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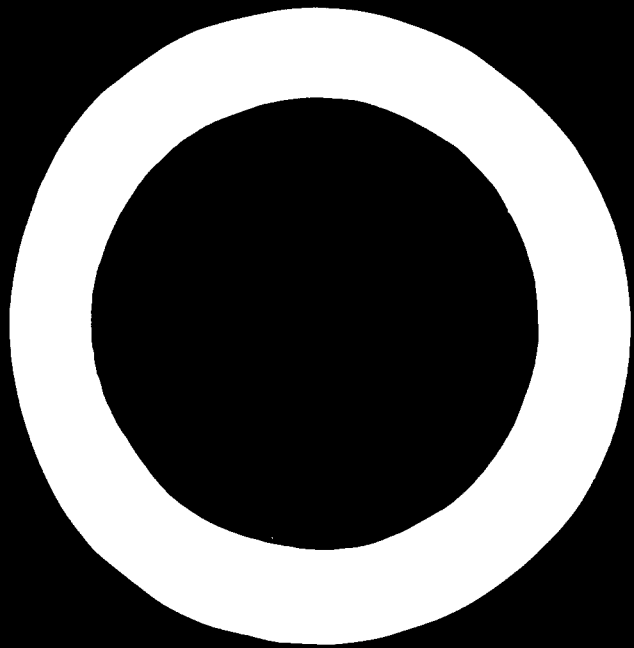
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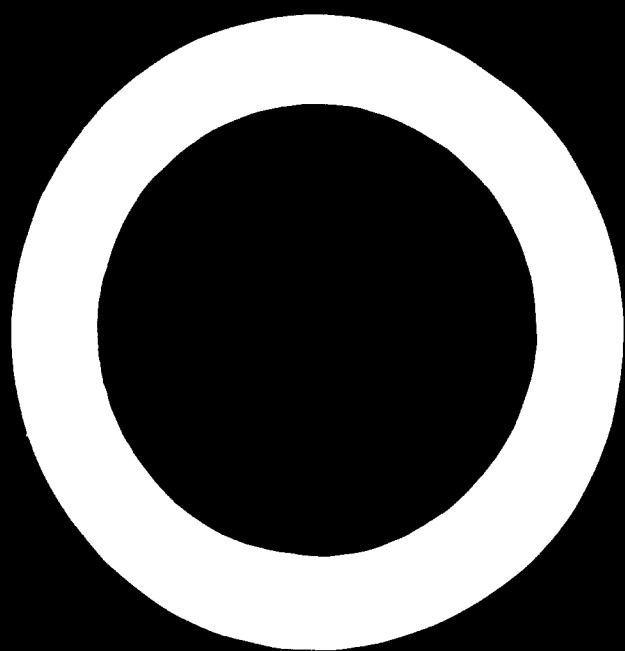
ORGANIZATION  
AND ADMINISTRATION  
OF  
INDUSTRIAL SERVICES  
FOR ASIA  
AND  
THE MIDDLE EAST

