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Development Centre

Expert Group Meeting on the Role and Promotion
of Subcontracting in Industrial Development

Paris, France, 6 - 11 October 1969

SUBCONTRACTING - AN ANALYSIS OF INTERNATIONAL EXPERIENCE[1]

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

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Introduction

In December 1968 UNIDO conducted a questionnaire survey on subcontracting in 42 selected developing countries. The questionnaire was designed to elicit information from developing countries having experience in subcontracting or having the necessary pre-requisites for developing it. Included in the questionnaire survey were [illegible] countries in Africa, 10 in Asia, 13 in Latin America and [illegible] in the Middle East and Europe.

For the purposes of the [illegible], subcontracting was defined as an arrangement made between a primary company (contractor) and small-scale secondary companies (subcontractors) for: 1/

(a) the supply of parts, components and assemblies that are incorporated in a product sold by the primary company, both companies being involved in manufacturing, or

(b) the processing of materials or parts that are returned to the primary company, or

(c) work on a long-term basis, including long-term jobbing.

The purchasing of general shelf items and parts and of services was beyond the scope of the inquiry.

The questionnaire was divided into three parts. Part I was designed to obtain answers to questions regarding the existence of subcontracting in the country, the industries involved, an indication of governmental assistance, or the presence of factors militating against subcontracting. Part I was answered by the United Nations expert or official in the respective country (either the UNIDO small-scale industry expert or, where none existed, other UNIDO field experts) after consultation with officials in the appropriate government departments dealing with industry. If subcontracting was found

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1/ The definition used for the Expert Group Meeting is somewhat different: "Subcontracting is a contractual arrangement between a primary company (contractor) and a secondary company (subcontractor) for:
(a) the supply, by the subcontractor, on order from the primary company, of parts, components, sub-assemblies and assemblies that are thus incorporated in a product sold by the primary company, both companies being involved in manufacturing,
(b) the processing of materials for the primary company - whether the materials are provided by it or not - and the processing or finishing of parts provided by, and returned to, the primary company." (ID/WG.41/2

to exist in the country, then replies to Parts II and III were obtained, wherever possible. Part II was designed to obtain information reflecting the subcontracting experience of the primary companies (contractors) while the questions in Part III were formulated to reveal the comparable subcontracting experience of the subcontractors.

The replies to the questionnaire were received by UNIDO headquarters in Vienna from February through May 1969. The response rate surpassed all expectations. Of the 42 developing countries to which questionnaires were sent, replies were received from 24 countries, representing a response rate of 57 per cent, an exceptionally high rate. Replies were received additionally from two unsolicited developing countries, thus increasing the total number of respondent countries to 26.

All 26 respondent countries submitted replies to Part I of the questionnaire. A total of 14 countries supplied replies to Parts II and III from 52 contractors and 58 subcontractors, respectively. These enterprises were involved in subcontracting operations covering a broad range of industries, thus providing UNIDO with an opportunity for assessing the subcontracting experience of developing countries from a multiple industry viewpoint.

Because of the relatively large number of questions included in the questionnaire - 16 in Part I, 19 in Part II, and 11 in Part III - and the fact that several questions contained 6, 8 or more component parts, in addition to other relevant information submitted by the respondent countries and enterprises, a considerable problem of organization, analysis and presentation of statistical data developed.

Of equal importance to the presentation of the material was the position on the part of UNIDO to treat in a confidential manner all information concerning the identification of contractors, sub-contractors, governmental departments, names of individuals etc., submitted in reply to this questionnaire. In this report, as much as possible of the original language used by both contractors and subcontractors has been maintained wherever comments are indicated.

The mode of procedure of this report is to present the analysis of the replies received on a question by question basis sequentially throughout the questionnaire. The report presents an analytical summary of the questionnaire findings, including conclusions in those areas where they are justified.

Part I - Government Department Dealing with Industry

The 10 major questions in Part I (A and B) were designed to ascertain the prevalence of subcontracting in the respective developing countries. Part I was divided into "A. Domestic subcontracting" and "B. International subcontracting". Replies to these sections of the questionnaire were provided directly, or indirectly through the United Nations expert, by an appropriate government department dealing with industry.

A. Domestic subcontracting

1. **Question:** "Does subcontracting exist in the country? Yes or No."

Answer: Of the 26 countries responding, 19 state that domestic subcontracting does exist while 7 indicate that it does not.

Yes		No
Argentina	Mexico	Honduras
Brazil	Morocco	Ivory Coast
Chile	Nicaragua	Kenya
China	Singapore	Liberia
Colombia	Thailand	Madagascar
Dominican Republic	Tunisia	Tanzania
El Salvador	Turkey	Uganda
Indonesia	United Arab Rep.	
Iraq	Zambia	
Malaysia		

1.(b) **Question:** "If yes, in which industries?"

Answer: The industries involved in domestic subcontracting are ranked below, by number (in parenthesis) of countries responding. The response shows that in those countries where subcontracting exists, it is usually practised in more than one industry.

textiles (10)
automobile parts (8)
metalworking and machinery (8)
television and other electronic products (6)
electrical appliances, including refrigerators (6)
autobikes, cycles and motorcycles (6)
furniture and woodworking products (6)
food preparation (6)
basic chemicals and petrochemicals (5)
leather products (3)
plastic products (3)
trucks, tractors and buses (3)
construction and building fittings (3)
foundry products (2)
lumber products (2)
cosmetics (2)
tires and rubber products (2)
electrical machinery (2)
pharmaceutical products (2)
shipbuilding (2)
agricultural equipment (2)
couplings (2)
toys (1)
sewing machines (1)
footwear (1)
printing (1)
engineering (1)
diesel motors (1)
animal feeds (1)
cement (1)
confectionery (1)

2. **Question:** "If the answer to the above question is no (referring to the existence of subcontracting), please ascertain which of the following reasons would apply: (more than one could apply)"

