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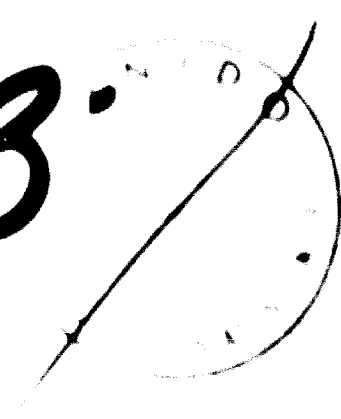
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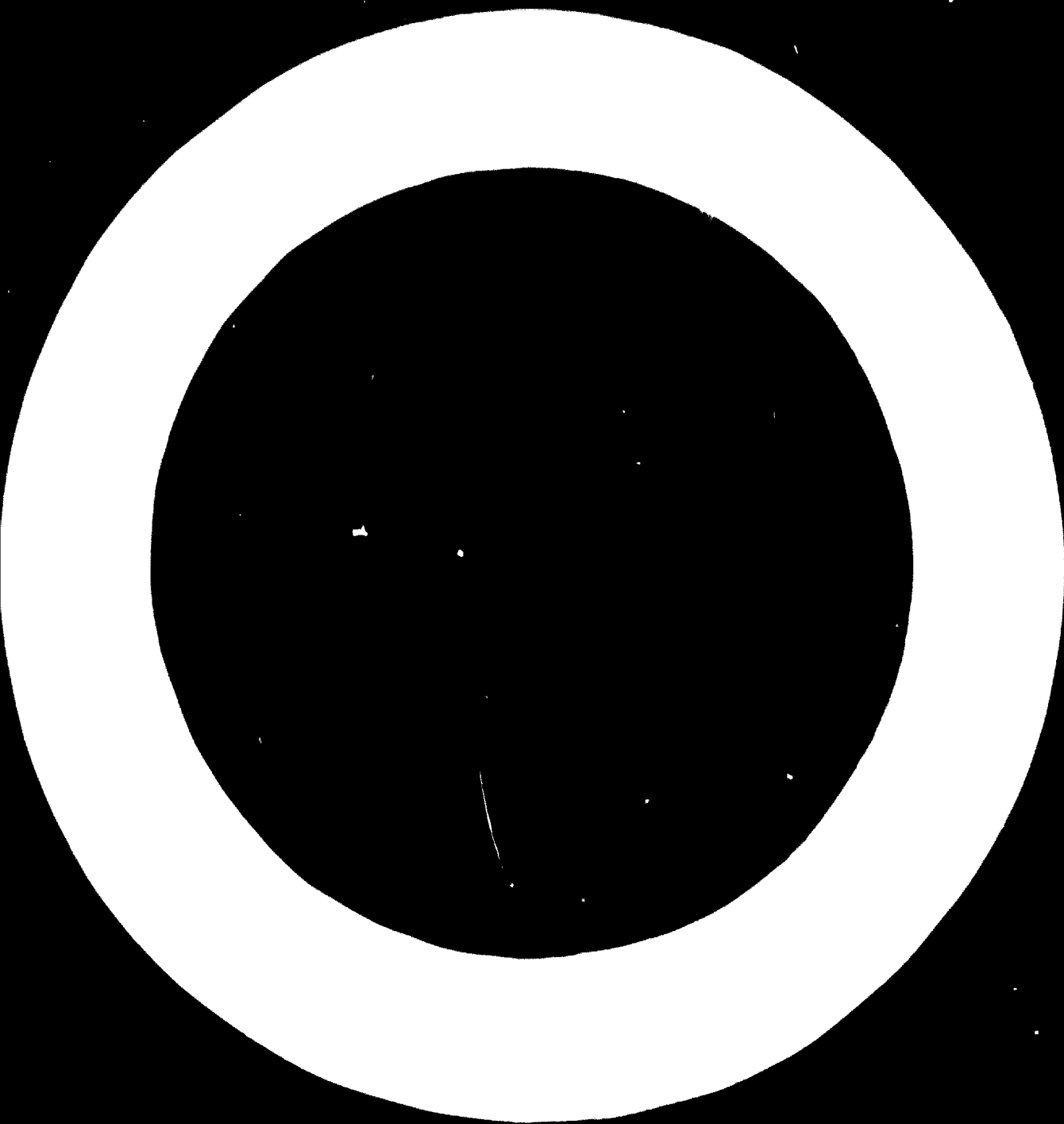


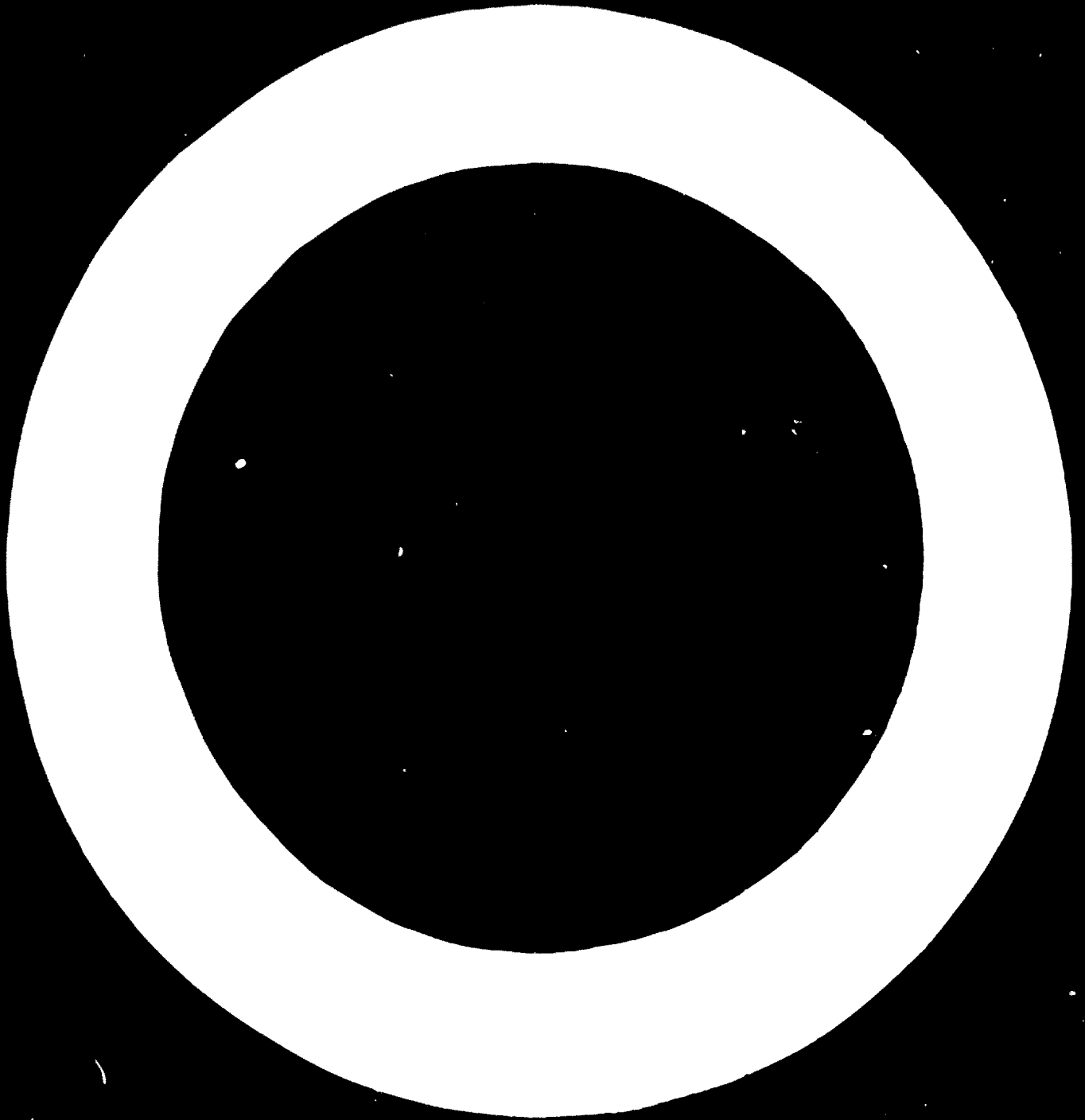
REPORT OF
THE INTERREGIONAL SEMINAR
ON INDUSTRIAL LOCATION
AND REGIONAL DEVELOPMENT

Minsk, 14 - 26 August 1968



UNITED NATIONS





UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION, VIENNA

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Contents

	<u>Page</u>
Preface	5
Introduction	7
CHAPTER I	<u>CONCLUSIONS AND RECOMMENDATIONS</u>
	<u>9-16</u>
The general problems of industrial location and regional development	9
Factors in the location of industry	10
Industrial location planning and regional planning	11
Instruments of industrial location and regional development policy	12
Recommendations for action by UNIDO	13
Concluding remarks of the Chairman	15
CHAPTER II	<u>THE GENERAL PROBLEMS OF INDUSTRIAL LOCATION AND REGIONAL DEVELOPMENT</u>
	<u>17-25</u>
General statements	18
The definition of "region"	21
The role of industrial location in regional development	24
Industrial dispersal and national economic growth	25
CHAPTER III	<u>FACTORS IN THE LOCATION OF INDUSTRY</u>
	<u>27-33</u>
The role of infrastructure	28
Labour availability as a location factor	30
External economies and industrial agglomeration	32
Industries appropriate for dispersal	33
CHAPTER IV	<u>INDUSTRIAL LOCATION PLANNING AND REGIONAL PLANNING</u>
	<u>35-40</u>
Co-ordination of sectoral and regional planning and project programming	35
Appropriateness of techniques of planning and programming	38
CHAPTER V	<u>INSTRUMENTS OF INDUSTRIAL LOCATION AND REGIONAL DEVELOPMENT POLICY</u>
	<u>41-47</u>
Policies to prevent further concentration of industry	42
Policies to promote growth in new opportunity regions	43
Policies to promote regional decentralization	44
Mechanisms for co-ordination	45

Annexes

	<u>Page</u>
1. Agenda and programme	49
2. Organization of the seminar	53
3. Welcoming statements by representatives of the host Government	55
4. Statement of Mr. I. H. Abdel-Rahman, Executive Director of UNIDO	61
5. Statements of Mr. E. Weissmann, Director of the Seminar (Senior Adviser on Regional Development, United Nations, New York)	63
6. Proposal by Mr. M. Husain, the Delegate from Pakistan	73
7. Closing address of the Chairman, Dr. P. Martinkevich (Director, Institute of Economics, Academy of Sciences of the Byelorussian SSR)	75
8. List of participants and observers	77
9. List of documents presented to the seminar	85

Preface

1. The Interregional Seminar on Industrial Location and Regional Development, sponsored by the United Nations Industrial Development Organization (UNIDO) in co-operation with the Government of the Byelorussian Soviet Socialist Republic acting as the host, was held in Minsk from 14 - 26 August 1968. It was the first large United Nations gathering exclusively devoted to problems of industrial location and regional development in developing countries.
2. The seminar was opened by Mr. F. L. Kohonov, Deputy Chairman of the Council of Ministers of the Byelorussian SSR and Chairman of its State Planning Committee. A welcoming address was then given by Mr. I. I. Levko, Chairman of the Minsk City Council. (These speeches are presented in Annex 3.)
3. In a welcoming address following these statements, Mr. I. H. Abdel-Rahman, the Executive Director of UNIDO, emphasized the importance of regional aspects of industrial planning as part of industrialization planning. He also observed that the importance of regional aspects of planning had been stressed in the recommendations of the International Symposium on Industrial Development (Athens, 29 November - 19 December 1967) and that the Industrial Development Board at its Second Session, held in Vienna (17 April - 14 May 1968), had recognized the need for improving the existing practices of location of industry in developing countries. Mr. Abdel-Rahman hoped that the discussions of the seminar would result in the formation of an organized body of knowledge to promote improved policies of industrial location and regional development in developing countries. (Mr. Abdel-Rahman's statement is presented in Annex 4.)
4. In a keynote statement Mr. E. Weissmann, the Director of the Seminar (Senior Adviser on Regional Development, United Nations, New York) discussed the rapid economic and industrial development that had taken place in recent years. Since the recognized purpose of development is social improvement, a country must allow social development a share of the wealth produced and must plan for an appropriate distribution of its available social benefits. He also observed that too-rapid urbanization is one of the dangers of a rapidly developing economy and that proper planning for regional development can correct this situation. Mr. Weissmann then outlined the various issues to be discussed by the participants in the seminar. (Mr. Weissmann's opening and closing statements are presented in Annex 5.)

5. The agenda of the seminar, comprising four major items of discussion, is given in Annex 1. Each of the major items was assigned to a panel of experts. (The organization of the panels is shown in Annex 2).
6. The participants of the seminar elected Dr. F. Martinkevich, Director of the Institute of Economics, Academy of Sciences of the Byelorussian SSR; and as Rapporteur Mr. K. Balachandran, Joint Secretary to the Government of India. Staff members of the United Nations served as Director, Secretary and Administrative Assistant. The UNIDO consultants, Mr. R. B. Helfgott, Professor and Chairman of the Department of Industrial Relations at the Newark College of Engineering in Newark, New Jersey, and Mr. S. Schiavo-Campo, Economist, United Nations Conference on Trade and Development (UNCTAD), New York, had the over-all responsibility for drafting the report. Mr. A. Kuprianov, member of the Industrial Programming Section, Industrial Policies and Programming Division of UNIDO, served as Technical Secretary and collaborated with the editors in the preparation of this report.
7. The seminar was attended by participants from 21 developing countries in Africa, Asia, Europe, Latin America and the Middle East. The total attendance was 96. The participants were officials directly concerned with industrial location and regional planning in their countries. The United Nations Regional Economic Commissions, national and other organizations sent observers. Eight international experts, invited by UNIDO, served as discussion leaders and assisted in the preparation of the report, in collaboration with host country advisers. Many specialists were also invited by the host country to attend the seminar as observers. A list of participants, observers, experts, representatives of the United Nations and affiliated bodies and representatives of the host country assisting in administration of the seminar is presented in Annex 7.
8. The meetings were held at the Scientific Research Institute of Economics and Economic-Mathematical Methods of Planning in Minsk.
9. The views expressed in this report are those of the participants and do not necessarily reflect the views of UNIDO.

Introduction

10. It is widely recognized that factors of industrial location can be crucial to the success of industrial projects and plans. Thus, the International Symposium on Industrial Project Evaluation (Prague, 11 - 20 October 1967)^{1/} recommended that industrial location be studied in a separate seminar, and the Industrial Development Board stressed the need for improving existing practices of industrial location in developing countries. The importance of regional development and planning was also recognized by the International Symposium on Industrial Development (Athens, 29 November - 19 December 1967).^{2/}

11. UNIDO, as well as its predecessor, the Centre for Industrial Development, has devoted considerable attention to industrial location and regional planning. The seminar held in Minsk represented an essential stage in the work of UNIDO and in its ability to render practical operational assistance in this area.

12. The agenda (Annex 1) was divided into the following four groups of items each of which is discussed in a separate chapter of this report:

- (a) The general problem of industrial location and regional development;
- (b) Factors in the location of industry;
- (c) Industrial location planning and regional planning;
- (d) Instruments of industrial location and regional development policy.

13. The seminar had before it analytical studies prepared by UNIDO consultants; these studies covered the main subjects in the agenda and served as the basis for discussion. In addition, several country studies illustrated the experience of developing countries. Extensive background documentation was prepared by experts from the host country and the Union of Soviet Socialist Republics. The seminar considered the discussion and background documentation as a useful and important source of knowledge and information. The list of documents prepared in connexion with the seminar is given in Annex 9.

14. The participants had useful discussions with authorities of the host country and participated in an extensive programme of field visits.

^{1/} ID/Ser.H/1 (United Nations publication, Sales No. E.67.II.B.23)

^{2/} ID/11 (United Nations publication, Sales No. E.69.II.B.1)



Chapter I

CONCLUSIONS AND RECOMMENDATIONS

15. The seminar emphasizes that in the field of industrial and regional development it is necessary to exercise great caution when making broad generalizations. Any conclusion must therefore be viewed in the light of the specific characteristics of the individual country, its stage of development and its institutional and political conditions. The principal conclusions and recommendations of the seminar are reported below, as they emerged from the order of the subsequent chapters.

The general problems of industrial location and regional development

16. The experience of developing countries shows that economic activity, especially industrial activity, tends to be concentrated in one or a few urban areas with many economic advantages. This creates a situation of regional disparities, which must be progressively reduced in order to avoid an ineffective development. The goal of regional policy, however, should be to develop industrial and regional equality and to develop each region to its maximum potential. Regional development policy should follow the principle of "relative dispersal", that is, growth points within the less developed areas of the country.

17. Efforts to counteract the strong tendency towards industrial concentration should be small and gradual and retained in the general interest of achieving that kind of economic and profitability and "social" profitability, which best corresponds to the national objectives of individual countries. In addition, as well as national policies, "national profitability" should have priority over "regional profitability".-

18. The general objective of regional development policy is the progressive equalization of per capita consumption levels within regions of a country. The seminar recognizes that the proper concern of regional policy is people, and not land per se: thus, changes in the distribution of population, as a

1/ There are both economic criteria, but while the first takes into account the economic profitability for the country as a whole, the second refers only to the profitability of the individual project. (See the Report of the Inter-regional Symposium on Industrial Project Evaluation, Prague, October 1965 - United Nations publication, Sales No. E.67.II.B.23.)

result of interregional migration, could help in resolving the conflict between regional development (in the above sense) and national economic growth, provided that such changes are correctly assessed and taken into account at the planning stage.

19. The seminar, recognizing the crucial importance of location for the success of a plan or project, recommends that international financial institutions pay increasing attention to the locational implications of planned projects and to their impact on surrounding regions.

20. The definition of "region" depends on the nature of the problem, on the conditions related to it and on the objectives of the individual country. No single definition of region, therefore, will serve for all developing countries or for all purposes. However, the seminar considers that a region is a dynamic entity, the characteristics and boundaries of which are subject to change through time, and that any division of a country into regions should, first and foremost, serve the needs and the purposes of planning and development.

21. The seminar recommended that efforts be made to standardize terminology in the field of industrial location and regional development. As a step towards such standardization (for working purposes), the seminar recommends the classification outlined in the section of Chapter II, entitled "The definition of a region".

22. The seminar recognized that, for some developing countries, particularly smaller ones, an economic "region" may often mean an area that overlaps national boundaries. It recommended that in such cases the possibilities for multinational co-operation be explored.

