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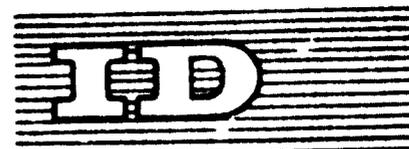
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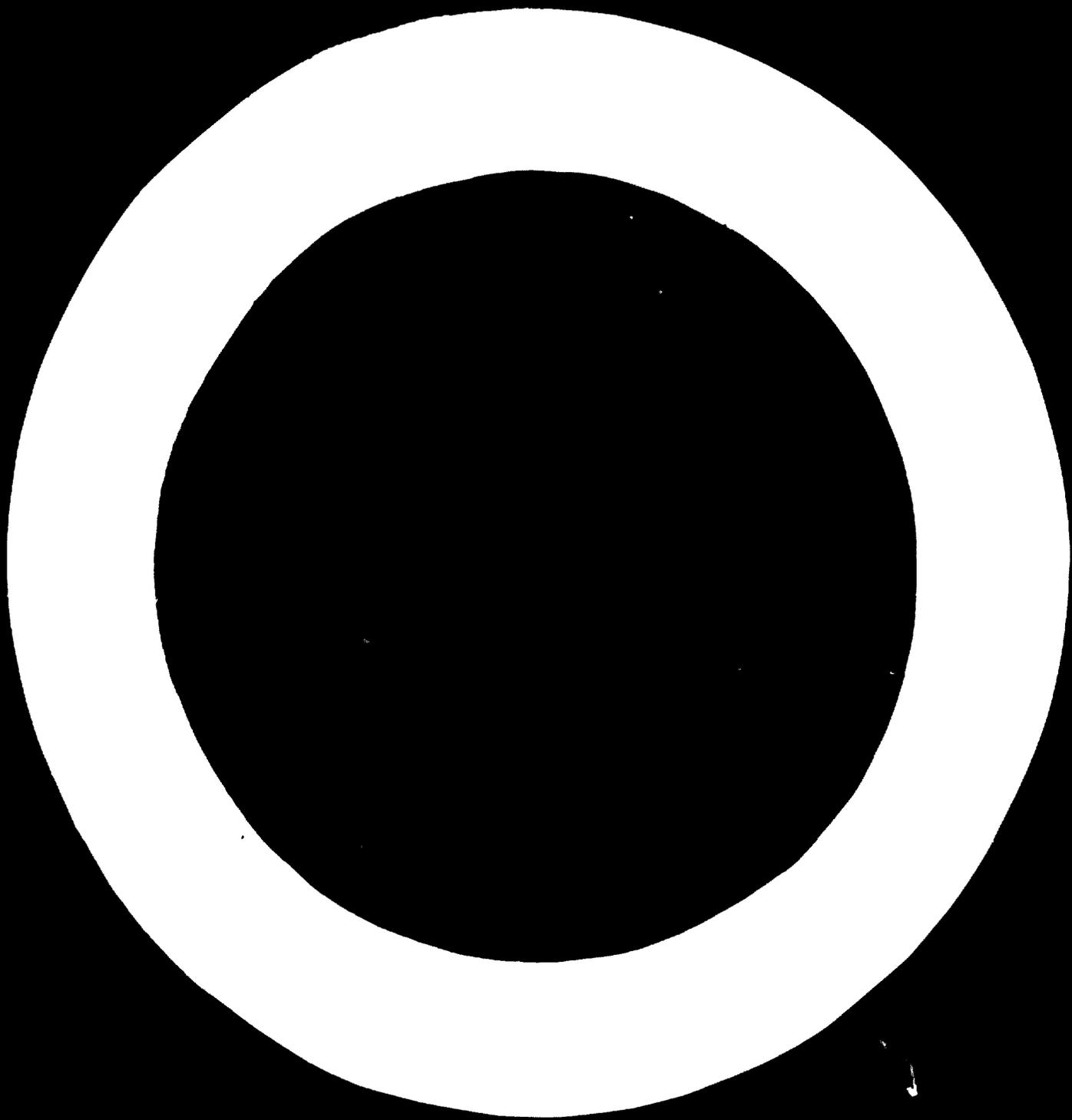
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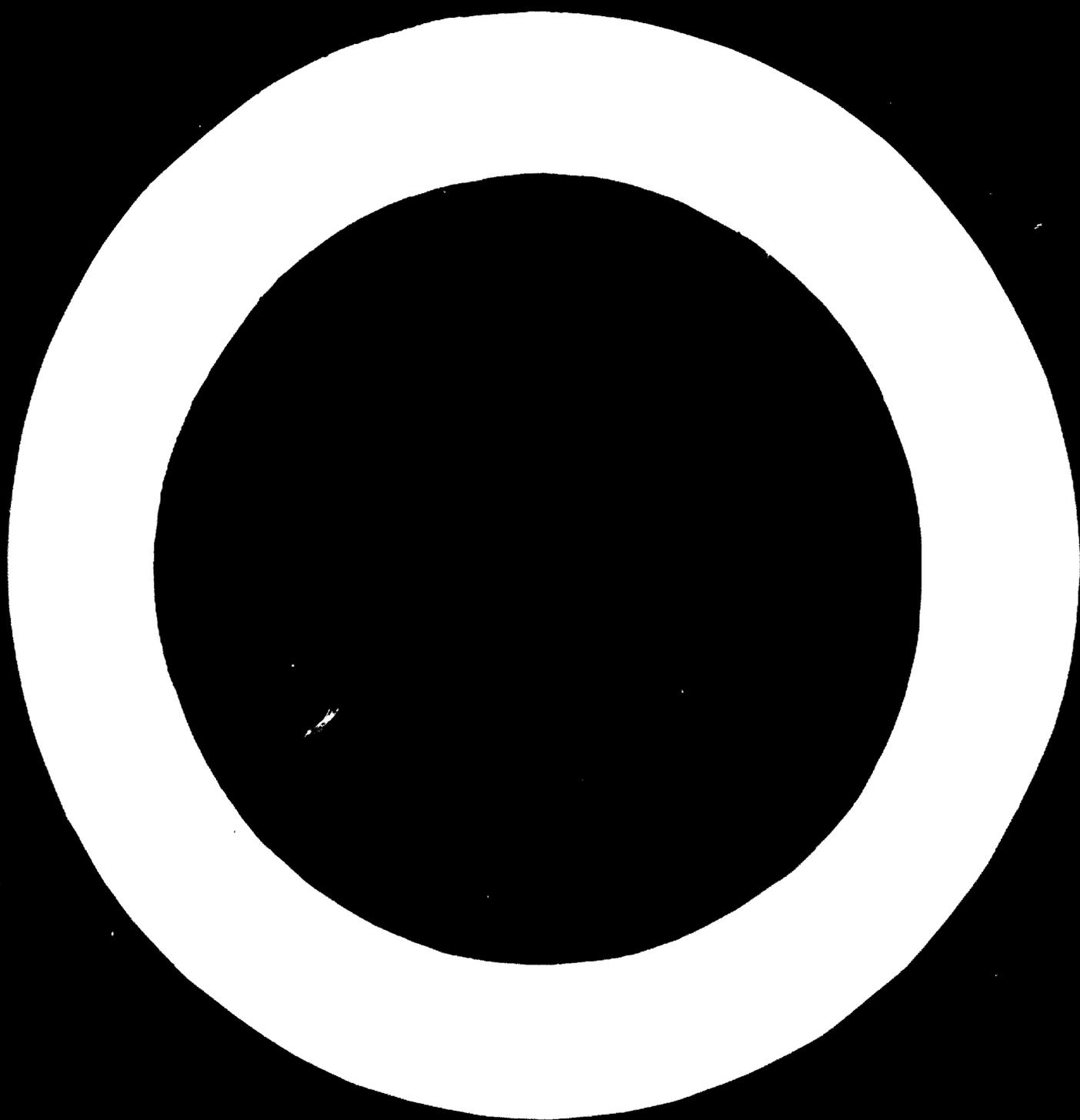
INDUSTRIAL LOCATION PLANNING 1/

