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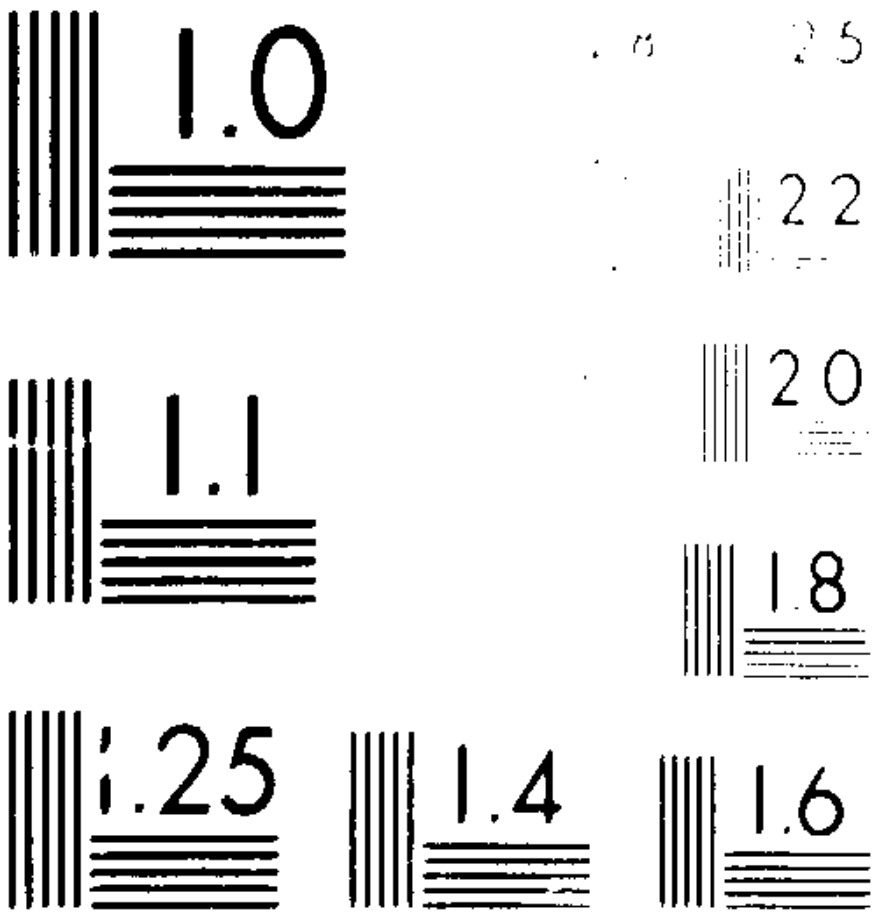
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JOINT UN/UNDP/UNIDO IN-DEPTH EVALUATION OF THE TECHNICAL CO-OPERATION ACTIVITIES OF UNIDO IN THE FIELD OF MANUFACTURES

Evaluation Staff Report

(complete version)*

prepared by

the Evaluation Co-ordinators

selected by the

United Nations

United Nations Development Programme

United Nations Industrial Development Organization

1 February 1983

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INTRODUCTION

1. The Committee for Programme and Co-ordination (CPC), at its twentieth session in 1980, reviewed the findings of an in-depth evaluation study of the manufactures programme of the United Nations (E/AC.51/1980/2) including a preliminary analysis of the technical co-operation activities of the United Nations Industrial Development Organization (UNIDO) financed by the United Nations Development Programme (UNDP) (E/AC.51/1980/2/Add.1) which it had requested at its nineteenth session. It expressed concern about the problems regarding the design, implementation and follow-up to the projects discussed in the report (A/35/38, para. 72). The Committee therefore requested that a more intensive review of the UNDP-financed technical co-operation activities of UNIDO in the field of manufactures be carried out in keeping with paragraph 62 of the report on its twentieth session with the full involvement of UNDP and UNIDO. The present report has been prepared in response to this request.

2. The UNIDO has no programme component or activity code named manufactures; most of its operational field activities and a significant proportion of its research studies and other special and supporting activities are related, directly or indirectly, to manufactures. It was necessary, therefore, to provide a functional definition which would permit development of an appropriate structure for the evaluation study. This was done by selecting a sufficiently comprehensive range of projects illustrative of UNIDO's technical co-operation activities in manufactures, which would benefit from the intensive and in-depth evaluation contemplated, and for which a representative sample of UNDP-financed and UNIDO-executed projects could be developed.

3. The primary purpose of the follow-up in-depth evaluation was to improve the relevance, design, implementation, effectiveness and impact of on-going and future projects in this and similar areas. In attempting to assess effectiveness and impact of the projects included in the

sample, the evaluation co-ordinators believed that it was necessary to place the results in perspective by also reviewing the performance of the tripartite project system and the unique requirements of the industrial sector.

4. The study was carried out in three phases, that is, phase I: a desk review of a wide range of selected projects in the field of manufactures; phase II: in-country studies of projects in a geographically representative number of countries; and phase III: synthesis of findings and reporting of results. A special effort was made to effectively involve field staff and country nationals who, as end-users, would be acquainted with the changes that were expected from and had actually resulted from project activities.

5. Chapter I of the report contains an assessment of the effectiveness and impact of a sample of manufactures projects drawn from an initial inventory of 906 and compares the findings of this report with those of the preliminary survey presented to CPC in 1980 and with other pertinent studies. In chapter II, the report explores a series of internal and external factors which form the project environment and directly influence their effectiveness and impact. These include the roles and capacities of UNIDO and UNDP, the nature and performance of the tripartite system and the intrinsic characteristics of the industrial system. The final chapter (III) summarizes the more important conclusions, particularly concerning large-scale projects and suggests some steps for consideration at policy, system and organizational levels. The report also contains the following annexes: I - project terminology used throughout the text, II - list 14 completed and on going projects examined at the country level, III workshop on significant issues held in Vienna, 1 - 6 December 1982, IV - supplement to recommendation no. 2, V - interim report to CPC(E/AC.51/1982/6) VI - preliminary analysis of the technical co-operation activities of United Nations Industrial Organization (E/AC.51/1980/2/Add.1) and

VII. - related evaluation reports and commentary.

6. The co-ordinators wish to note their awareness that this report is being completed at a very critical time. The current world-wide recession has sharpened the debate on the effectiveness of development assistance while resources for such activities are continually decreasing. The UNDP and its Governing Council through its Intersessional Committee of the Whole is giving serious consideration to many of the problems highlighted in this report. The UNIDO, on the verge of assuming new status as a specialized agency, will also need to give equally serious consideration to how it can most effectively restructure its policies, organization and human resources to carry out its heavy responsibilities in the field of industrial development.

7. The events which gave rise to this study, in addition to these circumstances, made mandatory a rigour and thoroughness not often attempted in previous evaluations. The co-ordinators are also aware that if the study findings are to be accepted as valid and the basis for subsequent review and action, they must be taken as reliable and authoritative. Given the constraints of time, money and staff resources, including the quality of the data and the state-of-the-art in the evaluation of effectiveness and impact, it is hoped that this has been accomplished. It was necessary, of course, to interpret the data collected and translate this into a synthesis which was meaningful and subject to some kind of remedial action. In this process, the co-ordinators, with the assistance of the principal consultant, had to draw on their own experience in development assistance and their perceptions of the most pressing issues and on that of the national consultants and other technical staff.

I. AN ASSESSMENT OF ACHIEVEMENTS OF MANUFACTURES PROJECTS

A. BACKGROUND

8. In the preliminary analysis of UNIDO technical co-operation activities carried out in 1980 a sample of projects was reviewed for the purpose of assessing (a) the extent to which each project achieved the immediate and ultimate goals set out in the project document and (b) when possible the impact made by the completed project in the industrial sector of the country. This report is contained in annex VI below.

9. As a consequence of its review of this survey, the Committee for Programme and Co-ordination, at its twentieth session, requested an intensive follow-up study of greater depth (A/35/38). This report describes the results of that study. The terms of reference for this exercise required an assessment of:

- The effectiveness of a sample of on-going and completed projects in achieving their immediate objective(s);
- The actual or potential impact/contribution of these projects to the broader development objectives which they were intended to support.

10. A comparison of two key findings from the preliminary study of 1980 and the in-depth follow-up study described in this report indicates a substantial disparity, particularly regarding impact:

Table 1. Comparison of key findings of 1980 preliminary analysis and 1980-1983 follow-up study

Parameter	Percentage of projects rated "as planned or higher"	
	Preliminary analysis - 1980	Follow-up study 1980 - 1983 a/
Effectiveness	54	57 (57)
Impact	31	43 (50)

Note. Figures in parentheses represent the percentages when projects rated "cannot determine" are excluded from the calculation.

a/ Represents the results of the in-country assessments of 14 large-scale projects.

A more complete comparison of the findings of the two studies is found in section B of this chapter.

11. An additional feature of the study is that it was conducted by three evaluation co-ordinators, one each from the United Nations, UNDP and UNIDO who were given, for the duration of the study, complete independence which permitted them to reach conclusions and formulate recommendations without supervision or intervention from their regular organizations once the terms of reference had been agreed upon. The team was assisted by a senior principal consultant from the industrial sector of a developing country. In the field studies, in each country, there were two highly qualified national consultants knowledgeable in the subsector of the project under review bringing the total to 14 national consultants. The Senior Industrial Development Field Adviser (SIDFA) or equivalent also participated.

12. This study reconfirms, and adds further dimension and clarity to the findings produced by numerous studies of United Nations technical co-operation projects conducted over the years by the United Nations, UNDP and UNIDO.

13. The methodology used to do these assessments was explained in the interim report to CPC (E/AC.51/1982/6, see annex V, below). Before presenting and summarizing the results of this study, however, it is useful to note the following features:

(a) The study design provided for a series of five project groups, viz, the selected study inventory, the first sample and subsequent subsamples (hereafter called levels), of progressively decreasing size with each group subjected to a systematic process of information collection and analysis of progressively increasing intensity and depth. The size and composition of the five levels are shown in table 2. The study design also provided for a series of cross-project analyses and comparisons between these analyses as a cross-check on the representativeness of each succeeding step. The study design was chosen because it ensured the maximum representativeness of project population samples at the lowest possible cost.

(b) The five levels of the study were:

- First - a total inventory of 906 projects within the manufactures area including UNDP-funded large-scale and small-scale, Special Industrial Services (SIS) and non-UNDP-funded projects.

- Second - a sample of 317 projects (87 large-scale, 164 SIS and 66 small-scale) selected from the inventory for a reconnaissance review. Abbreviated data sheets based solely on data in the official registry files were prepared and a cross-project analysis (CPA I) was conducted.

- Third - a subsample of 49 large-scale projects was selected from the above and more detailed data was collected, supplemented by interviews with backstopping officers when possible and subjected to more intensive desk review. A more comprehensive cross-project analysis (CPA II) was conducted and compared with CPA I.

- Fourth - a further subsample of 14 large-scale Indicative Planning Figure (IPF) projects was selected from the third level, using predetermined criteria, and detailed written profiles and assessments were prepared as a basis for the in-country studies. In addition, 35 small scale IPF and SIS projects were also included, selected from the 230 included in the second level, and abbreviated profiles were prepared.

- Fifth - additional data was collected on site for the same projects included in the sample just above and new assessments were prepared by an in-country team. The results were compared with the fourth level and CPAs III and IV were prepared and compared with CPAS I and II.

(c) The follow-up study used a favour-to-disfavour scale with five reference points as follows: 1/

5 Outstanding
4 More than planned
3 As planned
2 Less than planned
1 None or marginal
0 Cannot determine

14. To the extent this study has unique qualities, as compared with other evaluation studies done by the United Nations, UNDP and UNIDO, they are to be found in the size and scope of the study, the focus on effectiveness and impact (rather than efficiency in input delivery or programming guidelines in a selected field), the rigour of the study design and the intensity of the data collection and analysis.

1/ A three-point rating scale was used with the second level because of its size and self-evaluative nature. The scale was 0 - cannot determine, 1 - poor, 2 - adequate and 3 - excellent.

Table 2. Breakdown of total UNIDO manufactures projects funded by UNDP by type, level of funding and level of treatment
(In millions of United States dollars)

	Large-scale projects			Small-scale and non SIS projects	SIS projects		Total small-scale and SIS projects	Grand total	Value in millions of United States dollars a/
	Above $400,000	Between $150,000 - $399,000	Total number of projects		Above $10,000	Below $10,000			
Total UNIDO portfolio a/	330	200	530	4,500	2,000		6,500	7,030	$610
"Manufactures" element in portfolio, a/ of which:	210	128	338	2,900	1,300		4,200	4,538	$400
Level No. 1 (inventory)	57	30	87	569 a/	164	86	819	906	$100
Level No. 2 (Reconnaissance) b/	57	30	87	66	164		230	317	$ 82
Level No. 3 (Large-scale desk reviews)	49	-	49					49	$ 66
Levels Nos. 4 and 5 (Profile/field)	13	1	14	12	23		35	49	$ 21
Value of total UNIDO portfolio in United States dollars a/	$410	$60	$470	$100	$40		$140		$610

a/ Approximate figure(s) which excludes the Government's counterpart contribution to the project which is significant.

b/ The extent of the coverage at this level comprises 16.4 per cent of UNIDO's total portfolio of large-scale projects, 3.5 per cent of the total small-scale and SIS and 13 per cent of the grand total in value.

B. EFFECTIVENESS AND IMPACT

1. PROJECT FINDINGS

15. The average ratings for effectiveness (in achieving the project's immediate objective) for the several sample levels of large-scale projects were:

Level	Second level (N = 87)	Third level (N = 49)	Fourth level (N = 14)	Field study (N = 14)
Average rating	1.8	3.2	3.3	2.6
Number of zero ratings in level	25	3	2	0

Note. Rating of zero = "cannot determine"; N = total number of projects in group. It should be noted when interpreting the averages in this and subsequent tables that a three-point rating scale was used at the second level whereas a five-point scale was used at the third to fifth levels.

16. The average ratings for impact (the project's contribution to the development objective) for the same groups are presented here to permit easy comparison.

Level	Second level (N = 87)	Third level (N = 49)	Fourth level (N = 14)	Field study (N = 14)
Average rating	1.9	3.3	3.2	2.2
Number of zero ratings in level	77	8	5	2

(a) Effectiveness

17. Tables 3 to 5 below display ratings given at the third, fourth and fifth levels for three parameters which are concerned with effectiveness: (1) progress in producing outputs, (2) achievement of project objective (effectiveness) and the extent to which (2) can be attributed to (1).

Table 2. Effectiveness of large-scale IPF projects - distribution of ratings and averages

Effectiveness parameter	Rating scale	Second level (N = 87)		Third level (N = 49)		Fourth level (N = 14)		Field study (N = 14)	
		No.	%	No.	%	No.	%	No.	%
1. Progress in producing outputs	5	Not included a/		0		0		0	
	4			16	32.7	4	28.6	2	14.3
	3			12	24.5	5	35.7	7	50.0
	2			13	26.5	2	14.3	3	21.4
	1			3	6.1	0		2	14.3
	0			5	10.2	3	21.4	0	
	Average b/			2.9		3.2		2.7	
2. Achievement of project objective (effectiveness)	5			0		1	7.1	0	
	4			19	38.8	3	21.4	2	14.3
	3	5	5.7	19	38.8	6	42.9	6	42.9
	2	35	40.2	7	14.3	2	14.3	4	28.6
	1	22	25.3	1	2.0	0		2	14.3
	0	25	28.7	3	6.1	2	14.3	0	
	Average	1.8		3.2		3.3		2.6	
3. Extent to which 2. can be attributed to 1.	5	Not included a/		1	2.0	1	7.1	3	21.4
	4			12	24.5	2	14.3	0	
	3			16	32.7	4	28.6	8	57.1
	2			4	8.2	2	14.3	2	14.3
	1			3	6.1	1	7.1	1	7.1
	0			13	26.5	4	28.6	0	
	Average			3.1		3.0		3.1	

a/ Variables not rated at this level.

b/ Averages in this and subsequent tables exclude zero ratings.

Table 4. Effectiveness of small-scale IPF projects - distribution of ratings and averages

Effectiveness parameter	Rating scale	Second level (N = 66)		Third level (N = 0)		Fourth level (N = 12)		Field study (N = 12)	
		No.	%	No.	%	No.	%	No.	%
1. Progress in producing outputs	5	Not included [a]		Not included [b]		2	16.7	1	8.3
	4					2	16.7	1	8.3
	3					3	25.0	5	41.7
	2					1	8.3	4	33.3
	1					0		0	
	0					4	33.3	1	8.3
	Average					3.6		2.9	
2. Achievement of project objective (effectiveness)	5			Not included [b]		1	8.3	0	
	4					1	8.3	2	16.7
	3	9	13.6			4	33.3	5	41.7
	2	28	42.4			3	25.0	4	33.3
	1	5	7.6			1	8.3	0	
	0	24	36.4			2	16.7	1	8.3
	Average	2.1				2.8		2.8	
3. Extent to which 2. can be attributed to 1.	5	Not included [a]		Not included [b]		Not included [a]		Not included [a]	
	4								
	3								
	2								
	1								
	0								
	Average								

[a] Variables not rated at this level.

[b] Third level contained only large-scale projects.

Table 5. Effectiveness of SIS projects - distribution of ratings and averages

Effectiveness parameter	Rating scale	Second level (N = 164)		Third level (N = 0)	Fourth level (N = 23)		Field study (N = 23)	
		No.	%	No. %	No.	%	No.	%
1. Progress in producing outputs	5	Not included [a]		Not included [b]	0		0	
	4				9	39.1	3	13.0
	3				6	26.1	15	65.2
	2				2	8.7	2	8.7
	1				0		1	4.3
	0				6	26.1	2	8.7
	Average				3.4		3.0	
2. Achievement of project objective (effectiveness)	5			Not included [b]	1	4.3	0	
	4				5	21.7	2	8.7
	3	36	22.0		5	21.7	15	65.2
	2	73	44.5		4	17.4	2	8.7
	1	20	12.2		0		2	8.7
	0	35	21.3		8	34.8	2	8.7
	Average	1.8			3.2		2.6	
3. Extent to which 2. can be attributed to 1.	5	Not included [a]		Not included [b]	Not included [a]		Not included [a]	
	4							
	3							
	2							
	1							
	0							
	Average							

[a] Variables not rated at this level.

[b] Third level contained only large-scale projects.

18. Table 6 below, shows the percentages of large-scale projects which were rated "as planned" or higher for the three parameters which are concerned with effectiveness.

Table 6. Percentage of large-scale projects rated "as planned" or higher

Effectiveness parameter	Second level (N = 87)	Third level (N = 49)	Fourth level (N = 14)	Fifth level (N = 14)
(1) Progress in producing outputs	Not included a/	57 (64)	64 (82)	64 (64)
(2) Achievement of project objective (effectiveness)	46 (74)	77 (83)	71 (83)	57 (57)
(3) Extent to which (2) can be attributed to (1)	Not included a/	59 (81)	50 (70)	79 (79)

Note. Figures in parentheses represent the percentage when projects rated "cannot determine are excluded from the calculation.

a/ Variable was not rated at this level.

(b) Impact

19. The average ratings for impact (the project's contribution to the development objective) for the several levels of large-scale projects were as already displayed in paragraph 16 above.

Level	Second level (N = 87)	Third level (N = 49)	Fourth level (N = 14)	Field study (N = 14)
Average rating	1.9	3.3	3.2	2.4
Number of zero ratings in level	77	8	5	2

20. Tables 7 - 9 display ratings given at the second, third, fourth and fifth levels for parameters concerned with impact: i.e., (1) user utilization of results (outputs), (2) impact and (3) significance.

Table 7. Impact of large-scale IPF projects - distribution of ratings and averages

Impact parameter	Rating scale	Second level (N = 87)		Third level (N = 49)		Fourth level (N = 14)		Field study (N = 14)	
		No.	%	No.	%	No.	%	No.	%
1. User utilization of results (outputs)	5	Not included [a]		1	2.0	1	7.1	2	14.3
	4			7	14.3	5	35.7	1	7.1
	3			19	38.8	3	21.4	4	28.6
	2			12	24.5	0		5	35.7
	1			2	4.1	0		2	14.3
	0			8	16.3	5	35.7	0	
	Average			2.8		3.8		2.7	
2. Impact	5			3	6.1	1	7.1	0	
	4			16	32.7	1	7.1	2	14.3
	3	1	1.1	12	24.5	6	42.9	4	28.6
	2	7	8.0	9	18.4	1	7.1	3	21.4
	1	2	2.3	1	2.0	0		3	21.4
	0	77	88.5	8	16.3	5	35.7	2	14.3
	Average	1.9		3.3		3.2		2.4	
3. Significance	5	Not included [a]		6	12.2	0		0	
	4			23	46.9	5	35.7	5	35.7
	3			14	28.6	4	28.6	4	28.6
	2			1	2.0	1	7.1	0	
	1			0		0		3	21.4
	0			5	10.2	3	21.4	1	7.1
	Average			3.9		3.4		2.7	

[a] Variables not rated at this le

Table 8. Impact of small-scale IPF projects - distribution of ratings and averages

Impact parameter	Rating scale	Second level (N = 66)		Third level (N = 0)		Fourth level (N = 12)		Field study (N = 12)	
		No.	%	No.	%	No.	%	No.	%
1. User utilization of results (outputs)	5	Not included [a]		Not included [b]		0		0	
	4					0		2	16.7
	3					1	8.3	6	50.0
	2					0		3	25.0
	1					0		1	8.3
	0					11	91.7	0	
	Average					3.0		2.8	
2. Impact	5			Not included [b]		0		0	
	4					2	16.7	1	8.3
	3	0				1	8.3	3	25.0
	2	5	7.6			1	8.3	2	16.7
	1	4	6.1			2	16.7	3	25.0
	0	57	86.4			6	50.0	3	25.0
	Average	1.6				2.5		2.2	
3. Significance	5	Not included [a]		Not included [b]		0		0	
	4					2	16.7	2	16.7
	3					1	8.3	4	33.3
	2					1	8.3	2	16.7
	1					2	16.7	1	8.3
	0					6	50.0	3	25.0
	Average					2.5		2.8	

[a] Variables not rated at this level.

[b] Third level included only large-scale projects.

Table 9. Impact of SIS projects - distribution of ratings and averages

Impact parameter	Rating scale	Second level (N = 164)		Third level (N = 0)	Fourth level (N = 23)		Field study (N = 23)	
		No.	%	No. %	No.	%	No.	%
1. User utilization of results (outputs)	5	Not included [a]		Not included [b]	0		1	4.3
	4				3	13.0	1	4.3
	3				1	4.3	10	43.5
	2				0		1	4.3
	1				0		4	17.4
	0				19	82.7	6	26.2
	Average				3.8		2.7	
2. Impact	5			Not included [b]	0		0	
	4				4	17.4	4	17.4
	3	4	2.4		5	21.7	5	21.7
	2	7	4.3		2	8.7	2	8.7
	1	7	4.3		0		0	
	0	146	89.0		12	52.2	12	52.2
	Average	1.6			3.2		2.3	
3. Significance	5	Not included [a]		Not included [b]	1	4.3	0	
	4				3	13.0	0	
	3				5	21.7	9	39.1
	2				2	8.7	5	21.7
	1				0		2	8.7
	0				12	52.2	7	30.4
	Average				3.3		2.4	

[a] Variables not rated at this level.

[b] Third level contained only large-scale projects.

21. Before analysing these results, it is useful to note some additional information about the characteristics and methodology of this CPC-mandated intensive follow-up study and the extent to which the results are qualified on the basis of the data available to the co-ordinators and the constraints imposed by the time and resources limitations.

(a) The series of project samples were randomly selected subject to certain methodological constraints of size, maturity and subject area and, in the case of the in-country studies, a country's willingness to participate;

(b) Because of the CPC mandate and the desire of the participating organizations for a thorough study of the results of technical co-operation projects and their use, a new methodological approach was developed, as noted in paragraph 13 above, and applied to a large number of projects. The inventory of projects in manufactures (first group) comprised 13 per cent of all UNIDO-executed projects of all types since the establishment of UNIDO. The small-scale and SIS projects amounted to 3.5 per cent of the total number of projects, and those included in the study amounted to approximately 13 per cent of UNIDO's total portfolio in value;

(c) More than two thirds of the ratings in phase I are for on-going projects and consequently are predictive since effectiveness and impact cannot normally be fully determined until after project completion. On the other hand, the distribution of ratings among both on-going and completed projects is very similar (albeit slightly higher for on-going) which indicates that the predictive ratings can be usefully extrapolated. This is discussed further in paragraph 23 below;

(d) It is also important to note that the project ratings and cross-project analysis based on the second level (the first reduction from the original inventory) reflect the assessments of the project staff, backstopping officers and Resident Representatives as they appeared in the registry files. The project ratings and the cross-project analysis based on the third level and on brief interviews with backstopping

officers, contained only large-scale projects (49), and reflected the assessments made by the evaluators in this exercise;

(e) Statements of objectives were clarified to some extent at the fourth level, when preparing project profiles, by conducting more intensive interviews with backstopping officers and branch officials and reconstructing the design into the logical framework matrix which is now in common use. Design elements were further clarified in the fifth (final) sample i.e., the in-country studies. Small-scale and particularly SIS projects, by their nature, are usually quite specific in the product or service to be produced and its intended use. Effectiveness of these projects was easier to determine. For the in-country studies, 20 Governments were invited to participate. Of these, ten declined for various reasons, thereby restricting the project population from which a selection could be made. Seven countries were chosen on the basis of project criteria assuring adequate geographical representation. 2/

(c) Analysis of results

22. Table 10 below, shows the percentages of large-scale projects which were rated "as planned" or higher for the same three parameters which are concerned with impact.

2/ Although UNDP policies and procedures provide for the use of IPF project funds for evaluation, it is to be noted that five of the seven countries which participated were unwilling to authorize the use of IPF funds for the travel and per diem expenses of one person (team leader).

Table 10. Percentage of large-scale projects rated "as planned" or higher

Parameter	Second level (N = 87)	Third level (N = 49)	Fourth level (N = 14)	Field study (N = 14)
(1) User utilization of results (outputs)	-	55 (66)	64 (100)	50 (50)
(2) Impact	9 (80)	63 (76)	57 (89)	43 (50)
(3) Significance	-	88 (97.7)	64 (82)	64 (69)

Note. Figures in parentheses represent the percentage when projects rated "cannot determine" are excluded.

23. First, in the early stages of the project cycle there is a tendency to state anticipated project accomplishment in ways which will increase the prospects for project approval and continued funding i.e., to exaggerate the value and to oversell the project. Secondly, most project reports are prepared prior to financial termination and therefore prior to the achievement of the project objective (effectiveness) and the development objective (impact). Most achievement reporting during implementation necessarily is a projection of what might occur after financial termination; many project staff are hopeful and optimistic about the future prospects of the project in which they are, or have been, engaged. Thirdly, as additional information was acquired over time, particularly through in-country evaluation (phase II of this study), the verifiable achievements and the adverse effects of the project's external environment emerged more clearly.

24. The co-ordinators have a high level of confidence in the ratings given during the in-country studies because of the intensive data collection, the composition of the field teams including national consultants and the extensive contact with end-users and beneficiaries. The ratings given at the prior levels are subject to the qualifications

noted above and must accordingly be reduced. This reduction and the methodological precautions taken (e.g., comparisons between the cross-project analyses, verification-type interviews and observations during the in-country studies) also give a high level of confidence that the in-country ratings are indeed representative of the total project inventory.

25. A related question is the extent to which the existing management reporting and information system is able to support substantive management functions such as policy formulation, programme planning, resource allocation and project design and evaluation.

2. COMPARISON WITH PRELIMINARY MANUFACTURERS STUDY

26. The preliminary evaluation conducted by the United Nations involved a sample of only 160 projects (size and type were not identified), which depended largely on data found in the UNDP headquarters files and the use of a questionnaire on effectiveness and impact addressed to incumbent Resident Representatives. (See paragraphs 9 and 10 of annex VI below.) The validity of the results was subject to serious qualification. In the following table, the results of the responses from Resident Representatives compared to similar results from the in-depth study are displayed:

Table 11. Comparison of selected results from the 1980 and present studies

Parameter	Preliminary study 1980	In-depth follow-up study 1980 - 1983	
	Responses to questionnaires a/ (N = 160)	Third level (large-scale only) (N = 49) b/	Fifth level large-scale only (N = 14) c/
	%	%	%
Effectiveness			
- Successful achievement of project immediate objective	54	83	57
- Projects that did not achieve all their immediate objectives	46	17	43
Impact			
- Projects that successfully successfully achieved the long-range objectives	31	76	50
- Projects unable to achieve	69	24	50

a/ As noted earlier, all responses were provided by various offices of the Resident Representatives.

b/ Column 2, based on desk reviews and supplemented by headquarters interviews, is considered the level most comparable in terms of methodology to the preliminary study. All zero ratings (cannot determine) were omitted.

c/ Column 3, based on the in-country studies is considered more accurate than the data in column 2.

27. In addition, the assessments were summarized in the preliminary report as follows:

(a) Some projects were found to have been hampered by delays in the delivery of inputs;

(b) Some projects [3/] did produce positive results, such as an increase in outputs of goods and services, improvements in standards and quality, and follow-up investment activities in the sector concerned;

(c) Many other projects [3/] were not completed satisfactorily in the sense that the immediate or ultimate objectives were not achieved.

