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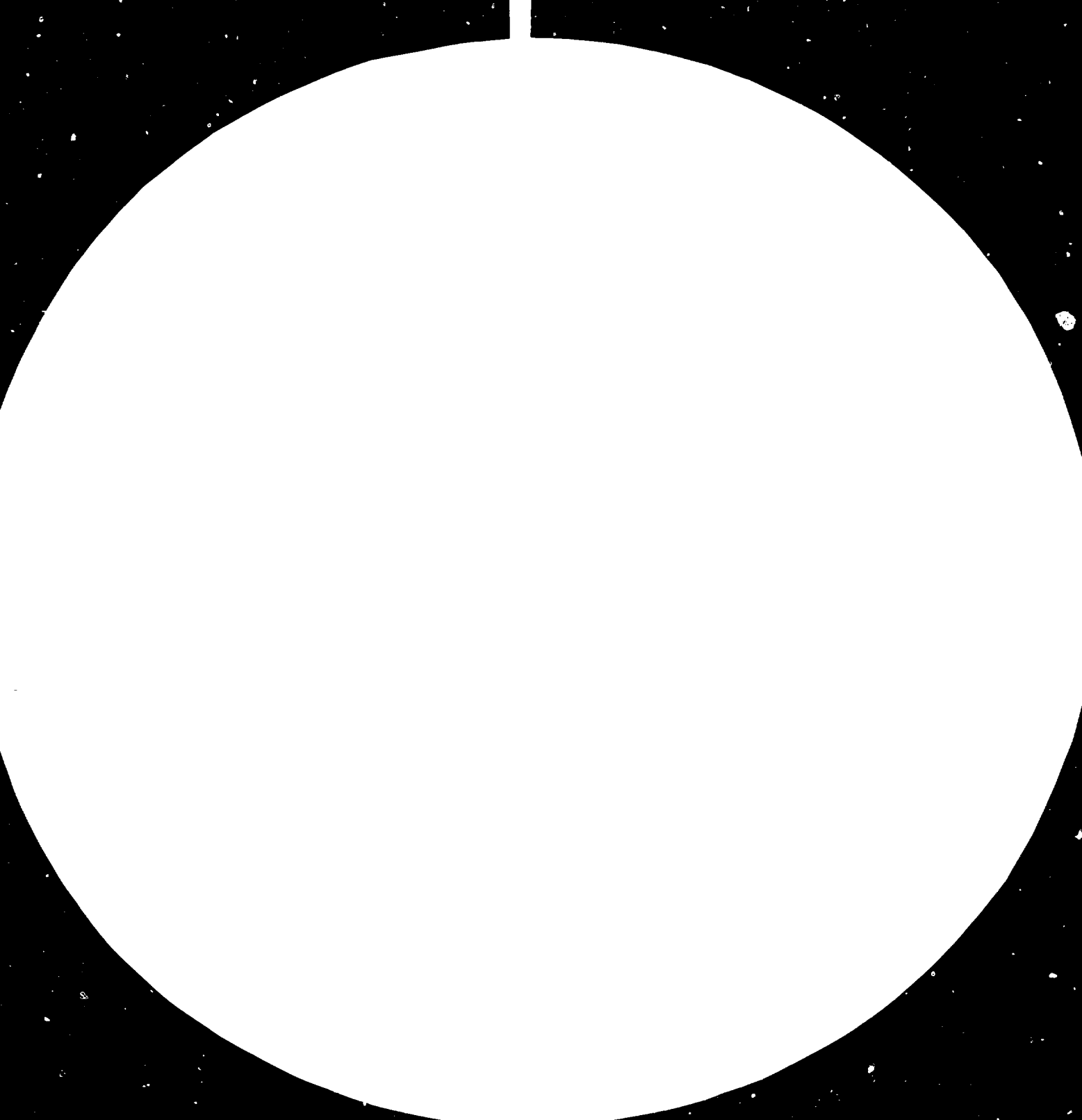
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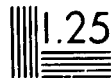
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2.0

2.2

2.5

2.8

3.2

3.6

4.0



Resolution Test Chart (NBS 1963-A) showing patterns for 1.0, 1.1, 1.25, 1.4, 1.6, 2.0, 2.2, 2.5, 2.8, 3.2, 3.6, and 4.0.