Answer: Six specific replies, plus an "other" category that permitted inclusion of any additional reply, were offered as possible responses to this question. The results for the 7 countries are as follows:

Reasons Why Subcontracting does not Exist	No. of Countries
Insufficient industrialization exists to enable development of subcontracting.	7
There is an insufficient number of large factories in industries lending themselves to subcontracting relationships.	7

Reasons Why Subcontracting does not Exist (cont.)	No. of Countries
The small-scale industry sector is at present insufficiently developed, specialized or efficient to participate in subcontracting.	3
There is an absence of governmental measures to promote subcontracting.	3
While there exist a sufficient number of large and small industries, there is inadequate co-operation within the private sector.	1
(Other) - The smallness of the domestic market and the variety of models and makes of automobiles are limiting factors.	1

3. **Question:** "If the answer to question 1 is yes (referring to the existence of subcontracting), please provide answers to the following:

(a) Does the Government provide special incentives for the promotion of subcontracting?"

Answer: Of the 19 developing countries in which domestic subcontracting exists, the governments of 8 countries provide special incentives while 11 countries do not.

Providing Special Incentives		Not Providing Special Incentives	
Chile	Morocco	Argentina	Iraq
China	Tunisia	Brazil	Mexico
Dominican Republic	Turkey	Colombia	Nicaragua
Malaysia	United Arab Republic	El Salvador	Singapore
		Indonesia	Thailand
			Zambia

3.(a) **Question:** "If yes, what kind?"

Answer: Five specific replies plus an "other" category were offered as possible responses to this question. The results show that the 8 countries provide the following assistance:

Special Incentives Provided by Government	No. of Countries
Management assistance	6
Technical assistance	5
Training	5
Financial assistance	4
(Other) Help subcontracting arrangements	2
(Other) Protection against imports	2
Taxation incentives	1
(Other) Promotion of subcontracting through multiple assistance measures	1
(Other) Encouragement of international subcontracting	1
(Other) Programme of industrial extension services	1

3.(b) **Question:** "Are there legislative or other governmental measures to regulate, investigate, and control subcontracting practice? Yes or No"

Answer: Fifteen of the 19 countries with domestic subcontracting replied to this question. Only 3 countries responded in the affirmative - Chile, Malaysia and the United Arab Republic.

4. **Question:** "Please evaluate the experience gained so far. Express your views on developments likely to take place in the future and suggest further measures which might need to be taken by the government."

Answer: The following remarks are a synopsis of the main views expressed by the 9 respondents to this questions:

(1) A very small Asian country states that because of the small industrial base many subcontractors do not receive a steady flow of orders. In some plants there is idle capacity while in others there is rush work. Some contractors prefer to do their own jobs when feasible. The Government believes in free enterprise and is not doing anything in particular to encourage or discourage subcontracting as such. Upon request, the Government will help industries to contact prospective subcontractors. One of the governmental units is ready to render technical advice. An International Trading Company newly formed mainly with Government capital will help international subcontracting in the near future.

(2) A large Southeast Asian country states that would-be contractors complain that there is a dearth of expertise on the part of subcontractors and this inhibits the subcontracting they would otherwise willingly do. One large international can-maker fears to order the making of stamping dies lest it give rise to copying, the law against industrial plagiarism being only partly effective.

Enquiries tend to reveal that there is little real distinction in the country between domestic subcontracting and international subcontracting. In the few cases in which international subcontracting appears to be done, it is carried out through one or another of the large foreign firms with branches here, the branch itself largely acting as a de facto contractor rather than merely as an agent.

In general, contractors subcontract only minor items and even this is sometimes under "duress" from the Government Development agency. There is, however, some voluntary subcontracting and even where firms in an industry were coerced into subcontracting, there are considerable differences in the items subcontracted. Apart from duress, the chief motivation is, of course, to avoid the additional capitalization of the contractor's own facilities for equipment which would be under-employed. In some cases, but by no means in all, costs were found to be lower when subcontracting was undertaken. Disadvantages in subcontracting arise largely from shoddy and/or delayed delivery. However, these are not overly serious and certainly not insuperable.

Contractors give very little assistance to subcontractors, either technically or financially. Assistance is largely limited to providing drawings and specifications and the subsequent giving of reasons why products are rejected. Rarely are progress payments made and even when they are, payments are well behind value of work delivered. There is little positive action taken to improve the standard of subcontracting either by the Government or by contractors.

(3) A large Asian country indicates that it is in a low stage of development with an insufficient number of large factories but with many small-scale industries. A very low level of co-operation between industrial firms exists, especially between the state-owned enterprises and the small firms in the private sector. There are no Government measures to promote sub-

contracting. The sales tax (turnover tax) on some raw materials and on intermediate products works against the development of subcontracting. Yet, keeping in mind the many small-scale industries and the faster development of medium-sized and large-scale industries within a competitive environment, it is assumed that subcontracting will increase in the future. The Government should abolish the sales tax on intermediate goods and take some organizational and legal measures to promote subcontracting.

(4) An Asian country in a more advanced state of development points out that without specific legislation the Government is encouraging the use of subcontracting through its "satellite industry" system. This programme encourages the clustering of contractors and subcontractors in specific areas to take advantage of available labour markets and/or sources of raw materials. The Government renders assistance to small firms by way of diagnostic surveys, low-cost loans and free management advisory services.

Contractors favour subcontracting to gain capacity, specialized production technology and lower costs. They state that they offer assistance in the form of counselling and training in management and technique. They seldom offer financial help.

Contractors find fault with their subcontractors' "undependable" delivering and non-uniformity of product. They want their subcontractors to improve the quality of their product by establishing statistical quality control programmes and improved processing techniques. The contractors feel they may assist in this direction by providing more jigs and fixtures.

Subcontractors favour contractual arrangements because they permit stable and specialized production, and a means of expanding output.