Report of Seminar held in  
Tashkent, Uzbek SSR, USSR  
19 - 24 October 1970

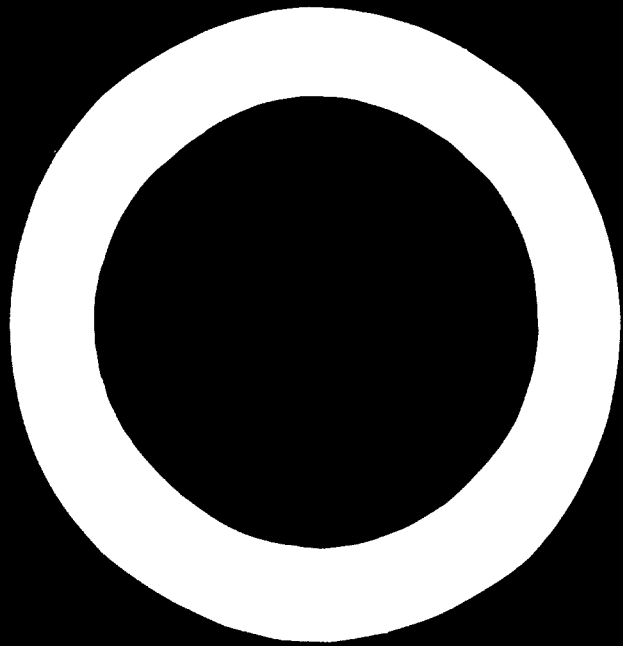


UNITED NATIONS





**ORGANIZATION AND ADMINISTRATION  
OF INDUSTRIAL SERVICES  
FOR ASIA AND THE MIDDLE EAST**



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION  
VIENNA

**ORGANIZATION AND ADMINISTRATION  
OF INDUSTRIAL SERVICES  
FOR ASIA AND THE MIDDLE EAST**

*Report of Seminar held in  
Tashkent, Uzbek SSR, USSR  
12-24 October 1970*



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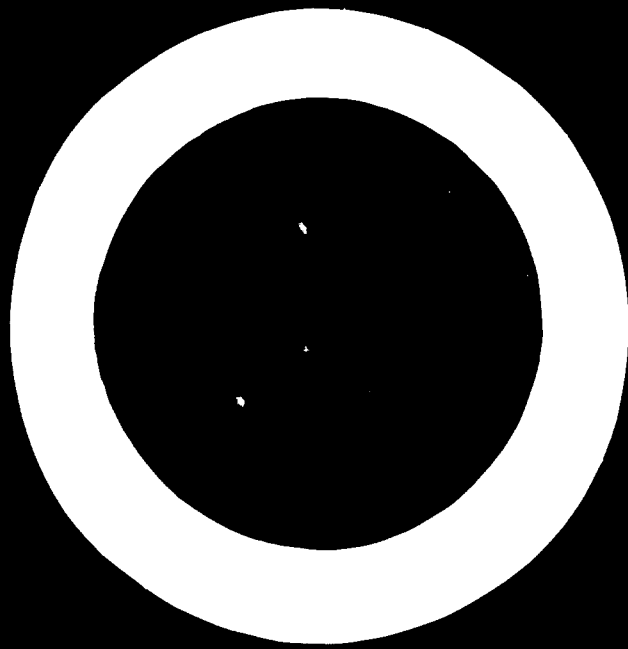


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## INTRODUCTION

1 The Seminar on the Organization and Administration of Industrial Services for Asia and the Middle East, organized by UNIDO in cooperation with the Government of the Union of Soviet Socialist Republics, was held in Tashkent, Uzbek SSR, 12-24 October 1970.

2 The purpose of the Seminar was to discuss various problems concerned with the provision of efficient services to industry in the developing countries and to suggest practical measures for strengthening and improving these services.

3 Mr. Sh. A. Khodjaev, Vice-Chairman, State Planning Committee of the Uzbek SSR, welcomed the participants to the Seminar and presented a summary of the Uzbekistan experience in industrial development. A message from Mr. F. H. Abdel-Rahman, Executive Director of UNIDO, was read by Mr. J. E. Cabrera, Director of the Seminar. The text of these addresses is given in annex 1.

4 The Seminar was attended by 21 participants from the following countries: Afghanistan, Burma, Ceylon, India, Indonesia, Iran, Iraq, Lebanon, Malaysia, Nepal, Pakistan, Philippines, Singapore, Southern Yemen, Syria and Thailand. The participants held high-level management positions in their respective countries, for example directors of departments in ministries of industry or directors of industrial research institutes, industrial development corporations or industrial consulting organizations. Seven experts who participated in the Seminar came from Canada, France, Hungary, India, the USA and the USSR, and ten observers were from Burma, the USA and the USSR. A representative of the Economic Commission for Asia and the Far East (ECAFE) also attended the Seminar. A list of the participants, experts and observers is given in annex 2.

5 The Seminar unanimously elected the following officers: Chairman, A. Agzamkhodjaev (USSR); Vice-Chairman, K. I. Nanjappa (India); Rapporteurs, S. Taj Mohammed (Southern Yemen), and A. H. Chotani (Pakistan).

6 The discussion followed generally the order of the agenda, which is presented in annex 3. English and Russian were the official working languages.

7 The list of documents prepared for the Seminar (annex 4) includes information papers, papers presented by the experts in attendance, country papers prepared by the participants from developing countries, and background papers prepared by observers.

8 At its closing session, the Seminar approved the draft report of the discussions. The draft recommendations, formulated by the participants and experts, were considered and approved (See the following chapter) The Seminar was addressed by Mr Sh A Khodjaev, who commended the Seminar as a forum for the exchange of experience on these important subjects and complimented the participants on their discussions and constructive recommendations. Speaking on behalf of UNIDO, Mr Cabrera expressed appreciation to the Governments of the USSR and Uzbek SSR for their hospitality and thanked individuals in the Uzbek Government for their special efforts in organizing and servicing the Seminar. Closing statements were also made by the participants from Malaysia, Pakistan and India and by the Chairman, Mr Agzamkhodjaev, who, speaking on behalf of all participants, thanked UNIDO for organizing the Seminar.

## RECOMMENDATIONS

9 The participants, after careful examination of the role of industrial services in the promotion of industrialization, were convinced that certain measures are necessary to improve the organization and administration of industrial services in Asia and the Middle East, and made the following recommendations

- (1) Governments of countries in Asia and the Middle East should ensure that their industrial research institutes operate on an autonomous basis with the technical staff responsible to a board of managers comprising government and industrial representatives. The board should be concerned with general policy, finances, working conditions of the technical staff and the prestige of the institute and with ensuring that the technical operation of the institute conforms with the national industrial development aims. The day-to-day operation of the institute, however, should be the responsibility of the technical director and should not be subject to supervision by the Government.
- (2) Governments of developing countries should be prepared to finance the commercial establishment and operation of economically promising projects developed by research institutes.
- (3) UNIDO should consider providing assistance, upon request, in establishing links between research institutes in developing countries and those in developed countries through appropriate agencies such as the World Association of Industrial and Technological Research Organizations (WAITRO). The following types of assistance should be considered:
  - o Provision of technical information including information on possible engineering consultants for projects
  - o Provision of information on areas of technical competence at various institutes
  - o Provision of training in management to senior members of institutes of developing countries through visits to institutes with related interests
- (4) UNIDO should, upon request, supply developing countries with mobile vans furnished with testing and standards equipment for various trades. Such vans would visit small and medium-sized enterprises to test their products and demonstrate to the enterprises the benefits to be derived from standardization.
- (5) Governments of countries in Asia and the Middle East should consider the establishment of an industrial information centre or unit if there is not one already attached to a central organization.
- (6) UNIDO should collect and evaluate existing reports or surveys on industrial information centres, and if necessary carry out surveys in a number of countries in order to draw up guidelines for establishing such centres. If requested, UNIDO should supply experts to developing countries to help them formulate plans for establishing their own industrial information centres.