Resolution Test Chart (NBS 1963-A) showing patterns for 1.0, 1.1, 1.25, 1.4, 1.6, 2.0, 2.2, 2.5, 2.8, 3.2, 3.6, and 4.0.

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Joint UNIDO/WAITRO Seminar on  
Co-operative Arrangements in Research  
and Development: Ways for Implementation  
13-16 October 1980  
Colombo, Sri Lanka

DRAFT REPORT\*

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I. SUMMARY OF RECOMMENDATIONS

The following are the recommendations of the Joint UNIDO/WAITRO seminar on Co-operative Arrangements in Research and Development (R+D): Ways for Implementation.

The World Association of Industrial and Technological Research Organizations (WAITRO) remains a group of industrial research and service institutions (IRSIs) dedicated to promoting the progress of such institutions and hence industrial development in all countries of the world. WAITRO membership should promote goodwill and active co-operation within the family of member institutions.

WAITRO reaffirms its aims and objectives:

The aims of the Association are:

- (a) To facilitate the development and advancement of the level and capabilities of member industrial and technological research organizations;
- (b) To identify fields of research, where international or regional co-operation and possible external assistance is needed;
- (c) To foster and promote co-ordination and co-operation between member institutes and organizations;
- (d) To encourage and facilitate the transfer of research results and technical know-how between members;
- (e) To promote exchange of experience in research management with a view to improving overall efficiency.

Some of the aims may be furthered by the Association, for example:-

- (a) Sponsoring meetings;
- (b) Helping to find financial sources to improve research facilities;
- (c) Establishing a central information clearing house for a systematic exchange of information on research organizations such as their programmes, expertise of research staff and research results achieved;
- (d) Establishing programmes for the exchange of research workers and research facilities;
- (e) Serving as a link between research establishments and international associations and federations;
- (f) Acting as a representative of members in matters on which a common opinion is desirable.

WAITRO takes determined and concerted steps to translate these objectives into implementable projects and programmes and to attract the funds needed to do so.

The seminar strongly endorsed and recommended that WAITRO secretariat be strengthened by increasing the number of permanent and full-time staff members; this number should include representatives of the developing countries.

The size of the secretariat should, however, be maintained at a level that promoted the greatest possible efficiency and avoided the creation of a heavy bureaucratic organization. The Seminar felt that when programmes required extra expertise, utilization of the services of specialists in WAITRO member institutions might be preferred to increasing the permanent staff cadre at WAITRO headquarters.

WAITRO should seek funds from the UN Interim Fund for Science and Technology for Development and other international and national agencies to meet costs involved in strengthening the secretariat.

The Seminar noted that the General Assembly of WAITRO convened for 17 October 1980 would approve the outline of a work programme for the next few years before the details could be added in the proposal to the UN Interim Fund (see Annex L).

WAITRO should continue to assist its member organizations in every way possible to obtain short-term on-the-job training in specific fields for their personnel. IRSIs still accord staff development as very high priority.

The role of WAITRO should cover:

1. Project formulation and design:

- (a) identification of projects common to WAITRO members
- (b) identification of institutions which could be involved, and
- (c) assistance in preparation of proposals (this could include also in-house projects of IRSIs).

WAITRO should support twinning and co-operative projects between its members as these provided the means for the transfer of knowledge and acquisition of skills needed by member institutions. WAITRO expressed full confidence in the success of such co-operative arrangements as they benefited both the developed and developing countries to meet the emerging challenges in technologies.

In order to enable WAITRO to meet the pressing needs of member IRSIs, which WAITRO could not at present due to lack of resources particularly in funds and professional personnel, the Seminar emphasized that as a matter of urgency WAITRO should take immediate steps to strengthen its headquarters staff and to secure funds necessary for this and the implementation of the work programmes.



## II. INTRODUCTION

Since the adoption of the Lima Declaration and Plan of Action in 1975 and the New Delhi Declaration and Plan of Action in 1980, it had been recognized increasingly that the application of technology to development spanned a wider area of action in developing countries. The need to utilize technologies appropriate to developing countries was acknowledged. Accordingly greater emphasis was given to developing technology suited to developing countries and strengthening technological capabilities, through twinning or co-operative arrangements, which were a prerequisite both for the selection, acquisition and absorption of technology as well as for the development of new technologies.