Subcontractors uniformly require more types of financial assistance. They uniformly object to the instability in the contractors' production scheduling.

Subcontractors represent an interesting example of the direct effects of Government action. Seemingly necessary legislation about the use of less than 50 cc motorcycles had a disastrous effect on small subcontractors until the legislation was rather quickly changed. Such discretionary decisions upon components of the business system can be very serious and illustrate the need to view the entire effects (system studies) of all legislation before its enactment.

(5) A very small Central American country states that it is necessary to establish within the plan to promote small-scale industry a programme specially designed to develop subcontracting, particularly from the financial and technical aspects. Such a programme should include public credits for working capital for small industries, technical assistance at the plant level and subcontracting exchanges. Such programmes of assistance should be carried out by responsible governmental agencies. It is also necessary to establish fiscal incentives so that the primary industries would want to obtain their component parts locally rather than to rely on imports.

The level of subcontracting remains limited because in many industries small firms have not acquired the necessary technical competence. Small firms still do not have the specialization required to substitute for imported components. There is insufficient contact between large and small industries, partly due to the absence of information and research concerning the present state of subcontracting and its potential for the future. There is a lack of fiscal incentives along with a lack of a specific Government programme for the development of subcontracting.

(6) A South American country in an intermediate stage of development points out that, in the appropriate Government Bureau for Industry, studies have been made on 124 different subcontracting cases on the basis of requests by 47 primary companies. Subcontracting possibilities have been worked out for 32 large and medium-sized firms which have resulted in subcontracting arrangements with 104 subcontractors, of which [illegible]1 are small-scale industrialists.

(7) Domestic subcontracting in a small Central American country is at a beginning stage. Up to now it is not practised as a bilateral agreement; the norm is that large enterprises make a production arrangement with small firms in a manner that suits their (large industries) convenience. It is hoped that this situation will improve in the future.

(8) In one of the more advanced, large Latin American countries, an appreciable number of the industrial firms that practise subcontracting are included in a government development programme in which domestic firms along the frontier zone with a highly developed country are permitted to import various types of raw materials whenever they are incorporated in products destined for export. This has given an impetus to subcontracting especially in the electronic, chemical and mechanical industries. Additionally, several industries in the interior of the country have reached an agreement with firms located in the frontier zone through which subcontracting has occurred in the automobile, textile and pharmaceutical industries. Subcontracting is also practised by many firms involved in assembly work.

(9) In one of the large Middle Eastern countries, the heaviest demand for subcontracting originates from large-scale industries who rely on imports to satisfy their needs for ready-made components, parts or processed materials. Subcontracting appears to develop where several large-scale industries become candidates for the same part, component or processed material, thus establishing a stimulant that attracts local entrepreneurial capital. The sizable demand created by the large industries justifies establishment of local subcontracting enterprises. Subcontracting industries developed from precisely such conditions. None developed as a result of a planned strategy or the institution of special promotional incentives.

A special case has developed in this country which sprang from the socialist reforms which converted top large-scale industries into a de facto monopoly of the state. Private industry was restricted essentially to small-scale industry. Consequently, large-scale industry developed slowly whereas small-scale industry grew fast. There is thus a disproportionate number of small-scale industries (potential subcontractors) with an insufficient number of primary contractors (large-scale industries) to work for. The solution to the problem could be as follows:

(a) The role of the state in industrial development should be defined. Are state and private capital to share the task of development as partners, competitors, or will they be complementary to each other?

(b) The role of foreign capital should be clarified.

(c) The industries where private capital is free to invest should be defined and,

(d) Industrial openings should be surveyed continuously and information published periodically so as to attract private capital on a selective basis.

B. International subcontracting

For the purposes of the questionnaire, international subcontracting was defined as an arrangement between a foreign prime contractor (usually a large international concern) and small-scale domestic secondary companies (subcontractors) in developing countries.

1. Question: "Does international subcontracting exist in your country? Yes or No."

Answer: Of the 26 countries responding, international subcontracting is carried out in 13. Only 1 of the 13 countries (Honduras) does not engage also in domestic subcontracting.

Yes	No
Brazil	Argentina
Chile	China
Colombia	Indonesia
Dominican Republic	Ivory Coast
El Salvador	Kenya
Honduras	Liberia
Iraq	Madagascar
Mexico	Malaysia
Nicaragua	Morocco
Singapore	Tanzania
Thailand	Turkey
United Arab Republic	Uganda
Tunisia	Zambia

2. **Question:** "If the answer to the above is yes (referring to the existence of international subcontracting) please indicate which industries are involved and the type of subcontracting done (manufacture of parts or components, assembly, etc.)"

Answer: International subcontracting is confined to a smaller number of industries than domestic subcontracting. The industries involved in international subcontracting are listed below by number of countries responding.

automotive parts and components (3)

bus and truck assemblies (2)

cosmetics (2)

tractor components and assembly (2)

parts and components for the construction industry (1)

assembly of integrated circuits and transistors (1)

furniture, television, radios, boilers, railroad cars (1)

dresses, detergents, trailers (1)

pulp, fruit, confection, luminous signboards for advertising (1)

hydroelectric "projects" (1)

The next two questions are being considered jointly because of the similarity of the replies received.

3. and 4.

Questions: "Are any measures taken (or is any assistance provided) by the Government to safeguard the interests of domestic small-scale subcontractors engaged in international subcontracting?"

Answers: The replies show that governmental protection or assistance measures exist in 3 countries - Colombia, Tunisia and the United Arab Republic. Domestic small-scale industries receive governmental assistance in:

(a) tax reduction schemes

(b) training through such facilities as National Productivity Centres

(c) purchase of raw materials and availability of capital whenever the product is for the export market

(d) provision of hard currency for purchasing equipment.

5. __Question:__ "Is there any centralized export marketing organization for the benefit of subcontractors in your country?"

__Answer:__ Only 2 respondents to this question replied in the affirmative - Colombia and Singapore.

6. __Question:__ "Does the Government of the developing country intend to promote international subcontracting in its future development plans?"

