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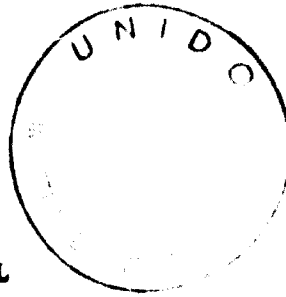
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UNITED NATIONS INDUSTRIAL
DEVELOPMENT ORGANIZATION

Distr.
RESTRICTED

UNIDO/ITD.25
September 1970

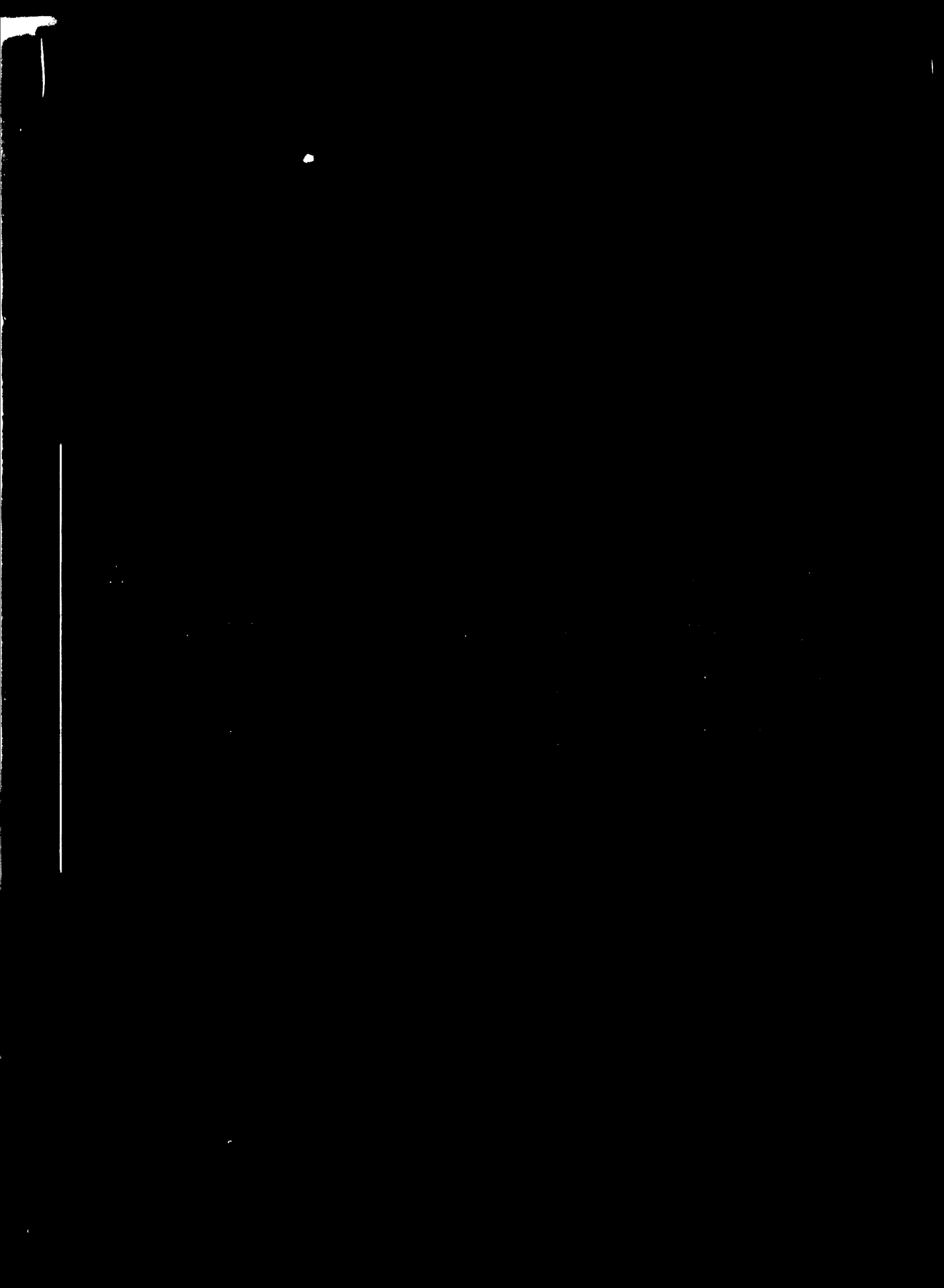
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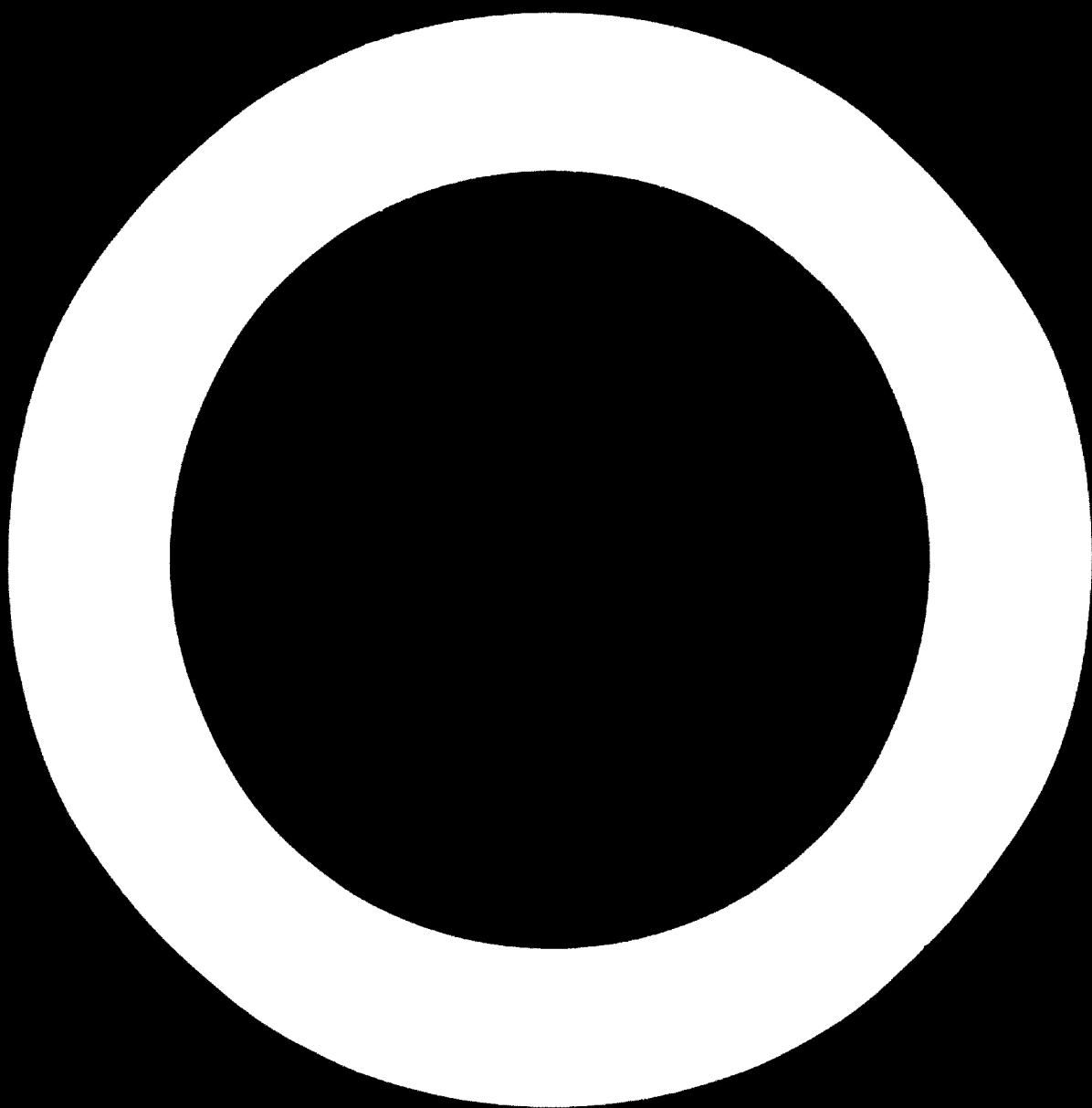
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FINAL REPORT ON THE SURVEY PACKAGE MISSION

TO INDIA

Id. 70-5216





Final Report

On the survey packaging mission to India

(December 1969)

Members of the Team: Mr. J. Fath
Chief of Industrial Sectors
Development Section,
Industrial Technology Division,
UNIDO, Vienna.