28. A comparison between columns 1 and 2 in table 11 which has the least dissimilar methodology to that of the preliminary study (column 1), shows that the ratings of column 1 are not reliable. On the other hand, column 3 which is considered to have the most valid ratings of the study indicates by chance that the results on effectiveness are quite similar while those on impact are significantly different. The co-ordinators caution that comparisons between columns 1 and 3 are not possible because of the substantial differences in methodology and however the results which now should be considered most realistic are those given in column 3. Any conclusions drawn from the preliminary study needs to be reconsidered taking into account the external project factors and the results of column 3.

3. OTHER RESULTS

29. As explained in the detailed description of the methodology, in addition to rating the sample projects in terms of effectiveness and impact, information collection also provided the means, by using an automated data processing programme, to array the data in various forms in an attempt to validate hypotheses on causes and effects and to provide the basis for further analysis. This was done by collecting

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3/ Unquantified.

data on a standard typology and producing computer printouts of frequencies and co-relations on the second, third, fourth and fifth levels. These are referred to as cross-project analyses (CPAs) and resulted in some significant, if limited findings.

(a) Project design

30. UNDP policy and procedural guidelines for technical co-operation projects carried out within the tripartite system accord the Government primary responsibility for project design with associated roles for the executing agency and UNDP through its Resident Representative. Analysis of data collected for the third level indicates that although in the large-scale projects, the Government participated more frequently in the initial drafting of the project document than any of the other interested parties, that participation only occurred in 57 per cent of the projects. Other key participants were UNIDO headquarters (22.4%), UNIDO expert on duty (28.6%) and the Resident Representatives' office (28.6%). Design missions were infrequently used (14.3%) as was preparatory assistance (4%).

31. At the third level of 49 large-scale projects, the co-ordinators conducted a two-part analysis of the major elements of project design. First, they examined the internal elements such as the project objective, the project hypothesis (approach), the output targets etc., contained in the project document. They applied standards for clarity, viability, soundness etc., as stated in the UNDP and UNIDO project guidelines or used practical tests such as asking the kinds of questions which could be expected in an exacting review and approval process. This analysis resulted in quality ratings which are summarized in table 12 below.

Table 12. Major elements of project design at the third level comprising 49 large-scale projects

Rating scale		Project objective		Project hypothesis[a]		Outputs/ results		Inputs		Workplan		Internal Logic[b]		Outputs to Objectives	
Outstanding	(5)	2	4.1					3	6.1	2	4.1				
Good	(4)	12	24.5	4	8.2	8	16.3	26	53.1	9	18.4	2	4.1	6	12.2
Adequate	(3)	18	36.7	14	28.6	16	32.6	17	34.7	16	32.6	18	36.7	16	32.6
Poor	(2)	14	28.6	18	36.7	11	22.4	3	6.1	16	32.6	17	34.7	17	34.7
Marginal	(1)	3	6.1	8	16.3	8	16.3			4	8.2	8	16.3	4	8.2
Cannot determine	(0)			5	10.2	6	12.2			2	4.1	4	8.2	6	12.2
		49	100	49	100	49	100	49	100	49	100	49	100	49	100
Average (Including projects rated 0)		2.9		2.1		2.2		3.6		2.7		2.1		2.2	
(Excluding projects rated 0)		(2.9)		(2.3)		(2.5)		(3.6)		(2.8)		(2.3)		(2.5)	

a/ Causal relationship between outputs and project objective.
b/ The interrelationships between inputs to workplan to outputs to project objective.

32. With the exception of inputs, which received an average rating of 3.6 (more than adequate), the average ratings for all other design elements were less than adequate (varying from 2.9 to 2.3), and the results would have been lower if zero had been included as shown in table 12 above. Of the 49 large-scale projects included in the third level (cross-project analysis II), 34.7 per cent had statements of project outputs[4/] with similar low ratings. Ratings of project hypothesis, internal logic and the sufficiency of outputs to achieve the project objective(s) received ratings of poor and marginal ranging from 43 per cent to 53 per cent of the projects. In 41 per cent of the projects the workplan was rated poor or marginal.

33. In the second part of the analysis, project documents were examined in an attempt to determine the clarity and explicitness of four basic project design elements which are considered important in the evaluation of impact. These elements were the statements of development objective, the development hypothesis (i.e., the predicted causal linkage between the project (immediate) objective and the development objective(s) of the co-operating Government), the intended end-users of the project outputs and the baseline conditions. In half of the projects the development objective(s) was not clear, or was too remote a level to be affected by the project objective In 73 per cent of the sample projects, the development hypothesis could not be determined. End-users were defined satisfactorily in 75 per cent of the projects, but baseline data were rated satisfactory in only 30 per cent of the cases.

34. The length of time and expenditure of manpower required for project approval does not correlate with good project design. In fact, there was usually little substantive change in the project proposal document during the entire review and approval process. At no point

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4/ Twenty-one of the projects, or 45 per cent of the sample complied with pre-1976 guidelines which did not require the specification of outputs.

in the process do the interested parties attempt consistently to define and apply quality considerations to the project design. A comparison of project designs before and after introduction of the UNDP guidelines (PPM chapter 3400) and similar UNIDO guidelines in early 1976 shows that a definite improvement has taken place over the previous system which was highly deficient, particularly with respect to outputs, objectives, target groups etc. This improvement, however, is still not sufficient to ensure that a satisfactory level of performance will be reached and further work is required to achieve the performance sought.

(b) Types and level of entry

35. An analysis was attempted to identify the differences, if any, in relation to various levels of project achievements which provide direct support to a firm or group of firms as compared with indirect assistance via a government agency or other intermediary body and have different levels of entry. The analysis produced the following results based on the rating scale of 0-5:

Table 13. Ratings of direct and indirect support large-scale projects - third level (N = 49)

Function/type	No. of projects	Project output	Achievement of output	Impact	Significance
Direct support	19	3.3	3.3	3.3	3.7
Indirect	30	3.1	3.2	3.2	3.8

Table 14. Ratings of projects with different levels of entry - third level (N = 49) a/

Function/type	No. of projects	Project output	Achievement of output	Impact	Significance
Industry at branch/ subsectoral level	12	3.2	3.4	3.4	3.6
Intermediary organization	33	2.9	3.2	3.3	3.8

a/ Four of these projects entered at the ministry level.

36. Except for significance, all the ratings are higher for projects whose principal function is direct support, 5/ and whose entry is at the branch/subsectoral level rather than dealing with an intermediary organization such as an industrial research and service institute (IRSI) or government ministry. The differences, however, are marginal.

(c) Statistical relationships

37. A number of statistical relationships between individual data sets were noted. For example, there was a strong relationship between quality of design and input delivery, project implementation and production of outputs. Analysis revealed a logical means-end chain running from design to impact where each link (design-input-delivery-implementation-outputs-utilization of outputs/achievement objective) was linked to one or even two preceding elements. No direct linkage however, could be demonstrated between design and achievement; presumably because the causal relation is too diluted by external factors along the way. In CPA I (based on the second level), where an intensive assessment of available

5/ Other applicable functions include institution building, direct training, experimental and pilot projects.

documentation was made, a strong correlation between the documentation rating, on one hand, and quality of design and achievement ratings, on the other hand, indicates that well-designed projects tend to be well documented and to have better results, or at least documented results.

C. PROJECT CYCLE ANALYSIS

1. FINDINGS AND ANALYSIS

38. In addition to assessing the effectiveness and impact of projects included in the sample and in support of the study design objectives of assessing the performance of the tripartite project system, data was also collected and analysed on the four major stages in the project cycle. This was done because the activities undertaken at each of these stages have a significant influence on the over-all project performance. The results are summarized as follows:

(a) Project identification and diagnosis

39. The problem identification and diagnosis stage of the project cycle is, or should be, of critical importance to the subsequent stage of project formulation and approval and, ultimately, to the prospects for effectiveness and impact. This is particularly true in the case of industrial development projects which operate in a complex environment with a large number of critically important factors which lie outside the control of the project's management e.g., the availability and cost of capital, effective demand, Government policies and controls etc., as explained in the next chapter. Nevertheless, the findings indicate that this stage is often overlooked or the analysis performed in a prefunctory manner, for example:

(i) The state of the development of industrial technology and manufacturing processes in the recipient country is often not assessed or is described only superficially in the project documentation. The information needed to make choices from among various alternatives (e.g., selections of an appropriate technology and means for its transfer and adaptation) and to formulate an effective project strategy or approach, is frequently not requested or available in sufficient depth and timeliness to support project design;

(ii) Government development sector planning is usually at the macro-economic performance level and does not reach the level of specificity needed for the identification and analysis of industrial problems or gaps in the infrastructure which are susceptible to solution or amelioration by individual technical co-operation projects;

(iii) The country programming process, which should provide the mechanism for obtaining these analytical inputs to project selection and design, appears to be more concerned with resource allocation and project identification.

40. In brief, pre-project problem identification and diagnosis is unsystematic and often superficial if done at all. The UNIDO is rarely requested to participate in this stage. The probability for project effectiveness and developmental impact is reduced when all three partners do not participate in the process and do not reach full agreement on the nature of the problem, the identification of end-users and their needs, and the most cost-effective approach to solving the problem.

(b) Project formulation and approval

41. As indicated earlier, there are serious deficiencies in project design caused, at least partically, by the failure to articulate clearly the project hypothesis i.e., the nature of the causal linkage between

outputs and the project objectives. Inadequate statements of the basic elements of project design (i.e., project immediate objective, outputs, project strategy and critical assumptions regarding external factors) and an approval process which is often input-oriented can considerably reduce the probability of successfully achieving the intended objectives.

42. Some reasons for this situation are discussed below. It is also worth noting that, particularly if a project proposal resulted from a government initiative, it was unlikely that UNIDO's technical knowledge if available, was inserted at this stage. Even when UNIDO participates, both the design and approval processes tend to concentrate on administrative and financial matters and particularly on the proposed UNDP inputs.

43. Problems caused in the implementation stage by poor project design often concern the frequently observed failure to clearly identify the purpose or function of a project. This is particularly the case regarding institution-building versus direct support. Whereas institution-building is the preferred mode for strengthening self-reliance, either by events or default, the thrust of the project may unintentionally become direct support by UNIDO experts to individual enterprises thus delaying the pursuit of local institutional self-sufficiency. Since project outputs should reflect and support the project purpose, institution-building outputs should usually be expressed in terms of increased or new country capability to deliver services to industry while direct-support project results often are expressed as specific products or services. These critical distinctions are often missing or confused. Failure to clarify and agree on the project (immediate) objective and function can seriously jeopardize the entire project. This was clearly demonstrated in the evaluation of large-scale projects.

44. Finally, it should be also noted that there were a number of instances observed when poorly designed projects proved to be reasonably effective and with discernable impact. The study found that a good

project design does not guarantee achievement of the project objective since the project may be adversely affected by the external project environment. Nor is project design a substitute for highly motivated, knowledgeable people given adequate resources and time to produce agreed results (outputs). On the other hand, the importance of good project design as a determinant of probable project effectiveness and impact has been reconfirmed by this study.

(c) Project implementation

45. The implementation stage involves the transfer and use of knowledge and resources and their conversion into planned project outputs. The process requires close collaboration between the executing agency, the Government and the end-users.

46. The implementation process per se was not a major area of focus in this study. Nevertheless, a number of deficiencies, common to the system, were identified in the phase I desk research and subsequently confirmed during the in-country studies in phase II. Some of these are briefly mentioned below:

(i) Delay in delivery of inputs by both UNIDO and the recipient Government;

(ii) Absence of agreed upon indicators of performance and end-of-project status;

(iii) Inadequate progress reporting focussed almost exclusively on input deliveries and administrative problems;

(iv) Tripartite reviews were often not timely and there were many cases when they were not held at all; generally they were input-oriented with hardly any attention to outputs and objectives;

(v) Absence of an effective evaluation effort, either on-going, terminal or ex post;

(vi) Overconcentration on the internal aspects of the project to the almost total exclusion of concern for external factors critical to project success. 6/

47. Insofar as UNIDO itself was concerned, its over-all delivery, including quality of inputs, was rated as adequate or better for 67 per cent of the large-scale projects. Concerning government inputs, the percentage of projects rated adequate or better was 59 per cent.

Table 15. Over-all implementation ratings at the third level (N = 49)

Rating	UNIDO	Government
	(Number of projects)	
Outstanding	-	-
Good	10	7
Adequate	23	22
Poor	11	16
Marginal	4	1
Cannot determine	1	3

These results were largely confirmed by interviews and on-site observations during the in-country studies.

6/ The tripartite system does not require the systematic monitoring of the external project environment which is also ignored in the design and approval stage. In those cases where critical assumptions are identified, there is a tendency to regard them as static and to assume that they will not change significantly during implementation, an unlikely proposition given the dynamics of development (see chapter II, section D on the tripartite system).

48. Among input categories, experts were rated less than satisfactory in 11 per cent of the cases. The situation was dramatically different in the cases of national counterparts with 26 per cent rated as less than adequate, a situation aggravated by inadequate quantity in 47 per cent of the projects and tardiness in 53 per cent of the cases. In the case of equipment, in 92 per cent of the projects the quality was rated as adequate or better. The assessment of timeliness was more negative with 69 per cent less than adequate, a finding generally consistent with the findings on procurement and delivery of equipment in other UNDP and UNIDO evaluation studies. A similar spread between quality and timeliness was observed with government inputs. Concerning the training component, in 24 per cent of the projects the quality of the training was less than adequate; in 33 per cent the quantity was only fair or marginal; and in 52 per cent the timeliness was also less than adequate. For counterparts provided by the Government for training, 21 per cent were less than adequate in quality, 32 per cent in quantity, and 55 per cent in timeliness.

49. In terms of effectiveness or impact there is little evidence to conclude that these types of considerations are given sufficient attention during the implementation stage. The overwhelming tendency of the system is a concern with input delivery and the countless administrative factors involved in their installation and use. Work planning, monitoring and reviews are not usually result-oriented and important items such as baseline data, performance indicators, and explicit critical assumptions are conspicuous by their absence.

(d) Project completion and follow-up

50. The termination of a project should be a planned event based on the production of project outputs and the actual or predictable achievement of the project (immediate objective). Such an event should also be the

occasion to record actual results and identify actions which need to be taken to consolidate project achievements. As concern with impact increases, the termination stage can also be used to identify actions which need to be taken in the future to sustain and/or increase the intended impact on the end-users or targeted beneficiaries.

51. The reality of the situation, including current system requirements, is quite different and the following findings were found to be typical:

(a) There is no clear functional linkage tetween the completion of project operations by UNIDO, financial termination of a project by UNDP, and the achievement of outputs or the project (immediate) objective. End-of-project status indicators are not required by the UNDP Policy and Procedures Manual and consequently are not used. Instead, termination is linked to the exhaustion of project inputs, i.e., finencial completion. The management concern at the time of termination is focussed on administration and financial matters such as final revision of the budget and the inventory and transfer or disposition of equipment.

(b) From a substantive standpoint, major reliance is given to the project terminal report which is written by the CTA or last international project staff member on the site. It is often late, sometimes not submitted. When a national project co-ordinator is involved, even more difficulty is experienced in securing such a report. In either case, the report may have very limited value in identifying, recording and assessing project achievements and the reasons for shortfall. The review and comment process at UNIDO generally adds little substance and may even reduce or soften a pointed criticism or recommendation. The Resident Representative's transmittal letter is often pro forma and, although required, rarely includes a terminal assessment. For these reasons, and because the review and comment process may be formalistic and lengthy, such reports appear to have limited value or interest for programme management. At the same time, there appears to be little demand for objective information concerning

project effectiveness and almost no concern with actual or potential impact. This implies that the fulfillment of the project and development hypotheses is taken for granted.

(c) The UNDP and UNIDO official files contain only sparse information regarding effectiveness and virtually none on project impact. This is because there has been no UNDP or UNIDO requirement for project specific evaluation and reporting of impact, 7/ and no resources have been allocated for such a review.

52. There has not existed in UNDP, and until 1982 in UNIDO, a project management information system which routinely collects information on project effectiveness and impact, analyses this information, recommends initiation of remedial actions if required, extracts patterns and conclusions which can be fed back into the project design process. This critical cycle of extracting lessons from experience is currently limited to two passive elements: (a) the publication of programme advisory notes based upon evaluations and (b) the personal initiative of individuals who must rely on seriously deficient project files or the informal exchange of experience among the colleagues. There is no information to detect what influence these actions have had.

D. COMPARATIVE STUDIES

1. PRELIMINARY STUDY

53. Most of the findings in the "preliminary analysis" concerned what are normally described as the "process" aspects of the project and can be summarized as follows:

(i) Reports, including terminal reports, were of limited use for evaluation purposes;

(ii) There were no built-in achievement indicators for measuring or analysing progress;

7/ The UNIDO project self-evaluation system introduced in February 1982 requires that consideration be given to project effectiveness and impact during implementation and at project termination. (See UNIDO/PC.31, dated 5 January 1982.)

(iii) In a majority of cases, the lack of an ongoing system of follow-up and the unavailability of resources for progress measurement prevented meaningful assessment of impact.

54. These findings were also identified in the in-depth follow-up study. However, contrary to the original study, the deficiencies in the process aspects of the UNIDO project portfolio were the result of multiple causes reflecting the complexity of the tripartite system and the roles, responsibilities and authorities of the three participants and their performance.

2. OTHER STUDIES

55. Insofar as the tripartite project system performance is concerned which, along with effectiveness and impact, was the implied focus of the "preliminary" manufactures evaluation, the (process) findings of this in-depth exercise are neither new or unique and serve only to verify or confirm similar findings in other system-wide evaluations and raise the serious question as to why necessary and self-evident changes in the system are taking place, if at all, at such a slow pace. To reinforce this point, a commentary on the following reports has been included in annex VII below:

-- Joint Inspection Unit - Evaluation of Technical Co-operation Activities of the United Nations System in Sri Lanka (JIU/REP/79/16), vol. 1.

-- CCSQ - Evaluation, ACC/1980/OPPG/2, 12 February 1980.

-- Joint UNDP/UNIDO Thematic Evaluation - Evaluation: Joint UNDP/UNIDO evaluation of industrial research and service institutes, ID/B/C.3/86/Add. 1, 21 November 1979.

(c) UNDP report on programme implementation

56. While other reports can be cited, particularly in reference to the "process" aspects of tripartite project systems performance, one additional report should be mentioned, a very significant one made by the Administrator of UNDP to the Governing Council at its twenty-eighth session. 8/ The following extracts are considered germane to the comparison being made.

57. Concerning the project cycle, the UNDP self-analysis revealed a number of shortcomings including (para. 24):

- The formulation of project documents in accordance with the present detailed format is a time and resource-consuming task for Governments, field offices, and Agency and UNDP headquarters;
- Project documents tend to be outdated by the time they are signed but are seldom revised;
- The project formulation process often stops with the preparation of the plan of activities currently included in the project document, which tends to be used in lieu of work plans which should be prepared at a subsequent stage; and
- The project management team recruited to serve in a project sometimes finds that previously designed project documents are poorly adapted to the realities of implementation.

58. Regarding experience with monitoring through tripartite reviews (para. 35), a UNDP headquarters review indicated that only one third of the reviews and evaluations required were actually being conducted. Even when held, it was found that many tripartite reviews place too much emphasis on delivery of inputs and administrative matters and not enough on outputs, i.e., the accomplishment of the project's objectives. Very few in-depth or ex-post evaluations have been conducted but the report implies (para. 37) that they should be primarily concerned with effectiveness and long-term impact.

8/ Programme implementation: government execution and management; project design, monitoring and evaluation; and UNDP-financed experts (DP/558), dated 23 February 1981.

E. CONCLUSIONS

1. FINDINGS AND CONCLUSIONS ON EFFECTIVENESS

59. The in-country studies (fifth level) which are considered to be the most reliable, showed that in 57 per cent of the sample, effectiveness was as planned or better. The co-ordinators believe that the percentage may even be lower in institution-building projects which are more complicated and lengthy.

60. In 33 per cent of the small-scale projects included in the second level it was impossible to assess effectiveness because of inadequate data in the files. For SIS projects the figure was 20 per cent. Among the projects which were assessed, the percentage of SIS projects rated successful or better (67%) was higher than small-scale projects (59%) with indications that these results are probably representative of the total portfolio.

61. While there is no standard against which to compare those results, there is a large number of large-scale projects where effectiveness is less than planned and a majority of small-scale and SIS projects where such data is completely missing. This corroborates the finding that not enough tripartite system attention has been given to managing for results and indicates that additional efforts are required to remedy this deficiency.

2. FINDINGS AND CONCLUSIONS ON IMPACT

62. Evaluation of impact was possible only through in-country studies. Fifty per cent of the projects were rated as having achieved an impact as planned or better if ratings of zero "cannot determine" are excluded.

9/ However, as indicated in the foot-note to table 1 above, the figure is 43 per cent if two ratings "cannot determine" are included.

Attempts to establish the extent to which these ratings were directly attributable to intended project outputs and their utilization were inconclusive.

63. In 86 per cent of the small-scale and 89 per cent of the SIS projects, no assessments of impact were possible. The in-country samples were too small (12 small-scale and 23 SIS) to extrapolate but the average ratings were less than those given large-scale projects. This is not surprising considering their size and usually short duration.

64. The large number of "cannot determine" ratings which were found in all levels of phase I clearly indicates that the tripartite system tended to ignore questions of eventual development impact in industrial projects at all stages in the project cycle. This absence of concern with potential and actual impact seems most alarming in the case of large-scale projects, particularly those which are aimed at producing significant change in the industrial sector and whose ultimate success depends heavily on external factors.

65. While the situation appears less of a problem with small-scale and SIS projects, the lack of any such information makes it difficult to learn from experience and raises questions as to what criteria are used in programming funds for these activities, particularly with SIS projects which have a special purpose.

3. INTERPRETATION OF RESULTS

66. In evaluating the results of project activity (outputs), the achievement of a project's (immediate) objective (effectiveness), and a project's significance and eventual effect on a higher level objective (impact), and given the current state of project documentation, desk reviews at headquarters based on the official project files, regardless of their intensity, do not always represent a valid assessment on an

individual project basis. Only field missions can presently overcome this absence of pertinent data and produce a reasonably accurate assessment. This is so, particularly with large-scale projects, because the project information system has not called for this type of data. It is also evident that the information which is contained in the files is often inflated or over-optimistic. This human phenomenon is noted in greater force as one attempts to travel up the project means-end chain. There are also no checks made on the results reported by project management.

67. The results of the in-country ratings of progress in producing outputs indicate that, on the average, they are less than planned. The same condition exists, but with greater shortfall, regarding effectiveness and even more so concerning impact. It appears evident that, in general, projects are justified and planned on the basis of unrealistically high expectations and without due consideration to resource limitations and the outside factors which facilitate or constrain achievements.

68. Notwithstanding the qualifications noted earlier about the numerical ratings and the quality of data upon which they were based, there was enough consistency within each CPA and in the comparison between approximations to give the co-ordinators confidence that the methodological design has provided results which permit analysis and form the basis for informed and systematic findings and conclusions. The basic problem,in terms of this exercise and its interpretation by the intended audience, is the lack of a framework to compare and judge the results. While the results can be considered representative of UNIDO's total project portfolio, there is no way to determine that an individual or average performance rating is acceptable, below or higher than a standard since no such standard exists. Indeed, a higher average rating on

effectiveness, for example, could indicate that UNIDO is executing low-risk projects with minimal developmental impact and significance. Since similar evaluations, i.e., using a comparable methodology and focussing on effectiveness and impact have not been carried out with other executing agencies, it is also not possible to compare the results of this study with other perceptions of performance in other sectors. Given this problem, it is only possible to make a limited comparison of the process-oriented results with similar results from recent evaluation studies concerning other United Nations agencies.

4. PROJECT CYCLE

69. Serious deficiencies exist in the several stages of the project cycle reflecting system-wide and internal UNIDO and UNDP constraints. This includes the widespread absence of systematic problem identification and diagnosis, the generally poor quality of project design, the inadequate attention given to effectiveness and impact at all stages and the over emphasis on resource inputs in the approval and implementation stages, the lack of result-oriented work planning, reporting, monitoring and evaluation, insufficient attention to critical external factors, lack of baseline data and performance indicators, and the total absence of terminal and ex-post evaluations of effectiveness and impact or concern with follow-up actions to sustain or increase the intended impact on a development problem or targeted end-users or beneficiaries. There are also serious deficiencies in project documentation and reporting.

70. These deficiencies appear in almost all projects, regardless of whether they were prepared under pre- or post-1976 guidelines and whether issued by the UNDP or UNIDO and are aggravated, in many cases, by poor documentation.

71. Chapter 3400 of the UNDP Policy and Procedures Manual was developed in 1975 to implement the "New Dimensions" emphasis on the results of technical co-operation and their development impact and eliminate some of the deficiencies noted in the project cycle. Similar guidelines were issued by UNIDO in 1976. Neither have had sufficient effect on these deficiencies indicating continued inadequate management attention to compliance and quality control.

72. The technical factors (design element, managerial and other information required) for result-oriented management including evaluation are often missing, and this is particularly evident and critical in project design. This requires, inter alia, new policies, procedures, guidelines and training.

73. Efforts to correct the deficiencies noted in the project cycle will not of themselves improve the effectiveness and impact of technical co-operation projects without at the same time addressing more fundamental issues which were encountered in the fact-finding phase of this study which deal with:

- The capacity of UNIDO ;
- The role of UNDP;
- The relationships between the Government, UNDP and UNIDO within the context of the tripartite system;
- The relationship of projects and the industrial system of a country within the context of the business environment.

74. The next chapter addresses these internal and external factors which form the project environment and are crucial in any analysis of effectiveness and impact.

II. THE PROJECT ENVIRONMENT - INTERNAL AND EXTERNAL FACTORS AFFECTING PROJECT EFFECTIVENESS AND IMPACT

A. BACKGROUND

75. As indicated at the end of the previous chapter, a number of fundamental issues were encountered in the fact-finding phase of the study which derive from factors which are external to the projects. These external factors were found to have a significant influence on the potential achievement of project effectiveness and impact. They also affected the several stages of the project cycle. Therefore, the co-ordinators consider it important to identify, analyse and discuss these external factors in order to place the results reported in chapter I in their proper perspective.

76. The study has not carried out an in-depth analysis of each one of the external factors to be presented, but it has obtained sufficient information to corroborate the view that these factors may tend to affect project performance to a greater extent than the intrinsic internal elements of project design and implementation.

77. The findings which are reflected in this chapter are derived from approximately 350 interviews[10/] carried out by the co-ordinators

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10/ At the in-country study level, interviews were carried out with project staff, both national and international experts, industrial end-users of project results, government representatives at policy-making as well as working levels, Resident Representatives and their staffs including specifically SIDFAs if on post; at UNIDO headquarters in Vienna senior and operating staff of the Division of Industrial Operations, Division of Programme Co-ordination and Division for Industrial Studies; at UNDP headquarters in New York, senior policy-making and working level staff of each of the four Regional Bureaux for Africa, Asia, Arab Countries, Latin America as well as the Unit for Europe and the Bureau for Programme, Policy and Evaluation. The co-ordinators also benefited significantly from the discussions and views expressed at the Workshop on Significant Issues held at Vienna at which a group of 16 persons selected from the national consultants, SIDFAs and participating staff of this study were present.

and observations of the evaluation teams. A large number of the persons interviewed had knowledge or some degree of experience in technical co-operation projects in industrial manufacturing. The majority of these interviews were directly linked to the seven in-country studies and included end-users and beneficiaries. There also were policy and management-oriented interviews with UNIDO and UNDP headquarters staff.

B. CAPACITY OF UNIDO

78. The UNIDO is the principal implementing agency for UNDP-supported technical assistance projects in industry. Its role during the project cycle makes it necessary for several levels and units of the organization to participate, each with a limited role and authority in the total UNIDO responsibility assigned within the scope of the approved project document, the legal instrument which provides the substantive, financial and legal parameters for the participation of the three parties: the Government, UNDP and UNIDO.

1. ROLE AND RESPONSIBILITIES

79. The UNIDO is called to help and advise Governments of developing countries in the identification and design of industry projects. UNIDO has also been assigned the responsibility for the implementation of UNDP-funded industrial development activities and the delivery of the inputs being purchased with UNDP resources.

80. There are two UNIDO divisions directly concerned with these projects: the Division of Programme and Co-ordination (DPC) which has primary responsibility for programming and project design, and the Division of Industrial Operations (DIO) which takes over after UNDP approval. There are four administrative support functions required: recruitment, purchasing and contracts, training (which is a substantive unit) and accounts/finance. There are also other units which, from time to time might support projects either from Policy Co-ordination or the Division for Industrial Studies.

81. The substantive and technical work is done by the Division of Industrial Operations with nine sections. Five technical sections deal with manufacturing as defined in this study, namely chemical industries, engineering, metallurgical industries, agro-industries and factory establishment and management. These sections were responsible for 64 per cent of the UNIDO project protfolio during the period 1977-1981. The remaining 36 per cent was the responsibility of functional sections dealing with infrastructure, planning, feasibility studies and training. The core support for technical co-operation projects in manufacturing is provided by the technical and engineering personnel of the five sections, either in project preparation and design (under the over-all responsibility of DPC) or in project implementation under its own responsibility. Thus, in the final analysis, UNIDO headquarters involvement in design and implementation of a project rests primarily on one technical professional in DIO and at least five other staff who are called to support his/her actions, each one of whom however, has distinct responsibilities and authorities which influence the procurement and delivery of project inputs. The technical competence of the organization is highly dependent upon and significantly enhanced by the recruitment of project staff (experts and consultants) who serve at the country level on specific projects after their approval. Other supporting units which could be particularly relevant at the problem identification and diagnosis stage leading up to project selection and design, such as the unit dealing with country studies in the Division for Industrial Studies, have not been used to any significant extent even though their knowledge might be valuable.

