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# Principles of the Distribution of Productive Forces in the USSR

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PRINCIPLES OF THE DISTRIBUTION OF  
PRODUCTIVE FORCES IN THE U.S.S.R.

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Principles of the Distribution of Productive  
Forces in the U.S.S.R.

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I. INTRODUCTION: SOCIALIST  
ECONOMIC PLANNING

Public ownership of the basic means of production, knowledge of the economic law of socialism and their practical application in the process of economic development, are indispensable conditions for economic planning and for the strategy of productive forces and population distribution. This provides the material basis for overall planning practised by the Soviet State in the interest of all Soviet people. A thorough knowledge of economic laws and their creative application make it possible to ensure rapid and balanced development of the national economy and to utilise the country's resources most rationally and effectively for establishing the material and technical basis of future development.

National economic planning, as a form of state guidance of the economy, encompasses all aspects and branches of the production process. It is based on scientific forecasting of economic development which makes it possible to satisfy social requirements as they grow, through maximum development of the productive forces.

The main features of the Soviet Union's planned economy are determined primarily by the basic economic law of socialism, which expresses the essence of the socialist mode of production: continuous expansion, and improvement of production on the basis of advanced technology for the purpose of the maximum satisfaction of the constantly growing requirements of the society.



At the same time, socialist economic planning aims at a balanced development of the national economy and for this there must be centralized planning embracing the whole country. The scale and structure of the Soviet economy, with its numerous interdependent sectors, are such that it can be organised on a nation-wide basis. The balanced development of the economy requires that every industrial establishment provides, at each given stage, the goods and services needed to meet the needs of the national economy and the population.

Relying upon public ownership of the means of production, the Soviet state is mainly guided in its economic policy by the basic economic law of socialism, the law of balanced development of the national economy including balanced distribution of population and productive forces as well as the law of value. The law of value is applied primarily in planning production costs, prices, profit, wages, etc. Planned guidance of the economy is also based on the principle of steady growth of labour productivity, the law of distribution according to work, the law of socialist accumulation and other economic laws.

On the basis of economic laws, planning authorities fix rates and indicators in economic development plans and determine the most important proportions and structural changes in the national economy.

The economic laws of socialism express the need and create the possibility for society to attain the maximum results with the minimum outlays. The task of planning is to give practical effect to this possibility after defining the objective trend in the operation of each specific economic law and system of economic laws as a whole. This requires a choice of such forms and methods of planning, economic management and material incentives which under given conditions and with the attained level of development of the productive forces, offer the best way of attaining this objective.

Among the essential features of the Soviet planning are the following:

A Communist Party approach to planning

By this is meant the embodiment in economic development plans of the tasks set by the Communist Party and the economic policy pursued by the Soviet state. The CPSU has organised and led economic planning at every stage of building socialism in the USSR. Planning is carried out in keeping with the Programme of the Communist Party, which expresses the prospects of communist construction in the USSR.

Scientific principles of planning

Every Economic plan must be scientifically based. This means that plans must conform to the objective laws governing the development of nature and society, taking into account the achievements and discoveries in modern

science and technology. Cybernetics and computer science are of invaluable assistance when it comes to the involved calculations and the choosing of optimal variants in practical planning and the plan is based on progressive technico-economic standards.

Leading economists, and other researchers at the numerous research institutions of the USSR Academy of Sciences and other scientific institutions participate in the development of economic plans.

#### The directive character of economic plans

The plans which determine the development of the national economy, covering the whole country, are binding on all concerned. The state economic plan takes the form of a government decree, and as such has the force of law. Hence, all central and local organisations, every Soviet enterprise, and institution must strictly abide by the planned assignments fixed by the state.

#### Democratic centralism in planning

National economic planning is a synthesis of centralised guidance and control and broad initiative exercised by local authorities and enterprises in both the drafting and execution of current and long-term plans. The targets stipulated in the state plan are based on the estimates and calculations made by enterprises, sectors, districts, and republics.

Continuity between the drafting and fulfilment  
of economic plans

The work of planning does not end with the drafting and endorsing of a plan. An equally important aspect of this work is to ensure fulfilment of the plan. The means adopted to this end include material and moral incentives and special awards to outstanding enterprises and their workers, the introduction of cost accounting, economically sound prices, the raising of efficiency and profitability and the assimilation and dissemination of the experience of advanced enterprises.

The following are the main objectives of national strategy of planning:

- Maximum strengthening and development of the socialist economic system;
- Fullest satisfaction of the growing requirements of society, the raising of living standards, and cultural level of the people;
- The securing of high rates of economic development on the basis of technological progress and greater efficiency of production, while maintaining the most rational proportions in the development of different sectors of the economy and the country's economic areas;
- The promotion of economic cooperation and mutual assistance among socialist countries through

coordination of the economic plans of the member countries of the Council for Mutual Economic Assistance (SMEA).

At the present stage of development of the Soviet society, the tasks of economic planning have the aim of securing a substantial use in production efficiency so as to bring about a rapid use in the living standards of the soviet people.

Socialist economic planning is primarily aimed at building the material and technical basis for the future development of the society. This requires:

- complete electrification of the economy and further improvement on this basis of the equipment, technology, and organisation of production in all economic sectors;
- comprehensive mechanisation and fuller automation of production processes;
- extensive application of the advances of chemistry in the national economy;
- maximum development of new economically effective branches of production and new types of power and materials;
- effective utilisation of natural material and manpower resources;
- close integration of science and production for rapid scientific and technological progress;

- the attainment of a high level of cultural development and technical skill by working people;
- improvement of productive forces distribution and, in accordance with it, distribution of population;
- the achievement in the nearest future of decisive superiority over the developed market economies in the level of labour productivity which is a cardinal condition for the successive and rapid further development of the Soviet Union.

II. METHODOLOGY OF PLANNING

The national planning system is based on the knowledge and practical application of the socio-economic laws operating in a socialist society. The transition from the cognition of these laws to their application in planning, from the theory to the practice of economic development, is effected through scientific methodology and methods of planning. Moreover, the process of planning at the same time adds to the knowledge of the economic laws of socialism. The scientific level of the methodology of planning depends on how soundly these laws are known, and on the objective assessment of the process at work in the economy.

The methodology of planning can be briefly described as the sum total of the general principles and methods of planned guidance of the economy. The methods and technics of economic, technico-economic, and econometric calculations involved in the drafting of specific sections of the plan targets, their coordination and dovetailing, as well as the analysis of the results are understood as the methods of planning. The latter make wide use of systems analysis and of the conclusions and generalisations furnished by applied economics and accounting practice as well as of specific statistical methods.

Inasmuch as state economic development plans of the USSR are plans for expanded socialist reproduction, the methodology of planning is based on the Marxist-Leninist theory of reproduction.



Reproduction in a socialist society is founded on public ownership of the means of production and is carried on according to plan on the basis of state economic plans embracing all stages of expanded reproduction: the manufacture, distribution, circulation, and use of the national product. The planning of expanded reproduction presupposes the establishment of links between different branches of production and all the economic sectors as well as their correlated development.