The industrialization process of the developing countries depended to a great extent upon the industrial R + D activities in these countries. In recognition of the importance of industrial R + D activities in developing countries, UNIDO had carried out a number of programmes and projects related to the stimulation and promotion of R + D in developing countries.

In October 1978, the first Joint UNIDO/WAITRO Seminar on Self-Reliance in Research and Development was held in the Netherlands. The Seminar concluded and recommended, inter alia, that UNIDO should promote further industrial research activities and twinning or co-operative arrangements among industrial R + D organizations, including holding the second Joint UNIDO/WAITRO Seminar.

One of the recommendations of the Joint UNIDO/WAITRO evaluation of IRSIs was the creation of a network of research institutes working on common problems of industrialization in developing countries. The aims of such networks would be three-fold:

- to produce high priority industrial research products;
- to strengthen institutional R + D capabilities and other functional activities;
- to reorient developed country research more fully towards third world type situations and needs.

Taking into account the Agreement of Understanding made on 10 November 1978, between the Executive Director of UNIDO and the President of WAITRO which emphasized joint co-operation activities in areas of common interest, such as the joint seminar as well as other joint programmes, it was mutually recognized that there should be closer co-operation between the two organizations through the joint seminar workshop. Following a series of consultations between the Secretary-General of WAITRO, the Development and Transfer of Technology Branch, and the Non-governmental Organizations Section of UNIDO, an agreement was reached to organize jointly the Second Seminar/Workshop during the tenth and eleventh meetings of the Executive Committee of WAITRO held at Vienna and Cairo in 1979 and 1980 respectively. It was decided that the next UNIDO/WAITRO seminar should be held in October 1980 at Colombo, Sri Lanka.

### III. ORGANIZATION OF THE SEMINAR

The Joint UNIDO/WAITRO Seminar was attended by 54 participants from 27 developed and developing countries, delegates of the Government of Sri Lanka, the host organization, Ceylon Institute for Scientific and Industrial Research (CISIR), UNIDO and WAITRO executives. A list of participants is attached as Annex 2 and the programme of the seminar is contained in Annex 3.

Mr. Eiliv Sodahl, President of WAITRO, acting as Chairman, welcomed all the participants. Professor P.C.B. Fernando, Chairman of CISIR, extended a warm welcome to delegates of the Seminar on behalf of the host institution.

The Honourable Cyril Mathew, Minister of Industries and Scientific Affairs for Sri Lanka, emphasized the high cost of research, particularly for developing countries, and the need for doing research of immediate relevance to a given country at a given time. The people of developing countries wanted effective and convenient solutions within a reasonable time, for the day-to-day problems that affected their mode and quality of life. He earnestly hoped that the three Sri Lankan members, the Ceylon Institute of Scientific and Industrial Research (CISIR), the National Engineering Research and Development Centre of Sri Lanka, and the Department of Small Industries, would work with the greatest zeal in formulating collaborative projects which might be expected to materialize as an outcome of the deliberations of the Seminar. He congratulated UNIDO and WAITRO for the selection of the very appropriate theme, co-operative arrangements in R + D: ways for implementation.

Mr. Y. Kim, Resident Representative for UNDP, in Sri Lanka, in his address stated that industrial research organizations in developing countries were frequently hampered in their work by lack of support, and direction and by management difficulties and he could see much potential for mutual co-operation and sharing of experience through a body such as WAITRO. Speaking on behalf of WAITRO, Mr. Eiliv Sodahl said that WAITRO had targets corresponding with those of UNIDO to foster capabilities in

industrial and technological R + D and its industrial implementation. Both organizations recognized that improvement of technological knowledge and capabilities were essential for developing countries to accelerate industrialization. UNIDO representative, Mr. H. W. Pack, stated that WAITRO together with UNIDO should promote further industrial research activities and twinning or other co-operative arrangements amongst industrial R + D organizations since the industrialization of the developing countries to a great extent depended upon their R + D activities. UNIDO expected that through the Seminar, the ways and means of strengthening the role of WAITRO should be clearly defined according to the needs of IRSIs. He stressed further that the promotion of co-operation through WAITRO could lead to strengthening the local technological capabilities of the developing countries. He extended thanks to the Governments of Sri Lanka and Norway for their support to the Seminar

Following the opening addresses, presentations were given by five experts. Mr. R. Kitchell of UNIDO presented the highlights of the UNDP/UNIDO IRSI Evaluation Exercise and their implications for WAITRO. He stressed the needs of IRSIs in developing countries and how WAITRO could play a part in meeting these needs particularly through technological linkages of IRSIs, co-operative programmes and institution building. However, this could only be achieved by considerable strengthening of WAITRO and its secretariat. This would require financial resources.