82. The roles and responsibilities of the secretariat staff are sometimes undefined or overlapping when dealing with the problem identification and diagnosis required in regard to preparatory project activities and the subsequent project formulation and approval stage. In practice, except for occasional participation in country programming missions, the first two activities are frequently omitted and the latter is collapsed by speedy delegation of project approval to the Resident Representative. Competition

for projects by the different technical units sometimes discourages necessary multidisciplinary or multifunctional approaches to provide effective support, distorting project designs and subsequent work plans.

83. There also was found to ba a certain amount of confusion regarding the responsibilities and duties of headquarters and field staff in respect to the project cycle and the extent to which UNIDO is solely or primarily responsible for results. This problem is sometimes exacerbated when a SIDFA is posted. This lack of clear understanding of roles and responsibilities for the staff and organization can overshadow other internal project problems and makes their solution even more complex.

2. FINDINGS ON UNIDO CAPACITY

84. At the preparation and design stage, it was found that frequently Governments and UNDP do not ask UNIDO for its advice or participation. Projects frequently are designed by the Government or the potential national implementing agency. Once the design has been prepared there is a reluctance on the part of the Government and UNIDO programming and technical personnel to take any action that might interfere with project approval. There is a bias for the acceptance of new projects with interest centred on the amount and specification of inputs which are to be funded by UNDP, since their value serves as the basis for UNDP's overhead payment to UNIDO for its implementation services. The agency overhead payment is the only significant source of discretionary funds available to UNIDO.

85. Technical competence in an industrial sector or subsector is not the same as knowledge of project design and practices. For example, it does not follow that an expert in gray iron foundry production will be able to formulate the design of a development assistance project to create a national centre for research, quality control testing and technical advisory services for the foundry subsector. In those cases where UNIDO

did participate in project design, the programming and technical headquarters staff as well as the SIDFAs, when they were involved, were found to lack a common and precise understanding of project design logic. They tended also not to recognize the quality aspects of project design With respect to the technical content of proposed projects, the co-ordinators found that the UNIDO technical staff sometimes does not have adequate technical experience and is called upon to respond to all industry technical matters without institutional recognition of the limits of UNIDO's technical competence.

86. The UNIDO secretariat sometimes is requested only to assist in the formality of preparing a project document, which reflects a project design already developed. The Government may choose not to seek UNIDO technical design expertise but rather assistance in formulating selection criteria for the purchase of equipment. The UNDP expects on such occasions for UNIDO to contribute to both but often the UNIDO staff responds to the Government's desires by leaving the project design problems to be solved after approval when there will be specialized technical experts or consultants available.

87. The study found that UNIDO tended to press for project approval as quickly as possible but with minimum attention to the technical/substantive dimensions and quality standards necessary for good project design. The effort to gain early UNDP approval can be incompatible with the ultimate achievement of project effectiveness and impact.

88. Once a project is approved, UNIDO's interest is focussed on delivering the inputs on schedule. Traditional management practices emphasize input delivery which is reinforced by the Government and UNDP which also operate and manage on the basis of financial oversight techniques based on annual budgets. The expenditure of the funds then appears to become the primary interest and the common measure of progress. Considerations of continuing relevance and quality of these inputs apparently become of secondary importance. In these circumstances, the role of UNIDO's headquarters

technical officer too often is reduced to the management and oversight of input delivery and occasional participation in ad hoc or tripartite reviews.

89. The technical competence of the organization is highly dependent upon, and significantly enhanced by, the recruitment of project staff (experts and consultants) who serve at the country level on specific projects. The post of Chief Technical Adviser (CTA) is of particular importance. This individual often finds it necessary to assume the primary responsibility for management of the project. With a vague project design he may find all responsibility has been delegated to him by default or, conversely, that headquarters severely limits his authority. The SIDFA, where there is one, is often expected to maintain a supervisory role on behalf of UNIDO and UNDP since he is part of the UNDP country office. However, the duties of the post and the industrial experience of individuals usually do not permit the incumbent to be a source of technical backstopping support in specialized subject matter.

90. The UNIDO technical capacity in respect to projects is reflected to a significant extent by the quality of experts it recruits or the services it secures. The study indicates that headquarters technical staff with project responsibility are so overcharged with work, both in volume and diversity of subject, that they generally can concentrate only on problems of input delivery. Technical backstopping from UNIDO headquarters often proves impractical due to the distance, limited travel funds, staff turnover and unfamiliarity with local conditions. Field experts are thus called upon to rely on their own personal professional networks. On the other hand, it was found that the project information, monitoring and evaluation systems are inadequate so that there is no timely feedback of problems from project management to UNIDO headquarters.

91. Thus, the technical co-operation project responsibility of UNIDO as an organization may de facto be reduced to the delivery and installation of inputs. It has no authority to change expenditures from one budget

line to another without approval by the Government and UNDP. All UNIDO purchases of material must be agreed upon by the national implementing agency and selection of experts must be approved by the Government. At the country level, project experts are similarly often reduced to a role largely limited to establishing specifications for equipment inputs, sometimes without proper reference material to do so, and facilitating their installation. Moreover, the experts sometimes are not well informed about the project outputs and objectives which the inputs are meant to support. This situation and the difficulties encountered in making formal changes to projects after approval encourages experts to utilize their time by providing ad hoc direct support to unplanned project activities rather than concentrating on poorly formulated objectives whose achievement are clearly beyond the expert's ability to produce or control.

92. Improvements in the organization's performance need to be seriously considered. Some proposals are:

(a) Training in project design and evaluation concepts and practices needs to be increased. The co-ordinators encountered many staff members with little understanding of the internal structure of a project, how to formulate verifiable outputs and objectives and particularly how to link project activities to the achievement of project effectiveness and impact.

(b) The country programme process ought to be used by UNIDO as a means for providing insights from its experience and knowledge in advising Governments on policy choices and priorities for industrial development.

(c) Greater use should be made of the country and other analytical studies of the Division on Industrial Studies particularly in helping to identify and understand the operative industrial system on a subsector basis leading to a better identification of industrial needs by the Governments concerned. This information would contribute substantially to better project selection, preparation and design.

93. Based on the findings of UNIDO participation in projects, the role of the organization at present seems to be primarily that of a purveyor of internationally financed goods and services. This de facto function is reflected in UNIDO's management systems which have been essentially input and financially oriented. The management responsibilities for outputs also seem to be significantly hindered due to lack of information feedback from projects, together with the remoteness of projects. Thus UNIDO headqua..ers' project management concepts seem to have been adjusted to the realities of its limited operational role.

3. OBSERVATIONS AND CONCLUSIONS

94. The study revealed that UNIDO headquarters has only limited technical capability to participate effectively throughout the project cycle. Despite this limitation the organization is sometimes called upon to implement projects in a much wider range of industrial activity and at specialized or higher levels of subsectoral expertise than it is capable of handling.

95. This imbalance between UNIDO's internal resources and responsibilities calls for further study on how it can be corrected under current conditions. Unless this is done, other efforts to improve the several stages of the project cycle will have limited influence on the effectiveness and impact of UNIDO-executed projects.

96. The UNIDO should define and describe the subsectors of industry and ... technical subjects in which it currently considers itself competent. Work on the definition of areas of specialization has been started but needs to be pursued in greater depth and scope. This information should be widely disseminated when it is completed, and revised periodically.

97. It is not possible for UNIDO to have a full-time technical staff competent to deal with all technologies, products, materials and methods in industry. The several subsectors of industry eligible

for priority assistance, are subject to change: some subsectors may shrink or disappear while new ones may have to be created. It is important therefore to develop further and use to a much greater extent the technical professional networks composed of individuals and institutions on a subsectoral level which could supply UNIDO with technical support on an ad hoc basis. These mechanisms need to be more explicit, more accessable and formally recognized as part of an adaptable, responsive service organization.

98. Consideration should be given to the wider use of technical committees composed of outstanding professionals from industry recruited on a world-wide basis to advise and assist in the design, review and evaluation of complex projects or those involving technologies in which UNIDO staff has limited practical experience. These committees would not be a substitute for UNIDO technical staff participation but rather are proposed as a supplement to UNIDO's technical competence in selected areas.

99. The co-ordinators found during the phase I desk research and phase II interviews and observations that the technical information base in UNIDO headquarters was not sufficiently developed. Information which is available may be difficult for users to obtain. When users wish to obtain technical information rapidly they tend to rely on personal contacts among technical staff members rather than on an established information base or on linkages to other information systems. Particularly evident is the total lack of expertise in industrial marketing, including methods for gathering intelligence and making market assessments. Co-operation among complementary and technical and functional sections and the sharing of information and skills is difficult due, inter alia, to the organizational arrangements for implementation services and perceived benefits for each implementation unit for credit related to project numbers and size.

100. The fundamental issue overriding all of these specific recommendations, however, is that the subject-matter of UNIDO-executed projects in manufacturing is extremely broad and complex; the choices of levels and kinds of technology are many; and there is a variety of means for delivering technical assistance and for transfer of technology. The UNIDO portfolio may total 1,200 active projects at any given time. The staff, which may number approximately 135 technically qualified persons available for project activities, does not have the range of knowledge and practical experience to plan and manage a project portfolio of such size and diversity. Consequently, UNIDO is forced to fulfil a technical function for which it is not currently equipped with adverse effects on quality, effectiveness and impact. The future of UNIDO as an organization useful to Member States might well rest on its competence in the technological, management and marketing aspects of industrial development. In none of these three fundamental industrial functions can the organization feel confident, least of all in marketing. In the final analysis, the competence of UNIDO will rest on the quality and number of professional staff with some combination of skills in engineering, industrial technology, finance, management and marketing backed up by a supporting network in specialized areas of technology.

101. Prompt action is needed to improve the identification of staffing requirements, recruitment standards and methods of selection in order to increase in quality and quantity the technical engineering capacity of the organization and most particularly the Division of Industrial Operations.

102. With respect to UNIDO's role in project implementation, it seems highly desirable to delineate with more precision the extent of UNIDO's responsibility for the achievement of project outputs and the authority that ought to be delegated to it, particularly by UNDP, over the composition and use of project inputs. Furthermore, the relationship between UNIDO headquarters and the field staff, particularly the Chief Technical Adviser, requires review since currently at headquarters,

project initiatives are sometimes made without the means of carrying them out, while at the project site, the Chief Technical Adviser has insufficient authority to exercise his managerial responsibilities.

103. Given the large proportion of IPF-funded projects in UNIDO's portfolio, these possible improvements cannot be seen independently of the role of UNDP. Many of the actions that might evolve can only take place effectively if UNDP's role is further examined and its effect on industry, project development and implementation is fully determined.

C. PARTICIPATION OF UNDP

104. The UNDP is the central organization in the United Nations system for technical co-operation between developed and developing countries. It provides the funding for international inputs to technical co-operation projects from voluntary contributions provided by the Member States. In addition, UNDP also fosters technical co-operation among developing countries. The UNDP designates, in consultation with the Government, the executing agency for the implementation of the technical assistance component of a government project the execution of which is carried out by a national agency selected by the Government.

1. ROLE AND RESPONSIBILITIES

105. The Administrator of UNDP is held accountable to the UNDP Governing Council for the utilization of the voluntary funds and is responsible, together with the Government and the executing agency for the implementation of the projects. Systems for financial supervision and control exist which demand budgeting on a yearly basis and a concomitant follow-up through management plans.

106. A Programme and Procedures Manual (PPM)[11/] defines terms and concepts, procedures and methodologies for both programme and administrative procedures which are to be utilized for the provision by UNDP of

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11/ United Nations Development Programme, Policy and Procedures Manual - PPM (New York, December 1975) and revisions.

assistance to government projects under the country programming concept and the fundamental tenet that the project belongs or is directed by the Government. The Manual also states UNDP support for international inputs is implemented under the responsibility of the executing agency. In this case the agency is UNIDO which is accountable to UNDP for the expenditures incurred. The obligations and responsibilities regarding resource inputs, legal liabilities etc., of the three parties for each project are spelled out in a project document which is formally signed by the Government, UNDP and UNIDO. Even so, the specification of roles, authorities and responsibilities for project management are unclear.

107. The UNDP requires participating Governments to prepare a country programme for a five-year UNDP development cycle. This document is intended to indicate the development strategy and plans of the Government for international technical assistance and taking into account other assistance it may expect to receive so that the whole development effort and aid resources to the country are co-ordinated. In addition, the document calls for the Government to contain its planning of UNDP participation within the scope of Indicative Planning Figures which are approved by the UNDP Governing Council for a five-year period.

108. The UNDP exercises its project responsibilities through a structure involving different levels and parts of the organization. The UNDP headquarters has delegated considerable responsibility and authority to the Resident Representative for all activities concerned with project implementation and for approval of projects calling for less than $400,000 from UNDP. Approval for participation of UNDP in projects above $400,000 is exercised by the UNDP Administrator. The responsibilities of the Resident Representative at the country level are shared by a Deputy Resident Representative and a number of professional staff, depending on the size of the programme at the country level.

Among these officers, generally one would be assigned responsibility for all industrial projects as well as projects in other sectors depending on total work-load. In those countries where there is a post for a Senior Industrial Development Field Adviser (SIDFA), he is usually given these responsibilities in addition to duties and responsibilities which he carries out on behalf of UNIDO.

109. At headquarters, UNDP discharges responsibilities dealing with programme, financial and administrative functions. The programme functions are organized on a regional basis by four bureaux covering Africa, Asia, the Arab States and Latin America and a unit for Europe. Programme responsibilities are assigned by country; area officers cover one or more countries dealing with all projects in all economic sectors including industry.

110. The UNDP has a Bureau for Programme Policy and Evaluation (BPPE) including a Division for Programme Development Support and Evaluation which gives technical, managerial and organizational support for project design and appraisal to the regional bureaux. It also assists in supervising projects with significant problems or where important evaluation is required.

2. FINDINGS ON UNDP PARTICIPATION

111. The observations made during the implementation of this study indicate that the principle that projects belong to Governments is well established. The country programme process as generally practiced by Governments does not permit them to make as thorough an analysis of the needs of the industrial sector or subsector as would be desirable so as to properly identify problems and effect the diagnostic work that would lead to more appropriate selection and design of projects.

112. Government co-ordinating offices which are the critical counterpart to the UNDP Resident Representative office are primarily concerned at the country programme stage with sector financial planning allocations for UNDP assistance. At the project implementation stage their principal concern is with project budgets and timely expenditures, with little interest in project preparation, design or implementation. There appears to be an over-reliance by the government co-ordinating offices on the UNDP Resident Representatives for advice and in some cases they delegate to him what would be presumed to be their own responsibilities in respect to the project cycle. It seems as if two factors contribute to this situation: an implicit reliance on the UNDP Resident Representative as an unbiased source of advice and a strong impression that UNDP procedures are unnecessarily complicated in proportion to the amount of money involved in UNDP assistance compared to other government responsibilities involving much greater financial resources.

113. This situation was seen as forcing UNDP at the country level into a considerable amount of administrative detail dealing with country programmes and the identification of new projects while at the same time causing neglect of problem identification and diagnosis which is a precondition to the achievement of project effectiveness and impact. On the other hand, the Government exercises its decision-making prerogatives as a sovereign state not only by its participation in, and contributions to a project, but also through the allocation of the Indicative Planning Figures by economic sectors and by projects. This is done irrespective of whether there is even a preliminary project design or a cursory problem diagnosis.

114. This problem is compounded because once a Government has decided on a project at the country programme stage, the UNDP lacks effective authority to influence the Government to consider alternative approaches or changes in project objectives at the time of project formulation and

approval when economic and other conditions may have changed considerably. It is against this background that UNDP regional bureaux and Resident Representatives must exercise their responsibilities related to project preparation and design as well as management oversight of implementation and results.

115. The UNDP Resident Representative offices have a better understanding of the problems of the country and of the projects than do the headquarters staff but this advantage is often constrained by staff turnover and shortages. With regard to project preparation and design, these offices are under strong pressure to meet approval schedules established in the country programme based on government financial planning considerations of its IPF. As a consequence, there is not enough time for careful and thorough project preparation and design. There is a bias against preparatory assistance project design on the assumption that problems can be worked out during implementation when project staff are available. The UNIDO, when requested, offers its design proposals in the form of a project document which in practice focusses on the details of delivery schedules for international inputs with minimal attention to outputs and their causal relationship to higher level objectives. The immediate project objective and development objectives are often stated at lofty levels so as to convince decision-makers of the significance of the project and the catalytic effect of modest inputs. Formulation of statements of development objectives at the macro-economic levels results in a large gap between that level and the project objective. Such a gap makes impact difficult to visualize and unlikely to occur. On the other hand, UNIDO relies on UNDP and the Government to set the project objectives since UNIDO has very little information or control over actions required to achieve them, apart from supplying inputs. The country offices of UNDP do not have sufficient knowledge and capacity to ensure adequate problem identification and

quality of project design. Consequently, they sometimes call upon headquarters technical advisory staff for appraisal of larger project proposals. The small size of this staff, found to be limited to two, constrains its ability to respond.

116. The pressures for project approval from Government, UNIDO and sometimes the Resident Representative often are great. Since UNDP has no real authority to refuse approval of a poorly designed project which has been included in the country programme and which in turn has Governing Council approval, it has only two alternatives. It can request further information or it can record the reservations raised by technical advisory staff and give approval with the proviso that such reservations will be worked out during project implementation. This may prove almost impossible to do at the country level.

117. In regard to project implementation, the dilemma of UNDP country offices is between adherence to implementation of annual budgets or managing to achieve effectiveness and impact. The standard of performance of UNDP country offices applied by UNDP headquarters is perceived to be adherence to annual programme budgets or meeting reduced country ceilings when there is a reduced level of voluntary contributions or similar situations. On the other hand, there are no formal quality standards for projects. Consequently, these country offices impose pressures on UNIDO, which is already predisposed to spend the funds, to deliver inputs. The concern of UNDP at the country level on the achievement of project outputs is not pursued actively because of these factors which are aggravated by the limitations of available staff resources and time and the great number of competing duties and responsibilities. In addition, there is no clear UNDP authority over the work programme aimed at producing outputs since most of these activities depend on the national implementing agency and UNIDO.

For this reason and because the UNDP has not explicitly required it, there is usually no monitoring of the critical external factors affecting implementation and eventual effectiveness and impact. Whatever UNDP follow-up occurs is done prudently and is not necessarily recorded in files since to be effective such representations must be discreet. Any power which UNDP headquarters might have by virtue of its control over project funds is lessened at the time the project is agreed upon although the approval of annual budgets for UNDP inputs is still nominally retained.

118. The capacity and influence of UNDP at the country level is further curtailed by the fact that any call for assistance from outside the country at any stage in the project cycle must be a charge to the UNDP project budget and be financed against the country's IPF. Governments usually have shown great reluctance to agree to the use of IPF resources for better problem identification and diagnosis leading to improved project design. There also may be a reluctance on the part of the Government, particularly from the designated national implementing agency, to accept any advice from UNDP headquarters or UNIDO before the project is formally approved. After approval, it becomes practically impossible to change the approved allocation from UNDP to the project since the national implementing agency considers it its own source for financial support.

119. The attention that is given by UNDP staff to a single project in industry consists of a small fraction of the time of a Resident Representative, assisted by a professional officer at the country level who dedicates part of his/her time to the project, supported by a headquarters country officer who deals with all projects of one or more countries. Occasionally, this team of two professional officers, qualified as generalists, call upon the services of a technical adviser.

The technical advisory unit is staffed with 12 technical professional advisers. Two of these advisers who have appropriate training, background and broad professional industrial experience are called upon as required to give advisory and evaluative support for industrial projects in all countries and all industrial subsectors in addition to other related responsibilities dealing with managerial, technical and scientific matters. These headquarters advisers make up part of the Division of Programme Development, Support and Evaluation. Consultants recruited because of specialized technical or scientific expertise are sometimes used; these consultants require considerable support from the UNDP technical advisers in briefing and debriefing etc. This working level team must assure compliance to all programme guidance and instructions and perform supervisory responsibilities in project design and implementation with corresponding involvement in project preparation and evaluation. Currently the number of industrial projects under active implementation by UNIDO and for which UNDP has monitoring responsibility totals 1,208. Based on these findings, the role of the UNDP seems de facto to have been reduced to that of management oversight for which the information feedback system from projects regarding quality and relevance is not adequate. It is called upon to play a role in respect to project design for which its technical capacity is minimal and its programme staff inadequately trained. Its role of financial sponsor to the project has in fact been assumed by the Government in so far as decision-making is concerned; in many cases UNDP is merely expected to supply the funds and account for them.

3. OBSERVATIONS AND CONCLUSIONS

120. In the study it has become very evident that the role and responsibilities that UNDP is being asked to fulfil by its Governing Council are far beyond its existing capacities. Some of these

responsibilities need to be pursued because UNDP's other partners are not fully exercising theirs, or because of a confusion about roles, authorities and responsibilities. Thus UNDP becomes the agent of last resort whereby it must account to its Governing Council on the utilization of its funds.

121. The actions of UNDP can influence the industrial projects being supported far beyond what would usually be expected from a financial sponsor. The UNDP does have a very significant role through its oversight and support activities which could significantly enhance achievement of project objectives. To these roles, there is the added dimension arising from its impartiality and unbiased relationship with Governments which oblige it to be heavily involved with project preparation and design, and particularly concerned with project significance, relevance and impact.

122. In this complex set of interrelated roles, there appears to be a need to review their different aspects and to define the role and functions of the different levels of the organization more precisely to ascertain whether or not UNDP has sufficient capability to fulfil its mandates. At present, the "management oversight" role seems to be diluted with too many organizational levels sharing responsibility and none having the knowledge and resources to fulfil their role. In this regard, it is necessary to clarify the responsibility to monitor the project environment in order to identify and take account of external factors which may influence the achievement of project effectiveness and impact. Effective and widespread training in the concepts and practices of project design and evaluation is needed since too many staff members were found to have improper or imprecise understanding in this matter. A better harmonization between UNDP and executing agency systems for design and evaluation should also be part of this effort.

123. The UNDP needs to reconsider the qualifications of its programme staff to fulfil their management oversight role. There is a priority need to select individuals educated in the engineering and associated professions with adequate industrial management experience who are able to recognize and understand complex techno-economic industrial problems. This reconsideration implies a possible change in recruitment policies and a restructuring and reallocation of posts to fulfil more clearly defined responsibilities. In addition, however, particular attention should be given to the technical advisory function and its backstopping support role so that it is commensurate with the requirements of the organization in the industrial sector.

124. The most fundamental issue, however, is the degree of authority of UNDP to refuse assistance to a project requested by a Government if the project proposal is found to have a low probability of success and/or of producing sufficient impact to warrant international support. Review is also needed on the usefulness of the country programming process if it is used only or predominantly as a technique to plan the allocation of financial resources to projects not yet designed. The review should consider means for achieving the intended purpose of country programming: to reflect a Government's policy and strategy for its development in selected sectors, to identify and diagnose problems impeding development and to select the most cost-effective solutions rather than the current practice which tends to use it as a tool for allocation of the IPF on a project basis, without the means to accomplish this task in a responsible fashion.

D. THE STRUCTURE AND FUNCTIONS OF THE TRIPARTITE SYSTEM

125. As both UNIDO and UNDP have already been discussed in some depth, the emphasis here is on the Government's interaction with its development partners, including the intended end-users and beneficiaries i.e., industry.

126. Several key features of the tripartite system described in the UNDP Policies and Procedures Manual which are of particular interest for the present study are:

- Recipient Governments have the ultimate responsibility for determining priorities for UNDP assistance. The UNDP-funded projects are actually the projects of the countries concerned; recipient countries can be entrusted with the responsibility of executing UNDP-assisted projects.

- The UNDP and the executing agency assess jointly the activities in particular sectors, subsectors or areas with a view to identifying gaps in UNDP assistance and developing new programmes and innovative approaches for responding to the evolving needs of developing countries.

- The executing agency (e.g. UNIDO) participates jointly with UNDP and Governments in the identification, formulation and evaluation of projects and programmes and assumes responsibility, jointly with the Government, for implementation.

- Within the organizations of the three participants, responsibilities and working relationships are assigned to a variety of different levels and units for programme planning, project operations and administrative management.

1. ROLES AND RESPONSIBILITIES WITHIN THE TRIPARTITE SYSTEM

127. In practice, there was much variability in the participation of the three parties in all stages of the project cycle. The UNIDO, which is presumed to be the major source of industrial development knowledge and of specific technology during project execution, was infrequently involved in problem identification and diagnosis and sometimes only superficially in project formulation and design. The results of studies on industrial development problems conducted by UNIDO generally were not found to be applied either in the diagnosis or planning stages of the

project cycle. Both UNDP field offices and headquarters may play an assertive role in the early stages of the cycle or conversely, one or both may be ignored by the Government if it feels its sovereign prerogatives are threatened. The Government may be unwilling or not prepared to assume the leading role in project planning. Delays encountered in project approvals were sometimes the result of the lack of clarity in the definition of tripartite roles and in communications. There were often strong pressures from co-operating Governments, UNIDO and the Resident Representative for quick project approval. When the UNDP headquarters wanted to justifiably withhold approval, it would cause delay by requesting additional information. Delay in approval often involved a number of problems rather than a single one but rarely concerned project design per se. The official project files do not always accurately reflect the roles played by these parties during an extended approval process.

128. Government participation in tripartite reviews was found to have only a marginal influence on project effectiveness and impact because they were held infrequently or were not scheduled to support decision-making, and because they tended to focus largely upon input delivery, budget issues and administrative changes. They lacked end-user participation and they also lacked headquarters staff participation which may have been limited by lack of travel funds. Government participation in in-depth evaluation was infrequent, as were the evaluations themselves. Governments do not participate in the preparation of terminal reports but rather are one of the recipients.

129. At the project level there is often no real authority vested in the national project director and/or the Chief Technical Adviser (CTA) appointed by the Government or UNIDO to manage effectively the implementation of the project. This limitation is caused in part by the complexity of the government structure, the diffusion of responsibility and authority within the several levels of government (e.g. the central co-ordinating office

for external assistance, the sectoral ministry, the planning, foreign or finance ministries and the implementing agency) and the relation between government and quasi- or non-governmental institutions and the industry itself. An example of the problem is found in the difficulty of identifying a counterpart agency with clear authority to make project-level decisions. Another cause is the limited substantive backstopping support available from the tripartite system, particularly from UNIDO. For administrative or budgetary problems within the purview of UNDP or UNIDO the channels for communication and the decision-making arrangements are reasonably clear, although not always prompt or responsive. For similar problems originating within the Government, some of which may have a political dimension, the channel for communications and the point of decision may be less clear and the response ever less prompt. The Government's role is further complicated by its complex nature as well as by its dual status: as a partner in the tripartite system, it consults with, and depends upon the other two parties; as a sovereign power, it has the authority to make all decisions. (See also paragraph 135 for the dual role of Governments vis-a-vis industry.)

130. The sovereign power of the Government can be the dominant factor in the functioning of the tripartite system. The nature and level of government activity in the project determine the stage and the extent to which UNDP and UNIDO are called upon to participate in, or contribute to, key decisions and the amount of project funds which can be used throughout the project cycle. The Government activity also affects the substantive, technical and other inputs which are delivered to project management. Ultimately it may strongly influence the achievement of the project and development objectives.

131. While the concept of sovereignty is beyond debate, it does result in an association of unequal partners. When the concept is applied at the working level, it may be used by any or all of the parties to avoid

consideration of important problems, the effect of changes in critical assumptions, or other factors vital to eventual project success. It also reduces substantially the likelihood that UNDP or UNIDO could impose demanding standards for project design or approval.

132. A more detailed analysis of the roles of the three participants in the four major stages of the project cycle is found in chapter I of this report.

2. THE COUNTRY PROGRAMMING PROCESS

133. The country programme, based upon a five-year projection of financial resource availability from UNDP (the Indicative Planning Figures (IPF)), in practice often goes beyond the allocation of anticipated IPF resources by sector and allots funds for individual projects. This sometimes occurs prior to the first stages of an orderly project cycle which should begin with problem identification and diagnosis, at least at the subsectoral level, followed by project formulation and approval. The premature assignment of project funds may result in a de facto decision to pursue a project which further exploration or changing circumstances would have shown to be of lower priority than other alternatives available. These decisions sometimes are made without the assistance of UNDP or the advice of UNIDO. Because of limited budget resources, the continuation of on-going projects may be given priority by default over new initiatives aimed at more pressing problems.

3. THE TRIPARTITE SYSTEM LINKAGE WITH INDUSTRY

134. The extent to which the tripartite system can induce development in the industrial sector depends directly on its ability (a) to forge close working relations with the industrial community, (b) to understand the

crucial problems and needs of that community, (c) to explore fully the entire range of industrial knowledge available through UNIDO and (d) to formulate technical co-operation projects which effectively address those needs. For maximum effectiveness the tripartite system must perceive the industrial community as a fourth member of what is essentially a quadripartite dialogue. This is very important where there is a large private sector but is necessary in any type of economy. This relationship is necessarily a government responsibility; UNIDO is not able actively to establish such a linkage although it can participate as an advisor and a supplier of expertise and other resources or act through an intermediary e.g., an IRSI. It also participates through training programmes, expert group meetings etc., financed from its own funds. As a corollary, the tripartite system should be able to recognize those problems which cannot be solved through technical co-operation.