Since the surplus product is the chief source of accumulation and accumulation is the source of augmenting production and non-production assets, national economic plans fix the volume of capital construction so as to ensure the continued expansion of the production of material values and services. Production ties between enterprises are maintained in conformity with the fixed plans for material and technical supplies and wholesale trade in producer goods. The exchange of consumer goods for the incomes of workers, office employees and collective farmers is regulated by state and cooperative retail trade plans. Financial allocations for the approved plans covering individual aspects of the economy—expansion of production, capital construction, development of the service industries are provided by appropriate financial plans.

National economic planning is not confined to material production but extends also to the full range of

of social, cultural and welfare services involving the training of skilled personnel, population distribution, town planning, improvement of housing conditions, provision of municipal services, promotion of educational and cultural levels and technical skills of the working people, the development of health services, sports, etc.

The main task in elaborating plans, notably such cardinal aspects of planning as price-formation, and wage rates, is to provide a scientifically substantiated quantitative definition for these indicators for the given plan period, taking proper account of the objective situation, available resource, existing possibilities and actual requirements. To this end, definite systems and methods of plan calculations are used. For example, computations based on scientifically justified rates of consumption, material and financial outlays, etc., are used to determine production and personal requirements. The volume and pattern of the resources needed to meet social requirements are defined by calculating the production of material values and services, proceeding from available production capacities and progressive standards of their utilisation, manpower resources, labour productivity, etc. Consequently, definition of the volume and pattern of resources and requirements calls for the application of the normative method of planning.

To bring the economic plan into conformity with the operation of the basic economic law of socialism and the law of balanced development of the national economy it is necessary to ensure that its estimates correspond to the available resources. This means that the plan must fix definite proportions in the development of diverse sectors and branches of production, in the distribution of incomes, in the distribution of population and manpower resources, etc. Without a harmonious system of material, financial and manpower balances it is impossible to integrate the various sections and divisions of the plan.

III. STRATEGY OF SPATIAL  
DISTRIBUTION OF  
PRODUCTIVE FORCES

Planning the distribution of the productive forces is of particular importance in the Soviet Union with its vast territory and exceptionally diversified economic-geographical conditions. This planning is one of the decisive factors ensuring the most efficient utilisation of the country's material and manpower resources and contributing to all the all-round economic and cultural development of the people.

The siting of the country's productive forces at the present stages is subordinated to the task of creating the material and technical basis of future development. The rates of economic development and the improvement of living standards directly depend on the rational distribution of production. Planning the siting of productive forces ensures the most effective utilisation of the country's natural wealth. That is why accelerated development of the Eastern areas of the USSR, where the greater proportion of the raw material and fuel resources are concentrated and where outlays on their development are much lower than in the European part, continues to be the chief trend in distributing the productive forces.

It is planned to establish a number of new power bases and major centres of power-intensive lines of production, notably ferrous and non-ferrous metallurgical enterprises and factories for the production of chemicals, pulp, and paper, in the Eastern part of the country. It is also

important to make effective use of the vast opportunities offered by the Eastern areas for the development of agriculture, above all grain production and intensive livestock farming.

In the Western districts limited fuel and power resources dictate that priority development in the coming years will be given to industries producing types of goods requiring a great degree of skill and relatively smaller expenditure of fuel and power. Power-intensive industries will be developed in the European part of the USSR only when they can be adequately provided with local natural resources.

Planning the distribution of the country's productive forces is based on the following main principles:

- Bringing production into the closest possible proximity to the sources of raw materials, fuel, power, and labour force, and to the users of finished products so as to reduce labour losses to the minimum, all the way from the extraction of raw materials to the production and consumption of manufactured goods;
- More even distribution of the productive forces over the country's territory in order to achieve specialisation and harmonious economic development of the various districts by making maximum use of the natural and manpower resources of the constituent republics and economic areas, and in order to even out their economic development levels;

- Ensuring the economic and cultural progress of all the Republics and promoting cooperation among them;
- Proper combination of specialisation and comprehensive development of economic areas with special emphasis on the most efficient use of natural, manpower and material resources, and production facilities.

These principles are common to all branches of the national economy but they find different expression in planning the distribution of production by different industries and in the context of the economic development of individual areas. The siting of individual branches is directly influenced by differing combinations of manpower, economic, technical, transport, natural resources, and many other factors.

Questions of the greatest importance in planning the distribution of enterprises are the availability of manpower resources or outlays involved in the resettlement of workers, the cost of raw materials, fuel, electrical power and water supplies, transport charges, etc., and in the final analysis the overall cost of finished products at the place of production and in the areas of consumption. The choice of the optimal variant for the siting of an enterprise is made on the basis of comparing indicators such as overall cost of production and of delivery to the consumer, and capital investments per unit of capacity and output.

Planning the distribution of production takes into account the question of specialisation in the Union Republics and economic areas which depends on what types of raw materials and fuel resources are available and how efficiently they can be utilised. Hence, the major criteria for determining the type of specialisation of a given republic or economic area are the level and pattern of production costs and the amount of capital investments per unit of output which largely depend on the available natural resources and the possibilities for their exploitation.

In those industries where fuel expenditure accounts for a sizeable share of the production cost (thermal power stations, ferrous and non-ferrous metallurgy, the chemical industry, etc.) the key factors determining the siting of enterprises are the location, quality and cost of fuel.

With respect to enterprises manufacturing a wide range of material-intensive products, efforts are made to achieve an optimal combination of areas producing raw materials and consuming areas with a view to effecting substantial savings in the cost of transportation. For example, expenditure on transport in the overall production cost amounts to 25 per cent in building materials and to nearly 50 per cent in round timber and iron ore. On the other hand, the industries manufacturing products from expensive raw materials where the degree of skill is of particular importance gravitate to the consumption areas



(textile and garment industries) and points where there is a concentration of skilled workers. In a number of production branches close attention is paid to many other specific factors which are of significance for their development, notably water supply, transport links, etc.

Of tremendous economic importance is the specialisation of agricultural production. The soil and climatic conditions vary widely over the country and are therefore key factors in determining productivity and specialisation in agriculture. Thus the Ukraine, the North Caucasus, and Moldavia specialise in the production of grain, sugar, fruit and vegetables and in intensive livestock farming; the republics of Central Asia, in cotton production and fruit growing; the Baltic republics in dairy and pig farming, etc.

Industry and agriculture are closely interconnected and this has an important influence on their location. The development of heavy industry determines the appearance of major industrial centres around which potato and vegetable growing farms and dairy farming zones are set up. On the other hand, the siting of food and light industry enterprises for the initial processing of primary products directly depends on specialisation of agricultural production.

Specialisation of one or another area may be changed as a result of the discovery of new natural resources

and of applying effective methods for their development. For example, production specialisation of the Central Asian republics in the nation-wide division of labour was cotton growing and related branches. The discovery of immense deposits of natural gas coupled with extensive hydropower resources has created the opportunity for these republics to specialise also in manufacturing power intensive products, primarily non-ferrous metals and chemicals.

