
Director, financial planning & control	1	12		

2/ Data taken from documents based on the recommendations contained in document DP/TA/L.5 and DP/TA/L.6 and Corr. 1, approved by the Governing Council of the United Nations Development Programme, held in November 1966.

Table 1 (cont'd.)

	<u>Project</u>	<u>Experts</u>		<u>Fellowships</u>	
		<u>Category I</u>	<u>Category II</u>	<u>Category I</u>	<u>Category II</u>
		<u>Expert Months</u>	<u>Expert Months</u>	<u>Fellow Months</u>	<u>Fellow Months</u>
<u>AFRICA (cont'd.)</u>					
Guinea	Industrial chemistry Small-scale industry	1	1	12	12
Liberia	Industrial economist Industrial mining Industrial engineering Industrial economics	1	1	12	12 12 12
Libya	Senior research chemist	1		12	
Madagascar	Industrial economist	1		12	
Malawi	Industrial adviser	1		12	
Mali	Industrial economist Industrial engineer Industrial adviser	1	1	12	8 6
Mauritania	Industrial engineer	1		8	
Mauritius	Industrial use of baggage Standards laboratory		1		6 12
Morocco	Chemical engineer Engineer metal processing Textile industry Industrial planning		1		15 15
Niger	Industrial economist		1		12
Nigeria	Director, Federal Institute of Industrial Research	1		12	

Table 1 (cont'd.)

	Project	Experts		Fellowships	
		Category I	Category II	Category I	Category II
		Expert Months	Expert Months	Fellow Months	Fellow Months
<b>AFRICA (cont'd.)</b>					
<b>Nigeria (cont'd.)</b>	Chemical engineer	1	12		
	Industrial economist	1	6		
	Industrial engineer	1	6		
	Industrial economist	1	6		
	Industrial economist	1	6		
	Industrial engineer	1	6		
	Industrial adviser	1	6		
					2
<b>Senegal</b>	Leather industry	1	12		
	Small-scale industry	1	12		
<b>Senegal</b>	Industrial economist	1	12		
	Industrial development				
<b>Somalia</b>	Industrial management			1	12
	Industrial accountant			1	12
<b>Sudan</b>	Administration & quality control			1	6
<b>Tanzania, U. Rep.</b>	Industrial economics			1	24
<b>Tunisia</b>	Textile chemistry			2	12
	Textile industry			1	6
<b>Uganda</b>	Senior industrial officer	1	12		
<b>Zambia</b>	Industrial adviser	1	12		

Table 1 (cont'd.)

	Project	Experts		Fellowships		
		Category I Expert Months	Category II Expert Months	Category I Fellow Months	Category II Fellow Months	
<b>LATIN AMERICA</b> Argentina	Weights and measures	1	4			
	Chemical separatory techniques	1	6			
	Leather technology	1	4			
	Desalinisation of water	1	4			
	Food technology	1	4			
	Laboratory installation	1	3			
	Industrial economist	1	9			
	Expert promotion of manufactured goods	5	30			
	Applied thermodynamics			1	6	
	Treatment of metals			1	6	
Barbados	Measurement of radioactivity			1	6	
	Mechanics of earth construction			1	6	
	Industrial economy			1	6	
	Project location			1	6	
	Industrial standards	1	12			
	Bolivia	Market research (petro-chemical products)	1	12		
		Leather industrialization				
		Industrial engineering			1	24
		Chemical industry			1	12
		Paper industry				
Brazil	Chemical industrial planning	1	6			
	Chemical industrial planning			1	6	
	Industrial estates			1	6	
Chile	Boiler plates	1	6			
	Machine tools	1	6			
	Industrial estates	1	5			
	Structural steel	1	5			
	Leather technology	1	4			

Table 1 (cont'd.)

	Project	Experts		Fellowships	
		Category I Expert Months	Category II Expert Months	Category I Fellow Months	Category II Fellow Months
<b>LATIN AMERICA (cont'd.)</b>					
Chile (cont'd.)	Industrial development Corrosion prevention Aluminum industry Wooden structures	1	4	1	6
				1	6
Colombia	Industrial programming	1	6		
Dominican Republic	Industrial adviser Small-scale industry	1	12		
		1	6		
Ecuador	Industrial programming	1	12	1	2
Jamaica	Furniture production			1	12
Honduras	Industrial adviser Industrial programming	1	12	1	18
Haiti	Industrial development				1
					6
Mexico	Automobile industry Industrial planning Productivity Industrial programming Building industry			1	9
				1	9
				1	9
Netherlands Antilles	Small-scale industry			1	12
Nicaragua	Industrial economist Standards and norms	1	9	1	12
Paraguay	General industrial adviser	1	12		

Table 1 (cont'd.)

	<u>Projects</u>	<u>Experts</u>		<u>Fellowships</u>	
		<u>Category I</u> <u>Expert Months</u>	<u>Category II</u> <u>Expert Months</u>	<u>Category I</u> <u>Fellow Months</u>	<u>Category II</u> <u>Fellow Months</u>
<u>LATIN AMERICA (cont'd.)</u>					
Paraguay (cont'd.)	Industrial development (fields to be specified)		3		24
	Industrial development				
Peru	Fertilizers	1			48
	Automobile industry	1			
	Petrochemicals	1			
Trinidad and Tobago	Chemical engineering				
	Chemical engineer		1		18
Uruguay	Industrial development				
Venezuela	Metal industry	1		1	10
	Industrial estates				
	Metal industry		1		12
			1		6
<u>ASIA AND FAR EAST</u>					
Afghanistan	Metric system	1			
	Industrial engineers	2			12 16
Burma	Commercial accounting	1			
	Mechanical engineer	1			12
	Testing and plant design	1			4
	Glass manufacture				
	Ceramics				
	Boiler manufacturing & inspection			1	6
	Study of tropical products			1	6
	Pulp and paper techniques			1	6



Table 1 (cont'd.)

Project

ASIA AND P.A.R. EAST (cont'd.)

Burma (cont'd.) Organic chemistry  
(petrochemical industry)  
Mechanical engineering design &  
construction  
Chemical engineering  
(petrol & allied industries)

Cambodia Industrial planning

Ceylon

Ceramics  
Industrial evaluation  
Senior industrial adviser  
Fertiliser production  
Vegetable oil extraction  
Food technologist  
Textile industry (team of experts)  
Chemical engineer

China,

Republic of

Aluminum fabrication  
Financial adviser for small ind.  
Group in-plant training  
Development of laminated wood ind.  
Group in-plant training  
Tea industry  
Cigarette manufacturing

Fiji

Industrial economist

India

Machine tool manufacture  
Tool and die maker  
Tool designing  
Steel foundry  
Electrical measuring instruments

Experts  
Category I  
Expert months

Fellowships  
Category I  
Fellow months

Category II  
Fellow months

2

48

2

48

2

48

1

12

1

12

1

6

1

6

1

12

2

6

1

12

3

12

1

12

1

9

1

6

1

6

2

12

1

6

1

6

1

6

1

6

1

7

1

7

1

4

1

12

1

12

Table 1 (cont'd.)

	<u>Project</u>	<u>Experts</u>		<u>Fellowships</u>		
		<u>Category I</u> <u>Expert Months</u>	<u>Category II</u> <u>Expert Months</u>	<u>Category I</u> <u>Fellow Months</u>	<u>Category II</u> <u>Fellow Months</u>	
<b>India (cont'd.)</b>	Mechanical engineering (tool room)	1	12			
	Organic pigments and dyes	1	12			
	Industry investment survey	5	36			
	Polymers			1	12	
	Polymers & synthetic tanning agents			1	12	
	<b>Iran</b>	Industrial adviser	1	12		
		Industrial economist	1	12		
		Industrial engineer	1	2		
		Mechanical engineer	1	12		
		Pharmaceuticals	1	12		
Food processing		1	6			
Dyestuffs		1	3			
Electrical & electronic standards				1	6	
Industrial research institute				1	6	
Industrial financing						
<b>Korea</b>	Textile industries				12	
	Machine tools			1	6	
	Chemical industries			1	6	
	Electronic industries			1	6	
	Group in-plant training			1	6	
	Food industries			4	24	
	Dye industries			1	6	
	Foundry and metal casting	1	6			
	Electrical equipment standards	1	10			
	Industrial abrasives	1	6			
<b>Steel casting</b>	Electrical equipment standards			1	6	
	Group in-plant training			1	12	
	Food canning industry			2	12	
	Industrial abrasives					
	Rubber products processing					

Table 1 (cont'd.)

	<u>Project</u>	<u>Experts</u>		<u>Fellowships</u>	
		<u>Category I</u> <u>Expert Months</u>	<u>Category II</u> <u>Expert Months</u>	<u>Category I</u> <u>Fellow Months</u>	<u>Category II</u> <u>Fellow Months</u>
<b>ASIA AND FAR EAST (cont'd.)</b>					
<b>Korea (cont'd.)</b>	Food canning techniques Rubber products Petrochemical products				1 6 1 12 2 24
<b>Laos</b>	Small & medium-scale industries	1 12	1 6		
<b>Malaysia</b>	Planning and evaluation Management & advisory services Industrial design Leather processing Industrial economist Financing of commercial industrial enterprises	1 12 1 12 1 12 1 12 1 12 1 12			
<b>Manila</b>	Leather tanning and dyeing Manufacture of spare parts for equipment in light industry Design & manufacture of packaging for consumer goods Tanning technology Technology of manufacture of spare parts Heat processing & preserving Applied industrial research Small-scale & cottage industries	1 6 1 6 1 3 1 3 1 3 2 24 1 12 1 12		1 3 1 6 1 6	
<b>Nepal</b>	Senior industrial economist (Chief of mission) Industrial adviser Industrial legislation Industrial specialists Industrial planning	1 9 1 3 1 4 3 6			1 12 1 12

Table 1 (cont'd.)

	<u>Project</u>	<u>Experts</u>		<u>Fellowships</u>		
		<u>Category I</u> <u>Expert months</u>	<u>Category II</u> <u>Expert months</u>	<u>Category I</u> <u>Fellow months</u>	<u>Category II</u> <u>Fellow months</u>	
<b>Pakistan</b>	Financing & investment analysis (Central)	1	12			
	Loan utilization (Central)	1	12		24	
	Loan appraisal - chemical & allied industries (Central)	1	12			
	Industrial engineer (Central)	1	12			
	Group in-plant training (West)			5	30	
	Electronics technique (Central)				16	
	Metrology (Central)				1	
	Textile technology (Central)				1	
	Photomicrography (Central)				1	
	Financial & industrial analysis				1	
<b>Philippines</b>	Steel industry	1	12			
	Industrial research			1	12	
	Timber industry				6	
<b>Singapore</b>	Taxation treaties	1	12			
	Industrial planning	1	12			
	Deputy Director - economic development board					
	Foundry	1	12			
	Light engineering	1	12			
	Industrial economist	1	12			
	Building hardware	1	2			
	Industrial research	1	2			
	Printing industry					
				1	12	
<b>Thailand</b>	Industrial standardization	1	12			
	Industrial economists	2	24			
	Industrial development					
	Mechanical engineering (metal industry)			2	18	
					1	12

Table 1 (cont'd.)

Project	Experts		Fellowships		
	Category I Expert Months	Category II Expert Months	Category I Fellow Months	Category II Fellow Months	
<b>ASIA AND FAR EAST (cont'd.)</b>					
Thailand (cont'd.)	Industrial microbiology	1	12	1	12
	Standardization and testing	2	7	1	12
	Mechanical engineering			2	18
	Ceramics development				
Viet-Nam	Ceramics	1	12		
Western Samoa	Furniture			1	6
	Furniture manufacture	1	6		
<b>EUROPE AND MIDDLE EAST</b>					
Bulgaria	Resin production	1			4
	Automation of copper factory	1			12
	Paper industry	1			6
	Furniture industry	1			6
	Hydro energy	1			6
	Construction material	2			11
	Non-ferrous metals				6
	Metallurgy				6
	Digital measuring				10
	Paper industry				6
	Hydraulics				6
	Compressors				10
	Electronic industries				6
	Power plants				
	Dust freeing		1		
	Metallurgy				
	Powder metallurgy				
Synthetic varnishes					
Thickening pastes					

Table 1 (cont'd.)

	<u>Project</u>	<u>Experts</u>		<u>Fellowships</u>	
		<u>Category I</u> <u>Expert Months</u>	<u>Category II</u> <u>Expert Months</u>	<u>Category I</u> <u>Fellow Months</u>	<u>Category II</u> <u>Fellow Months</u>
<b>Bulgaria</b> (cont'd.)	Pre-staining system			1	6
	Electronic industry			5	30
	Shipbuilding			1	6
	Boiler aggregates			1	6
	Dust freeing			1	6
	Cellulose wadding			1	6
	Afforestation mechanism			1	6
	Synthetic fibers			1	6
<b>Hungary</b>	Gas apparatus				
	Aluminum industry			1	6
	Chemical industry			1	6
	Electronic industry			2	10
	Automobile manufacturing			4	22
	Manufacturing			1	6
	Industrial development			4	15
<b>Iraq</b>	Stores manager	1	12		
	Industrial planning	1	12		
	Petrochemical industries	1	6		
<b>Israel</b>	Pharmaceutical research	1	12		
	Industrial design training	1	4		
	Research & development policies	3	3		
	Evaluation of fertilizers			1	12
	Industrial design				
<b>Jordan</b>	Industrial adviser & team leader	1	8		
	Chemical engineer (ceramics)			1	9
	Mechanical engineer (light engineering industries)	1		1	19
	Chemical engineer (petrochemical and plastics)	1		1	3
				2	12

Table 1 (cont'd.)

	<u>Project</u>	<u>Experts</u>		<u>Fellowships</u>	
		<u>Category I</u>	<u>Category II</u>	<u>Category I</u>	<u>Category II</u>
		<u>Expert Months</u>	<u>Expert Months</u>	<u>Fellow Months</u>	<u>Fellow Months</u>
<u>EUROPE AND MIDDLE EAST (cont'd.)</u>					
<u>Jordan</u> (cont'd.)	Food processing Industrial adviser (team leader)	1	3		
		1	12		
<u>Malta</u>	Ship-breaking In-plant group training Small-scale industry	1	3		2 12 1 5
<u>Poland</u>	Chemical industry Electrical engineer & electronics Automation Machine tools Iron and steel industry Industrial development Pulp and paper industry Timber processing			16 46 8 23 4 12 9 27 4 12 5 12	
<u>Romania</u>	Petroleum industry Chemical industry Plastics Paper industry Steel industry Aluminum industry Manufacturing Rare metals Industrial construction Ship construction			1 4 2 6 1 4 1 4 3 9 2 8 1 6 1 4 1 3 1 6	2 6 3 9
<u>Saudi Arabia</u>	Industrial economist Industrial engineer	1	7		
<u>Syrian Arab Republic</u>	Technology of calorific treatment of metals	1	6		

Table 1 (cont'd)

	<u>Project</u>	<u>Experts</u>		<u>Fellowships</u>		
		<u>Category I</u> <u>Expert months</u>	<u>Category II</u> <u>Expert months</u>	<u>Category I</u> <u>Fellow months</u>	<u>Category II</u> <u>Fellow months</u>	
<u>TURKEY AND MIDDLE EAST (cont'd)</u>	Industrial engineer (Chief project officer)	1	12			
	Industrial economist	1	12			
	Chemical & petrochemical engineering	1	12			
	Gear manufacturing	1	12			
	Forging	1	12			
	Industrial engineer (management)	1	12			
	Project engineer			1	12	
	Industrial engineer			1	12	
	Prevention of corrosion			1	3	
	Aluminum industry			1	6	
	Machine tool manufacture			2	12	
	Fertilizer industry			1	6	
	<u>Yugoslavia</u>	Cellulose chemistry	1	12		
		Paper technology	1	6		
Unbleached & bleached pulp technology		1	6			
Motor vehicle testing		1	2			
Chemical industry				1	3	
Glass wool production				1	3	
In-plant training (iron & steel)				2	12	
Optical engineering				1	2	
Flame burning mechanisms				1	2	
Electronics				1	2	
Diesel engines			1	2		
Construction under high temperatures			1	2		



Table 1 (cont'd.)

	Experts		Fellowships	
	Category I Expert months	Category II Expert months	Category I Fellow months	Category II Fellow months
<u>LPTA Regional Projects</u>				
<b>AFRICA:</b>				
<b>AMERICAS:</b>				
Industrial programming, part of the OAS/IDB/ECLA Central American programming mission	1	12	-	-
Industrial development, part of the Central American integration programme	1	12	-	-
<b>ASIA AND PAC EAST:</b>				
Seminar on development of Building Material Industries	2	3 <sup>a/</sup>	-	-
Seminar on oils and fats	2	6 <sup>a/</sup>	-	-
Workshop on promotion of industrial research	-	-	20	6 <sup>b/</sup>
<b>MIDDLE EAST:</b>				
<b>EUROPE:</b>				
<u>EFTA Interregional Projects</u>				
Second Conference on Petrochemical Industries	-	-	30	20 <sup>b/</sup>

<sup>a/</sup> Consultants

<sup>b/</sup> Participants

**Table 1 (cont'd.)**

EPA Interregional Projects (cont'd.)	Experts		Fellowships	
	Category I Expert months	Category II Expert months	Category I Fellow months	Category II Fellow months
Workshop for Managers of industrial research institutes	-	-	25	13 <sup>b/</sup>
Seminar on technical services and facilities for small-scale industries	-	-	30	15 <sup>b/</sup>
Seminar on industrial information	-	-	30	15 <sup>b/</sup>
Symposium on industrial location & regional development	-	-	-	-
Second iron and steel symposium	-	-	-	-
Seminar on the manufacture & use of basic chemicals	-	-	-	-
In-plant group training programme in iron & steel making	-	-	-	-
			35	18 <sup>b/</sup>
			50	32 <sup>b/</sup>
			35	25 <sup>b/</sup>
			100	600 <sup>b/</sup>

<sup>b/</sup> Participants

Table 2

Projects under the Regular Programme of Technical Assistance<sup>a/</sup>

<u>Project</u>	<u>Experts</u>		<u>Fellowships</u>	
	<u>Category I</u>	<u>Category II</u>	<u>Category I</u>	<u>Category II</u>
	<u>Expert Months</u>	<u>Expert Months</u>	<u>Fellow Months</u>	<u>Fellow Months</u>
<u>AFRICA</u>				
Algeria	1	12		
Industrial planning				
Cameroon	1	12		
Industrial engineer				
Congo (Brazz.)	1	6		
Small industries adviser				
Congo (Kinsh.)	1	6		
Small industries development				
Dahomey	1	10		
Industrial economist				
Gabon	1	9		
Small industries				
Kenya	1	10		
Industrial development				
Liberia			1	12
Industrial engineer				

a/ Data taken from document DP/EP/L/Add. 2, approved by the General Assembly, 21st session

Table 2 (cont'd)

	<u>Project</u>	<u>Experts</u>		<u>Fellowships</u>	
		<u>Category I</u> <u>Expert</u> <u>Months</u>	<u>Category II</u> <u>Expert</u> <u>Months</u>	<u>Category I</u> <u>Fellow</u> <u>Months</u>	<u>Category II</u> <u>Fellow</u> <u>Months</u>
<u>AFRICA (cont'd)</u>					
<u>Madagascar</u>	Small industries economist (trade promotion)	1	12		
	Industrial estates			1	6
<u>Malawi</u>	Industrial economist (OPEX)	1	12		
<u>Morocco</u>	Industrial estates	1	3		
	Small industries	1	6		
	Organization industrial information service	1	7		
<u>Niger</u>	Industrial accounting	1	12		
<u>Nigeria</u>	Industrial engineer (Western region)			1	12
	Sugar technologist (Eastern region)			1	9
	Small-scale industries (Federal)			1	9
	Industrial research institute Industrial development institutes			2	12
<u>Senegal</u>	Industrial engineer			2	12
<u>Sierra Leone</u>	Printing and engineering				
<u>Somalia</u>	Industrial adviser	1	12		
<u>Sudan</u>	Quality control	1	9		
					2
					24

Table 2 (cont'd)

<u>Project</u>	<u>Experts</u>		<u>Fellowships</u>	
	<u>Category I</u> <u>Expert</u> <u>Months</u>	<u>Category II</u> <u>Expert</u> <u>Months</u>	<u>Category I</u> <u>Fellow</u> <u>Months</u>	<u>Category II</u> <u>Fellow</u> <u>Months</u>
<u>AFRICA (cont'd)</u>				
Togo		1	12	
Tunisia		1	12	
United Republic of Tanzania		1	9	
Zambia				1
				1
				6
				6
<u>AFRICA REGIONAL</u>				
Mechanical forest industries	1		12	
Small-scale and medium-scale ind.	1		12	
Iron and steel engineer. and textiles	1		12	
Iron and steel engineering, textiles, medium-scale industries in general	1		12	
Chemicals (including pharmaceuticals and fertilizers)	1		12	

Table 2 (cont'd)

	<u>Project</u>	<u>Experts</u>		<u>Fellowships</u>	
		<u>Category I</u> <u>Expert</u> <u>Months</u>	<u>Category II</u> <u>Expert</u> <u>Months</u>	<u>Category I</u> <u>Fellow</u> <u>Months</u>	<u>Category II</u> <u>Fellow</u> <u>Months</u>
<b><u>THE AMERICAS</u></b>					
Barbados	Productivity promotion	1	3		
Bolivia	Production Director, Sugar Mill Operations (OFEX)	1	12		
Chile	Electrical equipment	1	6		
Colombia	Consultants	4	12		
	Industrial development and productivity (group training)			1	6
Cuba	Industrial development				18
	Pulp and paper			3	
Dominican Rep.	Industrial adviser	1	6		
Guyana	Industrial development planning				6
	Industrial estates			1	6
Jamaica	Chemical engineer, (ammonium, chloride and sulphate)				6
	Industrial estates			1	6
Mexico	Industrial research				6
	Machinery for food industries	1	6		
Paraguay	Chief Production, Valle-mi Cement Plant	1	12		
	Cement industry			2	6

Table 2 (cont'd)

Project	Experts		Fellowships	
	Category I Expert Months	Category II Expert Months	Category I Fellow Months	Category II Fellow Months
<b><u>THE AMERICAS (cont'd)</u></b>				
Trinidad and Tobago	1	12		
Uruguay	2	12		
Venezuela		1	6	
<b><u>THE AMERICAS REGIONAL</u></b>				
Chemical industries	1	12		
Metallurgy industries	1	12		
Pulp and paper	1	12		
Technological research	1	12		
Industrial development (Mexico office)	1	12		
<b><u>ASIA AND THE FAR EAST</u></b>				
Ceylon	1	6		
Industrial programming	1	10		
Industrial project evaluation				
Demand projections for industrial goods functions			1	12
<b><u>Other</u></b>				
Synthetic rubber manufacturing			1	6
Manufacturing of styrene monomer acrylonitrile			1	6
Industrial administration			1	6
Ammonia and urea technology			1	12
Cellulose products research			1	12