135. The study found that in the case of private and mixed industrial economies Governments often encountered difficulties in establishing communications and gaining an adequate understanding of the complexity of the industrial process, the interdependence of the industrial community and the key constraints to industrial development. This was partially due to Government's dual role as regulator and tax collector, on the one hand, and promoter of industrial growth on the other. This dichotomy often prevented the Government from examining objectively industry's most critical needs and accurately translating those needs into technical co-operation projects fro execution by the tripartite system.

136. Even in cases of mixed or public industrial economies where the Government had a greater involvement in goal and priority setting, planning, resource allocation etc., the concerned ministries made their choices on what appeared be a limited information base and insufficient consideration of all the elements of the industrial system at the country level.

137. The problems and needs of intended industrial end-users and beneficiaries did not always receive systematic attention in the project formulation stage. Although in some cases they may have been consulted, industry involvement was usually more pro forma than real. One difficulty has been that there is usually no authoritative spokesperson for the industrial community. When industry does have the opportunity to speak, often the emphasis is on measures to protect itself from government regulation and taxation. Their involvement in project planning is critical for the subsequent utilization of project outputs and achievement of objectives.

4. ORIENTATION TOWARDS RESULTS - PROJECT EFFECTIVENESS AND IMPACT

138. At the policy-making level the Government, UNDP and UNIDO and until recently, at the intergovernment level, there was little or no manifest demand for information on the achievement of development objectives which might be associated with UNDP-financed, UNIDO-executed technical co-operation projects in industry.

139. Policy formulation, the establishment of industrial development priorities and strategies, programme planning and other central management activities generally appear to be carried forward by all three parties without the benefit of objective information about the potential development impact of individual projects or types of projects or the internal and external factors which are associated with such intended impact. Decisions taken by co-operating Governments, UNDP and UNIDO during the stages or problem identification and diagnosis and project formulation and approval, have not taken into consideration prior knowledge of what has been effective in the industrial sector world-wide or country-specific, or what has not and why. Projects encountering difficulties during implementation may be examined by technical advisors from UNDP and UNIDO headquarters who must rely upon personal experience often without the benefit of any

institutional analyses of similar experience elsewhere which may be directly applicable or adaptable. An exception is the analyses provided by the UNDP thematic evaluation series[12/] which has not yet been recognized as having an influential role in policy and programme planning, project design or problem solving.

140. A further aspect of the problem lies in the definition of roles and responsibilities of the tripartite partners. The UNDP rules and procedures are perceived as overly lengthy and cumbersome in relation to the comparatively small financial resource transfers and in comparison to bilateral and government sources. These procedures call for the participation of high-level government officials with the concomitant involvement of key staff who may be heavily burdened with other tasks. Since the UNDP Policies and Procedures Manual includes no significant or explicit requirements concerning impact, none of the three partners raise the issue at the planning stage, during implementation or at termination. Thus many projects have gone through their complete life cycle without any manifest concern with, or verification of, their contribution to the economic and social development of the country which presumably was the justification for the project in the first place.[13/]

141. Financial considerations i.e., an emphasis on the amount and type of IPF resources assigned and on levels and rates of disbursement of project funds tied to input deliveries, generally seem to be dominant considerations in the project formulation and approval stage. This is the reverse of the logical means-ends sequence of project formulation

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12/ Three such evaluations have been carried out by UNDP and UNIDO covering industrial planning and strategy projects, textile industry projects and IRSIs.

13/ The new UNDP project document and checklist now being tested on a world-wide basis continues this inadequate treatment of impact but does increase the focus on effectiveness, (see chapter III, section B, below).

which should start with the problem and proceed to a viable project design before financial and other resource requirements become dominant.

142. Within the tripartite system there is no clear responsibility for setting and enforcing quality standards for project design. In actual practice there is even no clear assignment of responsibility for the design function itself. There are no perceived incentives for good design, nor is there accountability or sanctions for poor design. Of the five preconditions normally required for good project design (baseline conditions, targeted outputs and objectives, objectively verifiable indicators of progress and achievement, assumptions about external factors, and project and development hypotheses/linkages), the UNDP Policy and Procedures Manual explicitly requires only one. In actual practice, the one explicit requirement for design i.e., clear, verifiable statements of objectives, is almost universally not observed by all three parties. The UNDP Manual is even less demanding in the area of evaluation.

143. The project document, and the design elements it contains, are not readily susceptible to formal revision, once approved. The system tends not to resist actual, pragmatic change, but resists the onerous process of officially proposing, approving and recording such change. Because of the extraordinary amount of work and time required to amend a project document, most project managers do not undertake to revise project documents or even to record design changes in the project file, except for items which may affect the project budget and inputs.

144. In the preparation and review of the draft project document there is usually pressure to push the proposal through the approval process to assure retention of the allocated funds. This pressure does not encourage careful design. Rather it encourages early initiation with the intention of correcting any design deficiencies later. This seldom happened.

145. The termination of project operations and the closing of a project's financial books usually occurs before the successful achievement of the project's immediate objective can be determined and invariably before impact on the development objective begins to emerge. Thus IPF project funds are not available for evaluation of impact. The team found that UNDP and UNIDO project staff spent very little time on-site in the latter stages of project execution and almost never visited the project after financial termination.

146. Succinctly stated, the day-to-day practices within the tripartite system were not purposefully directed toward the pursuit of project effectiveness or developmental impact. At the several stages of the project cycle the expected contributions of the project were usually not given serious or sustained attention. No one member of the system was held responsible for pursuing or even observing impact, nor did the tripartite system facilitate or provide incentives for that purpose.

5. OBSERVATIONS AND CONCLUSIONS

147. Two very fundamental and practical aspects of the tripartite system tend to dominate the project cycle. First, the operational definition of the roles and functions of the three partners differs from country to country and by project within a country. Even more remarkable is the fact that the interpretation of roles and functions differs not only among the three parties but even within each of them. The clarity and specificity of these role definitions are also highly variable. The understanding and degree of compliance with tripartite system policies and procedures is also diverse. The pattern which emerges from this diversity is a widespread tendency to leave the roles of the individual parties loosely defined and to maintain maximum flexibility and freedom of action for both.

148. The second aspect is the unequal status of the three participants in decision-making at the policy and programme planning level and in operations at the project level. The inherent sovereign power of the Government over the IPF and all stages of the project cycle give it total and unquestioned decisional authority. The UNDP has a far more limited status; it draws its authority from its role as administrator of the IPF system, its impartial stance vis-a-vis the co-operating Governments and executing agencies and its broad overview of the economic and political circumstances in the recipient countries, but must rely to a large extent on the personal influence of its Resident Representative. The scope of UNIDO is even more limited since it is seen primarily as a supplier of expert and other services but not as an active or influential participant in industrial development planning.

149. If there were a well-established theory of industrial development or tested, widely accepted empirical models for technical assistance projects, and if project environments were similar and unchanging then it would be relatively simple for the tripartite system to formulate projects and execute them. In their absence, and given the dynamic nature of the industrial process, the tripartite system must regard each project as a unique and high-risk endeavour i.e., must identify and diagnose problems, consider alternative approaches and select specific project objectives, strategies, technology etc., on the basis of professional judgement and experience. Critical factors in the project environment must also be identified and monitored. This requires not only familiarity with industrial techniques and processes but also knowledge of economic, political and social systems at the national and sectoral levels. Since this knowledge is distributed among the three parties, they are interdependent, with each possessing different kinds and levels of knowledge as well as different powers.

150. The existence of these two aspects - the tendency toward a loose definition of roles and the need to co-operate on the basis of unequal power and knowledge - has produced the following observable consequences in tripartite operations which may adversely affect the achievement of project and development objectives:

(a) A confusion in roles and responsibilities among the parties in planning, implementation and other project management functions which in effect (i) leaves no one clearly responsible and (ii) assumes that events will take care of themselves;

(b) A tendency to avoid difficult and controversial issues or to compromise at the lowest common denominator;

(c) Inadequate collaboration and unclear communication among the parties resulting in differing perceptions of project functions, objectives and strategies;

(d) Lack of rigour and discipline in all stages of the project cycle. Tripartite system policies and procedures are not widely known, are found to be complicated and receive only minimal attention and compliance;

(e) Inadequate industry participation resulting in project designs and work programmes which may be based on misconceptions and therefore irrevelant to industry's needs and intentions.

151. There are no accepted measures for determining the difficulty and cost of solving a developing country problem by the transfer of knowledge and other resources through a technical co-operation project. Similarly, there are no clear, agreed upon criteria for determining the extent of UNIDO's and UNDP's role in the technical co-operation project cycle. In the absence of such criteria it was necesary for the co-ordinators, through the mechanism of the in-country studies, to make an informed judgement on the extent to which available UNIDO and UNDP

substantive/technical staff resources match the needs of the projects included in the samples. It is their judgement that these staff resources are well below that needed to carry out basic technical assistance project functions (e.g., design, implementation) adequately and consequently to ensure even minimal project effectiveness and impact.

E. INDUSTRIAL ENVIRONMENT

152. The projects in manufacturing sponsored and supported by the Governments and assisted by UNDP and UNIDO are meant to help the development and/or service of industry in developing countries. The limited help provided to the over-all industry activity must be viewed and assessed within the framework of industry operations which occur within an industrial system, different from the technical assistance system.

1. THE COMPLEXITY OF THE INDUSTRIAL SYSTEM

153. Industry requires the acquisition, mobilization and management of a large disparate number of elements and resources, larger than normally encountered in other economic sector activities. It includes a market to be served, investment capital, machinery, equipment, buildings, technology for its manufacturing process, skilled management, technical and operating staff, raw materials, energy and other services, working capital and other operating inputs. Each one of these principal resources needs to be identified, appraised, selected and used within a dynamic system in which it is necessary to optimize continuously so as to manufacture products balancing highest quality and minimum cost commensurate to the market competition, either internal or external. The driving force for the industry is the profit or value added which must be commensurate to the risk being encountered in the complexity of a particular industry system. This system is often strongly influenced by

governmental regulatory and promotional activities in the area of industry as well as by the demands and constraints of the domestic and international socio-economic systems.

2. THE CURRENT SITUATION

154. Decisions on production or marketing strategies by established industries of the developed or developing world, could have a significant impact on the industrialization and market expectations of the developing world. Industry today no longer has a restricted exclusive national connotation.

155. The present world economic recession, the competition from low-cost imports and the high cost of money have reduced the traditional export markets of developing countries with a consequent serious impact on the industrial development plans in most developing countries.

156. Diminishing profit margins (or value added) and the high risks associated with new industrial ventures with investment maturity cycles of ten years or more and lack of assurances or guarantees on performance, have inhibited industrial investment. Risk capital has been diverted to the money markets or more flexible investments in trade activities or the services sector because the returns are higher and the risks lower than in industry.

3. INDUSTRIAL DEVELOPMENT AND TECHNICAL CO-OPERATION

157. Industrial development may be shaped by the kind and degree of government intervention or non-intervention, as well as by the prevalent industrial/business climate described above. Industrial growth can be passively responsive to normal market growth or can be purposefully expanded via productivity increases, plant rehabilitation/modernization, new processes, product development or an increase in domestic or export market shares.

158. Although each country situation is unique, industry development demands from the entrepreneur-industrial manager a suitable kind of (i) management capability, (ii) marketing skills and information and (iii) technological knowledge. These three elements which circumscribe industry operation, need to be at an appropriate level commensurate with the demands imposed by the technological process and the product requirements. The lack of any of these three basic capabilities can seriously impede market and technology industry development. These three capabilities could be provided through a technical co-operation project.

159. Assuming that a technical co-operation project can substantially affect the managerial, marketing and technological capabilities of a specific industry in a developing country, then the formulation of such a technical assistance project should begin with a diagnosis of the following three basic areas:

(a) The industrial/business environment in which the project will operate;

(b) The process of industrialization which already exists in the country and the policies and practices of the Government regarding it;

(c) The present levels of capability and the main deficiencies and problems affecting management, marketing and technology of industries in developing countries.

160. A clear understanding of these considerations will permit UNDP and UNIDO to focus their technical assistance to the most critical and immediate needs of industry. A piecemeal approach, which is the practice today, is unlikely to be effective. It is evident that projects requested by Governments and assigned to UNIDO for execution seem often to lack the appropriate focus within these industry parameters of needs and consequently may be of relatively low significance and minimum impact.

4. THE PROBLEMS OF INDUSTRIAL MANAGEMENT

161. A fundamental deficiency in industry development has been the lack of entrepreneurs and qualified industrial managers who can handle and solve problems in the areas of market assessment and development, and technology assessment, transfer and assimilation. Relatively few entrepreneurs have entered the industrial sector in recent years and those who are already in small- and medium-scale industry operate with limited skills and managerial tools more appropriate to a lower techno-economic level than that required.

162. Larger enterprises which found it necessary to appoint a professional manager usually encountered difficulty in finding competent management skills with the appropriate techno-economic capabilities required. The problem is sometimes exacerbated by difficulties in defining responsibility and authority vis-a-vis the type of enterprise ownership. In government-owned or controlled enterprises, these difficulties often are compounded by a lack of incentives and career development opportunities offered to managers.

163. The lack of managerial techno-economic skills is particularly crucial during the development stage of a new industrial venture when multiple elements have to be procured and integrated such as market, product mix, industrial site, production technology, building, equipment and machinery, financing, raw materials, technical manpower and skilled labour.

164. The use of consulting and engineering firms for feasibility study, engineering or "turn-key" contracts must be closely monitored by the entrepreneur or manager to assure that important decisions such as the relationship of plant size to expected market, and technology selection are clearly formulated and supported by analysis of a sound information base.

165. The industrial development agencies established by Governments in most developing countries, could play a significant role in identifying industrial investment opportunities through the preparation of industrial profiles or prefeasibility studies to be made available to industrial entrepreneurs. These actions might reduce but not eliminate investment risks. At best, they show the entrepreneur the directions of industrial development sought by the Government.

5. THE PROBLEMS OF MARKET ASSESSMENT AND DEVELOPMENT

166. Defining markets and establishing marketing channels for industrial products may be more difficult than in other economic activities such as farming or mining, where the markets and the marketing channels are often well established. Marketing of raw materials or components for other industries, including currently imported finished products, may require the entrepreneur to identify those implicit markets and to help transform them into explicit demand through the identification and promotion of downstream industies.

167. To market-manufactured consumer goods it is necessary to identify real disposable income and the local, regional or national market levels as a prerequisite to decisions on packaging required to preserve the quality of goods, physical distribution, storage and retailing as well as on marketing channels, promotion and pricing policies.

168. These marketing problems are worsened when industrial or consumer goods are intended for export where it must compete in price, quality and packaging. Here, the need is for reliable, accurate and updated information on market and price trends, regulatory actions by Governments of importing countries, bilateral or multilateral market agreements and international trade channels.

6. THE PROBLEMS OF TECHNOLOGY ASSESSMENT, TRANSFER AND ASSIMILATION

169. Modern industrial production technology was created by industry in developed countries for their own use. During the 1960s and 1970s the industrial corporations expanded their world-wide activities, first through exports of goods and later through direct investments and joint ventures. These latter activities facilitated access to the emerging markets and made use of the resources available in the host countries. The industrial and marketing technologies created in the parent company were transferred to these foreign investments and joint ventures and later were thoroughly assimilated by the subsidiary and affiliated companies in the developing world.

170. The technologies utilized by those corporations have forced industry in the developing world to make technology choices which are competitive for both the internal and the export markets.

171. During the last 20 to 25 years, industrial technology from the industrialized countries was relatively available. With the current over-supply of industrial goods to the international markets, this availability has tended to decrease sharply. This decrease, coupled with the desire to limit and control the activities of multinational corporations in most developing countries compounds the problems for the United Nations system to transfer suitable industrial technologies from the developed to the developing countries.

172. For the developing countries, there is a lack of reliable and unbiased information on the technological alternatives that may be available for a given industrial production requirement. This makes it difficult to identify and assess the whole range of existing technologies to determine the most suitable one. The possibility of using technologies already adapted or created by the more advanced developing countries is hindered by the almost complete absence of communication and information on technology between developing countries.

173. Once a suitable technology is identified as transferable it might have to be adapted for local conditions. Often the technical skills for technology adaptation are not available in the recipient country.

174. Technology transferred through straight purchase of advanced industrial equipment and machinery may raise costs or generate products which do not serve the real needs of the users and consumers. Similarly, transfer of advanced technology which is induced by government action without adequate understanding of industry's real needs may have similar consequences.

175. The principal role in technology assessment, negotiation, transfer and assimilation is played by the entrepreneur or manager who currently often lacks the techno-economic experience to make such choices. The role of Government, if any, is usually passive, through the establishment of regulatory policies regarding technology license contracts and trademarks. The possible participation of local industrial research and services institutes (IRSI) is often disregarded.

176. When a developing country needs to develop a special kind of natural resource for industrialization purposes e.g., a country poor in oil and natural gas resources, but rich in low quality coal, and in forestry resources, the IRSI could help to develop non-conventional sources of energy through applied research.

7. EXTERNAL FACTORS IMPEDING INDUSTRY DEVELOPMENT

177. A number of external factors have been noted above which have to be clearly understood prior to the formulation of a technical co-operation project with a reasonable probability of impact on industrial development. These are: (i) the industrial/business environment, (ii) the process of industrialization and the Government's attitude regarding it, and (iii) the level of management capabilities, marketing skills and technological knowledge of the industrial sector. In the past in many

instances technical co-operation projects, either originated by national institutions, bilateral assistance or multilateral assistance, have not produced substantial impact in industrial development, because they did not take into account these external factors.

178. Within this framework, a number of specific constraints were identified by the Joint UN/UNDP/UNIDO Manufactures Evaluation Workshop on Significant Issues and are listed in annex III below. The Workshop also identified the most important and immediate needs of industry, some of which may be amenable to international technical co-operation.

179. The most important external factors in limiting industry development are set out in the following two paragraphs.

180. The Governments of developing countries have the principal responsibility for establishing the appropriate business climate for the development of industry so as to provide the opportunity to enhance profits or value added and to decrease the risk inherent in the use of capital and human resources compared to alternative opportunities. The principal functions for Governments are the establishment of appropriate monetary policies, regulatory actions for industry and promotion activities. The continuity of Government policies are considered to be the most effective way to minimize risk taking into account the Government administrations often change on the average, on a three year basis while industry requires policy continuity with duration of ten years in order to assure its economic viability.

181. The financial problems of industry, which are considered to be significant, were concluded to be dependent on the solution of management and marketing problems of industry together with an improvement of the business environment through appropriate monetary policies for industry promotion. If these were solved, then the banking community together with industry could find adequate solutions to problems arising from the profit/risk ratio and the high costs for investment financing.

182. Of more immediate concern to industry, the following factors need to be improved:

(a) The management of industry needs to be significantly enhanced by making sure that the techno-economic skills of managers is commensurate to the technology and product. Additionally, problems related to the definition of management responsibilities and authorities in relationship to different types of industry ownership must be resolved.

(b) Adequate market assessment and market intelligence techniques need to be used to a greater extent than is currently the case in order to identify the market opportunities based on real disposable income for products. Differentiations need to be made among consumer and industrial products.

(c) Information networks regarding such elements as market and price trends and competition at regional and international levels for the most important industrial sectors as a means of increasing exports should be improved:

(d) Adequate packaging and marketing channels for consumer goods should be reassessed;

(e) An adequate information system on world-wide availability of industrial technology is urgently required to be able to make choices between technology suitable to the intended market needs;

(f) Technology adaptation, improvement and transfer to other industrial projects must be promoted by industry as well as by the IRSI's which are competent in these functions.

183. Outside of the immediate realm of industrial productions are the long-term activities of the national industrial research and services institutes (IRSI), many of them established through United Nations assistance. These should be directed to the solution of technical problems in an industrial sector or area (e.g., pollution through the development of alternative energy sources) rather than duplicating research already being conducted by industry itself.

184. Ways and means should be found (a) to develop a host country's capability for problem identification and diagnosis which can effectively deal with the external factors noted above and (b) to reorient existing international technical co-operation to those more important problems of industry than would appear to be the case now. Unless this is done, the impact of technical assistance will not change from what it is now.

III. SYNTHESIS AND RECOMMENDATIONS

A. SYNTHESIS OF FINDINGS

185. This section addresses the study findings in descending order of magnitude and criticality starting with broad industrial development issues and ending with specific findings on the project sample.

1. INDUSTRY - A FOURTH PARTNER

(a) End-user participation

186. Government plays an all encompassing role in industrial development in most developing countries. Realizing that industrial development requires policy and investment continuity over at least a 10-year span, political changes can have a long-term impact on the direction, momentum and structure of its industrial development which can accelerate or thwart the intended impact on targeted beneficiaries of a technical co-operation programme or project.

187. The study indicated that often there was inadequate participation by industry in problem identification, project selection and design and work programmes which could lead to projects based on misconceptions of industry's felt needs and intentions. Given the failure to identify and monitor external factors (for example, a projected demand for a specific service), the exclusion of end-users from tripartite reviews and evaluations was also regrettable since, through their participation, they could have alerted the parties of potential problems in time to take remedial actions.

188. The communications problems with industry were compounded by the fact that the Government imposed both regulations and taxation, on the one hand, and promoted industrial growth on the other.

189. For maximum effectiveness, the tripartite system must perceive the industrial community as a fourth member of what is essentially a quadripartite dialogue.

(b) Sector complexity

190. During the study a number of factors concerning industry were noted

which must be clearly understood prior to the selection and design of technical co-operation projects if they are to have a reasonable probability of making a significant impact on the problems impeding industrial development. Some of them, which are discussed in some detail above, can be summarized as follows:

(a) The industrial system is complex and dynamic, requiring the mobilization and management of a disparate number of elements and resources, viz., a market, investment capital machinery and equipment, technology, skilled technical and operating staff, raw materials, energy, working capital and other production inputs;

(b) The present world-wide economic recession is seriously constraining industrial development plans in most countries and causing new problems e.g., maintenance of profit margins and loss of traditional export markets;

(c) A critical gap has been the lack of entrepreneurs and qualified industrial managers who can solve problems in the areas of market assessment and development, and technology assessment, transfer and assimilation;

(d) Defining markets and marketing channels for industrial products of developing countries is probably more difficult than in other economic activities such as farming or mining, where the markets and marketing channels are usually established;

(e) With the current oversupply of industrial goods, the relative availability of industrial technology has tended to decrease. Together with the desire of most Governments to limit and control the activities of multinational corporations, problems of transferring suitable industrial technologies are aggravated;

(f) The technical skills for technology adaptations are often not available in the recipient country and the possible participation of local industrial research and service institutes is often overlooked or disregarded.

(g) The management of industry requires a set of techno-economic skills in addition to the normal business management skills which are often

not found in industry in developing countries resulting in significant problems which stem from the gap between the management skills and technology skills. These weaknesses are the most critical since they affect on the way in which other problems related to marketing, technology and finance are treated.

2. ROLES, RESPONSIBILITIES AND AUTHORITY

(a) The tripartite system itself

191. The most important and pervasive problem which constrained the ability of the tripartite system to achieve the effectiveness and impact of industrial development technical co-operation projects was the existing diffusion and lack of definition of responsibilities with commensurate authority at the major stages of the project cycle. This was observed in the case of all three participating entities both within their organizational structures and in their interactions with each other. It was further aggravated by the unequal status of the parties. In addition, the operational definition of the roles and functions of the three participants varied from country to country and sometimes by projects within a country and even within each of the entities concerned.

192. The complexity of a Government's structure resulted in a diffusion of responsibility and authority both within the Government and between quasi- or non-governmental institutions and the industry itself. The Government's role was further complicated by its dual status, viz.,: as a partner in the tripartite system it consults with and depends upon the other two parties; as a sovereign power, it has the authority to make almost all decisions. This situation becomes more complex when it is realized that each member of the tripartite system has three or four levels which deal with projects making the interrelationships among the totality of levels an exceedingly difficult task.

193. The ability of deal with questions of project effectiveness and impact was also inhibited by the lack of definition of its

responsibilities and authority vis-a-vis its other partners and internally i.e., within and between headquarters and the field. The UNDP lacked effective authority to disapprove a project which had a low potential for effectiveness and impact and to require changes or the consideration of alternative approaches. There was no clear UNDP role regarding the project work programme or the monitoring of external factors. Its day-to-day operations were shaped by the lack of clarity in its responsibilities, the tripartite relationships and the scarce staff and other resources available to it.

194. Similar problems confronted UNIDO in its efforts to emphasize quality in its technical co-operation activities which can overshadow project-specific problems per se and make their solution more difficult. This was particularly true regarding the responsibilities and authorities of headquarters vis-a-vis field staff (both SIDFA's and project staff) in respect to the project cycle and the extent to which UNIDO is responsible for results. Due to this lack of clarity and compounded by the vacuum created by inadequate project design, the Chief Technical Adviser or National Project Director have often found it neeessary or convenient to assume de facto responsibility for project management without having the necessary authority.

195. The predominant role of Government and the consequent unequal status of the other two participants in decision-making at all stages in the project cycle combined with difficulties concerning roles and responsibilities has produced the following observable consequences in tripartite performance which can affect the achievement of project and development objectives:

(a) A situation where no one is clearly responsible for results with an implicit assumption that events will take care of themselves;

(b) A tendency to avoid difficult and controversial issues or to compromise at the lowest common denominator;

(c) Differing perceptions among the parties as to the problem requiring treatment, project purpose, and intended results;

(d) Poor compliance with tripartite system policies and procedures.

196. Understanding of, and compliance with tripartite system policies and procedures was also variable. The pattern which emerges from this condition is a widespread tendency to leave the roles of individual members loosely defined and to maintain throughout the project cycle maximum flexibility and freedom for each. Succinctly stated, the day-to-day practices within the tripartite system were not purposefully directed toward the pursuit of project effectiveness and development impact.

(b) Technical capacity and competence

197. The UNIDO headquarters has only limited technical capacity to participate effectively throughout the project cycle. Despite this obvious constraint, it has sometimes been called upon to design and implement projects in a much wider range of industrial activity and specialized levels requiring high technology and subsectoral expertise than it was capable of handling.

198. Headquarters technical staff have been so overloaded with project and non-technical activities that they generally have time only to concentrate on input procurement and delivery. In turn, the technical competence of the organization is highly dependent upon and significantly enhanced by recruitment of project staff (experts) who serve at the country level during implementation. There were large gaps in coverage; for example, a total absence of expertise in marketing, and a technological base at headquarters which is not sufficiently developed or used.

199. It is clear that it has not been possible for UNIDO to have full-time highly qualified technical staff on-board and in adequate numbers to deal with all technologies, products, materials and methods in industry. Nevertheless, there has been no apparent institutional recognition of the limits of its technical capacities.

200. Resident representatives handle a very heavy administrative workload

occasioned in part by cumbersome UNDP procedures, limited staff and the need to assist the Government and project staff on project-related matters. The UNDP's lack of industrial technical capacity, both at headquarters and in the country office, have kept it from making the kinds of substantive technical contributions and decisions needed to assure achievement of project effectiveness and impact. Skills in project design, concepts and methods also are lacking. Its capability to develop and use project design, evaluation and information systems integrated with other management functions is also seriously inadequate. These shortfalls were particularly acute at headquarters level.

(c) Definitions of roles

201. The role of UNIDO at present seems to be primarily that of a purveyor of internationally financed goods and services. This de facto role has been reflected, inter alia, in its management orientation and systems which have been essentially focussed on project approvals, inputs and expenditures and by a conspicuous absence of information and feedback from projects on results and their utilization for industrial development.

202. The prinicpal issue is that given: (a) the broad range and complex nature of the subject-matter of UNIDO-executed projects, the numerous choices of kinds and levels of technology, and the variety of means available for delivering technical co-operation and for the transfer of technology (knowledge); and (b) coupled with a UNIDO portfolio which may total 1,200 active projects at any one time and with a staff of only 135 technical officers with varying levels of technical qualifications available for project activities, it is self-evident that UNIDO does not have the range of knowledge and practical experience to plan and manage a project portfolio of such size and diversity. Consequently, UNIDO has been forced to fulfil a technical mandate or role for which it is not currently equipped, with adverse effects on quality, effectiveness and impact.

203. Until this imbalance between UNIDO's resources, role and responsi-

bilities is corrected, other efforts to improve the several stages of the project cycle will have limited value. Such efforts will also be tied, to a significant extent, to a similar examination of UNDP's role and capacities.

204. Although UNDP's role is enhanced by its impartial and unbiased relationship with Governments, it has not been adequately positioned and staffed to accomplish the demanding tasks envisaged by its Governing Council. Its management oversight role is not clearly delineated from other entities involved in the project cycle and is diluted by shared responsibility within the organization. Its role as financial sponsor was sometime limited to the supply and accounting of funds. Implementation was done under the pressure of budgetary expenditure targets with emphasis on input procurement and delivery and little regard for objectives. The UNDP's supervision of implementation is inhibited by lack of accurate, timely and results-oriented information from the field.

205. Until these conditions are addressed and unless UNDP's role and authorities vis-a-vis the other members in the tripartite process are clarified and strengthened, it is unlikely that procedural or process changes in the project cycle will have any significant effect on the UNDP's ability to respond meaningfully to its Governing Council's mandate.