Specialisation is combined with comprehensive economic development of the Union Republics and major economic areas, most of which are in a position to satisfy their needs in basic primary products, fuel, building materials, foodstuffs, and consumer goods from their own resources.

The principle of harmonious development helps to secure proper proportions between mining and manufacturing industries, between construction and production of building materials and between industry and agriculture--not only on a country-wide scale but in each individual republic or economic area. At the same time, consideration must be given to the economics of using local as against improved resources by comparing the cost of locally produced goods with that of imported commodities, including transport charges.

The distribution of productive forces in the USSR is planned at the level of the constituent republics and

major economic areas. The list of economic areas divides the country's territory into major economic complexes uniting a number of adjacent territories and regions or Union Republics, In forming economic areas it is necessary first of all to define its specialisation taking due account of national interest in respect of the division of labour and stable economic ties between industries, regions or republics within the given area.

The list of major economic areas changes with the country's progress. At present there are 19 such areas (Figure 1).

Planning the productive forces distribution by the country's economic areas is based on a broad range of indicators characterising the major aspects of economic development and the main relationship between these areas, such as the output of the basic types of industrial goods, state purchases of agricultural products, capital investments, and the starting of new production facilities.

In cooperating plans for the development of industrial branches of the economy within the framework of the given economic area and in planning economic ties with other areas, use is made of material balance calculations of production and consumption for the given economic area. Such calculations are made, for example, for mineral fertilisers, rolled steel, oil, coal, gas, timber, major types of agricultural products, and a number of consumer goods. Balanced calculations help to establish to

Figure 1. ECONOMIC REGIONS OF THE USSR



Figure 1. Economic Regions of the USSR

- Centres of economic regions and Union Republics
- Boundary of economic regions
- Boundary of Union Republics

Economic Regions

- |     |                   |  |
|-----|-------------------|--|
| 1.  | North-West        | (Leningrad)                                |
| 2.  | Central           | (Moscow)                                   |
| 3.  | Volga-Vyatka      | (Gorky)                                    |
| 4.  | Central-Chernozem | (Voronej)                                  |
| 5.  | Volga             | (Saratov)                                  |
| 6.  | North-Caucasus    | (Rostov)                                   |
| 7.  | Urals             | (Sverdlovsk)                               |
| 8.  | West Siberia      | (Novosibirsk)                              |
| 9.  | East Siberia      | (Krasnoyarsk, Irkutsk)                     |
| 10. | Far East          | (Khabarovsk, Vladivostok)                  |
| 11. | Donetsk-Dnepr     | (Kharkov)                                  |
| 12. | South-West        | (Kiev)                                     |
| 13. | South             | (Nikolaev)                                 |
| 14. | Baltic            | (Riga, Tallin, Vilnius)                    |
| 15. | Trans-Caucasus    | (Tbilisi, Baku, Erevan)                    |
| 16. | Central Asia      | (Ashkhabad, Tashkent, Frunze,<br>Dushanbe) |
| 17. | Kazakhstan        | (Alma-Ata)                                 |
| 18. | Byelorussia       | (Minsk)                                    |
| 19. | Moldavian SSR     | (Kishinev)                                 |

what extent the area is self-sufficient in a given commodity, or has a surplus for export, and what amount must be imported from other areas. Such calculations are made separately for every product according to the following model scheme:

1. Resources: production; imports from other districts; other receipts:

Total resources.

2. Consumption: industry; construction; transport; agriculture; housing and municipal economy; other consumers:

Total domestic consumption;

Exports to other areas;

Sum total.

Fuel and power balances for every major economic area are drawn up under a more detailed scheme. Balances of production and consumption for major types of output are supplemented by data on the exports and imports of the most essential types of products with reference to the exporting and importing areas, thus giving the picture of existing ties with other areas.

Plans for the development of economic areas include, in the form of special sections, the establishment and development of new industrial centers consisting of a complex of industrial enterprises united by production specialisation and a single raw material and power base called, "territorial integrated industrial complexes."

The problems of distribution of productive forces are tackled in long-term plans. Changes in this sphere require much time, the basic premise here being the general scheme for the development and siting of productive forces by the key industries and major economic areas.

These general schemes for the development and siting of individual industries indicate the main territorial shifts in the output of major types of products and specify the areas designated for the development of the given industry and for the establishment of new industrial centres. The main trends in the distribution of productive forces are outlined in the General Scheme of Productive Forces Distribution.

This General Scheme of Productive Forces Distribution is a scientific substantiation of rational productive forces distribution for a distant future. The scheme determines optimal territorial proportions of national economy development ensuring further raising of effectiveness of public production on the basis of:

- improvement of All-Union territorial division of labour;
- optimal combination of development and spatial distribution of branches of industry with planned formation of economy in Union Republics and economic regions.

The Scheme of Productive Forces Distribution is a basic document for working out the general scheme of population distribution, for the planning of territorial development, of national economy, for the formation of territorial integrated industrial complexes, and clusters of enterprises.



IV. POLICIES OF POPULATION  
DISTRIBUTION

The general scheme of population distribution is a document of state significance and the most important research forecasts study which must substantiate forming and developing rational network of urban and rural settlements in the USSR and system of population distribution. This is done in coordination with forecasts for development and distribution of the productive forces and on this basis is outlined the principal stages of improving the already formed settlement network into expedient settlement systems.

General scheme of population distribution will strengthen the scientific and planning foundations for development of regional planning and town planning and building in the country.

In the USSR the settlement network develops systematically, in accordance with the economic laws of socialism. The settlement network, historically formed under conditions of the pre-revolutionary unplanned economy, is characterized by the uneven distribution of population, by existence of separate urban and rural population distribution systems, by uneven growth of large and the largest towns, smaller towns and townships, and by the fractionary nature of rural settlement network. It demands, because of all this, constant improving. This is stipulated by requirements of planned national economy and by the tasks to increase efficiency of industry and agriculture, to improve living standards, welfare and environment with due regard for scien-

tific, technological and social progress.

At present the population of the USSR is 250 million, of which approximately 57 per cent is urban. At present the European part of the country contains 71.1 per cent of population and the Asian part, 28.9 per cent. (Figure 2) In future, this ratio will change in favour of the Asian part, due to the fact that in the eastern and northern regions there are located unique mineral, fuel, water power and forest resources.

The above data testify that town planning and building is to be realized on a huge scale. There were 1935 towns, 3570 urban settlements and 469,000 rural settlements in the USSR by the January 1970 population census. By the end of the century the number of towns and settlements will considerably increase. At the same time, the number of rural settlements will be reduced by means of consolidating small villages and farmsteads, integrating important rural settlements and transforming them into small urban settlements.