Factors in the location of industry

23. Infrastructural facilities are extremely important as a location factor for industry and as a prerequisite for regional development. Indeed, the general lack of such facilities in developing countries impedes national as well as regional development. Particular attention should be given to those infrastructural expenditures that are necessary for the exploration of the natural resources potential of a region. In general, the amount of investment in infrastructural facilities in a region should conform to the projected long-term demand for their services.

24. Large-scale employment opportunities are present in only a few urban centres. Although many workers migrate towards such centres, in many countries it is difficult to induce people, particularly skilled personnel, to move away from them.

25. The significance of the regional availability of skilled labour as a location factor for industry varies at different stages of development, and it is likely to increase as the complexity of the economy of a developing country increases and as the skill of the labour force increases.

26. The presence of external economies leads to industrial and urban agglomeration. To exploit these economies, particularly those stemming from inter-industry relations, regional development should be based, wherever possible, on concentrating industrial plants, within less developed regions, in centres that offer possibilities of becoming growth points for the development of the entire region.

27. Little information is available on the size of a city beyond which the economic disadvantages of urban concentration outweigh its advantages. It would be helpful if UNIDO were to undertake a study or provide assistance to outside researchers to analyse the implications of city size for industrial productivity and costs.

28. Although various types of industry may be appropriate for location in different less developed regions, and although in the long run a diversified industrial structure is necessary for sustained regional growth, the following types of industry appear to be more easily accommodated in such regions:

- (a) small-scale, labour-intensive industries that are oriented towards local markets;
- (b) agricultural processing industries based on local production and
- (c) industries based on the processing of locally available mineral or power resources (these often may be large-scale industries).

Industrial location planning and regional planning

29. Locational aspects form an essential part of the evaluation of industrial projects. Alternative locations must therefore be analysed on the basis of the criterion of national profitability and not that of commercial profitability. The economic value of the costs and benefits of the project for the economy as a whole, rather than the financial and economic feasibility of the project evaluated in isolation, should be the basis for decision. However, appropriate measures should be taken to subsidize projects that are nationally profitable but unprofitable in terms of their internal cash flow.

30. Effective regional planning bodies, systematic co-ordination between sectoral and regional planning organizations and direct involvement in the planning process on the part of people who have operational responsibilities,

are essential elements in the success of regional plans. In general, over-centralized planning, whether for national or regional objectives, is less effective than planning that delegates responsibility for many decisions to regional and operational agencies.

31. Developing countries possess limited ability to use advanced mathematical techniques of planning and programming. The use of such techniques is limited particularly where regional planning is concerned, owing to the greater scarcity of data at the regional level. The appropriate tools of planning vary with the level of development, and only techniques appropriate to the conditions of developing countries can be used effectively. In most developing countries, the most advanced techniques applicable are relatively uncomplicated.

Instruments of industrial location and regional development policy

32. Although a basic objective of regional policy is to promote the development of the less developed regions, it is inadvisable to spread the limited resources for investment too thinly over the country. The ability of a country to undertake a policy of regional decentralization depends largely on its level of economic and industrial development; a policy of selective dispersal and the creation of growth points should be given priority over broad decentralization. However, given the multiplicity of government objectives, political and social considerations must also be taken into account in formulating policies.

33. The provision of adequate infrastructural facilities is an important way to attract industries into the "new-opportunity" regions of a developing country. It is also necessary to provide incentives, such as housing, sanitation, wage and salary premiums and other amenities to induce migration, particularly of skilled labour, to these regions. Direct government investment in industrial activities in these regions also plays an important role in their development. Incentives can be provided to stimulate private investment in new-opportunity regions, but they may be insufficient at first to offset the cost reductions provided by the external economies in the existing developed regions. Joint public-private ventures, however, may be more successful.

34. The government of a developing country can use many policy instruments to influence the distribution of economic activities among and within its various regions. Positive incentives are more effective than prohibitive measures in

attracting industry to less developed regions. The provision of fiscal incentives such as tax reductions, credit and financial aid, and the building of industrial estates can play a useful role.

35. It is essential that there be co-ordination between the programmes of the national and regional entities. Exchange of information is vital, and it is necessary to provide a mechanism through which viewpoints can be conveyed from one level of authority to another. Giving regional authorities a voice in national planning enables them to understand the roles of their regions and helps to ensure conformity with the programme. Regional budgets can be very useful co-ordination devices if they are not permitted to hamper flexibility.

36. Co-ordination of the regional programmes of the public and private sectors is essential. The development authorities established to promote regional growth can be the instruments through which to achieve such co-ordination. Other tools of co-ordination are the licensing and incentive programmes established by governments.

Recommendations for action by UNIDO

37. In the course of the discussion the following recommendations were made for action by other agencies within the framework of the United Nations:

- (a) There was agreement that the recommendations for action by UNIDO in industrial location and regional planning made by the Ad Hoc Advisory Expert Group Meeting on Regional Industrial Planning (Geneva, May 1967)^{4/} are important measures to assist developing countries in such work. Special emphasis was given to the need for promoting wider knowledge and use of efficient techniques and for adapting them to the technical and informational conditions prevailing in developing countries so as to render these techniques practicable and directly usable.
- (b) With the modifications noted in item (c), the participants were in agreement with the list of topics of prior importance proposed by the expert group meeting for future UNIDO research in addition to research necessary for direct support of specific operational activities.
- (c) It was suggested that topics such as the reconciliation of sectoral and regional approaches to planning and the role of natural resources

^{4/} ID/WG.9/16, Final Report of the Ad Hoc Advisory Expert Group Meeting on Regional Industrial Planning (Geneva, May 1967), paragraphs 20 - 24.

in industrial location^{5/} should be given high priority. The latter is an especially important subject for research and one which is most relevant for developing countries.

- (d) It would also be helpful if UNIDO were to undertake a study or provide assistance to the developing countries to analyse the implications of city size for industrial productivity and costs.
- (e) It was also proposed that UNIDO initiate a study of the possibilities of creating growth poles outside the developed regions, in conformity with the general criterion of "selective dispersal", and of the characteristics of a policy to create such growth poles. This study should survey the present geographical distribution of industry, examine the possibilities of creating new industries in less developed regions and illustrate its findings by means of specific country examples.
- (f) Some participants thought that an operations guide on regional industrial planning should be prepared by UNIDO at the earliest possible date.^{6/} There was general agreement that the primary stress of the guide should be on the explanation of different techniques and their presentation in simplified form that could be of immediate usefulness to persons concerned with industrial location and regional development. It appeared that the preparation of a preliminary outline for the operations guide is a feasible first step towards the preparation of a detailed outline and plan of work.
- (g) Concerning the recommendation of the expert meeting to explore the possibilities of creating multinational centres for research and training in regional development and planning, there was agreement that such centres could be of great importance. It was stressed that they should be established and should work closely with other international organizations in this field. Three suggestions were made. The first emphasized that these centres should concentrate their work on regional development and also examine various other aspects of this problem rather than only the economic ones. The second proposal was that periodic seminars or workshops on the subject should be held pending the establishment of research and training centres, since it was likely that there would be some delay in the erection of such centres. Thirdly, it was noted that developing countries could take advantage of the computer and training facilities that exist in many developed countries (for example the centre in Bratislava, Czechoslovakia).
- (h) There was also general agreement with the suggestion that, when offering technical assistance in the fields of industrial location and regional development, efforts be made to select experts from developing countries. This point applies, of course, to economic development assistance in general. In this context the seminar took note, with approval, of a proposal by the participant from Pakistan (see Annex 6).

^{5/} ID/WG.9/16, Final Report of the Ad Hoc Advisory Expert Group Meeting on Regional Industrial Planning (Geneva, May 1967), paragraphs 22 and Annex 2, Part 2.

^{6/} ID/WG.9/16, Final Report of the Ad Hoc Advisory Expert Group Meeting on Regional Industrial Planning (Geneva, May 1967), paragraphs 22 and 84 - 86. Annex 3 of this document contains a description of the scope of the proposed operations guide and a tentative annotated outline.

- (i) A number of participants expressed the wish that information on methods of industrial planning be collected and exchanged internationally through UNIDO, which should, in the process, attempt to standardize such information and the corresponding terminology.
- (j) Finally, there was general agreement that the documentation prepared for the seminar was a comprehensive and very useful source of information. Participants took note, with satisfaction, of the quality of the discussion documents and expressed their appreciation of the care and thoroughness with which the background documentation had been prepared by scientists of the host country and of the USA. They recommended that these studies be made available in published form, to the greatest possible extent and at the earliest possible time. It was suggested that two separate volumes be produced, the first incorporating the discussion papers and selected country studies, and the other the studies prepared by host country scientists.

Concluding remarks of the Chairman

38. In closing the seminar, the Chairman observed that the characteristics of the problems discussed were more those of a symposium than of a seminar. The fact that the participants, especially the representatives from the developing countries, had participated as actively as the experts themselves, made the seminar more significant and important, because the problems of industrial location and regional development in developing countries could be discussed in greater depth.

39. The Chairman also expressed his satisfaction with the discussions that had taken place and cited in particular the descriptions by some participants of experiences with industrial location and regional planning in their own countries. Methodological questions as well as practical aspects of industrial location had been discussed, and it was hoped that these considerations would further the solution of industrial location problems in every country. The complexity of these problems was increased by political, economic and social factors and by natural conditions and resources. Such problems were more easily solved within the framework of the state sector. National investments were important to the development of new regions and in the solution of large-scale regional problems.

7/ The actual text of the Chairman's address is presented in Annex 7.

40. The Chairman emphasized the importance of experience with the multi-disciplinary approach to the solution of industrial location problems. With this method all sectors and aspects of industry could be more closely united and national and regional interests combined more effectively. As discussed, spatial models were most effectively applied to planned economies.

41. The Chairman expressed the hope that the interesting reports obtained through the seminar would help participants to continue their study of industrial location. He also expressed appreciation for the documentation submitted by UNIDO and the host country, and suggested that the material of the seminar be published.

42. In concluding, the Chairman commented with appreciation on the mutual understanding that existed among the participants and experts and between the participants and the officers of the seminar. He also expressed his appreciation of the great contribution made by UNIDO to the organization and work of the seminar and expressed the hope that individual aspects of the industrial location problem would be included in its prospective work programme.

Chapter II

THE GENERAL PROBLEMS OF INDUSTRIAL LOCATION AND REGIONAL DEVELOPMENT

43. The two UNIDO experts who acted as discussion leaders and rapporteurs on this agenda item introduced the subject and outlined the issues of primary concern and the focus of discussion. They emphasized that a decision on where to locate an industrial project could be as crucial to its impact on the development of the country and its regions as the very decision to undertake the project itself. Production could not take place in a vacuum; it was as inappropriate to decide what to produce without knowing where to produce it as to decide on a location before knowing what was to be produced there.

44. One of the major problems is that traditional location theories were evolved in and for industrialized economies and are therefore not fully applicable to developing countries. It would appear, however, that the traditional criteria could provide some broadly acceptable guide-lines for location and regional planning in developing countries. One purpose of the discussion on this and the other items, therefore, was to attempt an examination and, if possible, some adaptation, of such criteria and methods to the characteristics of developing economies.

45. It was emphasized that, in the field of location and regional development, it is necessary to exercise great caution when making broad generalizations; any conclusion must be viewed in the light of the structural characteristics of the economy of the individual country, its stage of development and its institutional and political conditions.

46. The three principal issues, which appeared to constitute a suitable focus of discussion by the group, were outlined as follows:

- (a) The meaning given to the term "region": The specification of the various objectives of regional development and of their implications, and the specification of the appropriate time dimension for each objective;
- (b) The role of industrial location in pursuing regional development objectives: How far industrial location policies can be used to further regional development objectives, in relation to the existence of other alternatives (agricultural policies, manpower policies, public infrastructural investment policies etc.);
- (c) The relationship between the geographical distribution of industry and the economic growth of the nation as a whole: At what stage, if any, does it become possible to follow industrial decentralization

policies without impairing national economic growth and interrelation that exists between optimal economic location and the achievement of other national objectives such as, for example, greater political integration of the various regions of a country?

47. The expert from the host country who worked with the UNIDO experts on this item of the agenda gave a comprehensive account of the problems and solutions in the location of industry and regional development of his country. He also reviewed the relevant background reports prepared by several other experts from the host country.

General statements

48. Participants from Brazil, Burma, Chile, Congo (Brazzaville), Congo (Democratic Republic), Ghana, India, Iraq, Nigeria, Pakistan, Peru, the Sudan, Syria, Turkey and the United Arab Republic, as well as several observers, related the experience of regional development problems and programmes in their countries.

49. A common theme running through the general statements was that economic activity in developing countries tends to be concentrated in one or a few urban centres. These centres offer infrastructure, larger markets, higher levels of education (and thus the availability of skilled technical and professional personnel) and ease of contact with governmental bodies as well as with managers of other enterprises. This situation creates regional disparities which governments seek to diminish by dispersing industry to other regions, either through the building up of the public sector or through regulation of the private sector. Several observers stressed that, from the point of view of solving the problem of rational distribution of productive forces within a country, the optimum efficiency was achieved within the framework of the public sector.

50. Most speakers also pointed out that the programmes of their countries for industrial dispersal could not be said to have been successful. Efforts were still continuing, however: approaches to industrial location and regional development policy were being re-evaluated, objectives were being redefined and clarified and more adequate institutional mechanisms were being created in most countries.

51. It was noted that a number of developing countries had a common colonial experience that influenced their regional development along similar lines. For example, at independence, the industries of India were concentrated in a few major centres such as Bombay and Calcutta. Since then, government policy had

sought to disperse new industry by giving a greater role to the public sector and through the licensing of private establishments. Dispersal policies, however, have encountered a number of inherent problems. One of these is that industrial dispersal was often costly, partly because regions with early starts are lower-cost locations. Another is that controlling the location of private enterprises through licensing did not ensure that they would locate in regions that governments would wish to develop, but only that they would not be able to locate in the major centres.

52. It was also pointed out that, since regions have different characteristics, the goal of regional development policy could not be to develop all regions equally but to develop all regions to their maximum potential. Two main points emerged in discussion of the experience of Pakistan.

- (a) Given the geographical nature of the country, its constitution explicitly included as an objective of the state the "parity objective", namely that of narrowing the economic gap between East and West Pakistan.
- (b) Within East Pakistan (the less developed region), industries could be located primarily on the basis of plant efficiency, since the region was internally more homogeneous, while within West Pakistan, owing to the existence of different cultural groups and internal economic characteristics, less freedom existed for economic location of individual plants.

53. In regional development, it was stated, there should be, first and foremost, "a balance between economic profitability and social profitability". The main concern of development should not be the rate of economic growth but the social and economic "price" at which a given rate of growth could be achieved. If the only concern were maximization of the national growth rate, investment should be continued primarily in developed areas. Clearly, however, the scope of national development is wider than the rate of economic growth.

54. The experience of the United Arab Republic indicated that efforts to counteract the strong tendency towards industrial concentration "should not be sharp, but smooth and gradual". Also, it was pointed out that, although all developing countries faced the same general problems associated with industrial concentration, the solutions could not be the same but "should be based on local conditions and availabilities as well as on national aspirations".

55. It was also noted during the discussion that, as shown by the experience of many countries, the existence of agglomeration economies and savings in transport costs had made individual projects less costly in the cities. One participant viewed the lack of transportation in the hinterland as the main

problems faced in regional development of his country. A possible solution suggested by another participant, is the exploitation of the rivers, both for transportation and as sources of power. It was also noted that, too often, international financial institutions that provided support for industrial projects did not concern themselves sufficiently with project location or its impact on the surrounding region. The experience of the Industrial Bank set up by the Sudan to stimulate industrial development suggests that the provision of infrastructure was the most important means to attract industry to an area. Finally, a participant described the regional policy of his country as being based largely on the exploitation of the potential of "new opportunity" regions, which are described later in this section. Natural resources revealed by exploration could constitute the basis for implanting local industries.

56. A number of Byelorussian observers described achievements in the rational distribution of productive forces, regional planning and regional development in the centrally planned economies. It was pointed out that, after the establishment of the Byelorussian SSR in 1919, the reconstruction and development of the country began on a socialist economic basis. By 1940, new branches of industry had been created and industrial production had increased considerably. This progress, however, was interrupted by the Second World War. During that war, a quarter of the population of the Republic perished, and most of the urban centres were practically destroyed, so that, at the time of the liberation, industrial production was only 10 per cent of the pre-war level. This enormous disruption, of course, immensely complicated the problems of regional development and location of industry. Recovery was very fast, however: by 1950, the level of industrial production was 15 per cent higher than the pre-war level, and in 1967 it was nine times higher, the average annual rate of industrial growth in the period 1951-1967 having been about 13 per cent. The most important result of this development was that the living conditions of the people had improved rapidly. Human exploitation had been eliminated, work guaranteed, medical services and education were free and a comprehensive system of social insurance had been provided. The Byelorussian experience of steady development from economic backwardness to the state of high industrial development could, in the opinion of the speakers, be used by many developing countries confronted with similar problems.

57. Three principal points were made by the observers from the USSR:

- (a) The correct approach to location of industry and regional development required the formulation of a comprehensive and consistent mathematical model of the distribution of all productive forces in the country;
- (b) Particular attention should be paid, in regional development, to objective infrastructural requirements;
- (c) Many problems of industry location could not be solved except through long-term action.

The definition of "region"

58. There was complete agreement that it was impossible to elaborate a general definition of the term "region" that would be valid for all purposes and at all times. There was also agreement, however, that planners must of necessity work with a well-identified geographic unit that is appropriate to the analysis being undertaken and consistent with the objectives and methodology of planning.

59. The seminar accepted, in this respect, the following statement contained in the UNIDO document Industrial Location Planning:

"The subdivision of the problem in practice will depend, of course, on how a 'region' is defined.... 'regions' will be considered as those which, for planning purposes, are treated by their Government as such ... the definition of 'region' depends on the nature of the problem at hand, many such definitions being possible and valid at different times and for different purposes."^{8/}

60. There was general agreement with the view that a region should be considered as a dynamic entity, the characteristics and boundaries of which are subject to change through time. This is especially important in a developing country. Thus, any concrete classification of regions should take into account the dynamic nature of the process of development. Also, any concrete regional breakdown must be kept flexible enough to permit adaptability and usefulness in the light of changing circumstances.