**Table 2 (cont'd)**

	<u>Experts</u>		<u>Fellowships</u>	
	<u>Category I</u>	<u>Category II</u>	<u>Category I</u>	<u>Category II</u>
	<u>Expert</u>	<u>Months</u>	<u>Fellow</u>	<u>Months</u>
<b><u>ASIA AND THE FAR EAST (cont'd)</u></b>				
<b>Fiji</b>	1	6		
Industrial economist				
<b>India</b>		1	6	
Tool room				
<b>Nepal</b>				
Industrial development			1	12
<b>Republic of Korea</b>				
Industrial management			1	6
<b>Singapore</b>				
Electrical appliance industry	1	6		
Industrial standards			1	12
Export inspection and specifications			1	12
Scientific instruments manufacturing			1	12
Metal indust. development centre			1	6
Industrial design centre			1	6
<b><u>ASIA AND THE FAR EAST REGIONAL</u></b>				
General industrial	1	12		
Chemical industries	1	12		
Metal industries	1	12		
Industrial areas development	1	12		
Industrial economist	1	12		
Industrial standardization	1	6		
Petrochemicals			1	12



Table 2 (cont'd)

	Experts		Fellowships	
	Category I	Category II	Category I	Category II
	Expert Months	Expert Months	Fellow Months	Fellow Months
<b>EUROPE</b>				
<b>Albania</b>				
Refractory tiles production			1	6
Television			1	6
Records cutting			1	6
<b>Bulgaria</b>				
Automation in petrochemicals production				
Textiles (in-plant/ <sup>Group</sup> training)			2	12
Electrical (in-plant/ <sup>Group</sup> training)			2	12
Machine tools (in-plant/ <sup>Group</sup> training)			1	6
			1	6
<b>Cyprus</b>				
Industrial consultant	1	12		
Small-scale industries				
			1	6
<b>Hungary</b>				
Industrial development			2	12
<b>Malta</b>				
Accounting and company law (OPEX)	1	8		
Industrial chemist (standards) (OPEX)			1	6
<b>Poland</b>				
Chemical industry			6	24
<b>Romania</b>				
Laminating and heat treatment of stainless steel			1	3
Production and maintenance of automatic brakes			1	3
Corrosion prevention (in-plant group training)			1	6
Machine tools (in-plant group training)			1	6
Laminating and heat treatment of stainless steel				
Prevention of corrosion (in-plant group training)			1	3
			2	12

**Table 2 (cont'd)**

	Experts		Fellowships	
	Category I Expert Months	Category II Expert Months	Category I Fellow Months	Category II Fellow Months
<u>EUROPE (cont'd)</u>				
Romania				
	Machine tools (in-plant group training)		2	12
Spain				
	Small-scale industries Industrial development		2	6
Turkey				
	Industrial engineering Engineering economist		4	48
			4	48
<u>MIDDLE EAST</u>				
Iraq				
	Possibility studies	1	9	
Syria				
	Industrial project evaluation Nitrogen fertilizer manufacture	1	12	
			1	12
<u>MIDDLE EAST REGIONAL</u>				
	Industrial development	1	8	
<u>INTERREGIONAL</u>				
	Inter-regional advisers in industry	7	48	
	Seminar on the organization and administration of industrial services in developing countries			
			30	15 <sup>b/</sup>

b/ Participants

Table 3

Projects under UNDP/Special Fund programme

These projects are described in Part II of the "Summary Data on the Operational Activities" included in the Consolidated Report. (DI/B/3).

(a) Projects approved prior to January 1967

BOLIVIA  
Technological Research Institute (cancelled in 1965)

COLOMBIA  
Institute for Technological Research

ISRAEL  
Industrial Research Centre

ISRAEL  
Silicate Institute

PARAGUAY  
Technical Standards National Institute

SUDAN  
Industrial Research Institute

TELEMANTE  
Technological Research Institute

Small-Scale Industries and Industrial Estates

IRAN  
Establishment of an Industrial Estate

UGANDA  
Small Industries Development Programme and Establishment of an Industrial Estate

**Table 3 (cont'd)**

**Development of Specific Industries**

**ALGERIA**

**Industrial and Marketing Surveys on Petroleum Derivatives and Natural Gas**

**PAKISTAN**

**Pre-Investment Studies for the Promotion of the Fertilizer and Petrochemical Industries**

**RWANDA**

**Pilot Plant for Industrialization and Pyrethrum Production, Mukingo**

**Industrial Development Centres**

**SAUDI ARABIA**

**Industrial Studies and Development Centre, Riyadh**

**TANZANIA, United Republic of**

**Industrial Studies and Development Centre**

**TUNISIA**

**National Centre for Industrial Studies**

**Regional Projects**

**ICAITI (PHASE I)**

**Central American Research Institute for Industry**

**ICAITI (PHASE II)**

**Central American Research Institute for Industry**

**MAGHREB**

**Algeria, Libya, Morocco, Tunisia  
Centre of Industrial Studies for the Maghreb**

Table 3 (cont'd)

(b) Projects approved by the Governing Council in January 1967

**IRAN**

Research Centre for Industrial and Trade Development

**JORDAN**

Centre for Industrial Development

**UNITED ARAB REPUBLIC**

Engineering and Industrial Design Development Centre

Chapter II INDUSTRIALIZATION SURVEYS AND POLICIES,  
INCLUDING INDUSTRIAL FINANCING

Industrial surveys

23. It has been recognized that an integral part of the work of the Organization should consist of periodic surveys of developments which are significant for the industrialization programmes of the developing countries and of reviews of the over-all progress achieved in the field. Such surveys should include studies for developing countries as a whole as well as for individual developing countries. Relevant experiences of developed countries should be analysed for their transferability. Further, while concentrating on developments within the industrial sector, they should not ignore the general economic environment in which industry seeks to expand. The usefulness of such surveys will be enhanced by detailed attention to statistical measurement of industrial progress and consideration of public and private perspective for evaluation of past and planned progress and will serve as an aid to policy discussion of basic issues of industrial development in United Nations bodies, including the Industrial Development Board. They will also serve as a briefing background for technical assistance experts and others working in this field. Work in this field started in 1966.

Industrial policies, including financing

24. Since certain aspects of industrial policy are covered under chapters III, IV and V below, this section relates particularly to financing and credit policies; these are subdivided, for the sake of convenience, into domestic financing, external financing and financing at the project level.

25. With regard to domestic financing, the research and technical assistance activities of UNIDO are focused on the promotion of policy

measures and domestic institutions designed to channel savings into industrial development.

26. Among the indirect policy measures designed to attract savings into industrial investment, fiscal and financial incentives are of particular importance for the private sector. Considerable research work has already been done by UNIDO on the various aspects of these incentives, the effectiveness of which is still uncertain, and further work is needed in this area. More important, technical assistance is made available to interested Governments in the design and operation of industrial fiscal and financial incentives and in the evaluation of existing incentive schemes.

27. Among the policies that can influence the pattern or the rate of industrial development is the promotion of manufacturing enterprises in the public sector. Governments in developing countries, even those with substantial public sectors, often lack experience to cope with the financial problems of public enterprises. An exchange of relevant information and experience, therefore, would be of considerable help to them. This is particularly true of the financing, as well as of the price and profit policies which have a direct bearing on the financing of public enterprises.

28. The promotion of domestic financial institutions supplying funds to industry in developing countries is a major concern of UNIDO. The bulk of the activities in this field will eventually be of an operational nature. Among these institutions, industrial development finance institutions are of particular importance for developing countries, as they provide finance as well as promotional services and technical assistance to the industrial sector. On request UNIDO will assist these institutions at the time of their establishment, and subsequently if and when they need strengthening, by providing expert advice, the nature of which would vary depending on the functions assigned to the particular development finance institution. UNIDO also offers assis-

tance to these institutions in their efforts to improve their operations. In this context, mention should be made of UNIDO's project to help in promoting the mutual co-operation of financing institutions on a regional or interregional basis for the purpose of facilitating the flow of information and experience and the promotion of joint projects such as research, training programmes and joint ventures.

29. When it comes to external financing, developing countries generally lack adequate facilities, know-how and contacts to inform potential investors about their promising industrial investment opportunities. Information and promotion are essential for the purpose of attracting prospective investors. A substantial part of UNIDO's activities in the field of industrial financing will be directed towards helping to remedy this deficiency. UNIDO will in the first instance provide information on the proper channels through which developing countries could reach prospective investors in capital-exporting countries. In the second place, it will make technical assistance available to Governments which may wish to establish investment promotion centres in capital-exporting countries and help them in running such centres efficiently. In the third place, on behalf of those countries which cannot afford the cost of running investment centres, UNIDO, through its Special Industrial Services (SIS), would help bring their investment opportunities to the attention of interested prospective private investors.

30. The emphasis on investment promotion services as a means to facilitate the flow of foreign savings into industry is complemented by UNIDO's interest in incentive measures to attract foreign private capital. The work on fiscal and financial incentives referred to earlier is also relevant here. Equally important is UNIDO's investigation of prevalent forms of foreign private investment; in this context, joint ventures between domestic and foreign partners deserve special attention.



31. The need for adequate financial planning at the project level is not sufficiently appreciated. Industrial projects which may be sound from a technical and economic point of view may fail because of inadequate financial planning. Frequently, new industrial enterprises are launched without adequate provision for working capital requirements so that financing difficulties arise soon after the project reaches the operational stage. Similarly, an industrial enterprise may find itself unable to meet its loan repayment obligations because its capital requirements were financed by an excessive number of short or medium-term loans and an insufficient share of equity. Inadequate financial planning may be due to insufficient awareness that there are certain financial relationships which cannot be ignored. Even where such awareness exists, the lack of requisite data may prevent adequate financial planning and management.

32. These observations suggest the need for collecting data on the financial planning of industrial projects with a view to their dissemination among developing countries. This is a long-term project which has begun only recently. In the more immediate future, training workshops on financial planning could be held either on a national or a regional basis for the benefit of industrial planners, promoters and managers of industrial projects and industrial financial analysts.

#### The Industrialization and Productivity Bulletin

33. The Industrialization and Productivity Bulletin was first published in 1958 in response to a request from the Economic and Social Council that a programme of work be undertaken by the United Nations Secretariat in the field of industrialization and productivity. So far, ten issues have appeared. Studies and articles bear directly on the specific problems of industrialization in the under developed countries and are made available to persons and organizations engaged in the formulation and execution of industrialization plans and projects

in these countries.

34. Bulletin No. 10,<sup>4/</sup> the most recent issue, released at the end of 1966, is primarily concerned with industrial development programming for the chemical and petroleum industries, with data presentations regarding the pre-selection of promising lines of chemical development and investments in the petroleum industries, with data presentations regarding the pre-selection of promising lines of chemical development and investments in the petroleum refinery industry. The problems of maintenance and repair of machine tools in developing countries and solutions to some of the problems under review are also discussed. The issue includes two short articles - one summarizing the report of an interregional conference on the development of petrochemical industries in the developing countries, held in Teheran in November 1964, the other reviewing the discussions and conclusions of the interregional symposium on industrial project evaluation, held in Prague in October 1965.

35. Bulletin No. 11, which is being processed for publication in the first half of this year, is devoted to reviewing the achievements of the United Nations Regional Symposia held in Manila (6-20 December 1965), Cairo (27 January-10 February 1966) and Santiago (14-25 March 1966), and the meeting of representatives of the Arab countries held in Kuwait (1-10 March 1966). In addition to a summary of the developments at these meetings, the issue contains several selected papers prepared especially for the conferences.

36. The subjects covered by these articles include the experience of the Central American Integration Programme as applied to East

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<sup>4/</sup> United Nations publications, Sales No. : 66.II.B.8

Africa; the metal-transforming industry of Venezuela; industrial financing policies in five African countries; problems of industrial planning and plan implementation in the ECAFE region, and the financing of manufacturing in selected countries of the Middle East.

37. Bulletin No. 12, to be prepared by the end of 1967, will contain several research studies implemented during the year.

Table 4 INDUSTRIAL SURVEYS: Summary of projects for 1967-1968

<u>Title</u>	<u>Description</u>
1. <u>Industrial Development Survey No. 1</u>	<p>The first issue will be prepared for the International Symposium on Development. (E/C.5/110, paragraphs 50 - 42. ID/B/3, page 34).</p> <p>The Survey will indicate the basic features of industrial progress in developing countries in recent years and the role of such progress in over-all economic development. The growth of selected major sectors of manufacturing will be considered. The role of selected demand and supply influences on industrial development will be examined. After a review of internal demand influence, the importance of international trade developments will be considered, both as regards export promotion and import substitution. Thereafter, the extent to which industrial development in developing countries is shaped by the exploitation of natural resources will be studied. This will be followed by a review of manpower and skill availabilities and of major problems in the area of technology. The requirements and the sources of finances for recent industrial development will be indicated and a summary review will be made of prospects for further industrial progress in developing countries.</p>

Table 4 INDUSTRIAL SURVEYS (cont'd)

<u>Title</u>	<u>Description</u>
2. <u>Industrial Development Survey No. 2</u>	<p>It is anticipated that in 1967 work will start on the second survey. The form will be similar to that of most United Nations surveys in that it will contain two parts: (a) current trends and (b) special study (or studies).</p> <p>As an integral part of the preparation of the current trends section, a number of specific studies will be prepared. Such sub-projects will consist of studies of problems from among the following areas: reviews in details of actual major bottlenecks in more rapid industrialization, both by selected countries and by selected projects; consideration of the opportunities for greater industrial processing of domestic primary products; surveys of the degree of utilization of installed capacities; examination of supply problems hindering more substantial expansion of exports of manufactures; assessment of solutions to selected employment; skills and technology problems arising from the industrialization effort included under this item there might be an inter-industry study of labour productivity in selected countries; studies of the industrial development plans of developing countries; survey of international actions designed to facilitate the growth of manufacturing in developing countries (included under this item would be an assessment of the achievements of international technical assistance in the area of industrialization); selective follow-up action on economic research matters raised at the Board session and the symposium. It is intended that, where the topics indicated above are similar to those mentioned in other parts of the work programme, and where the nature of the research is similar, there will be a full effort to utilize such work. The topic for the special study will be determined in the light of the recommendations of the Board. At present, the topic which appears under consideration relates to "financing requirements and sources for industrial development". A study of this nature would contribute to the understanding of developing countries as well as to many aspects of the operational work of UNIDO. The primary purpose of such a study would be to establish the long-term attitude of UNIDO in the important area of financing for industrial development.</p>

Table 4. INDUSTRIAL SURVEYS (cont'd)

<u>Title</u>	<u>Description</u>
3. <u>Country papers on industrial development</u>	<p>The preparation of selected country surveys on industrial development will be initiated. These surveys will contain basic country data; a review of the structure and trends of the general economy; and a detailed examination of the development of industry. The latter will consider the growth of industry and relevant factors and policies as, for example, planning, financial and fiscal, trade and payments policies with special reference to export promotion, small-scale industries, availability of resources including finance manpower, energy, the transfer of technology etc. The special problems of selected industries will be reviewed. The immediate outlook for industrial development in the country will be appraised.</p> <p>A primary purpose of these reports is to be of assistance to Governments of developing countries in the uniform presentation and assessment of developments in the industrial sector of their economy. The reports will also facilitate the work of all services and divisions of UNIDO. The reports will be prepared with the collaboration of established units of the United Nations and its specialized agencies; of individual Governments whose industrial development is being reviewed; and of Governments and private institutes engaged in uniform reporting on industrial developments in individual developing countries.</p>

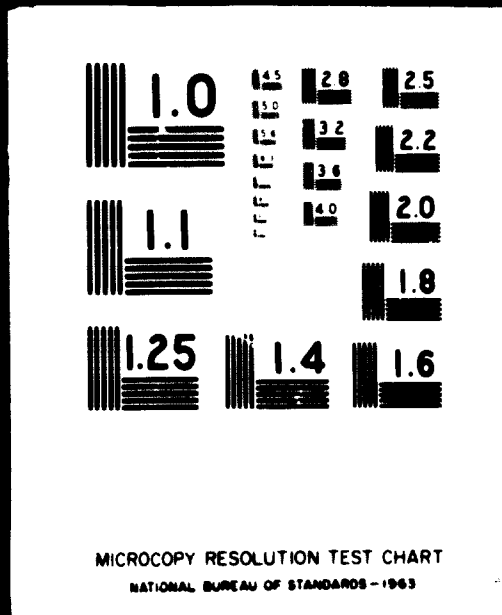


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We regret that some of the pages in the microfiche copy of this report may not be up to the proper legibility standards, even though the best possible copy was used for preparing the master fiche.

**Table 5 INDUSTRIAL POLICIES INCLUDING FINANCING: Summary of Projects for 1967-1968**

<u>Title</u>	<u>Description</u>
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1. Co-operation among industrial development finance institutions in developing countries

A bulletin, the first of a series, has just been completed, containing information on the products and the capacities of manufacturing projects promoted or financed by a number of industrial development finance institutions. The bulletin, which is based on replies received from these institutions, is intended as a reference for institutions seeking information on the planning, implementation, financing and other aspects of the manufacturing projects listed there. This bulletin and the subsequent issues will be supplied to interested development finance institutions.

In 1967, it is proposed to organize, together with the African Development Bank, a scheme of co-operation among industrial development institutions in Africa for promoting various activities which these institutions might want to undertake jointly. In addition, tentative arrangements have been made for holding a workshop on financial planning in Abidjan (Ivory Coast) intended for the staff of various industrial development banks in African countries.

Table 5 INDUSTRIAL POLICIES INCLUDING FINANCING (cont'd)

<u>Title</u>	<u>Description</u>
2. <u>Preparations for work-shops on financial planning of industrial projects</u>	<p>Arrangements have been made for two workshops to be held in Africa in the latter part of 1967. One workshop, to be organized in co-operation with the African Development Bank, has already been referred to. The other is to take place in the United Republic of Tanzania. These workshops are intended primarily for economic planners, promoters and managers of industrial projects, and industrial financial analysts. They will cover (a) financial analysis; (b) financial planning of the industrial sector; (c) financial planning of new industrial enterprises; (d) sources of industrial financing, and (e) financial reports. Preparations are being made for approximately six workshops in 1968. It is hoped that the workshops will be financed from operational funds.</p>
3. <u>Investment promotion services for industrial development</u>	<p>The project has been initiated in 1967. The purpose is to determine the extent and effectiveness of existing investment promotion agencies within the developing countries in their effort to attract foreign investors for their industrial investment opportunities. It is intended that recommendations be made as to the type of services needed.</p> <p>It is proposed to examine the activities and assess the adequacy of existing agencies; to suggest measures for improving their efficiency and to suggest new agencies if needed; and to specify what the United Nations can do in this field. In examining the activities of these agencies, consideration will be given to operational activities as well as to their function of making documents available for distribution among business interests. If it is found desirable, a standard industrial investment manual and a catalogue of sources, channels and procedures for reaching business interests will be prepared. For appraisal of existing agencies and for suggestions for improving their operations, an expert working group will be convened about June/July.</p>

Arrangements have been made with the Centre for Industrial Management Studies of the Delft Polytechnic Institute to undertake jointly that part of the project which concerns the United States. This joint project is to be financed by outside foundation contributions. It is hoped that institutions in other capital-exporting countries will also contribute.

Table 5 INDUSTRIAL POLICIES INCLUDING FINANCING (cont'd.)

Title	Description
4. <u>Fiscal incentives for industrial development</u>	<p>The project is a continuing one. A comparative study on fiscal incentives for industrial development has been completed in the first quarter of 1967. An expert group meeting will be held in May to review and comment on the comparative study, to discuss specific problems put before them, and to make appropriate recommendations with a view to improving the design, operation and administration of fiscal incentives in developing countries. Furthermore, the experts will suggest a programme in this field which will be operationally oriented. The objective is to impress upon the Governments of developing countries which provide fiscal incentives the need for improving the design of the incentive schemes and, equally, the need for assessing the costs and benefits of the schemes. Technical assistance in this regard will be available to interested countries. Co-operation with the International Monetary Fund in this field already exists and will be increased.</p>
5. <u>Preparations for a seminar on financial aspects of manufacturing enterprises in the public sector</u>	<p>The project is to be initiated in April 1967. The seminar planned for 1966 will discuss, among other things, the financing of industrial public enterprises, their price and profit policies, and their efficiency standards. While the seminar is intended for developing countries, and will be focused on their problems and their experience in dealing with them, the experience of developed countries, particularly centrally planned economies, will also be examined. It is proposed to undertake or commission, a number of country studies as well as comparative study in 1967.</p>

Table 5 Industrial Policy - Including Financing (cont'd)

Title

Description

6. Foreign-domestic joint ventures in manufacturing

The study will be initiated in June 1967. The study will seek to analyze actual cases of industrial joint ventures, associating foreign enterprises - typically, private corporations - with domestic enterprises, whether private, public or mixed. It will investigate the various fields of industry in which joint ventures have been launched and the partnership arrangements for each type of industry. Among these arrangements, particular consideration will be given to those specifying the contributions of the foreign partner to the joint venture, including financial contribution, as well as other contributions - patents, technical and managerial know-how, training of local personnel etc. The contribution of the domestic partner will also be examined. Arrangements for profit-sharing and regulations governing the repatriation of the foreign partner's principal and profits will be analyzed. Finally, marketing arrangements will be examined according to whether the output of a particular joint venture is directed to the domestic market of the developing country, or whether it is partly destined for export. Significant differences, if any, between joint ventures catering to both domestic and export markets and those catering only to domestic markets will be brought to light. The study will be prepared in co-operation with the Columbia University School of Law.

Chapter III INDUSTRIAL PROGRAMMING AND PROJECT FORMULATION

38. The programme of work in this field is based upon requests for technical assistance and has been shaped by views expressed and requests made by participants from developing countries in various meetings, by comments in technical assistance reports, and by the results of specific research carried out with the aim of pinpointing impediments or propelling factors in industrialization. The particular needs of developing countries have thus resulted in specific directions for the work programme of UNIDO in the field of industrial planning and programming, which fall under the following four broad headings, as discussed in this chapter:

- (a) Formulation, evaluation and implementation of industrial projects;
- (b) Establishment of an extensive catalogue of programming data (industrial programming data);
- (c) Industrial plans and programmes; and
- (d) Regional industrial planning. <sup>5/</sup>

Formulation, evaluation and implementation of industrial projects <sup>6/</sup>

39. The gap between planned targets and achievements arises from: (a) defects in formulation of projects; (b) inadequate and incomplete scrutiny of projects selected for execution; (c) difficulties and shortcomings in project implementation; and (d) insufficient follow-up of approved projects.