Such a great program may be only realized if town planning policy is coordinated with prospects for development and distribution of productive forces (Figure 3) with the programme of the social and economic society development and with the goals of ensuring ecological balance. In this connection there are planned combined efforts for the efficient use of natural resources, for nature preservation

Fig. 2. THE EXISTING NETWORK OF URBAN SETTLEMENTS ( FOR THE 15 OF JANUARY 1970 )

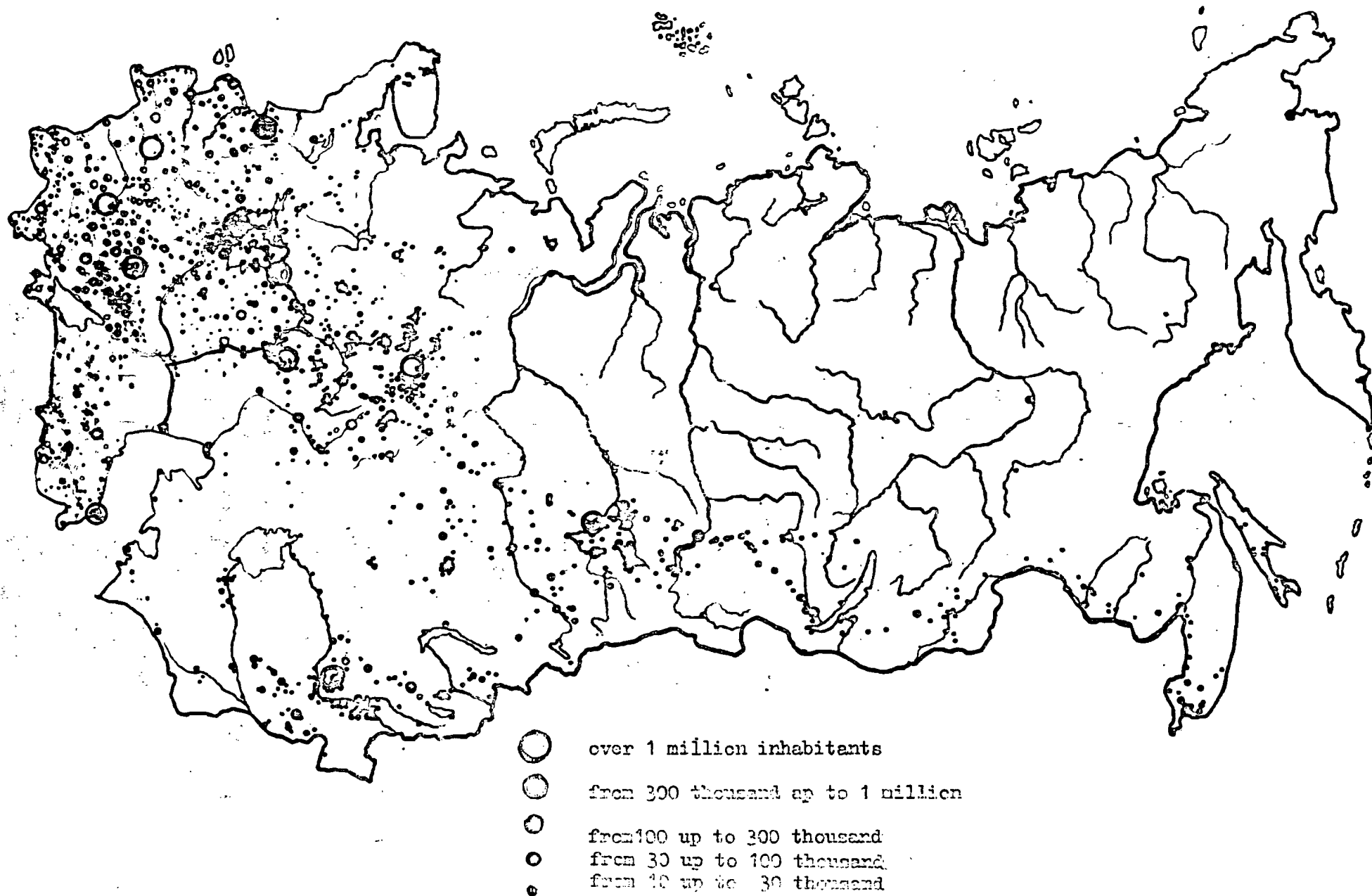
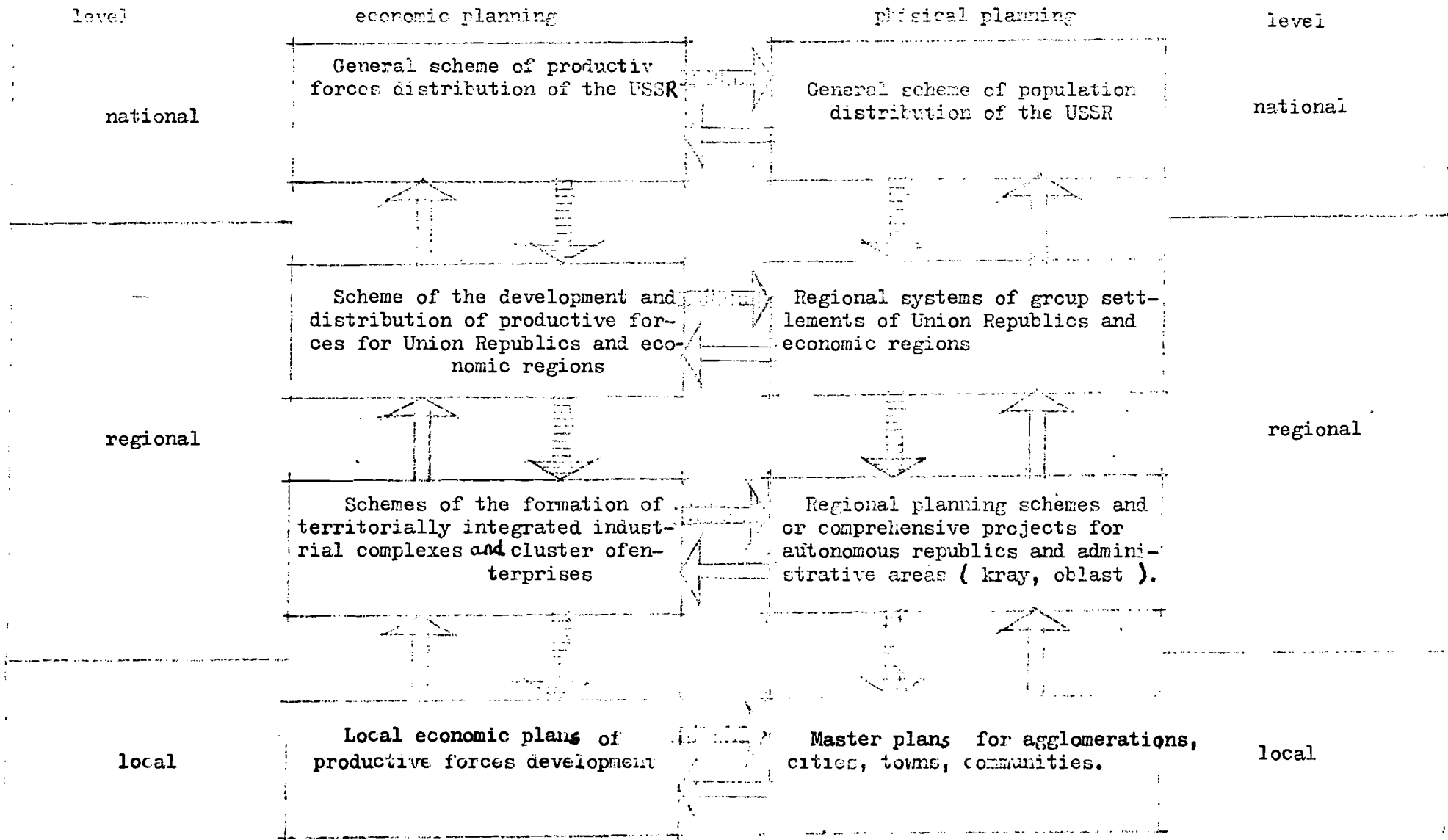