61. It was also generally agreed that a major difficulty confronting planners and administrators concerned with regional development and industrial location was the lack of a standardized terminology for working purposes. A classification of regions in broad types could lessen the difficulties of communication

^{8/} ID/Conf.1/12/1967, Industrial Location Planning, footnote 5/, page 5.

in this field; a possible criterion would consist of the uniformity of general economic problems facing regions of different types. Various classifications were, of course, possible. The classification adopted was thought to be of some practical value, regions being classified in the following broad categories:

- (a) Developed region: A geographic area within a country which is characterized by faster growth and by a higher average level of socio-economic development than the remainder of the country. It was also normally characterized by higher concentration of industry, higher degree of urbanization, and greater over-all locational advantages than the remainder of the country.
- (b) Less developed region: A geographic area within a country which has been characterized by slower growth and by a lower level of socio-economic development than the remainder of the country. Such a region is also normally characterized by a relatively poor endowment of many factors of production, although it may have a potential for future development. This classification included both less developed regions that offer some potential for future development and areas such as deserts or frozen wastelands that appear to lack any kind of basis for economic activity.
- (c) "New Opportunity" region: A geographic area within a country (not necessarily a border region), characterized by sparse population and by an unexploited natural resource potential. The economic exploitation of such potential could lead both to the development of the area and to faster national growth.
- (d) Depressed region: A geographic area within a country which has had economic growth in the past but which, due to internal or external structural changes, is experiencing economic stagnation (or decline). This type of region was more common in industrialized economies, though regional "depression" may occur also in developing countries.

63. Several participants felt that it would be "superfluous and completely irrelevant" to attempt to find a definition of region that would be valid for all purposes and for all developing countries. Some speakers expressed the view that there might be a great deal of wisdom in leaving the concept of region somewhat undefined; any concrete and meaningful definition would inevitably be so narrow as to exclude from consideration some very important individual regional phenomena. It would therefore be preferable "to infer the meaning to be given to the term 'region' from the context in which it was used and from the objectives of the particular case at hand".

64. Another participant added to this view the consideration that the regional mechanisms were attempts to get away from national aggregate models formulated in strict mathematical forms. Thus, it would be counterproductive to adopt strict definitions of regions, because this would have the effect of overemphasizing only a few of the interdependent objectives of the development process.

In this respect, he also mentioned the importance of pre-investment activities, that is, the identification of new areas of economic opportunity, which he considered a prerequisite for feasibility and location studies. This consideration was linked by a UNIDO expert to the dynamic nature of regions. An operational regional breakdown for planning purposes could be related intimately to the needs and direction of pre-investment activities in each developing country.

64. Another argument to support the opinion that attempts to find a single definition of region are not useful was the following: economic regions (in the sense of regions whose components were structurally interdependent) do not actually exist in most developing countries. Indeed, since the very process of regional and national development is directed towards the creation of such economically viable geographical units, it could not be assumed that such units already existed. One must therefore simply take, as the spatial basis for planning, the existing administrative divisions of the country, whatever they might be, simply because such divisions were the only regional classification available. Another participant agreed, emphasizing that the concrete limits given to regions mattered far less than the creation of viable economic units.

65. Several speakers emphasized that it was necessary for economists to participate in the delimitation of administrative regions and in solving regional problems so that the future basis for regional planning could be an administratively convenient one that would, at the same time, be responsive to sound economic criteria.

66. An observer from the United Nations Economic Commission for Africa, however, thought that a seminar devoted to regional development could hardly escape the need for some meaningful definition of region. Also, regionalization of territory was necessary for regional planning, and should be carried out to serve its needs. The UNIDO experts expressed a similar opinion, believing that the region, that is, the object of regional development policies, must be clearly defined, according to the particular cases, if the costs to the country and the benefits to the region were to be correctly assessed. They were also of the opinion that, from the terminological rather than from the analytical standpoint, the seminar would make an important practical contribution by agreeing on standard terminology and recommending it for work in this field, as noted earlier in this section.

67. In their statements describing the general approaches of their countries to industrial location and regional development, several participants noted

that the classification of regions on which their planning had historically been based had proceeded from a broad classification of a geographical nature to a more detailed regionalization of the territory, based only partly on the physical characteristics of the areas. Thus, the participant from Peru reported that the country had shifted from a broad classification of regions - costa (coast), sierra (mountain range) and selva (forest) to a breakdown of the nation into eight administrative regions based only partly on topographical features. Similarly, the Ghanaian approach to regional planning had progressed from the general objective of river-basin development to a multipurpose approach, using administrative regions as the unit for planning. Indeed, the interventions of several participants indicated that many developing countries did in fact attempt to use their geographical administrative divisions to fit planning needs.

68. Another important point that emerged from many general statements was that in smaller developing countries an economic definition of region might very often result in geographical divisions that overlap national boundaries and that sometimes would be larger than the country itself. They emphasized the need, in such cases, for multinational co-operation resulting in joint industrial undertakings, when economic and political circumstances permit.

The role of industrial location in regional development

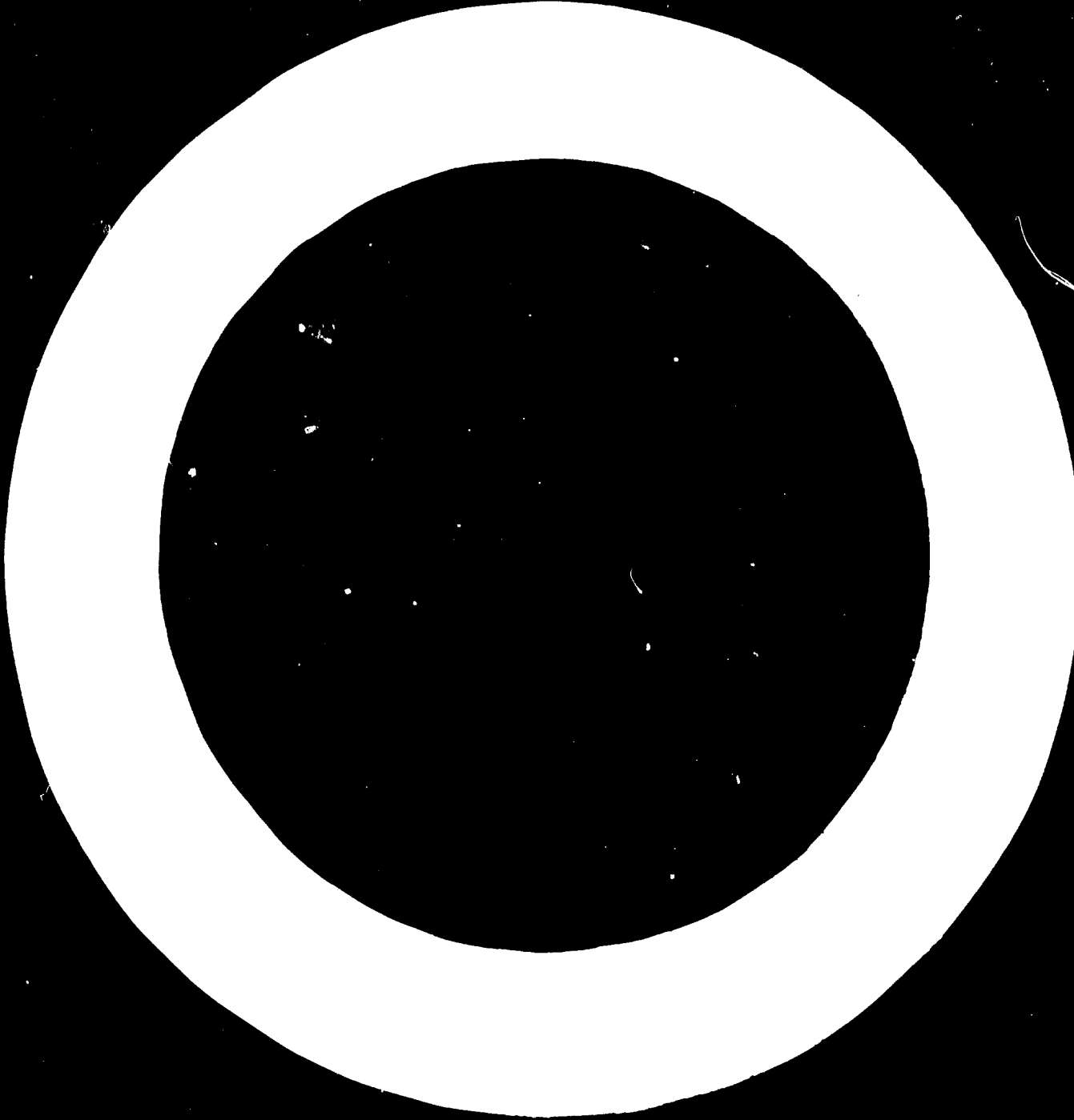
69. With respect to the extent to which industrial location policy can be used to further regional development objectives, a number of speakers thought that industrialization of less developed regions must be an integral part of regional policy, but there was disagreement on this point. In particular, it was pointed out that the evaluation of the role of industry for national economic development was subject to criteria different from those used for assessing the possibilities of pursuing regional development objectives through industrial dispersal. While it was widely recognized that industrial development is indispensable for sustained national economic growth, it did not necessarily follow that regional development should also be pursued through industrial location policies in preference to assistance to other economic sectors. Thus, some regions could be aided more through programmes of infrastructural development, agricultural improvement and other measures than through industrialization. To a large degree, much depends on the time perspective adopted; although industrial development of a less developed region might be desirable in the long run, it might not be at all feasible

at early stages of national development. Moreover, as discussed in some detail in Chapter III, industrialization of less developed regions does not at all necessarily imply that capital-intensive industries should be located there.

Industrial dispersal and national economic growth

70. The discussion of the stage at which it becomes possible to follow industrial decentralization policies without impairing national economic growth brought forth the view that some balance must be reached among conflicting national goals. Sustained economic growth is one of the main objectives of national planning. It is important, therefore, to recognize that, at least in the early stages of development, national growth is fostered by geographical concentration of industry, and that a policy of industrial dispersal involves an interaction between reduction of interregional inequality and national economic growth.

71. Several participants expressed the view that a concept of balanced regional growth was necessary for industrial planning. It was also remarked, however, that the concept of balanced regional growth was subject to different interpretations. Among such interpretations might be: (a) equalization of growth rates of different regions (thereby keeping constant the relative income differentials), (b) a narrowing of the absolute income gap between regions, or (c) progressive equalization of per capita consumption levels. The last interpretation was preferred, provided that it was understood that it did not rule out changes in the population distribution of a country, such as those resulting from interregional migration. In this connexion it was also generally agreed that the proper concern of regional development policies should be people and not land per se. The need to industrialize does not necessarily call for industrialization of each administrative region. Interregional migration could therefore permit both the exploitation of optimal location patterns and the progressive reduction of per capita income differentials.



Chapter IIIFACTORS IN THE LOCATION OF INDUSTRY

72. The two UNIDO experts who acted as discussion leaders and rapporteurs on this item of the agenda introduced the subject and outlined the main issues and the focus of discussion. In the general introduction they outlined the role of location factors in the process of decision-making at various levels of planning and described their relative importance. Although location factors should be analysed in close connexion with both the sectoral and regional goals of development, emphasis could be given to their role in achieving the most effective pattern of industrial location. The hypothesis that it is possible to consider the role of individual location factors in isolation is unscientific, because it was obviously essential to take into account, simultaneously, the frequently conflicting influences of all the various location factors. On the other hand, it is of great importance in practice to perform a careful analysis of the relative influence of the individual location factors on the branch of industry in question, particularly in the context of the specific social and economic conditions of different countries.

73. The analysis of location factors was subordinated to the task of devising adequate instruments for decision-making. Accordingly, the choice of location factors relevant for analysis depended on the level of planning at which the decision was taken and, consequently, on the geographical level of detail of the analysis (economic regions, urban agglomerations, towns etc.).

74. There are three main successive stages of location analysis: interregional, sectoral and intraregional. At the first two stages attention should be paid mainly to natural resources, environmental conditions (sources of power, raw materials, water and the like), transport, the distribution of population and its general characteristics, and the general level of development of every region. At the third stage such local factors as infrastructure, specific labour skills and the presence of existing production facilities and of related industries and services play a crucial role.

75. The issues which appeared suitable as a focus of discussion by the group were identified and outlined as follows:

- (a) The appropriate relationship, in a regional context, between investment in infrastructures and investment in directly productive facilities;

- (b) The role of regional availability of labour skills in industrial location;
- (c) The implications of scale and external economies and diseconomies for industrial location pattern; and
- (d) The characteristics of industries that could be optimally located in less developed regions.

76. The expert from the host country, who worked with the UNIDO experts on this item of the agenda, described the experience of the Byelorussian SSR in analysing the most important factors of location with respect to individual branches of industry. He also reviewed the background documentation for this item of the agenda, prepared by Byelorussian scientists.

77. In particular, he noted the location factors that should be taken into account for industries that process agricultural raw materials. On the basis of the report prepared by Byelorussian scientists, the expert stressed that industrial development and increases in population should not reflect negatively on the living conditions of the populations of towns. It was advisable to locate industry in conformity with a general plan of the town concerned and with regional planning projects. The most effective pattern of industrial location within a town was the creation of industrial areas on the basis of co-operation of enterprises.

78. Several observers, as well as participants from Brazil, Chile, Ghana, India, Iraq, Nigeria, Pakistan, Turkey, the Sudan, the United Arab Republic and Yugoslavia, spoke about the significance of various location factors.

79. Some participants stressed that the mutual dependence existing between objective locational characteristics and over-all aims of both national and regional planning prevented locational factors being analysed in isolation from the objectives of long-term planning. Furthermore, when deciding the location of individual enterprises or regional industrial complexes in a given region, a least-cost site should be chosen for attaining a given level of output.

The role of infrastructure

80. The participants were in general agreement on the importance of infrastructural facilities in general as a location factor for industry and as a prerequisite for regional development. It was noted that infrastructure should be conceived as consisting not only of economic facilities such as power and transportation but also of social components such as the health and education standards of a region. The over-all lack of such facilities in developing countries impeded both national and regional development.

81. There was a consensus that any infrastructural expenditure should be undertaken that would be required for exploring the natural resources of a region; pre-investment exploration of this type is a prerequisite for its future development. At the same time the amount of investment in infrastructural facilities in a region should conform to the projected long-term needs of its extractive, agricultural and industrial sectors for such services. For example, infrastructural expenditure related to the discovery of a mineral deposit should be related not only to the demand generated by the extractive industry but also to the anticipated demand of mineral-processing industries that would be located in the region.

82. Several participants noted the positive or negative effects that the presence or absence of infrastructural facilities could have on national and regional development. It was pointed out that the discovery of a local energy supply (natural gas) had helped to develop the textile industry in the Uzbek SSR. On the other hand, the participant from the Sudan pointed out that while his country had a large supply of livestock, its per capita meat consumption was low because the livestock was concentrated in one region, and the absence of transport links made it impossible to distribute meat products to the rest of the country.

83. Some types of infrastructure projects were of great size and required large absolute expenditures. Unless such infrastructure facilities were built in conjunction with a number of directly productive projects in the region, their rate of utilization would be low, and the infrastructure cost per unit of final output would be high. The same result would be obtained if the time lapse between the building of the infrastructure and the directly productive project was long. It was suggested that investment in the infrastructure should ideally be only one step ahead of directly productive investment.

84. The experience of Turkey showed how some of these problems might be approached. Investment in infrastructure in the lagging provinces of Eastern Turkey was undertaken in combination with the planned creation of a growth pole in the area which was to include investment in extractive industries and in small-scale manufacturing for local markets.

85. It was noted that a national decision must be made as to how to distribute the investment between infrastructure and directly productive activities. The choice was often between expenditures on directly productive projects likely to be near existing growing centres and infrastructural projects in the less developed regions. Given this choice, the participant from India reported

that the decision in his country was taken on practical grounds. Private investment, which was mainly of the directly productive type, tended to gravitate towards the growing points, while public investment, mostly in infrastructure, was consciously directed to the lagging regions.

86. Another participant suggested that the choice might be made on the basis of time. For example, if very great immediacy was placed on the development of a region, emphasis should be directed to directly productive investments (provided of course some minimum infrastructure existed); if long-term objectives were given preference, infrastructure projects might be stressed.

Labour availability as a location factor

87. It was generally agreed that one of the main problems faced by developing countries is that large-scale employment opportunities usually exist only in a few urban centres. This situation imposes the alternatives of either inducing migration to the growing points in the country or of providing employment locally.

88. There was a consensus that, whereas the labour force tends to move readily towards the urban centres, in many countries it was difficult to move people to lagging regions.

89. The participant from the United Arab Republic, for instance, reported that it was necessary in some cases to pay double wages in order to induce labour to move to the construction site of the new high dam at Aswan. It was also observed that, whereas interregional labour mobility might be low, intraregional mobility might be quite high, as has been well evidenced by large migrations to the cities from their agricultural hinterlands.

90. It was noted by several participants that if, in fact, labour was not greatly mobile, the concentration of skilled workers in a few areas made regional availability of different labour skills an important location factor for many industries. On the other hand, the participants from Ghana and the Sudan questioned the role of labour as a factor in the location of industrial projects in their countries. In their countries the main issue is the almost total absence of a skilled labour force.

91. The consensus of the participants was that the significance of regional availability of labour skills as a location factor for industry varies at different stages of development and is likely to increase as the complexity of the economy of a developing country increases, and as the skills of the labour

force are enhanced. A strong sentiment was expressed in favour of checking migration to the main urban centres by promoting the location of industry in the lagging regions.

92. Several participants observed that most lagging regions are well provided with unskilled labour, which often makes them attractive for the location of industries that employ labour-intensive technologies. For example, it was reported that in Iraq, when there was a choice between establishing a more efficient capital-intensive paper-processing plant in a relatively advanced region and a labour-intensive plant in a lagging region, the labour-intensive plant was chosen, despite its apparent relative inefficiency. It was stressed that this selection may, in fact, have been without social cost, since the economic value of the immobile unemployed labour may have been very small or even non-existent.

93. A similar approach has been used in the United Arab Republic in multi-plant industries in which equally efficient capital-intensive or labour-intensive techniques could have been employed. Labour-intensive techniques had been employed in the less developed areas, whereas capital-intensive plants had been built in the advanced ones. These examples of industrial location policy, however, should not prevent the installation in lagging regions of capital-intensive projects that might employ more modern or up-to-date plants.

94. It was emphasized by several participants that labour resources should be reviewed in a dynamic sense so as to take into account their potential changes in size and skill resulting from training programmes. Because of the difficulties of moving substantial numbers of workers, it was often necessary to establish local training centres for instruction in the skills required for the industries in view. For example it was reported that the industrial transformation of the rural regions of Eastern Turkey would require the industrially planned local training of future increments in the labour force.