- (7) UNIDO should strengthen its industrial inquiry service, which provides managerial and technological information to industry, and should make this service better known to the developing countries
- (8) UNIDO should support and assist any efforts of countries of Asia and the Middle East to operate industrial services on a co-operative basis. In particular, it should examine the feasibility of setting up regional industrial service centres, e.g. one in Beirut for the Arab countries of the Middle East in co-operation with the Industrial Development Centre for Arab States (IDCAS), one for Pakistan, Iran and Turkey, and a third for the Far East. Such centres would co-ordinate and supplement the activities of national institutions in the regions, and would be available at the request of countries in the region to provide industrial services not supplied by national institutions. As one of its functions, each centre would promote the training of personnel responsible for the administration of industrial services in the various countries of the region, and would provide fellowships for this purpose
- (9) UNIDO should undertake a survey of possible measures to raise the effectiveness of training of technical personnel for accelerated industrialization of developing countries in Asia and the Middle East. The findings of the survey could be the subject of a subsequent seminar
- (10) Governments of the countries of Asia and the Middle East are advised to devote more attention to (a) planning and co-ordination of training programmes and institutions (b) reorganizing the educational and training systems on the basis of actual industrial needs, so as to ensure the efficient utilization of the facilities available and (c) providing better employment opportunities and facilities, wages and salaries and other incentives for technical personnel
- (11) Governments should play an effective role in the elaboration and enforcement of standardization and quality control systems. This could be achieved by enacting appropriate legislation to determine the functions and responsibilities of standardization, quality control and metrology institutions. Nonconformity to standards by enterprises could be penalized by withdrawing concessions and privileges, imposing fines, or suspending industrial licences
- (12) Users of consulting services in countries of Asia and the Middle East, including the Governments of these countries, should assist in increasing the supply of local industrial consultants by giving preference to such consultants whenever possible. UNIDO should provide assistance to developing countries, upon request, for developing local industrial consulting services
- (13) UNIDO should make certain that experts and consultants assigned to developing countries are fully aware of their obligations to train local personnel assigned to work with them, and when applicable this obligation should be defined in their contracts
- (14) Governments of the countries of Asia and the Middle East should consider the establishment of an over-all agency in each country to co-ordinate the various services provided to industry
- (15) UNIDO should continue studying the organisational and administrative problems of industrial services, paying particular attention to the clarification of measurements and standards by which such services can be evaluated. UNIDO should support the provision of advisory help to individual countries

with regard to the administration of industrial services from any regional centres that may be established, and through experts made available from UNIDO technical assistance programmes

- (16) Governments of the countries of Asia and the Middle East should give attention to the establishment of units for analysing and improving the organization and methods of industrial services, either as part of a general national management service or an organization and methods agency, or within the body exercising over-all co-ordination of industrial services
- (17) Governments of the countries of Asia and the Middle East should ensure that rules and procedures concerned with the provision of industrial services be as simple and expeditious as possible, as well as flexible and adaptable to the demands of industry. Governments should also assist and encourage their industrial services to take internal action towards this end
- (18) UNIDO should consider allocating funds to sponsor study visits of senior officials of developing countries, for periods of two to three months, to areas of interest, in order to acquaint them with the various aspects of setting up specific industries or industrial services. Such experience would enable officials to make a choice of suitable consultants for the establishment of similar industries or services in their own country

10. It was agreed that there was considerable room for improving the present system of UNIDO and other international organizations in recruiting experts for developing countries. It was suggested that UNIDO should consider providing confidential reports on the expert to be sent to a country requesting his services, then allow the expert to visit the country for interviews and discussion before he is officially recruited for the assignment. UNIDO should also consider expanding the format of the personal history form for experts to include more details concerning the expert's qualifications.

## SUMMARY OF THE DISCUSSION

### Nature and scope of industrial services

#### *Industrial research*

11 A research institute can provide a broad range of industrial services, but which services it provides depends on the level of development of the particular country and its aims for industrialization. The services offered may include an information service, chemical, physical and biological testing, troubleshooting, techno-economic and feasibility studies, and scientific engineering and socio-economic investigations on industrial projects.

12 The main problems facing industrial research institutes relate to seven requirements for their successful operation:

- (a) A good market for technical services.
- (b) Competent, qualified staff.
- (c) Freedom of action.
- (d) Sound "in-house" programme planning.
- (e) Adequate finance.
- (f) Businesslike approach.
- (g) Active promotion of research results.
- (h) Favourable government policy within the framework of the national plan for industrialization.

13 Particular emphasis was placed on the need to determine the market for technical services, unless an immediate market exists, either in industry or government, the establishment of an institute is not advisable. Because of the scarcity of candidates with experience in industrial research as well as managerial and business ability, staffing of institutes is a serious problem. Developing countries face difficulties in attracting a staff of high calibre for their institutes because of low government salary scales. It is essential for scientists working in institutes to be industry-oriented.

14 Freedom of action for industrial research institutes was considered of paramount importance. Institutes must enjoy complete autonomy and be allowed to



operate with minimum government intervention within the targets set by national development plans. The institutes must however act with accountability and with complete scientific honesty, integrating their efforts with the requirements of national development and planning their research programmes accordingly.