Issue paper on agenda item III

✓ The document is presented as submitted, without re-editing

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## Introduction

Programming for industrial location involves three categories of social and economic groups with divergent interests; namely, those who represent undertakings and industrial sectors, those who represent the various regions, and those who represent the country as a whole. The first seek a maximum return from the means of production at their disposal. The second group wants to increase the income and improve the living conditions of the regional population. The third group is responsible for striking a balance between the economic interests and social objectives of the two other categories. Governments therefore seek to diminish the opposition between the interests of the three groups which becomes chiefly apparent in the methods used for locating industry. To that end, they use various co-ordination techniques that are tending to become generalized.

### 1. Methods used for locating industry

The interest attaching to purely economic methods should not be allowed to obscure their limitations.

A distinction must be drawn between economic techniques for locating industry that are applied to separate plants and those that are applied to groups of plants. As regards the former, a distinction must again be made between mathematical methods and comparative methods.

Mathematical methods can in turn be sub-divided into classical mathematical methods such as, on the one hand, the Launhardt and Weber's "localization triangle" or Weber and Palander's "isodapanic" system, and, on the other, the polyvector method, a geometrical approach for determining a focal point with minimal distances between it and its points of reference, duly weighted to take into account the latter's relative importance.

Comparative methods can be used to evaluate the investment and operating costs of a given factory in different locations. These methods are described as "complex" or "abridged" according to whether all the factors affecting location - quantitative and qualitative, direct and indirect - are taken into account, or simply the basic factors that have a direct influence.

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\* Translator's note: This word is not in Webster's or in any other dictionary we have.

Among the methods used for locating groups of industries, quantitative analytical techniques and spatial models may be distinguished.

The best known of the quantitative analytical systems is the analysis of industrial complexes, developed by M. ISAÏD and his co-workers, which is based on such methods as analysis of comparative costs and input-output techniques to evaluate a group of industrial activities and individual locations forming a unit from the technological and economic point of view. Among other quantitative analytical systems may be mentioned the methods used in the Soviet Union, stressing analysis of technical location parameters and the "poles of development" theory, which features largely in the work of the French regional school.

Spatial models, which are mostly appropriate for planned economies, are used for determining, on a territorial or regional scale, the optimal distribution of activities, in relation to specified objectives. Spatial models may be homogeneous or heterogeneous. The first variety deals with activities of the same kind, for example the most economical geographical distribution of similar plants, such as steelworks or oil refineries etc., within a country or region. One can use, for example, a linear programmed transport model to reduce to a minimum the transport costs of either the finished goods or the raw materials. Heterogeneous models are formed by grouping together several homogeneous models, but for this there is no specific methodology other than the classical economic analysis.

Purely economic models are still used more frequently in theoretical research than in daily practice and their limitations must be emphasized.

In the first place, these methods tend to make us neglect a vital aspect of industrial location - social conditions. Nowadays every industrial entrepreneur gives a good deal of weight in choosing a location to a whole set of social factors such as the local public health, educational, cultural and recreational facilities. Furthermore, purely economic calculations take no account, besides the traditional costs, of such factors as the social cost of water pollution and the additional expenditures involved on account of urban traffic congestion. However difficult it may be to express these factors in terms of figures, they must not be ignored by public authorities. The fact is that, in order to operate properly, industries need, both in their own interest and the interest of the country as a whole, an entire system of infrastructures, both productive and non-productive, technical and non-technical; and economic science

has not yet found out how to deal with all these complexities. In this connexion, Czechoslovakia's experience has some significance. There the emphasis in regional industrial development has been placed on a number of principles, such as the establishment of essential links between industries, coherence in investment policy and regional specialization. Economic development has been linked with town planning. The twin objectives are to increase national income to the maximum extent possible and gradually to eliminate regional economic disparities.