3. PROJECT CYCLE

206. The sample results demonstrated that serious gaps and weaknesses exist in the several stages of the project cycle, reflecting system-wide as well as internal UNIDO and UNDP constraints. These include: the widespread absence of systematic problem identification and diagnosis; the generally poor quality of project design; the inadequate attention given to effectiveness and impact at all stages; the over-emphasis on resource inputs in the approval and implementation stages; the lack of result-oriented work planning, reporting, monitoring and evaluation; the insufficient attention

to critical external factors; the lack of baseline data and performance indicators; and the total absence of terminal and ex-post evaluations of effectiveness and impact or concern with follow-up actions to sustain or increase the intended impact on a development problem or targeted end-users or beneficiaries. There were also serious deficiencies in project documentation.

207. These deficiencies appeared in almost all projects, regardless of whether they were prepared under pre- or post-1976 guidelines and whether issued by the UNDP or UNIDO. Chapter 3400 of the UNDP Policy and Procedures Manual was developed in 1975 to implement the "New Dimensions" emphasis on the results of technical co-operation and their development impact and eliminate some of the deficiencies noted in the project cycle. Similar guidelines relating to project formulation and approval were issued by UNIDO in 1976. Neither have had a sufficient effect indicating inadequate management attention to, or concern with compliance and quality control.

208. These conditions existed despite mandates, policy declarations and procedures designed to change them. Some observations on how they adversely affected project effectiveness and impact at the various stages of the project cycle are included in the following passages to demonstrate this troublesome but evident fact-of-life.

(a) Problem identification and diagnosis

209. This stage is of critical importance for a sector which operates within a complex environment with many factors outside the direct control of Government. Nevertheless, the study findings indicate that it is often overlooked or approached in a perfunctory manner.

210. The Governments, through their concerned ministries, were sometimes not adequately staffed, experienced and skilled to identify and diagnose industry needs and construct well-designed programmes of technical co-operation aimed at eliminating key obstacles to industrial development. At the same time, Governments did not usually view the country programming

process as a mechanism for this purpose and a pre-condition for project selection and design; nor have they been encouraged to do so by UNDP. On the contrary, the process has often resulted in the premature assignment of project funds and a de facto decision to pursue a project.

211. Indeed, the practice of identifying individual projects in the country programming process actually inhibited the orderly identification and diagnosis of problems which should have preceded project identification and selection. Financial considerations and early initiation of project activities seem to have been the dominant considerations. Policy formulation, programme planning and project design generally appeared to have been carried forward by all three parties without the benefit of objective information about potential development impact of individual or types of projects or the external factors which would be associated with the intended impact.

212. The staff of UNIDO seldom have the opportunity to participate at this early stage and when they do, the principal interest appears to be in drafting a project document. Other non-operational headquarters supporting units which could have been particularly useful at this stage, were not used in any significant extent even though their knowledge and experience may have been relevant and valuable.

213. These factors reinforce an apparent bias for the rapid and automatic acceptance of new projects with interest centred on the amount and specifications of inputs to be funded from the IPF because, inter alia, their total value served as a basis for the UNDP payment of overhead to UNIDO which is the major source of UNIDO's discretionary funds. The problem was particularly evident at both the problem identification and diagnosis and the project formulation and approval stages of the project cycle which were sometime omitted or unnecessarily collapsed by almost automatic delegation to the Resident Representative to approve projects in the name of UNIDO.

214. Partly due to the above factors, the traditional practices of UNIDO

have sometimes resulted in actions which did not contribute to and may have detracted from continuing concern with effectiveness and impact.

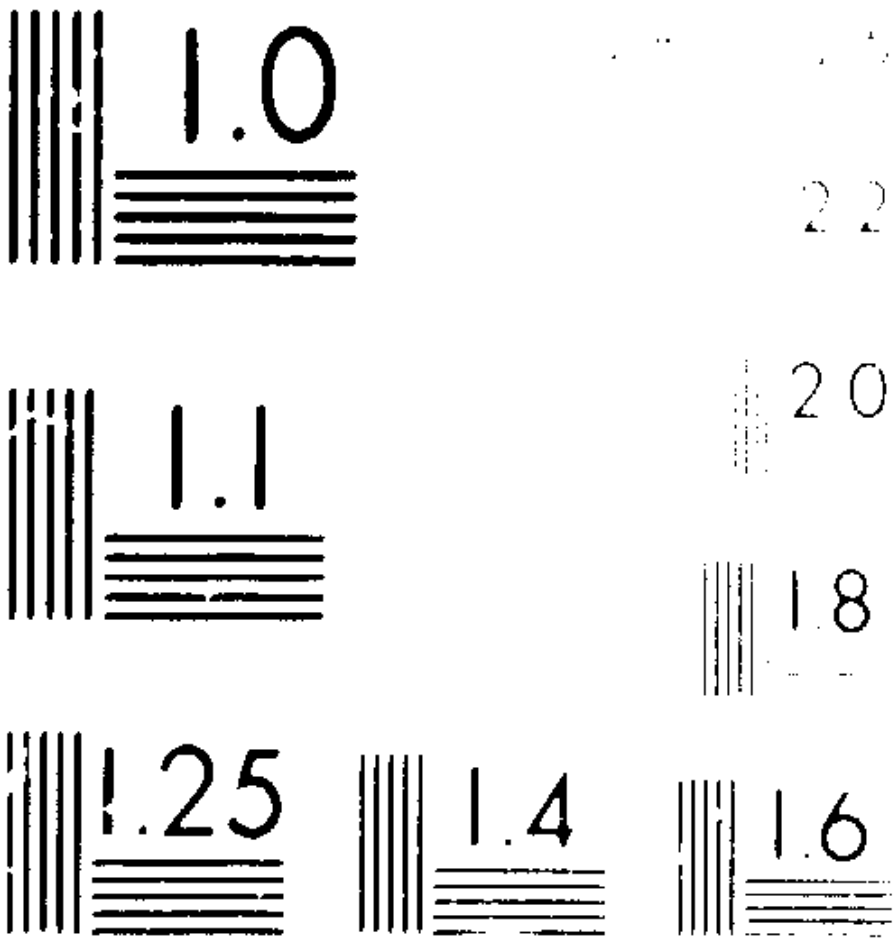
215. Since the process is often perfunctory, industry was rarely involved in any effective way. This can and has resulted in the selection of project approaches based upon an erroneous perception of industry needs.

216. It is important to (a) develop Government' capability for problem identification and diagnosis which can effectively deal with the more critical external and internal variables affecting industrial development and (b) reorient existing assistance programmes to the more important problems and pressing needs of industry. Unless this is done, the impact of technical co-operation cannot be expected to increase significantly.

(b) Project formulation and approval

217. Instances were observed where poorly designed projects proved to be reasonably effective with discernible impact. It is obvious that good design per se does not guarantee success. Nevertheless, the importance of good design as a determinant of probable effectiveness and impact was reconfirmed by this study. This is particularly true in a high-risk project operating in a dynamic environment. The study results in this respect were not encouraging.

218. The project elements and associated information needed for result-oriented management of the project cycle were often missing, but this is particularly evident and critical in project design. There were strong pressures on UNDP headquarters and the country office for quick approval of projects with a concommitant reluctance, particularly by the government sponsor concerned, to accept advice or revisions in the draft proposal which may have already passed through numerous clearance channels. Project and development objectives were often inflated by the drafters to convince decision-makers that a modest level of funding would produce large results. There was no clear responsibility for setting and enforcing adequate standards of project design within the tripartite system which permitted all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parties to avoid asking challenging questions.

219. The UNIDO has only limited technical capacity to participate effectively in project design. Despite this obvious constraint, it has sometimes been called upon to design and implement projects in a much wider range of industrial activity and specialized levels requiring high technology and subsectoral expertise than it was capable of handling. When UNIDO technical staff have participated, they were found to lack a common and precise understanding of project logic, common definitions and terminology and acceptable standards of design quality. A qualified programme officer, technician or SIDFA who was also knowledgeable in the methodology of project design appeared to be a rarity. When faced by design problems caused by government proposals endorsed by the Resident Representative, UNIDO avoided confrontations and left the problems to be corrected during implementation, when internationally recruited project staff were available. These corrective actions rarely occured.

220. Competition for projects between headquarters technical and functional units has sometimes discouraged multidisciplinary and multifunctional approaches which were necessary to provide effective support, thus distorting project design and subsequent work planning. Such co-operation among complementary units and sharing of information and skills has been difficult due, inter alia, to organizational arrangements for implementing services and the perceived benefits of approval statistics on project numbers and size.

221. UNIDO's limitations in project design have also been exacerbated by UNDP's truncated treatment of the project logical framework concept which omits some of the essential elements of good project design. Consequent efforts to follow these incomplete instructions have resulted in confusion between project levels and objectives and, in practice, have proved ineffective. The instructions also cause problems in harmonization of UNDP design guidelines with executing agencies which are using the logical framework in their own systems. The flaws in this model contribute to a

similar observation that many UNDP staff, both in the field and headquarters, also lack the basic understanding and skills of project design.

222. These factors lead to the observation that there was a systems bias for rapid and almost automatic approval with the attention primarily devoted to the non-substantive elements of the project document. Even on the occasions where the UNDP headquarters attempted to raise questions regarding the design and justification of a project, because of its undefined authority it could only cause delay in the hope that more reasoned consideration might prevail.

(c) Implementation

223. Once a project was approved, UNIDO's interest and management systems were focussed on the delivery of inputs on schedule and according to specifications. As a consequence, many of the deficiencies noted above have a pervasive effect on implementation and considerations of quality. They included:

- Absence of agreed-upon indicators of performance, end -of-project status and impact;
- Inadequate progress reporting focussed almost exclusively on input deliveries, activities and administrative matters;
- Tripartite reviews which were: not timed for decision-making; frequently not held at all; lacked adequate participation of end-users and technical inputs from non-project sources and were perfunctory or input-oriented; rarely concerned with critical external factors, progress in producing outputs or the continuing validity of the project strategy (hypothesis);
- Almost total absence of objective, rigorous evaluation either on-going, terminal or ex-post;
- Lack of timely feedback to higher levels from project management on problems.

224. This kind and level of government activity often significantly

affected the substantive, technical and other inputs which were delivered to project management. Ultimately, it often strongly influenced the production of outputs. Nevertheless, government participation in tripartite reviews and evaluations had only a marginal influence on effectiveness and impact.

(d) Completion and follow-up

225. The termination of a project should be a planned event based upon the production of targeted outputs. It should be the occassion to record actual results and identify actions needed to consolidate project achievements. In actual practice, it is a non-event linked only to the exhaustion of project inputs and administrative actions. There was little demand from any of the parties, during implementation, at termination, or after project completion, for information on the assessment of achievement of objectives and their ability to produce the desired change (the development hypothesis). Nothing approaching such an assessment was attempted. Headquarters backstopping staff rarely returned to the project site. It was left to the Government or the Resident Representative to form the final judgement on the status and outcome of the project. The study found virtually no record that such a judgement had been formulated.

4. SAMPLE PROJECTS

(a) Effectiveness and impact

226. In the case of the large-scale projects ($400,000 and over) included in the most reliable sample, 57 per cent were rated as having achieved their project (immediate) objective as planned or better.[14/] Ratings of effectiveness were similar for small-scale (56%) and higher for SIS

14/ Based on in-country studies (Fifth level)

projects (67%), which make up the majority of UNIDO's project portfolio but in 36 and 21 per cent of the cases, respectively, such assessments were impossible because of the lack of relevant data.[15/]

227. Similar results regarding the impact of large-scale projects showed that 50 per cent of the projects were rated as having achieved an impact as planned or better.[16/] The evaluation of impact was possible only through in-country studies. In 86 per cent of the small-scale and 89 per cent of the SIS projects, no assessments were possible owing to the lack of data. The average ratings obtained during the in-country studies were lower than for large-scale projects but the number was too small to extrapolate.

(b) Interpretation and conclusions

228. The large number of "cannot determine" ratings found in all levels of Phase I clearly indicated that the tripartite system did not adequately produce or record data concerning project effectiveness, and tended to ignore questions of eventual development impact in industrial projects at all stages in the project cycle, regardless of size, duration and type of project.

229. It is obvious that given the current poor state of information produced by the system, only in-country studies can produce a reasonably accurate assessment of effectiveness and impact. It is equally obvious that projects are often justified and planned on the basis of unrealistically high expectations and without due consideration to resource and time constraints or the outside factors which facilitate or limit achievements.

230. With some qualification; there was enough consistency within and between each sample level to give the co-ordinators confidence that the methodological design had provided results which permitted

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15/ Based on reconnaissance review (Second level). Results were higher in the in-country studies but the sample in relation to the total population was small.

16/ This rating is 43 per cent if "cannot determine" ratings are included, see table 1 above.

analysis and formed the basis for the findings and conclusions which follow. Nevertheless, there is no framework or reference point upon which to judge the statistical results nor any established standards of acceptable performance. (For example, a higher average rating of effectiveness could indicate that UNIDO has been executing low-risk projects with minimal development impact.)

231. On the other hand, the results do suggest that UNIDO, UNDP, the Governments of developing countries and the concerned intergovernmental bodies, do need to give prompt and serious consideration to ways and means to improve the effectiveness of developmental assistance in the industrial sector, and perhaps in all sectors.

5. NEED FOR BALANCED PERSPECTIVE

232. Finally, an evaluation exercise of this type focuses on determining the actual situation, identifying problems and offering possible solutions. By its nature and to be of use, it concentrates on these problems and may unintentionally give an unbalanced picture regarding accomplishments. The co-ordinators wish to point out that in the light of the basic problems and important issues identified through this study, one could expect the overall system to perform at significantly low levels of effectiveness, yet it must be realized that in spite of these problems, close to 60% of the manufacturers projects included in the sample had effectiveness ratings of as planned or better. This could only be accomplished because of the dedication, imagination, ingenuity and ideals of the international staff concerned, including the national project counterparts, to try make an imperfect system work in an imperfect world.

233. While the exercise exclusively concerned the industrial sector, CPC may also wish to consider the systemwide implications of many of the findings, conclusions and suggestions included in this study.

B. RECENT DEVELOPMENT WITHIN UNDP AND UNIDO

234. The UNDP, UNIDO and their respective intergovernmental bodies have recognized some of the deficiencies and gaps noted in the project cycle as they relate to effectiveness and impact and, particularly in the last year, have initiated some remedial actions insofar as the deficiencies were perceived to be within their control and the resources available.

1. UNDP

235. Beginning in 1983, the UNDP started limited use of a new project document format and checklist, which had been field-tested, as a beginning to a modified but undefined approach for the project cycle as a whole. The intent is to apply the logical framework concept to the major design elements for use as a project management tool. The shortened document will emphasize the need for clear definition of the objective or function of the project and the outputs to be produced, thereby facilitating the prospect of achieving effectiveness. The question of impact is not addressed except incidentally in connexion with project justification.

236. This same exercise introduces a requirement for output-oriented workplans and the use of performance indicators, but without supplying adequate guidance or relating them to other elements of the project management system, particularly reporting. In September 1982, however, UNDP decided to try to improve the quality, timeliness and increase the number of tripartite reviews and provide specific criteria for the conduct of in-depth evaluations intended to verify the current validity of a project's design.[17] Guidelines for such evaluations, however, have not yet been developed.

17/ Project Monitoring, Evaluation and Duration, UNDP/PROG/95; UNDP/PROG/FIELD/150; UNDP/PROG/HQTRS/152, 30 September 1982.

237. Early in 1983 UNDP presented a series of proposals to its Governing Council's Intersessional Committee of the Whole at its second session intended to increase the effectiveness and impact of development co-operation.[18] These included inter alia:

- Improving the compliance and quality of tripartite monitoring;
- Introducing a feedback system concerning the use of evaluation results;
- Integrating design, appraisal and evaluation aspects of the project cycle, including selective checks on the quality of the project design;
- Requiring terminal evaluations to examine and record project achievements;
- Introducing ex-post project evaluations on a selective basis for the implied purpose of verifying and/or taking follow-up actions to sustain intended impact (It should be noted that this proposal is vaguely worded and reflects the lack of experience within UNDP in dealing with this dimension);
- Collaborating with the executing agencies in harmonizing project design and evaluation practices and systems.

2. UNIDO

238. In 1982, UNIDO inaugurated a project self-evaluation system with total coverage which is output-oriented and designed to complement UNDP's system.[19] The UNIDO system is focussed on project effectiveness and introduces the concept of monitoring critical external factors and giving some consideration to eventual impact, particularly in large-scale

18/ DP/1983/ICW/6 December 1982 - Arrangements for the Evaluation of the Results and of the Effectiveness of the Programme.

19/ UNIDO/PC.31, January 1982.

projects. Effective utilization of the system for on-going projects is being hindered by the poor design of projects in the active portfolio.

239. Self-evaluation is being facilitated by efforts to increase the quality of project design,[20] by issuing guidelines on output-oriented work planning and establishing performance indicators,[21] and by the initiation of extensive training in design and evaluation methodology for headquarters and field staff.

240. During 1983, the self-evaluation system is expected to begin providing data on quality and progress in producing outputs which will add a new dimension to implementation reviews carried out at the headquarters level and place more emphasis on project effectiveness.

241. The value of these efforts will depend, to a large extent, on UNIDO management's use of the results produced, both in the field and at headquarters, and on the effectiveness of similar measures being taken by UNDP.

3. MUCH REMAINS TO BE DONE

242. While these recent efforts are commendable, enthusiasm must be tempered by the realization that in the past, similar efforts by both UNDP and UNIDO have had little effect on traditional management practices. This can be explained, at least in part, by the internal and external factors already discussed above and which form the basis for the recommendations which follow. These are not easy recommendations to make, consider, approve or implement, but in the opinion of the co-ordinators, they are critical to the improvement of multilateral industrial development assistance or even its continuation at any reasonable level of quality.

20/ UNIDO/PC.41.
21/ UNIDO/PC.3/Add.1.

C. RECOMMENDATIONS

243. This section follows the pattern of section III-A and presents the study recommendations in a descending order of magnitude and criticality, starting at the policy level and ending at the operational level. These recommendations are integrated and mutually reinforcing. They should not be undertaken piecemeal; to do so would sharply reduce their effectiveness.

Recommendations for improving the tripartite system for technical co-operation to industry

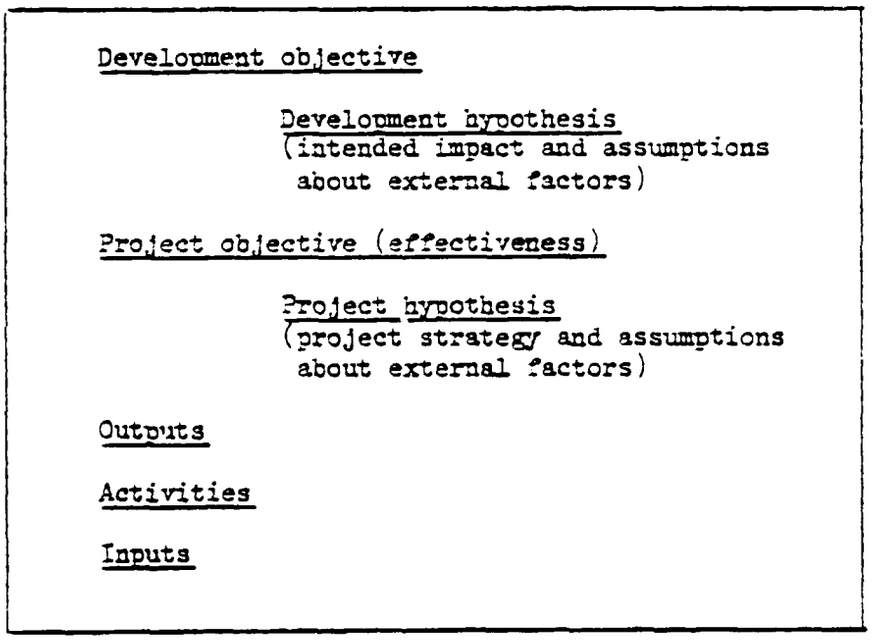
Recommendation No. 1

244. The roles, responsibilities, accountability and authority within the tripartite system should be clearly redefined if projects are to be more effective and have a significant development impact. This redefinition should occur at the programme policy and working levels, with sharp distinctions between the rules that would apply at each level. The co-ordinator's recommended approach follows:

245. At the programme policy level, the Government's sovereign will should be communicated to UNDP in the form of a country programme document. This country programme document should state Government policy decisions on the kind of United Nations development assistance it desires and should articulate the goals it wishes to achieve for individual economic sectors. The planning of the assigned IPF should define a distribution of the potential IPF resources to the different economic sectors and subsectors without making a specific disaggregation of the sector planning figures by individual projects. The distribution of funds within the industrial sector would be accomplished at the

working level and at a time and in a manner which would maximize the probability of achieving the Government's development objectives. In the preparation of the country programme the Government should be encouraged to seek the assistance of UNDP and the advice of UNIDO if it felt that the experience of either or both organizations would be useful in industrial sector planning. (See recommendation No. 2.)

246. At the working (project level), the three participants would centre their efforts on the identification and formulation of industrial development projects based on the logical framework concept for projects as illustrated below:



247. At the working level the government co-ordinating office and UNDP would be the financial sponsors of the project. Each would be responsible and accountable for the financial support contributed by it and required by the project. It would be necessary to establish explicitly that each financial sponsor would have independent authority to approve or deny monies under its management control. A refusal of financial support to a project by UNDP would be based on its judgement of whether the project's objective was directly relevant to identified problems and the project design could reasonably be expected to address those problems. Approvals could be withheld if necessary until appropriate preconditions or prerequisites were fulfilled. Such actions would not be an infringement of the sovereign right of Government since those monies would still be available for other technical co-operation projects in the particular economic sector. The UNDP does not now have such authority. Consequently, a clear and unequivocal clarification of this authority should be sought.

248. At the stage of project design the Government and UNDP would jointly select the national implementing agency and invite UNIDO, as well as end-user representatives, to participate in project design, making use of UNIDO's technical capacities. The primary responsibility for ensuring that a project design has acceptable quality would rest with UNDP which would exercise its leadership principally through the Resident Representative supported as required by the technical advisory capacity of UNDP and UNIDO. In this case, UNDP capacity would be oriented to the integrity of project design from the standpoint of the industrial system and quality standards while UNIDO's would be primarily from that of the technical specialist. In an important, large-scale project, design should be the joint effort of the sponsors, executing agents and the intended end-users.

249. The UNIDO as the designated agency for the implementation of the UNDP-funded assistance would have the right of refusal if it did not agree with the technical aspects of the project design. In the event of such a refusal there should be intensive consultation between UNDP headquarters, UNIDO headquarters and the Government before a decision is made to assign the project elsewhere within the United Nations system.

250. After approval, the authority for implementation, that is, actual production of outputs, would be delegated by the national implementing agency to its national director and by UNIDO to its chief technical adviser. UNIDO headquarters would supply the technical support to the project through its staff in the Division of Industrial Operations, or supplemented as necessary through technical advisory project committees. These arrangements recognize the basic principle that the project should be a government project. (See recommendation No. 5.

251. The responsibilities of the parties for achievement of outputs, project objective and development objective should be explicitly clarified within the framework of the project logic. Although there is a shared tripartite responsibility among all three partners at all levels of project objectives there is a need to have one partner assigned the leading or primary management responsibility at each level.

252. The co-ordinators suggest that one possible allocation of responsibility would be:

(a) Responsibility for the pursuit of project impact (achievement of the development objective) would be solely the Government's, chiefly discharged through the Government co-ordinating office and exercised by the Government at the required policy level;[22/]

(b) UNDP would be responsible for project effectiveness (achievement of project objective); chiefly discharged by the Resident Representative;[23/]

(c) Responsibility for production of project outputs would be UNIDO's with appropriate co-operation and participation of the national implementing agency;[24/]

(d) Responsibility for inputs and project activities would be the Government's through the national implementing agency and UNIDO. These responsibilities would be shared by delegation to the national project director and chief technical adviser of all necessary authority, within the constraints of the approved outputs and resources. UNIDO's services for procurement of all internationally funded inputs would be made available to this management team.

22/ See following paragraphs.

23/ See following paragraphs.

24/ In cases where the executing agent was the co-operating country Government, the responsibility would rest there.

253. The concept of responsibility assures that all factors necessary for its fulfillment are under the control of the entity responsible. Under the above proposal, such would be the case at the level of the inputs and activities for the national project director and UNIDO Chief Technical Adviser. The assignment of responsibility at the output level is a special case: it is shared by UNIDO and the national implementing agency since each contributes inputs and participates in implementing. The prime responsibility is assigned to UNIDO because it provides the critically needed contribution to produce the outputs. This in no way diminishes the overriding responsibility of the national project director.

254. The responsibility of the Resident Representative for achievement of the project objective and of the Government for the achievement of development objective has to be understood in different terms since neither one would have control of the external factors at those levels. Their responsibility would be to monitor, influence and try to mobilize any participation and actions needed to exert control over the external factors affecting the project thus maximizing the probability for achievement of project and development objectives.

Summary of recommendation No. 1:

The roles, responsibilities, accountability and authority within the tripartite system should be clearly defined at the programme policy and working levels with sharp distinctions between the needs that would apply at each level.

- At the programme policy level, the sovereign will of the Government should be exercised through the country programming process which should be expanded to include problem identification and diagnosis and the suggested allocation for IPF funds at the sector and subsector levels but not allocations to projects;
- At the working level, the tripartite system should centre its efforts on the identification and formulation of industrial projects based on the logical framework concept;
- At the working level, the Government and UNDP should act as financial sponsors, both having the independent authority to approve or refuse financial support of a project;

- The primary responsibility for establishing and enforcing standards for project design should rest with UNDP;
- The UNIDO, as the designated executing agency, would have the right of refusal on technical grounds with the opportunity for review at headquarters level before another designation is considered:
- The allocation of primary responsibility for each major element of the project should be made clear and as follows:

development objectives - Government
project objectives - UNDP
outputs - UNIDO
work programme - national implementation agency
inputs - Joint

Recommendation No. 2:

255. Clarify and expand the country programme concept to include problem solving at the sectoral and subsectoral levels.

256. Consideration should be given to the formulation and approval of industrial development programmes, as opposed to individual projects, within the context of the country programming process. This would have two probable advantages. First, it would encourage and strengthen the critical planning stages: the orderly identification and diagnosis of sectoral problems, the selection of the most appropriate projects, and subsequent project design. Secondly, it would permit the phased and co-ordinated creation of several interrelated projects aimed at the same critical subsector or problem and keyed to the longer-range industrial development cycles of 10-15 years.

257. In support of this recommendation, reorient and strengthen industrial research to solve more substantive and immediate industrial problems, which either affect an entire industrial branch or have far-reaching impact at the national level. An elaboration of this proposal with examples is found in Annex IV.

258. In addition, priority should be given to more comprehensive individual industrial technical co-operation projects which, in addition to the basic production process, also address management questions, market assessment and marketing techniques, and methods for technology search, assessment, negotiation and transfer. This is particularly important in view of the current world-wide economic situation.

259. The formulation of a technical co-operation project should begin with an analysis of the three basic areas:

- The industrial/business environment in which the project will operate:
- The process of industrialization which already exists in the country and the policies and practices of the Government regarding it;
- The present levels of capability and the principal deficiencies and problems affecting management, marketing and technology.

A piecemeal approach is unlikely to be effective.

260. The UNDP should further consider its responsibilities in the context of its being a sponsor of high-risk ventures. For a developing country, a large-scale development project may be a high risk venture. Therefore, UNDP ought to consider the special approach used for that type of activity which requires the sponsor to be a technically knowledgeable and active participant with access to outside expertise. In this conceptual framework, the sponsor needs to be highly selective of those who will be responsible for project implementation and particularly of those fulfilling the management and entrepreneurial roles. Once these selections have been made, the sponsor continues as an active partner who not only provides funds but also maintain continuing oversight in order to assist and overcome impediments which might be encountered during implementation. This assistance might take the form of further funding support, providing guidance and helping the project to develop outside contacts through technical networks that would permit the project to achieve its aims.

261. If UNDP were to play such a role, it would call for the Government co-operating agency and the end-users also to be active participants. For this purpose, the Government's co-ordinating offices would need appropriate industrial skills to deal with complex techno-economic matters. See supplement to this recommendation in annex IV.

Summary of recommendation No. 2

Clarify and expand the country programme concept to include problem solving at the sector and subsector levels.

- Develop problem-oriented industrial programmes, requiring technical co-operation inputs of an intermittent nature, covering priority subsectors and extended to the long-range industrial development cycles of 10-15 years;

- Encourage government involvement of the industrial community, example, entrepreneurs, managers, professional societies, industrial associations and research institutions, in the process:
- Give priority to comprehensive technical co-operation projects which, in addition to production, also address problems in management, market assessment and techniques and technology search, assessment, adaptation and transfer;
- Problem diagnosis at the subsectoral level should begin with collecting and analysing information on:
  (i) The industrial/business environment;
  (ii) The process of industrialization which already exists in the country and the policies and practices of the Government regarding it; and
  (iii) The present levels of capability and the principal deficiencies and problems affecting management, marketing and technology;
- Identify high-risk ventures which require special arrangements for the management and technical expertise required, e.g., the use of technical advisory committees;
- Encourage Governments to use IPF funds for this stage.