15 Because of the lack of support for research by private industry in developing countries, it is necessary for Governments to finance the establishment and operation of industrial research institutes. To accelerate the pace of industrial development, private industrialists in developing countries are being offered incentives such as tax relief, tariff protection, liberal foreign exchange allocations for import of machinery etc. However, the sheltered market provided for them and the lack of keen competition often result in indifference towards investment in industrial research. There is a danger that over-financing by a Government may lead to unmarketable in-house projects, lack of drive and over-expenditure.

16 The Government should also assist industrial research institutes by supporting newly developed processes through national investment programmes and by directing banking organizations to accord recognition to the institutes and their projects.

17 Small and medium-sized enterprises are usually keener than large ones to make use of the services of research institutes because of their interest in utilizing indigenous raw materials and their need for information on equipment and technical know-how. Through the institutes, such enterprises are able to set up an operation without depending heavily on import licences and without becoming too involved with red tape.

18 The ultimate objective of a research institute to be financially independent was recognized. To this end, it was felt that the management of an institute should carry on its activities in a businesslike manner and promote its services vigorously. A modified view was that the performance of an industrial research institute in a developing country should be measured not in terms of financial self-sufficiency, but by the extent of the economic and social impact of the processes developed by the institute that were being commercially exploited by industry, and by the amount of foreign exchange savings resulting from import substitution.

19 It was generally agreed that the multi-functional approach to the establishment of research institutes is appropriate in the early stages of industrial development because it offers savings in equipment, tools, buildings, and laboratory facilities, and because it prevents duplication of efforts. It is, however, difficult for industrial research institutes in developing countries to conduct research in every field of national interest. Wherever possible, developing countries should utilize the results of research achieved in the developed countries by setting up an effective,

industry-oriented technical information service. Mono-functional research institutes can be established at a later stage of a country's development depending on the national importance of specific industrial sectors and the availability of scientific personnel and supporting facilities. In countries where several mono-functional research bodies exist, formal or informal co-ordination among them should be strived for to achieve greater benefits and to avoid duplication of efforts.

20. An industrial research institute will be of maximum value to a country when it is an integral part of the country's industrialization programme.

#### *Standardization and quality control*

21. The important role of standardization, quality control and metrology in the industrial and economic development of a country was recognized. As these industrial services are interrelated, they should be considered together in relation to the industrialization process of developing countries.

22. There was a divergence of views on the advisability of setting up international standards during the early stages of a country's development. It was agreed that standardization and quality control should be introduced at an early stage of industrial growth and developed progressively.

23. It was agreed that quality control systems for raw materials, semi-finished and finished products should be introduced in manufacturing enterprises. It was also agreed that high-level quality of goods can be attained only after standardization, quality control and metrology systems have been sufficiently developed. Stringent international standards should be adhered to therefore, especially for export goods that must compete in the world market. International standards should also be introduced for certain domestic manufactured products where nonconformity to standards can be dangerous, such as in pharmaceutical products and electric and gas appliances.

24. The Government should play an effective role in the elaboration and enforcement of standardization and quality control systems by enacting appropriate legislation to determine the functions and responsibilities of institutions concerned with standardization, quality control and metrology. The Government can penalize enterprises not conforming to standards by withdrawing concessions and privileges, imposing fines and finally suspending industrial licences. The Government may seek the co-operation of the publicly owned industrial sector and private institutions in enforcing appropriate regulations.

25. It was generally agreed that because of a lack of sufficiently trained manpower and financial resources in the initial stages of industrial growth, a

developing countries should consider establishing one institution with facilities for standardization, testing and research. UNIDO should intensify its assistance to developing countries by advising them on the establishment and operation of institutions for standardization and quality control.

#### *Industrial information*

26. The value of an industrial information service was fully recognized because of the large reservoir of available industrial knowledge and experience that can be extremely useful for developing countries. Some of this information is applicable immediately while other industrial knowledge may require adaptation to local needs. To make industrial information services more effective, particularly for small and medium-sized enterprises, it may be necessary to organize field and extension activities and to translate the information into national or regional languages.

27. The type of services to be provided and the objectives must be clearly defined when a Government establishes an industrial information centre. Its structure under the appropriate governmental agency will depend upon the needs and stage of development of a country. The service should keep industry informed of up-to-date developments, including information on exportable goods, and offer assistance in the selection of internal organization, structure, economics, management and technology. The association of industrial information services with other industrial services, such as library services, and particularly with industrial research institutes was also discussed. It seems advisable to link industrial information services with industrial research institutes wherever possible.

28. Widely differing industrial conditions and stages of development in developing countries make it impossible to give general recommendations for setting up industrial information services. It would be helpful if UNIDO collected and evaluated existing surveys and made additional surveys as necessary in order to draw up guidelines for the establishment of industrial information centres. This activity could be followed by sending experts to assist in planning the structure and operation of such centres. UNIDO should also give particular attention to the training of personnel for industrial information services.

29. It was recognized that documentation centres often disseminate information that is irrelevant to industry, therefore, the need for supplying selected suitable information was emphasized. Wherever possible, an industrial information service should be separated from the basic scientific information service. The importance for industrial information of trade catalogues and development reports was stressed. With regard to fees, it was agreed that at least a nominal fee should be charged for industrial information services to ensure that they will be appreciated.

30 It was suggested that a quick question-and-answer service is an effective means of transmitting managerial and technological information to industry. Such a service should be set up in national industrial information centres as well as in international centres. It was suggested that UNIDO's inquiry service be strengthened and publicized in the developing countries.