95. In all instances, on-the-job training was also emphasized as a serious alternative. However, it was noted that the adaptability of labour to different specific skills and its ability to assimilate on-the-job training is enhanced by formal education and by the presence of work attitudes suitable for industrial employment.

96. It was also pointed out that industries that are likely to cope with considerable seasonal fluctuations in output and employment are preferably to

be located near large labour pools. If such an industry were located in an outlying area, the problem of providing employment for the labour force during periods of low activity would arise.

External economies and industrial agglomeration

97. The importance of external economies as a location factor was explored, and it was suggested that their impact, if unchecked, might well lead to the overwhelming concentration of industry in one or, at most, a few urban centres.

98. These external economies were thought to stem from two main sources: the availability of infrastructural facilities and interindustry relations. In the latter case the various mechanisms of forward and backward linkage were discussed, and the tentative conclusion reached was that certain industries would be optimally located near their major suppliers of inputs or, conversely, near major industrial purchasers of their outputs.

99. The attention of the participants was drawn to the importance of this principle for the construction of industrial complexes. Several speakers noted that, in planning the development of a region, unnecessary dispersal of industrial activities should be avoided. Rather, development should be based on the construction of productive complexes in regional centres that would serve as growth poles for the development of the entire region.

100. However, such a policy might well entail an economic sacrifice, as opposed to permitting unplanned centralization of industrial activities. If it did, the costs involved should be made explicit.

101. Several participants discussed the efforts of their countries in creating precisely such industrial complexes. In this context the experience of the Soviet Union in the development of the productive forces of vast territories in Siberia was considered, by some observers from the host country, to be of particular significance for the future efforts of developing countries.

102. There was considerable discussion on the appropriate minimum size and the industrial mix of the growth poles created. The experience of several countries suggests that there was no single optimal scale of a growth pole, and that the industrial composition of a complex depends on the individual productive characteristics of different territories and countries. The participant from Turkey noted that, from experience in his country, external economies began to become important in an urban concentration with at least 250,000 to 300,000 inhabitants.

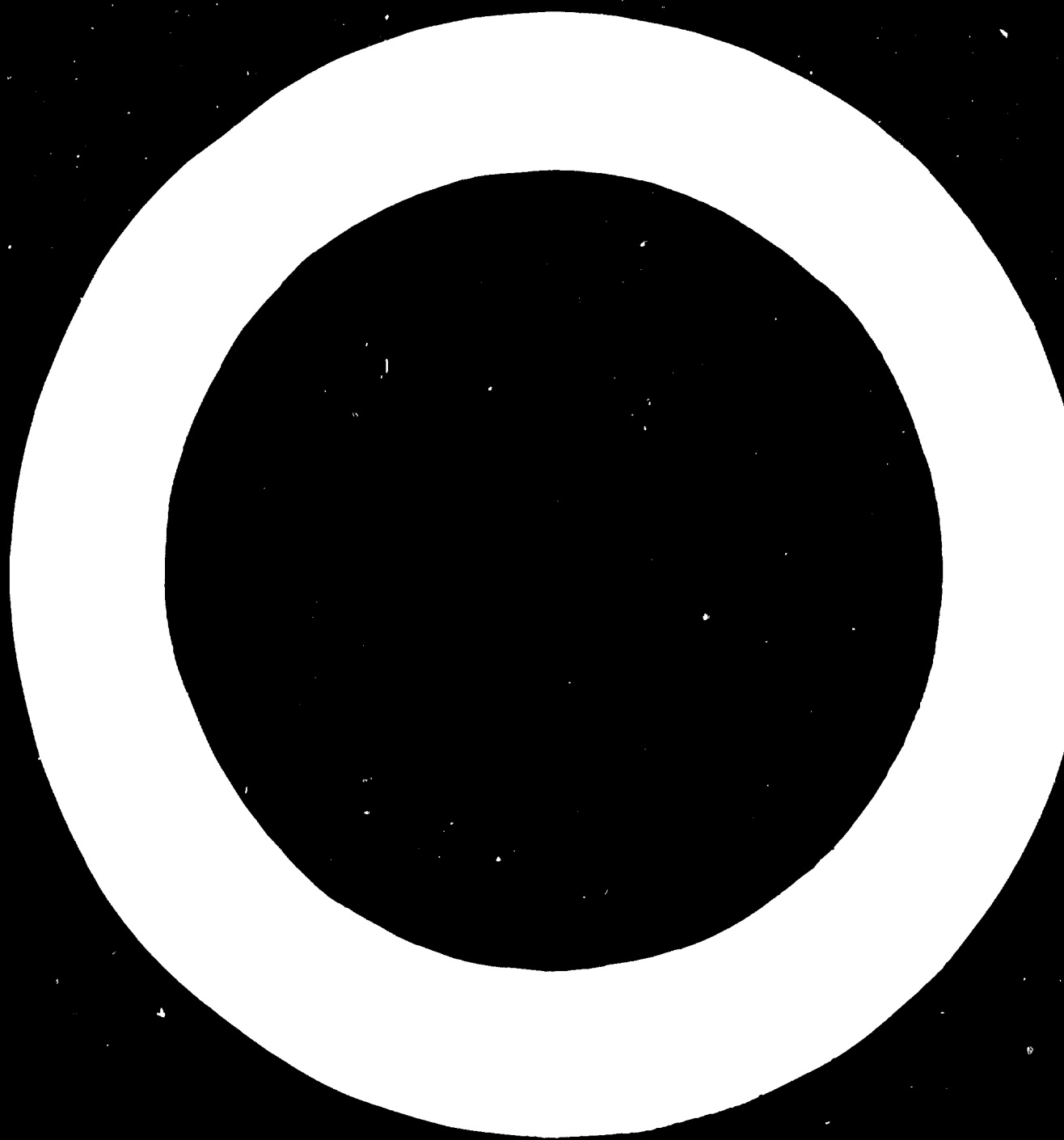
103. It was pointed out by several participants that, while agglomeration might be desirable up to a point in order to exploit potential external economies, diseconomies might set in after a certain urban size had been reached. It was stressed however, that no exact information existed as to the size of urban concentration at which such diseconomies began to occur.

Industries appropriate for dispersal

104. The question of the industries appropriate for location in lagging regions was examined by several participants. There was general agreement that different industries might be appropriate for regions with different resources.

105. The following alternatives were suggested:

- (a) The establishment of small-scale labour-intensive industry oriented towards local markets: In this context one participant noted that exclusive reliance on such industries might be hazardous for regional industrial development. Such industries appeared to thrive only within a diversified industrial structure that is absent in developing countries.
- (b) Agricultural processing industries based on regional agricultural production.
- (c) Large-scale complexes that incorporate processing industries based on local mineral or power resources: In this context the experience of India in locating an oil refinery and related processing industries in a lagging region, at a site midway between the production and distribution points, was instructive.
- (d) Ancillary industries whose services were used by dynamic sectors in the economy and for which transport costs were not significant: Such industries were likely to benefit from the dynamism of the industries they served and to transmit the growth of the dynamic sectors to lagging regions.



Chapter IV

INDUSTRIAL LOCATION PLANNING AND REGIONAL PLANNING

106. The third item of the agenda, dealing with industrial location planning and regional planning, was introduced by the two UNIDO experts responsible for this topic. A brief review of mathematical models, distinguishing between locational and regional models and between planning and programming models, was presented. The discussion that followed was focused on the question of co-ordination of regional and sectoral planning, co-ordination of aggregated plans with project programming and the appropriateness of various mathematical techniques.

107. The expert from the host country who co-operated with the UNIDO experts on this item described the principal mathematical economic models developed and applied in Byelorussia. These models include many variables and non-linear relations and have great problem-solving potential, including that of finding near-optimum location solutions for comparative consideration. Although mathematical methods are already powerful and are improving rapidly, limitations of data, of computers, and of technical personnel restrict their application and require the simultaneous use of a variety of methods, including traditional ones. Concrete problems are best solved, not by reliance on a single method, but by the use of a wide range of methods, including the complex scientific ones, which reinforce each other.

Co-ordination of sectoral and regional planning and project programming

108. The two UNIDO experts, in outlining some of the principal issues, stressed the role of the national government in achieving consistency of sectoral and regional plans. Three elements are necessary: (a) the existence of effective regional planning and programming organs, (b) procedures for the systematic co-ordination of and exchange of views among regional and sectoral bodies and (c) a system to provide data on existing conditions by projects, sectors and regions, together with projections or proposed developments at each of these levels. Regional planning and project programming must be carried out within the context of both short-term and prospective plans and as an important aspect of efforts for national development.

109. The need to consider national profitability as well as commercial profitability in the evaluation of projects was also stressed. Projects that might not be undertaken on the basis of conventional feasibility studies might prove to be most feasible and desirable if account were taken of the indirect economic valuation of the costs and benefits of the project for the economy as a whole, including the developmental effects of the project. Thus, conventional feasibility studies would count wages as a cost but, if the labour force had been unemployed, social profitability techniques such as cost-benefit would show this not as a cost but possibly as a benefit. However, appropriate measures should be taken, to the extent possible and desirable, to subsidize projects that are profitable from the national standpoint but unprofitable in terms of their internal cash flow. Such analytical techniques are of particular value in countries that do not have national plans elaborated in detail, because they permit an evaluation of individual projects from a national perspective, and they can be carried out in terms of "shadow" prices determined by the planning bodies.

110. There was general agreement on the issues of co-ordination. It is important to have effective regional planning organizations and systematic and continuing working procedures for collaboration among sectoral and regional bodies. Moreover, the involvement of persons who have operational responsibility in the planning process serves to increase the realism of plans, to enhance the likelihood of their successful implementation and to provide a channel for information on and evaluation of development efforts. This co-ordination among sectoral and regional planning and operational agencies should be supported by an appropriate organization for the systematic collection and distribution of the data needed for informed decisions. Countries whose conditions permit the use of advanced mathematical tools could advance the co-ordination of sectoral and regional plans by techniques of simultaneous solution.

111. There was also general agreement that over-centralized planning was less effective than planning in which there is delegation of responsibility for many decisions to regional and operational agencies. Sectoral or vertical planning is of greatest significance for activities of national economic importance, while regional or horizontal planning is of greater importance for economic activities internal to the individual region.

112. The importance of effective mechanisms through which regional and national sectoral planning agencies could collaborate and achieve consistency in their planning was emphasized by many participants who described the procedures used in their countries, including Chile, Ghana, India and Iraq. The prevailing and preferred pattern appeared to be the initial setting of targets by a national sectoral planning body. Indian experience with working groups that include representatives from the national and regional levels has been effective in bringing together the two points of view and is important in adjusting national targets to local conditions and specific situations.

113. A number of participants and observers pointed to the important roles of national and regional planning bodies in the proper consideration of industrial location. The experience of Iraq with various degrees of centralization of planning process and execution and with various degrees of flexibility in adherence to the plans indicates that targets are better fulfilled when the national plan is regionalized. Planning is more effective when regional organizations are given responsibility for execution of the national plan and authority to adapt it to local opportunities and conditions than when planning is centralized and rigid. This point of view was supported by many participants, who stressed the need to involve in the planning the agencies that are to execute it. By so doing, it is possible to take advantage of the specialized local or technical information and experience of the regional bodies and to secure their identification with a commitment to the plans. Observers from the host country underlined the importance both of collaborative mechanisms and of the consistency of national and regional plans.

114. It was noted that national and regional development is a cumulative result of interactive processes that are influenced by governmental and private decisions at the national, regional and local levels. Regional planning can be done with either concentration or dispersal of activity. In general, projects of national importance are planned centrally and more local ones at the regional level. Within the region, planning is sectoral. The problem is to establish organizations for research, planning and implementation in such a way that they might improve their performance and co-ordination. There is a crucial need to guard against the dangers either of neglecting long-term plans under the pressure of day-to-day decisions or of neglecting important questions of practical programming or project identification while engrossed in long-term

plans. There are problems with respect to the establishment of new planning bodies, such as imbalances in capacities of technical agencies and the definition of their relations with long-established line agencies.

115. A severe shortage of trained personnel was noted by a great many participants and observers. Owing to the small number of personnel trained in location and regional planning, many developing countries have had to use foreign experts while awaiting the formation of a sufficient number of national ones. Even in countries possessing trained personnel, it is often difficult for the planning organizations to keep it. Consequently, even investment in the training of new professionals does not guarantee a sufficiency of technical staff.

Appropriateness of techniques of planning and programming

116. There was general agreement on the limited ability of developing countries to use advanced mathematical techniques of planning and programming. The participants thought that these techniques required preconditions of availability of technical personnel, data of good quality, and computers, and such preconditions do not exist in most developing countries. The appropriate tools for planning and programming vary according to the level of development, and only those of the most advanced methods that are consistent with the conditions of many countries should be used. Since it might not be possible to use the theoretically most satisfying techniques, simpler or abridged approaches were often more useful for practical work.

117. In the extensive discussion on methods, it was observed that simpler or abridged methods were more adaptable for practical work in the location of projects than for regional planning. It was also indicated that it is not advisable to rely on a single method but to use a variety of techniques that reinforce each other. Even though complex methods are of limited value for decision making, they have other uses. For example, they can clarify the relations within the economy and thus improve understanding of its problems. Complex methods can also indicate more precisely than simpler ones what types of data should be obtained. Finally, they could serve as a context or background for the application of more practical techniques.

118. Considering the complexity of problems in the developing countries, representatives of research organizations in the host country recommended that use of models and methods in regional planning and industrial location worked out in industrially developed countries. In their opinion, the experience of

the Soviet Union in the application of mathematical models and methods of planning industrial location could be useful to countries that are introducing similar methods of planning their national economies.

119. It was emphasized that developing countries must prepare their own specialists in order to apply modern economic and mathematical methods successfully to planning and programming problems.

120. Most participants thought that conditions in developing countries required simpler methods of analysis than those used in developed ones, except in special cases involving primarily technical programming problems. The preconditions for the effective use of complex mathematical models are the availability of technical scientific personnel, of computers and, most significantly, of plentiful and accurate data. Since these do not exist in most developing countries, abridged versions of scientific methods or simple practical methods might be more effective. Although a few opinions were voiced that the most powerful and scientific methods should be used that are consonant with national conditions, the consensus was that, for most problems in the vast majority of developing countries, the appropriate level of mathematical analysis should be a rather simple one. Since, as development proceeds, the preconditions of data, personnel and computers will gradually be met, the appropriate level of sophistication of the techniques should vary directly with the level of development of the country. Against this view, proponents of advanced models contended that complex relations were imperfectly reflected by simple techniques, which were therefore prone to error. A generally acceptable formulation appeared to be the use of the most advanced, possible and effective techniques insofar as such techniques are feasible; in most developing countries these techniques would be relatively simple ones.

121. Although recent studies indicated a relative ineffectiveness of complex predictive techniques in developing countries, these techniques had several other virtues: (a) They helped technicians and decision-makers to understand the structure of the economy and gave them better insights for decision making; (b) They served as a context for simpler techniques; simple and complex techniques in combination might be better than either by itself; (c) They helped identify the key data needs; (d) In certain situations, the scientific prestige of these techniques was helpful in promoting acceptance of planning decisions.

122. It was pointed out that simple or abridged methods are better suited for location decisions than for regional ones. On the other hand, it was mentioned that location decisions, because they involve physical investment, are less reversible than regional policies, which might be changed relatively easily.

Chapter V

INSTRUMENTS OF INDUSTRIAL LOCATION AND
REGIONAL DEVELOPMENT POLICY

123. The UNIDO experts, in introducing this subject, indicated that, since economic growth does not take place simultaneously and uniformly throughout a country, there are interregional differences in standards of living. The crucial policy problem is to discover means of rapidly developing the lagging regions without impeding economic expansion in the dynamic ones. The solution to this problem might involve a variety of conflicting political, economic and social considerations.

124. Governments can use a variety of policy instruments to influence the distribution of economic activities among regions. Most of these are designed to encourage labour and capital mobility, to create external economies by training the labour force and building social overhead capital or to affect the price-cost structure among regions.

125. The expert from the host country, who co-operated with the UNIDO experts on this item of the agenda, reported the means by which a policy of location of industry is implemented in his country. The workability and timeliness of a plan are ensured by wide discussion of the draft by the workers and the trade unions. After consideration of the plan by the Government, it is presented to the Supreme Soviet of the Republic for approval, after which it becomes law.

126. To prevent further concentration of industry in the large towns, a governmental decision had been made to prohibit or limit the construction of industrial enterprises in large towns. The stimuli for regional decentralization of industry included measures for establishing residential complexes, schools, hospitals and other establishments to satisfy the needs of the population. In some cases, wage and salary increases as high as 30 per cent were provided to attract manpower.

127. The discussion focused on the following issues:

- (a) If a decision has been taken to prevent further industrial concentration, what concrete policy steps have proved to be efficient and feasible?
- (b) What are the appropriate policies to promote growth in new opportunity regions?
- (c) What are the most appropriate policies to promote regional decentralization?

(d) What are the administrative and institutional mechanisms through which to co-ordinate national and regional actions in the field of industrial location and regional development policy?

128. Participants from Brazil, Burma, Chile, Congo (Democratic Republic), Cuba, Ghana, India, Indonesia, Iran, Iraq, Nigeria, Pakistan, Peru, the Sudan, Syria, Thailand, Turkey, the United Arab Republic, Uganda and Yugoslavia, as well as several observers, reported on the policies for industrial location and regional development followed in their countries.

129. A basic objective of regional policy in most countries is to promote the development of new regions as well as to deter new investments in the main urban centres. A policy of decentralization, however, does not mean that it is advisable for developing countries to spread the limited resources available for investment thinly over the entire country. On the contrary, it is very important for these countries to set up regional priorities, taking into account national interests. It was recognized that in the early stages of development this approach would lead to concentration and development in selected regions and to the temporary neglect of other regions.

130. It was agreed that the ability of a country to undertake a policy of decentralization depended largely on the level and degree of its economic development and industrialization. Uganda, for example, is only now beginning to industrialize. The main policy preoccupation of the Government is to attract new investments and not to disperse them in new areas. Of course, the efficient use of economic resources would guide the location of the new investments.

Policies to prevent further concentration of industry

131. It was pointed out that in most developing countries the prevailing tendency had been for industry to concentrate in metropolitan areas, leaving the periphery untouched by the process of change. Social concern, as expressed in regional policy in these countries, is basically related to the desire to move away from this centre-periphery model. Policy measures to slow the trend toward concentration, both by preventing the establishment of more industry in the developed areas and by stimulating new investment into lagging areas, have been adopted.