__Answer:__ The replies reflect a promising trend in this direction. Fourteen countries indicate "yes", 4 state "no" and 2 are uncertain.

Part II - Answers Provided by the Contractors

The 16 major questions in Part II were formulated to obtain information concerning the subcontracting experience of the large and medium-sized contractors. The replies were provided directly by the owners or leading officers of the primary companies, thus reflecting an assésessment of subcontracting from their viewpoint. A total of 52 contractors from 14 countries replied to the question in Part II. The distribution is as follows:

Country	Number of Contractors Responding
Argentina	5
Brazil	1
China	5
Colombia	4
Dominican Republic	2
El Salvador	6
Indonesia	1
Iraq	2
Nicaragua	1
Singapore	9
Thailand	12
Tunisia	1
Turkey	1
United Arab Republic	2
	52

The first question deals with the respondent's preference for confidentiality. All replies are maintained confidential by the Secretariat of UNIDO.

2. <u>Question</u>: "What products do you manufacture?"

<u>Answer</u>: The products manufactured by the primary companies cover a broad spectrum and are ranked below by number (in parenthesis) of contractors responding.

automobiles, trucks, buses, wagons, jeeps - (11)
refrigerators and freezers - (5)
radios, television sets, portable radios - (5)
motorcycles - (4)
electric motors - (4)
leather, rubber and plastic footwear - (4)
electric fans - ([illegible])
air conditioners - ([illegible])
sewing machines - (2)
watt-hour meter clocks - (2)
aluminium and stainless steel shutters - (2)
water pipe fittings and castings - (2)
stainless steel kitchen equipment - (2)
fire fighting vehicles and equipment - (2)
conveyors, generators and pump sets - (2)
soap - (2)
office and domestic furniture - (2)
rice cookers - (1)
transformers - (1)

electric irons - (1)

biscuits - (1)

tin cans and tubes - (1)

carbonate soda, chlorine, bicarbonate - (1)
and hydrochloric acid - (1)

battery, electrical systems - (1)

railroad cars - (1)

building structures - (1)

fruit and vegetable concentrates - (1)

lamps, transport equipment, toys - (1)

curing and tanning of leather - (1)

bathtubs, closets, kitchen cabinets - (1)

textiles - (1)

vegetable oils and seed extracts - (1)

3. <u>Question:</u> "What products, parts and components are manufactured or processed by your subcontractors?"

<u>Answer:</u> The industrial activities performed by the subcontractors are ranked below, by number (in parenthesis) of contractors responding. The most important single activity is the manufacture of automobile parts.

Automotive parts of all kinds (1[illegible]) a/

Cast iron, steel and plastic parts, packaging materials (6)

leather and textiles ([illegible])

instrument parts and furniture ([illegible])

electrical generators, pulleys, water pumps, wheel gears (2) fan net, television wooden base, gaskets, handle screws, poly-vinyl-chloride parts (2)

commercial refrigerators and pumps (2)

upholstery, metal fittings (2)

chairs, tables, cupboards (2)

chemicals (2)

bricks and tiles (2)

special moulds and wooden frames (2)

plastic caps and necks (2)

assembly and erection of doors and windows (2)

bus bodies made from aluminium sheets (1)

galvanized and electro-plated steel structure (1)

valves, nozzles and base nuts (1)

bulk soap (1)

dials, cases, bands for watches (1)

casting of aluminium and iron parts, forging (1)

elastic binding (1)

tin plate printing (1)

bulk biscuits (1)

machinery equipment and parts (1)

footwear parts (1)

plastic moulds and handles (1)

iron hoops (1)

vignettes (1)

joists (1)

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a/ Four of these 18 enterprises reported that their subcontracting operations related to the manufacturing of over 200 different parts.

4. **Question:** "How long have you been subcontracting?"

Answer: Forty-eight of the contractors replied to this question. The results reveal that two-thirds have been subcontracting for less than 10 years.

Duration of Subcontracting Experience	Number of Respondents
Under 1 year	3
1 through 3 years	16
4 through 6 years	9
7 through 9 years	4
10 through 14 years	5
15 through 19 years	4
20 through 24 years	3
25 years or more	3
"Several" years	1

5. **Question:** "How many subcontractors do you have?"

Answer: Fifty-three contractors replied to this question. The results indicate that 65 per cent of the contractors have more than 1 subcontractor and 45 per cent more than 5 subcontractors.

Number of Subcontractors per Contractor	Number of Respondents	Per Cent of Respondents b/
Only one	8	15
2 - 5	21	40
6 - 10	5	9
11 - 15	4	7
16 - 25	-	-
26 - 50	1	2
51 - 100	4	7
101 - 200	4	7
201 - 500	4	7
Over 500	1	2
"Several"	1	2
Total	53	100 %

b/ Throughout this report percentages may not add up to 100 due to rounding.

6. Question: "What is the value of your subcontracting?"

Answer: A total of 39 contractors replied to this question, of which 29 replied in absolute value terms and 10 in terms of percentage of total output. The results show a broad distribution in the value of subcontracting. In no case did subcontracting represent more than 70 per cent of total output.

Value of Subcontracting	Number of Respondents	Per Cent of Respondents
Less than $ 25,000 per annum	7	24
$ 26,000 - 49,999	2	7
$ 50,000 - 99,999	1	3
$ 100,000 - 499,999	7	24
$ 500,000 - 999,999	2	7
$ 1,000,000 - 5,000,000	8	27
Over $ 5,000,000	2	7
Total	29	100 %

Subcontracting as a Percentage of Total Output	Number of Respondents	Per Cent of Respondents
1 - 10	1	10
11 - 20	3	30
21 - 30	2	20
31 - 40	1	10
41 - 50	-	-
51 - 60	2	20
61 - 70	1	10
Over 70	-	-
Total	10	100 %

7. **Question:** **"What is the approximate average size (number of employees) of these subcontracting firms?"**

Answer: Forty-two contractors replied to this question. Over 80 per cent of the subcontractors had less than 100 employees. Thirty-eight per cent had under 25 employees while 45 per cent had 26 to 100 employees.