#### *Industrial consulting services*

31 Industrial consulting services have a crucial role to play in the industrialization of developing countries. These services cater to the needs at the macro or industrial programming level, as well as at the micro, or project, level. In this connexion, the need for speeding up the development of local consulting services in developing countries was recognized.

32 Five major types of consulting services relevant to the industrialization process are:

- (a) Economic consulting services.
- (b) Pre-investment or project planning services.
- (c) Engineering or plant design services.
- (d) Process and technological consulting services.
- (e) Management consulting services.

Sources of consulting services that are available to developing countries include:

- (a) Industrial research institutes.
- (b) Universities and other institutions of higher education.
- (c) Public-sector agencies concerned with industrial growth.
- (d) International consultants provided by Governments of industrialized countries.
- (e) Private consulting firms, local and foreign.
- (f) Consultancy provided by equipment manufacturers and suppliers, contracting firms etc.

33 It was recognized that merely transplanting technology, equipment or techniques from industrialized countries does not fulfill the industrialization needs of a developing country. Local consultants should therefore establish a close working relationship with foreign consultants as soon as they arrive in the country and familiarize them with the prevailing economic and social conditions. Thus, the foreign consultants will be able to take the constraints on economic development into account in their work. A close association between local and foreign consultants is also needed to produce an adequately trained nucleus of local industrial

consultants. In granting contracts to consulting firms for work in developing countries, UNIDO should stipulate that local consultants be brought in to work with the foreign consultants

34 A major problem confronting local consultants in a developing country is to establish a reputation for competence. The consultant can win the confidence of his clientele by demonstrating his ability on every job he undertakes. It is also essential to establish codes of ethics for industrial consultants and to set up machinery to enforce them in developing countries. In this connexion it was agreed that Governments and public organizations in developing countries should ensure that a local industrial consultant is appointed wherever available, even though such a consultant may initially have to rely heavily upon the foreign consultant to supplement his own expertise

35 It was recognized that sophisticated technologies from industrialized countries are not always suitable for developing countries. One of the main functions of an industrial consultant in a developing country should therefore be to determine the type of technology most appropriate for the local environment, and to adapt and modify existing technologies to meet local needs

36. The lack of follow-up on the suggestions, reports and recommendations of consultants in developing countries is a serious problem. Organized follow-up is essential to ensure that recommendations of consultants are implemented. It also enables the consultant to record accomplishments and provides him with feedback data that are vital for his future assignments in developing countries

37 It was felt that the consultant working in a developing country has a significant role to play as an agent for the transference of know-how, and in this context the obligation of the foreign consultant to train his local counterpart is extremely important

38 It was noted that one of the main problems that confronts consultants working in developing countries is the lack of organized industrial information. The need to set up industrial information centres has already been emphasized in connexion with the agenda item on industrial information.

#### *Industrial training*

39 Training of technical personnel was considered essential for accelerated industrialization. Most of the developing countries suffer from a shortage of specialists. A supply of adequately trained personnel is a prerequisite for industrialization. It was stressed that personnel training should be carefully planned, and co-ordinated or integrated with a country's industrialization requirements to avoid unemployment

and frustration. One of the factors that makes manpower planning difficult in developing countries is that production plans generally depend heavily on external assistance, which may not materialize during the period of implementation of the plan.

40. As training in many developing countries tends to be unco-ordinated and unrelated to industrialization requirements, there is a great need for a sound and effective educational planning system. This would entail, *inter alia*, an accurate assessment of the technical skills required for the implementation of industrial development programmes, proper professional orientation of students, and the reorganization of educational institutions to ensure efficient utilization of their facilities. The importance of providing specialized training at the secondary education level for technicians was stressed. The necessity of improving the training of personnel for industrial services such as administration, information and consulting was recognized.

41. It was agreed that the "brain drain" resulting from social, economic, political and external factors, as well as the lack of proper planning, presents a serious problem to the developing countries. To minimize this loss, educational and training systems should be reorganized so that training will be linked closely with industrialization requirements and most of it can be provided within the country. Arrangements can also be made for advanced and specialized training abroad, such as refresher courses for local graduates after they have become employees of enterprises, institutions and agencies within the country. Among other measures suggested to alleviate the problem were better employment opportunities, higher wages and salaries, and other material benefits and moral incentives.

42. It was also recognized that the training received abroad by nationals of developing countries is frequently of an academic nature, based on standards that are often irrelevant to the industrialization requirements of developing countries. Agencies responsible for assisting training programmes should give greater emphasis to applied industrial training, either in research institutions and factories, or in educational institutions having close contacts with industry. Frustration felt by scientists and technologists trained abroad results from their high expectations and the incompatibility of their training with the industrialization requirements of the developing country.

43. The opinion was expressed that UNIDO should survey ways and means to raise the effectiveness of training of high- and middle-level technical personnel for accelerated industrialization of developing countries in Asia and the Middle East, and that the survey findings might be the subject of a subsequent seminar.

44. It was proposed that regional centres for the organization and administration of industrial services be established with the assistance of UNIDO, and

that such centres provide, *inter alia*, training programmes. It was noted that both UNIDO and ECAFE organize training programmes for public industrial administrators. Such training programmes could be considerably facilitated if regional centres were established.