Mr. C. Killenius
Director Institute TNO for
Packaging Research,
Delft.

Review and discussion of the Proposal for the further development
of the Indian Institute of Packaging **

Contents of report:

- I Introduction
- II Changes made in the original proposal
 - Expanded objectives of the Indian Institute of Packaging
 - The Organisation
 - The Graphic Arts Section
 - The Engineering and Technical Services Section
 - The Equipment needed
 - Foreign experts and fellowships
- III Report on meetings

** A non-edited version of this report was submitted on 4 February 1970.
This Final Report contains some editorial changes only in comparison
with the previous one.

PACKAGING MISSION TO INDIA

1. Introduction:

A detailed proposal for a Special Fund request regarding the further development of the Indian Institute of Packaging was submitted to UNIDO by the Government of India. A team consisting of Mr. J. Fath, Chief of Industrial Sectors Development Section, UNIDO and Mr. C. Hillenius, Director of the Institute TNO for Packaging Research, Delft, was entrusted with the following tasks:

- a. to discuss the details of the proposal with the Indian Institute of Packaging and other interested parties;
- b. to advise the Government in the final formulation of its request.

The results of the team's activities are incorporated in the new "REQUEST OF THE GOVERNMENT OF INDIA FOR SPECIAL FUND OF THE UN TO ASSIST IN THE FURTHER DEVELOPMENT OF THE INDIAN INSTITUTE OF PACKAGING". (32 pages plus appendices)

This revised proposal could not have been prepared during the short stay of the team in the country without the previous preparatory work of the staff of the Institute and without its devoted help and co-operation. It is also very much regretted that the team could not accept the invitation to pay a visit to different parts of the country due to lack of time and the priority that was to be given to the discussion and revision of the original proposal. The new version of the proposal was mimeographed during our stay in India and was submitted to the authorities for further consideration.

The new document has the following chapters and appendices:

Chapter I	Introduction
Chapter II	Indian Institute of Packaging
Chapter III	Factors Affecting the Growth of the Institute
Chapter IV	Details of the Project
Chapter V	Expanded Objectives
Chapter VI	The Organization and Main Functions

Chapter VII	Land, Building and Facilities
Chapter VIII	Foreign Experts and Fellowships
Chapter IX	Finances
Chapter X	Conclusion
Appendix A	Memorandum of Association
Appendix B	Proposed Organisational Chart
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Appendix C	Equipment
Appendix D	
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Appendix F	Schedule of Training Courses
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Appendix J	Furniture Requirement
Appendix K	Details of Pay and Allowances of Staff
Appendix L	Expenditure - Estimates for Training and Information
Appendix M	Income Estimates for the Establishment
Appendix N	Yearwise Utilization of Foreign Experts and Fellowships Abroad
Appendix O	Details of Expenditure on Foreign Experts and Fellowships
Appendix P	Land
Appendix Q	Buildings
Appendix R	Roads, Water supply and Other Facilities
Appendix S	Staff Quarters

II. The main changes made in the original proposal

Since a new version of the original proposal was prepared and submitted to the authorities during the stay of the mission, it does not seem to be necessary to refer in this report to all the details and changes discussed in New Delhi and Bombay. We wish to limit this report to highlighting some of the aspects of more general nature that were discussed and thoroughly elaborated together with the staff of the Institute. Consultations with representatives of the packaging industry and particularly with those of the packaging materials industry were also very fruitful and offered additional insight into the tasks that should be solved by the Indian Institute of Packaging under the new conditions expected to be established with the help of the UN.