40. In implementing this programme, UNIDO has already initiated a sustained research programme and is preparing a manual and organizing training workshops on Industrial Project Formulation and Evaluation as the most effective ways of improving existing practices and procedures in this field. In 1966 three workshops were held on Industrial Project

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<sup>5/</sup> For details, see Chapter IV: "Industrial Location and regional Development".

<sup>6/</sup> For a more detailed discussion, on Industrial Project Evaluation, see document E/C.5/100.

Formulation and Evaluation in Ceylon, Mexico and India. <sup>7/</sup> Three workshops are planned for 1967 in Iran, Africa and Latin America, the latter two being still under consideration. Eight research projects are being undertaken with a view to helping with the training workshops and the preparation of the "Manual".

41. In the field of project implementation and follow-up, recently taken up in response to the suggestions of the Prague Symposium on Industrial Project Evaluation <sup>8/</sup>, UNIDO will make surveys of problems impeding the implementation of industrial projects in developing countries; develop operational procedures for programming and control of implementation of industrial projects; and establish effective implementation and follow-up systems so that more reliable progress evaluation and hence corrective measures can be taken to attain industrial targets.

42. In undertaking this programme of work in the implementation of industrial projects, UNIDO has initiated research and the preparation of a "Manual on Procedures for Programming and Control of Implementation of Industrial Projects in Developing Countries". An expert group meeting will be held in 1967 to review the research findings.

Industrial programming data <sup>9/</sup>

43. This is a continuing project, initiated in the middle of 1965. The data will cover the pre-selection of industries, preparation of feasibility studies, evaluation of performance gaps, inter-industry resource balances etc. in order to provide fuller reference data for industrial planning and programming.

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<sup>7/</sup> See Second Consolidated Report ID/B/3).

<sup>8/</sup> See report St/TAC/SER.C/82

<sup>9/</sup> A detailed account of the earlier stage of this project is given in E/C.5/106 (1966) and Consolidated Report on Industrial Development Activities (1967), (ID/B/3 Chapter III.B).

44. The long-range objective is to provide a "data-bank" by taking stock of and appraising and organizing information on experience in various countries in the form of catalogue data. Specific reference will be made to structural-functional profiles of industrial production as observed in actually existing manufacturing establishments or enterprises; details of inter-industry relations as envisaged in the operational context of industrial programming; and detailed aspects of other "industry-level" information (including statistics of various origins) to be reconciled with programming data from the plant-level.

45. In conjunction with these tasks of compilation, the project involves research for the purpose of clarifying the practical nature and sources of raw material required for a truly operational application of various programming techniques. This will also help to promote and expedite technical assistance activities entailing ad hoc industrial enquiries, data processing, staff training and other operations necessary to fill informational gaps in industrial programming.

46. As some of the specific sub-projects, currently limited in scale, reach completion, it will be necessary to reintegrate them into a broader and longer-term programme through which new channels of co-operation and co-ordination will be available within the United Nations family to meet the growing need arising from the operational tasks facing UNIDO.

#### Industrial plans and programmes

47. The need has been expressed at recent international meetings <sup>10/</sup> and has also been pinpointed by United Nations technical assistance experts working as industrial planners and programmers, industrial

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<sup>10/</sup> See United Nations documents: Committee for Industrial Development. Report on the Sixth Session, Economic and Social Council, Official Records: Forty-first Session, Supplement No. 6 E/4203, E/C.5/150, and recommendations in the Report of the Inter-regional Symposium on Industrial Project Evaluation, ST/T.O/SER.C/82.



advisers, industrial economists etc., for research and assistance at different levels on the problems of industrial development in developing countries in the following areas: the formulation of the industrial development strategy best suited to accomplish the targets of the over-all economic plan; the problems of programming for industrial branches or sectors; the programming of specific industries; problems of partial programming; including specific aspects such as diagnosis of the existing manufacturing sector; programmes for the improvement of capacity utilization; expansion into new industries; productivity and skills improvement; intensified vertical integration of productive structure etc.

48. The long-range work objectives are as follows: A general strategy of industrial development will be formulated taking into account the problems of countries at different stages of economic development, with different sizes of domestic markets and differences in resource endowments. Industrial planning and programming techniques for the preparation of consistent, feasible and efficient industrial plans and programmes will be prepared. Sectoral programmes, to bridge the gap between the over-all plan and the development of a bank of feasible industrial projects will be drawn up. Partial programmes will be drawn up from a diagnosis of the existing manufacturing sector. These programmes will improve the capacity utilization, assist in the diversification into new industries and promote productivity and skills improvement and intensified vertical integration of productive structure.

49. In the field of industrial planning and programming, UNIDO provides substantive servicing for industrial development and research centres and technical assistance experts, including the evaluation of governmental requests and the preparation of plans of operations for such projects.

50. Four staff members were on missions in 1966, working on the development and implementation of technical assistance activities. One staff member served as director of the workshops on industrial project evaluation in Ceylon, Mexico and India.

51. The results of research in the field of industrial planning and programming were published in 1966 in the following publications:

"Economic Integration and Industrial Specialization among the Member Countries of the Council for Mutual Economic Assistance" (United Nations Publications: Sales No. 66.II.B.4);

"Pre-investment Data for the Aluminium Industry" (Sales No. 66.II.B.10);

"Report of the Interregional Symposium on Industrial Project Evaluation" (United Nations Publications: Sales No. 66.II.B.11); and in

Two articles in the Bulletin on Industrialization and Productivity No. 10 (United Nations Publications: Sales No. 66.II.B.8) on the programming of the petroleum refining and chemical industries.

52. A number of additional publications in the "Industrial Planning and Programming Series" are under preparation; four are included in the 1967 publications programme. A publication on "Studies on Evaluation of Industrial Projects" is planned for 1967.

Table 6 PROJECT FORMULATION, EVALUATION AND IMPLEMENTATION; Summary of Projects for 1967-1968

<u>Title</u>	<u>Description</u>
<p>1. <u>Manual on Industrial Project Formulation and Evaluation</u></p> <p>Part I: For formulators and evaluators at the Project Level</p> <p>Part II: For central planning authority, with supporting studies</p> <p>i) Textbook on industrial project formulation and evaluation</p> <p>ii) Basic concepts in industrial project formulation and evaluation</p> <p>iii) Introduction to mathematics used in industrial project formulation and evaluation</p> <p>iv) Portfolio of case studies illustrating the application of social benefit-cost analysis</p>	<p>The Interregional Symposium on Industrial Project Evaluation<sup>a/</sup> recommended the preparation of the Manual on Industrial Project Formulation and Evaluation and supporting studies which could be used in formulation and evaluation of projects in developing countries. The basic approach is on the use of social benefit-cost analysis, that is, the national economic profitability analysis in the formulation and evaluation of industrial projects. The Manual is divided into two parts: Part I for formulators and evaluators at the projects level (to be completed in 1967); and Part II for use by the central planning or policy-making authority (to be completed by mid-1968). The application of the social benefit-cost analysis requires that values of some of the parameters be provided at the national level.<sup>b/</sup> The techniques of working out these parameters will be dealt with in Part II of the Manual.</p> <p>The Manual will deal with the practical steps to be taken in formulating and evaluating the industrial projects, while the Textbook on Industrial Project Formulation and Evaluation will explain the basic principles of social benefit-cost analysis and the rationale for adding this analysis to purely commercial profitability analysis in formulating and evaluating industrial projects. Since a great majority of the formulators and evaluators of industrial projects are not economists, it is necessary to explain to them the basic economic concepts used in social benefit-cost and commercial profitability analysis. It has also been found that a number of administrators, accountants, and economists involved.</p>

<sup>a/</sup> See document ST/TAO/Ser.C/82

<sup>b/</sup> See discussion paper: "Industrial Project Formulation and Evaluation within the framework of Industrial Planning and Programming - The Role of Policy Makers" to be submitted to the International Symposium on Industrialization.

Table 6 PROJECT FORMULATION, EVALUATION AND IMPLEMENTATION (continued)

<u>Title</u>	<u>Description</u>
1. Manual on Industrial Project Formulation and Evaluation (continued)	<p>In project formulation and evaluation do not have an adequate mathematical background to employ techniques used in project formulation and evaluation. It is therefore, necessary to prepare a study on this subject. In order to enhance the value of the above studies, a portfolio of case studies illustrating the application of the social benefit-cost analysis to various types of industrial projects will be prepared. It is hoped that these materials will assist in the understanding and application of the techniques of social benefit-cost analysis and commercial profitability in the formulation and evaluation of industrial projects.</p> <p>These studies will draw heavily upon the experience gained in training workshops <u>o</u>/ already held and in those scheduled for the near future. The following research projects, to be completed in 1967, are being undertaken with a view to helping in the preparation of the Manual and other studies.</p> <p>a) <u>Comparative evaluation of the recoupment or payback period, internal rate of return and present value methods for intertemporal criteria:</u> It has been found that "intertemporal criteria" presents one of the difficult problems in project analysis. Three available techniques of intertemporal evaluation will, therefore, be studied with a view to determining their relative merits, drawbacks and suitability for specific types of projects and for specific developing countries.</p> <p>b) <u>The role of value judgments in the calculus of national economic profitability and the relationship between these judgments and the possibilities of fulfilling different national objectives:</u> Value judgments are implicitly expressed in the selection of various projects.</p>

o/ See "Report on Training Workshops on Industrial Project Formulation and Evaluation" (Mexico, Ceylon and India (ID/B/3, page 94)).

Table 6 PROJECT FORMULATION, EVALUATION AND IMPLEMENTATION (continued)

<u>Title</u>	<u>Description</u>
1. Manual on Industrial Project Formulation and Evaluation (continued)	<p>It is necessary to find out how these value judgments can fulfill different national objectives.</p> <p>c) <u>Treatment of uncertainty in the evaluation of industrial projects and possible solutions:</u> There are inherent uncertainties in every project. It is necessary to bring out these uncertainties explicitly in project evaluation.</p> <p>d) <u>Case studies designed to test suitability of alternative techniques of using accounting prices in developing countries:</u> The market prices fail to reflect the relative scarcity of resources in developing countries. This requires the use of accounting prices in the evaluation of projects. There are a number of techniques of varying degrees of complexity, for calculating accounting prices.</p> <p>It is, therefore, necessary to prepare case studies to test the suitability of alternative techniques of using accounting prices in developing countries.</p> <p>e) <u>The use of international prices for inputs and outputs and other methods for evaluation of export industry projects with a view to integrating them into international specialization;</u> It is necessary to develop specific techniques applicable to the evaluation of export industry projects.</p> <p>f) <u>The role of policy makers in industrial formulation and evaluation:</u> There is hardly any material to assist policy makers in fulfilling their role in project formulation and evaluation.</p>

Table 6 PROJECT FORMULATION, EVALUATION AND IMPLEMENTATION (cont'd)

Title	Description
1. <u>Manual on Industrial Project Formulation and Evaluation (cont'd)</u>	<p>g) <u>The techniques of deriving the social rate of discount: The present value of future benefits and costs under social benefit-cost analysis or national economic profitability analysis are calculated by the social rate of discount, reflecting the communities choice of present consumption over future consumption.</u></p> <p>h) <u>Techniques of determining the relative weights of different national objectives: The social benefit-cost analysis is based on working out the national economic profitability of a project represented by the weighted sum of the net benefits accruing to different national objectives embodied in the national plan or policies.</u></p> <p>i) <u>The techniques of estimating the rate of social return on investment: The social rate of return represents the rate of total return on a given investment accruing to all economic entities such as project authority, government, and other entities in the economy.</u></p>
2. <u>Training Workshops on Industrial Project Formulation, and d/ Evaluation</u>	<p>The aim of training workshops is to train technicians and policy makers of developing countries in methods of quantitative assessment of commercial and national economic profitability in formulating industrial projects and evaluating their impact on industrial development, and in methods of balancing and reconciling the different policy objectives. Two types of workshops are organized under this programme, one for technicians at the project level and another for policy makers at the national level.</p>

d/ See E/C/5.110 para. 56 and Note.

**Table 6 PROJECT FORMULATION, EVALUATION AND IMPLEMENTATION (cont'd)**

<u>Title</u>	<u>Description</u>
2. <u>Training workshops on Industrial Project Formulation and Evaluation (cont'd)</u> d/	<p>Teachers specialized in this field will give lectures, lead discussion groups and direct study sessions on the basis of teaching material prepared by consultants and by UNIDO for a period of three to six weeks. A project submitted by the Government will be analysed in depth by the participants, in order to demonstrate the relevancy of the techniques being taught to the economic environment of the host country. It is expected that three training workshops will be held - one in Iran, one in Africa and one in Latin America.</p>
3. <u>Preparation of a "Manual on Procedures for Programming and Control of Industrial Projects in Developing Countries"</u>	<p>Among the impediments to project implementation, the need for procedures for programming and control of industrial projects is of paramount importance. To meet this need, UNIDO has initiated a sustained programme of research with a view to preparing a "Manual on Procedures for Programming and Control of Implementation of Industrial Projects in Developing Countries". The Manual will provide developing countries, field experts, planning and implementation bodies etc. with detailed explanations of the application of effective and operational procedures in this field, adapted to the conditions in the developing countries. These procedures are being developed mainly for solving implementation problems such as:</p> <ul style="list-style-type: none"> <li>- Identification of the component activities or tasks of projects and their chronological and financial inter-relationships and the determination of the relative importance of each of these so that those who are responsible may concentrate efforts where they are most needed;</li> <li>- Reliable decision-making in connexion with time-cost trade-offs of project activities; and</li> <li>- Allocation of scarce resources to meet certain limitations as well as the scheduled project completion date.</li> </ul>

d/ See E/C/5.110 para. 56 and Note.

Table 6 PROJECT FORMULATION, EVALUATION AND IMPLEMENTATION (cont'd)

<u>Title</u>	<u>Description</u>
3. <u>Preparation of a "Manual on Procedures for Programming and Control of Implementation of Industrial Projects in Developing Countries"</u> (cont'd)	<p>The Manual will also include effective control procedures for bringing the project implementation plan into reality and for continuous feedback and appropriate modifications in the project implementation plan.</p> <p>The research has been undertaken and an expert group meeting will be held in October 1967 at UNIDO Headquarters to review the research findings and advise on the preparation of the Manual, which will be published in the early part of 1968.</p>

Table 7 INDUSTRIAL PROGRAMMING DATA: Summary of Projects for 1967-1968

<u>Title</u>	<u>Description</u>
1. <u>Evaluation and reorganization for dissemination purposes of the catalogue establishment data from France, India, Israel, Japan and Yugoslavia</u>	<p>This relates to the finishing stage of the series of Establishment Studies (Profiles of Manufacturing Establishments) initiated in the middle of 1965. The scope and method of this project are stated in detail in E/C.5/109 and in the Consolidated Report for 1966 (Chapter III.C.7).</p> <p>The data collected through the special study groups organized in the five countries are re-edited and transcribed into a uniform format for dissemination purposes. Selected establishments, each being considered as a non-anomalous specimen, are arranged by three-digit industry groups. Photo-copies will be made available directly to UNDP experts and any governmental organs interested in such materials. The first set of data on 200 establishments will be ready for reproduction in May 1967; the second in October 1967, and the third in March 1968. These will also eventually appear as sales publications ("Industrial Planning and Programming Series").</p>



Table 7 INDUSTRIAL PROGRAMMING DATA (continued)

<u>Title</u>	<u>Description</u>
2. <u>Collection and evaluation of catalogue manufacturing establishment data from additional developing countries</u>	<p>This is the expanded phase of the Profiles of Manufacturing Establishments (see project above), for which agreement as to the selection of model establishments and collection of basic information could not be reached within the last year. In this phase, emphasis is shifted toward newly established and already operating factories or enterprises in developing countries. Brazil, Ceylon, Ecuador, Iran, Mexico, Tunisia, U.A.R. etc. are among the candidate countries, and negotiations are underway. The total number of establishments to be filed within this year will not exceed 400, but the form of compilation applied to each establishment is modified so as to permit assessment of various policy measures influencing new manufacturing factories in developing countries.</p> <p>As in the earlier stage of Project No. 4, the collection of information is handled by outside experts appointed to form special study groups in respective countries, relying more heavily on their visits to specific factories than was the case with Project No. 4. The results will be disseminated in a form similar to Project No. 4, and will appear as additional volumes in the Industrial Planning and Programming Series.</p> <p>As the compilation of profiles in this phase matures, a comparative analysis will be undertaken to clarify the implications of the whole collection for certain issues and factors of industrial development such as economies of scale, import substitution policies, flexibility of factor proportions, capacity utilization etc.</p>

Table 7 INDUSTRIAL PROGRAMMING DATA (continued)

Title	Description
3. <u>Preparation of reference inter-industry coefficient tables on the basis of existing data in Finland, France, Hungary, Japan and the United States</u>	<p>The background of this project is reported in E/C.5/109, and its scope and method are stated in Consolidated Report for 1966, (Chapter III.C.7.). It was initiated in the early part of 1966, to be pursued along the lines recommended by the first <u>ad hoc</u> expert group on industrial programming data at their meeting in New York, 9-12 November 1965. The assembling of detailed inter-industry data, mostly drawn from unpublished worksheets and special studies underlying the published versions of inter-industry data, has been undertaken through consultants in respective countries, and almost completed by the end of 1966.</p> <p>The project will reach its final phase in 1967. This will involve the re-assembling of the basic data into a comparable scheme for the purpose of comparative analysis. The analysis is intended to clarify the sensitivity of technical coefficients (defined at a highly disaggregative classification level involving some 200 productive sectors) to stages of industrial development, size of national economy, trade pattern, relative price structure etc.</p> <p>The re-assembled data, together with the findings from the abovementioned analysis, will be arranged for publication under the Industrial Planning and Programming Series. The first draft will be ready late in 1967.</p>

Table 7 INDUSTRIAL PROGRAMMING DATA (cont'd.)

<u>Title</u>	<u>Description</u>
4. <u>Meeting of the second ad hoc working party on industrial programming data</u>	<p>The need for such a meeting has been strongly felt in order to appraise the significance of the experience obtained through those CID/UNIDO activities in the field of industrial programming data, in relation to the practical data problems facing the UNIDO in its operational tasks. The meeting is thus intended to provide a stepping stone toward a continual and enlarged scheme of data-bank services - <u>inter alia</u> a workable scheme of co-operation and co-ordination of the resources available for such purposes within the United Nations family.</p> <p>Programming data in this context may be interpreted in a broader sense as an integral part of "industry statistics". However, emphasis should be laid on the practical circumstances in which a considerably higher degree of detail and specificity than is involved in the conventional (published) form of industry statistics is required in order that operationally meaningful linkages, now generally missing, can be generated as between the sector-level and the project-level programming data. At the same time, attention should be drawn to the importance of securing a reasonable degree of inter-country comparability in compilatory processes, which is an essential requirement for the treatment of catalogue programming data.</p> <p>It is proposed that the working party will be composed mainly of a few selected UNDP experts active in the field, officers of the United Nations Regional Economic Commissions and staff of UNIDC. The meeting will be held during 1967 (tentatively scheduled for 6-13 November) or possibly early 1968.</p>

Table 8 INDUSTRIAL PLANS AND PROGRAMMES: Summary of Projects for 1967-1968

<u>Title</u>	<u>Description</u>
1. <u>Studies of factors affecting the formulation of a general Strategy of Industrial Development</u>	<p>This is a series of analytical and empirical studies of the major factors underlying the formulation of the strategy of industrial development in countries at different stages of development and with different size of domestic market and different endowment of natural resources.<sup>e/</sup> Among aspects covered are: a) Links between the industrial development strategy and over-all economic objectives, problems of consistency; b) structural changes in the economy concurrent with industrialization, <u>inter alia</u>: changes in the composition of output and in the occupational distribution; c) Economic structural characteristics of modern manufacturing industries. The studies are prepared by UNIDO staff and expert consultants. As a result of this project, a discussion paper and a background paper on "The Role of the Industrial Sector in Economic Development" will be presented to the International Symposium on Industrial Development, Athens, December 1967. Results of these series of studies will also be available in mimeographed form during 1967 and in printed form in 1968 for planning officials in the developing countries who are responsible for long-term planning of the development of the industrial sector, and to serve as guidance in the work of industrial advisers rendering technical assistance in this field.</p>

e/ This is a continuing project initiated in 1966. See documents: Committee for Industrial Development, Report on the Sixth Session, Economic and Social Council, Official Records: Forty-first Session, Supplement 6, E/4203, E/C.5/150; and recommendation in the Report of the Interregional Symposium on Industrial Project Evaluation, ST/TAO/SER.C/82.

Table 8 INDUSTRIAL PLANS AND PROGRAMMES (cont'd.)

<u>Title</u>	<u>Description</u>
2. <u>Industrial programming manual</u>	<p>The Manual will serve as a basic reference source for training in courses, workshops and seminars, as well as for the briefing and substantive backstopping of technical assistance experts in the field of industrial planning and programming. Preparation of the Manual is planned to be carried out in co-operation with the Economic Commission for Asia and the Far East (ECAFE), the Economic Commission for Latin America (ECLA), the Asian Institute for Economic Development and Planning (Bangkok), the Latin American Institute for Economic and Social Planning (Santiago), and a selected group of experts in the field of industrial programming. Drafting of the different chapters of the Manual in the framework of an outline prepared in advance is expected to take two years. An ad hoc group of experts is planned for 1968, at which the first drafts of chapters will be presented and reviewed. The Manual will be available in mimeographed form during 1968, and will be distributed to international and technical assistance experts for comments.</p>
3. <u>Sectoral planning and programming studies</u>	<p>To bridge the gap between the over-all economic plan and the development of a set of feasible projects requires planning work at different levels including the programming of industrial branches or sectors, and that of specific industries. This project will provide information on programming data and techniques used in planning and programming at the sectoral or industry branch level.</p> <p>This is a continuing project to cover with similar studies all relevant industry sectors; it involves a series of monographs prepared by expert consultants and UNIDO staff and published in the new publication "Industrialization and Productivity." Two studies - "Programming Data Summary for the Chemical Industry" and "Programming Data for the Petroleum Refining Industry" - were published in the Bulletin on Industrialization and Productivity No. 10<sup>1</sup>; No. 1 of the Industrial Planning and Programming Series is devoted to a study of "Techniques of Sectoral Economic Planning: The Chemical Industries"<sup>E/</sup></p>

**Table 8 INDUSTRIAL PLANS AND PROGRAMMES (continued)**

Title	Description
3. <u>Sectoral planning and programming studies (continued)</u>	<p>Among the studies being planned for publication are: Joint Programming of the Metalworking and Assembly Industries and of the Basic Metals, Metal Products and Machinery Sectors.</p> <p>The studies in printed form are made directly available to all United Nations technical assistance experts in the field as well as to all government agencies or planning offices engaged in industrial programming in developing countries.</p>
4. <u>Role of Advanced Skills and Technologies in Industrial Development b/</u>	<p>In 1967, the main activity in this project will be centred around the <u>Ad Hoc Meeting of Experts</u> to be convened in New York, May 22-29, 1967, at which invited international experts will present studies for discussion, evaluate the work programme and make recommendations on future research as well as areas for training and technical assistance activities. It will also prepare the ground for the Interregional Seminar on the Role of Technical Progress in the Industrialization of Developing Countries which is planned for 1968.</p>

b/ This is a continuing project. For previous reference, see E/C.5/113, para. 31-37 and studies E/C.5/111 and Add.1, and E/C.5/112 and Add.1.