Mr. J.D. Blackledge of the Interamerican Corporation of Denver, Colorado, spoke on the interaction between IRSIs from his firsthand experience of technological linkages between research institutes throughout the world. Dr. J.K.Higam of the Sri Ram Institute of Delhi, India, described the operation of his institute in meeting many of the industrial problems and in promoting industrial development in India.

Mr. M. Aslam of the Pakistan Council for Scientific and Industrial Research described co-operative projects with other research institutes and cited many areas for potential technological collaboration with other research institutions. Dr. R.B. Banks, President of the Asian Institute of Technology, Thailand, described the training of scientists and engineers at the master and doctorate levels in technology and its orientation to equip students to address the technological problems of developing countries.

The second part of the Seminar was devoted to studying five topics in workshops. The first two, under the theme of Strengthening of WAITRO were: Needs of WAITRO Members and Role of WAITRO to Meet These Needs; and Work Programmes of WAITRO and Their Financing. The second theme was Twinning and Co-operative Projects in which the following topics were considered by workshop groups: Principles for the Selection of Projects for Co-operative Arrangements; Formal Arrangements for the Establishment of Co-operation; and Proving the Effectiveness and Impact of Projects. Each topic was introduced by the workshop group chairman, discussed in a plenary session, and then discussed by the workshop group. Rapporteurs of the five working groups prepared reports and later these were brought together and consolidated into a single report by the programme rapporteur. The plenary session discussion of the topics was held on one day and the workshop meetings and consolidation of recommendations carried out on the following day. The draft recommendations were then brought before a plenary session for final revision and adoption.

IV. SUMMARY OF WORKING GROUP MEETINGS

The following recommendations for the role of WAITRO and its programmes were approved by the Seminar.

The needs of WAITRO members were identified as twofold. Firstly those which represented the internal needs of IRSIs, such as training, collaborative arrangements, twinning and the use of information to improve and develop skills; and secondly, those which expressed the external needs of the WAITRO family such as those flowing from the relationships with national governments and international agencies.

WAITRO was perceived as an effective tool to influence governments to recognize the fundamental importance of IRSIs to industrial development and to respond by providing adequate support and flexibility whenever needed. Further, WAITRO was seen as the catalyst for establishing co-operative twinning arrangements amongst its members and other institutions.

Noting the aims and activities laid down in the WAITRO constitution, the meeting emphasized the following urgent roles of WAITRO in relation to the pressing needs of its members:

- (a) The organization should act as a focal point for industrial research and technical institutions;
- (b) WAITRO should provide a platform for co-ordinating and sharing experiences in a structured manner;
- (c) The organization should continue to be a resource centre for identifying and organizing on-the-job training opportunities for the development of needed skills and expertise for workers in IRSIs;

- (d) The organization should continue to hold meetings and conferences for the exchange of ideas and methods on the administration of research;
- (e) WAITRO should promote the importance of IRSIs in its member countries as well as on a regional and international scale.

It was agreed that the present organization and financial strength of WAITRO was wholly inadequate. As a minimum in meeting the aspirations of the IRSIs, the following programmes were required.

1. Training Programme

|  | <u>US\$</u>             |
|--|-------------------------|
| Training expenses                        | 500,000 per year        |
| Training officer attached to secretariat | 60,000                  |
| Travel expenses                          | <u>20,000</u>           |
| Total                                    | <u>580,000 per year</u> |

Type of training

- (a) On-the-job training
- (b) Study tours (industry/IRSIs)
- (c) Short courses/workshops
- (d) Identification and promotion of training opportunities to be funded by agencies outside WAITRO.

It was generally accepted that on-the-job training programmes were of prime importance and that they should be continued and possibly expanded by a diligent search for funds and training opportunities.