Average Employee Size of Subcontracting Firms	Number of Respondents	Per Cent of Respondents
Under 5	-	-
6 - 10	6	14
11 - 15	2	5
16 - 25	8	19
26 - 50	9	21
51 - 100	10	24
101 - 200	3	7
201 - 500	1	2
501 -1000	-	-
Over 1000	3	7
Total	42	100 %

8. **Question:** "What motivated you to subcontract?"

Answer: Four major factors, plus an "other" category, were offered as possible replies to this question. More than one factor could be selected by the 53 respondents, whenever applicable. The results show that the contractors were motivated mainly by cheaper costs and the specialized techniques of the subcontractor.

Reasons	Number of Respondents	Per Cent of Respondents
(1) Cheaper costs c/	50	94
(2) Spezialized techniques of subcontractor	37	70
(3) Desire to build up alternative sources of supply	18	34
(4) Limited capacity of own plant	16	30
(5) Other:	21	40
(Volume of business does not justify expansion of existing facilities - 5)		(9)
(Avoid capitalization on equipment - 4)		(7)
(Agreement with Government to develop local subcontracting - 4)		(7)
(Import savings and/or restrictions - 2)		(4)
(Easier supervision and faster completion of job - 2)		(4)
(Other individual reasons include:		
no labour troubles - 1		(2)
willingness to help toward national progress - 1		(2)
periodic insufficient capacity - 1		(2)
scale of local production limited due to uncertainty of Government policy - 1)		(2)

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c/ The relative importance of the cost factor was as follows: labour - 20, machinery - 18, other - 12.

9. **Question:** "Was governmental assistance available to your firm to facilitate subcontracting arrangements?"

Answer: Of the 4[illegible] contractors replying to this question, only one-third (16) indicated that government assistance was available.

10. **Question:** "If the above is yes, to what extent?"

Answer: The governmental assistance available to the 16 contractors was often of more than one type. Of those receiving assistance, over one-half received technical assistance while one-third received financial assistance.

Type of Governmental Assistance	Number of Respondents	Per Cent of contractors receiving assistance
Technical	9	56
Financial	6	37
Management	3	19
Training	3	19
Other assistance:	9	56
(Tariff reduction - 4)		(25)
(Government puts us in touch with appropriate subcontractors - 3)		(19)
(Tax concessions -2)		(12)

11. **Question:** "What kind of assistance do you offer your subcontracting firm?"

Answer: Forty of the 53 contractors, or 75 per cent, provided assistance to their subcontractors. The contractors often provided more than one type of assistance. Of these firms providing assistance, over 85 per cent granted technical assistance.

Type of Contractor Assistance	Number of Respondents	Per Cent of Contractors Providing Assistance
Technical	35	87
Financial	24	60
Raw materials	20	50
Training	12	30
Management	10	25
Gauges, jigs, dies and tools	10	25
Other assistance (Medical)	1	3

12. **Question:** "What advantages have you derived from subcontracting?"

Answer: Any, or a combination, of 6 specific responses, plus an "other" category could be selected. Most of the 53 respondents indicated more than one advantage gained. The advantage of cost reduction was selected by 75 per cent of the contractors.

Advantages Derived	Number of Respondents	Per Cent Selecting Advantage
Cost reduction	40	75
Flexibility in type of product output	25	47
Economical use of your own equipment	24	45
Ease in adjusting to demand changes	23	43
Ability to fill orders quickly	21	40
Management flexibility	10	19
Other:	9	17
(Reduced inventories - 3)		(6)
(Reduced need to import - 2)		(4)
(Reduced labour problems - 1)		(2)
(Developed technical innovation and information exchange - 1)		(2)
(Developed specialized trade - 1)		(2)
(Having developed subcontracting, we now have the right to receive Government permission to set up an additional manufacturing plant - 1)		(2)

13. **Question:** "What problems have you faced with subcontracting?"

Answer: The questionnaire offered 6 major problem areas, plus an "other" category, for selection. Most of the respondents encountered more than one problem. Delivery delays and non-conformance with specifications were the problems most encountered.

Problems Encountered	Number of Respondents	Per Cent Responding
Delay in delivery	32	[illegible]
Non-conformance with specification	30	57
Too many rejects	19	36
Weakness of subcontractor(s) management	18	34
Pricing difficulties	18	34
Negotiations with subcontractors are too time-consuming	13	24
Other:	4	8
(Suitable subcontractors are difficult to find - 2)		(4)
(Reluctance to employ modern techniques - 1)		(2)
(Inadequate quality control and analysis of raw materials - 1)		(2)

13. (b) **Question:** "Of the above, list the three most important in order".

Answer: The replies show that the most important problems are:

(1) Delay in delivery

(2) Non-conformance with specifications

(3) Pricing difficulties

14. **Question:** "What can you do to improve your subcontracting arrangements? - Please explain."

Answer: Of the 37 contractors that replied to this question, 15 , or 40 per cent, indicated that subcontracting would be improved by their providing technical and financial assistance to subcontractors.