**Table 2 INDUSTRIAL PLANS AND PROGRAMMES (continued)**

<u>Title</u>	<u>Description</u>
4. <u>Role of Advanced Skills and Technologies in Industrial Development</u> <sup>b/</sup> (cont'd)	Several studies have been commissioned from experts on such aspects as: a) The relationship between productivity and the occupational distribution in manufacturing industries; b) Planning and programming methods to meet skill requirements and for productivity change; c) Case studies of the development of selected skill-intensive industries implying the transfer of advanced technologies in countries having recently experienced rapid structural change and achieved fast economic growth; d) Analysis of the relationships between endogenous technical change and economic growth, implications for the allocation of resources for technical education; e) Classification and analysis of skill-intensive industries; f) Transmission of technical knowledge among the various sectors of the economy, skill acquisition and the flow of skills among industries, dynamic effects of certain industries and technologies in the development of the labour force and on other industries.

<sup>b/</sup> This is a continuing project. For previous references, see E/C.5/113 para. 31-37 and studies E/C.5/111 and Add.1, and E/C.5/112 and Add.1.

**TABLE 6 INDUSTRIAL PLANS AND PROGRAMMES (continued)**

<u>Title</u>	<u>Description</u>
5. <u>Study surveying industrial plans and programmes</u>	<p>To meet research needs in support of operational activities in the field of industrial planning and programming, an analytical survey has been initiated which will examine industrial plans and programmes in developing countries from the point of view of methodology, performance and institutional constraints, and will include such aspects of industrial planning and programming as: formulation of general objectives and quantitative targets, levels of aggregation, programming periods, material balances, consistency, feasibility and efficiency, organizational aspects, promotion instruments and institutional constraints.</p>

The study is to be prepared by UNIDO staff and expert consultants and will be conducted in two phases. The initial phase will be limited to a sample of five or six countries selected on the basis of availability of data, contacts with experts in the field and local authorities, relevance of country experience, type of economic organization etc. In a second stage the study will be expanded to include 20 to 25 countries and the organization of country study groups evolving from an ad hoc expert group meeting to organize the securing of data and other information only available in the field. Basic sources to be used in preparing the study include: industrial plans and programmes issued separately or as part of over-all economic plans, plans for supporting activities like infrastructure, reports from technical assistance experts (including advisors, industrial planners and programmers, industrial economists etc.), recent studies of the industrial sector prepared inter alia, in connexion with the Regional and International Symposia on Industrial Development etc.

Preliminary results of the study will be circulated in mimeographed form among experts during 1968, and printing is expected by late 1968.



Table 2 INDUSTRIAL PLANS AND PROGRAMMES (continued)

<u>Title</u>	<u>Description</u>
6. <u>Training course in industrial development</u>	<p>UNIDO, in collaboration with the United Nations African Institute for Economic Development and Planning in Dakar, will carry out a training course in Industrial Development. The course is designed for government officials from various African countries who are currently engaged in the industrial development in their countries and are expected to continue to be engaged in such activities. Twenty to thirty such participants will be invited to attend the course, which will be sub-regional in participation. The course is designed to give intensive training and to introduce the participants to the current thoughts and techniques of industrial planning, project planning, industrial policies, industrial management and similar topics. The training will be mainly in a discussion-lecture form which will give the participants the opportunity to express their problems and get acquainted with colleagues from the other countries. UNIDO will contribute a team of three staff members and one expert and the respective teaching materials. The first course is planned for September/October 1967 in West Africa.</p>

Chapter IV INDUSTRIAL LOCATION AND REGIONAL DEVELOPMENT

53. Decisions as to where to locate industrial projects can be as crucial to their success as is the initial decisions to undertake the projects, as incorrect spatial distribution of industrial activity may seriously retard the economic development of a country. For this reason, UNIDO has undertaken a work programme in the field of location and regional development. These activities stress the spatial aspect of industrial development planning and are designed to help in assessing the industrial potential of regions within a developing country, in defining the objectives of regional policies within national plans, and in evaluating the locational implications of sectoral plans.

54. Through its work in the area of regional industrial planning, UNIDO is seeking to improve or develop new methods and criteria for location of industries, specifically suitable to developing countries. It is probing the relationship between alternative patterns of regional location of industry and the growth objectives of developing countries, as well as the programming methodology and government policies required to achieve the desired geographic distribution.

Table 2 INDUSTRIAL LOCATION AND REGIONAL DEVELOPMENT: Summary of Projects for 1967-1968

1. Title Description

1. Ad Hoc Meeting of Experts on Regional Industrial Planning

Since the Interregional Seminar on Industrial Location and Regional Development has had to be postponed until 1968, a five-day meeting of nine experts from various countries and two UNIDO staff members will be held, 29 May - 2 June 1967. The purposes of the meeting are as follows:

- (a) To identify the concrete regional industrial planning problems most relevant to developing countries;
- (b) To discuss the UNIDO paper, "Industrial Location Planning prepared for the International Symposium on Industrial Development (Athens, December 1967), and provide detailed recommendations on the subjects treated there;
- (c) To review the adequacy and internal consistency of the documentation assembled for the Interregional Seminar on Industrial Location and Regional Development;
- (d) To discuss the tentative outline and plan of preparation of an "Operations Guide on Regional Industrial Planning," which is to serve regional planners in developing countries as a basic methodological source;
- (e) To advise on a consistent order of priorities and a set of guidelines for the future research and operational activities of UNIDO in the field of Regional Industrial Planning.

2. Interregional Seminar on Industrial Location and Regional Development

This seminar<sup>a/</sup> will attempt to define the principal factors of location, the various programming methods and data requirements, and the impact of several policy instruments. Although the seminar has had to be postponed until 1968, the preparations for it will continue. These will include completing the seminar documentation by commissioning additional studies on industrial location and regional planning, editing all the studies, and preparing a tentative agenda and list of participants. Final preparations for the seminar will take account of the advice offered by the ad Hoc Meeting of Experts on Regional Industrial Planning.

a/ E/C.5/110, paragraphs 41-43; ID/B/3, p. 114

Chapter V DEVELOPMENT OF EXPORT-ORIENTED INDUSTRIES

55. The expansion of exports, particularly of manufactured goods, has in recent years become increasingly prominent in the development programmes of developing countries. This shift of emphasis has been partly the result of the continuing balance-of-payments difficulties encountered by most developing countries and the realization that the prospects of remedying these difficulties within the framework of the traditional pattern of international trade are highly unfavourable. In part, the new approach also reflects the recognition, in many of the more advanced among the developing countries, that the opportunities for further industrialization afforded by import substitution tend to shrink, while many of the smaller countries which have recently attained independence, and whose size in terms of population, income, and natural resource endowment affords only a relatively narrow domestic base for industrial development, face this problem in acute form from the start of their development.

56. An export-oriented pattern of industrial development thus answers two key requirements of economic growth: First, it is needed to increase the import capacity of the developing countries, particularly with respect to the capital goods which are crucial to their continued development. Where countries have traditional exports of some significance, these are usually difficult to expand beyond their present levels, for well-known reasons. An increase in developing countries' import capacity thus requires a diversification of their foreign trade sectors, away from primary commodities and semi-manufactured goods into more highly fabricated manufactured products. Secondly, and equally important, a more pronounced orientation towards exports is needed to broaden the market base for the industrialization efforts of the developing countries, thus enabling them to take advantage of the opportunities afforded by the application of modern techniques of large-scale production, and to avoid industrial inefficiencies inherent in production for a small sheltered domestic market.

57. These new needs have found expression in a large number of recommendations and resolutions adopted by the various organs of the United Nations ever since the 1964 United Nations Conference on Trade and Development. The promotion of exports from developing countries, and particularly the development and expansion of export industries, has become a central task of the United Nations system in the field of economic development, and particularly of UNCTAD and UNIDO. A major responsibility for long-run action is borne by UNIDO because the expansion and development of exports of manufactures from developing countries is in the first place a supply problem without the solution of which commercial policies will be of little avail.

58. The traditional route of industrialization through import substitution tends to create structural barriers to subsequent exports, so that any carry-over into exports, if obtained at all, is liable to be insufficient compared with the long-run needs of industrial growth. In many important areas there is also a serious dearth of the basic information needed for policy formulation, because in the absence of export-oriented policies there was no public need to generate such information.

59. International action in this field therefore meets a set of entirely new requirements and finds itself in a position analogous to that which existed with respect to the traditional approach to industrialization two decades ago, when the basic guidelines for policy were first worked out. It must therefore be recognized that unless much effort is speedily devoted to filling the gaps in the existing body of knowledge, the concrete assistance and support demanded by the developing countries will necessarily grope in the dark.

60. The main responsibility of UNIDO is of an operational nature; its entire body of activities is intended to support technical assistance in its various forms. However, the effectiveness of the technical assistance to be given to specific industries or with respect to specific areas of economic policy will depend largely on the measure in which basic policy questions are clarified, information collected and analysed, the available options specified,

and the criteria by which rational choices can be made worked out. Solutions of an ad hoc type may be irreversible in practice and may not be the solution in the best long-run interests of the country. The need for laying the foundations for practical technical assistance work through adequate research must therefore be emphasized.

61. The work of UNIDO in the field of export promotion and development will therefore have to proceed in two major directions: (a) the development of basic policy guidelines for an export-oriented industrialization strategy; and (b) technical assistance in specific, more narrowly circumscribed areas in which the expansion of exports is the major problem.

62. While UNILC must stand ready to fulfil requests of Governments for technical assistance in specific areas as they arise, the need for developing an adequate body of information of a more general nature, which was emphasized in the preceding paragraphs, has been recognized by the various United Nations organs. More recently, it has been given added emphasis by the recommendations of a group of consultants invited jointly by the Commissioner for Industrial Development and the Secretary-General of UNCTAD to advise them on the area and forms in which the United Nations should provide technical assistance. (See ID.B/11). A number of further joint activities of UNIDO and UNCTAD is planned for 1967 and subsequent years.

63. The Meeting of the Executive Secretaries of the regional Economic Commissions, held in January 1967 and attended by the Executive Director of UNIDO and the Secretary-General of UNCTAD, endorsed those joint activities, particularly the plan to send joint missions to selected countries in each of the developing regions to study their export plans and needs and to develop technical assistance programmes in that field.

64. The work programme for 1967 is mainly a continuation of projects begun or planned for 1966 and held up in the first half of the year for lack of staff and financial resources. As will be seen from the description of the individual projects, the main emphasis is on projects that are either intended to provide basic information and analyses for policy formulation, or are expected to result in concrete technical assistance programmes in selected areas.

Table 10

Summary of Projects for 1967-68

Title

Description

1. Policies for the promotion of export-oriented industries

The Economic and Social Council, in resolution 1178 (XLI), requested the Secretary-General to obtain appropriate information from Governments and the appropriate international agencies on the practical steps taken in the direction of the development and establishment of export-oriented industries in the developing countries, and to report to the Industrial Development Board at its first session. A report on the replies obtained has accordingly been prepared and will be submitted to the first session of the Industrial Development Board.

2. Metal-transforming industries as potential export industries

The authority for this project, which was begun in 1966 (see Consolidated Report, page 43) is contained in the recommendations of annex A.III.3 of the Final Act of the UNCTAD and in resolution 1178 (XLI) of the Economic and Social Council. The latter resolution specifically referred to the metal-transforming industries as an example of industries with an export potential, in the development of which "there might be achieved concurrent opportunities for import substitution".

During 1966, the basic methodology for the project was worked out, and the guidelines for two empirical country studies were formulated. In addition, bibliographical research was completed and a computer-generated indexing system was worked out for the literature relating to this sector. Finally, work was begun on a series of country studies of the metal-transforming sector, with the purpose of providing the background information and analysis for those countries in which technical assistance programmes could be proposed as a result of this project. The first of these studies (Mexico) has already been completed, and a second (for the U.A.R.) has begun.

In 1967 this project will be continued on a limited scale with a view to completing the methodology and the guidelines for the empirical studies, so that the latter may be undertaken to the extent that resources for this purpose become available. The additional work envisaged for 1967 comprises a semi-quantitative description of the major products of the sector and studies of the programming methods required with particular reference to

Table 10

DEVELOPMENT OF EXPORT ORIENTED INDUSTRIES (continued)TitleDescription2. Metal-transforming industries as potential export industries (cont'd)

exports. Depending on the progress of the work, a small expert group will be convened, and some preparatory work for later case studies will be initiated. The forces pushing in these directions will operate also where export industries are concerned, and it is generally agreed that developing countries will be guided in their choice of techniques by their relative factor endowments. While the additional constraint of having to work for the foreign market narrows the range of choice, there is nevertheless some variability in the techniques that can be adopted.

A study is, therefore, being undertaken to determine the range of choice available from a technical point of view in a number of selected export industries and to derive the consequences with respect to cost of production and competitive position.

After the preparation of estimates of alternative techniques for selected export products and an analysis of the initial results, which will in part be carried out with the help of consultants, a small group of experts will be convened to clarify the problems and to make recommendations with respect to further work to be undertaken in this area and its implications for technical assistance to be rendered to the developing countries. This study is expected to be completed in 1967.

3. Utilization of Industrial Excess Capacity for Exports

Any attack on the problem of expanding exports of manufactures from developing countries must provide for the utilization of temporary or structural excess capacities for exports.

The proposed study (see Consolidated Report, para.II.E.5, page 45) will first deal with a quantitative estimate of excess capacity in different developing countries and in different industries. It will be necessary to solve a number of complex problems of definition and measurement and to examine the technical adequacy of the presently idle equipment for the purpose of expanding exports, the adaptations in over-all product mix as required, and the needs for marginal investments that may be necessary to devise organizational methods whereby existing excess capacities can be put to use for exports without upsetting the existing market structures at home and thereby arousing opposition from existing producers.

After preparatory work and collection of initial data, which will make possibly a first analysis and a set of tentative recommendations, it is proposed to convene a meeting or a seminar (presumably in 1968) to discuss



Table 10      DEVELOPMENT OF EXPORT ORIENTED INDUSTRIES (continued)

<u>Title</u>	<u>Description</u>
3. <u>Utilization of Industrial Excess Capacity for Exports</u>	<p>the practical policy implications and to devise technical assistance projects in this field. The first stage of the study is expected to be completed in 1967.</p>
4. <u>Export associations and joint export marketing organizations</u>	<p>This study is a continuation of work begun in 1966 (see Consolidated Report, para. II.E.2, page 43), and described in previous work programmes. Its purpose is, briefly, to investigate the possibilities for increasing the export capacity of developing countries through the device of exporters associations and central export marketing organizations. Such organizations would be able to overcome some of the difficulties faced by individual producers in turning towards the foreign market and to achieve economies of scale in marketing.</p> <p>A number of country studies has been received and a comparative study will be completed in the first half of 1967. This study should permit the formulation of policy proposals and of technical assistance programmes along the lines indicated.</p>
5. <u>Study of Repayment of Foreign Credits in the form of Commodities</u>	<p>In a number of resolutions and recommendations of ECOSOC and UNCTAD, the Centre for Industrial Development has been required to investigate the problems relating to foreign assistance in which loans are repaid in the form of commodities. This form of assistance has been used mainly by the countries with centrally planned economies and the purpose of the study is to examine in detail the procedures so far in use and their implications for industrial development programmes. In particular, it is necessary to analyse the effects of such credits on the volume and structure of industrial production and on the volume and directions of trade and their internal spill-over effects.</p> <p>The study will analyse the advantages and disadvantages inherent in such arrangements for the recipient countries.</p> <p>It will be necessary to collect the data through interviews with Government officials and plant managers in several countries. In the first instance, it is proposed to carry out these studies in India and the U.A.R., among the recipient countries, and in Czechoslovakia, Hungary and Poland among the donor countries. The study is expected to be completed in 1967.</p>

TitleDescription6. Training for Export Promotion Personnel

One of the main areas in which the Centre for Industrial Development as well as other United Nations agencies have traditionally provided assistance to the developing countries has been in training. The new field of export promotion is no exception to this and the need for training facilities has been emphasized repeatedly by the different UN organs. (See for example, the Final Act of UNCTAD Annex A.III.1 (F)(K)). More recently, the need for training of export promotion personnel has been emphasized by a meeting of experts invited by the Centre for Industrial Development and UNCTAD at the end of October 1966.

7. Export-propelled Industrialization in the Caribbean Countries

The purpose of this project (see Consolidated Report par. II.E.3, page 44) which was initiated under a research contract with the Centre for Developing Area Studies at McGill University, Montreal, in May 1966, is to analyse the pattern of industrialization in small, highly foreign-trade dependent countries, of which the Caribbean countries are typical examples. The authority for this project is found in annexes A.III.1, particularly par.3, and A.III.3 of the Final Act of the UNCTAD. The obvious solution for the problems faced by such countries in their efforts to industrialize lies in the diversification and expansion of manufacturing activity, not only for possible integrated regional markets, but (since this will at best be small, and therefore unlikely to permit a sufficiently high rate of growth) for wider export markets as well.

The narrow limits imposed on industrial growth by the small markets available to such countries, and their generally narrow domestic resource base make it all the more necessary to clarify the options available for policy in such a context, to analyse the probable results of alternative industrial development paths, and to point towards the character of structural and institutional changes which are required for the successful implementation of chosen industrialization programmes.

8. Foreign Aid and Industrialization

The purpose of this project, which was undertaken in accordance with the recommendations contained in annexes A.IV.2 and particularly A.IV.3 of the Final Act of UNCTAD, is to analyse the implications of foreign aid on the rate and pattern of industrialization in the recipient countries. The project, which was also begun under a research contract with the

Table 10 DEVELOPMENT OF EXPORT ORIENTED INDUSTRIES (continued)

Title	Description
<p>8. <u>Foreign Aid and Industrialization</u>                      (con'd)</p>	<p>Centre for Developing Area Studies of McGill University, is designed as multi-country comparative analysis. In the first instance, the cases of Ghana and Pakistan were chosen for examination; Nigeria may be included in the programme at a later stage.</p>
<p>9. <u>Alternative techniques for Export-Oriented Industries</u></p>	<p>A central problem in the process of industrialization has always been the choice of techniques. The basic criteria for determining the appropriate techniques have in the past been worked out within the framework of a domestically oriented industrialization effort. These criteria require re-evaluation where export industries are concerned. Where import substitution is considered, relative factor prices, as well as other circumstances may lead to the adoption of a small scale of production compared with that of the displaced imports, to a hitherto labour intensity and to modifications in design, quality and product mix which often go with such changes in the productive set up. Following the recommendations of the group of experts, it is to set up a joint training programme by UNCTAD and UNIDO in the field of export promotion.</p>
<p>10. <u>Expert Meeting on Government Policies for the Promotion of Exports of Manufactures and Semi-Manufactures from Developing Countries</u></p>	<p>The present programme provides for a training course for export management personnel, either holding or slated to hold posts as commercial attaches, officials of trade centres or branch officers of export promotion councils and similar functions. The duration of the course is to be eight weeks with 40-50 participants, and its objective is to convey to the trainees a knowledge of the methods and techniques used to promote exports.</p> <p>Following the deliberations of the meeting of experts on United Nations Technical Assistance relating to exports of manufactures and semi-manufactures from developing countries which was held in Geneva from 24 to 28 October 1966 (ID/B/11), the Secretariat of the United Nations Conference on Trade and Development and the United Nations Industrial Development Organization propose to convene another joint meeting of experts in order to recommend what assistance could be rendered by both organizations in the field of government policies for the promotion of exports of manufactures and semi-manufactures from developing countries. The meeting should be held in New York sometimes in June 1967 and about 10 to 12 experts will be invited. The costs for the meeting will be borne jointly by UNCTAD and UNIDO.</p>

Chapter VI METALLURGICAL AND METALWORKING INDUSTRIES

65. The technical assistance activities carried out by the CID in recent years, especially in Africa and in Asia, in the field of metallurgical industries, will be continued on an expanded basis in 1967. In order to support these activities in this complex and crucially important industry, a diversified research programme is being continued and developed by UNIDO. A set of studies will be prepared in 1967 and 1968 under the heading "Techno-economic projects of the development of the iron and steel industries in the developing countries". Together with the iron and steel manual under preparation and completion, these studies will give comprehensive guidance to the developing countries in this area. Additional studies on specific problems in metallurgy, mostly raised by experts engaged in technical assistance, will also be initiated and completed in 1967. The organization of aluminium and copper expert consulting groups in 1967 illustrates the extension of the work of UNIDO in new areas within the metallurgical industries.

66. The work programme in the engineering industries field for 1967 will include: projects designed to implement the directives for action stemming from programmes carried out in preceding periods (e.g. implementation of recommendations of the Metalworking Symposium); the continuation of the preparatory work already initiated on various projects (e.g. preparation for the Automotive Industry and Electrical and Electronic Equipment Industry Seminars); and the expansion of the activities of UNIDO into new areas important for engineering industries (e.g. the farm equipment industry and technological aspects of quality control in the manufacture of engineering industries products).

67. Two projects undertaken in 1965 and 1966 may require follow-up work i.e.:

- (a) The Report on Second-hand Equipment for Developing Countries was circulated for comments and suggestions among member nations of the United Nations. Interest expressed in the answers received does not warrant additional studies on this

subject, but UNILC will undertake work on specific projects arising out of the report requested by any Member Government of the United Nations.

- (b) The Report of Maintenance and Repair of Industrial Equipment in Developing Countries will be circulated in 1967 among Member Governments of the United Nations. Work on this project will continue, depending on requests for action and comments received.