Recommendations concerning the project cycle and the nature of the technical co-operation process

Recommendation No. 3

262. Many of the recommendations in this section have been made in the past - some repeatedly - as a result of management surveys, evaluations and other studies. The recommendations are largely qualitative i.e., they involve chances in attitudes, levels and kinds of knowledge and operational practices. They can be accomplished within the secretariats concerned without recourse to intergovernmental bodies, and without substantial staff or financial resources. The methodologies are widely known and readily available. Given these conditions, the co-ordinators believe it is incomprehensible that the deficiencies and gaps to which these recommendations are addressed, have been permitted to persist. The recommendations for corrective action are aimed at

those elements of the project cycle which have been identified by the study as being critical to project effectiveness and impact. They are:

(a) Measurement and recording of baseline conditions to permit better understanding of the nature and magnitude of the problem and to serve as a base from which to measure project progress;

(b) Setting of explicit, time-limited targets at the output, project objective and - to the extent feasible or useful - the development objective levels;

(c) Revision of the concept of the development objective to make it more proximate to the project objective by including specific problems impeding its achievement which are susceptible to solution or amelioration through technical co-operation;

(d) Discontinuance of the use of multi-objectives at the project (immediate) objective level and discouragement of multipurpose objectives (e.g., institution-building and direct support);

(e) Formulation and use of objectively verifiable progress and achievement indicators, including end-of-project-status indicators at the project objective level;

(f) Articulation and monitoring of assumptions about the anticipated behaviour of critical external factors at the problem, project objective and output levels;

(g) Formulation and monitoring of project hypothesis (the project approach, that is, the causal relationship of outputs to the project objective) and development hypothesis (the contribution/impact of the project objective on the development objective or problem);

(h) Output-oriented workplans and the systematic monitoring of progress and results;

(i) An improved approach to the planning and conduct of ongoing, terminal and ex-post evaluations;

(j) Involvement of end-users and beneficiaries in problem identification, project planning and the review and evaluation of effectiveness and impact;

(k) Establishment of simple procedures for the revision of project design, workplan and budget when such changes are based upon feedback from evaluation findings or are caused by external factors;

(l) Revision of the concept of, and the procedures for, the termination of project operations so that termination is keyed to achievement (i.e., production of outputs, fulfillment of project objective) rather than the financing and delivery of inputs;

(m) Revisions of progress reporting requirements to emphasize progress in producing outputs, problems, effects of external factors and results.

263. In view of the inadequacy of past attempts at improvement, the co-ordinators strongly urge that the managers of the tripartite system undertake four kinds of actions to ensure the effective implementation of the above recommendations:

- Clear and comprehensive procedural guidance and instructions;
- Establishment and enforcement of standards of quality;
- Systematic orientation and training to prepare staff to fulfil their assigned responsibilities;
- Clear and forceful assignment of specific responsibilities to project and backstopping staff.

Summary of recommendation No. 3

Institute remedial actions to improve the technical preconditions necessary throughout the project cycle to increase capability to plan and manage for effectiveness and impact.

- In project design, introduce use of subsectoral problems in lieu of macro development objectives; use of single objectives at project level; time-limited targets; baseline data; end-of-project status indicators; development and project hypotheses; and explicit formulations of critical external factors, viz, the complete logical framework concept;
- During project implementation, introduce or expand use of: targeted outputs expressed in kind, magnitude and quality; output-oriented workplans with performance indicators; output-oriented progress reporting; monitoring of critical external factors; and reviews and evaluations focussed on effectiveness and expected impact;
- Simplify procedures for revisions in project designs, workplans and budgets;

- Require in-country terminal evaluations on a routine basis and conduct ex-post evaluations of impact on a selective basis and upon government request only:
- Involve end-users in industry at all stages of the project cycle.

Four kinds of actions are necessary, in view of the inadequacy of past attempts, to ensure effective implementation of this recommendation.

(a) Clear and comprehensive procedural guidance and instructions:

(b) Clear assignment of specific responsibilities to project and backstopping staff:

(c) Systematic orientation and training to prepare staff to fulfil their assigned responsibilities: and

(d) Establishment and enforcement of standards of quality.

Recommendation concerning the professional and technical qualifications of tripartite system staff

Recommendation No. 4

264. Three areas of weakness in staff capabilities which adversely affect project effectiveness in industry have been identified in varying degree among all three of the tripartite parties. They are: (a) lack of understanding of project design concepts and methodologies, (b) absence of techno-economic management skills in contrast to business management and (c) inadequate techno-economic knowledge and experience in important industrial subsectors. Projects are affected when one or more of the parties lacks the required skills, thus restricting the performance of the group as a whole.

265. Action programmes should be aimed at staff development in all three parties - within the context of the role each has to play - and should be planned and implemented as a tripartite effort. For the Government Co-ordination Office, priority should be given to all three of the skills noted above to permit it to participate more effectively in the project cycle with particular attention to the early stages. For UNDP, the emphasis should be on project design as well as techno-economic capability to enhance its design, review and approval capabilities. UNIDO should stress subsectoral technical engineering specialization and support of project design.

266. The co-ordinators recommend (a) the formulation of new recruitment policies and criteria, (b) intensive training and orientation activities and (c) redeployment of existing staff as necessary. All of these actions should take into consideration the subsectors which are expected to receive priority programme attention in the foreseeable future.

United Nations Industrial Development Organization

Recommendation No. 5

267. UNIDO should consider policy, organizational and staffing arrangements which will increase its capacity to participate more effectively in all stages of the project cycle, an action which is important and timely as UNIDO prepares for its transformation into a specialized agency. Some specific suggestions include:

(a) Strengthen its technical specialized capacities in individual subsectors and technical subjects in which UNIDO considers itself competent and for which it could perform the gatekeeper[25/] function. Actions could include (i) supporting and using technical networks on a subsector basis for technical support of headquarters staff, (ii) use of country studies and other pertinent inputs from the Division of Industrial Studies for problem identification and diagnoses, including industrial system diagnoses and (iii) redeployment in the Division of Industrial Operations (DIO) of qualified technical engineering staff specialists with practical industrial experience;

(b) Improve recruitment policies and staff selection focussed on the subsectors and technical subjects in which competency is required to provide an appropriate technical gatekeeper function. In particular, salient gaps such as expertise in marketing methods for identifying new industrial production opportunities need to be filled;

(c) Redefine the responsibilities and authority of staff, including in particular the Chief Technical Adviser or, where there is none, the national designated project director, the Senior Industrial Development Field Adviser and headquarters backstopping officers;

(d) Assign the continuing responsibility for problem identification and diagnosis, including participation in country programming exercises when requested, to a small programming section including programming, technical and industrial skills; staffed at senior levels which would draw upon the technical and functional units of the Secretariat. This section would also identify high-risk/venture projects and, during the project formulation and approval stage, advise DIO on those projects requiring a multidisciplinary or multifunctional approach involving special backstopping arrangements;

(e) Reassign the responsibility for project formulations (design) and approval of UNDP-financed projects to the implementing or operations division, including the necessary staff;

25/ Technical gatekeeping is the function that either possesses the technical specialized knowledge and expertise in a given subject matter maintaining itself always up-to-date or, alternatively, can identify the sources where such information and expertise can be obtained. Particular personal talents and traits are required for individuals to perform such tasks by continously keeping up on the state-of-the-art.

(f) Assign responsibility for maintaining a country, long-range programming and monitoring function, based on the results of the country programming process and similar exercises and studies, to a central programming office organized on a geographical basis;

(g) Assign a project design and quality control responsibility to a central unit independent of operations;

(h) Intensify and expand training for both headquarters technical staff and field project staff in project design, preparation of work plans, and evaluation methodologies and requirements;

(i) Prepare a UNIDO manual of policies and procedures covering the roles, responsibilities, authorities, duties, procedures, guidelines, etc., for all aspects of secretariat participation in technical co-operation activities.

(j) Develop the appropriate use of the self-evaluation system to review project effectiveness and initiate corrective actions as required;

(k) Assuming the development of a result-oriented project reporting system as suggested in recommendations nos. 3 and 5, supplemented by tripartite and internal reviews, evaluations and similar reports, develop a technical co-operation project information system with a focus on the production of outputs, effectiveness and, when possible, impact. In addition to its use in project implementation reviews and similar exercises, it should be designed for use in programming and project design guidance, technical reference and training of staff.

United Nations Development Programme

Recommendation No. 6

- Take the necessary policy and administrative actions to reorient the country programme process to emphasize the formulation of development policies and strategies and the allocation of IPF at the sectoral and subsectoral levels rather than on a project basis;

- Provide unequivocal authority to the Administrator to approve or disapprove funds for technical co-operation projects on the basis of relevance to identified problems and on the integrity and soundness of the design;

- Provide authority to enter into the planning of IPF resources on a programme basis adapted to the industrial planning and investment cycle of approximately 10 years, subject to Government continuity of supporting industrial development

policies, regulatory activity and monetary policies;

- Develop practices for high-risk venture industrial projects including the special technical and support authority required by these ventures;

- Strengthen the technical support capabilities of the organization through staff redeployment and changes in recruitment policies and priorities to obtain professional engineering staff with techno-economic skills and industrial management experience. The qualifications should be attuned to problem identification and diagnosis, project design, oversight and evaluation.

- Revise the recruitment policies for the programme staff dealing with industrial projects by emphasizing engineering and science qualifications with appropriate practical industrial experience so that over time, there will be an increased capability for substantive programme oversight;

- Redefine the responsibilities and authority of staff, both at headquarters and field, in line with the agreements reached in recommendations 1 and 3 and make the resident representative the principal focus of responsibility for the relevance and quality of project design with support and oversight by BPPE;

- Intensify and expand training in project design and evaluation methodology;

- Redesign and reorganize the project information and reporting system to require substantive, output-oriented progress reports based upon approved work plans and performance and achievement indicators;

- Clarify and strengthen the procedures and guidelines for the project cycle in accordance with recommendation 3.

Follow-up action

Recommendation No. 7

268. The changes recommended here fall into three categories:

(a) Changes which can be brought about through policy, structural and organizational revision at little or no direct cost;

(b) Those which would require redeployment of human resources and acquisition of new skills at relatively low cost;

(c) Those which would require additional resources.

/...

269. Having identified the important problems, the evaluation team was able to indicate the nature and direction of change which is needed but could not forecast the magnitude of those changes or the resources necessary to bring about those changes. The evaluation team was also unable to determine which of the above three categories is most appropriate for each of its recommendations. For these reasons, the team has recommended that the appropriate intergovernmental bodies should request UNDP and UNIDO to develop proposed programmes of action for their review.

270. The evaluation team is well aware of the scarcity of resources during this period of world-wide recession. The team does feel the responsibility, however, to call attention to its finding that the UNIDO and UNDP substantive/technical staff resources are well below that needed to carry out basic technical co-operation project functions adequately and, consequently, to ensure even minimal project effectiveness and impact.

I. PROJECT TERMINOLOGY USED THROUGHOUT THE TEXT

A technical co-operation project is defined as an undertaking which is designed to achieve certain specific objectives within a given budget and a specified period of time, e.g., establishment of a technical research and training centre, expanding an existing foundry to permit production of new products.

Effectiveness is a measure of the extent to which a project achieves its own immediate objective.

Impact is a measure of the contribution of a project to its development objective, i.e., the progression of further effects resulting from the achievement of the project immediate objective.

The four major stages in the life cycle of a technical co-operation project are:

1. The problem identification and diagnosis stage

This stage usually is preceded by, and is the logical outgrowth of macro and sectoral planning. Its purpose is to identify and examine obstacles, usually at the subsectoral level which impede industrial growth and which are susceptible to solution by a TC project(s). This stage differentiates problems which can be addressed by TC project assistance from problems which require policy, legislative or structural (non-project) change. This stage is crucial in that it (a) establishes the extent to

which the project is essential to development, (b) assesses the nature, magnitude and intensity of the problem, (c) formulates the development hypothesis linking the project to the development objective at sectoral/subsectoral level, (d) assigns a priority to the solution of the problem and (e) proposes a strategy for its solution.

2. Project design and approval

This stage is highly dependent upon the prior stage. At this stage, the project designers articulate the major design elements: the immediate objective, the development hypothesis, the project strategy, the function, kind and level of technology, the output etc. Resource input requirements (expert services, training, physical plant, equipment etc.) are specified and a work plan is proposed. Approval is based upon the critical assessment (appraisal) of the relevance, feasibility and potential effectiveness of the project. More specifically, the proposed project proposal is reviewed to ensure (a) the relevance of the project to the recipient country problem, (b) the logic and adequacy of the causal linkage between inputs, outputs, project immediate objective and development objective and (c) whether these outputs and objectives are sufficiently explicit and precise to permit objective verification of progress and achievement.

3. Implementation

In this stage the work plan is carried out. The implementation stage includes the adaptation, transfer and utilization of resources (i.e., material resources, technology and skills) through close

collaboration between the executing agency and the recipient Government. In the case of institution-building projects, the creation of institutional capability occurs during implementation. The implementation stage is in fact a field test of the soundness, integrity and relevance of the project design. It also affords an opportunity for reformulation of project objectives and strategy in the light of evaluation findings from operational experience.

4. Project completion and follow-up

At present a project is financially terminated when the inputs have all been procured. UNDP requires a terminal report on the completion of scheduled activities, outputs and objectives and recommended future actions. Following financial termination, no United Nations funds are available for further project activities.

LIST OF 14 COMPLETED AND ON-GOING FIELD MISSION PROJECTS

ARG/75/021	Petroquimica, Bahia Blanca
ARG/78/004	Assistance to the Small and Medium Scale Industry in the Province of Santa Fe
EGY/77/004 and EGY/81/009	Plastic Development Centre
EGY/69/562	Textile Quality Control Centre
EGY/73/020 EGY/77/008	Textile Development Centre
IND/72/030	Institute of Packaging
INS/77/004 and INS/78/078	Assistance to the Development of Small Scale Industry
INS/78/002	Assistance in Identification and Development of Industrial Projects
KEN/77/006	Assistance to Kenya Industrial Estate
KEN/74/007	Assistance to Industrial Survey and Promotion Centre
PER/72/030	Metal and Electrical Industries
PER/76/006	Siderurgical Industries
YUG/75/027	Centre for Industrial Organization and Development
YUG/78/009	Industrial Utilization of Non-Metallic Minerals

ANNEX III.

JOINT UN/UNDP/UNIDO MANUFACTURES EVALUATION

Workshop on Significant Issues

Summary Report of the Discussions

Vienna
1-6 December 1982

JOINT UN/UNDP/UNIDO MANUFACTURES EVALUATION

Workshop on Significant Issues
Vienna, 1-6 December 1982

1. The Workshop on Significant Issues met in Vienna from 1-6 December 1982. It was held as the culmination of Phase II of the Joint UN/UNDP/UNIDO Manufactures Evaluation which, inter alia, focussed on 14 field projects in seven countries. The main thrust of the Workshop was to identify the principal significant problems and significant issues which affect industrial development in the developing world so as to determine whether the role of governments and the international system was appropriately focussed in trying to find solutions which would have an important impact on the industrial environment of the countries concerned.

2. The Workshop was attended by eight national consultants from six of the countries in which field missions were held: Egypt, Kenya, India, Indonesia, Peru and Yugoslavia. It was also attended by the three joint co-ordinators from the United Nations (UN), United Nations Development Programme (UNDP) and United Nations Industrial Development Organization (UNIDO), as well as two Senior Industrial Development Field Officers and other staff. Mr. Arturo Chavez J. (UNDP) acted as Moderator of the Workshop and Mr. Juan Tampier was Principal Consultant. The list of participants appears in Annex I.

3. The meetings were designed to draw from the experience of the participants in terms of their knowledge arising from the industrial end-user needs from the subsectors, the assessment of technical assistance projects reviewed by the consultants and the rather vast and long personal experience of the participants in industry.

4. The agenda of the Workshop appears in Annex II. Meetings were held at the Vienna International Centre.

DISCUSSION

5. The discussion of the participants focussed on the identification of the main significant problems or impediments which affect industrial development. The following questions were addressed:

(a) What is the nature of the problems and where do they originate?

(b) Where and how are they felt?

(c) What can the UN system do to solve those significant problems?

6. In order to provide some basic framework and information pertinent to the subject of the Workshop, the Joint Co-ordinators of the Manufactures Evaluation Study presented:

(a) A thinkpiece on the industrial system and the relations of the technical assistance programme to it (Annex III) together with figures (1-7); and

(b) The main findings of Phases I and II of the Manufactures Evaluation Study, including preliminary information on the main findings of the in-country evaluation missions (Annex IV).

7. On the basis of a far-ranging discussion covering the whole spectrum of industrial development interactions, the participants agreed that the discussion should focus on the following topics:

1. The realities of industry in the world today
2. The dilemmas of developing countries in industrial development
3. The role of governments
4. The tripartite system (Government/UNDP/UNIDO) in technical assistance

6. Identification of main problems

7. Identification of possible solutions.

1. The Realities of Industry in the World Today

8. Industry and its products no longer have a restricted exclusively national connotation. Decisions taken regarding production or marketing strategies by industries of the developed and developing world, could have a profound impact on the further industrialization and market development of the developing countries.

9. In the present world economic recession, the traditional export markets of developing countries are suffering a serious decline due to the shrinkage of purchasing power and effective demand as well as to the protectionist measures taken by the industrialized countries in respect to the imports from the developing world. This situation, as well as crucial questions of financing and lack of infrastructure, have had a serious impact on the industrial structure and industrial development plans in developing countries.

10. As a result, some industries are being forced to close down while others have to reorient their ideas, change their machinery and retain their workers in order to develop new production possibilities to respond to market demand.

11. A further problem is the fact that the dynamic nature of industry, with investment project cycles of 10 years or more, was not taken adequately into account. Thus, the normal motivation for industry (profit or value added) vis-a-vis the inherent perception of high risk arising from the complexity of an industrial venture together with the lack of assurance or guarantees on performance resulted in the developing world in an inherent lack of interest in industrial investment and development.

12. In some cases the variety of problems and uncertainties encountered are the cause for the postponement of industrial investment decisions, until better prospects for selling the intended product could be found, the availability of investment financing be obtained at more suitable terms and lastly, actions or measures would be taken to decrease the perceived risks involved.

Entrepreneurship

13. A fundamental problem limiting the industrial development of developing countries is the lack of significant numbers of entrepreneurs. According to the participants, there seems to be a general shortage of entrepreneurs in most of the developing countries who could innovate and optimize the various possibilities for industrial projects in productive realities.

14. The specific problems related to this situation were considered to be as follows:

(a) The identification of a feasible industrial project and the consequent preparation of a "bankable" project proposal for its external financing require the existence of suitable entrepreneurs with the motivation, drive and imagination who could carry the project proposal into the final stage of the investment process when the enterprise would reach economic operation;

(b) Few entrepreneurs enter the industrial sector because of the complexity and severe competition involved on the one hand, and the high risk and low returns of investment, on the other hand; Such individuals then turn to alternatives such as trade and services;

(c) The possible sources of potential entrepreneurs differ from country to country in the developing world, because of differences in:

(i) levels of education

(ii) social values and social status

(iii) cultural inhibitions

(iv) psychological motivations

(v) other non-economic considerations;

(d) Entrepreneurs lack the information and resources to cope with the dynamic changes of the industrial structure and the managerial complexity for starting, operating, monitoring and developing further the industrial enterprise;

(e) Entrepreneurship, enterprise development and management development are usually confused and their relationships, concepts and definitions remain unclear.

Management in Developing Countries

15. One of the main handicaps of industry in most of the developing countries was identified to be the lack of capable managers who have understanding and appropriate competence in the technical/economic parameters involved and for which a preparation in engineering is particularly relevant. Due to this fact, a large part of small entrepreneurs manage their own enterprises with limited skill and management tools which are appropriate to a lower techno-economic level than that required, thus achieving only limited success or in some cases even failure. Larger enterprises, which find it necessary to appoint a professional manager, usually encounter many difficulties in finding competent management and in some measure the problem is exacerbated by difficulties in defining for them the limits of responsibility

vis-a-vis authority. In government-owned or controlled enterprises, the difficulty may still be greater because of the lack of incentives offered to managers, part of which is related to the limited wage structure and lack of career development opportunities.

16. Special management skills lacking is developing countries are in the following subjects: market identification, quality control, product design and development, feasibility studies, maintenance, as well as business administration. This situation applies also to top management levels. In many instances there have been striking cases of success or failure mainly arising from the change to an effective management.

Transfer of Technology

17. The problem of transfer of suitable industrial technology from the developed countries to the industries in the developing countries which have the need for it, is multifaceted.

18. In the first instance, there is the difficulty of identifying the whole range of existing technologies. This identification is necessary so as to make a proper assessemnt of them to determine what would be the suitable technology to transfer in order to serve the purposefully identified and targeted market needs. The current difficulties in making these assessments reflects the influence in development strategies of the big corporations from the developed world. Those corporations during the 1960's and the 1970's expanded their activities, first through exports to the developing countries, and later through direct investments and joint ventures in the developing countries. These latter activities facilitated access to the emerging markets and made use of the resources available in the host countries. The technological choices made by those corporations has forced industry in the developing world to make technology choices which are competitive.

19. Currently, with the oversupply of industrial goods to the international markets, the owners of technology seem to be more concerned about the short and long-term impact which a wider use of their industrial technology would imply for their own business. At present, they see no benefits accruing to them to justify facilitating their transfer.

20. Once a suitable technology is identified as transferrable, that technology might have to be adapted to the industrial project. Furthermore, those responsible for the selection, transfer and incorporation of technology often do not seem to possess the necessary knowledge, professional background nor do they have access to reliable and unbiased information on the technologies they will manage.

21. Sometimes the technology is transferred through purchase of advanced industrial machinery, which perhaps may prove not to serve the real need of the market place, producing products which might not take appropriate account of the disposable income possibilities of the targeted markets.

22. In other instances, transfer of advanced technology is induced by government action. In some of these instances such technology might not be addressed to solve the needs of the industry in that country but may serve a different government objective.

2. The Dilemmas in Industrial Development

23. The participants recognized that there was today a significant dilemma on whether to focus new industrial ventures solely on the internal market as a means of import substitution or whether to focus on the service of export markets.

24. In view of these problems, the Workshop emphasized the need to focus production and investment plans primarily on the needs of the internal national market of a country. Possibilities for export could also be included

in such plans, but if so, these possibilities should be regarded as incremental sale possibilities. The possible export potential should not be used as a basis to ensure the break even point of the operation which should be entirely based on the national market considerations.

3. The Role of Governments

25. There was no question that the Government in any developing country plays a substantial role in all stages of the industrial investment cycle. For instance, the Government, through its planning agencies, determines priorities, strategies and tactics for the industrialization of the country. It also has major responsibility for national industrial policy and provides the policies, incentives, information and sometimes, the back-up for the installation of specific industrial plants, through its Ministry of Industry or industrial development corporations.

26. It also enacts legislation, provides the incentives and establishes the regulations which would condition the everyday operation of an industrial concern through its regulatory bodies.

27. In certain cases, where publicly-owned industrial enterprises exist, the Government may actively participate or influence the management of such enterprises.

28. There is a political dimension in industrial development. For that reason any important change in the political situation in a country may have a long-term impact on direction, momentum and structure of industrial development.

4. The Tripartite System in Technical Assistance

29. The discussion focussed on some of the realities which any technical assistance programme, originated through the participation of bilateral, multilateral, private or UN system agencies, had to bear in mind.

30. Where the UN system is involved, one has to take into account the particular structure and process created for such technical assistance projects, involving the participation of the Government of the host country, UNDP and the executing agency, which for industrial technical assistance is normally UNIDO.

31. This tripartite system and process has been used to identify, design, implement and evaluate the specific technical assistance projects in the programme within the context of the existence of the system of Indicative Planning Figures (IPF) which UNDP utilizes for eventual financial resource allocations to each country being served.

32. One of the first considerations that must originate within the system is the following: Is the technical assistance pertinent, oriented and structured in such a way as to directly address the problems of industry?

33. One important finding regarding the role of the tripartite system at the stage of project inception (i.e., problem identification and diagnosis) was that the immediate end-users and beneficiaries of the technical assistance project, i.e., the indusrry, often had no opportunity to participate or act as sponsor or consulting body, in order to obtain a better focussing of the project outputs. (For other findings based on phases I and II of the study, see Annex IV.)

34. These findings revealed the weakness of tripartite system which was further compounded by the complexity of the industrial world to which technical assistance programmes are addressed.

35. In addition, the participation of the Government, in its sovereign capacity, makes the working of the system a very biassed undertaking since neither UNDP, who disburses the technical assistance funds which are

voluntarily made available to it, and even less so UNIDO, who is presumed to inject the technological know-how capacity and has the implementation responsibility for implementing internationally funded technical assistance inputs, can make their viewpoints felt effectively since by definition and mandate, they serve the sovereign state.

5. Identification of Main Problems

36. In order to define better the structure and kind of technical assistance that would be required in the future, the workshop identified some of the main problems which affected industry in developing countries, taking account of the following factors:

The different levels of industrial development among the developing countries, require a different approach;

The level of technological competence of the Government of the recipient country and even the level of technology prevailing in the country itself, may pose problems regarding the transfer of a certain technology through a technical assistance project;

The lack of information on the local capabilities of the host country, particularly regarding consulting services, may mean that these capabilities are not utilised in the project or even that unfair competition is created;

The lack of an integrated and systematic approach to understanding the total needs of the industry and its industrial/business environment may result in a technical assistance project addressed to the solution of a partial problem with limited impact on the industrial sector;

The lack of consultation and substantive information exchange between government officers, UN field representatives and industry officials and

end-users may pose a serious drawback in the working efficiency of the tripartite system, with the corresponding deleterious effect on project performance:

The determination of the most suitable national counterpart agency to act as intermediary for technical assistance inputs to be provided by the Government and by the UN system, is one of the key responsibilities of the tripartite system.

37. The participants at the Workshop identified a set of 30 main problems which are being faced by end-user industry in developing countries. The list of problems certainly does not represent a total roster of problematics but rather a judicious selection of those considered significant enough to hinder the industrialization process. The problems were identified within the following categories: financial, management, technical and market. The list of these problems are provided in Annex V.

6. Possible Solutions

38. In order to identify possible solutions to the problems faced by industry in developing countries, the participants defined that these problems needed to be viewed in the context of the interrelationships between the entrepreneur and industry, and the surrounding environment. The identification of the location of these problems was made. Their origin i.e., where they are felt and where the solution was to be found is given in graphic f in Annex V, figure 1. The same main list of problems was then analyzed as perceived by the industrial entrepreneur within the context of industrial system. This analysis is shown in graphic form in Annex V, figure 2.

39. On the basis of the above analysis, the Workshop went on to prioritize these main problems on the basis of a value scale designed as follows:

1. critical problems
2. very important problems
3. important problems
4. less important problems
5. not as important as the above.

40. The results of these priorities identification of the 30 main problems are included in tabular form in Annex V.

41. The participants agreed that the governments in developing countries had the principal and leading responsibility to create the appropriate business climate for the development of industry. In this respect, the policy measures of government dealing with the establishment of appropriate monetary policies, regulatory actions of industry together with promotion activities on behalf of industry were considered at the most important element for the survival and growth of national industries. In this context, it is of paramount importance for the government to provide a continuity in policy realizing that often the dynamic nature of government administration operates on the average of a three-year basis, while industry requires industrial policy continuity with durations of 10-year spans in order to assure its economic operation. At the second level, the financing system of a country had a primary responsibility in providing capital needs required for industry development.

42. The participants of the Workshop viewed the possible solutions for industry development in the context of short-term measures which need to apply within the next two to three years. The Workshop did not find it

possible to address solutions for the medium-term (10 years) and even less so for the long-term (20-50 years). In regards to the short-term, it was unanimously agreed that the problems related to management were the most significant, followed by market problems. The technology problems while important were not as critical as any of the above-mentioned headings.

43. In substantiating these conclusions, it is important to highlight that the Workshop identified nine main problems dealing with finance, 10 main problems dealing with market, five main problems dealing with management and six dealing with technology.

44. In terms of priorities, the critical problems were recognized to be three dealing with finance, five dealing with market, one dealing with management. The analysis of all the problems indicated that the critical areas that needs to be looked at, is the field of market were nine out of 10 problems are critical or very important. A second level of ranking is management, with four out of the five problems in the critical and very important priority. In actual fact, the solutions to the marketing problems depended heavily on the solution of the management problems as a consequence of which the Workshop concludes that first attention must be given to the solution of the management problems.

45. The problems dealing with finance were categorized to be dependent on the solutions of management, marketing problems as well as the creation of the correct business environment through government monetary policy for industry promotion. In this regard, three of the nine financial problems were considered to be critical.

46. A significant finding of the Workshop was the fact that the technology problems were on the whole classified as very important but none of them

were considered to be critical. Thus as a whole, technology per se, was not recognized to be a critical focus for immediate attention.

47. In view of the shortness of time, it was not possible for the Workshop to devote sufficient time to make proposals for the solutions of the critical problems. However, the Workshop recognized that industry development of the developing countries, would be totally dependent on the finding of solutions to these critical problems.

GENERAL OBSERVATIONS

48. The Workshop concluded that the overriding responsibility for action laid with government legislation and actions related to monetary policy oriented to industry development in order to enhance profitability and decrease industrial risk for the medium-term. These government measures must assure a continuity of government policy in spite of changes in government administrations.

49. In the finance area, the problem arising from the profit/risk ratio and the high investment costs should be addressed by industry and the banking community to find adequate solutions.

50. In like manner, industry should review the critical market problems which arise from poor market intelligence for new market development, on the one hand, and inadequate packaging to preserve and protect the products, on the other.

51. Government intervention in respect to pricing of industrial goods is considered to be a negative action critically hindering industrial performance. Governments ought to better direct their efforts to effective comprehensive assistance to local industry.

52. Nevertheless, solutions to the critical problems rested primarily with industry management. However, management needs to first solve critical issues of definition of responsibility/authority vis-a-vis different types of industry ownership. Furthermore, management needs to have technical and economic skills required by the complexity of industry activity.