The striking feature of these problems is the diversity of their various aspects, and this means that to achieve the necessary coherence, there must be a drive towards co-ordination.

## 2. Co-ordination techniques

Such techniques are applied at two levels, and are aimed at dovetailing national and regional plans, on the one hand, and at harmonizing decisions taken by undertakings or by branches of industry with those taken by the regional authorities, on the other.

To bring regional ideas into line with the national interest, the first requisite is to provide the regional group with institutions capable of expressing its opinions. It is with this end in view that, in the United Kingdom, the Regional Planning Councils and, in France, the Commissions de Développement Economique Régional, have been set up. Bodies of this kind are sometimes composed of administrative and political figures, as in the Multistate Regional Planning Commissions of the United States. In Czechoslovakia the machinery of local government - regions, districts, municipalities, etc. - participates in the process of elaborating regional plans.

Once the regional point of view has been expressed, the next essential problem is to ensure that it is in harmony with the national viewpoint. A region does not exist in isolation; its problems are linked with the problems of other regions, and all these spatial or territorial entities form a whole - the nation. The necessary harmony in this respect is more and more achieved through the regionalization of the national plan. Here the Czechoslovak experiment seems to come close to the French practice of dividing the Plan into regional sub-divisions. In both cases, agreement is obtained between national and regional authorities through collaboration and face to face confrontation of view points. In the event of failure to agree, the national argument naturally

carries the day, since, as a rule, the general interest of the State supersedes all particular interests. In France, regionalization is carried a very long way, since the State budget is itself regionalized, which makes it possible to form a preliminary idea as to how the balance of public investments at the regional level, is achieved.

When the regional industrial expansion programmes have been brought into line with national projections, the individual decisions of undertakings and industrial sectors must be brought into harmony with them. The first step is to collect information. Industrialists must be given concrete information on the opportunities for setting up plants, in the light of the economic, technical and social conditions of the region concerned and the local public authorities must be informed of the actual needs of industrialists, in the light of the development of technology and of markets. Czechoslovakia has organized a system of providing information on the geographical, technical and economic conditions in every part of the country. The data assembled are published in the form of texts, tables and map diagrams, systematically and permanently revised and brought up-to-date. This is a very important experiment because it makes it possible to make available to public authorities and industrialists alike correlated and up-to-date information. This might well seem a decisive step towards better mutual understanding of different points of view. It is even to be hoped that such a system of standardized information could be internationally applied. Meetings between specialists from many countries, and action by international bodies, particularly UNIDO, could contribute to the adoption of such a system.

To bring about final agreement between industrialists and public authorities regarding the location of industry, the Government can avail itself of a whole arsenal of measures of persuasion or dissuasion. Among the former may be mentioned tax exemptions, low interest loans, subsidies; in the second group, the necessity, for obtaining an authorization or paying a tax, as is the case for the privilege of establishing factories in the Paris region. In reality, however widespread their use, these measures are of little practical utility and seem likely to have still less in the years to come. To the extent the public authorities prepare the technical and social infrastructure for new factories and bring it to the notice of industrialists, the latter naturally tend to make use of them. Any other attitude on their part would hardly appear