132. It was stressed, however, that insufficient empirical evidence was available about the optimum size of urban centres, and that more research was required to discover whether it is economically efficient to hamper new investments in the urban centres. Of course, given the multiplicity of government objectives, political and social considerations might also guide policy decisions.

133. There was general agreement that measures of direct control such as a licensing system might be the most efficient type of policy instrument to prevent new investments in a given area. On the other hand, this negative approach might not be as effective in channelling private investment into regions that the government is seeking to develop.

134. It was pointed out that preoccupation with development in areas other than the urban centres should not be allowed to result in an inadequate supply of basic services in metropolitan areas. The high concentration of population and economic activities in these areas indicates that they perform a critical role in the process of industrialization and national economic development. Therefore, to the extent that they are deprived of vital services, not only their own growth but that of the remaining regions will be affected.

Policies to promote growth in new opportunity regions

135. It was agreed that the provision of adequate infrastructure facilities was an important way to attract industries into the new opportunity regions, that is, those with unexploited natural resources appropriate for national economic development (see para. 61, the section on "The definition of 'region'" in Chapter II). Since this type of region is underpopulated appropriate incentives are required to stimulate migration to it. These incentives usually include the provision of housing, education, health facilities and other amenities needed to offset, at least partially, those left behind in metropolitan areas. These incentives might not be sufficient and might have to be supplemented with salary and wage premiums. It is often more difficult to induce skilled labour to stay in such a region than to move to it.

136. In a number of developing countries, universities and industrial training centres have been organized in these regions, not only to train workers in needed skills but also to create an atmosphere that would generate further economic development.

137. For public investment projects in the United Arab Republic, teams are being formed that will move from one area to another as they are needed. Such an approach could help partially to offset the lack of managerial ability and skilled labour in many regions. Since this programme was getting under way in the United Arab Republic only at the time of the seminar, no evaluation of its effectiveness was then possible. It was suggested that UNIDO undertake studies of this type of approach.

138. Another type of policy that plays an important role in promoting development in new opportunity regions is direct government investment in industrial activities. It was indicated that investments of this type are usually closely related to the exploitation of natural resources. It was suggested that, in mixed economies, public investment should take the lead because of the great risks and uncertainties involved, which often deter private investment during the initial stages of development of new opportunity regions.

139. Indirect policy measures to stimulate investment include temporary tax remission, import-duty exemption and the provision of credit facilities. There was general agreement that these incentives have not proved to be effective in the development of new opportunity regions except when proper infrastructure facilities had been provided. Even the cost reductions provided by these various policy measures in new opportunity regions might be insufficient to offset the cost reductions provided by external economies in existing advanced regions.

140. The experience of the joint-venture system between the public and the private sectors in Pakistan indicated that it had been effective in stimulating new investments. The Government undertook the feasibility studies and contributed to the financing of the projects. After a number of years, private investors bought out the share of the Government in the project.

Policies to promote regional decentralization

141. The UNIDO experts, in reviewing the policies used to promote regional decentralization, concluded that positive incentives are more effective than prohibitive measures in attracting new industries to less developed regions. The roles of fiscal incentives, credit and financial aids and industrial estates in promoting regional development were reviewed. The consensus was that, in general, these incentives are marginal and are not usually determinants of location decisions by private entrepreneurs. It is only when a rough balance exists between the attractiveness of two or more locations that such incentives become really significant. They should not be disregarded, however, for they serve to enhance the attractiveness of a region for the location of industry.

142. In the general discussion, it was disclosed that fiscal incentives, in one form or another, are utilized in most developing countries as a means of inducing industry to settle in particular regions. In Brazil, for example, a deduction of up to 50 per cent of taxable income is allowed to those who invest

in approved projects. These tax savings must be deposited in the Brazilian Northeast Bank and, if they are not invested within three years in a project in the northeastern region, they revert to the national treasury.

143. Other forms of fiscal incentives offered in some developing countries include reductions in, or even exoneration from, income or profit taxes and taxes on imports of equipment or raw materials used by new industries. The time period involved is usually limited to four or five years, but in one country the period of exoneration varied from none at all to eight years, depending upon the region involved. It was stressed, however, that fiscal incentives are not effective when the less developed region lacks an adequate infrastructure.

144. Financial aid, in one form or another, is also used as an incentive. Many developing countries have established industrial development banks to provide long-term loans to investors, and some of these banks have regional branches. Development funds, which could provide financing equal to 50 or even 75 per cent of the cost of a project, have also been created for regional promotion. In some countries joint public-private ventures have been organized.

145. Grants-in-aid are less acceptable than loans. Generally, they are given to induce specialized workers to go to areas where their skills are vitally needed. Very often, entrepreneurs benefit from indirect grants, for example, the provision of land or facilities at a figure below the economic cost.

146. Industrial estates have been organized in many developing countries, and experience indicates that they have often been successful. A distinction was drawn, however, between industrial estates intended for large or medium-sized enterprises and those designed for small plants. The former, which were sometimes linked to larger industrial agglomerations, are planned and organized by high-level agencies such as provincial governments, and their financing comes from state or industrial banks. The latter type of industrial estate is intended for smaller plants that could achieve greater efficiency by locating within an industrial estate.

Mechanisms for co-ordination

147. Given the differences between national and regional authorities in the problems faced and their viewpoints on them, it is essential to co-ordinate their policies and programmes. The most important need is for an exchange of information between national and regional administrative agencies. To this

end, it is necessary to provide a mechanism through which the viewpoints of the regional authorities and the national planners could be made known to each other.

148. From the discussion it became clear that most developing countries are implementing their development policies within the framework of a national plan. Discussion of the national plan by regional and local agencies makes possible an understanding of the roles of the regions in the national effort, and they are more likely to conform to a programme that they have had a voice in establishing.

149. Since both public and private industrial sectors exist in most developing countries, co-ordination of programmes becomes very important. The consensus emerged that the co-ordination problem is more easily solved within the public sector, where it is largely a matter of administration. It is necessary only to establish a smooth mechanism by which general directives can be transmitted from higher to lower executing agencies. Co-ordination within the public sector is more complicated in countries with a federal form of government, but it is induced by the fact that infrastructure investments must be financed, at least partially, by the federal government.

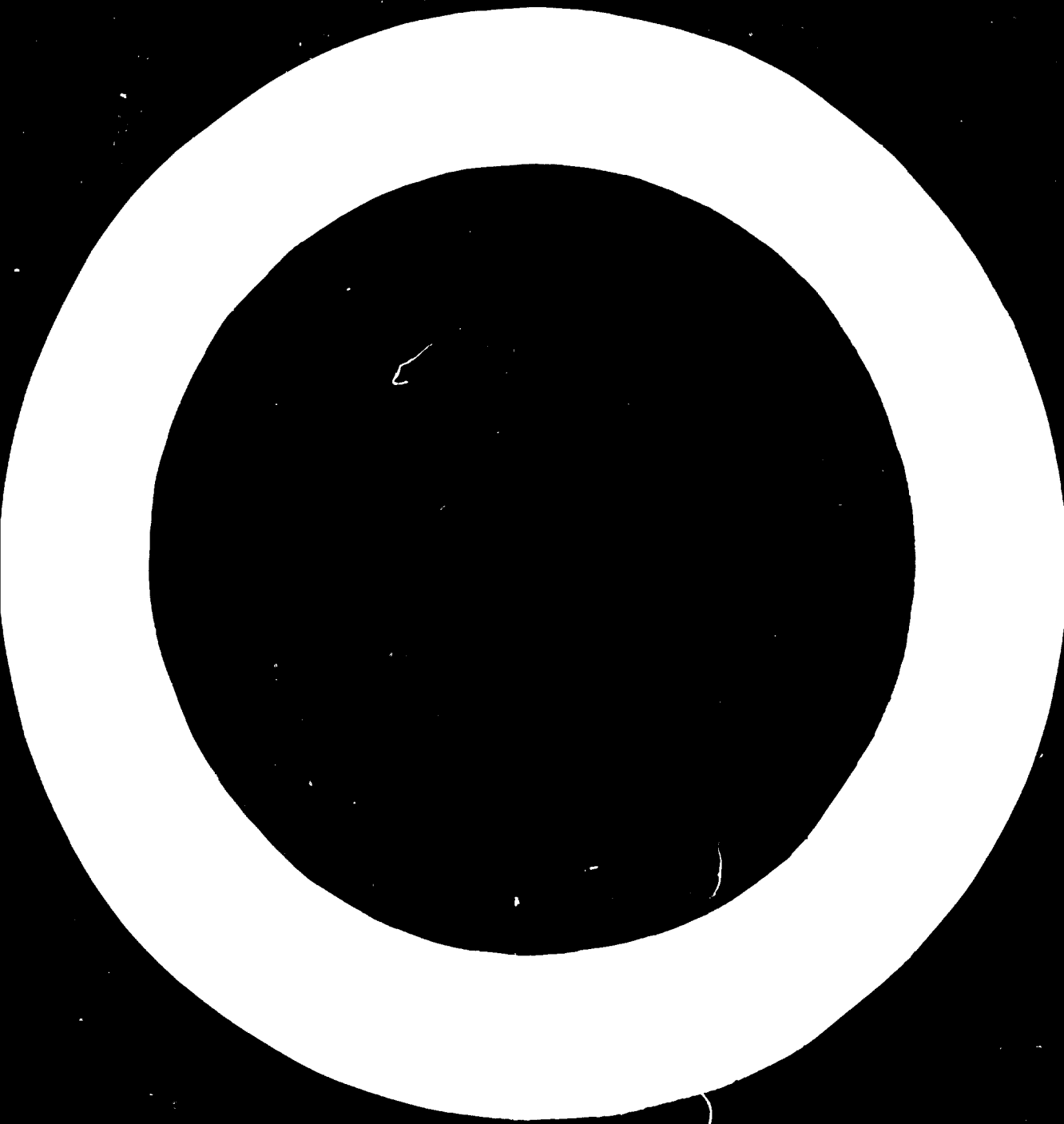
150. In the private sector, industrial expansion is often promoted through development centres or corporations that have regional or sectoral branches; these organizations become the instruments of co-ordination between public and private programmes. Co-ordination is also achieved in many countries by requiring industrial entrepreneurs to secure government licences before starting operations. Authorization of new enterprises depends upon their conformity to national and regional plans. Co-ordination is further ensured by the fact that entrepreneurs need building licences, and sometimes financial aid, from governmental authorities.

151. It was generally agreed that regional budgets can be very useful as a co-ordination device. Such budgets are either independently established by regional authorities for their own areas or established by national governments through division of national budgets along regional lines. These procedures are very important in ascertaining the true state of regional activities and in providing a more-informed basis for regional action. Dividing the national budget among the regions also permits an evaluation, within the regional framework, of the internal consistency of the budget, for example, the relationship between proposed expenditures for new schools and those for new housing in a

region. A disadvantage of regionalization of the national budget is that it tends to limit flexibility and to become an instrument for conservatism rather than of progress.

152. Experience in many developing countries seems to indicate that, despite all efforts at co-ordination of national and regional planning, when the two conflict, the national plan takes precedence. Thus, in Pakistan, national planning includes the objectives of maximum national growth and regional development but, when existing resources are not sufficient to fulfil both goals, the pressure is inevitably in favour of national growth. In Pakistan's Third Five-Year Plan, for instance, in the interest of promoting national growth, preference had been given to the modernization of existing industrial facilities rather than to the building of new plants. Since the existing plants are in the more developed centres, a result of the policy has been to further regional concentration.

153. The Director of the Seminar described Japanese regional policy, which is designed to stimulate the development of "city-regions". The elements of the policy include the establishment of new industrial and commercial centres near the large metropolitan agglomerations, the creation of economic activity in less developed regions in order to deter migration towards the centres, the creation of industrial employment opportunities in rural areas in order to lessen migration from them and the redevelopment of the great central cities through the strengthening of their economic foundations and the improvement of their physical and social environments.



Annex 1

AGENDA

Item 1: The general problems of industrial location and regional development

- (a) The definition of region
- (b) The role of industrial location in regional development
- (c) Industrial dispersal and national economic growth

Item 2: Factors in the location of industry

- (a) The role of infrastructure
- (b) Labour availability as location factor
- (c) External economies and agglomeration
- (d) Industries appropriate for dispersal

Item 3: Industrial location planning and regional planning

- (a) Co-ordination of sectoral and regional planning and project programming
- (b) Appropriateness of techniques of planning and programming

Item 4: Instruments of industrial location and regional development policy

- (a) Policies to prevent further concentration of industry
- (b) Policies to promote growth in "new opportunity" regions
- (c) Policies to promote regional decentralization
- (d) Mechanisms for co-ordination

PROGRAMME

Wednesday, 14 August

11.00 - 12.30

1st meeting

Opening of the seminar

Message from Dr. I. H. Abdel-Rahman,
Executive Director of UNIDO

Appointment of the Chairman

Statement by Mr. F. L. Kohonov, Deputy
Chairman of the Council of Ministers
of the Byelorussian SSR and the
President of the Organizing Committee

Greeting speech by Mr. I. I. Levko,
Acting Chairman of the Minsk City
Council

Organization of the seminar

Welcome by the Director of the Institute
of Economics and Mathematics, and
Co-Director of the Seminar,
Mr. V. Medvedev

Statement by the Director of the Seminar,
Mr. E. Weissmann

15.00 - 18.00

2nd meeting

Item 1: The general problems of industrial
location and regional development

18.30

Film on the history of industrialization of
the Byelorussian SSR

Thursday, 15 August

10.00 - 12.30

3rd meeting

Discussion of Item 1 (continued)

15.00 - 18.00

4th meeting

Discussion of Item 1 (continued)

Friday, 16 August

10.30 - 13.00

5th meeting

Item 2: Factors in the location of industry

14.00 - 16.30

6th meeting

Discussion of Item 2 (continued)

Saturday, 17 August

No meeting

8.30

Trip to industrial region of mining industry (Soligorsk)

Sunday, 18 August

No meeting

10.30 - 12.00

Meeting with Mr. I. I. Levko, Acting Chairman of the Minsk City Council

12.00 - 14.00

Excursion through the town with special emphasis on industrial location

18.00

Visit to the textile combine; acquaintance with the work of the combine.

Monday, 19 August

10.30 - 13.00

7th meeting

Discussion of Item 2 (continued)

14.00 - 16.30

8th meeting

Discussion of Item 2 (continued)

18.30

Acquaintance with the work of the Scientific Research Institute of Economic-Mathematical Methods of Planning, Minsk

Tuesday, 20 August

10.30 - 13.00

9th meeting

Item 3: Industrial location planning and regional planning

14.00 - 16.30

10th meeting

Discussion of Item 3 (continued)

18.30

Visit to Institute of Economics

Wednesday, 21 August

10.30 - 13.00

11th meeting

Discussion of Item 3 (continued)

14.00 - 16.30

12th meeting

Discussion of Item 3 (continued)

Thursday, 22 August

10.30 - 13.00

13th meeting

Item 4: Instruments of industrial location and regional development policy

14.00 - 16.30

Discussion of Item 4 (continued)

18.30

Visit to the Institute of Industrial Projecting

Friday, 23 August

10.30 - 13.00

14th meeting

Discussion of Item 4 (continued)

14.00 - 16.30

15th meeting

Discussion of Item 4 (continued)

Recommendations for action by UNIDO

19.00

Reception for participants in the seminar given by the Deputy Chairman of the Council of Ministers of the BSSR, Chairman of the State Planning Committee of the BSSR, Mr. F. L. Kohonov

Saturday, 24 August

No meeting

8.00 - 20.00

Visit to one of the industrial processing complexes (city of Brest)

Sunday, 25 August

No meeting

Monday, 26 August

10.00 - 12.30

Final meeting of the seminar

Conclusions

Introduction of seminar report

Adoption of seminar report

Closing statement by the Director

Closing address of the Chairman

Annex 2

ORGANIZATION OF THE SEMINAR

Panels of experts responsible for the major agenda items

Item 1: The general problems of industrial location and regional development

R. B. Helfgott (UNIDO)
S. Schiavo-Campo (UNIDO)
N. A. Utenkov (Host country)

Item 2: Factors in the location of industry

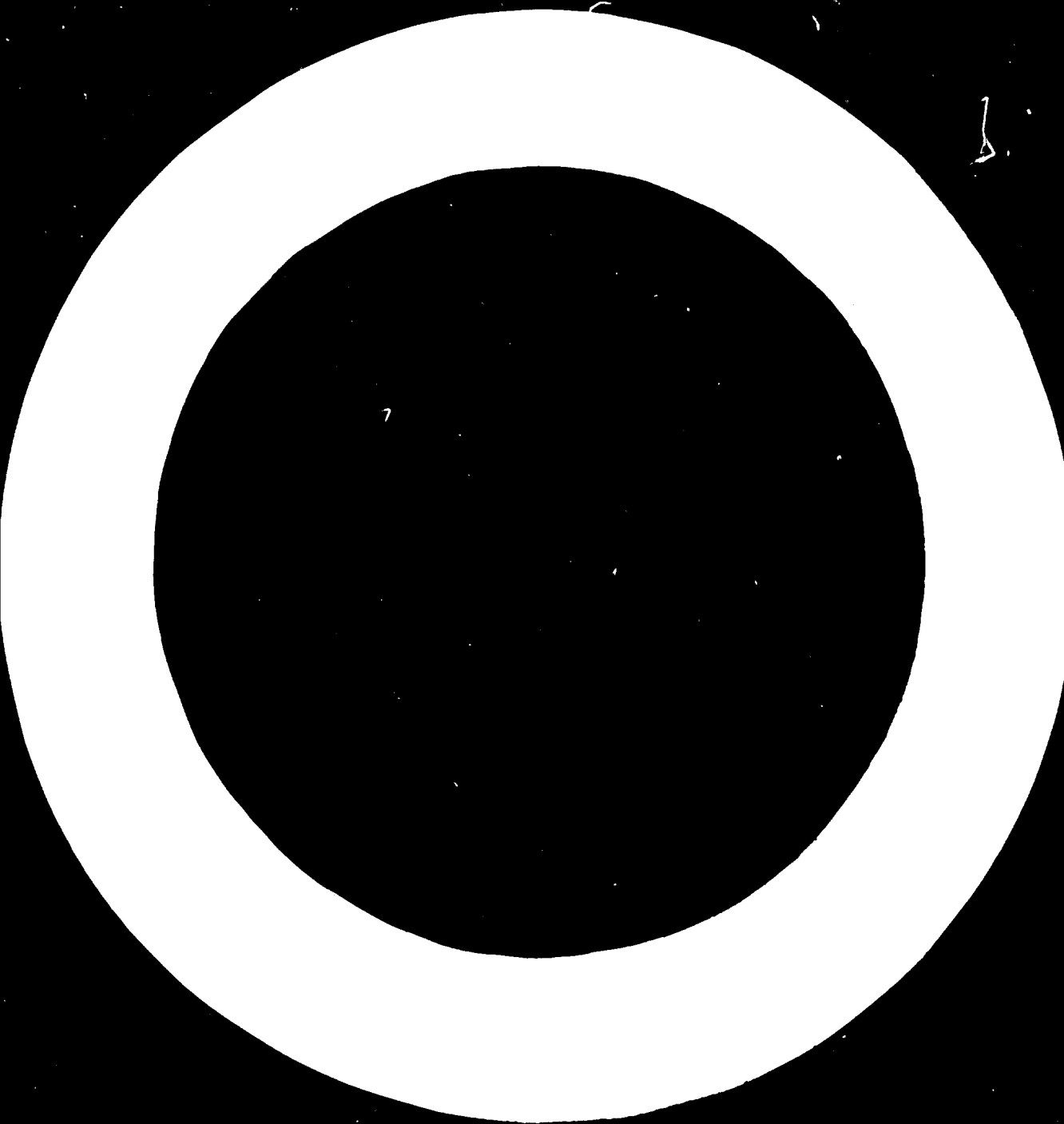
Y. M. Aleksandrovich (Host country)
C. Michalopoulos (UNIDO)
S. Nikolaev (UNIDO)