### Organizational aspects of industrial services

45. It was agreed that industrial services are an instrument of national policy, that an effective institutional structure for these services is necessary, and that the national industrial development plan should allocate financial and other resources to industrial services.

46. The role of the Government in the process of industrialization is twofold: first, to organize and supervise the framework for development, and second to promote or actively participate in that development itself, particularly by establishing the required industrial services.

47. Communication between the public and private sectors should be based on a continuing dialogue and exchange of information between the parties concerned. Workers and industrialists should be given suitable representation on the boards of industrial development organizations, and short seminars on specific branches of industry at which representatives of public authorities and private sectors could freely exchange their views should be organized.

48. Industrial services are provided by a number of more or less independent institutions. Broadly speaking, these institutes undertake industrial research, investment promotion, market research, consulting services and provision of industrial information to enterprises, financing, and training. Depending on the economic and political system, these institutions may be public, private or mixed. In the absence of sufficient collaboration among these various institutions and between the institutions and the users, several institutions may deal with the same problem. Such duplication wastes resources.

49. Problems of liaison and co-ordination arise

- (a) Between the Government or its industrial promotion organization and the various other organizations that provide industrial services.
- (b) Between the industrial service units themselves.
- (c) Between the organizations and the public and private industrial sectors using their services.

50. Co-ordination among public agencies should be undertaken first of all. Possible measures to achieve such co-ordination include establishment of an

inter-ministerial industrialization committee placing of restrictions on the proliferation of activities of departments in the field of industry designation of a minister entrusted with over-all responsibility for industrialization and the issuing of orders that independent institutions providing services must follow government policy and establishment of an over-all agency to coordinate the various industrial services

51 Any increase in the number of bodies providing industrial services undoubtedly increases the risk of overlapping of competence and duplication of effort. A need was therefore felt for grouping together, as far as possible, all services that could be placed under the direction of one agency, permitting each service to retain its own individuality within that single framework. This point has already been emphasized in connexion with the possible grouping of research, standardization and quality control activities under one institution.

52 The functions of each institution providing industrial services should be clearly defined, as well as the jobs, duties, and powers of its supervisory staff. Effective budgeting and allocation of adequate financial resources and careful cost controls are vital instruments for the satisfactory administration of industrial services.

53 The importance of adequate facilities for training was recognized, with management, either private or public, providing adequate pay scales, promotion prospects and fringe benefits to the staff of agencies rendering industrial services.

54 It was generally felt that the status of administrative civil services in some of the developing countries has caused frustration among scientists, technologists and other specialists. Such specialists should not be barred from attaining the highest positions in appropriate branches of the Government and these positions should not be reserved for members of a certain administrative service. The need for increasing the speed of procedure and decision-making in agencies providing industrial services was recognized.

55 The performance of all industrial services must be evaluated. The system of evaluation employed will depend upon such factors as the stage of development of a country, the range and scope of services provided, and the organizational and administrative systems within which they are required to operate.

56 Each country will have to determine its criteria for evaluation, keeping in mind the criteria and standards adopted by other countries. Institute directors should periodically review their systems for organizing in-house projects, assess their personnel policies to ensure an appropriate level of expertise and continuity in professional development, and strengthen their public relations activities to attract and serve a larger or broader industrial clientele.



*Bilateral and international technical assistance*

57 The activities of UNIDO in the field of industrial services, as well as the procedures for requesting assistance under the various programmes (United Nations Development Programme Special Fund, Special Industrial Services (SIS) and the regular programme) were noted.

58 It was agreed that the present system of UNIDO and other international organizations for recruiting experts for developing countries can be improved considerably. UNIDO should provide a confidential report on any expert to be sent to a requesting country and then allow the expert to visit the country for an interview before he is recruited officially for the assignment. UNIDO should also consider expanding the format of the personal history form for experts to include more information on an expert's qualifications.

59 It was recommended that UNIDO allocate separate funds for sponsoring study visits of senior officials of developing countries, for periods of two to three months, to areas that would enable them to become acquainted with the various aspects of setting up specific industries or industrial services. Such experience would enable these officials, when establishing similar industries or services in their own country, to choose suitable consultants.

60 It was emphasized that the developing countries should carefully evaluate prospective experts and their work during the visit for interview and discussion and should assist the experts by providing them with all necessary background material and contacts with their local counterpart.

61 UNIDO should intensify its efforts to assist developing countries in establishing services for industries that are vital for industrial development.

## Annex I

### OPENING ADDRESSES

**Address by Sh. A. Khodjiev  
Vice-Chairman, State Planning Committee of the  
Uzbek Soviet Socialist Republic**

On behalf of the Government of the Uzbek Republic, the research workers and specialists of Soviet Uzbekistan and personally, permit me to welcome you here to sunny Uzbekistan.

One of the characteristic features of our age is the ever-increasing scope of contacts and co-operation among the peoples of the world. This co-operation is manifested in various forms and encompasses a wide range of problems, many of which are vital to progressive development.

Ours is an age of tempestuous scientific-technical revolution: the age of space exploration and nuclear energy, the age of automation and electronics. The latest achievements of modern science and engineering have a tremendous impact on the development of industry and agriculture and they help to accelerate cultural development. This is well illustrated in the case of the Uzbek Republic, which has achieved tremendous economic and cultural progress.