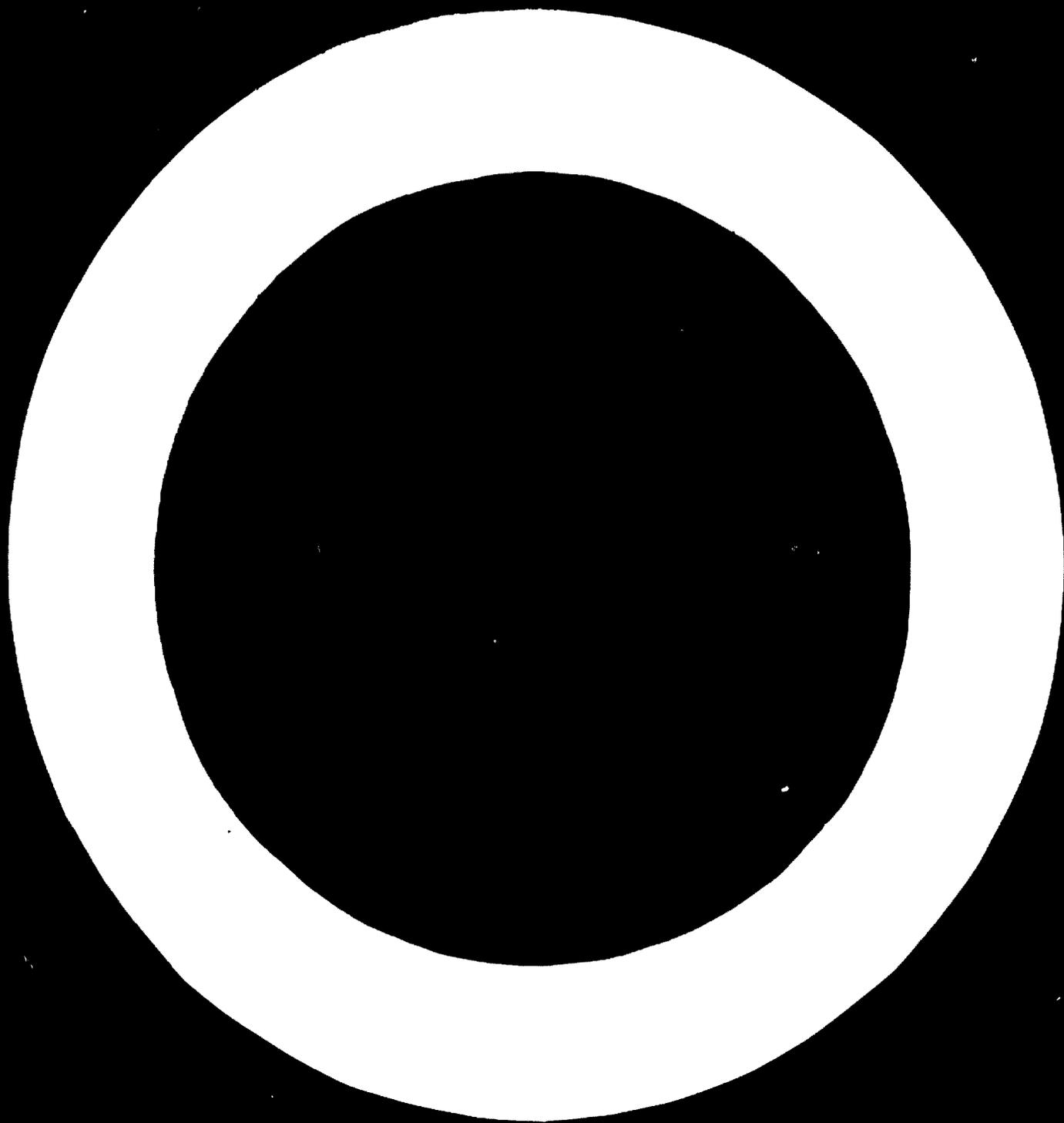
rational and certainly not economic, since the public authorities will have consulted the representatives of industry before selecting the development zones. The views of the authorities and of the industrialists thus tend to converge more and more without the need for artificial measures of encouragement or prohibition.

### Conclusion

Generally speaking, the developments outlined relate to both the centrally planned economies as the others. In both groups the same problems arise, and what may perhaps seem more surprising, the same techniques are used to resolve them: regionalization, joint planning, information services, persuasion and dissuasion. These observations seem to lead to two sets of conclusions:

1. Countries already industrialized, whatever their politico-economical system, would find it very much in their interest to exchange experience in this field, even to work together in research and development studies, since the result of their joint labours would be of direct utility to each one of them, without having to be adapted to its particular structures.