It was also considered that since the requirements of training had changed over the past years, exchange of knowledge on this subject should be a WAITRO concern. It was felt that this exchange of experience and expertise might lead to the identification of areas of possible collaboration between members.

| <u>2. Twinning and Co-operative Arrangements</u> |       | \$ US                   |
|--|-------|-------------------------|
| Preliminary studies and project definition       |       | 150,000 per year        |
| Liaison officer                                  |       | 60,000                  |
| Travel expenses                                  |       | <u>20,000</u>           |
|  | Total | <u>230,000 per year</u> |

Methodology:

- (a) Inventory of resources and needs of WAITRO members
- (b) Compilation of twinning experiences
- (c) Assistance in identification of potential projects
- (d) Identification of potential organizations
- (e) Follow-up and assessment.

| <u>3. Information</u> |       | \$ US                   |
|-----------------------|-------|-------------------------|
| Operating expenses    |       | 50,000 per year         |
| Systems officer       |       | 60,000                  |
| Travel expenses       |       | <u>5,000</u>            |
|                       | Total | <u>115,000 per year</u> |

Since various organizations in the world were compiling information relevant to IRSI needs, WAITRO should act primarily as a referral service to direct its members to sources of specific information.

This service was not expected to be expensive and elaborate, but was intended to provide an index of technical know-how and processes available in various institutions. It was an arrangement to direct the inquirer to the source of information; it was not intended that the information be collected at a WAITRO centre. Furthermore it was suggested that WAITRO publish information on the achievements of its members in Communique and that this publication should be available to non-members and their technical and scientific laboratories.



Specifically, a bi-monthly WAITRO publication was suggested to cover the following topics:

- (a) WAITRO's international network of R + D and technical service institutions;
- (b) Co-operative projects being undertaken;
- (c) Results of projects and their potential application;
- (d) Aspects of WAITRO operations of interest to industrial companies, governments and donor agencies.

The publication would be expected to create wider awareness of WAITRO among industry, and should carry industrial advertisements to defray costs.

4. Activities

These were expected to cost \$125,000 per year and included the following:

- (a) Regional meetings and co-operative activities
- (b) Global meetings
- (c) Staff development programmes

5. Strengthening of the secretariat base

- |  |                       |
|--|-----------------------|
| (a) Administrative/secretarial/support staff | US \$ 75,000 per year |
| (b) Travel expenses and miscellaneous        | 15,000 per year       |

|              |                        |
|--------------|------------------------|
| <u>Total</u> | <u>90,000 per year</u> |
|--------------|------------------------|

The functions of the Secretary-General of WAITRO could be performed by any one of the officers associated with the secretariat or by someone with additional responsibilities in a parent organization providing secretariat facilities. The budget above excluded the financial and manpower support presently being provided by the Central Organization for Applied Scientific Research in the Netherlands(TNO).

The total cost of all the programme components would be US\$ 1,140,000 per year.

6. Programmes of co-operative arrangements

Considering the importance of co-operative arrangement programmes, principles and criteria for selecting such projects were elaborated. So that these co-operative arrangements would function smoothly and harmoniously with a proper understanding of the scope, intent and accurate objective of each arrangement, it was deemed necessary also to provide some indication of the types of formal arrangements which might be required. In this context the kinds of co-operative arrangements were identified as:-

- (a) Exchange of information on research results
- (b) Exchange of research staff and
- (c) Project co-operation, e.g. joint R + D on common problems, marketing and development of methodology.

7. Follow-up

It was considered that follow-up was indispensable to ensuring continuing improvement of the effectiveness and impact of co-operative arrangements in strengthening scientific and technological infrastructures. The information so gleaned should then be made available to potential twinning partners.

It was considered necessary to start the monitoring from the project formulation and design stages, because proper evaluation would be impossible unless clear and specific goals were identified.

Management should cover:

- (a) Work programmes
- (b) Reporting
- (c) Monitoring
- (d) Performance evaluation

This aspect of follow-up should be scrutinized carefully as research management, especially middle management was weak in some countries.