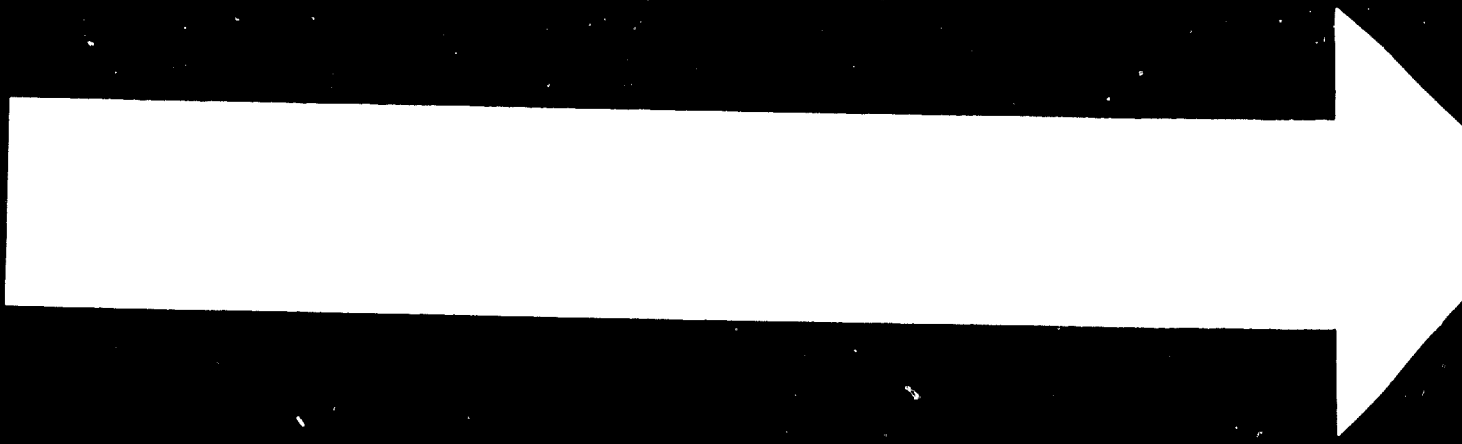
Item 3: Industrial location planning and regional planning

W. Alonso (UNIDO)
V. F. Medvedev (Host country)
D. Schejbal (UNIDO)

Item 4: Instruments of industrial location and regional development policy

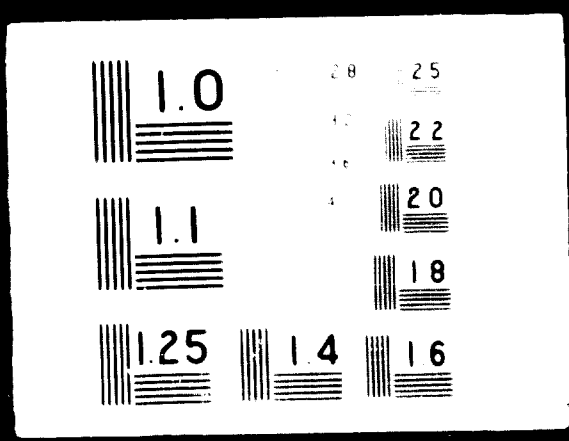
M. Brodersohn (UNIDO)
P. David (UNIDO)
A. P. Koloshin (Host country).





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Annex 3

WELCOMING STATEMENTS BY REPRESENTATIVES OF THE
HOST GOVERNMENT

Statement of Mr. F. I. Kozlov, Deputy Chairman
of the Council of Ministers of the Byelorussian
SSR and Chairman of the State Planning Committee

Allow me, in the name of the Government of the Byelorussian Soviet Socialist Republic, and personally to welcome all participants in the Inter-regional Seminar on Industrial Location and Regional Development.

The seminar is conducted by the United Nations Industrial Development Organization jointly with the Government of the Byelorussian SSR, and we are all very much interested in the success of its work and ready to promote it in every way possible. It is especially pleasant to us that the seminar is taking place in the year in which we are preparing for the fiftieth anniversary of the forming of the Byelorussian Soviet Socialist Republic, the creation of which, on the first of January 1919 became possible as a result of the victory of the Great October Socialist Revolution.

The Government of the Republic deeply appreciates the importance of the complex of problems associated with the location of industrial enterprises and regional development and the special importance of these problems in connexion with the implementation of a policy of long-term planning for economic development. Special significance is attached to the scientific approach to these problems, both for countries that have only recently begun their independent development and for those that have already chosen the paths of development and location of the national economy.

Regardless of the size of the population of any country, regardless of its geographical situation, of its economic conditions and possibilities, the regional planning of industrial development and objectives of location of industrial enterprises are in all cases exceptionally important questions, to which its government should give serious consideration.

At all stages of its development, problems associated with the location of industrial enterprises and regional development have arisen and been successfully solved in our Republic. In an unprecedentedly short historical period, twice having to repulse invasion by aggressors, Byelorussia, in close co-operation with all of the fraternal peoples of the Soviet Union, has made

great progress in the development of the economy and culture and in raising the living standards of the people. It is for this reason that we are especially aware of the value of peace and are constantly struggling against those forces which, unfortunately, have recourse to aggression in different regions of the world at the present time. We shall be happy if this seminar should also prove useful for strengthening mutual understanding and friendly relations in the interests of peace and progress.

In the past fifty years the Byelorussian SSR has been transformed from a backward agrarian outpost of tsarist Russia into a highly industrialized socialist republic with a volume of production eighty times higher than at its foundation. It has also acquired rich experience in the construction of a socialist economy, and in particular in working out and solving problems of development and location of industry in conditions of planned management of the economy.

This was made possible by the socialist system and the indefatigable efforts made by the Government of Byelorussia to solve vital problems of location of industrial forces and regional development. This attention is manifested in the regular hearing, discussion and, in accordance with recommendations of scientific and planning organizations, the taking of concrete decisions by the Government on all questions associated with the location of separate enterprises, the creation of industrial complexes and the proportional development of individual regions and of the Republic as a whole.

Success in the development of the national economy and scientific and technical progress in all branches of the national economy of Byelorussia are constantly accompanied by improvements in methods of planning and direction at all levels. Economic reforms are being successfully carried out in industry and in other branches of the economy for the purpose of increasing productivity. In the field of long-term planning new scientific approaches are used, for example, drawing up preliminary and general schemes for the development and location of the productive forces of the country over long periods, for example, for the period 1971-1980.

Much work is being done in the Republic on the practical application of mathematical methods and of electronic computer techniques for long-term planning. In particular, in the Scientific Research Institute of Economics and Economic-Mathematical Methods of Planning, in which we are assembled,

work is being carried on successfully on the construction of economic-mathematical models of the development and location of various branches of our industry, on the creation of effective mathematical methods and on the wider use of high-speed electronic computers.

Results obtained with these new methods will help to solve future problems of long-term planning of development and location at a modern scientific and technical level.

It was certainly correct to discuss scientifically the location of industrial enterprises and regional development, to organize the exchange of experience and to study the practice of other countries in this field. The experience of the Byelorussian SSR and other socialist countries, which have solved these problems, should be extremely useful to participants in this seminar and to all countries aiming at the development of their national economies in the interests of the welfare of their peoples.

In addition to the sessions of the seminar, in your visits to industrial enterprises you will become acquainted with our people and their traditional Byelorussian hospitality, visit places of interest and monuments of our Republic.

Statement of Mr. I. I. Levko,
Chairman of the Minsk City Council

In the name of the Minsk City Council of Workers' Deputies, permit me to welcome you to our ancient and yet young city.

We are very happy that this seminar is being conducted in the capital of the Byelorussian Soviet Socialist Republic, the town of Minsk. We shall be still more happy if your stay in our city proves to be both pleasant and useful. We should like to give you an opportunity to become acquainted with our city, its places of interest and its hospitable people.

In 1967 the inhabitants of Minsk, like those of the whole country, celebrated a famous date - the nine hundredth anniversary of the foundation of our city. In its long history this city has been destroyed more than once, but it has always remained the centre of Byelorussian culture.

The victory of the Great October Socialist Revolution, which brought freedom and independence to the Byelorussian people, wrote an entirely new page in the development of the economy and culture of the town of Minsk. It has since become one of the largest economic and cultural centres of the country.

As has already been said, Minsk is both ancient and young; the present city was built only 24 years ago. During the years of the Second World War the city was completely destroyed by the Fascist invaders. Industrial enterprises, cultural establishments, medical facilities, town transport and dwelling houses all had to be created from the beginning in the postwar period. The total loss to the city was 600 million rubles.

In the difficult conditions of the postwar years, often at the price of a conscious limitation of other requirements, the inhabitants of our city, like those of the entire country, made great efforts to restore and develop it.

It is not surprising that the people of Minsk love their city with a special love and at the present time actively participate in the work of the Minsk City Council.

In these past 24 years Minsk has not only restored industry and urban economy, but has also greatly exceeded many of the indexes that characterize its state of development. Its population now exceeds 800,000, which is triple the prewar figure. The volume of industrial production of the town has

increased by more than 26 times in this period. The structure of industry has changed, and the machine construction and metalworking industries have become predominant. Light industry and the food industries have been widely developed. Goods for which there is a high demand, locally and elsewhere, are produced here. Tractors, automobiles, motorcycles, metalworking machines, television sets, radio receivers, watches and many other items are exported to more than 50 countries of the world.

Minsk has a well-developed building industry. Of the 15,000 to 16,000 flats built in recent years, about 9,000 were built by municipal dwelling-house building agencies by industrialized methods, using a high proportion of prefabricated elements. Culture and science have been widely developed, as have public health and social maintenance. The living standard of the people has risen considerably.

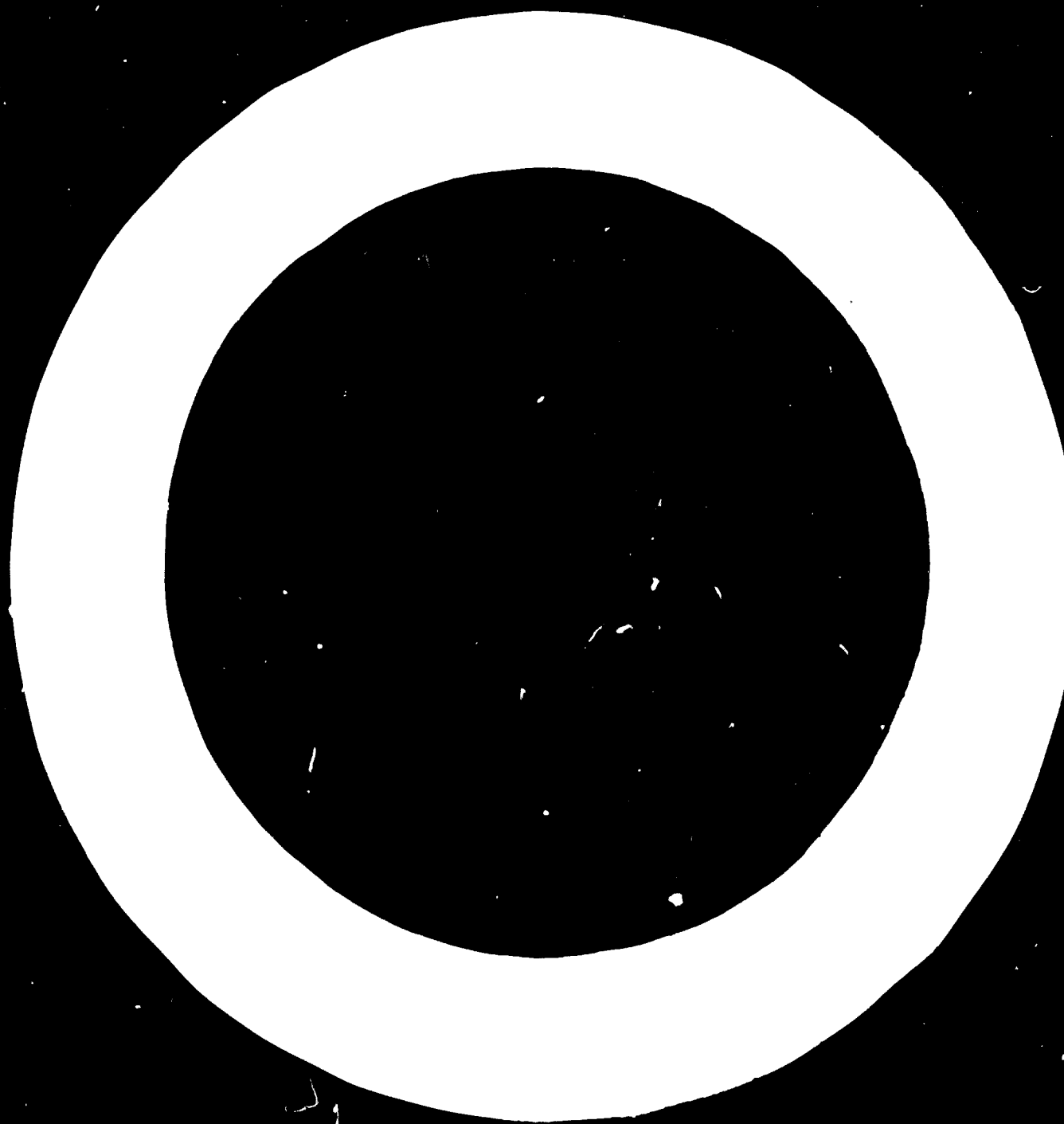
Minsk is a city of young people. Every day 123 schools of general education are filled with 120,000 children. In thirteen higher educational institutions 72,000 people are studying; in secondary specialized educational institutions there are more than 30,000. Twelve thousand scientists, the great majority of whom are talented young people, work in the Academy of Sciences and our other scientific establishments.

About 5,000 doctors and 9,000 specialized personnel with secondary medical education work in the Minsk public health service.

Minsk has five theatres, a circus, a philharmonic orchestra, 46 Palaces of Culture and clubs, 22 cinemas, 8 museums, 130 circulatory libraries, and a number of other cultural establishments.

Minsk is developing in conformity with an approved general plan for the rational location of production, the use of natural and labour resources to maintain the growth of the national income and to improve the people's welfare. The conditions of our socialist planned economy make it possible to limit the spontaneous growth of large towns, which naturally also promotes a more rational location of industry and regional development. We hope that the participants in this seminar will be able to make use of our experience.

Honoured guests, please accept our sincere good wishes for success in the work of the seminar. May the knowledge and experience which you will have the opportunity to gain here serve in your work and aid in the progress of your countries and strengthen peace in the whole world.



Annex 4

STATEMENT OF MR. I. H. ABDEL-RAHMAN,
EXECUTIVE DIRECTOR OF UNIDO

The work of the United Nations in the economic field in recent years has been directed more and more to the problems of industrial development in the developing countries and to the methods for achieving such development as a means of raising living standards and income levels. Indeed, the creation of the United Nations Industrial Development Organization (UNIDO), which began its operations on 1 January 1967, shows the importance of the UN efforts in this direction. UNIDO carries out its functions essentially on the basis of meeting the urgent needs of the developing countries in accelerating their industrial development through promotional and operational activities, supported by research.

The importance of keeping in mind market areas beyond national borders and of providing for such areas through regional agreements when new industries are being considered and located or as existing industries are expanded are key factors in their prospects for viable growth and development. The present meeting of experts is concerned with these problems. UNIDO, as well as its predecessor Agency, the Centre for Industrial Development, has been devoting much effort to the problems of regional planning of industrialization of developing countries, and its work is focused on rendering practical operational assistance in this area. At the request of governments, locational and regional aspects of industrial projects are evaluated, and experts are chosen for assignments and sent to the field. Success in the area of industrial location and regional development primarily depends on an understanding of the basic requirements of economic industrialization, but important also is the elaboration of ways and means of applying the modern achievements of science in this field to the needs of countries in which industrial development is being initiated and expanded.

On the whole, economists and planners have, in recent years, paid too little attention to the role of industry location or industry space in the development of the industrial sector of the national economy. The factor of location and space, however, has become more and more crucial as a requisite for successful plant operation. In the near future, no developing or developed country will be able to afford to disregard this problem.

The importance of the regional aspects of planning, both in developing countries and within their regional and subregional economic groupings, was stressed in the recommendations of the International Symposium on Industrial Development (Athens, November - December 1967). Similarly, the need for improving the existing practices of location of industry in developing countries was recognized by the Industrial Development Board in its meeting in Vienna (17 April to 14 May 1968), and UNIDO's efforts in this direction have been favourably commented on by its members.