2. For the developing countries the common experience gained by the industrialized countries presents the exceptional advantage of being compatible with any political regime. Its application presupposes no choice and leaves the door open to all future developments. More specifically, developing countries might draw from the experience of industrialized nations the lesson that it is desirable to give attention to regional development right from the beginning of industrial expansion and not merely when the defects of unbalanced development have perhaps caused irreparable damage.



Annex 1

RELEVANT UNITED NATIONS DOCUMENTS

<u>I PRESENTED TO THE INTERREGIONAL SEMINAR</u>		<u>Symbols</u>
<u>A. Discussion papers (Agenda item 3)</u>		
1. <u>V. Cernianski</u> <u>M. Mikulas</u>	) Data requirements for industrial location	ID/WG.9/3
2. <u>P. David</u>	The Use of Indicative Planning in Translating aggregate plans into location of individual projects	ID/WG.9/4
3. <u>I. Krosic</u>	Techniques of industrial location programming (Selective survey)	ID/WG.9/5
4. <u>V. Medvedev</u>	Planning of industrial enterprises: bases for their location	ID/WG.9/18
5. <u>S. Nikolaev</u>	Territorial Division of Labour and the Location of Productive Forces	ID/WG.9/9
6. <u>D. Scheibal</u> <u>O. Zurek</u>	) Methods of achieving consistency between national and regional location plans	ID/WG.9/11
7.	<u>Final Report</u> of the <u>Ad Hoc</u> Advisory Expert Group Meeting on Regional Industrial Planning (Geneva, May 1967)	ID/WG.9/16
8. <u>UNIDO</u>	Industrial Location Planning	ID/CONF.1/12, 1967
<u>B. Background papers</u>		
1. <u>E. Alayev</u>	Planned Location of Industries and Regional Development in the West African Sub-region	ID/WG.9/B.1
2. <u>S. Jack</u>	Industrial Location and Regional Development in Africa	ID/WG.9/B.2
3. <u>U.N. Commission for Africa</u>	Cartographic Methods applied to regional planning	ID/WG.9/B.3
4. <u>UNIDO</u>	Industrial Location, Regional Development and related subjects: A Partially Annotated Bibliography	CID/1.1966
5. <u>A. Koloshin</u>	Regional Planning, Policy and Goals of Location of Industrial Enterprises in the Byelorussian S.S.R.	ID/WG.9/B.4
6. <u>F. Martinkevich</u> <u>Y. Alexandrovich</u> <u>A. Pavlova</u>	) Features and Factors Governing Location of Enterprises Processing Agricultural Raw Materials	ID/WG.9/B.5
7. <u>V. Medvedev</u> <u>W. Kagan</u>	) Economic Mathematical Models and Methods of locating Industrial Enterprises	ID/WG.9/B.6

B. Background papers (continued)

Symbols

- |     |  |  |              |
|-----|--|--|--------------|
| 8.  | <u>B. Yemelichev</u><br><u>I. Klebanov</u><br><u>V. Komlik</u> | ) Possibilities for Using Electronic Computers<br>) and Methods of Mathematical Programming for<br>) Solving Problems of Production Location ..              | ID/WG.9/B.7  |
| 9.  | <u>V. Chenichev</u><br><u>A. Aegorn</u>                        | ) Micro-location of Industrial Enterprises and<br>) Planning of Towns  | ID/WG.9/B.8  |
| 10. | <u>K. Adonz</u>  | Experiments of Development and Industrial<br>Location in Soviet Armenia  | ID/WG.9/B.9  |
| 11. | <u>G. Gyelcsiani</u>   | Characteristic Features of Industry in the<br>Georgian S.S.R.  | ID/WG.9/B.10 |
| 12. | <u>S. Hodjaev</u>  | Experiments and peculiarities of Industrial<br>Enterprises Location in Formerly-Backward<br>Regions with Relation to Industry (case of<br>Uzbekskaja S.S.R.) | ID/WG.9/B.11 |
| 13. | <u>A. Hinz</u>   | Natural Resources as a Factor of Territorial-<br>Productive (Regional) Complex Development   | ID/WG.9/B.12 |
| 14. | <u>M. Vilevnski</u>  | Technical Progress and Efficiency of Distri-<br>bution of Productive Forces  | ID/WG.9/B.13 |
| 15. | <u>J. Feigin</u><br><u>V. Udovonko</u>                         | ) Basic Principles and Factors of Industrial<br>) Location   | ID/WG.9/B.14 |
| 16. | <u>N. Utankov</u>  | Methods of Development and Distribution of<br>Productive Forces on New Digested Territories  | ID/WG.9/B.15 |
| 17. | <u>L. Karpov</u><br><u>V. Gochman</u>                          | ) Peculiarities of Modern Urbanization and<br>) Industrialization of Production  | ID/WG.9/B.16 |
| 18. | <u>Galkina</u><br><u>L. Nochovkina</u><br><u>M. Sokolov</u>    | ) Post-war Problems of Regional Development of<br>West-European Countries  | ID/WG.9/B.17 |