Fig. 3

MODEL OF HIERARCHY AND FEEDBACKS  
BETWEEN ECONOMIC AND PHYSICAL PLANNING



and improvement of environment, water supply facilities, as well as for the organization of recreation, tourist and health treatment areas. All these problems can only be solved successfully by a systematic structural comprehensive approach.

According to the "General Scheme of Population Distribution", the main direction of planned control and qualitative improvement of the settlement of towns, settlements and their groups within the group settlement systems on the basis of social and economic relations (Figure 4).

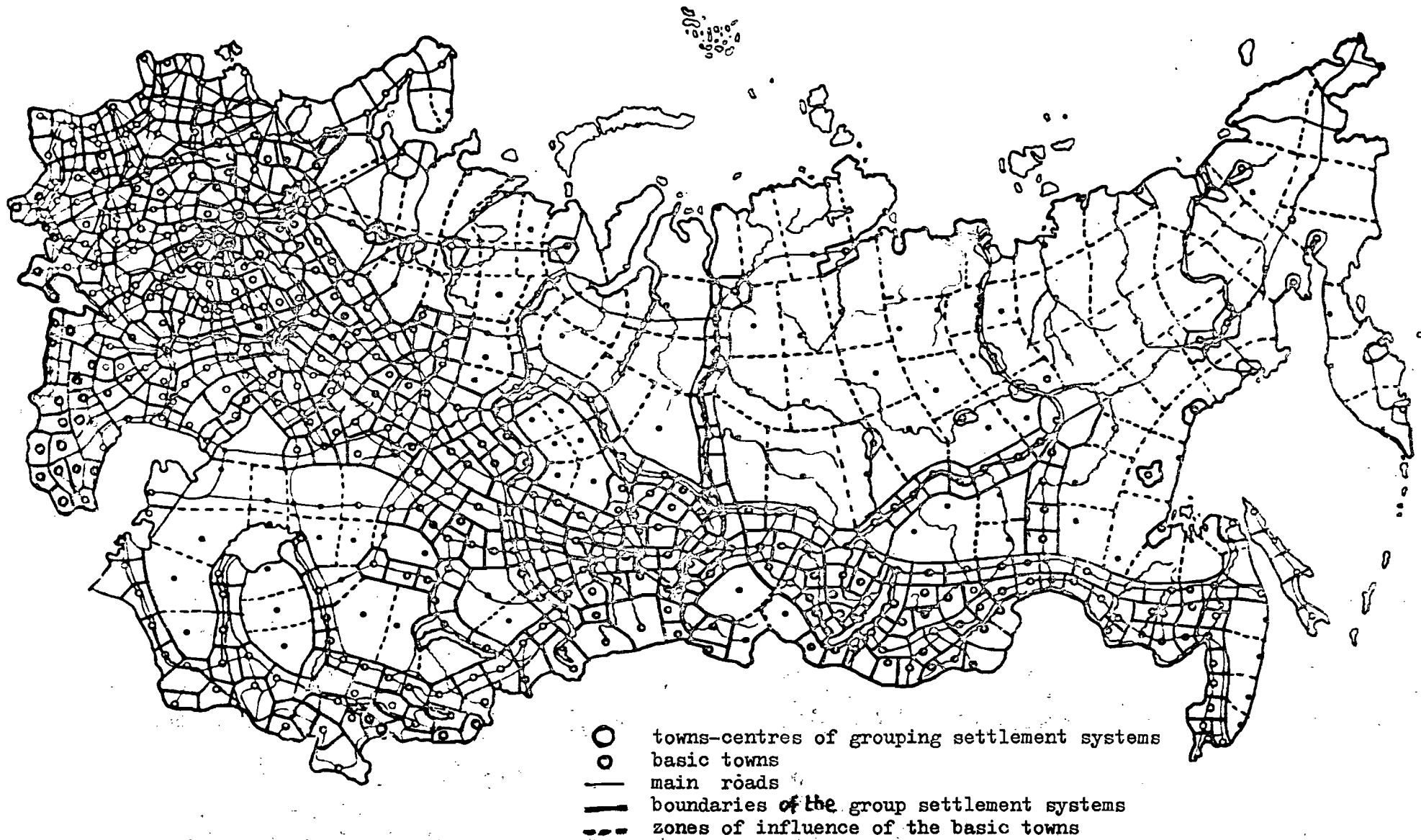
The policies of the improvement of population distribution and settlement network puts forward the following tasks:

(a) acceleration of development of towns and settlements in the eastern regions of the country along with provision for a more evenly balanced population distribution between the European and Asian parts of the country;

(b) efficient restraints on the growth of large, existing towns in developed regions together with simultaneous formation of new, large towns as the centres of developing and newly organized territorial industrially integrated complexes in Siberia, Kazakhstan and Central Asia;

(c) intensified development of small and medium-size towns having favourable growth conditions on the basis of already accumulated production funds and further consoli-

Figure 2. THE PRINCIPAL SCHEME OF THE GROUPING SETTLEMENT SYSTEMS DEVELOPMENT



dation of industries (mainly in the European part) and on the basis of building new enterprises (mainly in the Asian part of the country);

(d) rational integration and transformation of prospective rural settlements into well-organised urban-type settlements.

The formation of group settlement systems is to be founded on:

(a) successive development of territorially integrated industrial complexes based on the largest (large) towns and their agglomerations in freshly industrially developed regions;

(b) organisation of a united transportation system and centralised engineering networks, systems of public and economic facilities and urban and country-side recreation zones within the framework of group settlements;

(c) full range system-scale realisation of measures aimed at environmental preservation and improvement, and at comprehensive land-use planning.