In general, project follow-up would seek to ensure the maximum utilization of resources and to analyse project impact. This type of evaluation and monitoring might lead to the updating of criteria for selection and execution of projects, and the strengthening of WAITRO's role in fostering the success of these ventures. Although WAITRO personnel might participate in evaluating some projects to improve the methodology of evaluation by the supporting agencies, under no condition should WAITRO be an evaluator. During the evaluation of projects, opportunities should be sought to evaluate the IRSIs themselves. It was recommended that the evaluation of IRSIs should take place about every three years whereby WAITRO could assist in finding appropriate experts from peer groups in government, industry etc., to carry out performance evaluations.

In the follow-up phase WAITRO might play an active part in the application of results, suggesting additional areas where they could be applied.

The proposal to the UN Interim Fund for Science and Technology for Development

In principles this proposal was endorsed by the meeting, but its specific nature would have to await the final conclusions regarding the WAITRO work programme and its funding. It would be instructive for the General Assembly of WAITRO to formally endorse this proposal, before it was sent to selected governments for submission to the Interim Fund.

V. CLOSING OF THE SEMINAR

The participants expressed appreciation to UNIDO and to the Norwegian Agency for International Development for financial assistance to permit their attendance at the Seminar. The participants also expressed thanks to CISIR for hosting the Seminar in Sri Lanka.

ANNEX 1

"STRENGTHENING THE INTERNATIONAL CO-OPERATION BETWEEN TECHNOLOGICAL RESEARCH ORGANIZATIONS"

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A proposal for the UN Interim Fund  
for Science and Technology for  
Development (UNIFSTD)

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BACKGROUND

The World Association of Industrial and Technological Research Organizations (WAITRO) - an independent association of organizations either actively engaged in technological research (technical members) or interested in encouraging, promoting and supporting industrial research (sustaining members) - was established in 1970 with UNIDO assistance to:

- assist the development and improve the capabilities of technical members, especially in developing countries ;
- identify fields of research needing co-operation or assistance by outside agencies ;
- promote co-ordination and co-operation between members ;
- encourage the transfers of research results and technical know-how between members ;
- promote exchange of experience and research management between members.

Implementation of these aims is to include:

- sponsoring technical meeting ;
- training personnel ;
- information exchange and improvement of research facilities ;
- operation of a central information clearinghouse ;
- exchange of research and use of research facilities ;
- serving as a link between members and international associations and federations ;
- acting as spokesman for members of common interest.

In undertaking the various activities described above, there has been a severe limitation caused by lack of resources, both financial as well as in manpower. With the modest income deriving from the membership fees, WAITRO and its Secretariat are compelled to depend upon direct

contributions of donor institutions of Canada, The Netherlands and Norway, in order to maintain a minimal staff concurrently carrying out the work in addition to their normal duties and assignments. Support by UNIDO and the Norwegian Agency for International Development has promoted activities of organizing two Seminars and meetings of its members.

The Training Programme has been supported financially by the Canadian International Development Agency and the Netherlands Ministry of Foreign Affairs.

The United Nations Conference on Science and Technology for Development and the Third General Conference of UNIDO among other meetings have emphasized the need of promoting international co-operation with the aim of strengthening the national technological capabilities and capacities of the developing countries.

WAITRO with its broad membership from developing and developed countries could provide an ideal mechanism, acting as the focal point of international co-operation among R & D institutions in the developing and the developed countries, provided that appropriate measures be taken to make available additional resources.

Such resources, however, should be based upon a concrete programme of action with appropriate identification of inputs required and the time perspective. Accordingly, the following proposal is submitted for consideration and endorsement.

#### ORGANIZATION

In addition to the work aimed at by the existing officers at the Secretariat, four programmes will be put into operation with the following objectives and methodology of operation:

- a) Promotion of twinning / co-operative arrangements ;
- b) Training Programme and exchange of experiences ;
- c) Information collection and dissemination including Technological Advisory Services ;
- d) Meeting programme.

#### a) Promotion of twinning / co-operative arrangements

Most of the technologies presently available to the developing countries are those that have been developed in a developed country for purposes quite different from those in the developing countries, and for application

in an environment which are more typical in a developed country. Therefore, the technologies would have to be adapted to suit the needs of the developing countries. Additionally, developing countries are faced with problems which are not applicable to developed countries, and therefore, are not within the priority concerns of the R & D circles of the developed countries. Accordingly, the problems would have to be tackled by the developing countries themselves in order to find an appropriate solution.