Table 11 METALLURGICAL INDUSTRIES: Summary of Projects for 1967-1968

<u>Title</u>	<u>Description</u>
1. <u>Studies on the techno-economic principles of the development of the iron and steel industries in the developing countries</u>	<p>This is a continuing project started in 1966. The staff is working out a technical basis for a new set of organized studies covering items of special interest for the developing countries in the promotion of their iron and steel industries. Topics will include the present status, future potential and long-term plans for the development of the iron and steel industry related to the world trade in steel; theory and technological improvement in the industry on a national and a regional basis; determination of the optimum capacity of the iron and steel plants; economic analyses, reconstruction and modernization of the iron and steel industry.</p> <p>These studies will be made available to the interested countries, and UNIDO will use them as supporting material for experts engaged in technical assistance activities in the field. The provisional assent of the Government of the Union of Soviet Socialist Republics has been given for the organization of the Second Iron and Steel Symposium on the USSR, possibly in 1968.</p> <p>Approximately fifty papers will be presented at the Symposium by the staff and outside experts. The regional economic commissions would also be asked to prepare documentation on specific problems in their regions. The total number of participants, experts and observers is expected to be about 100 to 120.</p> <p>In order to support technical assistance activities, studies in the following fields will be undertaken in 1967: Problems of productivity in stainless, special and tool steel and alloys industries; production economics of ferro-alloys in developing countries; relevant problems of the foundry industry in the developing countries; characteristics of supply and economics of production of refractory materials for iron and steel.</p>
2. <u>Selected studies on metallurgy</u>	

Table II METALLURGICAL INDUSTRIES (cont'd.)

<u>Title</u>	<u>Description</u>
3. <u>Iron and Steel Manual</u>	<p>This is a continuing project as outlined in a report submitted to the Committee for Industrial Development at its sixth session (E/C.5/150, para. 52). A thoroughly revised text of the manual will be prepared for presentation at the Second Iron and Steel Symposium scheduled for 1968, the final draft to be published in 1969.</p>
4. <u>Organization of expert consulting groups in non-ferrous metal industries</u>	<p>During 1967, the Expert Consulting Group on Copper Industry and the Expert Consulting Group on Aluminium Industry will be convened. The experts will examine the economics of supply, demand and production in developing countries and lay down guidelines for their development. The following problems will be considered: nature of raw materials; resources for primary aluminium and copper metal industries; choice of production techniques; the optimum size of the plant in relation to the production of primary metals and secondary copper and aluminium alloy industries; capital investment requirements vis-à-vis operational and production costs of primary metal production; the economic and technical efficiency of the industrial unit engaged in the production of the metal; the market pattern and sales structure of copper and aluminium in developing countries including export potential.</p>

Table 12 METALWORKING INDUSTRIES: Summary of Projects for 1967-1968

<u>Title</u>	<u>Description</u>
<u>1. Studies on automotive equipment industry</u>	<p>This is a continuing project, initiated in 1966. To ensure the best utilization of available resources and the greatest return on investment and to accelerate economic development, it is of great importance that the development of the transportation equipment industry in developing countries be undertaken from the outset in an orderly manner and after a careful examination of all relevant economic, technological and labour factors. Of the ten studies already commissioned for 1966, eight are completed. Twelve more studies will be commissioned in 1967. The studies will be reviewed by the staff and general conclusions will be made. The studies will be made available to the interested countries. This documentation would also be used in a seminar on the automotive equipment industry proposed for 1968.</p>
<u>2. Studies on electrical and electronic equipment industry</u>	<p>This is a continuing project, initiated in 1966. The studies are geared to help the developing countries in the formulation of objectives for the electrical and electronic industries. They will also provide data on sources, manpower, plant and machinery and point in a number of cases toward feasible targets that can be realized in the near or foreseeable future. They will establish short- and long-term goals for individual countries and will help to identify development projects that can be accomplished with minimum resources, while having the largest possible impact on the industry as a whole. The staff will review the studies prepared by consultants and prepare a concise report on the most important findings. At the same time, UNIDO will contact the regional commissions concerning the possibility of organizing seminars on the electrical and electronic equipment industry on regional levels in 1968 and 1969 - one for Latin America and one for Africa, Asia and the Far East. Of four studies commissioned in 1966, three have been completed and five additional studies will be commissioned in 1967.</p>



Table 12 METALWORKING INDUSTRIES (cont'd.)

<u>Title</u>	<u>Description</u>
3. <u>Implementation of recommendations of metalworking symposium</u>	<p>(a) <u>International classification systems for metalworking machines and for materials for metalworking industries:</u> This is a new project, the purpose of which is to eliminate existing confusion in terminology. The staff will work on further definition of this project and thereafter a consultant will be engaged for a period of four months to initiate work on these two classification systems.</p> <p>(b) <u>Adaptation of acceptance tests for new machine tools:</u> This is a new project, the purpose of which is to update Schlesinger and other acceptance tests to correspond to current requirements. Following the analytical preparatory work of the staff, a consultant will be engaged for a period of three months to initiate and complete work on this project. Another consultant will prepare a paper on this subject.</p> <p>(c) <u>Dies and jigs, their design, manufacture and utilization.</u> This is a new project concerning a subject of considerable importance on the establishment and development of the metalworking industry in developing countries. The staff will prepare a well-founded programme for this new project in 1967 and will organize contributions by consultants on various aspects of this project; approximately five studies will be commissioned by the end of 1967. These studies will be widely disseminated and will also be used as background documentation for a meeting of experts planned for 1968.</p>

Table 12 METALWORKING INDUSTRIES (cont'd.)

Title	Description
4. <u>Studies on farm equipment industry</u>	<p>At the beginning of 1967, a new project will be initiated in the area of the agricultural equipment industry which is critically important for most developing countries. Two important characteristics of the industry should be emphasized: (a) this industry needs less sophisticated facilities than some other sectors of the engineering industries; (b) in product engineering the application of design to local needs is particularly important. This project will be formulated taking into account these two specific characteristics. Five studies will be commissioned in 1967 for preparation by consultants. In addition, as a contribution to an FAO study on the procurement of farm equipment in developing countries, UNIDO will take a study exploring production and export facilities in agricultural input, <u>inter alia</u> farm equipment.</p>
5. <u>Technological aspects of quality control in the manufacture of engineering industries products</u>	<p>A number of participants at the Metalworking Symposium in Moscow emphasized that, especially in the first stage of industrial development, the requirements and the establishment of methods of quality control are neglected. Within the framework of this project it is intended to identify the most significant aspects and methods of quality control, with special relevance to the engineering industry of the developing countries, particularly for export products. After the elaboration of the basic problems and the tasks in this field, about five studies will be commissioned by the end of 1967 for preparation by consultants.</p>

## Chapter VII CHEMICAL INDUSTRIES

68. The chemical industry is characterized by a broad range of products and branches which, as a matter of convenience have been grouped under four headings in the discussion which follows.

### Petrochemical industries

69. The petrochemical industry is an example of a particularly dynamic industry. Many developing countries with ample petroleum and natural gas resources have shown increasing interest in the development of petrochemical industries. In some countries, petroleum refineries already in operation provide a convenient base for the possible establishment of petrochemical complexes. In others, the existing organic-chemical industry shows an increasing interest in substituting traditional inputs, such as coal and raw materials of vegetable origin, with petroleum and gas.

70. These considerations were examined in depth in a conference organized by the Centre for Industrial Development of the United Nations in 1964. The "Report of the First United Nations Interregional Conference on the Development of Petrochemical Industries in Developing Countries" was presented to the Sixth Session of the Committee for Industrial Development (ST/TAO/SER.C.83). The techno-economic studies prepared for the Conference were published in 1967 by the United Nations Industrial Development Organization under the title "Studies in Petrochemicals" (Vols. I and II, series No. 67.II.B.2).

71. The Industries Section is carrying out a number of studies on various aspects of the establishment of petrochemical industries in developing countries and on marketing of petrochemical products both for the local and export markets. This is a continuing project exploring the accumulation of new substantive data on this industry sector and adding to data already available and disseminated to the developing countries. An example of such a study is the "Studies in Petrochemicals".

### Fertilizers and pesticides

72. The work programme recommended for 1967 in this field is discussed in greater detail in the special report on "Implementation of the Recommendation of the Interregional Seminar on the Production of Fertilizer held in Kiev, Ukrainian SSR" (ID/B/9), submitted to the Board in compliance with resolution 1179 (XLI) of the Economic and Social Council.

### Plastics, rubbers and synthetic fibres

73. Recent United Nations conferences, e.g. the United Nations Interregional Conference on the Development of Petrochemical Industries in Developing Countries (Teheran, November 1964), the Asian Conference on Industrialization (Manila, December 1965), the Seminar on the Development of the Chemical Industry in Latin America (Caracas, December 1964), and the Symposium on Industrial Development in Africa (Cairo, January 1966), emphasized the importance of establishing and developing the polymer industry (plastics, rubbers and synthetic fibres industries) in the developing countries.

74. In many developing countries, the polymer industry is currently undergoing a process of backward integration. Production facilities are being extended from utilizing the polymers for fabrication of end-products to the manufacture of polymer itself as well as for the production of monomers and intermediates.

75. Bearing in mind the needs of many developing countries, a series of new projects has been initiated dealing with plastics, rubbers and synthetic fibres.

### Basic chemicals and miscellaneous products

76. In 1967, a series of studies on basic chemicals will be continued. New areas will be explored in pharmaceuticals and other chemical products. These studies are geared to diversify the types of technical assistance in the chemicals field.

Table 13 PETROCHEMICAL INDUSTRIES: Summary of Projects for 1967-1968

<u>Title</u>	<u>Description</u>
1. <u>Alternative production technologies for petrochemical raw materials</u>	<p>This study will deal with alternative processes for manufacture of natural gas and liquids, refinery gases, paraffin, light and heavy oil fractions, cyclics, aromatics, naphthas etc. The study will identify the optimum process to be established in a developing country under a given set of conditions and elucidate <u>inter alia</u> the criteria used to make such selection.</p>
2. <u>Petrochemical intermediates petrochemical end products</u>	<p>The studies on these two subjects will follow the format outlined above but will be concerned with petrochemical intermediates and end products and will include in addition to the treatment of alternative production, technologies and criteria for selection in the petrochemical industry of a developing country, the entire gamma of problems in connexion with promotion of new end uses for petrochemicals in developing countries.</p>
3. <u>Economies of scale in the petrochemical industry in developing countries</u>	<p>In order to complete the information to be obtained in the above studies, a compendium of data on the economies of scale in the petrochemical industry, which are operable under prevailing conditions in the developing countries, will be prepared. The studies will be subdivided to deal in the three major industry areas mentioned above, i.e. raw materials, petrochemical intermediates and end products.</p>
4. <u>Alternatives in the development of petrochemical industries in developing countries</u>	<p>The project will be completed by a study of broad perspective analysing the relative advantages and their shortcomings in development of petrochemical industries in developing countries by either forward integration from raw materials utilization through intermediates and finally end products manufacture, or backward integration from processing and transformation industry facilities based on imported intermediates leading to the manufacture of intermediates and finally to raw materials production.</p>

Table 13 PETROCHEMICAL INDUSTRIES (cont'd.)

<u>Title</u>	<u>Description</u>
5. <u>Second interregional seminar on the petrochemical industries in developing countries</u>	A second interregional seminar on petrochemical industries in developing countries is scheduled for 1968, tentatively to be held in Mexico City, Mexico. (See further E/C.5/110, Chapter 3, Chemical Industries Report on the Activities of the Centre for Industrial Development, Sixth session, Committee for Industrial Development, 1966). This conference will serve to review the developments in the industry in the last four years and pinpoint their importance to developing countries. It will also deal in greater depth with some selected sectors of the industry such as basic intermediates and plastics materials. For this purpose, a series of techno-economic surveys will be commissioned for presentation to the seminar.

Table 14 FERTILIZER AND PESTICIDES: Summary of Projects for 1967-1968

<u>Title</u>	<u>Description</u>
1. <u>Studies in fertilizer and pesticides</u>	The work programme recommended for 1967 is incorporated in the document "Implementation of the Recommendation of the Interregional Seminar on the Production of Fertilizer held in Kiev, Ukrainian SSR" (ID/B/9), attached to the documentation to the first session of the Industrial Development Board.

Table 15 PLASTICS, RUBBERS AND SYNTHETIC FIBRES: Summary of Projects for 1967-1968

<u>Title</u>	<u>Description</u>
1. <u>Studies on the setting-up of an integrated plastic industry</u>	<p>In setting up an integrated plastics industry, developing countries face problems such as: the sources of raw materials; whether to set up a costly petrochemical complex or to start with a small-scale plant using more expensive raw materials of coal or vegetable origin; should monomers and intermediates be manufactured or imported before producing polymers; the types of plastics to be manufactured; market situation, finance export possibilities and the ability to produce plastics at a low price; the setting up of units to process plastics into end-products; the ability to utilize the limited technical and financial resources; the end-uses of different plastics and their more suitable applications. Six to eight studies on the above problems will be made and completed in 1967.</p>
2. <u>Study on wider utilisation of natural rubber</u>	<p>The purpose of the study is to examine methods of converting natural rubber into other materials in particular, plastics materials which have much wider applications than rubber. This is of special interest to the natural rubber producing countries because of the increasing competition from synthetic rubbers. The study will consist of collecting and summarizing published information on the recent technological advances made in rubber transformation. Such information is generally scattered in the technical literature. The collection of the information in one study and the evaluation of the possibilities indicated in the publication will assist the natural rubber producing countries in taking an effective course of action.</p>
3. <u>Studies on testing and quality control of polymers</u>	<p>There is an urgent need by many developing countries, especially those with newly formed polymer fabricators, for assistance in standardization, testing and quality control of their products. An investigation will be made to determine the kind of technical assistance and facilities required to establish standards and quality control laboratories. These studies which will be initiated and completed in 1967, will be specifically concerned with polymers and complementary to the over-all UNIDO standardization programme.</p>



Table 15 PLASTICS, RUBBERS AND SYNTHETIC FIBRES (cont'd.)

<u>Title</u>	<u>Description</u>
4. <u>Studies on the setting up of Regional or National Pilot Plants</u>	<p>There is great interest in many developing countries in setting up national or regional pilot plants for the production of intermediates for plastics and synthetic fibres. The main aims for establishing the pilot plants are: to develop a country's own technology by the extension of research on the modification of properties of products; to develop suitable processes for the production of chemicals, monomers, and intermediates especially with the object of utilizing locally available raw materials; to examine known processes and to establish optimum operational conditions; to assist and collaborate with industries and institutes of technology in training technical personnel. The studies which will be initiated and completed in 1967, will be directed to assisting the developing countries to fulfill the above objectives in setting up pilot plants for intermediates.</p>

Table 16 BASIC AND MISCELLANEOUS CHEMICAL PRODUCTS: Summary of Projects for 1967-1968

Title

1. Studies in basic chemicals

In the basic chemicals field, pilot plants are of great importance and almost indispensable to countries which have yet to establish the chemicals industries firmly. The degree of experimentation, adaptation, adjustment etc. is always needed depending upon the individual circumstances. These studies which will be initiated and completed in 1967, are geared to develop ideas for the establishment of pilot plants in basic chemicals in the developing countries. The studies will cover the following items: manufacture of sulphur; extraction of sulphur dioxide from waste gases; utilization of surplus chlorine; utilization of surplus oxygen from air separation plants; natural soda ash; manufacture and uses of chemical lime.

2. Selected manufacturing problems in the pharmaceutical industries of the developing countries

The pharmaceutical industries already account for 12 to 15 per cent of production in the chemical industry in developing countries. The research programme of UNIDO is geared to clarify the situation in selected branches and to open it up for further exploration. Particular attention will be given to drugs in common use where the developing countries could start or expand manufacturing in priority programme. Co-operation with WHO will be undertaken, especially concerning the pattern of drug utilization, quality control and other practices determining the demand and production of pharmaceuticals. Some studies of exploratory nature will be initiated and completed in 1967 on such topics as requisites for manufacture of pharmaceuticals in developing countries; drugs in common demand and the development of their production; feasibility studies on plants for the manufacture of auxiliaries such as pharmaceutical water, alcohol and surgical cotton.

3. Studies on miscellaneous chemical products

Studies will be initiated and completed in 1967 to identify chemical products which could be manufactured in the developing countries, especially for local markets within acceptable cost and quality limits. The relevant technologies will be thoroughly explored and appropriate recommendations made for their adaptation and application. These studies will cover the following items: non-lead anti-corrosive paint, manufacture of industrial adhesives in developing countries, chemicals from agriculture residues.

## Chapter VIII CONSUMER INDUSTRIES

(Textiles, Food Processing and Building)

### Textiles

77. The manual to be published in 1967 will review the basic technological and economic changes taking place in the textile industry, and will assist developing countries in taking appropriate decisions in developing their textile industries. Rapid progress in the textile field has transformed the industry from a traditional to a dynamic one. The manual is a follow-up activity of the United Nations Interregional Workshop on Textile Industry in Developing Countries, which was held in Lodz, Poland, September 1965.

### Food-processing industries

78. In the food-processing industries modern engineering methods and processing techniques are of great importance. While the manufacturing aspect will predominate in UNIDO's technical assistance activities, all implications in the development of the food industries in developing countries, and their place in the general industrial development, will be taken into consideration in co-operation and consultation with the established agencies and regional commissions.

### Building materials and processing

79. In addition to technical assistance, a number of technical papers were prepared in 1966 on such subjects as: Puzzolana cements, plastics as building materials, plastic magnesia cements, brick manufacturing, building lime etc. These papers are now being evaluated and revised by the staff of UNIDO. Some of them will be presented at the Seminar on Prefabrication in Building for the Latin American Region which will be held in Denmark in 1967 and at the Interregional Workshop on Administrative and Organisational Measures for Increasing Productivity in the Housing Construction and Building Materials Industries, to be held in the USSR, in 1967. The seminar and

workshop are being organized by the Centre for Housing, Building and Planning of the Department of Economic and Social Affairs in collaboration with UNIDO. The most important activity of the UNIDO in this sector in 1967 will be the preparation of the interregional seminar on the development of clay building material industry.

Table 17 TEXTILES: Summary of Projects for 1967-1968

<u>Title</u>	<u>Description</u>
<u>1. Manual on the textile industry</u>	<p>One of the recommendations adopted by the workshop was to prepare a manual on the textile industry in developing countries which presents, in a systematic form, information on new machinery, new fibres and blends, mill lay-out, production programmes, quality control systems. etc. This work has now been completed and the Manual "Textile Industry Manual with Emphasis on Prospects for the Textile Industry in Developing Countries" is being edited for publication in 1967. It will serve as a practical guide to the authorities and organizations of developing countries.</p>
<u>2. Surveys of the textile industry in developing countries</u>	<p>In order to adequately identify the basic problems of the textile industry in developing countries, it has been decided - following the Lodz workshop recommendation - to conduct country studies in the ECA and ECAFE regions. The methods utilized by ECLA in its fourteen-country surveys in Latin America have been carefully studied and will be followed where applicable. The studies are expected to result in an increasing exchange of experience between the developing countries and regions and in efficient forms of international technical assistance.</p> <p>The preparatory work by the staff was begun in 1966. The first survey - on the Indian woolen industry - will be completed in 1967. A detailed questionnaire has been prepared for distribution to the mills by local consultants who will also make a preliminary analysis. The final processing of the collected data will be undertaken by the staff of UNIDO.</p>
<u>3. Guidelines for the developing countries on the selection of textile machinery</u>	<p>The increasing variety of textile machinery offered by manufacturer often creates difficulties in the selection of appropriate equipment for the expansion or modernization of the textile industry. This question was discussed at the Lodz workshop and, following its recommendation, a set of guidelines for the developing countries in the selection of textile machinery will be prepared by UNIDO. The first study will be made on short-staple processing machinery, taking into account established economies of scale and increasing use of man-made fibres. A preliminary draft will be presented for discussion and recommendations at a meeting of textile machinery experts to be convened by UNIDO. The panel, consisting of five experts, will meet in New York in June 1967.</p>

Table 18 FOOD PROCESSING INDUSTRIES: Summary of Projects for 1967-1968

Title

1. Selected studies in industrialization of food production in developing countries

Description

UNIDO will initiate and complete research programmes in selected fields of industrialization of food production in developing countries. In the selection of topics, UNIDO aims at the identification of specific manufacturing problems of relevance to the developing countries which can be handled by UNIDO in its technical assistance activities. The projects are, therefore, of an exploratory character. Taking into account the complexities of the food processing and food industry as a whole, UNIDO intends to co-operate with other interested agencies, especially FAO, WHO, UNESCO, UNICEF and the Regional Commissions in order to achieve the best results with its limited resources. The studies to be prepared in 1967 will cover the following:

- (a) Information on up-to-date citrus processing
- (b) Evaporation in modern food processing
- (c) Starch production in developing countries
- (d) Production of feedstuffs and protein rich mixtures and concentrates
- (e) Milk processing in developing countries
- (f) Protein enrichment in starchy food products
- (g) Water-saving techniques in food processing plants
- (h) Packaging problems in developing countries
- (i) Production of dried fruits (dates, bananas, figs etc.) in sub-tropical and tropical areas

Table 1.2 BUILDING MATERIALS AND CONSTRUCTION: Summary of Projects for 1967-1968

Title

Description

1. Interregional Seminar on the Development of Clay Building Materials Industries in Developing Countries

The preliminary work for the organization of this seminar is going forward. The seminar will be held in 1968 and financed by EPTA funds. The cost of \$60,000 will be financed from the Government of Denmark. Thirty-five participants at both policy making and technical levels from developing countries will be invited to attend the seminar. Approximately sixteen papers will be presented covering an equal number of major areas to be discussed at the seminar. Among other important topics to be reviewed will be the technologies of manufacturing clay building materials; capital and operating costs in the manufacture of clay building materials; clay building materials industries in developed and developing countries and their role in general economic development; demand and supply of clay building materials; industry studies; country studies; the role of the United Nations. UNIDO will participate in the seminar and workshop by collaborating in the preparation of papers on industrialization in the building materials and construction industries (technology of prefabrication in house construction), and development of new and improvement of traditional building materials in house construction.

2. Studies in building materials

Research activities in the field of building materials manufacture will be expanded. There are traditional and new materials that could contribute to a reduction in construction cost, and to the expansion of the construction industries, if properly manufactured and utilized. Studies will be undertaken on mineral wool; its manufacture and uses; fiber-cementitious composites; and manufacture of boards from organic materials.

Chapter IX INDUSTRIAL STANDARDIZATION AND QUALITY CONTROL

Standardization

80. Attention was drawn at the fifth and sixth sessions of the Committee for Industrial Development (E/C.5/84 and E/C.5/131) to the importance of the early introduction of standardization in developing countries. ECOSOC, in resolution 1182 (XLI), expressed the conviction that the assistance of the United Nations in introducing standardization in developing countries is a matter of urgency and invited the Governing Council of the United Nations Development Programme to pay due attention to the needs of developing countries in this field.

81. UNIDO has already provided industrial standardization experts for developing countries under financial assistance programmes and will continue this work in 1967.

82. UNIDO has maintained close liaison with the International Organization for Standardization (ISO) and the International Electrical Commission (IEC) in an effort to establish national standardizing bodies (NSB) in developing countries and to increase the participation of such bodies with respect to international standardization activities. A detailed and comprehensive document on standardization has been commissioned and published (UN Publications, Sales No. 65.II.B.2), and three regional papers on standardization have been commissioned for the regions of Central America, Latin America, Africa and Asia and the Far East.