Owing to the radical transformations that have taken place in the economic, social and political fields as a result of the Great October Socialist Revolution of 1917, the people of Uzbekistan and all the other peoples of the USSR have been able to embark on the road of scientific and technical progress and to transform their formerly backward region into an advanced industrial republic with a highly developed agrarian economy. Uzbekistan today boasts of a highly developed culture and a high standard of living. Suffice it to say that the Uzbek Republic has over 140 research centres and some 40 higher educational institutions. These have a staff of well over 23,000 lecturers and research workers. Uzbekistan also has a large number of designing centres and experimental plants that provide the basis for technical progress.

The Soviet Union has always offered scientific and technical assistance to the developing countries, assistance aimed at consolidating their national economies and achieving complete economic independence. It gives us great pleasure to share our experience with you and we hope that it may be of some use to you.

We believe this seminar will serve to further consolidate cooperation and promote mutual understanding in such an important sphere of activities as the organization and administration of industrial services and institutes which are called upon to facilitate technical progress. In conclusion, may I wish you every success in your work and the rapid development of science and engineering in your countries.

**Message from I. H. Abdul-Rahman  
Executive Director of UNIDO**

In sponsoring this Seminar, UNIDO wishes to underline the importance it attaches to the existence of sound industrial services in developing countries as a prerequisite for the rapid industrialization of those countries.

Your agenda covers a broad spectrum of industrial services such as applied industrial research, standardization and quality control, industrial information, industrial promotion, industrial consulting, feasibility studies and training.

While an individual enterprise may be able to provide some of these services itself, only a few if any enterprises in developing countries can hope to provide them all. It is therefore imperative that an effective institutional framework exist that can provide the necessary services to support the viability of industry in a given country.

Industrial services are provided under a variety of institutional arrangements, depending on the level of industrial development already attained, availability of financial and human resources and prevailing social and political conditions. In Asia and the Middle East, as in developing countries elsewhere, the industrial sector has, by and large, not yet reached a level of self-sufficiency to enable it to play the predominant role in establishing the required institutions. But some progress in that regard is being made. In practice then, the Government, either acting alone or in partnership with the industrial sector, has been responsible for setting up most of the institutions that provide industrial services.

Establishing an industrial institution is not, and should not be, however, an end in itself. An institution that fails to provide the services for which it was created, or that provides them unsatisfactorily, defeats the purpose of its own existence and ultimately defeats the national purpose.

The very fact that this Seminar is taking place here today is recognition by all concerned that while much has already been done by way of providing institutional industrial services, much more remains to be done. As you are no doubt aware from your own experience with industrial development, the problems in this field do not lend themselves to easy solutions.

The task before you in this Seminar is therefore a difficult one but I earnestly hope that you will suggest practical measures for strengthening and improving industrial services in Asia and the Middle East, including further specific activities that could be undertaken by UNIDO in this field. UNIDO will of course continue to give its utmost attention to assist Governments upon request in the strengthening of existing industrial development institutions and in creating new ones. Such assistance may take one or a combination of the following forms:

- (a) Assistance in determining, at the planning stage, the technical feasibility and economic soundness of proposed institutions.
- (b) Long-term assistance under the UNDP Special Fund programme in the initial operation of established institutions.
- (c) Assignment to institutions of UNIDO professional staff members and/or outside experts for short periods to evaluate internal organizational structures and administrative procedures of institutions and the relationships between the institutions and external bodies and make recommendations for improvements.
- (d) Recruitment and assignment to institutions of short term experts to tackle specific problems.
- (e) Recruitment and assignment to institutions of directors and other management personnel under the OPAS programme of technical assistance.
- (f) Fellowships to local institutional management personnel for further studies abroad for periods of up to one year.
- (g) Other appropriate forms of assistance, depending on need and availability of resources.

The first step in each case must, of course, be taken by the Government, namely, the submission of a request.

It is indeed a pleasure to have the opportunity of holding this Seminar in Tashkent, and I wish to seize this opportunity to express my gratitude and thanks to the Governments of the USSR and of the Uzbek SSR for their kind co-operation. On behalf of UNIDO I extend to all of you my best wishes for success in your deliberations.

## Annex 2

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## **Annex 3**

### **AGENDA**

- 1. Nature and scope of industrial services**
  - (a)* Applied industrial research
  - (b)* Standardization and quality control
  - (c)* Industrial information
  - (d)* Industrial consulting services including feasibility studies
  - (e)* Training
  
- 2. Organization aspects of industrial services**
  - (a)* Roles of public and private sectors and their relationship in the provision of industrial services
  - (b)* Co-ordination of industrial services
  - (c)* Systems of procedures, finance and personnel
  - (d)* Evaluation of performance
  
- 3. Bilateral aid and international technical assistance in the field of industrial services**
  
- 4. Discussion and approval of the draft report and recommendations of the Seminar**

## Annex 4

### LIST OF DOCUMENTS PRESENTED TO THE SEMINAR<sup>1</sup>

#### Discussion papers

- ID/WG.61/DP.1 Problems of Applied Industrial Research in Developing Countries  
by P.C. Trussell
- ID/WG.61/DP.2 Appraisal of the Performance of Industrial Services by  
Technological Institutes in Developing Countries  
by Lawrence W. Bass
- ID/WG.61/DP.3 The United Nations Industrial Development Organization's  
Industrial Promotion Service  
by UNIDO
- ID/WG.61/DP.4 Establishment of Industrial Information Services in the Developing  
Countries  
by Susan Lévai
- ID/WG.61/DP.5 Some Organizational and Administrative Aspects of Providing  
Industrial Services in Developing Countries  
by Laurence L. Barber
- ID/WG.61/DP.6 Training of Technical Personnel for Accelerated Industrialization  
of Developing Countries  
by V. A. Kondratov
- ID/WG.61/DP.7 The Role of Industrial Consulting Services in the Industrialization  
of Developing Countries  
by Kan D. Marwaha
- ID/WG.61/DP.8 United Nations Industrial Development Organization's Assistance  
to Developing Countries in the Field of Industrial Services  
by UNIDO

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<sup>1</sup> A limited number of copies are available upon request.