In fact, for the above reason, much R & D work are presently going on in various research institutions in the developing countries, however, in very isolated manner with little knowledge of what other institutions are doing in the same areas or projects.

It was therefore considered useful if twinning and co-operative arrangements be promoted between and among the institutions having a common interest, and a seminar to this effect was organized jointly by WAITRO and UNIDO in 1978 in The Netherlands. A number of proposals were collected. However, due to the lack of financial means the envisaged co-operative actions could not become effectuated.

In order to remedy this situation, it is hereby proposed that a senior expert be recruited for a period of 24 man-months to be attached to the WAITRO Secretariat, to undertake the task of promoting twinning and co-operative arrangements.

The first aim of this senior expert would be to create a mechanism which could systematically collect and identify problems and projects of common interest for a number of developing countries ; secondly, to promote twinning / co-operative arrangements between and among the institutions for carrying out the needed R & D work by pulling together all available knowledge and experience as well as means and resources in an effective and efficient manner in order to secure solutions to the problems in a period of time as short as possible.

The twinning and co-operative arrangements could also be applied to the exchange and transfer of experience and knowledge in the organization, management and operation of R & D institutions to serve better the purpose and the needs of their governments.

An amount of travel costs would be required to be budgeted to enable the officer to establish relationships between the relevant institutions.

The objective of the project is to strengthen the technological capacities of R & D institutions towards serving the requirements of their countries most efficiently.

b) Training Programme and exchange of experience

The British Columbia Research Council, which hosted the Secretariat of WAITRO from 1972 - 1978 has been carrying out a training programme for staff of R & D institutions in developing countries.

More than 65 trainees have been placed for a varying length of time, with a total cost of \$ 217,000. during 6 years of operation.

The Training Programme was implemented under the initiative and supervision of the former Director of BC Research Council and Secretary-General of WAITRO, who, after his retirement accepted the request of the Executive Committee of WAITRO to stay in charge of the training programme during some more time.

As the programme was welcomed by the developing countries institutions as a most useful one, it is felt that continuation of this work should be ensured and an officer be assigned to continue the programme regularly. A project is therefore proposed to have a senior training programme officer recruited, for a period of 24 man-months.

The duties would be to identify the needs of training of staff of developing country R & D institutions ; to identify possibilities of placement of trainees from developing countries in developed and/or other developing country institutions ; and, to make necessary arrangements for drawing up the programme, arranging for the travel, and monitor the outcome of the programme, particularly its impact on the work programme of the institutions.

Also an amount of travel costs should be budgeted to enable the officer to visit the institutions.

Apart from the costs of the senior training programme officer, a budget of a total of 30 fellowships over a period of two years will have to be considered.

The objective of the project will be to strengthen the human resource capabilities of the R & D institutions in developing countries.



c) Information collection and dissemination including Technological Advisory Services

The Secretariat of WAITRO is already undertaking to a certain extent the functions of information collection and dissemination. It is felt, however, that this work should be further broadened and strengthened including the establishment of a more closer working relationship with UNIDO's INTIB and other relevant information systems within and outside the UN family, in order to serve better the needs of the member institutions. It is therefore proposed to establish a project on information services with a senior information officer recruited for a period of 24 man-months. The duties would be to systematically build up an infrastructure service taking into consideration the needs of the member institutions and also by establishing practical working relationship with existing information services such as UNIDO-INTIB.

The programme component would also act as a focal point for arranging and providing technological advisory services to the member institutions as and when such needs arise, a lump sum equal to 24 man-months of high-level short term experts, over a period of two years should be included in the budget.

d) Meeting programme

One of the most practical and effective means of promoting international co-operation is to provide an opportunity for the involved persons to get together, discuss and elaborate action programmes focussing on solution to problems of common concern. For this purpose, funds for two workshops, to be held during the two years, are already included in the budget.