Quality control

83. Quality control is a recognized management function, since it involves basic aspects of market and product, functional decisions involving design and technology, and economic decisions involving finance and marketing.<sup>11/</sup> Quality control in the developing countries should be viewed by Government, management, workers and consumers as a management

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<sup>11/</sup> The need for work in the field of quality control was recommended by the Committee for Industrial Development at its fifth session, (see document E/4065).



function which will improve quality, provide better utilization of materials and increase profit. The modern concept of quality control is based on what is technically called "quality-circuit" approach or integrated quality control. A single document or project cannot serve all the needs of developing countries in this area.

84. In 1966 UNIDO conducted surveys on quality control practices in selected Latin American countries which indicated that the following five-pronged approach is necessary:

- (a) A general report to Government officials and industrial managers consisting of a brief summary of the quality control concept emphasizing the objectives, the economies of quality control, the cycle of quality activities, the need for objective quality standards and the system of quality control;
- (b) A reference document for middle management, emphasizing the cycle of quality activities and indicating the need for a quality system. This document should emphasize the company-wide aspect of quality, not only in the manufacturing plant, but also outside the factory in the suppliers' plants and in the users' facilities;
- (c) An education and training programme in quality creation and quality control, suitable to the particular conditions prevailing in the developing countries;
- (d) Quality control institutions on a regional basis. These institutions, inter alia, could assist industry by undertaking training programmes in this field;
- (e) Interregional and regional meetings to increase the awareness of quality control and to suggest suitable areas of work.

85. To review the problems of various geographical areas, UNIDO will undertake further country studies in the Middle East in 1967. The studies prepared in 1966-1967 will facilitate the preparation for the interregional seminar on the application of industrial quality control techniques by management of industrial enterprises planned for 1968. The studies on quality control, as well as the other industrial management studies outlined below in Chapter X are regarded as essential for evolving a rational programme of work by UNIDO to assist the developing countries in these fields.

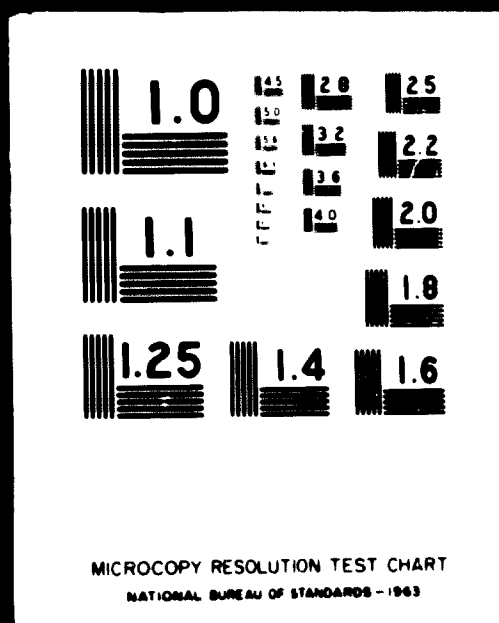


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We regret that some of the pages in the microfiche copy of this report may not be up to the proper legibility standards, even though the best possible copy was used for preparing the master fiche.

Table 20 INDUSTRIAL STANDARDIZATION AND QUALITY CONTROL: Summary of Projects for 1967-1968

Title

Description

1. 1967 Standardization Conference

The United Nations will sponsor fifteen representatives from developing countries who are not members of the International Organization for Standardization (ISO) as participants in a specially convened Development Conference (DEVCON) and other meetings in connexion with the 1967 General Assembly of ISO in Moscow. The DEVCON will have a specially prepared agenda on promoting standardization activities in developing countries. The representatives will also observe the operation of ISO, technical committee and national and company standards activities in the USSR and other countries on their return journey.

2. Country studies on standardization

Ad hoc consultants will be commissioned to make studies on the industrial standardization needs of a selected number of developing countries and prepare definite recommendations for the organization of national standardizing bodies for the development of standardization practices and to seek ways for a more effective programme of United Nations assistance in this field.

3. Studies on quality control

As a continuation of work taken up in 1966, two studies in the field of quality control practices in selected countries of the Middle East will be undertaken in 1967.

Chapter X INDUSTRIAL TRAINING AND MANAGEMENT

Industrial training

86. Assistance in this field is given to Governments of the developing countries in formulating national policies for training for industrialization, in evolving national and international programmes of action, and in suggesting an institutional framework and methods to implement detailed training programmes. The General Assembly, at its twentieth session, emphasized the need to expand work in this area (Resolution 2090(XX)). UNIDO has initiated research and operational activities in depth concerning the training of engineers and technicians for industry, training of personnel dealing with specialized fields of management, training of government and public sector officials dealing with industrial development, and filling gaps in training as they become known.

87. There is a gap between the requirements of skills by industry and the supply of such skills through existing educational systems. In-plant training is one way of helping young engineers to bridge this gap. Details of in-plant training programmes for engineers, organized by the UNIDO, were described in documents E/C.5/132 and E/C.5/133, submitted to the Committee for Industrial Development at its sixth session. The implementation of such programmes was recommended by the Committee for Industrial Development, at its fifth and sixth sessions. The work programme of UNIDO in this area in 1967 consists of the following major activities: (a) to continue to organize and implement in-plant group training programmes for engineers in selected industrialized countries; (b) to explore possibilities of organizing short-term in-plant training programmes in selected developing countries, to be conducted with the co-operation of former participants in the programmes undertaken in industrialized countries and with experts to be provided by UNIDO; (c) to prepare skeleton projects leading to assistance from the Special Fund component of the UNDP for establishing permanent in-plant training centres in selected developing countries. One country has already submitted a request, prepared with the aid of a UNIDO staff member, for assistance to the Special Fund in order to implement such a

project; (d) to prepare in-plant training manuals for specific industry branches to facilitate the tasks of organizing in-plant training programmes in the developing countries themselves; (e) to convene an ad hoc meeting of the directors of in-plant training programmes with the view to evaluating the experiences so far gained and to make suggestions for further development of the programmes.

88. UNIDO is servicing approximately 300 individual fellowships annually in the field of industrialization, financed under the United Nations programmes of technical assistance. Training opportunities are available in the following fields: industrial development planning and programming, industrial technology and practice, technology and research, development of new industries, special problems of small-scale industries and industrial management. UNIDO participates in the selection of candidates and their placement, and in the evaluation of the results achieved. It is felt, however, that UNIDO needs to take a more active role in these activities. UNIDO will initiate in 1967 a research programme including an evaluation and analysis of fellowship reports to support such activities.

89. UNIDO has, in co-operation with industry and management associations in the industrialized countries, evolved a programme of industrial consultation workshops and in-plant training of top executives and specialists, in which the top-level operating executives and technical personnel will participate with their counterparts in the developing countries in discussing common problems. The ultimate aim is to provide advice on practical problems faced by management of manufacturing plants in reaching production and financial targets. Assistance to industry supporting organizations, such as industrial banks, consulting service organizations etc., may also be included in this work. The workshops will be initiated in 1967. Groups of UNIDO experts will be assigned to industrial plants on request from Governments as a follow-up to the consultation workshops. The experts will serve as full-time consultants on functional activities and will, simultaneously, train "on the site" functional executives in such activities. It is hoped that these follow-up activities will be undertaken in 1968 under the UNDP or the SIS programmes of technical assistance.

90. A survey concerning the area of coverage by various development training institutes, conducted by the Centre for Industrial Development in 1962, revealed that there is no comprehensive training in industrial development and planning for government officials. A report on the survey was submitted to the Fourth Session of the Committee for Industrial Development (document E/C.5/54). In order to better ascertain the over-all training needs of the developing countries on the subject, the Centre for Industrial Development, in co-operation with the Development Centre of the OECD, organized the first interregional working party on Training of Economic Administrators of the Developing Countries in Industrial Development, held in Paris in September 1965. A preliminary report on the working party was submitted to the Committee for Industrial Development at its Sixth Session (document E/C.5/124). The Working Party, inter alia, recommended that international organizations sponsor short seminars or meetings for top-level administrators in the developing countries in development strategy and administration with emphasis on problems of industrial development; promote training programmes for the mid-career general administrator on a national and regional basis; and initiate and organize training programmes for technical administrators in specific or specialized subjects of industrialization. These recommendations have not so far been fully implemented owing to a lack of resources. The UNIDO staff will initiate work in 1967 to implement these recommendations. This work may be finalized in 1968 with the assistance of consultants.

91. In 1967 UNIDO will participate in a training programme in industrial development for government officials in the ECAFE region being organized by the United Nations Asian Institute of Planning in Bangkok. The programme will be based on a similar training programme organized for African Government officials in 1965 by the United Nations African Institute for Economic Development and Planning in Dakar (Senegal) in co-operation with the United Nations Centre for Industrial Development.

92. The research work in the fields of industrial training and manpower is oriented to guide the operational work programme. At the same time, the continuous development of such programmes creates a feedback from which new ideas emerge for further research. At present, research activities are being undertaken in the form of country studies on manpower development for



industrialization, and studies on the estimation of technical and managerial personnel requirements in specific industries. The aim of the studies on manpower development is to review the over-all situation with respect to industrial occupational structures, training facilities and manpower needs to carry out the planned industrialization programmes. The studies on personnel requirements are intended as a source of information to planners and to management of industrial enterprises in the developing countries concerned with manpower planning at the industry and plant levels.

### Industrial management

93. In the field of industrial management, the work of UNIDO will be selective rather than comprehensive in the early stages. The activities so far conducted and planned are being closely co-ordinated with the management activities conducted by ILO in order to avoid over-lapping. UNIDO considers that, as a first step, a series of survey studies are needed to identify the needs of the developing countries. The studies will be conducted primarily by UNIDO staff and will be concerned with functional problems of industrial management, such as maintenance and plant engineering, industrial and product design, materials management and inventory control, production planning and control, management planning and control of the financial activities of an industrial enterprise, information systems for industrial and corporate planning, domestic marketing for industrial products, standardization and quality control. The assistance of experts will also be sought in specific areas.

94. Maintenance schemes are often introduced on an ad hoc basis with little or no continuity, and permanent maintenance departments rarely exist. Three studies were prepared in 1966 on problems faced by developing countries, in the field of management and training in maintenance and plant engineering. These problems were also discussed by the Expert Group Meeting organized by UNIDO on Repair and Maintenance in New York in late 1966. UNIDO will collect training material on the subject in 1967 for publication in 1968.

95. Industrial design is a management function rather than a management technique; it utilizes all such techniques in order to develop more technologically advanced products, a more economic and effective manufacturing

process, or a more economically producing plant. With the increasing importance of export markets for manufactured goods, a greater emphasis needs to be given also to the product design function of management. UNIDO is presently the executing agency of a UNDP project on industrial design in the United Arab Republic. It is expected that similar projects dealing with industrial design as well as with product design may be initiated in other developing countries. UNIDO will initiate in 1967 survey studies of practices in this field.

96. Materials management and inventory control are concerned with planning, programming, organizing and controlling all kinds of materials necessary for the efficient functioning of an enterprise. The experience of industrialized countries in this field needs to be adapted to the particular conditions of the developing countries. UNIDO initiated research work in this field in 1966 by preparing five papers. Research in this area will continue in 1967.

97. The production planning and control activity is based on a number of specific techniques. A well functioning centralized production planning and control department will eliminate bottlenecks in production, increase the utilization of existing machines, reduce manufacturing costs, increase profits, and maintain delivery dates to customers. As recommended by the Committee for Industrial Development at its fifth session (E/4065, para.99), UNIDO will initiate surveys in 1967 on production planning and control practices in the developing countries.

98. Periodic financial reports, such as balance sheets, do not reveal information on the day-to-day operations of firms. In order to analyse the production and financial activities within the accounting period, management in the developed countries frequently uses additional tools or techniques, including product costing, standard costing and fixed or variable budgets. This area of activity was recommended by the Committee for Industrial Development at its fifth session, UNIDO initiated a research study in this field in 1966 which will continue in 1967.

99. In 1966 UNIDO initiated five studies and identified some of the quantitative techniques suitable for industrial development in the developing countries. This work will be continued in 1967/1968 by outlining the various

phases of information systems and their role in industrial development and corporate planning. To facilitate easier understanding, audio-visual presentation of quantitative techniques is being prepared. The results will be presented during management seminars which are planned to be held in 1967/1968.

100. Even in a developed country, the cost of marketing accounts for as much as 61 per cent of the consumer's expenditure. In a developing country, where the basic cost of production is high to begin with, an adequately managed marketing function may lead to significant reductions in price. As recommended by the Committee for Industrial Development at its fifth session, UNIDO will initiate limited research work in this field in 1967.

101. General Assembly resolution 2152 (XXI) refers to the over-all co-ordination function of UNIDO, which requires a general knowledge of the activities undertaken within the United Nations system and elsewhere in addition to the research activities in the specialized fields mentioned above, supporting research leading to an over-all survey of activities in industrial management was initiated in 1966 and will continue in 1967. The results will subsequently be published as "A Survey of Current Activities in Industrial Management Training".

**Table 21** INDUSTRIAL TRAINING AND MANAGEMENT: Summary of Projects for 1967-1968

<u>Title</u>	<u>Description</u>
1. <u>In-plant group training programmes</u>	UNIDO has organized, in co-operation with industrialized countries, programmes in specific branches of industry, of which one took place in 1965, three in 1966 and six will be conducted in 1967, as follows:
Ukrainian SSR	Iron and steel industries June 1965
Sweden	Electrical industries February 1966
Ukrainian SSR	Iron and steel industries June 1966
Yugoslavia	Non-ferrous metal industries November 1966
France	Prevention of corrosion January 1967
Italy	Metallurgical industries February 1967
Italy	Machine manufacturing February 1967
Sweden	Electrical industries March 1967
Poland	Textile industries May 1967
Ukrainian SSR	Iron and steel industries June 1967
The following programmes are under consideration for 1968:	
Denmark	Cement industries
Federal Republic of Germany	Machine tool manufacturing industries
Japan	Materials management and inventory control, Industrial maintenance and shipbuilding.
Netherlands	Electronic equipment and consumer appliances
Poland	Shipbuilding Textiles
Sweden	Electrical industries Telecommunications equipment
Ukrainian SSR	Iron and steel industries
Yugoslavia	Non-ferrous metal industries

Table 21 INDUSTRIAL TRAINING AND MANAGEMENT (cont'd)

Title	Description
2. <u>Survey of in-plant training facilities in developing countries</u>	<p>The survey will be conducted in 1967 with the assistance of an expert to explore the possibilities of organizing short-term programmes and establishing permanent "in-plant training centres for engineers" in developing countries.</p>
3. <u>Preparation of in-plant training manuals</u>	<p>Training manuals are being prepared in the fields of iron and steel, electrical industries, non-ferrous metal industries, textile industries, machine manufacturing. Due to the wider application in the developing countries, the manual for textile industries will be completed in 1967 with the assistance of a specialist. Others may be completed in 1968.</p>
4. <u>Ad hoc meeting of directors of in-plant group training</u>	<p>UNIDO will convene in Vienna in 1967, an ad hoc expert meeting of the directors of the in-plant group training programmes being conducted in the industrialized countries, Other specialists are also expected to attend.</p>
5. <u>Evaluation and analysis of fellowship reports</u>	<p>UNIDO will conduct a survey in 1967 with the assistance of an expert in order to provide suggestions regarding the formulation of training programmes for the various industrial areas, the selection of place of study and systems to evaluate and follow-up the training programmes. The work will be supplemented in 1968 by a second study on training activities and organizations in developed countries.</p>
6. <u>Industrial consultation workshops</u>	<p>The workshops will be conducted in two phases. The first phase will be essentially a three-day round-table type discussion seminar, for top-level management. The second phase will be an orientation type seminar, for middle-level management, on the operation and management of the specific functions, such as production planning, maintenance materials management, corporate planning etc. In 1967, the UNIEC will conduct two industrial consultation workshops. It is proposed that these activities be expanded in 1968.</p>
7. <u>Implementation of recommendations of the interregional working party on training of economic administrators in industrial development</u>	<p>It is proposed to explore the possibilities of implementing the recommendations of the working party by expanding the facilities of pilot, economic training and research institutes located in the semi-industrialized countries. In 1967, staff of UNIEC will initiate a survey of the activities of selected development institutes with a view to selecting one or two pilot institutes. It is hoped that the survey will be finalized in 1968 with the assistance of an expert.</p>

**Table 21. INDUSTRIAL TRAINING AND MANAGEMENT (cont'd)**

**Table**

**Description**

8. Training programme for industrial administrators in the ECAP region

UNIDO will participate in the organization and implementation of the training programme in the ECAP region by sending one lecturer.
9. Review of studies on manpower development for India, Pakistan, Sri Lanka, Thailand, and studies on technical assistance requirements in industrial enterprises in specific industries

The ten country studies on manpower development prepared in 1966 will be reviewed with the assistance of a manpower specialist in 1967 for publication in 1968. Six studies conducted in 1966 on estimation of technical and managerial personnel requirements in specific industries will be published in 1967. In 1968, it is proposed to convene an ad hoc meeting of experts on the subject to determine whether further research along similar lines is warranted, as well as to provide guidelines to maximize the compatibility of the research work done for the different industries.
10. Collection of training materials in industrial maintenance and plant engineering

In 1967, training materials in industrial maintenance will be collected by the staff for subsequent use in in-plant training programmes and centres in the developing countries.
11. Survey on industrial design and production planning

In 1967, UNIDO staff will conduct limited surveys of training practices in the field of industrial and product design in developed as well as developing countries.
12. Case studies on materials management and inventory control

This is a continuing project. In 1966 five country studies on materials management practices were prepared. In 1967 case studies on training programmes will be collected for subsequent preparation of training guides.
13. Studies on production planning and control

In 1967, studies will be conducted by the staff in the field of production planning and control with the ultimate aim of publishing a guide to assist the managers and engineers in establishing production planning and control departments. Such a guide is not available at present. It is hoped that the guide will be completed in 1968. The work in 1967 will be conducted with the assistance of a specialist.
14. Studies on management planning and control of financial activities

Studies in selected countries will be undertaken on the use of integrated cost accounting, product costing, standard costing and budgetary systems by industrial enterprises. These studies will subsequently be published and are intended to assist management in the developing countries to install such systems. The first study will be prepared in 1967.

**Table 21 INDUSTRIAL TRAINING AND MANAGEMENT (cont'd)**

<u>Title</u>	<u>Description</u>
15. <u>Information systems: system analysis and design operation research, computer application and quantitative decision making</u>	A comprehensive study will be prepared with the assistance of specialists in 1967, dealing with the concepts and functions of information systems applicable to industrial development and corporate planning. Selected sections of the study shall be presented during management seminars (planned for 1968) to conform with the level of a selected region.
16. <u>Survey in domestic marketing</u>	UNIDO staff will initiate in 1967, a series of limited surveys on domestic marketing in selected developed countries. The surveys will cover, <u>inter alia</u> , laws affecting product sales and recommendations for the improvement of existing facilities and organizations. The surveys are expected to be continued in 1968 with the assistance of experts, and subsequently lead to the preparation of a training manual in domestic marketing.
17. <u>Survey of current activities in industrial management training</u>	Two questionnaires will be circulated in 1967-one to leading institutes, schools and associations dealing with management training and research in developed countries; another to similar institutions in developing countries. The data collected will be tabulated and analytically compared. This will provide a basis for a subsequent analytical survey, to be continued in 1968 and 1969.

Chapter XI. INSTITUTIONAL ASPECTS OF INDUSTRIAL DEVELOPMENT

102. The development of industry requires the support of its own particular infrastructure, referred to as "industrial services". The following activities of UNIDO make up the over-all pattern of industrial services: industrial research; industrial property; industrial legislation to promote and protect local industry; industrial co-operatives; dissemination of technological, business and economic information; machinery for the organization and administration of industrial services; standardization; special assistance to small business and training of personnel for the above purposes.

103. While an individual enterprise may be able to provide some of these services for itself, only a few, if any, in developing countries can hope to provide them all. The existence of a system of services which can lend the necessary support to individual enterprises is imperative for the growth of industry. Depending on the individual national policies of a country, these services may be carried out by the organized private sector, e.g. trade, professional and industrial associations and/or Government.

Industrial research

104. It is now widely accepted that certain basic investigative and technical services are just as essential in the industrialization of a country as the availability of investment capital.

105. An industrial research institute is defined as a local organization for rendering various technical services and for carrying out scientific, engineering, economic, or socio-economic investigations on industrial projects, whether such projects are initiated by the organization itself or proposed by individual establishments, investors, industry associations or government agencies. Its work is by no means limited to research. An industrial research institute is a valuable national asset that is likely to grow as the economy expands. It has that element of permanence that is lacking in ad hoc research schemes and investigations which rely mainly on the short-term assistance of an expert.



106. In providing these services, the institutes conduct laboratory testing and research; operate pilot-plants as an intermediate activity between obtaining the results of research in a test tube and the actual commercialization of these results; diagnose problems and solve them on the spot; and conduct field investigations and studies.

107. In order to assist developing countries in establishing new research institutes, UNIDO proposes to conduct feasibility studies in several countries to determine whether or not it is possible to establish such institutes. These studies will determine what services should be provided, as well as the most suitable organization and type of management required. It is anticipated that ten such feasibility studies will be conducted in different countries in the course of 1968.

108. The UNIDO experience to date in establishing industrial research institutions in developing countries indicates that it may be advisable to increase the flexibility in developing such institutions, especially with regard to the adjustment of long-term plans to changing situations, and with regard to relationships with governmental authorities concerned with industry, and also with the industrial community. In giving priority to the substantive work of research and study, certain difficulties, particularly with regard to the establishment of special buildings, may be temporarily waived until such time as permanent buildings are established.

109. The establishment of new institutes can be assisted by UNIDO, as has been done in several cases already under Special Fund financing.

110. UNIDO will assist the developing countries in the management of research institutes, recommending the names of specialists to be hired by requesting host countries; recruiting directors and management personnel through the OPEX programme; or recruiting experts through UNDP financing. UNIDO may be sub-contract with other institutes and consultants to share in the execution of projects; in the operation of pilot plants; may assist in the evaluation of industrial research institutes to help the institute "sell" its service to the community so that its value may be felt. UNIDO also assists such institutes through the publication of the "Industrial Research and Development News". (Table 22, project 1).

111. As a continuation of previous programmes, UNIDO is organizing in Athens in July 1967 a training workshop for managers of industrial research institutes. (Table 22, project 2)

Industrial consulting services

112. The concept of bringing outside consultants into a host firm or organization on a temporary contractual basis to provide simple consultancy services is firmly established. In most developing countries there are few, if any, local facilities for industrial consulting services of any kind; hence, reliance is necessarily placed on consultants from the more industrially advanced countries.