How Can Subcontracting be Improved	Number of Respondents	Per Cent Responding
Grant technical assistance	9	24
Provide financial assistance	6	16
Provide more management assistance	2	5
Encourage use of gauges and develop quality control	2	5
Encourage subcontractors to join industrial associations	2	5
Help subcontractors to import	2	5
Help subcontractors to modernize plant, improve machinery and increase capacity	2	5
Help subcontractors to specialize	1	3
Develop parallel supply sources	1	3
Introduce long-term agreements with price flexibility	1	3
Maintain constant output	1	3
Be prepared to extend advance payments	1	3
Introduce improved planning and production control methods for the subcontractor	1	3
Constructor should not intervene	1	3
Introduce longer programming schedules	1	3
Subcontracting should be based on economic studies, and not on judgment alone	1	3
Improve planning of placing orders and securing raw materials	1	3
Introduce greater standardization of technical specifications	1	3
No general assistance can be provided; each case must be treated separately	1	3
	37	100 %

15. **Question:** "Have you made any evaluations, reports or studies pertaining to your subcontracting experience? Yes or No"

Answer: Only 6, or 13 per cent, of the 4[illegible] respondents to this question replied "Yes"; information provided by 3 of the respondents is included in replies to question 4, Part I, and question 10, Part II.

16. **Question:** "Please evaluate and comment upon your subcontracting experience."

Answer: Relevant comments on the subcontracting experience of 45 contractors were received. A summary of these comments shows the following:

Comments by contractors	Number of Respondents
The present subcontracting arrangement is satisfactory	11
The subcontracting arrangement has not turned out as satisfactory as expected. Very often delivery is delayed and the quality of the product is not up to our standard. The Government should give greater assistance, both technical and financial, so that subcontractors could turn out competitive products of acceptable quality.	6
We would like to subcontract more widely but the expertise is just not here.	3
Subcontractors lack experience and cannot always produce to the required specifications.	3

Through subcontracting we reduce management costs, increase productivity, and provide a higher standard of product for our consumers.	2
The output and capacity of subcontractors are too small for real mass production.	2
Subcontracting will improve as new manufacturing techniques, inspection and control methods come about, which assure a minimum standard of quality.	2
Some subcontractors are not interested in accepting long-term contracts at fixed prices due to the risk of price fluctuations. They prefer to have orders on a manufacturing cost basis.	1
Capacity has been well utilized, there have been good collaboration and reduced costs.	1
The contractor benefited from subcontracting because he gave a great deal of technical assistance to the sub-contractors.	1
An expert from the firm holding the vital patent in the developed country visits the area and advises on technical matters.	1
The reduced stock-holding (inventories) is welcome.	1
Most subcontractors suffer from want of funds and cannot improve their equipment.	1
Most subcontractors lack scientific management and quality control techniques.	1
Since the motorcycle industry requires more than 300 different parts, a subcontracting system is necessary and valuable.	1

Subcontracting is at an elementary level. It has not developed into an institutional arrangement whereby specialized subcontractors serve larger industries, although the trend is obviously pointing in that direction. Subcontracting became convenient for there was a captive market doubly secured by assurances of a governmental ban on imports. 1

We would not subcontract if we could justify putting up a plant ourselves. 1

Prices of our products are often higher than for imports. 1

Subcontracting proved to be a very tiresome arrangement so we decided to manufacture everything ourselves. 1

Subcontractors demand payment in advance. 1

It is more economical to subcontract for components and parts rather than purchase the machinery that would only be of limited use to us. 1

The prime contractor has no definite subcontractors. In all instances, he would call for quotations from a number of his normal subcontractors and the lowest bid will be awarded the contract. Some subcontractors may not get any work for an entire year. 1

Part III - Answers Provided by the Subcontractors

Part III of the questionnaire contained 11 major questions formulated to obtain information on the subcontracting experience of the subcontractors who might be expected to view subcontracting in a different light than the primary companies. All replies were provided by the entrepreneurs or the leading officers of the 58 responding subcontractors from 13 countries. The distribution is as follows:

Country	Number of Subcontractors Responding
Argentina	10
China	10
Colombia	1
Dominican Republic	7
El Salvador	9
Honduras	4
Indonesia	1
Nicaragua	1
Singapore	8
Thailand	4
Tunisia	1
Turkey	1
United Arab Republic	1
	58

The first question pertained to the respondent's preference for confidentiality. All replies are maintained confidential by the Secretariat of UNIDO.

2. Question: "What type of products, parts or components do you manufacture, assemble or process?"

Answer: The manufacturing, processing and assembling of products reported by subcontractors relate closely to those listed by the contractors. They are listed below by number of subcontractors responding:

Manufacturing

automobile parts - (4)
all types of plastic products - (4)
motorcycle frame and parts - (3)
nuts, bolts, washers and screws - (3)
cast iron machine parts - (3)
textiles, cosmetics, paper - (3)
suspensions, front forks - (2)
wooden TV cabinet, radio and phonograph - (2)
castings for ceiling lamps, electrical switch boxes and fittings - (2)
water pumps, brackets, filters - (2)
die-casting parts - (1)
oil tanks - (1)
oxygen, liquid gas, nitrogen, acetylene - (1)
bus bodies - (1)
upper leather for shoes - (1)
oil seals - (1)
various forms of steel structures and press tools - (1)
refrigerators, service counters - (1)
fire fighting equipment - (1)
batteries - (1)
rubber products - (1)
pens, plastic covers and containers - (1)
leather goods - (1)
toys - (1)

Manufacturing (continued)

furnace parts - (1)

chemicals - (1)

medicine - (1)

electronic parts - (1)

apparel items - (1)

Processing

TV bodies and other wooden furniture - (2)

fuel pipes, oil boxes, gears - (2)

electric motors, windshield heating, auto systems - (1)

aerosol cream - (1)

hair shampoo and deodorants - (1)

chemicals - (1)

purify lemon juice - (1)

mango pulp, tangerines, papaya, custard apple - (1)

brakes and clutch faces - (1)

leather goods - (1)

metal and rubber - (1)

torsion bars - (1)

body auto locks - (1)

auto window raisers - (1)

chrome and zinc plate - (1)

electro-galvanizing of iron and steel parts - (1)

glass - (1)

Assembly

hair setting hairspray - (1)

chemicals - (1)

clutch faces - (1)

headlights - (1)

handles - (1)

generator sets, boiler installations, switch panels - (1)

3. **Question:** "What percentage of the value of your output is solely for sale to the prime contractor?"