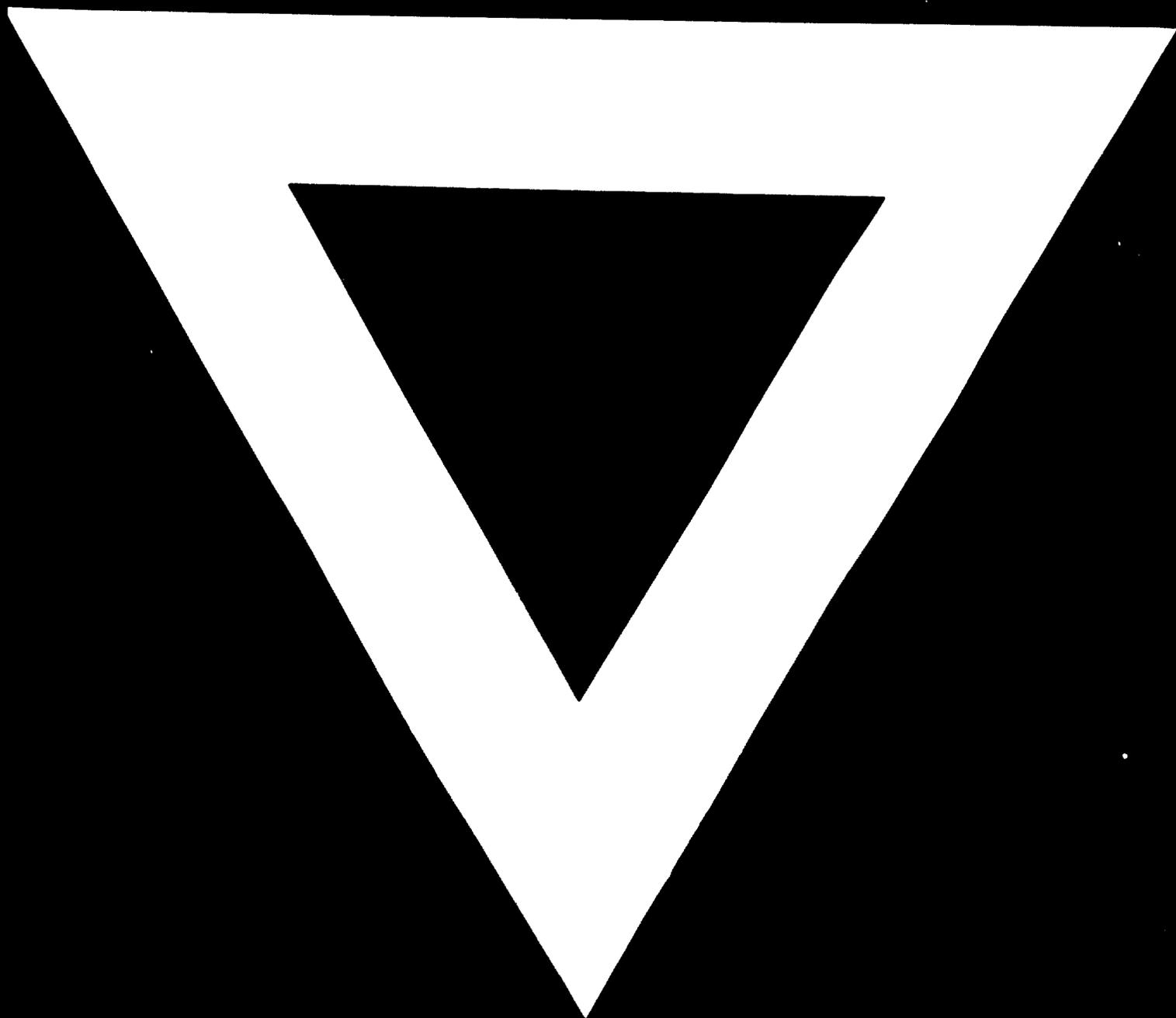
C. Country papers

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|----|---|---|-----------------------|
| 1. | <u>M. Sorwadda</u>  | Uganda - experience as related to problems of<br>industrial location and regional development | ID/WG.9/<br>Country 1 |
| 2. | <u>A. Faria</u>   | Regional disparities and the allocation of<br>investments in Brazil                           | ID/WG.9/<br>Country 2 |
| 3. | <u>Ministry of<br/>Economic Affairs,</u><br><u>Ghana.</u> | Industrial location and regional development  | ID/WG.9/<br>Country 3 |

II PRESENTED TO THE INTERNATIONAL SYMPOSIUM ON INDUSTRIAL  
DEVELOPMENT (Athens, 29 Nov. - 19 Dec. 1967)

Symbols

- |     |  |                                   |
|-----|--|-----------------------------------|
| 1.  | Issues for Discussion: General Policies -<br>Economic and Social Aspects   | ID/CONF.1/<br>A.14                |
| 2.  | Issues for Discussion: Formulation and<br>Implementation of Industrial Programmes  | ID/CONF.1/<br>A.16                |
| 3.  | Issues for Discussion: Regional Co-operation   | ID/CONF.1/<br>A.24                |
| 4.  | Implementation of Industrial Projects  | ID/CONF.1/3                       |
| 5.  | The Role of Policy-makers in Project<br>Formulation and Evaluation   | ID/CONF.1/4                       |