BUDGET PROPOSAL

(covering a period of two years of operation)

|  | Man-Months    | US \$    |
|--|---------------|----------|
| a) <u>Twining / Co-operative Arrangements Programme</u>          |               |          |
| - Senior Expert  | 24            | 120,000. |
| - TCDC Travel Costs  |               | 30,000.  |
| b) <u>Training Programme and Exchange of Experiences</u>         |               |          |
| - Programme Expert   | 24            | 120,000. |
| - TCDC Travel Costs  |               | 30,000.  |
| - Training Costs 30 Fellows<br>(including travel expenses)       |               | 150,000. |
| c) <u>Information, including Technological Advisory Services</u> |               |          |
| - Senior Information Expert                                      | 24            | 120,000. |
| - Technological Advisory Services                                |               | 120,000. |
| - TCDC Travel Costs  |               | 30,000.  |
| d) <u>Meeting programme</u>                                      |               |          |
| - Workshops or meetings for a 2-year period                      |               | 90,000.  |
|  |               | <hr/>    |
|  | Total         | 810,000. |
|  | 14 % Overhead | 113,400. |
|  |               | <hr/>    |
|  | Grand Total   | 923,400. |
|  |               | <hr/>    |

ANNEX 2

List of participants

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ANNEX 3

PROGRAMMES OF JOINT/WAITRO SEMINAR  
Co-operative Arrangements in R + D: Ways for Implementation

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Monday, October 13 Committee Room A Plenary Sessions

- 9.30 hrs. Address of Welcome - P.C.B. Fernando  
Chairman, CISIR
- 9.35 hrs. Opening Address - Hon. Cyril Mathew  
Minister of Industries & Scientific  
Affairs
- 9.50 hrs. Address - Y. Kim  
Resident Representative, - UNDP
- 10.00 hrs. Address - E. Sodahl  
President, WAITRO
- 10.30 hrs. Election of the Chairman, Co-Chairman and Rapporteur
- 10.45 hrs. Introduction of the Seminar  
by H. W. Pack, UNIDO
- 11.00 hrs. Aim and Set-up of the Seminar  
by the Secretary-General of WAITRO
- Appointment of Chairmen and Rapporteurs of 5 working groups.
- 11.30 hrs. Summary of highlights of UNDP/UNIDO IRSI evaluation exercise  
and implications for WAITRO  
by R. Kitchell, UNIDO
- Interaction between IRSI and WAITRO's role by Dr. J.B.  
Blackledge, Interamerican Corp., U.S. A.

- 14.30 hrs. The Industry as client of IRSIs' case study  
by Dr. J.K. Nigam, Joint Director, Shri Ram  
Institute of Industrial Research, Delhi, India
- 15.30 hrs. PCSIR's Experience in Increasing its Effectiveness and  
Proposals for Co-operative Arrangements in R + D  
by Mr. M. Aslam, Member (Technology), Pakistan Council  
of Scientific and Industrial Research, Karachi, Pakistan
- 16.45 hrs. IRSIs in the South-east Asian Region  
By Dr. R.B. Banks, President Asian Institute of Technology,  
Bangkok, Thailand

Tuesday, 14 October Committee Room A Plenary Sessions

Introduction of each subject by the respective Group Chairmen followed  
by discussions

THEME A STRENGTHENING OF WAITRO

- 9.00 hrs. Topic 1: Needs of WAITRO members and Role of WAITRO
- 11.00 hrs. Topic 2: Work programmes and financing

THEME B TWINNING AND CO-OPERATIVE PROJECTS

- 14.00 hrs. Topic 3: Principles for the selection of projects for  
co-operative arrangements
- 15.15 hrs. Topic 4: Formal arrangements for the establishment  
of co-operation
- 17.00 hrs. Topic 5: Follow-up of co-operative projects

Wednesday, 15 October

- 9.00 hrs. Plenary meeting to form 5 working groups
- 9.30 hrs. Separate meetings of the 5 working groups to prepare draft recommendations
- 11.00 hrs. Continuation of morning sessions

Afternoon Sessions: Combined meetings of:

- 14.00 hrs. to 16.00 hrs. Working groups 1 and 2 to prepare common recommendations with respect to Theme A
- 14.00 hrs. to 16.00 hrs. Working groups 3, 4 and 5 to prepare common recommendations with respect to Theme B
- 16.30 hrs. Group Chairmen and Rapporteurs jointly prepare draft reports on Themes A and B

Thursday, October 16 Committee Room A

- 14.00 hrs. Plenary Sessions  
Presentation of draft reports for adoption
- 17.15 hrs. Closing Session