Before going into detail of what is needed, the team discussed with the staff of the Institute objectives of this organization and aimed at redefining them in order to make the Institute's activities more complete and responsive to the needs of the economy of India.

Expanded Objectives

Keeping in view the need of the industry to promote exportation, the assistance to be derived from the UN Special Fund will be primarily directed toward expanding the technical consultancy services and the testing and certification facilities. Accordingly the Institute will:

- 1) study and improve the existing packaging pattern in India for selected products;
- 2) act as a Central Testing Laboratory for testing packaging materials and packages;
- 3) assist in the standardisation of packaging materials, packages and methods, in active association with the Indian Standards Institution;
- 4) study and evaluate shelf-life of packaged products;
- 5) evaluate packages for their transportworthiness, and suggest improvements;

- 6) develop prototypes of packages for industrial products;
- 7) assist in the development of prototypes of semi-automatic and fully-automatic packaging machinery;
- 8) study the characteristics of traditional and non-traditional packaging materials produced in India, with a view to improving their functional qualities and adapting them to the changing needs;
- 9) develop, through research, newer applications for available packaging materials, and develop newer, economical and more functional packaging materials, either independently or in collaboration with other Institutions or Industrial Establishments in the country;
- 10) assess the behaviour of packaging materials during mechanised packaging processes, and suggest improvements.

In the light of the objectives as suggested above, the proposals submitted were examined in detail as follows:

- 1) The Organisation
- 2) The Tasks of some of the sections of the Institute
 - a. Graphic Arts Section
 - b. Engineering and Technical Services Section
- 3) The Equipment needed
- 4) Foreign Experts and Fellowships.

In the revised request from the Government of India which resulted from the co-operation between the Consultants and the I.I.P., the necessary changes and adjustments have been made. Some of the subjects involving initial differences of opinion are discussed below.

The Organisation

Taking into account the objectives of the Institute as regards research and development, and keeping in mind the large number of problems that will be brought up before it by

the industry, for study and advice, it was considered that the number of personnel planned for the Package Testing and Development Section, as well as for the Research Section, was insufficient. An increase in staff of two technical officers per section was considered to be a minimum requirement.

In order to prevent the Technical Officers and Assistant Directors from expending too much of their time in making and maintaining contact with the industry, and in order to emphasize that the primary function of the Institute is to offer technical consultancy services, it was proposed that the "Function of Industrial Liaison and Promotion" be introduced as a separate unit, and that this unit be staffed initially with a Deputy Director.

A number of assistants in the Administration and Secretarial Section, 56 out of a total staff of 116, was considered to be very high. It was not possible, however, for the team to go into this matter at any great length.

The Graphic Arts Section

In the original proposal of the Institute, the intention was expressed of providing the industry, if deemed desirable, with graphic designs for the packages of their products and of equipping the Institute with instruments and staff to carry out this task.

The team was strongly opposed to these plans, as such an approach would preclude any chance of solving the design problems in India, and would, moreover, give false hope to those industries that would tend to rely on the Institute to provide good design.

The team did not feel this to be the role of this Institute but felt, rather, that instead of this activity the Institute should promote professional activities in graphic design through organizing courses, lectures and competitions, as well

as through making proposals for setting up appropriate institutions in this field. It is essential that in the Training and Information Section of the Institute, capabilities be created for carrying out these promotional tasks.

The Engineering and Technical Services Section

The proposal for the Indian Institute of Packaging included plans for an Engineering and Pilot Plant Section, having a pilot plant department and a workshop.

According to the original proposal, the pilot plant department was to be equipped with experimental laminating machines - machines for plastic extrusion, experimental carton-making machinery and considerable other similar equipment. The main task of the workshop was described as being to fabricate the prototype machines and automatic innovations usually employed in packaging.