Settlements within the system should complement each other in production, scientific and cultural aspects. These systems are characterised by high level of organisation, comfort facilities, by the well developed transport and communication networks, civic centers on different scales, favourable conditions for mental and physical development both for urban and rural populations. They will promote



accelerating the process of eliminating important disparities between urban and rural ways of life, more efficient restraint of growth of large towns and reduction in numbers of commuting people of mass professions from suburban zones to large towns.

The results of research shows that under the USSR conditions the most efficient group settlement systems are being formed as follows:

(a) on the basis of the largest town and its agglomeration within the area of 100-150 km radius and more depending on local conditions (Figure 5);

(b) in newly developing regions on the basis of large territorially integrated industrial complexes undergoing the organisational process;

(c) in large areas of almost undeveloped regions (mainly in Asian and northern parts of the country) having as a centre a large or medium-size basic town, connected by air lines with communities of the system and with a "fulcrum" basic large town in the developed zone of the country.

Besides, the complex population distribution systems may be organized by integration of some interconnected group settlement systems, gravitating towards the central town with a million or several million population (for example, in the Moscow, Leningrad, Kiev, Kharakov, Tashkent systems.)

# Regional group settlement system model (see annex 2)

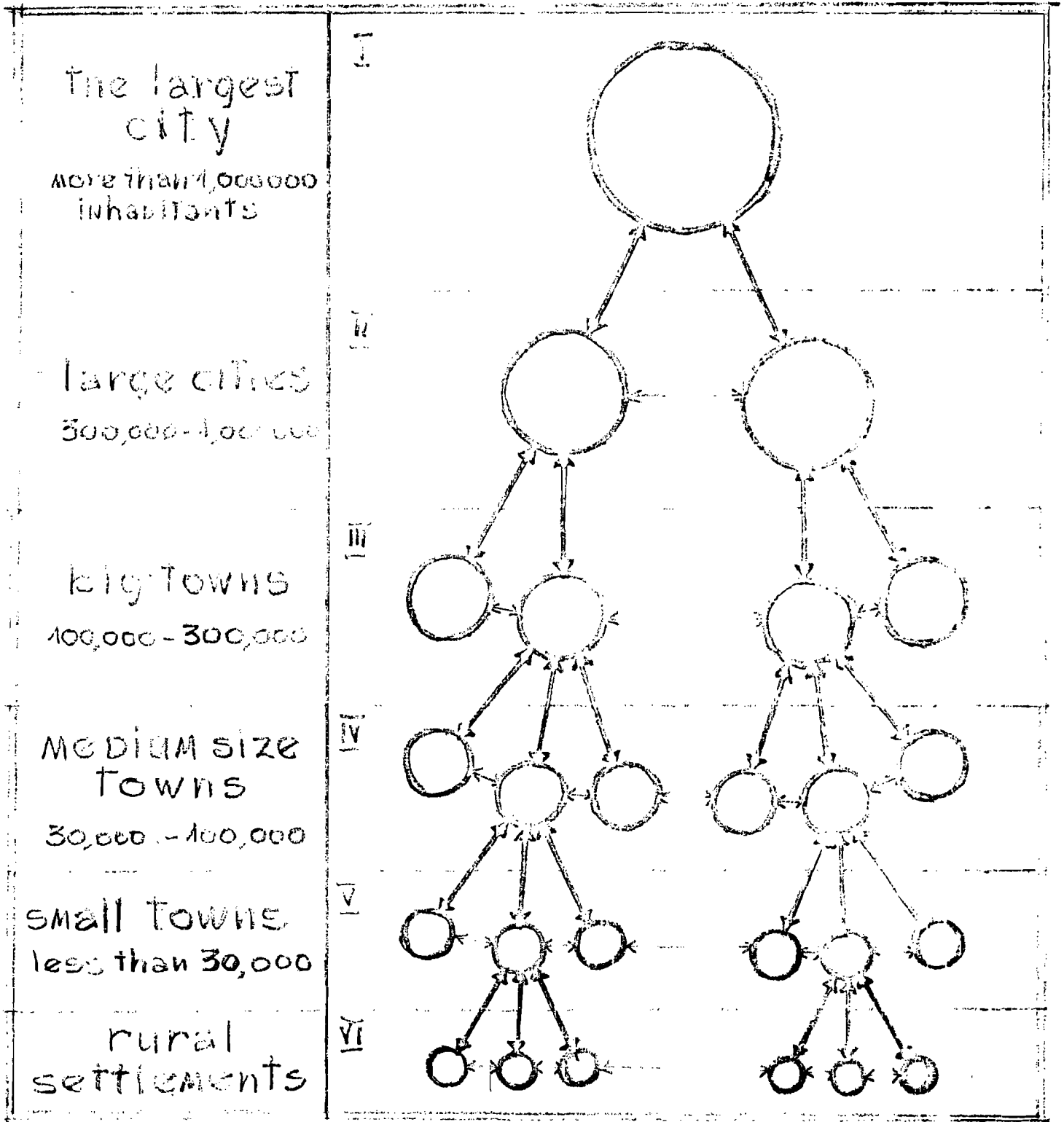


Figure 5.

Depending on local conditions and the development phase, the group settlement system may be monocentric or polycentric, may comprise urbanised communities as sub-centres of science, education, industry, culture, medical service, outdoor recreation, tourism, or health resort treatment.

Efficiency of group settlement system within the framework of national economy is determined by:

(a) joint utilisation of territorial economical base and its infrastructure;

(b) a pass from the concentration of essential town forming objects in the largest and large towns and agglomerations on organising integrated, interconnected industrial and agricultural enterprises within great areas;

(c) wider choice of job opportunities near the residences, reduction in amount of irrational commuting for people of mass professions as a result of the consecutive relocation and establishment of main labour and residential areas;

(d) convenient access to the service centres and facilities of different levels which are being developed in accordance with the unified plan on the system scale;

(e) broad possibilities for inter-town social contacts, for development of the specialised and social-residential communications;

(f) existence of wide range of recreation areas;  
of united transportation and engineering networks;

(g) more favourable conditions for realisation of  
efficient measures aimed at nature preservation and improve-  
ment of the environment.

Within the next 15-20 years it is envisaged to  
organise 27 group settlement systems on the basis of the  
most important and largest towns of the country, and 15  
group settlement systems in new developing regions, mostly  
in the east. In the future, it will be practicable to lay  
the foundation for another 40 to 50 group settlement systems.

The group settlement systems as well as the town,  
urban and rural communities will become an organic part of  
the regional system of population distribution formed within  
the boundaries of the Union Republics or economic regions.  
At the present stage of research it is recommended to  
organise for the future 42 regional systems of population  
distribution, their centres being the largest towns of a  
high level of scientific, research, technical, social, and  
cultural potential. Regional systems of group settlement  
will be successively incorporated into the united national  
economic system of population distribution of the Soviet  
Union (Figure 3).

Every regional system of population distribution  
will have its own specific tasks in the sphere of recon-  
struction of existing community network. These tasks largely

depend upon the level of industrialisation, urbanisation and economic development, the existence of natural resources, natural and climatic conditions, and national traditions and customs.