This seminar provides the opportunity to bring together responsible representatives from a number of developing countries and a group of outstanding experts on the problems concerned, to examine further the appropriateness of present location techniques and to discuss and exchange views on still other approaches. I am of the opinion that the down-to-earth discussions of this seminar will be aimed at developing practical methods which will meet the needs of the developing countries and contribute importantly to the technical field. It is our hope that the serious work you have already put into the preparation of the many important papers which form the basis for your deliberations at this seminar will lay the foundation for an organized body of knowledge that will be applicable in the developing countries in the form of systematic procedures, criteria and methodology in the location of industry and regional development.

May I take this opportunity, also, to express my sincere thanks to the Government of the Byelorussian Soviet Socialist Republic for its graciousness in being host for this meeting and for its provision of the necessary facilities for this gathering.

I would like to extend my best wishes to all participants for a successful meeting.

Annex 5

STATEMENTS OF MR. E. WEISSMANN, DIRECTOR OF THE SEMINAR
(Senior Adviser on Regional Development, United Nations, New York)

Opening statement

We have become so preoccupied with the need for economic growth that the actual purpose of development is often forgotten; in our struggle to create new capacities we can lose sight of the wider meaning of development, which is the creation of new qualities of life. Recently, however, the purely economic approach to development has begun to change. Improvement of the human condition is now more generally accepted as a prerequisite for balanced and sufficiently rapid economic growth.

Industrialization is sometimes called the engine of development. Rightly, therefore, the developing countries look to it as the principal means of maintaining an adequate pace of economic, social and cultural progress. Indeed, industrialization offers the key element in their struggle to close the large and rapidly widening gap between the growth rates of their populations and their economies.

The truly fantastic growth of world population in recent decades is mainly due to measures of education, public health and sanitation motivated by humanitarian considerations. These measures are evidently succeeding in saving and maintaining the lives of the newborn. The current world trend towards urbanization is thus a direct consequence of the steadily increasing pressure on agricultural land that could offer but mere subsistence to earlier generations. However, the great agglomerations of population in major cities and metropolitan belts of many developing and developed countries alike result mainly from the still prevailing tradition of locating new economic and other essential investments with short-term benefits in view, considering them project by project, rather than considering the long-range benefit-cost ratios of broader sectoral, regional or national development plans.

Such essentially economic considerations often lead some countries to excessive concentration on the requirements of the world market rather than on their own needs, so much so that the urbanization pattern in a developing country may well be a direct result of the demand for certain primary goods in the industrialized countries. Also, when external investment is sought,

the already severe limitations imposed by the concept of economic efficiency are often mixed with political and ideological issues. This, then, restricts further the use of the world's accumulated technological, capital and human resources for the establishment of a viable economy in a tranquil world which, in turn, would enable the pre-industrial nations to use their own natural wealth and human capabilities more for their own benefit.

As things stand now, the location of economic activities (and more particularly the location of the most dynamic element of development - industrialization) will continue to follow the path of least resistance, with consequent excessive concentration of activities and people in the already crowded cities, which are becoming less and less efficient as agents of development and less and less desirable as places in which to live.

It can be seen that, in the developing countries, traditions and communities tend to disintegrate under the impact of over-rapid urbanization. In industrialized countries also, the services and facilities available fail to meet the social and cultural needs of their communities or the requirements of continued economic growth. Although productivity in some affluent nations steadily increases and while their investments in social programmes continue to rise at even faster rates, the quality of life tends to deteriorate. The malformation and malfunctioning of cities then cause economic losses and produce social tensions and sometimes neglect the "redundant" old and the "left-out" young.

While the recognized purpose of development is social improvement, human progress is not an automatic consequence of economic growth. To obtain social improvement a country must allocate to social development a suitable share of the wealth produced, and it must plan for an appropriate distribution of its available social benefits. In this context, a plan is both a model of an intended future situation with respect to economic and social activities, their location and linkages and the land structures, installations and landscape that provide their physical environment, and a programme of action and predetermined co-ordination of legislative, fiscal and administrative measures required to achieve the transition from the present situation to that presented in the model. It should be noted that the essential feature of both parts of this definition is the intent to develop and to achieve development through change.

As the concept of development broadens and planning becomes more comprehensive, the questions arise: "At what level of government or at what scale of planning can the economic, social and environmental mainstreams of development be most suitably integrated?" and "At what level of government, and at what scale of operation can the implementation of national plans be conveniently programmed in a rational system?". Starting from the latter question, namely, planning from the centre versus local planning, recent experience has led to a general recognition of the region as a convenient level for planning, stimulating and controlling, in the scientific sense of the term, the growth of national economies.

The various geographic regions of a country may vary with respect to economic and human resources, productivity, levels of living and physical and social infrastructure. Once these regional differences are recognized, national development policy must try to strike a balance between two extreme positions: (a) to equalize, as soon as possible, the conditions in all areas, conceivably at the expense of total national economic growth, or (b) to favour areas most likely to grow rapidly and to use the resources that realized to bring about progress everywhere over the long term.

Such decisions must, of course, be guided by the full knowledge of the available alternatives and of their consequences in economic and human terms. If so conceived, regional development could help to guide, in a very concrete way and in accordance with national urbanisation policies, the processes of industrialization, agricultural reconstruction and improvement of the quality of our environment generally. It could also facilitate the growing need for mobility, economic, social and geographic, of the population. First of all the local economies of urban agglomerations in a given region could be strengthened by making the best use of external economies and the services and facilities already available. Secondly, to attract migration from rural areas, alternative new urban centres could be created in conjunction with new production centres by developing services and utilities on a pattern that would benefit from economy of scale and yet avoid congestion.

Realizing that environmental considerations are often crucial for the effectiveness both of industrial development and the efficiency of individual projects, UNIDO has established regional industrial planning as one of its main areas of work. In response to an increasing interest in this concept in developing countries, work in this area was begun by UNIDO's predecessor, the Centre for Industrial Development, in mid-1965. Following recommendations

by the United Nations Symposium on Industrial Project Formulation and Evaluation, held in Prague in 1965^{1/} (to the effect that locational considerations are indispensable for adequately evaluating both the commercial and the national profitability of industrial projects) the Centre began preparations for this seminar.

In our discussions, we will focus on four main questions: (a) the general criteria of the geographical distribution of industry in the regional context, (b) the specific factors determining industrial location and their influence on national and/or regional growth, (c) methods for programming the geographical distribution of industry in line with a given policy on location and (d) policy instruments to promote the achievement of the objectives of industrial location policy and of the regional programmes that reflect these objectives.

In order to facilitate the discussion, UNIDO has commissioned a series of papers by outstanding experts from all parts of the world. UNIDO has also invited a group of experts, many of whom have prepared sections of the background material for the seminar, to help us in our discussions. Most important of all, of course, are the participants. Your countries have selected you to attend this seminar because you plan or administer industrial location and regional development and have a wealth of practical experience to contribute. As professionals representing many disciplines, we have a unique opportunity to make a significant contribution to further the theory and practice of development planning if we will keep in mind the technical nature of the discussion and avoid extraneous and argumentative discussions.

We shall first examine the criteria of the geographical distribution of industry. Next, we shall turn to the specific factors of industrial location; the importance of transportation, of human resources, of interindustry linkages, of economies of scale and of economies of agglomeration. Then, in connexion with the planning and programming of industrial location, we shall explore the planning techniques necessary for successfully carrying out a location programme in countries at various levels of economic and technological development, planning skills required by such a programme, the consistency between national

^{1/} ID/Ser.H/1 "Evaluation of Industrial Projects", United Nations Publication, Sales No. E.67.II.B.23.

and regional location plans and the connexion between a plan expressed in terms of gross aggregates and the actual location of single projects. Finally, we shall explore the policy instruments that would be most appropriate, under varying conditions, to achieve the desired location pattern.

In the course of the discussion, we should be able to examine critically the leading issues of industrial location in the regional context. Thus, the proposition that nations should seek balanced development among and within their regions could be examined to ascertain whether, in fact, such a policy has resulted in locating industries correctly from the standpoint of economic efficiency; that is, whether the comparative advantages of particular regions have been ignored and the opportunities for future growth of the nation's economy not maximized. Similarly, the questions of dispersion versus concentration of industrial activity and of smaller-town versus metropolitan-centred location can be judged in terms of comparison of the economies of spatial juxtaposition and the diseconomies of industrial agglomeration.

A seminar is not a resolution-passing meeting, and we can air our differences of opinion openly without fear of committing our Governments. The aim of this seminar, as of all UNIDO's work, is to enhance the developing countries' own abilities to deal with problems of regional industrial development and planning, and to guide UNIDO's further work in this area with a view to determining what types of assistance it may be asked to provide. No seminar can possibly give a complete blueprint of the actions that countries or international organizations should take. However, from an exchange of views and consideration of the issues, we shall all have a clearer picture of the problems of geographical distribution of economic activities consistent with national goals of economic growth and the furtherance of human welfare, taking at the same time full advantage of the opportunities that world trade offers.

In conclusion, may I, Mr. Chairman, take this opportunity, on behalf of the Executive Director of UNIDO and, indeed, on behalf of the entire family of United Nations organizations, to thank the authorities of the host country for the generous offer to hold this seminar here and for the great care and gracious and abundant hospitality they have programmed for us.

Closing statement of Mr. Weissmann

The report of our seminar is highly relevant to the problems of development when industrialization serves as a tool for promoting growth in the various regions of a country. Our method of exchanging experiences in this seminar was to single out vital issues and discuss them in the light of policies, plans and programmes that we know have worked or failed. We have considered with particular care the crucial problems of underdevelopment. We have come from all corners of the world. Our backgrounds differ. Technology and development in our countries range from the pre-industrial stage to full-blown affluence. Even more pertinently, different ideologies, social values and cultures motivate the development processes of our countries. Our conclusions and recommendations to entities and persons concerned were drafted against the background of the wide range of conditions, experiences and scientific research represented here. They include suggestions to UNIDO and to other parts of the United Nations family of organizations which could enhance the effectiveness of the assistance they render to Member States, singly or jointly.

As we discussed the issues and considered our conclusions, one could observe a fruitful interplay and four productive confrontations of concept, approach and method. These confrontations were useful to all participants and the countries and agencies they represented, because all of them participated in this frank interchange and communicated without reserve.

The first confrontation was between those who sought scientific objectivity in development planning and those who, as planners and administrators, faced political reality. One approach assumes economics to be an exact science like those subject to immutable laws of nature that man seeks to understand and harness but cannot change; the other recognizes that in human affairs there is a need for flexibility in concept and approach, for deep understanding of the changing nature of our society and, indeed, for direct involvement of the citizen in the continually changing nature of human relations.

In the second confrontation the scientific approach faced the practical one. The scientific attitude was taken by researchers who persisted in finding, through massive processing of data, supposedly correct solutions to the economic problems inherent in the behaviour of the wealth man produces, often neglecting the basically human behaviour of humans who produce it. Development practitioners and administrators must, however, plan and make decisions in many instances on the strength of data that are inadequate both in comprehensiveness and quality.

The third confrontation involved attitudes and values concerning development. One group saw the present conditions of underdevelopment and the world economic and trade patterns as they emerged from colonial relationships to be of a rather secular nature. Others maintained that the current revolution in science and technology, in agriculture and industry, in health and in education should not be looked upon as a cause of social and economic problems; on the contrary, the current social changes and the rapidly multiplying potential for economic growth were bringing solutions to the economic and social problems of both the highly industrialized and the underdeveloped countries.

The fourth confrontation of approaches concerned the most appropriate mix of economic efficiency and social benefit in development planning. Most participants stood by economic efficiency, a relatively simple concept that, while readily amenable to the use of mathematics and the computer, is of limited usefulness in guiding the use of the productivity of a country. Other participants began to conceive of new planning tools that would blend economic and social criteria for investment, thus adjusting productivity to human progress.

Case after case illustrated the short-comings of development policies that rely on the short-term economic efficiency of projects that are productive in terms of gross national product. It was evident that such policies tend to create dangerous and chronic imbalances between industry and agriculture and often caused internal inconsistencies in the structure and pace of industrialization itself. Most importantly, however, this approach generally fails to develop sufficient internal markets for the very industries it promoted. While a relatively small segment of a country may derive direct or indirect benefit from such supposedly productive projects, by far the larger part of the country may be untouched by it.

The more common among these inconsistencies and imbalances are:

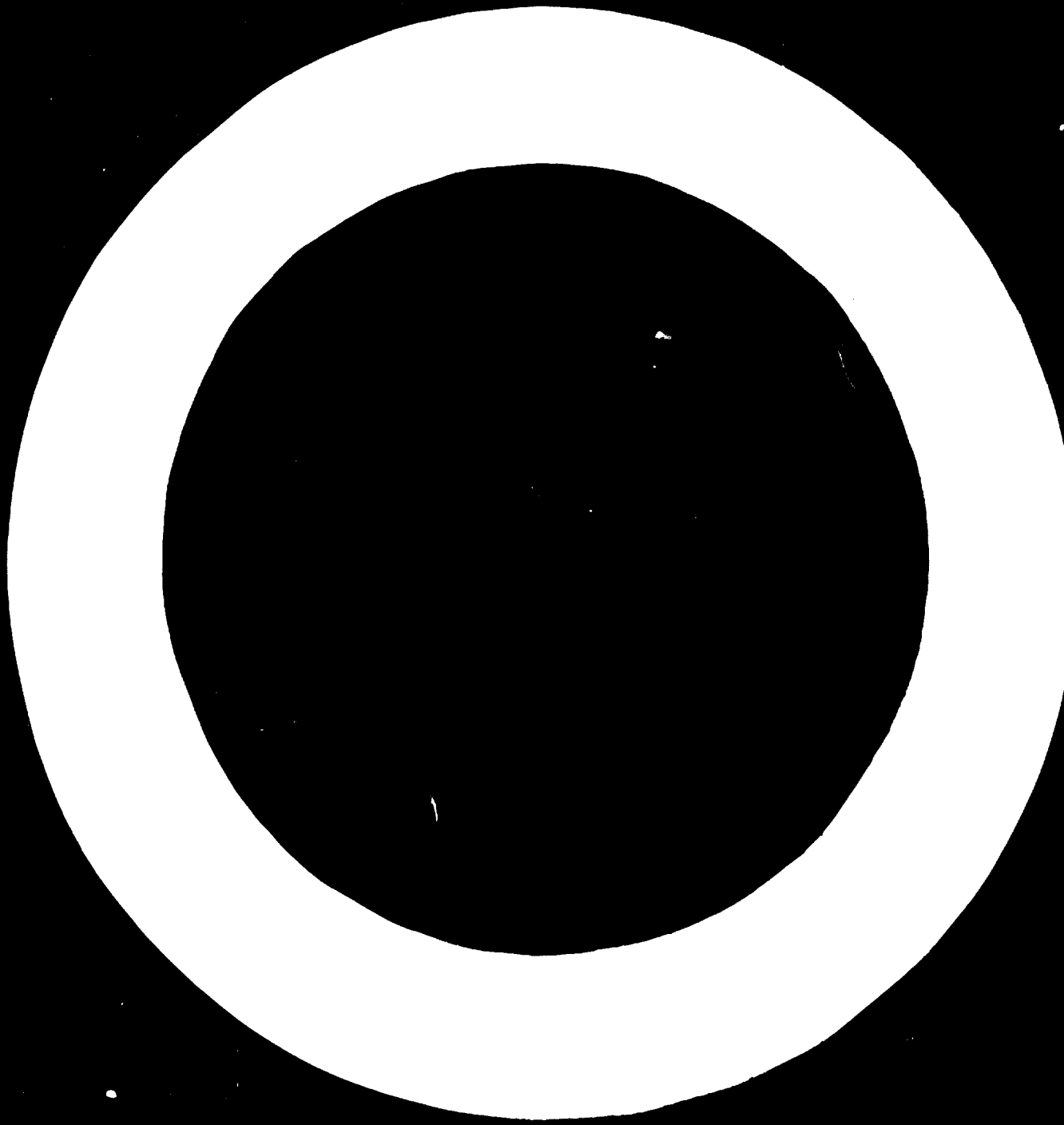
- (a) The critical lag (in the developing countries) between the rate of economic growth and employment and the rate of population growth;
- (b) The unavoidably slow pace of investment in social programmes (in the developing countries) as compared with investments in their economic programmes;
- (c) The growing gap between the rapid increase in unemployment or redundancy and the agonizingly slow rate at which industry can offer new employment; and
- (d) The rapid deterioration of the quality of life in most metropolitan agglomerations while economic productivity and social investment rise at unprecedented rates.

It could be contended that overemphasis on technical and economic efficiency in development leads to technocracy at the expense of real social benefit, that undue stress on administration of development tends to foster bureaucracy damaging not only to technical and economic efficiency but also to social benefit. A suitable accommodation, however, among the requirements of technical, economic and administrative efficiency, combined with ready access and rising quality of service, would undoubtedly tend to strengthen the participation of citizens and their identification with community, region and country first, as plans are being formulated and then as they are implemented. As a result, the present disparities in the levels of income between industry and agriculture, between urban and rural life and between decent neighbourhood and slum could begin to fade away, at least by degrees.

For the sake of economic efficiency all kinds of restrictions and violations of human dignity are still accepted. This attitude may have been valid in an era of scarcity when social development had to be limited to what furthered the economic goals of society, but the dilemma now facing the affluent countries is whether to define the levels of living they desire as a society, as well as the contribution they are willing to make towards creating a viable economy or to continue to arm and police the world. In fact, negotiating the necessary shift in attitudes and values concerning development away from exclusively economic criteria might well become the major issue faced by society in the remaining years of the twentieth century. There are limits not only to the ability of the rich countries to divert resources from their present uses but also to the capacity of the developing countries to absorb such resources effectively from both the socio-economic and the political viewpoints. But how will it be possible ever to discover these limits unless we move from speculation in conference to a real test?

Before I conclude, Mr. Chairman, may I express, on behalf of the Executive Director of UNIDO, his sincere thanks to you, and through you to our host country, the host institute and to all those who have so thoroughly organized this seminar and prepared themselves to present to us the remarkable story of the Byelorussian SSR and many other Republics of the Soviet Union in realizing their economic and social aspirations, using industrial productivity as a major instrument of growth. Your factories and fields, your cities and people and the social progress that accompanies your economic development are singularly impressive. Our work has been greatly facilitated by sharing with you your remarkable experience.

I would also like to thank the experts and staffs of your country and of UNIDO for their devoted service, going far beyond the call of duty. Our special thanks should go to the interpreters who kept our communications alive and smooth. And to the Byelorussian people, our gratitude for their warm hearts and proverbial hospitality. Finally, to you my fellow participants and experts, to you my friends, my very personal thanks for a unique experience that I had the great privilege to share with you.