The objectives in both of the above cases were considered by the team to be unrealistic, for many reasons. Concerning the proposed pilot plant activities, it must be said that the technical staff planned for this section of the I.I.P. is far too small to carry out the activities which have been proposed. The investments needed for this type of research alone would require at least \$ US500,000 if one is to carry out research in this field which will be significant in to-day's packaging world. Much the same could be said about the plans to fabricate, in the workshop, prototype machines and automatic innovations in packaging. The development of machinery for packaging is a highly specialized business, and it is unrealistic to assume that, in such an advanced industry, one Assistant Director, with only one technical officer and some assistants, can produce economically justified innovations and developments in packaging machinery.

After thorough discussions with representatives of the Indian Institute of Packaging and those of the industry, it was agreed that an Engineering and Technical Services Section be

proposed with the following tasks:

1. to assist in the development of packaging machines in India by locating the areas where such machines are in great demand;
2. to develop designs and assist in their fabrication;
3. to fabricate prototype testing instruments in collaboration with other sections of the laboratory and industry; and
4. to assist the various units in the laboratory in their developmental work as well as maintenance.

The Equipment Needed

Keeping in view the "expanded objectives" of the Indian Institute of Packaging, as enumerated on pages 4-5 of this report, it seems apparent that the lists of equipment, as they appeared in the original proposal, did not harmonise with these objectives. Too much emphasis was given to equipment to be used for fundamental research-type work and too many instruments were listed that do not belong in a packaging laboratory.

For these reasons it was necessary to make a partial revision of the lists of equipment.

In revising the lists, it was at this stage impossible to separate instruments that have to be imported from instruments that are indigenously available, and it is with this in mind that the following lists of items to be provided are made.

LIST OF ITEMS TO BE PROVIDED AT THE VARIOUS UNITS OF THE INSTITUTE

MATERIALS TESTING EQUIPMENT

for instance: Mullen tester
Tear tester
Stiffness tester
Puncture tester
Tensile tester
Water vapour transmission tester

Gas transmission tester

Thickness gauges

Hardness tester

and others -

To be imported \$ 65,000

Indigenous \$ 5,000

\$ 70,000

PACKAGE TESTING AND DEVELOPMENT EQUIPMENT

Transport Packaging

for instance: Inclined plane tester
Drop tester
Compression tester
Vibration tester
Bump tester
Revolving drum, 14 ft.
G.E. cushioning meter
Climatic rooms
and others -

To be imported \$ 110,000

Indigenous \$ 10,000

\$ 120,000

PACKAGE TESTING AND DEVELOPMENT EQUIPMENT

Retail Packaging

for instance: Humidity cabinet
Vacuum/gas heatsealer
Impulse heatsealing machine
Pressure gauge for can testing
App. for extracting gas from cans
and others -

To be imported \$ 35,000

Indigenous \$ 5,000

\$ 40,000

RESEARCH EQUIPMENT

Biological photo microscope and attachments
Recording potentiometer
Gas Chromatography equipment
Humidity and temperature recorder
Spectrophotometer
Hand film applicators
Hand operated laboratory roller coater
and others -

To be imported \$ 80,000

Indigenous \$ 10,000

\$ 90,000

ENGINEERING AND TECHNICAL SERVICES EQUIPMENT

Bench drill
Portable drill
Electric welding unit
Gas welding unit
Air compressor
and others -

To be imported \$ 5,000

Indigenous \$ 20,000

\$ 25,000

LIBRARY EQUIPMENT

Technical books on packaging and related fields
Back numbers on a restricted number of trade journals
Subscriptions to journals
Back book shelves
Index card cabinets
and others -

To be imported \$ 20,000

Indigenous \$ 2,000

\$ 22,000

TRAINING EQUIPMENT

Chalk boards
Flannel boards
Overhead projector
Slide projector
Film projector
and others -

To be imported -----
Indigenous \$ 5,000

 \$ 5,000

Publications equipment	— not to be specified —	\$ 3,000
Graphic arts	"	\$ 3,000
Laboratory glassware	"	\$ 10,000
Etching equipment	"	\$ 3,000
Office equipment	"	\$ 16,000

For purposes of training Industries' Personnel, duplicate sets of selected items from among those indicated above should be obtained.

The equipment detailed under the various headings is not limitative. The instruments are typical for the various planned sections of the Institute and should be a guideline for those who are going to decide upon the equipment ultimately to be purchased.