113. UNIDO aims at assisting developing countries in the hiring of industrial consultants, and in the development of local consulting establishments. The programme will include: a workshop for managers of industrial development corporations, industrialists, and other employers of consultants; and a workshop for the managing staff of local consulting establishments. (See Table 22).

114. UNIDO will assist developing countries in the setting up of local consulting organizations by providing, through operational funds, experts and consultants to assist in the establishment of local consulting firms and to help strengthen the relationship between local and foreign consultants; and by making available fellowships to the staff of local consulting organizations for training abroad in various aspects of consultancy. Fellowships would be for a duration of three to six months.

115. As a central clearing house activity, UNIDO plans to undertake research and promotional activity during 1967 with a view to establishing, in co-operation with interested agencies, a roster of industrial consulting organisations. The roster will contain other information on various organizational matters and practices. It will be made available to countries upon request.

### Industrial property

116. General Assembly Resolution 2152 (XXI), states that in the area of industrial property UNIDO undertake "measures for the improvement of the international system of industrial property, with a view to accelerating the transfer of technical know-how to developing countries and to strengthening the role of patents consistent with national interests as an incentive to industrial innovations."

117. UNIDO will work in co-operation with such organizations as the Bureaux Internationaux Reunis pour la Protection de la Propriete Intellectuelle (BIRPI) and the African and Malagasy Union for the Protection of Industrial Property (OAMPI) which have already assumed an active role in the field of industrial property.

118. During 1967, research and organization will be undertaken for a technical meeting on patents to be held in 1968 (See Table 22).

### Industrial legislation

119. As stated in document E/C.5/121, submitted in 1966 to the Committee for Industrial Development, the field of industrial legislation covers a wide range of subjects such as patents, standards and specifications, requirements for plant operating licenses, industrial sites, factory layout and structure, investment incentives, inspection, import controls, trade marks, taxation, training, forms of organization and registration, and the use of machinery and equipment. It was decided to compile and publish information on laws and regulations affecting industry in the "Industrial Legislative Series". A feasibility study conducted suggests that this project is essential, as no comprehensive work in industrial legislation exists at present. The "Series" will enable developing countries to benefit from the experience acquired in other countries. (See Table 22, item 6)

### Industrial co-operatives

120. It is generally agreed that in the over-all effort to achieve a higher rate of industrial growth, industrial co-operatives have played an important role. Industrial productive co-operatives exist in developed as well as developing countries. For example, co-operative industries based on the processing of agricultural produce, fertilizers etc. are widespread both in Canada and the United States. The organization of light industries along co-operative lines is common to all the countries of Eastern Europe. In 1962, about 275 industrial productive co-operatives existed in Mexico; 200 in Israel; and 2,800 in Pakistan. Most of these are chemical, engineering and metals, leather, textile, and food processing co-operatives.

121. The Committee for Industrial Development at its Sixth Session in May 1966, recognizing the importance of co-operatives and other private organizations in the acceleration of industrial development in developing countries, authorized the Secretariat to undertake a study of support services generally. In considering the various non-governmental organizations, the Committee paid special attention to the co-operative movement and supported the view that the development programmes of the United Nations should include "the encouragement of co-operative associations". In continuation of past activities, UNIDO proposes to organize in 1967, a technical meeting on industrial co-operatives. (Table 22, item 7).

### Dissemination of Technological, Business and Economic Information for Industrial Development

122. UNIDO will assist in establishing various types of information services. It will assist developing countries in the establishment and operation of local industrial information and extension services; act in general as a clearing house for industrial information, promoting the exchange of knowledge and experience; provide directories to source of information; train personnel on methods and techniques of dissemination of information.

123. In 1966 alone, more than 80 inquiries were handled on specific industrial problems from developing countries all over the world. Problems which require "on the spot" investigation and advice were referred to the "Special Industrial Services" programme for evaluation and eventual provision of field experts.

124. UNIDO will continue to enlist reputable scientific, industrial and professional bodies throughout the world as voluntary contributors to an Industrial Inquiry Service. Contributors will provide ad hoc replies to those industrial inquiries which do not require additional new research on their part. (See Table 22, item 8)

125. The Economic and Social Council, in Resolution 1183 (XLI), recommended that an advisory service which could provide information to the developing countries on the sources of supply, the cost and the quality of equipment needed for their development be set up. Pursuant to this Resolution, UNIDO proposes to convene in late 1967, a working group of experts who would be representative of both the suppliers and users of industrial equipment from private and public sectors. (Table 22, item 9)

126. Further to the report presented to the Committee for Industrial Development at its Sixth Session, a feasibility study on the need for a world-wide directory of industrial agencies, as well as on the most appropriate method of presentation, was carried out in 1966. The study indicated that there is no comprehensive national or regional directory of this type and the resulting hazard to potential investors. Based on these findings and on the data compiled in the sample case studies of industrial development agencies in four countries from different regions of the world, UNIDO proposes in 1967 to proceed with the collection of the information required for the publication of the world-wide directory. (See Table 22, item 10).

127. It is hoped to organize in 1968 a seminar on industrial information for participants from developing countries. Negotiations are under way with certain industrialized countries which have tentatively agreed to finance and host this seminar. (See Table 22, item 11).

128. The need arises for creating suitable machinery to provide industrial services on a broad-based institutional level. Such machinery may be set up within the organized private sector, typified by such organizations as chambers of industry, industrial co-operation, professional associations, etc., and by or in conjunction with the Governments. During 1965 and 1966, the Secretariat conducted a survey of the organization and administration of industrial services in 31 developing countries in various parts of the world. The survey indicated that there was little co-ordination between industrial development agencies, resulting in jurisdictional overlaps in some cases and gaps in others. These and other problems will be the focus of attention in future work programmes of UNIDO.

129. In continuation of previous plans, UNIDO and the "Centre Africain de Formation et de Recherche Administratives pour le Developpement" (CAFRAD) are jointly organizing and financing in 1967 a Seminar on the organization and administration of industrial services in Africa. (Table 22, item 12)

130. A technical meeting will be held in 1968 to study the role of manufacturers associations and similar organizations in providing industrial services to developing countries.

The meeting will discuss problems facing the organized private sector in providing industrial services to enterprises and suggest ways and means for improving the organization of agencies providing these services. It is expected that the meeting will be organized in co-operation with interested bodies such as the International Chamber of Commerce. It will devote attention to problems of providing industrial services through the organized private sector.

Table 22 INSTITUTIONAL ASPECTS OF INDUSTRIAL SERVICES: Summary of Projects for 1967-1968

<u>Title</u>	<u>Description</u>
1. <u>Industrial Research and Development News</u>	<p>The Industrial Research and Development News is a continuation of the "Industrial Research News", a periodical which was started in January 1966. Designed as a communication medium among industrial research institutes throughout the world, it includes information on the organization and management of industrial research institutes and their current research and development projects, co-operative activities, problems and achievements, as well as biographic sketches of men prominent in industrial research, information on forthcoming research events and meetings, reviews of directories of research organizations and other closely related matters. Vol II No. 1 was issued recently (Sales No. 67II.B.4) and Vol. II No. 2 is scheduled for publication in May 1967.</p>
2. <u>Workshop for managers of industrial research institutes</u>	<p>As a continuation of previous programmes, UNIDO is organizing in Athens in July 1967, a two-week training workshop for managers of industrial research institutes. Twenty-five managers or directors of various industrial research institutes in Africa and The Middle East, Asia and the Far East and Latin America will participate in the workshop. The workshop is intended to serve as a forum in which the participants can exchange experiences, discuss practical problems and resources for their solution. In this way, managers will in effect receive practical training.</p>
3. <u>Preparation for regional workshop for employers of consultants</u>	<p>During 1967 research, the establishment of contacts and general promotion will be undertaken with a view to holding a regional workshop for employers of consultants in 1968. The workshop will be for managers of industrial development corporations, industrialists and other employers of consultants for an exchange of views and training on techniques and systems of selecting consultants; contractual and financial arrangements; client consultant relationships; and implementation of consultant recommendations. The experience gained in this workshop would be supplemented by similar schemes in the future, therein allowing constant modification in thinkings and adjustment to current and future needs of each region.</p>
4. <u>Workshop for the managing staff of local consulting establishments</u>	<p>During 1967 research and promotion will be undertaken for a regional workshop for the managing staff of local consulting firms and offices, thereby bringing to light problems of their profession and examining ways and means of providing more effective help to industry. The workshop would be designed to train participants in such areas as the organization of the consulting professions (establishment of offices, associations, rules and regulations, codes of ethics,</p>

Table 22

INSTITUTIONAL ASPECTS OF INDUSTRIAL SERVICES: Summary of Projects for 1967-1968 Cont'd

<u>Title</u>	<u>Description</u>
<u>4. Workshop for the managing staff of local consulting establishments</u>	etc.); fields of activity of consultants; contracting procedures; financial aspects of consulting activities; consultant-client relationships; assistance from and the relationship with consulting firms in other countries, etc. Practice for training management personnel of local consulting establishments in other regions in the future may be based on the experience gained from this first workshop.
<u>5. Technical meeting on patents</u>	During 1967 research and promotional activity will be undertaken with a view to organizing in 1968 a technical meeting for the review of existing systems and practices in developing countries on the use of patents. The findings of such a meeting will put UNIDO in a position to suggest possible courses of action in developing countries specifically interested in strengthening their patent systems and patent legislation. In addition, the meeting will offer an opportunity to study the relationship between patent holders and industrialists; the advisability of regional arrangements for patent administration; and the means of inducing the creation of new local industry through procurement of new patents in co-ordination with other incentive methods, such as joint public and private sector ventures, use of international funds, and enterprise-to-enterprise arrangements.
<u>6. Industrial Legislative Series</u>	This technical meeting will, in effect, strengthen and reinforce regional seminars already sponsored by BI RPI between 1963-1966. Designed as an action-oriented device, its findings will help to shape the future programmes of practical action and technical assistance of UNIDO in the field of industrial property. The meeting is proposed to last for a period of two weeks; it will be held in co-operation with interested organizations. Its participants should reflect the views of developed and developing countries, and the experts should represent the private as well as the public sector, in addition to the opinions of interested observers. During 1967 material will be collected for an Industrial Legislative Series which will be undertaken on a periodical basis starting early in 1968. The "Series" will not be limited exclusively to legislation, but will also include pertinent administrative directions, executive orders and other regulations affecting the various subject categories. The series would be published in a looseleaf format, with periodic supplements, and would include developed as well as developing countries. It is proposed that the services be published initially in English with a French and Spanish index. UNIDO will seek the



## Description

the co-operation of other interested agencies in the preparation of material for publications.

In continuation of past activities, UNIDO plans to organize a technical meeting in late 1967 to study and explore the most practical approach to effectively utilize the United Nations Technical Assistance programmes for strengthening industrial co-operatives. The aim is to allow these co-operatives to take their place in the process of industrialization in the developing countries.

This service, already established, aims to assist industries in developing countries to gain access to industrial information of possible use to them. Such information is the fruit of industrial research or practical experience in areas which have already been faced with problems similar to those now being encountered by the newer enterprises in the industrializing countries. UNIDO will continue to enlist scientific, industrial and professional bodies throughout the world as voluntary contributors to the Service providing ad hoc replies to inquiries.

Pursuant to ECOSOC Resolution 1183 (XLI), UNIDO plans to convene in late 1967 an expert group meeting which would be representative of both the suppliers and users of industrial equipment from private and public sectors. The group would explore appropriate ways and means for the collection, analysis, classification and dissemination of information on industrial equipment with a view of establishing an advisory service in UNIDO for such a purpose.

As a continuation of previous programmes, UNIDO will collect data from various regions of the world on agencies engaged in industrial development with a view to publishing an industrial agency handbook in 1968. The directory will include information on the organizational functioning of industrial agencies as well as administrative procedures for the establishment of industries. The directory is designed to serve as comparative reference for the use of local authorities and investors. It is hoped that the handbook will play an important role in the promotion of private and public investment from both domestic and foreign sources.

Research and negotiations will be undertaken in 1967 with a view to holding a seminar on industrial information for participants from developing countries in 1968. The seminar will identify problems of organization of industrial

## Title

6. Industrial Legislative Series  
(Cont'd)7. Technical meeting on industrial co-operatives8. Industrial inquiry service9. Advisory service on the supply of industrial equipment10. Directory of industrial agencies11. Seminar on industrial information

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Description

11. Seminar on Industrial Services in Africa (1967)

Industrial services in developing countries; serve as a forum for the exchange of views and discuss technical assistance in this field. Negotiations are under way with possible host countries.

12. Seminar on the Organization of Industrial Services in Africa

In continuation of previous plans, UNIDO and the African Training and Research Centre in Administration for Development are organizing a seminar on the organization and administration of industrial services in Africa to be held in August 1967. The two-week seminar is a regional project covering countries in Africa and participants will be drawn accordingly from those countries. The seminar will attempt to identify problems of organization and administration of industrial services in Africa; serve as a forum for the exchange of information between the various countries, discuss matters of technical assistance in the area of industrial services; and formulate recommendations for strengthening these services as well as for their more effective administration. Highlights of the seminar will include discussions on the following topics: (a) Various kinds of industrial services designed to promote industrialization, (b) Institutional arrangements for providing industrial services, with special attention to related organizational factors, including personnel and policies and problems of financing, (c) the role and relationships of public and private sector agencies and organizations, such as industrial development corporations, industrial co-operative and chambers of industries, in the provision of industrial services, (d) bilateral and international assistance in the field of industrial services.

Chapter XII SMALL-SCALE INDUSTRY

131. In the past, the research work of the Centre for Industrial Development (UNIDO) in the field of small-scale industry was concerned principally with the main issues and policies for the promotion of this sector. Studies were made on the definition of small-scale industry, the role of small-scale industry in industrialization policies and programmes, the role of industrial estates in policies and programmes for the development of small-scale industries, subcontracting as a means of promoting small industries, stimulation of entrepreneurship, export promotion of small industry products etc. At the same time, studies in greater depth were carried out on some of the more important measures for the development of small-scale industry. Much work, in particular, was done on industrial estate development, which was studied in all its aspects, including physical planning, organization, management and financing. Four regional meetings on industrial estates were convened and five United Nations publications on the subject were issued. Studies were also carried out on techniques of assistance to small entrepreneurs at the pre-investment stage, industrial extension services, hire-purchase of machinery, government procurement schemes and other measures of promotion. A publication on the types of assistance which may be made available by the United Nations under its technical co-operation programmes was issued at the end of 1966.<sup>12/</sup> In December 1966, a seminar on small-scale industry in Latin America was held at Quito, Ecuador; this was the first meeting in which all major problems of small industry development were reviewed at a regional level.

132. The groundwork laid through studies, surveys and regional seminars provided a basis for the next stage which is now almost entirely devoted to operational activities. The number of technical assistance and Special Fund projects in the field of small-scale industry has increased substantially. The knowledge and experience gained by UNIDO staff and advisers enabled them to provide direct advisory services to Government, an activity which has continuously gained in importance and which will

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<sup>12/</sup> Technical Co-operation for the Development of Small-scale Industries  
(67.II.B.3)

continue to expand in the future. In 1966, all three staff members and the technical adviser of the Small-scale Industry Section carried out missions of this type, under the technical assistance and ILO programmes, in Colombia, Cyprus, Ecuador, Greece, Iran, Malawi, Morocco, the Sudan and Venezuela.

133. In 1967 and subsequent years, further work will be carried out with the aim of providing guidance to Government and technical co-operation experts in policies and programmes but an increasing part of the research activities of UNIDO will be devoted to the study of specific fields of promotion of, and assistance to, small-scale industries, with a view to guiding and facilitating the implementation of these policies and programmes.

134. In the first area, two papers on the main issues and policies in the development of small-scale industries and of industrial estates, respectively, are being prepared for submission to the International Symposium on Industrialization, which will be mostly concerned with policy aspects. Also, the material already collected on the place of small-scale industry in the industrialization of both developed and developing countries will continue to be analysed, and a paper on a policy problem, which has received little study so far - the future of the traditional industrial sector in a modernizing economy - will be prepared.

135. In the second area of specific fields of implementation, work will be undertaken on the following main problems: (a) technical services and facilities for small-scale industries; (b) financing of small-scale industry; (c) subcontracting; (d) common service facilities for industrial estates and specialized industrial estates; (e) techno-economic studies of projects of development of small-scale industries and appropriate technologies for this sector; and (f) export promotion of small industry products.

136. The technical services and facilities for small-scale industries will be the subject of an Interregional Symposium to be held at Vedbaek, Denmark, from 24 June to 8 July 1967. The symposium will bring together directors or other senior officials of such institutions as small industry service institutes, industrial extension centres, productivity

centres etc. It will review the organization, methods, financing and management and assess the usefulness of different services and examine the scope and prospects for regional and international co-operation in this field.

137. The country studies of sub-contracting and the general analysis prepared in 1966 will be followed up by studies in greater depth on special aspects of the subject, in particular on the types of industrial production which lend themselves to complementary relations between large and small industries.

138. The studies of industrial estates will not concentrate on certain common facilities such as tool room and testing and quality control laboratory and on specialized projects such as the functional, ancillary and port or airport industrial estates.

139. A new field of study will be taken up in 1967 - that of technologies for small-scale industries. A first study will deal with machines and machine tools, which can both be used and produced by small establishments. Studies on other processes, machines and equipment will be undertaken at a later stage. A related project, to be implemented in 1967, will be concerned with the techno-economic criteria for determining the types of industries suitable for small-scale operation.

140. The reports to be prepared in 1967 for publication in that year and in 1968 include: "Promotion of Small-scale Industry in the Developing Countries"; "Inter-relations between Small and Large Industries - A Study of Sub-contracting"; "Small-scale Industries in Latin America"; "Industrial Estates and Industrial Areas in Europe and the Middle East"; and "The Role of Small-scale Industry in Industrialization Policies and Programmes".

Table 23 SMALL-SCALE INDUSTRY: Summary of Projects for 1967-1968

<u>Title</u>	<u>Description</u>
1. <u>Promotion of small-scale industry in the developing countries</u>	This publication <sup>a/</sup> will include studies on the definition of small-scale industries, pre-investment surveys and measures for the stimulation of entrepreneurship, financing of small-scale industries, industrial extension services and industrial estates development. Work on the publication began in 1965. Some of the studies contained in it were submitted as discussion papers to three regional seminars on industrial estates for, respectively, Africa, Europe and the Middle East, held in 1964 and 1966, and for the regional seminar on small-scale industries for Latin America, held in 1966. The project will be completed in 1967.
2. <u>Inter-relations between small and large industries: A study of sub-contracting</u>	The purpose of this publication <sup>b/</sup> is to inform developing countries of the role of sub-contracting between large and small industries, as a means of promoting small industry development. It contains studies of sub-contracting in France, India, Japan and the United States and Puerto Rico, and a general analysis of the four country reports. The project was initiated in 1966 and will be completed in 1967.
3. <u>Small-scale industry in Latin America</u>	This publication <sup>c/</sup> will include 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. It will be the first United Nations publication discussing all major problems of small industry development in a given region. The work was initiated in 1966 and will be completed in 1967.

a/ See E/C.5/110, paragraph 161; ID/B/3, p. 137

b/ See E/C.5/110, paragraph 158; ID/B/3, pp. 131, 134

c/ See E/C.5/110, paragraph 162; ID/B/3, p. 139

Table 23 SMALL-SCALE INDUSTRY (cont'd.)

Description

Title

This publication<sup>d/</sup> will include the reports of the consultative group on industrial estates and industrial areas for Europe and of the consultative group on industrial estates and industrial areas for the Middle East, held during October/November 1966, and some of the papers prepared for these meetings. It is one in a series of publications on industrial estates in various regions. Volumes on industrial estates in Asia and the Far East (Sales No.: 62.II.3.5), and industrial estates in Africa (Sales No.: 66.II.3.2) have already been published. The work was initiated in 1966 and will be completed in 1967.

This publication<sup>e/</sup>, the purpose of which is to provide guidelines to developing countries on the potentialities and limitations of small industry development in countries at different stages of industrialization, will contain a statistical analysis of the place of small-scale industry in the industrial structure of developed and developing countries and a paper on measures for the development of small-scale industry. The work was initiated in 1966 and will be completed in 1967.

This symposium<sup>f/</sup> organized jointly by UNIDO, the United Nations Bureau of Technical Assistance Operations and the Government of Denmark, will be held in Vedbaek, Denmark from 25 June to 8 July 1967. The provisional agenda includes a review of technical services and facilities in the countries of the participants and general evaluation of experience;

4. Industrial estates and industrial areas in Europe and the Middle East

5. The role of small-scale industry in industrialization policies and programmes

6. Interregional symposium on technical services and facilities for small-scale industries

d/ See E/C.5/110, paragraph 162; ID/B/3, p. 146

e/ See E/C.5/110, paragraph 158; ID/B/3, p. 130

f/ See E/C.5/110, paragraph 163; ID/B/3, p. 136

Table 23 SMALL-SCALE INDUSTRY (cont'd.)

Title	Description
<p>6. <u>Interregional symposium on technical services and facilities for small-scale industries</u> (cont'd.)</p>	<p>functions and methods in the promotion of entrepreneurship; assist-ance at the pre-investment stage; technical counselling; technical servicing; quality improvement; management assistance; marketing assistance; research and demonstration; sub-contracting; training of extension personnel; and co-operation and co-ordination between national agencies and between countries, both on a regional and international basis. It is expected that the conclusions of the symposium will provide guidelines for the planning, establishment and operation of technical services and facilities for small-scale industries in developing countries, and for technical co-operation projects in this field. Papers to be presented to the symposium include country papers (by the participants), thirteen discussion papers and four background papers, (thirteen by UNIDO staff, advisers and consultants, three by Danish consultants and one by ILO). The papers will cover the following subjects:</p>
	<ul style="list-style-type: none"> <li>(a) Types of technical services and facilities for small-scale industries;</li> <li>(b) Integrated programmes of small industry development;</li> <li>(c) Industrial extension services for small-scale industry in developing countries in the light of the Danish experience;</li> <li>(d) Technical counselling for small-scale industries;</li> <li>(e) Advisory services in management;</li> <li>(f) Quality problems in small industry production;</li> <li>(g) Productivity improvement in small industrial undertakings;</li> <li>(h) Technological research and industrial extension;</li> <li>(i) Training of extension workers;</li> </ul>



**Table 23** SMALL-SCALE INDUSTRY (cont'd.)

<u>Title</u>	<u>Description</u>
6. <u>Interregional symposium on technical services and facilities for small-scale industries</u> (cont'd.)	(j) Sponsorship, organization and financing of technical services and facilities in the light of the Indian experience; (k) Management and operational problems of small industry service institutes in the light of the Indian experience; (l) Scope for organization of technical services on a regional basis; (m) <u>United Nations</u> technical co-operation for the establishment, development and operation of technical services and facilities for small-scale industries; (n) Stimulation of entrepreneurship and assistance to small industrialists at the pre-investment stage; (o) Industrial extension services for small-scale industries; (p) Training for industrial production of prototype machinery; (q) Services and facilities in industrial estates.