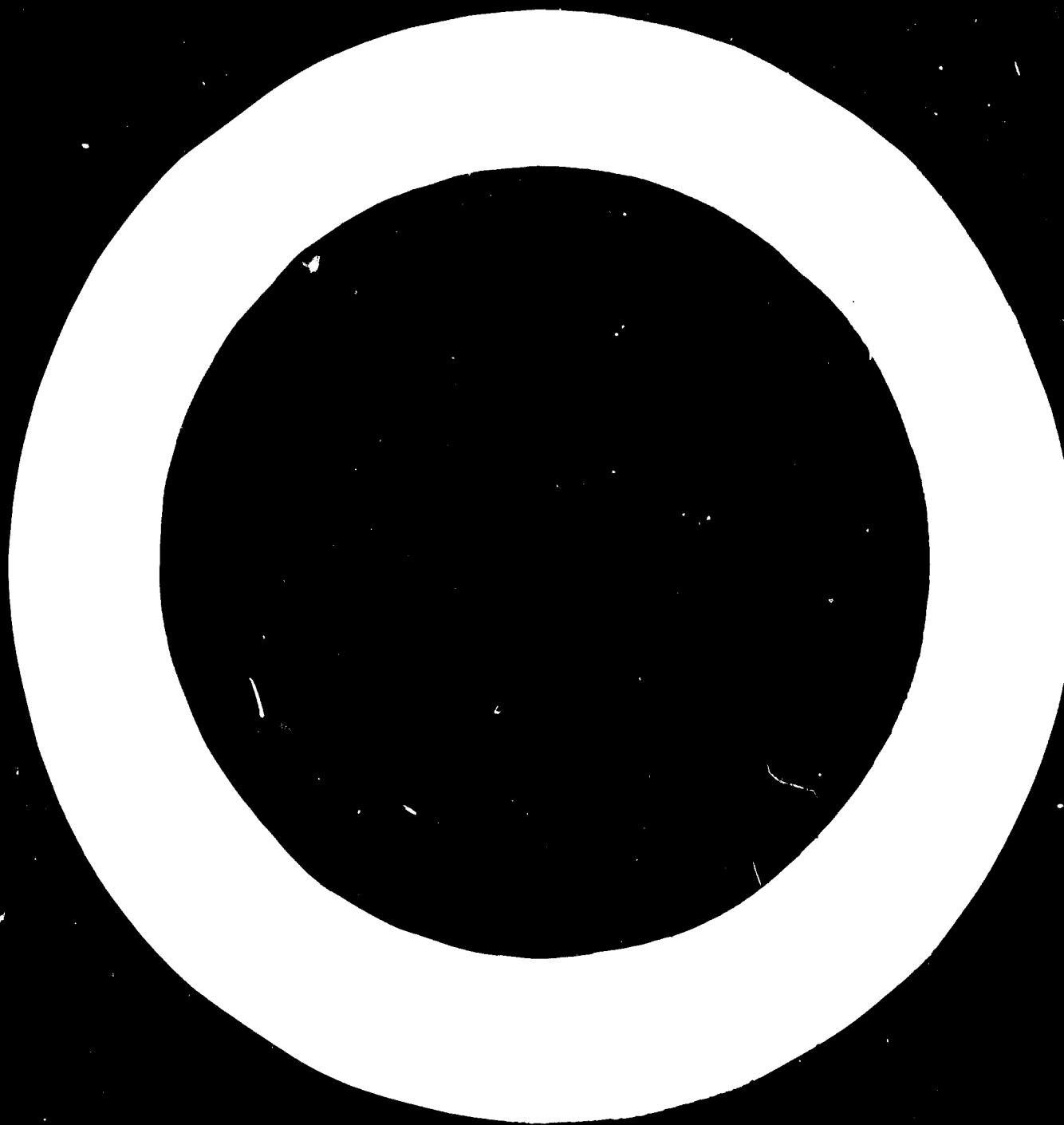


Annex 6

PROPOSAL BY MR. M. HUSAIN,
THE DELEGATE FROM PAKISTAN

The delegate from Pakistan called for a specific study by a high-level and appropriately qualified committee established by UNIDO to explore the following questions:

- (1) A survey of the availability, competence and quality of foreign experts and the demand and need for their services in the developing countries, taking realistic account of the conditions of the host country, the terms of recruitment and the appropriateness of their competence for the required services.
- (2) A realistic survey of the mechanism for the identification of the need for and the recruitment and placement of foreign experts from the United Nations and other sources.
- (3) A positive but critical evaluation of national attempts to develop national experts through (a) training schools, (b) counterpart systems and (c) training abroad, with a follow-up of the products of these systems, taking account of the propensity of such national experts to stay abroad in developed countries or to be employed in multinational organizations that assist other developing countries.
- (4) Quantitative estimates of the needs and available resources and recommendations for action to meet the situation.



Annex I

CLOSING ADDRESS OF THE CHAIRMAN, DR. P. VASILEVSKI, (Director, Institute of Economics, Academy of Sciences of the Bulgarian SSR)

The seminar has reached the end of its work. In this exceptional experience a double feeling: On the one hand a feeling of satisfaction with the results of our work, and on the other a feeling of great regret to have to must part. During the two weeks of our work we have become friends. We have discussed the problems of the development of our countries and we have acquainted with each other.

I should like to make note of the fact that the characteristics of the problems discussed here were more those of a symposium than a seminar. Not only were the experts active but also the participants themselves, especially the representatives from the developing countries. For this reason - I keep to this term traditionally - more significant and important to me, in the process of discussion, we heard not only the advice of the experts but also had the opportunity to discuss in depth the problems of industrial location and regional development that the developing countries are experiencing.

As Chairman, I note with great satisfaction that the discussions were fruitful. Many thought-provoking remarks were made which will certainly have a most positive influence on both the solution of the problems and the management of industrial planning. Extremely valuable were the experiences of industrial location and regional planning described by some participants. These experiences were most varied because of the different economic structures, conditions, resources and traditions of the different countries. Not only the practical aspects of industrial location but also technological questions were discussed. It is probable that this will help to solve concrete problems in every country.

Many participants pointed out the complexity of the problems of location - political, economical, social factors, natural conditions and resources - all of which greatly influence industrial location.

Attention was rightly drawn to the fact that for many reasons these problems are much more easily solved within the framework of the state sector. National investments are an important factor in the development of new regions and in the solution of large-scale regional problems.

Experience with the multidisciplinary approach to the solution of problems of industrial location deserves attention. With this approach all sectors and aspects of industry could be bound more closely, and national and regional interests could be combined more effectively. Spatial models, as was correctly pointed out by the experts, are most effectively applied to planned economies.

Every participant will take with him many interesting reports which will help to continue the study of problems of location. We are convinced that these reports, as well as the whole seminar, will help participants, and through them other planning specialists, in their practical work.

I should also like to express the feeling that the comprehensive documentation submitted by UNIDO and the host country is a real source of knowledge in the field of industrial location. Bearing this in mind, I strongly support the suggestion of some of the participants that the material of this seminar be published.

In assessing the results of the seminar one should pay tribute to its distinguished Director, Mr. E. Weissmann, who revealed a profound knowledge of the problems under discussion.

I cannot but highly appreciate the extensive and hard work of the secretariat, headed by Mr. A. Kuprianov. It is to be regretted that they frequently could not enjoy certain items of the out-of-work programme, as preparation of documents for the following session was necessary.

I regard it as my duty to point out the mutual understanding and co-operation that existed among the participants and experts and between the participants and the officers of the seminar. This was of great importance to the success of our work, and I believe that the personal contacts established here will be useful in the future.

I concur with the opinion expressed by participants concerning the great contribution made by UNIDO to the organization and work of the seminar. I also wish to say, once again, what I have already expressed as regards the appropriateness of including individual aspects of the industrial location problem in the prospective programme of work of UNIDO.

I confess that I regret that we must part, but we all know that it is inevitable. I hope that you, like myself, will retain the most pleasant impression of our collective work.

Bon voyage, good health, success in your work and happiness in your personal lives.

Annex 8

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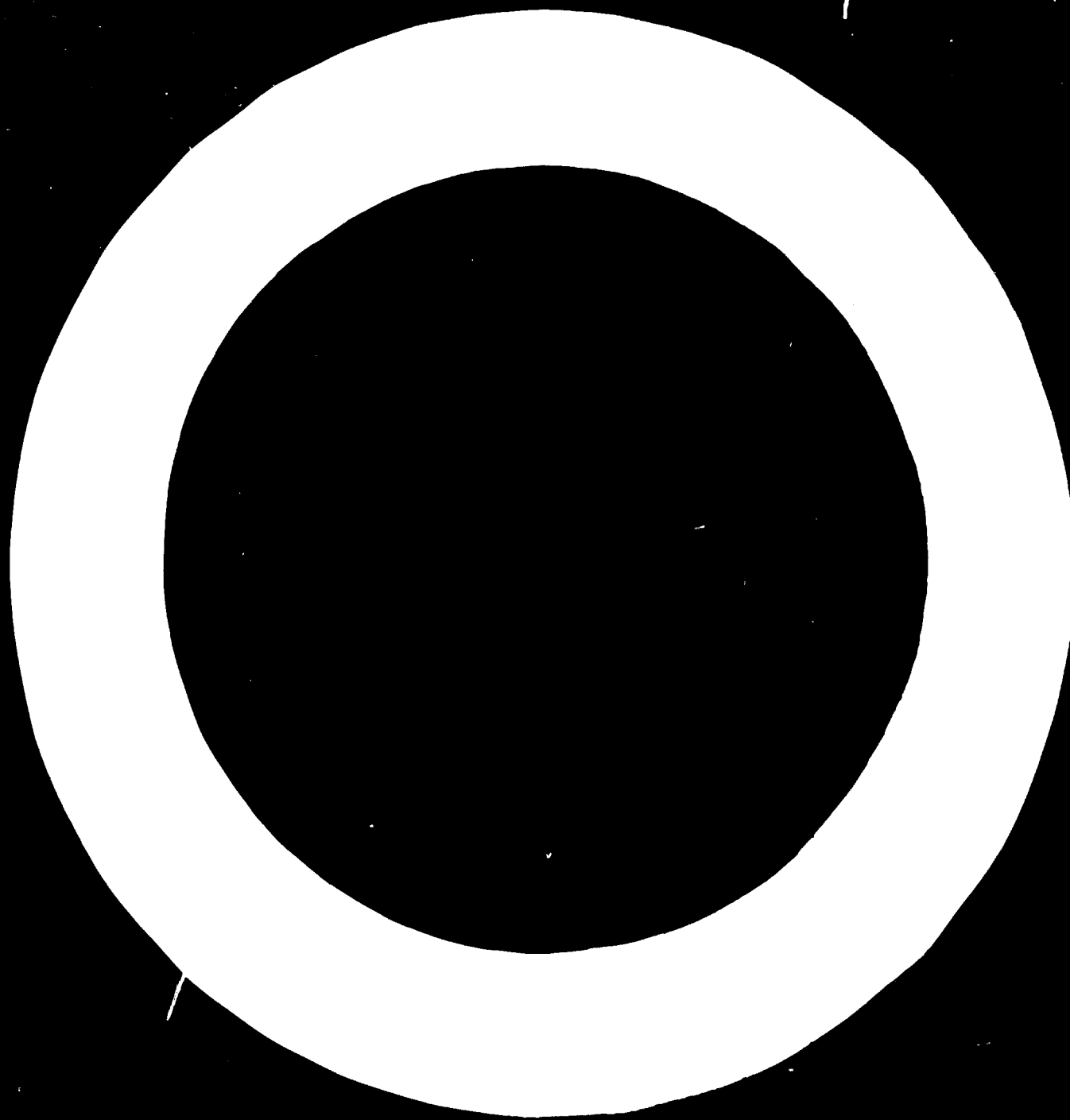
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Annex 9

LIST OF DOCUMENTS PRESENTED TO THE SEMINAR

Issue papers

- ID/WG.9/Issues 1 Industrial location and regional development: The general problem
- ID/WG.9/Issues 2 Factors in the location of industry
- ID/WG.9/Issues 3 Industrial location planning
- ID/WG.9/Issues 4 Instruments of industrial location policy

Discussion papers:

- ID/WG.9/1 and Summary Evaluation of an industrial project from the point of view of rational location of productive forces, by E. Aliev
- ID/WG.9/2 and Summary The location of industry in developing countries, by W. Alonso
- ID/WG.9/3 and Summary Data requirements for industrial location, by V. Gerniavsky and V. Mikulas
- ID/WG.9/4 and Summary The use of indicative planning in translating aggregate plans into location of individual projects, by P. H. David
- ID/WG.9/5 and Summary Techniques of industrial location programming: A selective survey, by I. Kresić
- ID/WG.9/6 Regional development and industrial location policy in Argentina, by M. S. Brodersohn
- ID/WG.9/7 and Summary Inter-industry relations, external economies and regional economic development, by C. Michalopoulos
- ID/WG.9/8 and Summary Regional economic growth and labour mobility in Canada 1956 to 1961, by J. C. Mills
- ID/WG.9/9 and Summary Territorial division of labour and distribution of productive forces, by S. A. Nikolaev
- ID/WG.9/10 and Summary Regional location and efficiency of industrial complexes in relation to the provision of infrastructure, by J. A. Shubin
- ID/WG.9/11 and Summary Methods of achieving consistency between national and regional location plans, by D. Schejbal and G. Zurek
- ID/WG.9/12 and Summary Relevance of intermediate industries and industrial services for correct location planning, by E. S. Tosco
- ID/WG.9/13 and Summary The planned interregional location of industry: Argument in favour of a "trade-not-aid" approach, by T. Victorinaz
- ID/WG.9/14 Industrial location policy in Mexico, by A. Lamadrid
- ID/WG.9/15 A transport strategy for development, by W. Owen
- ID/WG.9/16 Ad hoc advisory expert group meeting on regional industrial planning - final report

- ID/WG.9/17 Problems of distribution of industry in the Union of Soviet Socialist Republics (theory and practice), by N. Nekrasov
- ID/WG.9/18 Planning of industrial enterprises: Basis for their location, by V. F. Medvedev
- ID/WG.9/19 Annotated provisional agenda and tentative timetable for the seminar

Country papers^{1/}

- ID/WG.9/
Country 1 Uganda - experience as related to problems of industrial location and regional development, by Mrs. M. A. Serwadda
- ID/WG.9/
Country 2 Regional disparities and the allocation of investments in Brazil, by A. Rodrigues Faria
- ID/WG.9/
Country 3 Industrial location and regional development in Ghana, prepared by the Ministry of Economic Affairs, Accra, Ghana
- ID/WG.9/
Country 4 Experiences in the development of the National Planning Institute's teamwork, by F. C. Mestres
- ID/WG.9/
Country 5 Industrial location in the Sudan, by M. S. Ali and M. S. Abdalla
- ID/WG.9/
Country 6 Politique Générale de la République Démocratique du Congo en Matière de Développement Industriel, by L. P. Essanga

Background papers^{2/}

- ID/WG.9/B.1 Planned location of industries and regional development in the East African sub-region, by E. Alaev
- ID/WG.9/B.2 Industrial location and regional development in Africa, by S. Jack
- ID/WG.9/B.3 Cartographic method applied to regional planning, by E. B. Alaev and S. Jack
- ID/WG.9/B.4 and
Summary Features and factors governing location of enterprises processing agricultural raw materials, by F. S. Martinkevich, Y. M. Aleksandrovich and A. D. Pavlova
- ID/WG.9/B.5 Economo-Mathematical models and methods of locating industrial enterprises, by V. F. Medvedev and V. A. Kagan
- ID/WG.9/B.6 and
Summary Possibilities for using electronic computers and methods of mathematical programming for solving problems of production location, by V. A. Emelichev, I. F. Klebanov and V. I. Komlik

^{1/} A limited number of country papers were also presented by the participants from Burma, Chile, Indonesia, Pakistan, and the United Arab Republic.

^{2/} See also Report of the Interregional Symposium on Industrial Project Evaluation, Prague, October 1965 (ID/SER/H/1, United Nations publication, Sales No. E.67.II.B.23).

- ID/WG.9/B.7 and Summary Regional planning, policy and goals of location of industrial enterprises in the BSSR, by A. P. Koloshin
- ID/WG.9/B.8 and Summary Microlocation of industrial enterprises and planning of towns, by V. P. Chernyshev and L. M. Eingorn
- ID/WG.9/B.9 Characteristic features of development and territorial distribution of industry in the Georgian SSR, by G. G. Gvelesiany
- ID/WG.9/B.10 and Summary Experiment of development and industrial location in Soviet Armenia, by M. A. Adontz
- ID/WG.9/B.11 and Summary Natural resources as a factor of formation of territorial (regional) productive complexes, by A. A. Mintz
- ID/WG.9/B.12 and Summary The experience and peculiarities of the location of industrial enterprises in Uzbekistan, by S. M. Khodzaev
- ID/WG.9/B.13 Peculiarities of modern urbanization and industrialization of the production, by L. N. Karpov and V. M. Gokhman
- ID/WG.9/B.14 and Summary Basic principles and factors of industrial location, by Y. G. Feigin and V. G. Udovenko
- ID/WG.9/B.15 and Summary Postwar problems of regional development of West European countries, by T. Galkina, L. Nochevkina and M. Sokolov
- ID/WG.9/B.16 and Summary Methods of development and distribution of productive forces on anew digested territories, by N. A. Utenkov
- ID/WG.9/B.17 Technical progress and efficiency of distribution of productive forces, by M. A. Vilensky
- ID/WG.9/B.18 The creation of poles of industrial development: Experience of Bari-Tarente in Italy, by G. Gelee

Documentation prepared for the International
Symposium on Industrial Development
(Athens, 29 November - 19 December 1967)^{3/}

1. Issues for discussion: General policies - economic and social aspects ID/Conf.1/A.14
2. Issues for discussion: Formulation and implementation of industrial programmes ID/Conf.1/A.16
3. Issues for discussion: Regional co-operation ID/Conf.1/A.24
4. Implementation of industrial projects ID/Conf.1/3
5. The role of policy-makers in project formulation and evaluation ID/Conf.1/4
6. Regional integration and the industrialization of developing countries ID/Conf.1/11
7. Policies and programmes for the establishment of industrial estates ID/Conf.1/29 and Corr.1
8. Criteria for location of industrial plants: Changes and problems ID/Conf.1/B.3

^{3/} The Report of the Athens Symposium has been published as ID/11 (United Nations publication, Sales No. F.69.II.B.1).

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5. 7. 72