Answer: Fifty-seven subcontractors replied to this question. The results show a fairly even distribution pattern.

Percentage of Output Sold Only to the Prime Contractor	Number of Subcontractors
10 - 25 %	10
26 - 50	16
51 - 75	10
76 - 99	14
All	7

4. **Question:** "How has the above percentage changed in the last three years?"

Answer: Thirty-seven subcontractors replied to this question. The results show that during the last three years, 65 per cent of the subcontractors increased the percentage of their output sold solely to the prime contractor, 19 per cent reduced it, and 16 per cent had no change.

Change in Percentage Sold to the Prime Contractor	Number of Subcontractors
+ 1 to + 10 %	7
+ 11 to + 25	9
+ 26 to + 50	7
+ 51 to + 75	1
+ 76 to + 100	0

Change in Percentage Sold to the Prime Contractor	Number of Subcontractors
No change	6
- 1 to - 10 %	2
- 11 to - 25	2
- 26 to - 50	3
- 51 to - 75	0
- 76 to - 100	0

5. **Question:** "What kind of assistance do you receive from the prime contractor?"

Answer: All 58 subcontractors responded to this question. The results show that over 80 per cent of the subcontractors received assistance from the prime contractor. The assistance was generally of more than one type with technical and financial assistance accounting for the major share. About 20 per cent of the respondents received no assistance whatsoever.

Type of Assistance Received from Prime Contractor	Number of Subcontractors	Per Cent Receiving Assistance
Technical	24	41
Financial	15	26
Raw material	8	14
Gauges, jigs, dies and tools	8	14
Training	6	10
Management	4	7
Machinery	3	5
Other: (Favourable payment - 1) (Trademark - 1)	2	3
None	11	19

6. **Question:** "Do you receive technical, management or training assistance from other sources, in particular from small industry service institutes, industrial extension agencies or similar promotion organizations? Yes or No."

Answer: Of the 54 respondents to this question, about one-third (19) received assistance from other sources; two-thirds (35) did not receive any other assistance.

7. **Question:** "In your opinion is the assistance provided adequate? Yes or No (Why?)"

Answer: Thirty-eight subcontractors answered this question, of which 17 (45 %) replied that the assistance was adequate. Of the 21 respondents (55 %) who stated that the assistance was inadequate, some clarification was received from 13. The reasons given were:

Reasons for Inadequate Assistance	Number of Subcontractors
Company was excluded from the small-scale industry status and the loan was stopped.	2
The assistance offered was simply not enough.	2
The prime contractor has not developed his assistance programme effectively.	1
Technical assistance was to have been provided two years ago and it has not materialized.	1
Prime contractor should render financial assistance.	1
There is a real need for technical assistance and advice.	1

There should be an enlargement of all services provided.	1
There is no single responsible authority dealing with the problem.	1
The financial assistance provided is too restricted and too time-consuming	1
The advisers are too inexperienced, too academic, too strict and ask too many questions.	1
The agency that could provide assistance is only interested in large organizations, especially with foreign capital.	1

8. Question: "What advantages have you derived as a subcontractor?"

Answer: All 58 subcontractors responded to this question, which provided 7 possible answers plus an "other" category. Most of the subcontractors indicated that more than one advantage (an average of almost 4) had been gained through subcontracting. The results show a fairly equal distribution of advantages gained.

Advantages Gained Through Subcontracting	Number of Subcontractors	Per Cent Responding
Stability in order	40	69
Better utilization of plant and machinery	40	69
Expansion of products	38	66
Increased specialization	30	52
Increase in technical competence	28	48

Improvement of working capital position	19	33
Increase in management efficiency	15	26
Other:	9	16

(No difficulty in selling products or in collecting payment - 1)

(Increase in revenue and profit - 1)

(Experience has been so good that exports have been generated - 1)

(Large improvement in capacity output - 1)

(Better market position - 1)

(Less risk in introducing product change - 1)

(Substitution of imports - 1)

(Technical assistance for our personnel - 1)

(Possibility of merging with the contractor - 1)

9. <u>Question</u>: "What disadvantages have you derived as a subcontractor?"

<u>Answer</u>: While all the subcontractors responded to this question, the number of disadvantages amounted to about one half of the number of advantages. The question provided 6 possible answers plus an "other" category. The results show that

almost one-half of the subcontractors complain about excessive dependence on the contractor.

Disadvantages From Subcontracting	Number of Subcontractors	Per Cent Responding
Excessive dependence on contractor	26	45
Difficulty in negotiating adequate prices	20	34
Profit too low	17	29
Unreasonable demands on the part of the contractor	17	29
Delays in payment	13	22
Inability to develop market elsewhere	11	19
None	6	10
Other:	5	8

(When models change, the costs for changing moulds are not compensated - 1)

(Control of and limitation on salaries - 1)

(Insufficient lead time to programme deliveries - 1)

(Job controls are very unstable. Many workers are laid off after completing contract work while waiting for the next contract. The unsteady employment of workers tends to discourage them from taking up jobs with our company for long - 1).

10. **Question:** "As a subcontractor, what special problems do you face?"

Answer: Forty-four of the subcontractors replied to the question, with several pointing out more than one special problem encountered. The results show that the major problems concern financing and unsteady ordering.

Special Problems Encountered	Number of Subcontractors
Difficulty in raising capital to purchase adequate equipment and machinery to meet increasing market demand.	10
Orders are placed giving insufficient time for production planning, thus, no production schedule can be drawn up.	10
No special problems are encountered.	6
Working capital is inadequate	3
Contract is not on a long-term basis; therefore, it is not easy to increase specialization.	3
Purchase of raw materials is always a problem.	2
Lack of tools and moulds which must be imported or made by ourselves	2
Tariff laws do not give enough protection against imports.	2
Because of model or design change, specialized machinery cannot be introduced.	2
Contractor always changes production schedules.	2
Government policy, which always changes the size of the market, is not consistent.	2

Lack of assistance in publicizing our capability as a subcontractor.	2
No assistance from government to export.	1
Factory space and skilled labour problems.	1
Dependency on the industry.	1
Inadequate planning.	1
Problems with contractor are often political	1
We are at a disadvantage in price negotiations.	1
Contractor is too demanding	1

10.(b) Question: "What assistance would you like to obtain that could help you solve the above problems?"