The amounts given under the various headings are fair estimates of the costs involved, as to the division into imported and indigenous equipment.

There should also be provided the possibility of making slight adjustments in the amount of \$ 124,000 for imported equipment and \$ 77,000 for indigenous equipment.

FOREIGN EXPERTS AND FELLOWSHIPS

In order to be of service to the industry, the Institute should have suitably trained personnel. In the initial stages of development, it is necessary to obtain the services of foreign experts in the specified field of packaging technology, who will guide their counterparts in the Institute in the respective areas. It is also necessary to get the Institute's personnel trained in specialized institutions abroad, who, on their return, will be able to apply the knowledge and experience gained, in solving the problems of the Industry.

The requirements of experts and fellowships during the three-year period of the project are indicated below:

Foreign Experts	- 96 man months at a cost of about
	\$ 208,000.
Fellowships (6 months each) - 60 man months)	at a cost of about
Fellowships (2 months each) - 20 man months)	\$ 68,000.

III Report on Mission

12 December 1969

**13, 14, 15, 16, 17 December
1969**

16 December 1969

Arrival Bombay

Discussions with :

**Major N.V.N. Iyengar, Director, Indian
Institute of Packaging**

**Mr. N.N. Subramanian, Secretary Indian
Institute of Packaging**

Afternoon meeting with:

**Shri. H.N. Kapadia, Poysha Industrial Co. Ltd.,
Manufacturers of Tin-Plate, Collapsible
Tubes.**

(Vice Chairman of the I.I.P.)

**Shri. S.B. Cadre, Hoechst Dyes and Chemical
Ltd., Manufacturers of High Density
Polyethylene.**

**Mr. D.A. Rees, Komtek Plastic Mfg. Ltd.,
Mfrs. of Plastic Moulders.**

**Shri. Ramesh Datt, The Metal Box Co. of
India Ltd., Paper Group, Paper Conversion.**

**Shri. B.K. Joshi, Sanatik Paper Industries,
Mfrs. of Corrugated Board. (Member of the
Governing Body of the I.I.P.)**

**Shri. S.C. Agarwal, Sunwell India Private
Ltd., Mfrs. of Corrugated Board.**

**Shri. Y.A. Vasiralli, Vasir Glass Works Ltd.,
Mfrs. of Glass.**

**Shri. S.N. Chikramane, Union Carbide India
Ltd., Mfrs. of Low Density Polyethylene.**

**Shri. S.P. Chavan, Parle Products Private
Ltd., Mfrs. of Biscuits.**

**Dr. L. N. Kaul, Roche Products Ltd.,
Mfrs. of Pharmaceuticals.**

Arrival Delhi.

**Meeting with Resident Representative of
UNEP Mr. John McDonald**

**Mr. Vladimir Morozov (Assistant Resident
Representative)**

18 December 1969

Mr. J.H. Lascelles, UNIDO Field Adviser

Meeting with Mr. N.J. Kamath, Jt. Secretary, Ministry of Industrial Development, Internal Trade and Company Affairs, and others in the National Commission for Co-operation with UNIDO.

19 December 1969

Meeting at the Indian Institute of Foreign Trade with :

Shri. N. Sengupta, Chief.

Shri. R.S. Desphande, Chief

Shri. P.B. Brahma, Chief.

Dr. H.B. Desai, Associate Professor.

Shri. S. Kalia, Deputy Chief.

Shri. N. Parthasarathy, Assistant Chief.

20 December 1969

Meeting at Ministry of Foreign Trade and Supply, New Delhi with :

Mr. J. Bannerjee, Director Export Assistance, Ministry of Foreign Trade.

Mr. L. S. Rastogi, Under Secretary, Ministry of Foreign Trade.

Mr. N. N. Agarwal, Deputy Director-Chemicals Planning Commission

Mr. K. N. Misra, Under Secretary, Ministry of Industrial Development.

Mr. K. R. Saxena, Deputy Director Planning Commission.

Mr. M. L. Ahuja, Ministry of Finance.