| 6.  | Regional Integration and the Industrialization<br>of Developing Countries  | ID/CONF.1/11                      |
| 7.  | Policies and Programmes for the Establishment<br>of Industrial Estates   | ID/CONF.1/29<br>and Corr. 1       |
| 8.  | Criteria for Location of Industrial Plants:<br>(Changes and Problems)  | ID/CONF.1/B.3                     |
| 9.  | Problems of Development of Export-oriented<br>Industries in Developing Countries with regard<br>to the Expansion of their Co-operation with<br>Socialist Countries | ID/CONF.1/<br>G.11 and<br>Summary |
| 10. | The Use of Input-Output Analysis in the Pre-<br>paration of Economic Development Programmes  | ID/CONF.1/<br>G.15 and<br>Summary |
| 11. | Yugoslavia's Industrialization and the Develop-<br>ment of her Under-developed Regions   | ID/CONF.1/<br>G.27 and<br>Summary |
| 12. | Co-operation between Countries as a Factor of<br>Economic Development  | ID/CONF.1/<br>G.36 and<br>Summary |
| 13. | Principles and Models of Industrial Location   | ID/CONF.1/<br>G.38 and<br>Summary |
| 14. | Economic Regionalism as a Method for Co-<br>ordinating Economic Development in Africa  | ID/CONF.1/<br>G.39 and<br>Summary |
| 15. | The Location of Industries in the Socialist<br>Republic of Romania   | ID/CONF.1/<br>G.47                |
| 16. | Location of National Industry Within a Wider<br>Economic Context   | ID/CONF.1/<br>G.63 and<br>Summary |



**23. 6. 72**