Answer: The following replies, given by 31 respondents, show that financing assistance is the most desired.

Assistance Needed to Overcome Problems	Number of Subcontractors
Low interest, long-term loans	[illegible]
Financial assistance for purchasing better equipment and for working capital.	4
None	3
Government should expand and develop a tool and die-making industry locally.	2
Government should give us protection and help in finding more contractors.	2
Long-term contract (at least one year) for our production scheduling.	2
Contractor should not change orders so frequently.	2
Policy of government should be constant.	2
Free technical and general management assistance from the government to help open up export markets.	2

Government should force assemblers to buy locally.	1
Less tax on raw materials	1
Market information.	1
Government standardization	1
Assistance from the contractors.	1
Better quality of material to work with.	1
The Small Industry Development Centre to be established in 196[illegible] with UNDP assistance should be able to answer many of the problems of subcontractors.	1
Technical assistance at the plant level.	1
More lead time on production changes.	1

11. **Question:** "Would you want this assistance from the prime contractor or from the government or both?"

Answer: The replies show that assistance is desired in the following order:

Desire Assistance From	Number of Subcontractors
Both the government and the prime contractor	16
Government	9
Prime contractor	5
None	2
Other (bank)	1

Concluding Remarks

The presentation of the replies to the questionnaire is based on conventional statistical reporting procedures. The replies, in general, give a clear response to the questions raised. However, because of the international coverage of the questionnaire and the difficulties in obtaining information on subcontracting in developing countries for the first time, a few remarks are in order.

Concepts and definition of terms imply different things to different people. Information on subcontracting in the developing countries is scarce and, consequently, its definition can be interpreted differently from country to country. The definition used in the questionnaire is somewhat different from that used in the Expert Group Meeting's main background paper, "Subcontracting - Its Role in Industrial Development" (see footnote page 1 of the present paper). Yet, despite the fact that the responses reflect subcontracting conditions in 19 different countries, the data undeniably reveal a number of relevant basic findings with considerable consistency.

The replies show that subcontracting is practised in a large number of developing countries - 19 out of 26 respondents. This number does not include other developing countries, non-respondents to the questionnaire, which are known to practise subcontracting, e.g. Hong Kong, India, Israel, Pakistan, Venezuela and others. There is no subcontracting in the less developed of the developing countries, as is reflected in the responses from most of the African countries.

The replies bring out the fact that a broad range of industries are involved in domestic subcontracting. This is borne out by the replies provided by government departments, contractors and subcontractors, alike. While the manufacture of automobiles, other vehicles and cycles, electrical appliances and products and the metalworking industry account, as expected, for the most representative types of subcontracting industries, the diversity of industries included in subcontracting is striking. However, it is likely that, in the above industries, the number of parts, components and accessories is very large, but is much smaller in the other industries listed in the replies. The replies indicate that where subcontracting does not exist, it is mainly due to insufficient industrialization and to an insufficient number of large industries.

In 40 per cent of the countries practising subcontracting ([illegible] out of 1[illegible]), the governments provide various special incentives, generally through assistance in management and technique, and training. Very few (only 3) of the countries practising subcontracting have introduced legislative or other governmental measures to regulate or control subcontracting practices.

International subcontracting is, as expected, practised in fewer developing countries and in fewer industries than domestic subcontracting. Surprisingly, replies from both Argentina and China indicate an absence of international subcontracting, but this may be the result of misinterpretation of the definition included in the questionnaire. A large majority of the countries apparently intend to promote international subcontracting in the future.

The industrial products involved in subcontracting arrangements, as reported by both contractors and subcontractors, are quite similar. In several cases the products are not complementary. This is explained by the fact that (1) the subcontractors reporting are not in all cases subcontracting for the reporting contractors and (2) some subcontractors produce additional items for the open market.

Subcontracting is a relatively recent experience in most developing countries. The replies show that two-thirds of the respondents have been subcontracting for less than 10 years and over one-half for less than 6 years.

The average size of the subcontracting firms varies, but over 80 per cent have less than 100 employees, and about 60 per cent have no more than 50 employees.

The replies show that the vast majority of contractors were motivated to subcontract mainly by cheaper costs (of which labour costs were the most important) followed by the specialized techniques of the subcontractor.

Subcontracting offers different advantages to contractors and subcontractors and different problems. The replies indicate that contractors more often derive advantages of cost reduction, flexibility of product output and economical use of equipment while subcontractors generally gain through stability in orders, better utilization of plant and machinery, and an expansion of product output. Conversely, contractors complain of delays in delivery and non-conformance with specifications while subcontractors complain mainly about the excessive dependence on the contractor. It is evident that only a small proportion of subcontractors (12 per cent of the respondents) sell their entire output to the prime contractor.

Government assistance in facilitating subcontracting arrangements, while available to only one-third of the contractors, is often of more than one type, with technical and financial assistance predominating. As much as 75 per cent of the responding contractors offer assistance to their subcontractors, usually through technical, financial or raw material assistance. This is confirmed by the replies received from the subcontractors. The financial assistance is presumed to be mainly in the form of advance payments.

Two-thirds of the subcontractors indicate that assistance from small industry service institutes, industrial extension agencies, or similar promotional organizations is not available. The subcontractors are fairly evenly divided concerning the adequacy of all assistance received, with 55 per cent stating that the assistance received is inadequate. When asked which kind of assistance is most desirable, the most frequently stated reply is low interest, long-term financial assistance.

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