**7. Financing of small-scale industries**

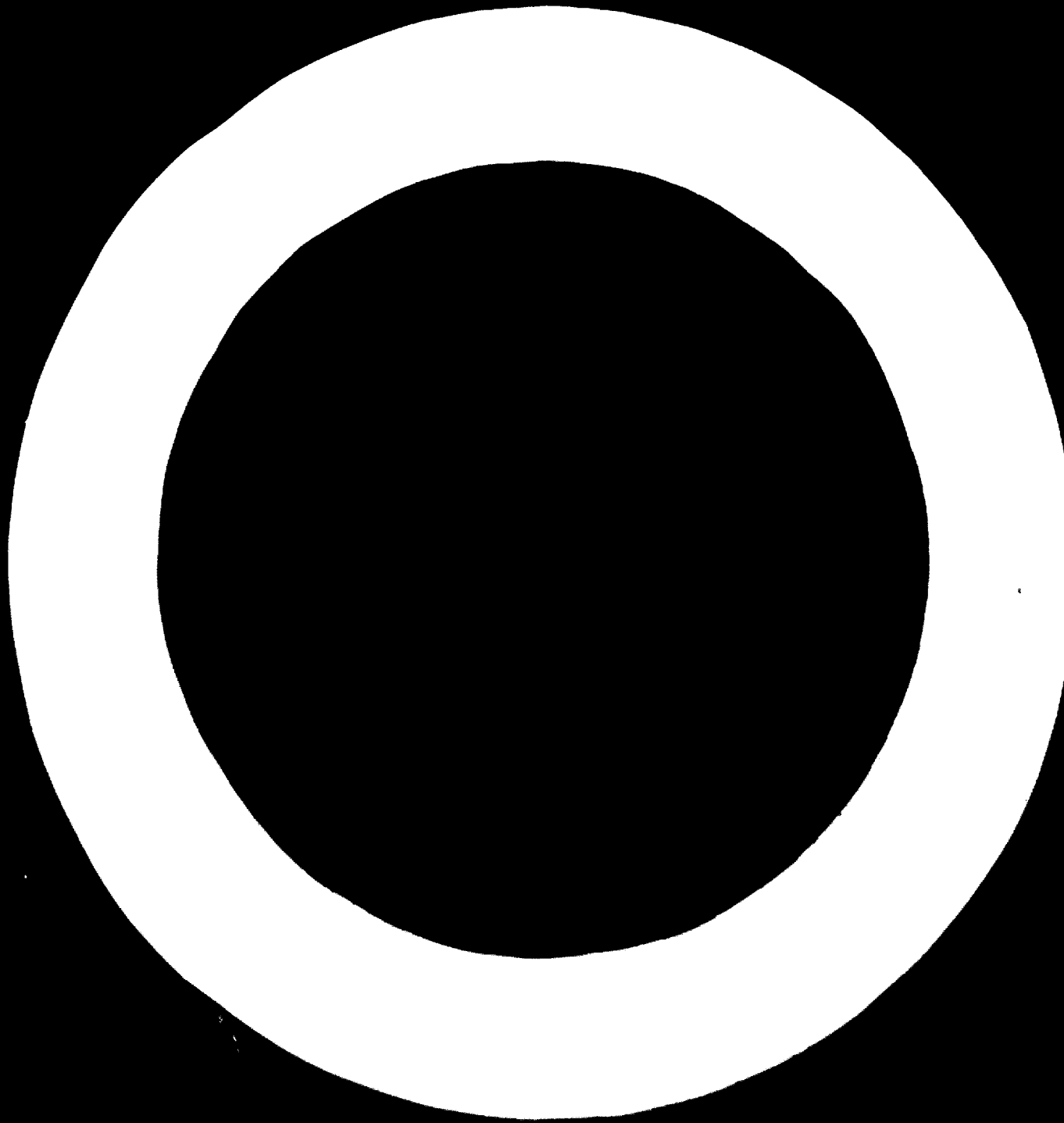
Four studies will be undertaken during 1967, discussing the institutional and operational aspects of financing of small-scale industry in selected countries: the role of commercial banks, joint private-government funds and guarantee and insurance systems in meeting the financial requirements of small-scale industries; the financing of institutional facilities and services for small-scale industries; and methods for linking technical assistance to financial assistance. Studies on other aspects of financing will be undertaken in 1968. It is intended to submit all these studies to a seminar or an expert group meeting to be organized in 1968 and 1969, if appropriate financing is secured.

Table 23 SMALL-SCALE INDUSTRY (cont'd.)

Title	Description
8. <u>The future of the traditional industrial sector in a modernizing economy</u>	<p>The purpose of the project is to evolve, on the basis of an analysis of experience in developed and developing countries, guidelines for government policies and measures in respect of artisan, handicraft and cottage industry undertakings. The study will focus attention on 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 retraining, extension, incentives etc.</p>
9. <u>Industrial estates</u>	<p>Three studies, to be carried out in 1967, will relate to special aspects of industrial estate development. Two studies will deal with the tool room and the testing and quality control laboratory as common service facilities on industrial estates for small-scale industries. Each study will describe the functions, policies, procedures, methods, equipment and staff of these facilities, including economic and engineering data. The third study will discuss the functional industrial estate, including an analysis of the suitable types of production, sponsorship, organization, layout, services, financing etc.</p>
10: <u>Techno-economic studies</u>	<p>As a first study in a new series of projects on technologies for small-scale industries, it is proposed to undertake an analysis of processes, machines and equipment, capital and labour requirements etc. for selected small-scale machine and machine-tool industries. The study will take into account economies of scale, market characteristics and other techno-economic considerations.</p> <p>Another study in this category will relate to the techno-economic criteria for determining the types of industries suitable for operation on a small scale. On the basis of comparative analyses of manufacturing data from selected developed and developing countries, the study will bring out lists of industries suitable for development in developing countries with different types of economies and different sizes of markets.</p>

Table 23 SMALL-SCALE INDUSTRY (cont'd.)

<u>Title</u>	<u>Description</u>
11. <u>Export promotion of small-industry products</u>	The subject of export promotion of small-industry products was studied in a paper prepared by UNCTAD (Proceedings of UNCTAD, 64.II.B.14, Vol. IV). It is proposed to study in greater depth certain programmes, incentives, facilities and institutions in selected developed and developing countries with a view to providing practical recommendations on policies and methods for promoting the exports of small-scale industries.



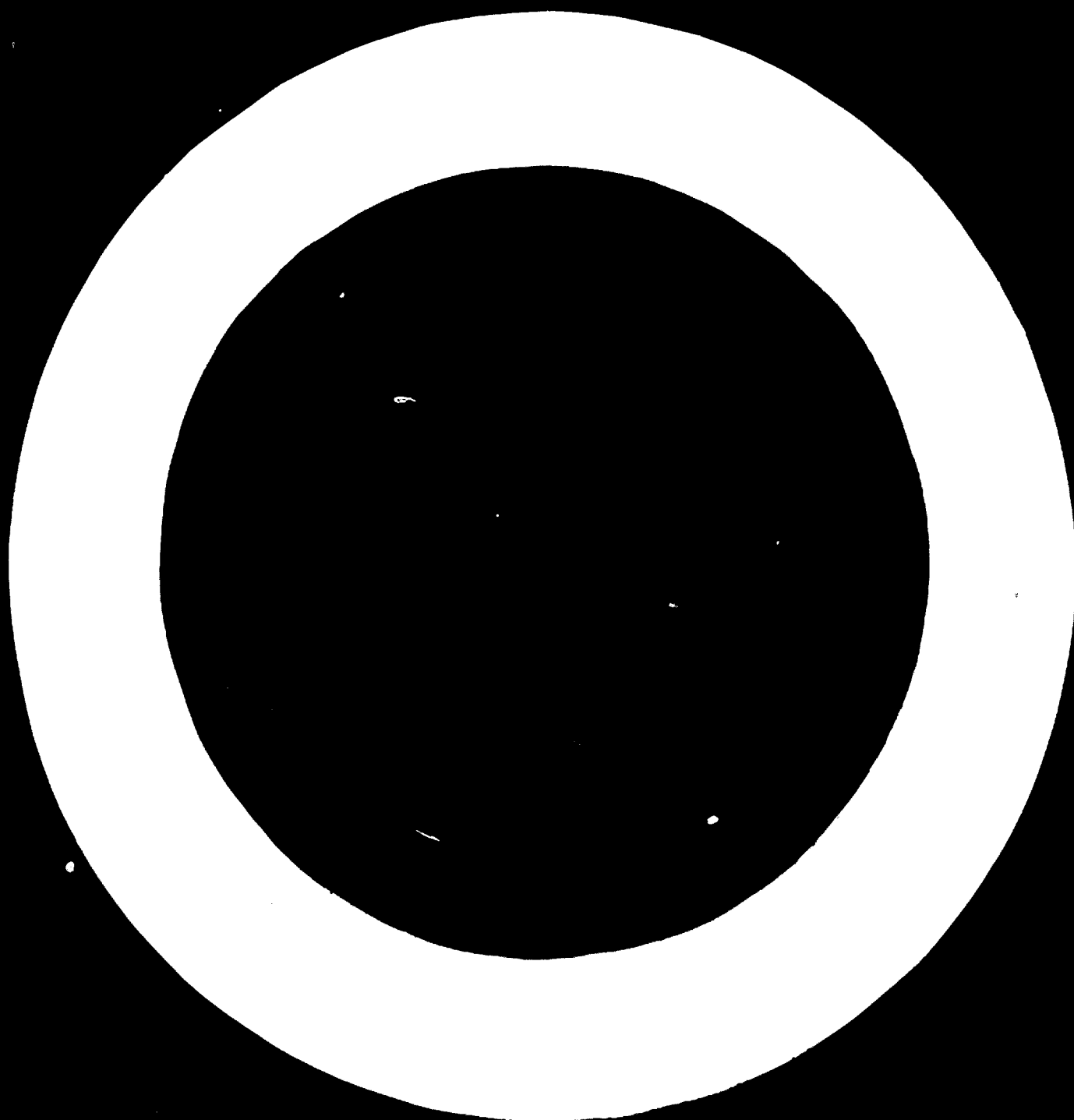
ANNEX I

UNIDO: STAFF AND BUDGET RESOURCES RELATED TO SPECIFIC SECTORS OF ACTIVITY

Area of Activity	Professional Staff as of 1 January 1967 <sup>a/</sup>	Funds Budgeted for 1967		
		Consultants	Meetings and Expert Groups	Printing and Publications
1. Technical co-operation (Operational field activities)	11			
2. Industrialization surveys and policies, including financing	12	36,000	8,000	
3. Industrial programming and <sup>b/</sup> project formulation	8	89,700	25,500	39,400
4. Industrial location and regional development	4			
5. Development of export oriented industries	7	24,000	15,000	
6. Metallurgical and metal-working industries	4 )			
7. Chemical industries	5 )	69,300	18,000	62,350
8. Consumer industries	4 )			
9. Standardization and quality control	1 )			
10. Industrial training and management	7	35,000	8,000	14,000
11. Institutional aspects of industrial development	10	20,000	22,000	22,850
12. Small-scale industries	4	16,000		18,400
Totals	77	290,000	96,000	157,000

<sup>a/</sup> Includes only staff with direct responsibility in the particular areas. All professional staff are involved in servicing operational field work in their respective sectors.

<sup>b/</sup> In addition to budget funds, the balance (some \$48,000) of the special contribution of \$100,000 by the Government of Sweden - which was allocated for the industrial programming data project - will be available for use in 1967 for continuation of this project.



UNIDO 1967 Publications Programme

RECURRENT PUBLICATIONS

1. Bulletin on Industrialization and Productivity No. 11
2. Bulletin on Industrialization and Productivity No. 12
3. Industrial Research and Development News, Vol. II No. 1
4. Industrial Research and Development News, Vol. II No. 2
5. Industrial Legislative Series, No. 1

STUDIES AND REPORTS

CATEGORY "A"<sup>1/</sup>

1. Fertilizer Technology: Production and Usage
2. Studies on Evaluation of Industrial Projects
3. Training for Industrialization Series, No. 1: Training of Economic Administrators
4. Training for Industrialisation Series, No. 2: Estimation of Managerial and Technical Personnel requirements in Selected Industries
5. Industrial Planning and Programming Series, No. 1: Sectoral Programming, Chemical Industries
6. Industrial Planning and Programming Series, No. 2: International Comparisons of Inter-Industry Data
7. Industrial Planning and Programming Series, No. 3: Role of Advanced Skills and Technologies in Industrial Development
8. Manual on the Use of Consultants in Industrial Development
9. Manual on Fertilizer Industry
10. Studies in Economics of Industry: Aluminium

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<sup>1/</sup> Studies and reports in Category "A" fall within the approved budget of \$157,000.

11. Development of metalworking Industries, Symposium Proceedings and Papers
12. Report of the Meeting of Group of Experts for the Production of Fertilizers from Natural Gas (15 - 16 December 1966).
13. Textile Industry Manual with Emphasis on Prospects for the Textile Industry in Developing Countries
14. Industrial Planning and Programming Series, No. 4: Profiles of Manufacturing Establishments in Selected Countries: UNIDO Collection, Vol. I

CATEGORY "B"

15. Technological Adaptation and Innovation
16. Industrial Planning and Programming Series, No. 5: Manual on Industrial Project Evaluation and Similar Teaching Materials
17. Industrial Planning and Programming Series, No. 6: Structure of Materials Inputs in Manufacturing Industries and Inter-Industry Relations
18. Industrial Planning and Programming Series, No. 7: Profiles of Manufacturing Establishments in Selected Countries. UNIDO Collection, Vol. II



ANNEX III

UNIDO: LIST OF SEMINARS AND TECHNICAL MEETINGS  
PROPOSED FOR 1967-1968

Industrialization Surveys and Policies including  
Industrial Financing

<u>Subject</u>	<u>Dates</u>	<u>Place</u>
Workshop on financial planning	1967	Abidjan (Ivory Coast)
Workshop on financial planning of industrial projects	1967	United Republic of Tanzania
Workshop on financial planning of industrial projects (six planned)	1968	undetermined
Expert group meeting on fiscal incentives for industrial development	May 1967	New York
Seminar on financial aspects of manufacturing enterprises in the public sector	1968	undetermined
Expert group meeting on investment promotion services	June 1967	New York

Industrial Programming and Project Formulation

Training workshop on industrial project formulation and evaluation	May-June 1967 (provisional)	Iran
Training workshop on industrial project formulation and evaluation	undetermined	Africa
Training workshop on industrial project formulation and evaluation	undetermined	Latin America
Expert group meeting to advise on Manual on Programming and Control of Implementation of Industrial Projects	October- November 1967	UNIDO HQ
Meeting of the second <u>ad hoc</u> working party on industrial programming data	6-13 November 1967	UNIDO HQ

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Industrial Programming and Project Formulation (cont'd)

<u>Subject</u>	<u>Dates</u>	<u>Place</u>
<u>Ad hoc</u> expert group to review industrial programming manual	1968	
<u>Ad hoc</u> meeting of experts on role of advanced skills and technologies in industrial development	22-29 May 1967	New York
<u>Ad hoc</u> expert group meeting on surveys on industrial plans and programmes	1968	
Sub regional training courses in industrial development	September/ October 1967	West Africa

Industrial Location and Regional Development

<u>Ad hoc</u> meeting of experts on regional industrial planning	29 March- 2 June 1967	Geneva
Interregional seminar on industrial location and regional development	1968	Moscow (provisional)

Development of Export Oriented Industries

Expert meeting on government policies for the promotion of exports of manufactures and semi-manufactures from developing countries (UNIDO/UNCTAD)	June 1967	New York
Expert group on metal transforming industries as potential export industries	June-August 1967	New York
Training course for export management personnel	undetermined	Zagreb (provisional)
Alternative techniques for export oriented industries	August 1967	New York
Seminar on utilisation of industrial excess capacity for exports	1968	undetermined

Metallurgical and Metal Working Industries

<u>Subject</u>	<u>Dates</u>	<u>Place</u>
Expert consulting groups in non ferrous metal industries	1967	UNIDO HQ
Second iron and steel symposium	1968	USSR
Seminar on automotive equipment industry	1968	Santiago (provisional)
Regional seminars on electrical and electronic equipment industry	1968	Lat. America Africa Asia and Far East (provisional)
Meeting of experts on dies and jigs	1968	undetermined

Chemical Industries

Second interregional seminar on the petrochemical industries in developing countries	1968	Mexico City
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Consumer Industries

Meeting of textile machinery experts	June 1967	Basle (provisional)
Interregional seminar on the development of clay building materials industries in developing countries	1968	Denmark

Industrial Standardization and Quality Control

Standardization conference	1967	USSR
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Industrial Training and Management

In-plant group training programmes -- prevention of corrosion	January 1967	France
In-plant group training programmes -- metallurgical industries	February 1967	Italy
In-plant group training programmes -- machine manufacturing	February 1967	Italy

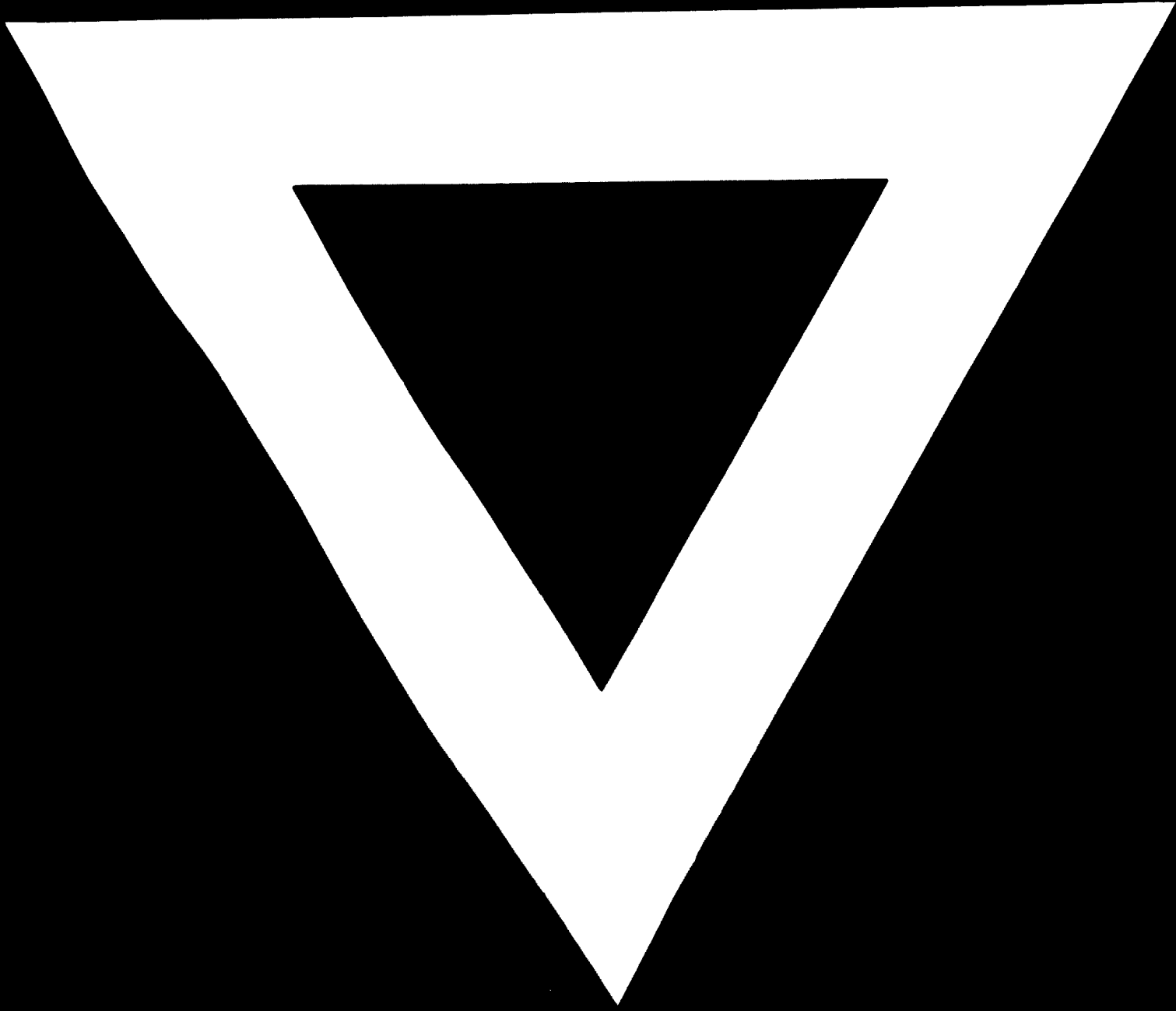
Industrial Training and Management (cont'd)

<u>Subject</u>	<u>Dates</u>	<u>Place</u>
In-plant group training programmes - electrical industries	March 1967	Sweden
In-plant group training programmes - textile industries	May 1967	Poland
In-plant group training programmes - iron and steel industries	June 1967	UkSSR
In-plant group training programmes - cement industries	1968	Denmark
In-plant group training programmes - machine tool manufacturing industries	1968	Federal Republic of Germany
In-plant group training programmes - materials management and inventory control, industrial maintenance and shipbuilding	1968	Japan
In-plant group training programmes - electronic equipment or consumer supplies	1968	Netherlands
In-plant group training programmes - shipbuilding, textiles	1968	Poland
In-plant group training programmes - electrical industries, telecommunica- tions equipment	1968	Sweden
In-plant group training programmes - iron and steel industries	1968	UkSSR
In-plant group training programmes - non-ferrous metal industries	1968	Yugoslavia
<u>Ad hoc</u> meeting of directors of in-plant group training	1967	Vienna
Industrial consultation workshops	1967	
<u>Ad hoc</u> expert meeting on manpower develop- ment for industrialization	1968	
Seminars on management	1968	

Institutional Aspects of Industrial Development

<u>Subject</u>	<u>Dates</u>	<u>Place</u>
Workshop for managers of industrial research institutes	July 1967	Athens
Seminar on the organization of industrial services in Africa	August 1967	Tangiers
Technical meeting on industrial co-operatives	October 1967	New York
Expert group meeting on supply of industrial equipment	November 1967	New York
Regional workshop for employers of consultants	1968	undetermined
Regional workshop for the managing staff of local consulting establishments	1968	undetermined
Technical meeting on patents	1968	undetermined
Seminar on industrial information	1968	Denmark (provisional)
<u>Small Scale Industry</u>		
Interregional symposium on technical services and facilities for small scale industries	25 June - 8 July 1967	Denmark
Seminar on financing of small scale industries	1968	undetermined





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