53. International assistance for effective industry development needs also to be better focussed on real critical industry needs. Ways and means need to be found to develop a competence and to orient the existing efforts to more important problems of industry than would appear to be the case now. Unless this is done, the impact of technical assistance will not change from what it is presently.

54. It is recognized that there is an overall interrelationship among all these problems and solutions, which therefore require an approach which encompasses the whole industry system. Hereby rests the immense complexity of industry development which touches upon organization, co-operation and appropriate techno-economic skills to deal with complex scientific, engineering, marketing and business considerations to serve the needs of mankind, while maintaining a sufficient profit or value added characteristics to make the production enterprise competitive with other alternative uses of human, material and financial resources.

Joint UN/UNDP/UNIDO Manufactures Evaluation
Workshop on Significant Issues
Vienna, 1 - 6 December 1982

List of Participants

1.	Mr. Nikola Čatipović	- National Consultant, Yugoslavia
2.	Mr. M.S. El Ghoroury	- National Consultant, Egypt
3.	Mr. Farouk Garrana	- National Consultant, Egypt
4.	Mr. F.M. Iqbal	- UNIDO SIDFA, Indonesia
5.	Mr. Raymond Kitchell	- UNIDO Co-ordinator, Vienna
6.	Mr. Eric Kotut	- National Consultant, Kenya
7.	Mr. A. Krasiakov	- UNIDO SIDFA, India
8.	Mr. Abdul Latief	- National Consultant, Indonesia
9.	Mr. Herman Muegge	- UNIDO, Vienna
10.	Mr. K.R. Narasimhan	- National Consultant, India
11.	Mr. Wilfredo Pflücker	- National Consultant, Peru
12.	Mr. Suryo Sediono	- National Consultant, Indonesia
13.	Mr. Juan Tampier	- Principal Consultant
14.	Mr. Herbert Turner	- UN Co-ordinator, New York
15.	Mr. Arturo Chavez J.	- Workshop Moderator and UNDP Co-ordinator
	Mr. Adrie de Groot	- UNIDO Observer
	Ms. Angela King	- UN Observer
	Ms. Lorelei Schnabler	- Secretary, Room D 1740, ext. 3598
	Ms. Srisuda Kokanoutranon	- Secretary, Room D 1735, ext. 3603

Joint UN/UNDP/UNIDO Manufactures Evaluation
Workshop on Significant Issues
Vienna, 1 - 6 December 1982

AGENDA

Tuesday, 30 November	Arrival of participants and registration at hotel
Wednesday, 1 December	
09:00	Assembly - Ambassador Hotel lounge (First Floor)
09:15	Departure to Vienna International Centre (VIC)
10:00	Welcome to participants at the Workshop meeting room (UNIDO Headquarters, Building F, 7th Floor, Room 0701) and establishment of working procedures by the Co-ordinators
10:30 - 12:00	Information on results of Phases I and II of Manufactures Evaluation Study
12:00 - 14:30	Lunch hosted by UNIDO and free time for use of VIC facilities (banks, travel, etc.)
14:30 - 17:30	Presentation of thinkpieces and graphic aids as food for thoughts regarding external and internal factors affecting technical assistance projects
Thursday, 2 December	
09:00 - 17:00	Brainstorming day (Breaks for lunch and coffee)
Friday, 3 December	
09:00 - 12:30	First round-up of ideas coming from brainstorming
14:00 - 17:30	Second round-up of ideas and conclusions coming from brainstorming
Saturday, 4 December	
14:30 - 17:30	Short afternoon meeting to review draft conclusions of Workshop
Sunday, 5 December	Free day
Monday, 6 December	
09:00 - 12:30	Discussion of substantive issues
14:30 - 16:30	Review and endorsement of conclusions
16:30 - 17:30	Summing-up and closing remarks

Joint UN/UNDP/UNIDO Manufactures Evaluation

THINKPIECE

The Industrial System and the Industrial Development Project

One of the significant features of industry is that it needs to bring together, for its effective operation, a large number of inputs, services, people and functions. Their interaction obliges them to handle a myriad of component items much larger than any other economic sector. In particular, the human participants require an understanding of science and technology, usually an engineering background, in addition to the general knowledge and skills utilized in other economic sectors. Often these pre-requisites demand specialization.

The different stages of industry development, resulting from market growth, technological innovation or managerial improvement, determine different needs for technical assistance.

The management tools required by a highly diversified corporation are different than those required by a family-run business.

The need for technological innovation or information on alternative technologies is greater in a dynamic growth industry than in a traditional industry.

To sell a product in a local market implies a different knowledge of market strategies and local conditions than to try to sell the same product in the international market. Also the type and quality of the product may differ.

As a consequence, it seems very difficult to aim a technical assistance project or programme to serve the industry as a whole. It would seem wise first of all to select and understand the kind of industry the project is meant to serve.

The ultimate end-user of any technical assistance project, as opposed to the ultimate beneficiary who is the consumer of the manufactured product, is the entrepreneur (or manager) who is running an industrial operation or is trying to start an industrial concern.

The prime motivation of the entrepreneur is the profit or value added of the industrial goods he sells.

The profit expectation in an industrial enterprise has to be greater than the risk. Industry has to offer risk capital a higher return than that obtained from the money market or savings plans.

The entrepreneur wants to decrease the risk by obtaining guarantees, assurances or participation of financial, management or joint ventures partners who have a well established and recognized experience.

The industrial system, where the entrepreneurial activities are immersed, has a fairly complicated interaction, for example: between governmental promotional activities and regulations: between the market development actions and the constraints given by the amount of disposable income of the consumers: the pressure from the lending institutions to make their money available for investment and the cost of that money to the industry: the need for expanding the geographical area for marketing the products and the burden that the incorporation of alternative marketing channels may pose to the profit margin.

These interactions can be further complicated or eased when the entrepreneur seeks help of one kind or another from suppliers, joint venture partners, technical national institutions or international multilateral assistance.

All the above are elements of the industrial/business environment where the industrial activity is located. These elements establish the pre-

/...

conditions for a technical assistance project. These pre-conditions have to be carefully taken into consideration if one expects that it will have any impact in the industrial sectors to which it is addressed.

Assuming that a technical assistance project is well focussed to the specific industry needs and that the pre-conditions established by the industrial business environment are adequately analyzed and look favourable to achieve the impact to be generated by the technical assistance project, there still remains the problem to determine the kind of technical assistance to be delivered by the project and the type of project design which will permit the project outputs to be most effective.

The national development projects supported by the government to which UNDP/UNIDO provide assistance are based on the provision by the above parties of a certain amount of experts, fellowships, building, equipment, services and miscellaneous, which through a workplan are expected to produce effective outputs.

Industrial innovation, concepts, which is another expression for industrial development, has recognized the need to have the involvement of the following functions:

- an idea man
- a manager
- an entrepreneur
- sponsors
- a gatekeeper

The idea man provides the concept for the new product, process or venture. The manager is responsible for the organization and delivery of the results of the new idea. The entrepreneur is the risk taker. The sponsors are the

/...

banks or lending organization which supply the financing. The gatekeeper is the technology overseer of the project, who provides the information on the technological state-of-the-art including other external factors, which may influence the results, as well as interchanging information on the results of the new idea.

A last thought about industrial time-frame and project life-cycle. The technical assistance project generally goes through the stages of inception, design, implementation and termination, which in total determine a time-frame, which tends to become quite rigid since the project contractual document establishes deadlines for the delivery of outputs.

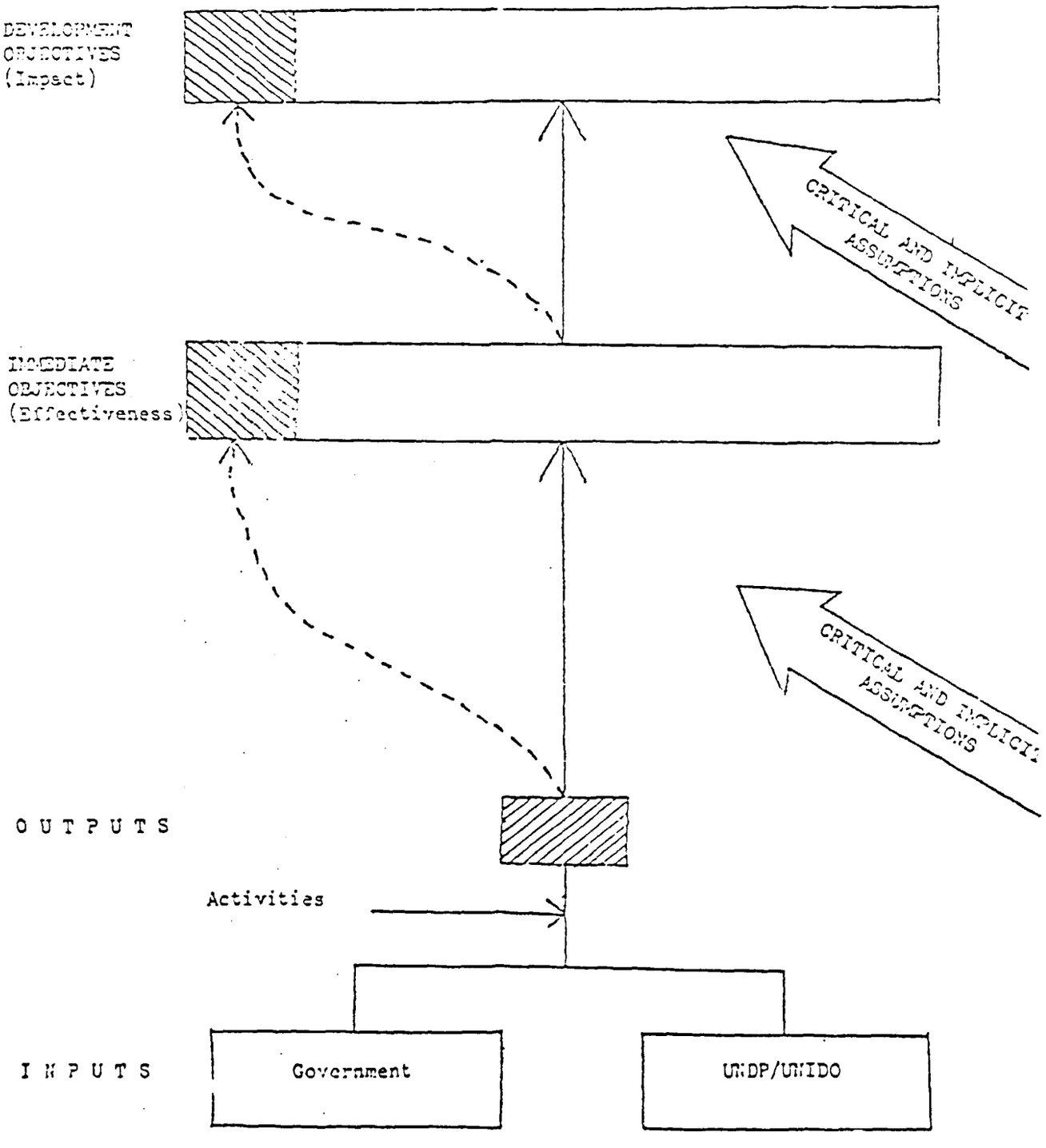
On the other hand, an industrial endeavour from idea to production at a level where the expected return on investment begins to be achieved generally may take 10-20 years, i.e., 5 years for idea generation and development, 5 years for planning, engineering and financing, 5 years for construction and start-up and 5 years for the optimizing of process and obtaining of sufficient market base to generate profits.

In this process, the project dynamically changes by continuous reassessment, except that at certain critical points in time, fundamental decisions are made which provide the framework for further action.

An industrial endeavour operates with a strategy and the corresponding tactics to achieve its aims. Consequently, it would be expected that a technical assistance project would incorporate both strategy and tactical elements in its design and implementation.

Annex III - Fig. 1

P R O J E C T D E S I G N L O G I C

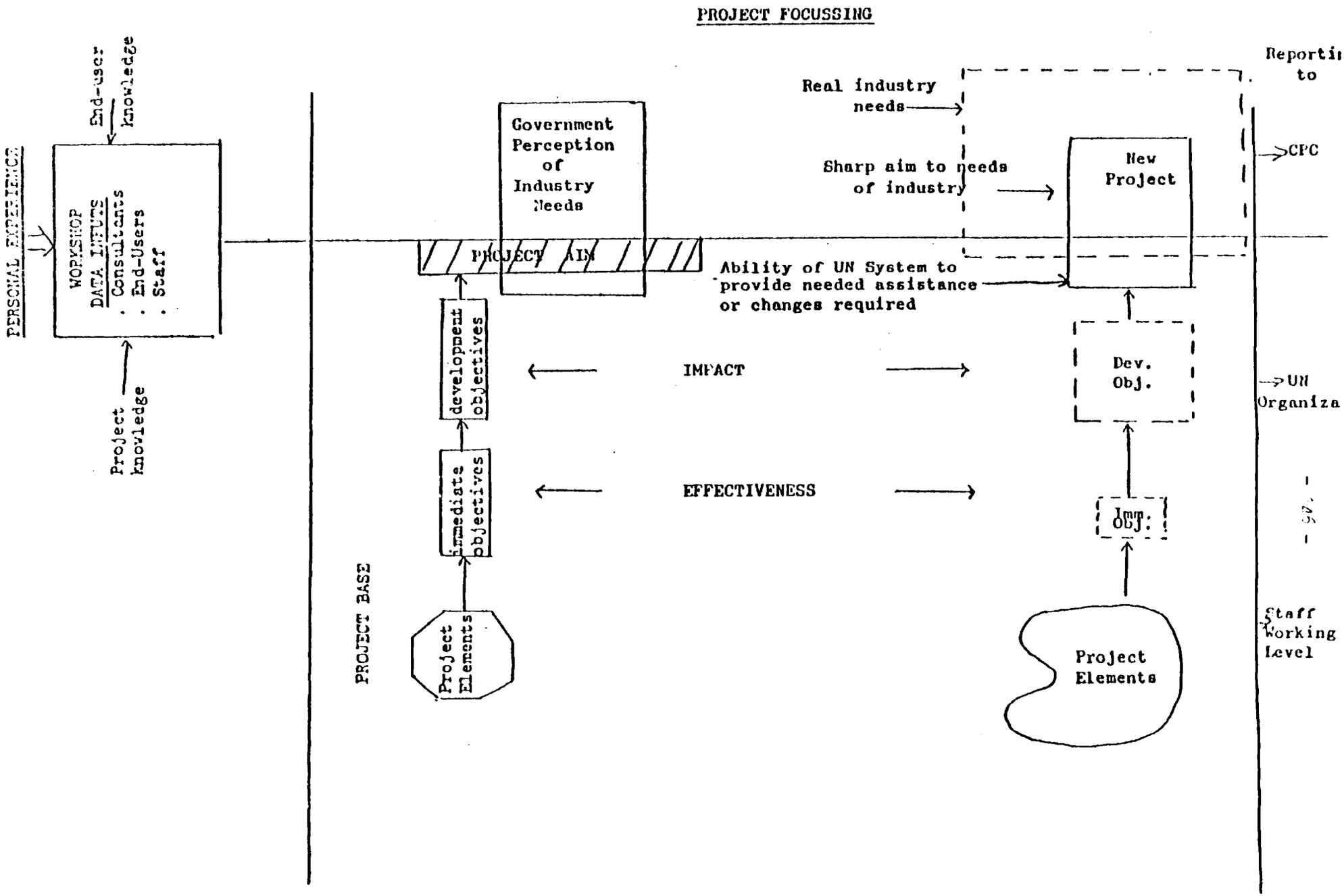


Joint UN/UNDP/UNIDO

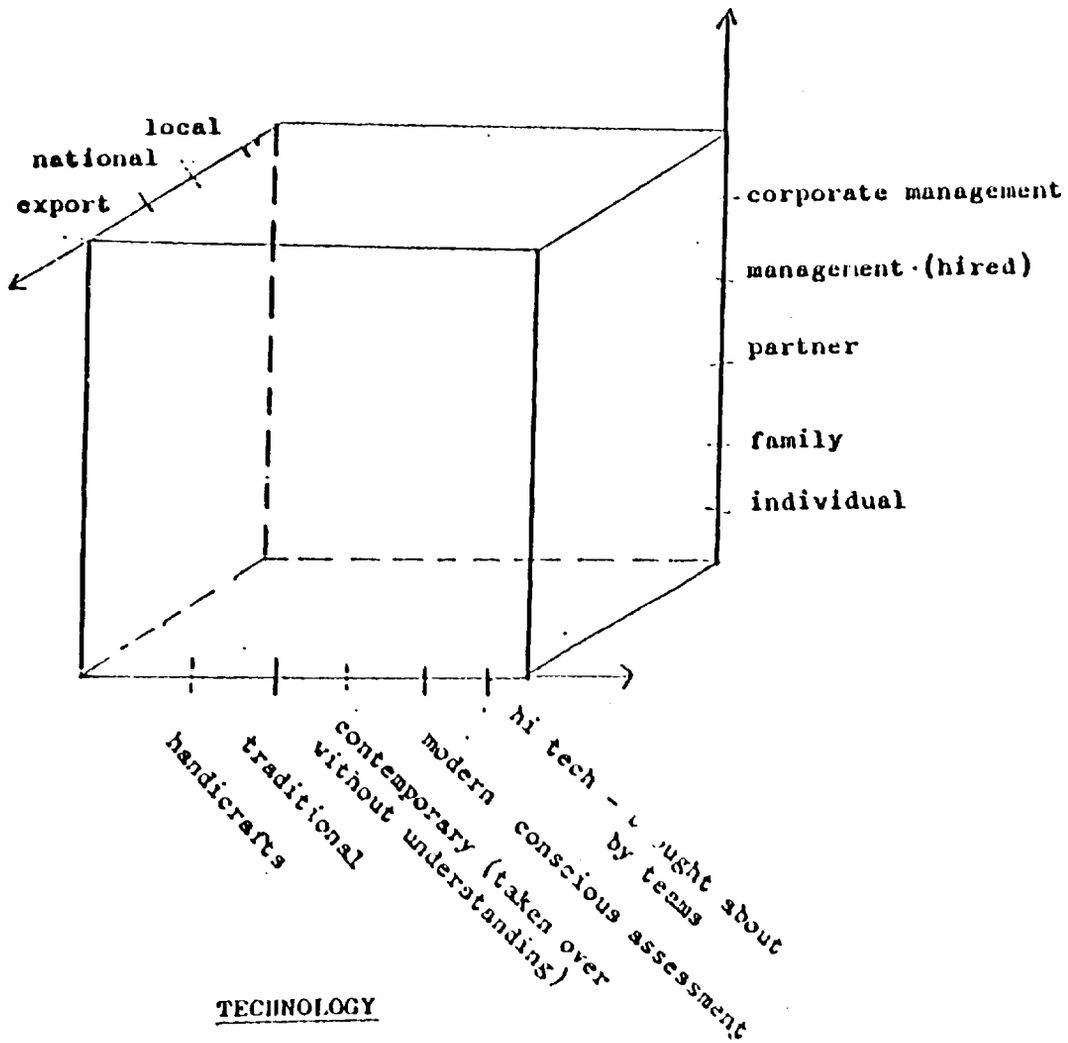
E V A L U A T I O N O F M A N U F A C T U R E R S

Workshop

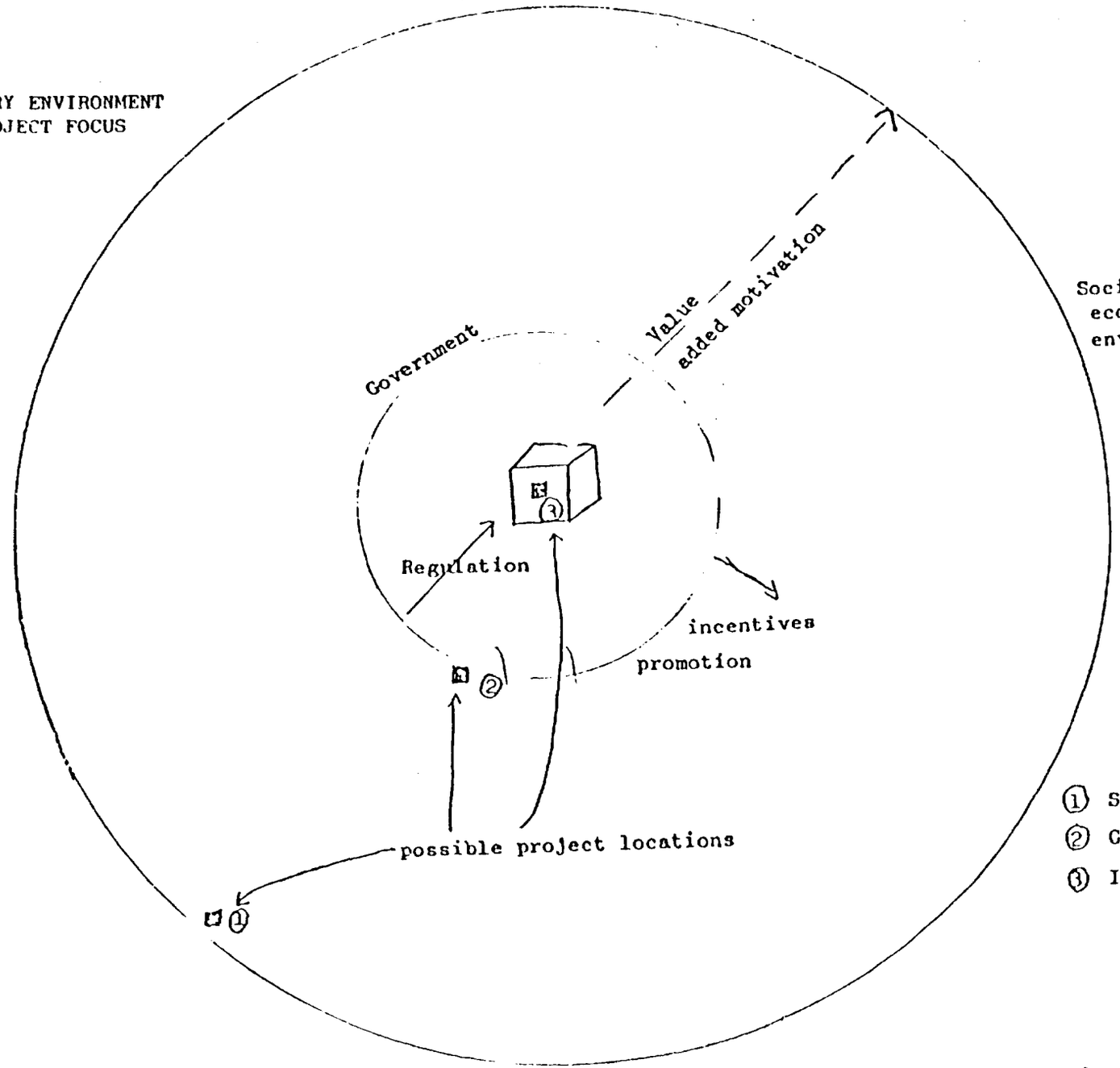
Annex III - Fig. 2



INDUSTRY

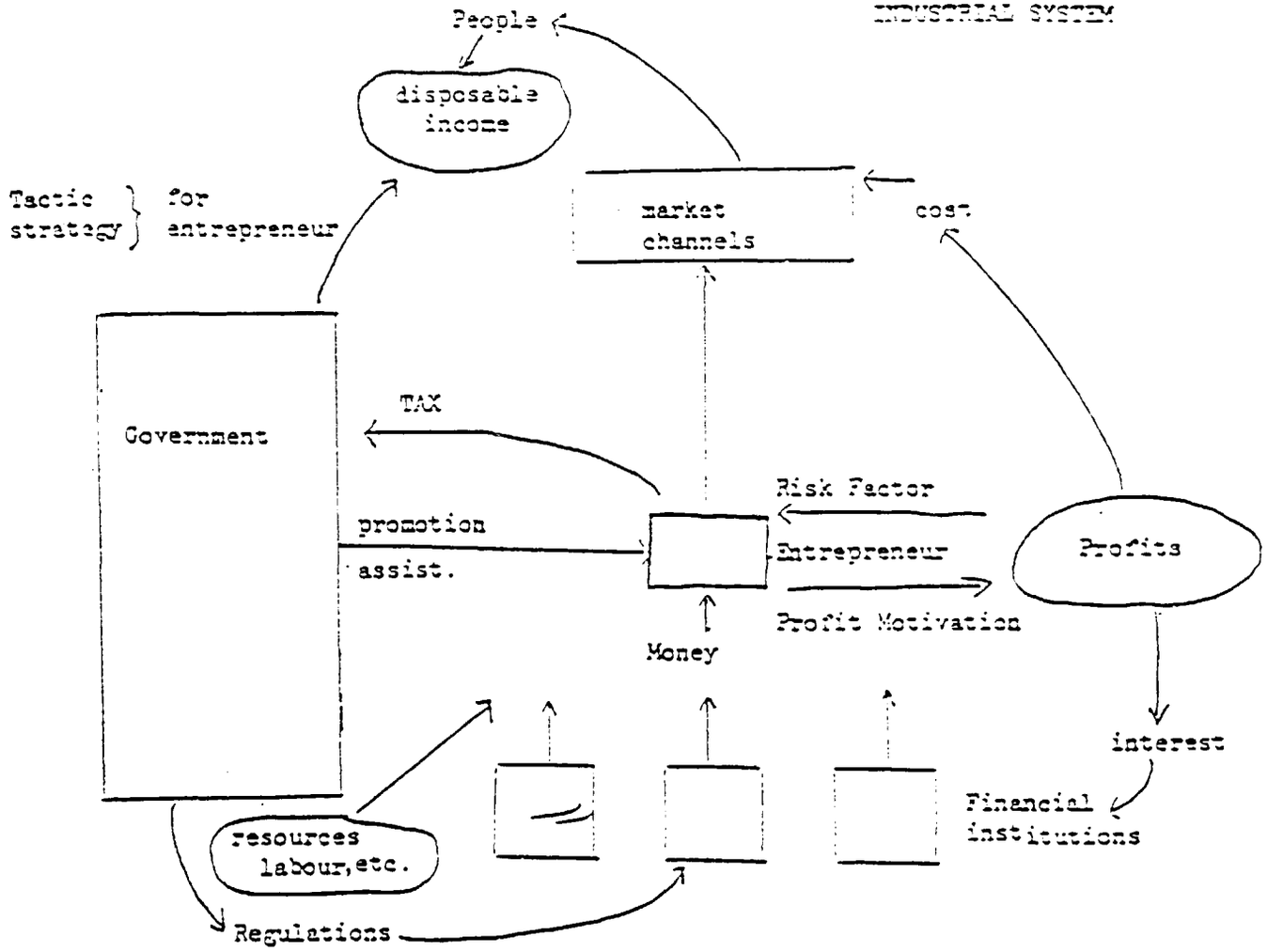

MARKET
local
national
export
corporate management
management (hired)
partner
family
individual
MANAGEMENT
handicrafts
traditional
contemporary (taken over without understanding)
modern conscious assessment
hi tech - thought about by teams
TECHNOLOGY

INDUSTRY ENVIRONMENT
AND PROJECT FOCUS



Annex III - Fig. 5

INDUSTRIAL SYSTEM



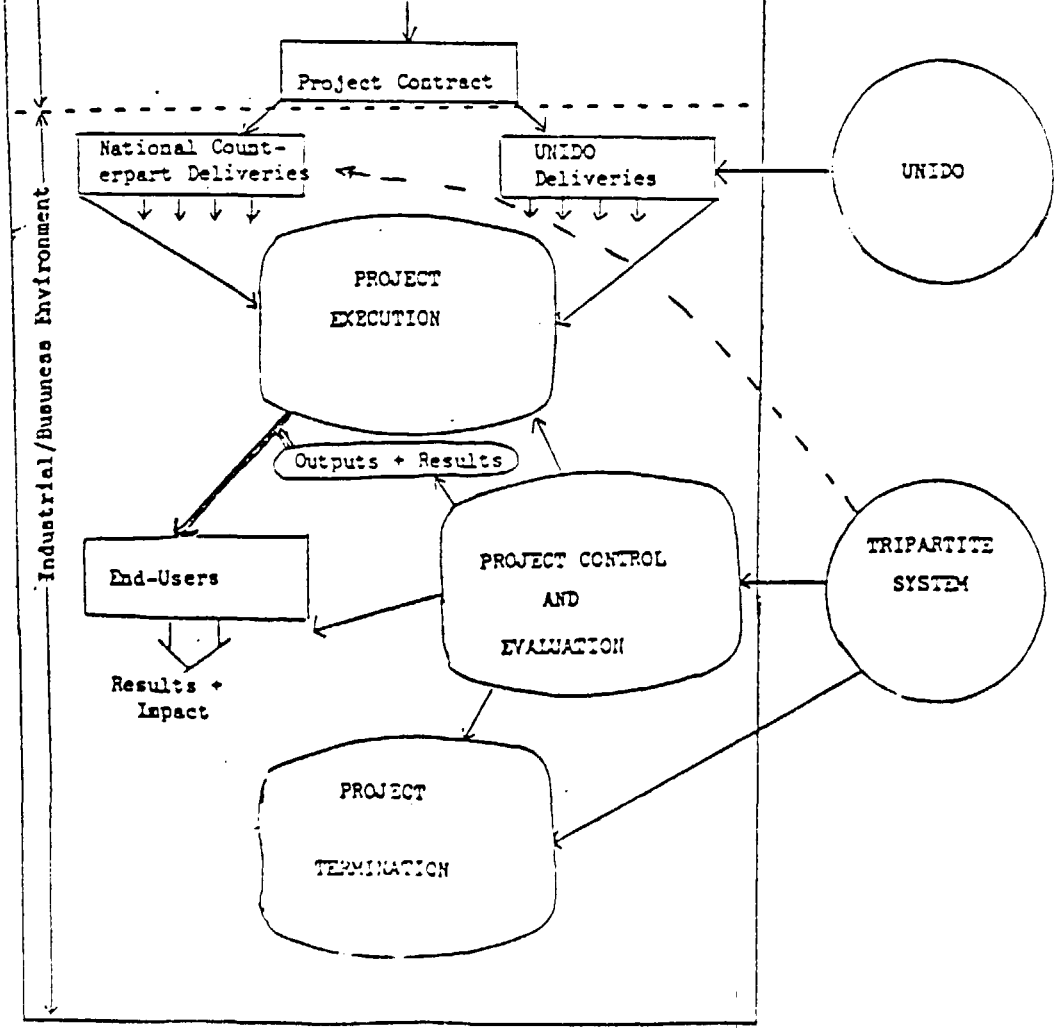
NEEDED PRECONDITIONS		PROJECT PRECONDITIONS AND EXPECTED OUTPUTS (THE INDUSTRY VIEWPOINT
Governmental Attitudes	Industrial/Business Environment	INDUSTRY GROWTH
. Aggressive export promotion policies . Generation of comparable international cost advantages	. Modern and sophisticated management practices under heavy and open competition	INCREASED GROWTH THROUGH EXPORT MARKETS DEVELOPMENT
. Free access to markets . Pricing flexibility . Growth incentives through profits reinvestment	. Heavy competition in domestic markets . Management with market-oriented mentality	INCREASED GROWTH THROUGH MARKET DEVELOPMENT
. Profits squeezing on established production	. Dynamic and changing markets . Heavy competition in traditional products . Modern management practices	INCREASED GROWTH THROUGH PRODUCT DEVELOPMENT
. Active R+D promotion and support	. Modern business mentality . Active competition	INCREASED GROWTH THROUGH PROCESS DEVELOPMENT
. Attractive financing and tax incentives for equipment modernization	. Profit margins for reinvestment . Confidence in future	INCREASED GROWTH THROUGH REHABILITATION
. Some R+D incentives	. Increasing competition	INCREASED GROWTH THROUGH PRODUCTIVITY
. Market protection	. Traditional business mentality	VEGETATIVE GROWTH