**ID/WG.61/DP.9 Co-ordination of Activities between the Public and Private Sectors of Industry and between the various Industrial Services in Developing Countries**  
by Roland Julienne

**ID/WG.61/DP.10 Standardization and Quality Control the Key Factors to Advance the Developing Countries to Technical Progress**  
by E. S. Evseenko

#### **Country papers**

**ID/WG.61/CP.1 Thailand's Small Industries Service Institute (SISI) Review of its Background, Organization, Activities, Problems and Plans**  
by P. Chakkaphak

**ID/WG.61/CP.2 Management Development and Consultancy Services in Iraq the National Centre for Consultancy and Management Development**  
by A. Al-Asam

**ID/WG.61/CP.3 Organization and Administration of Industrial Services in the Philippines**  
by F. U. Santillan

**ID/WG.61/CP.4 Some Facts about the Management Development and Productivity Centre in Syria**  
by H. Kadiy

**ID/WG.61/CP.5 National Standardization in Syria**  
by T. Cheikh-el-Chabab

**ID/WG.61/CP.6 The Singapore Institute of Standards and Industrial Research**  
by Cheo-Tiong Yew

**ID/WG.61/CP.7 Organs for the Provision of Industrial Services in Lebanon**  
by N. M. Ladi

**ID/WG.61/CP.8 The Industrial Development Programme in Afghanistan**  
by G. S. Bayat and H. Ah

**ID/WG.61/CP.9 Small Businesses in the Philippines**  
by E. O. Almonte

ID/WG.61/CP.10 (not issued)

ID/WG.61/CP.11 Industrial Service for the Development of Small Industries in India  
by K. L. Nanjappa

ID/WG.61/CP.12 Growth, Organization and Administration of Consulting Services in  
Pakistan  
by M. Uzair

ID/WG.61/CP.13 Industrial Services in Pakistan  
by A. H. Chotani

ID/WG.61/CP.14 Malaysia's Experiences in the Organization and Administration of  
Some of the More Important Industrial Services Institutions  
by G. Jaanathan

ID/WG.61/CP.15 Supporting Services to Industry in Ceylon  
by L. N. De. L. Bandranaike

#### **Background papers**

ID/WG.61/BP.1 The Organization and Administration of Industrial Services in the  
Developing Countries of Asia  
by the Economic Commission for Asia and the Far East  
(ECAFE)

ID/WG.61/BP.2 (not issued)

ID/WG.61/BP.3 Organization of Industrial Research in Uzbekistan An Important  
Stage in Industrialization  
by M. Z. Khamudkhanov

ID/WG.61/BP.4 Organization of Research in the Cotton Ginning Industry  
by A. N. Nurajiev

ID/WG.61/BP.5 Development and Introduction of Agricultural Machinery  
by H. Gonsiev

ID/WG.61/BP.6 Development of the Chemical Sciences and Industry in Uzbekistan  
by Kh. U. Usmanov

- ID/WG.61/BP 7 Training of National Scientific and Technical Personnel for Industrial Research Institutes in the Uzbek Republic**  
by A. Agzamkhodjaev
- ID/WG.61/BP 8 Standardization and Its Place in National Economy Development of the Uzbek Republic**  
by M. M. Mirsagatov
- ID/WG.61/BP 9 Organization of Activities to Secure the Unity of Measures and Measurements in the Economy of the Uzbek Republic**  
by Mr. Mjasnikov
- ID/WG.61/BP 10 Nature and Scope of AID Assistance to the Development of Afghanistan's Private Industrial Sector**  
by C. H. Zondag



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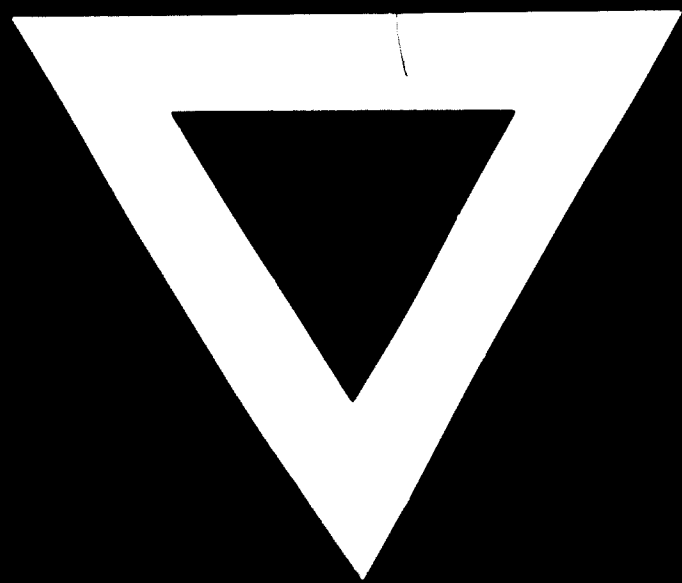
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