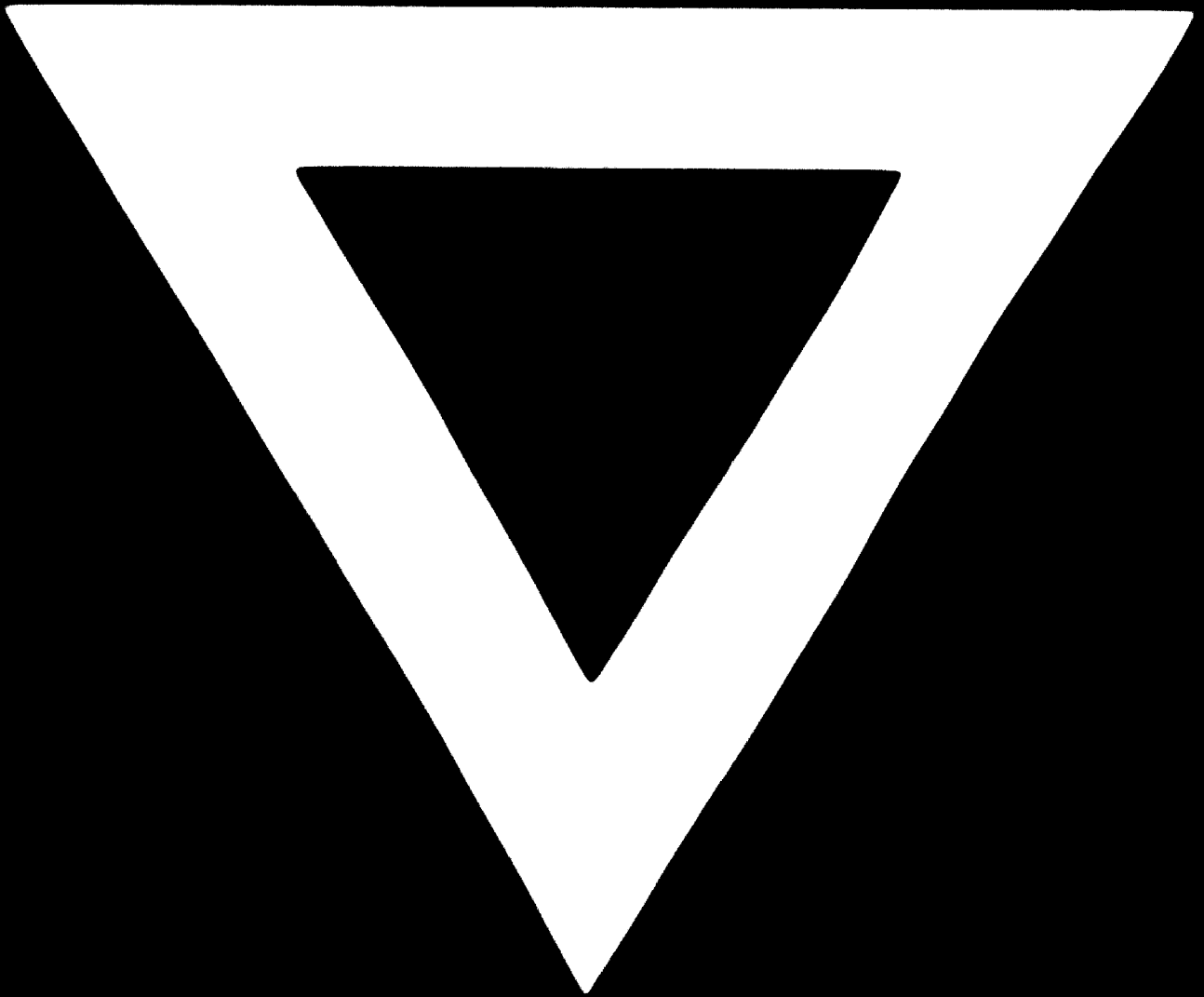
Mr. N.V. R. Iyengar, Director Institute of Packaging.

Mr. J. H. Lascelles, UNIDO Field Adviser.

21, 22 December 1969

Departure from Delhi to Vienna, respectively Delft.





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