Annex III - Fig. 6

REQUIRED INPUTS

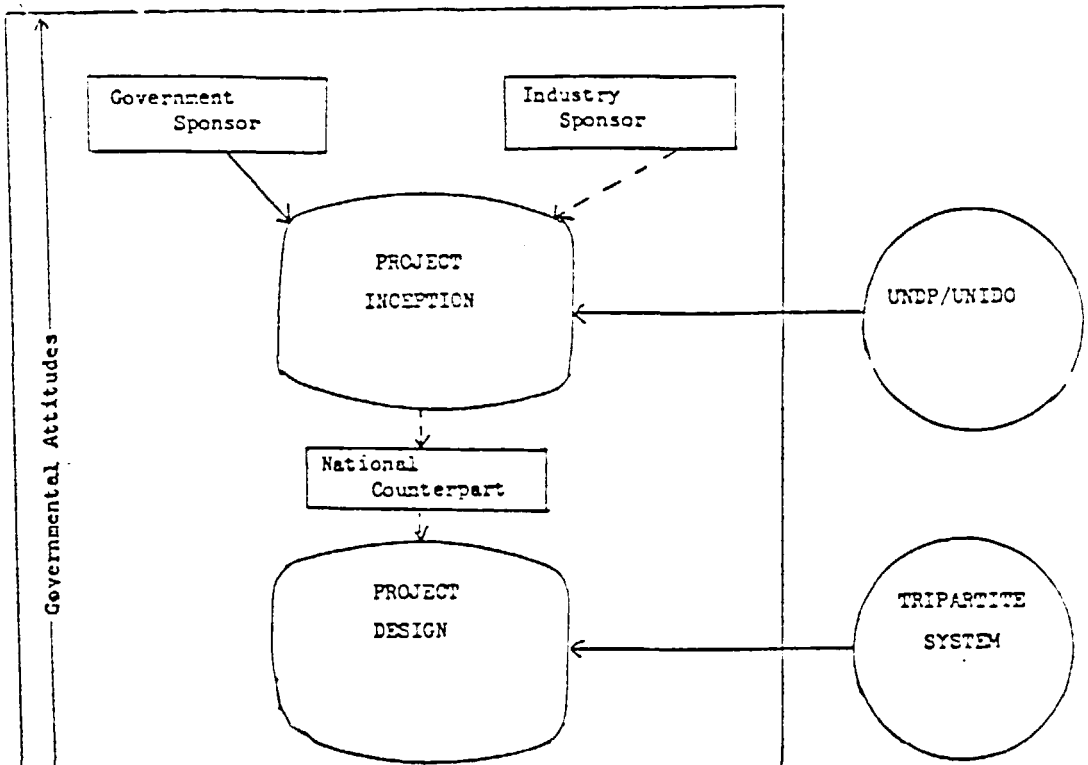
(from technically assisted national projects)

	PROJECT'S EXPECTED OUTPUTS
-International market and price information -International market research -International marketing studies -Quality control services based on intl specs. -Advanced management technics and tools	
-Market research -Marketing strategy studies -Market information services -Product management tools and services	
-Market research services -Feasibility studies -Management tools and services -Technical information services -Technology transfer	
-Technical information services -Technology transfer	
-Technical information services -Technical assistance for equipment selection.	
-Troubleshooting -Manpower training -Technical services such as quality control	
-None	


Project Contract
National Counterpart Deliveries
UNIDO Deliveries
UNIDO
PROJECT EXECUTION
Outputs + Results
End-Users
PROJECT CONTROL AND EVALUATION
TRIPARTITE SYSTEM
Results + Impact
PROJECT TERMINATION
Industrial/Business Environment

Annex III - Fig. 7

PROJECT LIFE CYCLE



Annex V

List of main problems shown in figure 2 by category: finance, management, technology and market with number in figure 1 and key to figure 2

Category	Key to fig. 2	Title of main problem	No. in fig. 1	Priority level [a]
1. Finance	F.1	Lack of interest in industrial investments because of (a) high risk, (b) poor investment return and (c) other better cost investment (e.g. trade and services)	19	2
	F.2	High interest rates on commercial loans	23	2
		High interest rates on industrial development loans	14	-
	F 3	Loan/equity financing by a third party (also banks)	15	3
		Need to resort to loans and/or third party equity for expanding existing industrial projects because of high risk, poor investment return or better opportunity cost alternatives, e.g. trade and services		
	F.4	High product inventory due to inefficient marketing and stockpiling of raw materials/spare parts /also part of Management category/	6	1
	F.5	Costly pre-investment studies required by banks	21	3
	F.6	High start-up cost (e.g. management, training, maintenance etc.) /also part of Management category/	7	3 or 4
	F.7	High cost of transfer of technology from outside supplier	12	4
	F.8	Financing of subcontracts	22	5
	F.9	Legislation (taxes, wages, depreciation rates, social welfare, pricing, pension funds, insurance etc.)	16	1
	-	Government intervention (e.g. protection of infant industries, monetary policies concerning export)	20	-
2. Management	Mgt. 1	Gap between management skills and technology levels	1	2
	Mgt. 2	Difficulty in managing in environment of rapid change	2	3
	Mgt. 3	Lack of incentives (e.g. career development, income)	3	2
	Mgt. 4	Management and labour problems aggravated by government intervention	13	2
	Mgt. 5	Inadequate definition of responsibilities and authority	4	1 - 5 [b]
	Mgt. 6	Brain and skill drain	5	-
3. Technology	T.1	Restricted access to information about technology (particularly new)	8	1
	T.2	Limited capacity and means for acquisition/assimilation of technology	9	2
	T.3	Limited government capacity for technology assessment	17	3
	T.4	Gap between labour skills and technology requirements	10	2
	T.5	Impact of automation on employment	18	
	T.6	Quality standards (important for export market)	11	2

a/ See explanation in paragraph 39 of text.
b/ Depends on culture, structure and size of firm.

Category	Key to fig. 2	Title of main problem	No. in Fig. 1	Priority level
Market	Mk.1	Poor market intelligence (e.g. on disposal income, pricing consumer need and effective demand)	24	2
	Mk.2	Market system restricted and costly. Restrictiveness of established marketing system (e.g. excessive intermediate costs)	25	2 - 3[c]
	Mk.3	Inadequate market infrastructure	26	3
	Mk.4	Inadequate packaging (e.g. high cost, poor storage)	27	1
	Mk.5	Low quality	-	1
	Mk.6	Government intervention in pricing (e.g. provision of incentives)	2	1
	Mk.7	Poor market intelligence (e.g. on economies of scale)	30	-
	Mk.8	Lack of incentives	-	1
	Mk.9	Restrictive trade practices, mainly with regard to developed countries	29	2
	Mk.10	Lack of long-term marketing agreements	28	3

c/ Priority 2 for commercial and priority 3 for industrial markets.

Findings of Phases I and II of the evaluation study

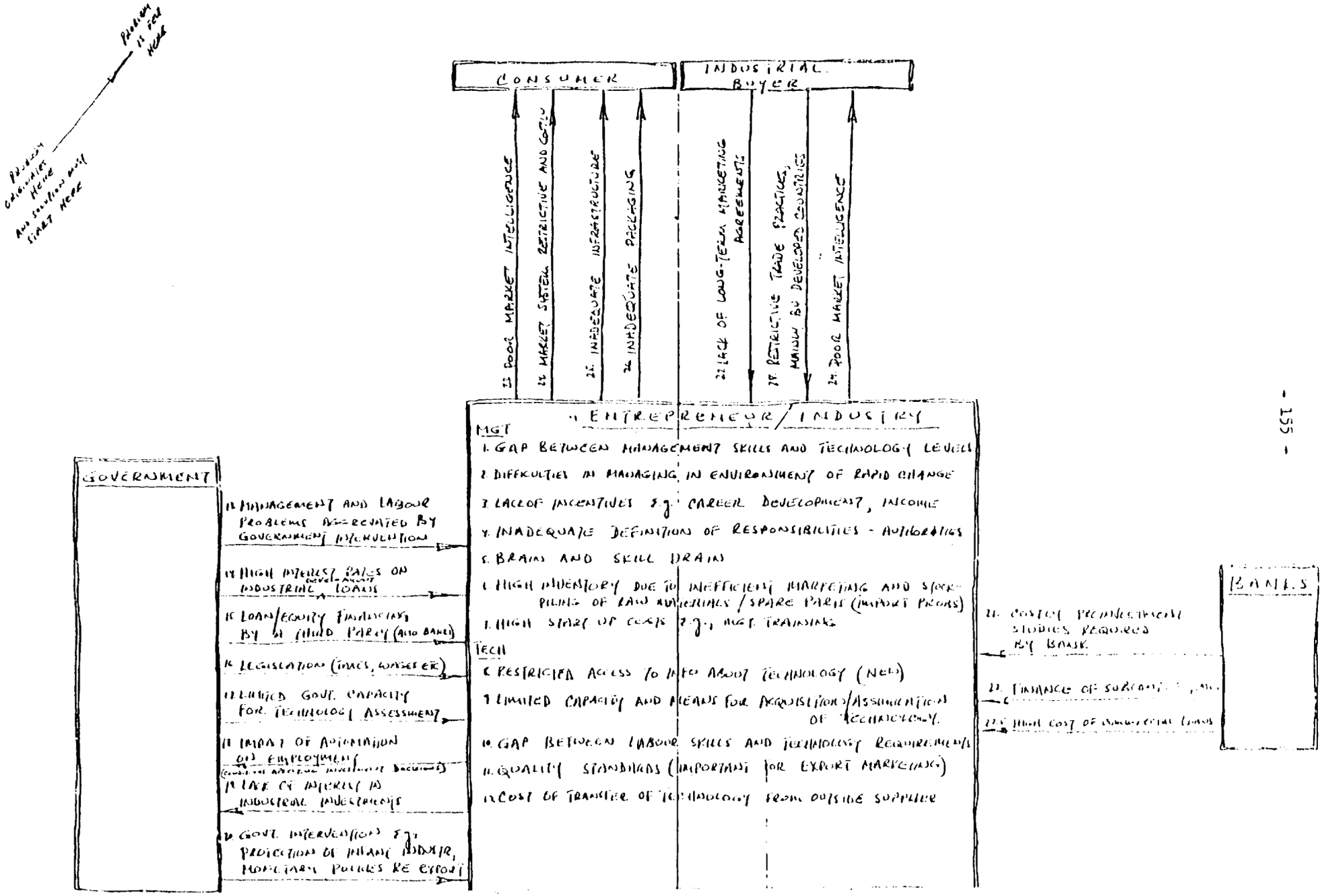
The findings of phases I and II of the desk reviews and field evaluation of technical assistance projects seem to indicate certain important weaknesses in the system which have affected the achievement of planned objectives. Some of the study findings are:

(a) During the problem identification and planning stage of a technical assistance project, the Government has a preponderant role in keeping with its sovereignity. This circumstance sometimes prevents the two other participants (UNDP and executing agency) from contributing important empirical and technical inputs at this critical stage. As a consequence it may be possible that certain projects do not benefit from experience with similar projects elsewhere;

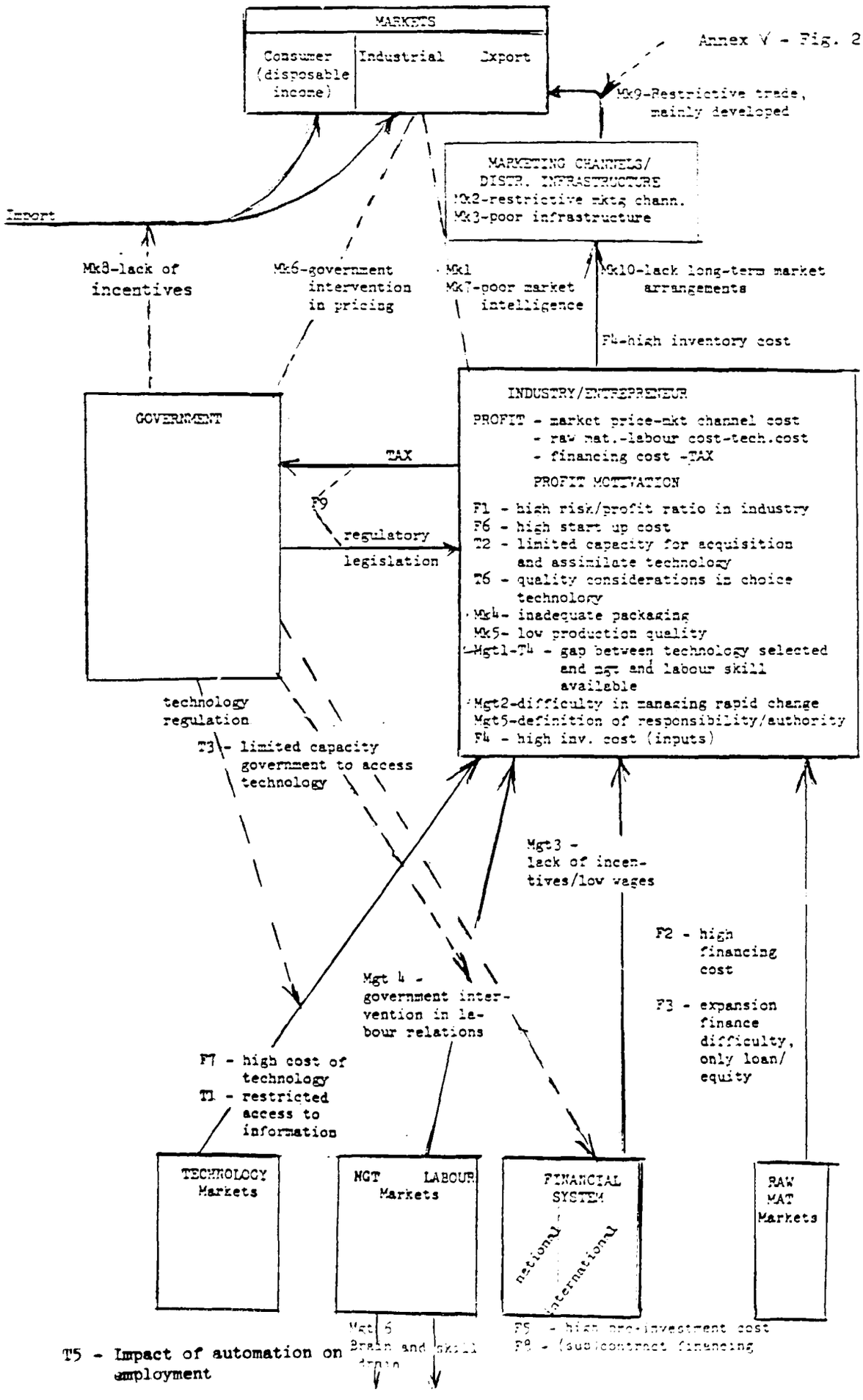
(b) There is a lack of clear definition of authority, responsibility and accountability among the three parties possibly resulting from a desire to preserve freedom of action and flexibility by the three partners. As a consequence, some projects suffered from poor management and lack of quality control;

(c) Often the need to harmonize the views of the three parties involved tended to produce a lower common denominator with respect to the rigour and clarity of design;

(d) Frequent changes in tripartite staff at all levels adversely affected the understanding of project objectives and the strategy and also affected the supervision of some projects with corresponding poor results.


PROBLEM IS FELT HERE
PROBLEM ORIGINATES HERE AND SOLUTION MUST START HERE
CONSUMER
INDUSTRIAL BUYER
1. POOR MARKET INTELLIGENCE
2. MARKET SYSTEM RESTRICTIVE AND COSTLY
3. INADEQUATE INFRASTRUCTURE
4. INADEQUATE PACKAGING
5. LACK OF LONG-TERM MARKETING AGREEMENTS
6. RESTRICTIVE TRADE PRACTICES, MAINLY BY DEVELOPED COUNTRIES
7. POOR MARKET INTELLIGENCE
ENTREPRENEUR / INDUSTRY
MGT
1. GAP BETWEEN MANAGEMENT SKILLS AND TECHNOLOGY LEVELS
2. DIFFICULTIES IN MANAGING IN ENVIRONMENT OF RAPID CHANGE
3. LACK OF INCENTIVES E.G. CAREER DEVELOPMENT, INCOME
4. INADEQUATE DEFINITION OF RESPONSIBILITIES - AUTHORITIES
5. BRAIN AND SKILL DRAIN
6. HIGH INVENTORY DUE TO INEFFICIENT MARKETING AND STOCK-PILING OF RAW MATERIALS / SPARE PARTS (IMPORT PROBS)
7. HIGH START UP COSTS E.G. MGT. TRAINING
TECH
8. RESTRICTED ACCESS TO INFO ABOUT TECHNOLOGY (NEED)
9. LIMITED CAPACITY AND MEANS FOR ACQUISITION/ASSIMILATION OF TECHNOLOGY.
10. GAP BETWEEN LABOUR SKILLS AND TECHNOLOGY REQUIREMENTS
11. QUALITY STANDARDS (IMPORTANT FOR EXPORT MARKETING)
12. COST OF TRANSFER OF TECHNOLOGY FROM OUTSIDE SUPPLIER
GOVERNMENT
13. MANAGEMENT AND LABOUR PROBLEMS ACCENTUATED BY GOVERNMENT INTERVENTION
14. HIGH INTEREST RATES ON INDUSTRIAL LOANS
15. LOAN/EQUITY FINANCING BY A THIRD PARTY (AND BANK)
16. LEGISLATION (LABOUR, WAGES ETC)
17. LIMITED GOVT. CAPACITY FOR TECHNOLOGY ASSESSMENT
18. IMPACT OF AUTOMATION ON EMPLOYMENT
19. LACK OF INTEREST IN INDUSTRIAL INVESTMENTS
20. GOVT. INTERVENTION E.G. PROTECTION OF INFANT INDUSTR, MONETARY POLICIES RE EXPORT
BANKS
21. COSTLY TECHNO-ECONOMIC STUDIES REQUIRED BY BANK
22. FINANCE OF SUBCONTRACTING
23. HIGH COST OF COMMERCIAL LOANS

Annex V - Fig. 2


MARKETS
Consumer (disposable income)
Industrial
Export
Mx9-Restrictive trade, mainly developed
MARKETING CHANNELS/ DISTR. INFRASTRUCTURE
Mx2-restrictive mktg chann.
Mx3-poor infrastructure
Import
Mx8-lack of incentives
Mx6-government intervention in pricing
Mk1
Mk7-poor market intelligence
Mx10-lack long-term market arrangements
F4-high inventory cost
GOVERNMENT
INDUSTRY/ENTREPRENEUR
PROFIT - market price-mkt channel cost
- raw mat.-labour cost-tech.cost
- financing cost -TAX
PROFIT MOTIVATION
F1 - high risk/profit ratio in industry
F6 - high start up cost
T2 - limited capacity for acquisition and assimilate technology
T6 - quality considerations in choice technology
Mx4- inadequate packaging
Mx5- low production quality
Mgt1-T4 - gap between technology selected and mgt and labour skill available
Mgt2-difficulty in managing rapid change
Mgt5-definition of responsibility/authority
F4 - high inv. cost (inputs)
TAX
F9
regulatory legislation
technology regulation
T3 - limited capacity government to access technology
Mgt3 - lack of incentives/low wages
F2 - high financing cost
F3 - expansion finance difficulty, only loan/ equity
Mgt 4 - government intervention in labour relations
F7 - high cost of technology
T1 - restricted access to information
TECHNOLOGY Markets
MGT LABOUR Markets
FINANCIAL SYSTEM
national
international
RAW MAT Markets
Mgt 6
F5 - high pre-investment cost
F8 - (sub)contract financing
T5 - Impact of automation on employment

Annex IV

SUPPLEMENT TO RECOMMENDATION NO. 2

A proposal to reorient industrial research to solve more substantial industrial problems which either affect an entire industrial sector or have far-reaching impact at the national level

1. The local UNDP office (or a UNIDO mission) may co-operate with the proper local government agency (Ministry of Industry, Ministry of Development, Industrial Development Corporation, Ministry of Natural Resources, etc.), in trying to identify a small group of important problems at a national level that will meet the following criteria:

(a) That the problem be amenable to solution through the development of a suitable technological system possibly requiring a multidisciplinary approach (e.g., the development of self-sufficient solar energy system to supply reliable energy for communication or similar needs in remotely located villages; the development of alternative sources of energy for an oil-poor country; the development of a rapid transit system for a rapid-growth community when normal systems may not be applicable).

(b) That the development of the technological system be predicated on locally available industrial technology and utilize industrial products (fuels, electronic devices, transport modules etc.), which can be obtained in the country, largely through local production.

2. Having identified one or more such problems a systematic, multidisciplinary approach to their solution could be instituted at the national level. This would require the establishment of a national programme of industrial research financially supported by the Government.

3. This approach might be used, for example, in the case of an oil-poor country with the need to develop energy alternatives for oil substitution. Depending on the national resources alternatives and end-user, research activities could be undertaken in the use of methanol-gasoline blends for vehicles, in coal liquefaction to generate liquid fractions equivalent to gasoline and diesel oil and/or the utilization of forest residues to produce fuel-briquettes.

4. Research would also have to be conducted in fuel performance in vehicles, motor design modification or adoption, systems to gather and transport forest residues, systems to dispose of solid residues from the coal liquefaction plant etc. This multidisciplinary approach would require the services of university laboratories, local consultants etc. It might also be necessary to reinforce national capabilities either by subcontracting or by bringing in international experts and specialized machinery for tasks and pilot plant runs.

5. Although the Government would be responsible for financial support of a national industrial research programme, United Nations assistance to the Government would be appropriate at different levels:

(a) At the stage of problem identification and diagnosis;

(b) At the level of designing the national industrial research programme including establishment of research objectives and methods, organization and management monitoring systems etc.

6. The United Nations could also provide experts, equipment, subcontract services etc., not available in the country. United Nations assistance could be concentrated on only one problem identified at the national level, or on several.

7. The end-product of this proposed research programme would be a recommendation on the technology most adequate to solve a given problem together with a feasibility study on how to integrate the recommended technology with the local manufacture of industrial products (synthetic fuel blends, domestic appliances to use the synthetic fuel, equipment for collecting and processing forest residue etc.).

8. The purpose of this approach is to use a research and development approach to solve a national problem through the use of local resources and the development of local capabilities.

ANNEX VII

COMMENTARY ON JOINT INSPECTION UNIT EVALUATION ON SRI LANKA AND OTHER RELEVANT STUDIES

JIU, "Evaluation of technical co-operation activities of the United Nations system in Sri Lanka" (JIU/REP/79/16)

In commenting on the approach and methodology used, the JIU inspectors noted that an analysis of the broader impact was constrained by a number of factors, among them: (a) many projects do not yet focus on results, measure progress, or establish a relationship to higher-level development objectives or sectoral priorities; and (b) considerable gaps still exist in project documentation and design (para. 15). Deficiencies in project design and management were found across-the-board in the Sri Lanka evaluation (paras. 44-46 and 72) involving both UNDP and agency-funded projects and a large number of executing agencies, including UNIDO. These deficiencies were noted in both the preliminary and in-depth "manufactures" evaluations.

In the Sri Lanka exercise, the assessments indicated that in about 70 per cent of the cases the projects produced their expected outputs, that these outputs generally contributed to desired results, and that the immediate objectives of the project were achieved very well or moderately (or were being achieved for all projects still active) (para. 66). Regarding impact, the assessment of project contribution to higher-level objectives "...was even more uncertain...the project's contribution to broader objectives appeared to be fairly evenly distributed along the spectrum from very good to not at all, with a fair number of cases in which the contribution had to be considered indeterminate." (para. 67). These results are consistent with the findings discussed in sections B and C above.

Finally, in discussing "reviews and evaluations" the inspectors expressed concern (para. 143) "...that tripartite reviews too often become bogged down in operational detail, and that the poor design of many projects makes it difficult to assess progress," which is being confirmed by this study.

CCSQ Report on Evaluation

Evaluation,(ACC/1980/OPPG/2),12 February 1980

At the request of the joint secretariats of the CCSQ sub-committee on Operational Activities and Programme Matters, a paper was prepared summarizing the critical problems, reported by United Nations organizations and cited in evaluation reports, impeding effective use of evaluation in the United Nations system. Among the contributing factors suggested were an uneven application of existing evaluation policies and methodologies and absence of technical pre-conditions including the following shortcomings (para. 16):

- vague descriptions of problems being addressed, objectives, outputs and work programmes;
- confusion of means with ends and the absence of clear statements of causative linkages;
- failure to take adequately into account external factors (critical assumptions);
- absence of baseline data; inability to determine the "before" of the project/programme status in order to make a comparison with the "after" status at the time of evaluation;
- absence of progress and end-of-project status indicators;
- lack of performance-related targets and reporting thereon; and
- incomplete or qualitatively inadequate documentation

Others, germane here, included (a) resistance to change - the "human factor", (b) insufficient clarity on roles and responsibility for evaluation (and, presumably, quality), (c) non-compliance with existing policies and procedures and absence of incentives, and (d) failure to integrate evaluation into the total project management cycle.

Thematic Evaluation Studies

Evaluation: Joint UNDP/UNIDO evaluation of industrial research and service institutes, (ID/B/C.2/86/Add. 1), 21 November 1972

Similar deficiencies in the project cycle and management system have been disclosed in almost every one of the joint UNDP/Agency thematic exercises conducted to date. The most recent exercise involving UNIDO concerned an evaluation of industrial research and service institutes (IRSIs). The inventory of 110 projects represented a total UNDP contribution of nearly $55 million. The summary of the joint UNDP/UNIDO assessments is worth paraphrasing (paras. 4-8) here.

- In terms of efficiency, i.e., the quality and timeliness of the inputs supplied, neither the desk nor the field reviews revealed any problems of significant magnitude;
- Assessing the effectiveness of assistance was more difficult and required a judgement concerning the IRSI itself. UNDP and UNIDO have had little success in influencing governments (a) regarding the type of IRSI to create or strengthen, its sectoral coverage and policy objectives, or the functional activities or services it should offer, or (b) the development of strategies and plans for institutional growth, staff development and expansion of services.
- Among the more serious problems, present in one form or another in most of the projects assessed involved in providing technical co-operation to IRSIs, were:
  - failure, or lack of opportunity to work with and advise competent authorities on the establishment of an IRSI, policy objectives and strategies, and on actual or potential demand for services - before a request for assistance is set in concrete;

- uncertainty, partly as a consequence of the above, as to the impact the successful completion of a project is expected to have on a higher-level objective or industrial problem;
- insufficient clarity in project design and documentation with respect to: the institution-building function of a project; distinguishing the project objectives from those of the IRSI; specifying the intended results of project activity; and providing baseline data and verifiable indicators of progress, completion and success;
- poor [causal] relationship between work programmes and budgets on one hand, and the expected results of a project on the other;
- lack of effective programmes for staff and career development, such as on-the-job training, practical experience in industry, and staff exchanges with other IRSIs; and
- absence of reporting on impediments to the obtaining of expected results (outputs).

On the other hand, technical co-operation assistance to IRSIs has generally been responsible for:

- Strengthening the IRSIs
- Providing laboratories and experimental or pilot plants
- Providing staff training
- Introducing highly relevant research and related functional activities