Formation of regional systems of population distribution and of the United National Economic System will permit the elimination of quantitative and qualitative, inter- and intra-regional unbalanced development of communities of various size and economic specialisation.

General scheme of population distribution will thus serve as the basis for:

(a) regional schemes of population distribution in all Union Republics and economic regions;

(b) general and regional schemes of development and location of health resorts, recreation and tourism areas, nature parks and preserved zones; and

(c) comprehensive regional planning schemes and projects for developing, and newly developed, areas of the USSR (Annex 2).

V. FORECASTS OF TOWN  
PLANNING DEVELOPMENT

Social progress and the scientific and technological revolutions exercise more and more influence on town planning, bringing to the foreground the necessity of the scientific prediction of population distribution and forming of town pattern. The idea of the future development of the Soviet town planning is based on the interaction of the motive forces of the social progress and regularities of urban-economic development.

The peculiarities of the modern stage of the settlement systems evolution and urban development depend in many respects on the scientific and technological revolution and social transformations. The scientific and technological revolution which is the qualitatively new stage of the Soviet social history rules out the possibility of a mechanical extrapolation of the process of urban development and gives the opportunity to look in the distant future on the basis of the programmatic prospects of future development of society. At the same time, the aim of town planning prediction is not the mere elaboration of the guidelines of urban construction for the near and distant futures on the basis of modern town planning theories.

The principle, "from the social and economic predictions to the predictions of population distribution and spatial shaping of towns," is the main principle of town planning prognoses. The influence of population distribution and spatial environment on the living conditions should be taken into consideration.

All scientific and technological achievements should be used in the interests of the society and individual persons. It gives reason to consider the complex town planning creating the best conditions for labour, education, everyday life and recreation as the long-term social and economic problem. However, the scientific and technological revolution called to life the problem of preservation, transformation, and enhancement of the urban environment. Urban development is closely connected with the restoration of the ecological balance.

Town planning predictions have their own peculiarities. Comprehensive and farseeing approaches to the solution of town planning problems are necessary because of the rapid rate of social development and of scientific and technological progress. Only then we shall realize the true essence of the modern, and what is more important, long-term problems.

The strategy of planning policy outlined by the prognoses is the transition from the local regular measures planned for the near future to the fundamental revision of the whole settlement system and to the more complex town planning categories, the grouping settlement systems. Creation of the group settlement systems leads to the liquidation of the essential distinctions and disparities between the towns of different size and age, and between urban and rural settlements.



The three stages of town planning prediction are assumed conditionally as:

(a) the next decade--within the limits of the national economic plans and priority construction plans;

(b) the end of the century--within the limits of the nation-wide and branch prediction and estimated periods for the master plans of towns;

(c) the more distant future is limited by the estimated period of the technical amortisation of residential and public buildings that are being built now. These prognoses are given in the form of general tendencies and theoretical hypotheses.

Any town, large or small, is to be considered not separately, but as a part of the system of urban and rural settlements since the production, cultural and other relations become wider and more stable.

A group settlement system is a group of settlements connected by national economic activities. Creation of such systems should be based first of all on a rational distribution of productive forces.

Such problems as the location of recreation areas, large scientific and educational complex, service facilities of incidental use, engineering and transport communications, building basis, sanitary-protective zones and prevention of possible merging of towns also become of paramount importance with the intensification of interurban communications.

This, in turn, leads to the increasing significance of the General Scheme of population distribution and comprehensive regional planning projects determining groups of interconnected settlements and the stages of the solution of these problems. Soviet town planning is characterized by the variety of new and existing towns of different economic specialization and size. The processes of creating new towns and developing existing ones is stipulated by the development and rational distribution of productive forces and the necessity to overcome contradictions between new social and economic requirements put forward by the social progresses and productive forces development on the one hand and the historically formed population distribution and planning structure of settlements on the other.

The current planning structure of a town is a system of function zones connected by transport and communications. The division of residential areas into residential districts and neighbourhoods, the organization of streets and urban arterial roads with consideration of travel speed and modes of transport, the creation of a system of public centres, recreation zones and system of greenery are of no less importance.

When forming the town pattern organization of urban and interurban transport communications, taking into consideration location of functional zones is of particular importance. The aim of town planners is to provide fast,

safe and comfortable movement, establish optimal proportions between the individual and public transport modes but with the dominating development of the latter.

Rapid urban growth generates such complex problems as deficiency of land for urban development, and soil, air and water pollution as a result of economic activity. Natural environment which is preserved and transformed by people in accordance with their requirements determines the living conditions of future generations. That is why improvement of the urban environment involves drastic measures of air, soil and water purification both in cities and in their environs. These measures might be most effective in the group settlement systems.

Accelerating processes of urban development are entering the period when social, scientific and technological progress has an influence on the solution of not only functional engineering, technical and hygienic problems, but on the aesthetic ones. The prediction of the settlement network transformation process town planning and housing is in domain of town planning science. The next directions for the elaboration of the predictions are clearly defined in Soviet town planning science:

First -- determination of the prospects of the settlement network comprehensive development in the scheme of population distribution of the USSR on the basis of the rational distribution of productive forces with the

purpose of the most complete satisfaction of the growing requirements of the Soviet people. Creation of the large territorially integrated industrial complexes taking into consideration natural peculiarities of the region and stable economic relations is an important aspect of the prognoses. Creation of the group settlement system involves transformation of the existing network of rural settlements.

Second -- is the determination of the principles of new towns construction and evaluation of their planning structure (pattern) and its transformation in the existing towns with due consideration of the variety of the national and economy peculiarities of settlements, i.e. examination of the problems connected with the development of:

(a) work places in accordance with the long-term tendencies of industry development;

(b) residential districts based on the further individualization of dwellings and development of the collective forms of the cultural and welfare services;

(c) public centres in conditions of growing contacts among people and increasing demand for cultural, welfare and transport services.

Third -- the elaboration of the problem of the overall transformation of urban environment, first of all in large cities. Restoration of the ecological balance, determination of the possibility of improvement and creation of the qualitatively new urban environment is also of a great importance.

The fourth direction outlines the ways of urban and inter-urban transport development. Here the following principal problems are to be solved:

(a) determination of the amount of transport work in towns of different size predetermining the road network development, taking into consideration the prospects of the evolution of the modes of transport in towns and group settlement systems;

(b) Coordination of functioning of different modes of transport, i.e. a united transport system. Rational distribution of passenger transportation between the public and individual transport is the most important key here.

Finally, the fifth direction deals with the aesthetics of the architectural development. Here, attention is concentrated on the problem of the historical succession of compositional means that help to create architectural and spatial unity of towns, taking into account national traditions and customs, and natural and climatic conditions. Thus, town planning predictions include investigation of economic, social technical, architectural and spatial conditions and determination of the prospects for population distribution systems development in the near and distant futures on the basis of their interactions.

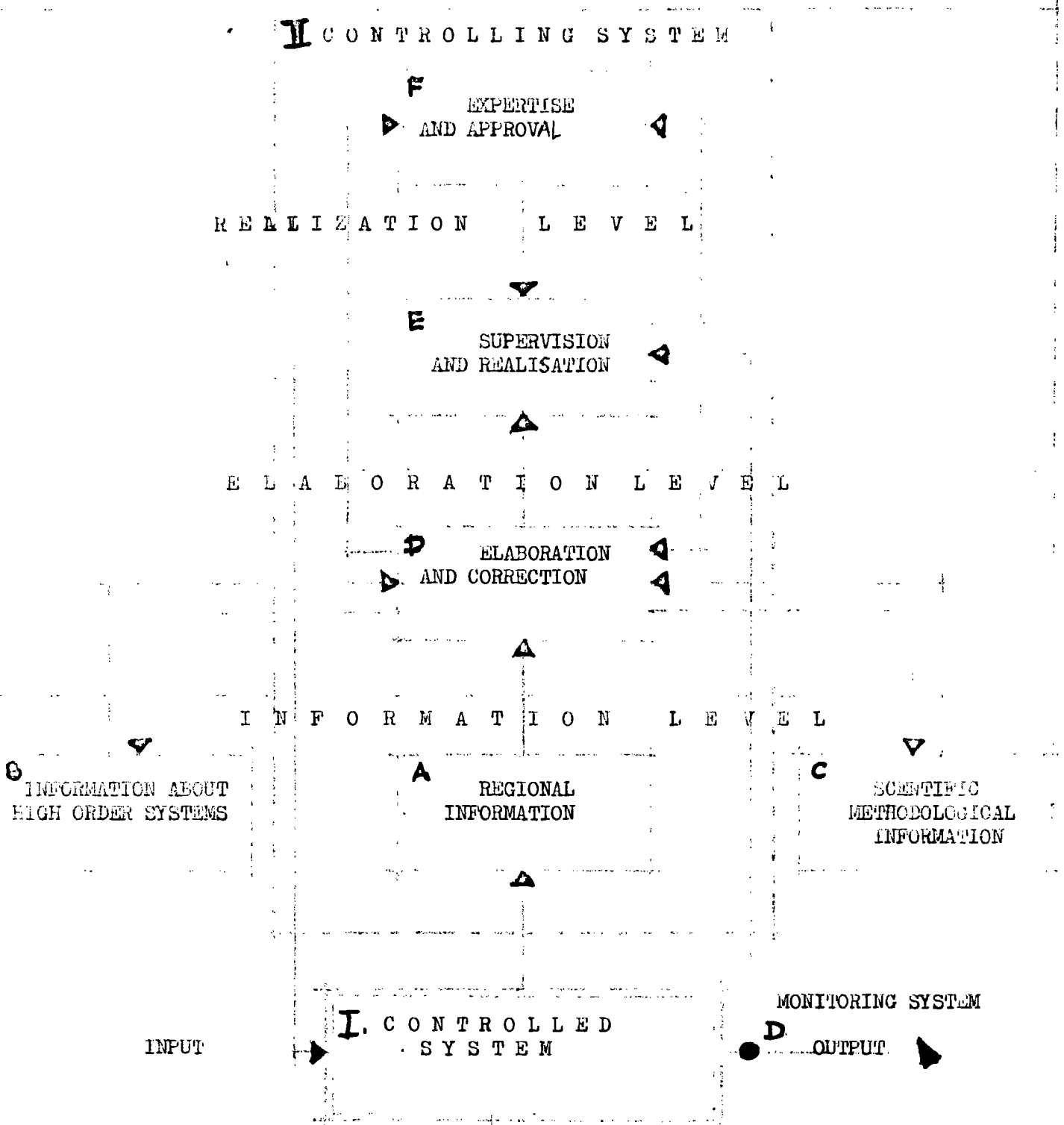
Scientific predictions will allow us to take into account the tendencies of town development over the limits

of the estimated periods of their master plans. The scientific forecasts for urban development are an important part of the comprehensive prediction of the national economy development in the USSR and the foundation for the elaboration of the settlement network development scheme on the basis of the long-term plans of industrial and agricultural development. In other words, the predictions of the Soviet town planning development will be useful as the theoretical premises for the elaboration of the General Scheme of Population Distribution, and for future development of the theoretical basis of town planning.

ANNEXES

Annex No. 1

REGIONAL PLANNING MODEL -  
COMPLEX DYNAMIC CONTROL SYSTEM





Annex No. 1

Figure No. 6 represents the model of the regional planning process in which the situation to be controlled and the controlling system are closely interconnected in a single complex dynamic control system. In this model

I is the controlled system of a given region  
(real planning situation of a region)

II is the controlling system that includes:

Information Level

A - initial information about a region (regional data bank);

B - information about systems of a higher order;

C - methodological information.

Both "B" and "C" are scientific research and planning subsystems which are closely interconnected by feedbacks with "D".

Elaboration Level

D - Conceptual research and design subsystem along with periodical correction of a regional planning project.

Realisation Level

E - Realisation of regional planning project with supervision by design (D) and monitoring (D) subsystems that make operational decisions on specific problems (not at the conceptual level) in the process of the regional project realisation.

F - expertise of decision making subsystem carries out approval and adoption of regional planning project. It consists of ad-hoc committee and subcommittees under the authority of the USSR Gosstroy and Gosplan with the participation of high level scholars and decision makers.

Annex No. 2 - Characteristics of Human Settlements within a Region; Group settlements consists of -

Settlement Type	Largest cities more than 1,000,000		Large cities 500,000-1,000,000		Big towns 200,000-500,000		Hamlets towns 50,000-200,000		Small towns less than 50,000		Rural settlements	
	●	○	●	○	●	○	●	○	●	○	●	○
ADMIN. (Soviets)	Union Republic Autonomous republic kray, oblast											
	regional											
	city / town											
INDUSTRY	territorial integrated industrial complex											
	cluster of industrial enterprises											
	big industrial enterprises											
AGRICULTURE	arable											
	live-stock raising											
INFRASTRUCTURE	airport / airfield											
	railway terminal/station											
	interurban terminal											
	water supply network											
	sewerage and sanitation											
	electricity											
	gas											
	research centers											
	research and design institutions											
	research laboratories											
SCIENCE	universities											
	specialized institutes											
	polytechnical schools											
EDUCATION	specialized school (art, music, etc)											
	ordinary schools											
	kindergarten											
CULTURE	theatres											
	concert halls											
	Palace of culture											
	libraries											
	cinemas											
TRADE	clubs											
	trade centres											
	specialized shops											
	big shops											
HEALTH CARE	shops											
	small shops											
	markets											
RECREATION	clinics											
	hospitals											
	polyclinics											
SPORT	tourism											
	long-term vacations											
SERVICE	everyday											
	large sport complexes											
	sport complexes											
sport grounds												
big enterprises												
medium size enterprises												

● - should be

○ - might be

ANNEX No. 3

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bution Policies.

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