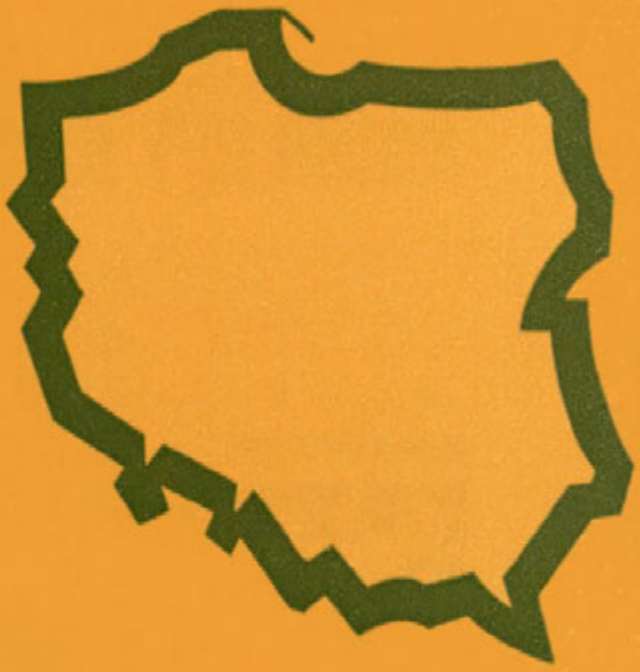
POLISH ACADEMY OF SCIENCES

GEOGRAPHIA POLONICA



35

PWN—POLISH SCIENTIFIC PUBLISHERS

Address of Editorial Board

KRAKOWSKIE PRZEDMIEŚCIE 30
00-927 WARSZAWA
POLAND

Printed in Poland

POLISH ACADEMY OF SCIENCES
INSTITUTE OF GEOGRAPHY

GEOGRAPHIA POLONICA

35

PWN — Polish Scientific Publishers • Warszawa 1977

PROCEEDINGS OF THE POLISH-SOVIET SEMINAR ON CONTEMPORARY PROBLEMS OF DEVELOPING COUNTRIES

Warsaw, November 1973

Edited by

MARCIN ROŚCISZEWSKI, YAKOV G. MASHBITS AND BRONISŁAW CZYŻ

CONTENTS

PREFACE

Research on organization of socio-economic space in Third World countries has acquired an increasing importance in the field of modern geographic sciences. This research has become indispensable in explaining transformations which occur nowadays in world geographic space. It allows the introduction into the theory of socio-economic geography of elements in the sphere of the character and trends of spatial evolution peculiar to developing countries. It should be stressed that the role of these countries and their significance in the modern world is continuously on the increase and for this reason a cognizance of spatial systems which already exist in these countries and of those in the process of formation, as well as of the conditions shaping these systems, has a considerable importance for learning about the reality surrounding us. These problems, however, from their very nature, go beyond the framework of the pure geographic sciences. By the same token, it creates a base for the integration of achievements of other scientific disciplines and for interdisciplinary studies allowing mutual co-operation of experts from different fields.

Apart from the theoretical and cognitive side, research on organization of socio-economic space in Third World countries has also acquired a considerable practical meaning. In many cases it will constitute a starting point for studies concerning planning and regional development. For that reason it may constitute a significant contribution to the geographic sciences as far as assistance to developing countries is concerned. In this way these countries acquire an important tool, serving not only for cognizance and analysis of the state and level of development of their territories, but also for elaboration of an adequate strategy of reconstruction of the existing spatial structure, which often may be one of the main barriers on the way of efficient growth.

The honour of organizing the first Polish-Soviet geographic seminar on socio-economic problems of the Third World countries has fallen to the Institute of Geography of the Polish Academy of Sciences. The conference was organized by the Section of Geography of Developing Countries. The meeting was participated in by a delegation of scientific research workers of the Department of Economic Geography of the Institute of Geography of the USSR Academy of Sciences, scientific staff of the above-mentioned Section, and invited guests. The Seminar was business-like in character. It permitted a survey of problems dealt with in the work of both Institutes. Discussion showed that the scope of this work is, in many cases, similar or concurrent, which made it possible to develop a fruitful exchange of views. The Institute of Geography of the

Polish Academy of Sciences positively evaluates the scientific results achieved in the course of the seminar, and hopes that further development and still closer mutual co-operation between the Institutes of Geography of the USSR Academy of Sciences and of the Polish Academy of Sciences, will take place.

Professor Dr. Stanisław Leszczycki

Director, Institute of Geography and Spatial Organization, Polish Academy of Sciences, Warsaw

PREFACE

The problems of overcoming the economic backwardness of the developing countries, with their rapidly growing population, are among mankind's most important problems. They form a main line of international co-operation, including that in the scientific and technical field. Constructive geography can and should play an important part in the interdisciplinary approach to the study of the developing countries and to the elaboration of a strategy for overcoming their economic backwardness.

But in order to efficiently apply the methods of constructive geography, it is necessary to raise the general level of cartographic and geographic knowledge of the developing countries of Asia, Africa and Latin America, with their extreme variety of natural and economic conditions.

The problems of the developing countries occupy a place of growing importance in world geography. This is true of both geographical science and its leading centres in the socialist countries. Since the early 1950's, the scientists at the Institute of Geography of the USSR Academy of Sciences have been studying the geographic problems of the developing countries. The experience of co-operation between the Institute and the Polish Academy of Sciences in the organization of joint work on studying the economic geographic problems of the developing countries, is praiseworthy. The prerequisites for multilateral cooperation between the geographical centres of the socialist states in studying problems of the developing countries, are obviously quite ripe. Besides yielding practical results, such research would further enrich geographical theory, advance the knowledge of general and regional laws governing natural processes, conditions of habitation and the running of the economy in the tropics. Such international cooperation, with the participation of geographers of the developing countries, undoubtedly offers good prospects.

Academician Inokyenti P. Gerasimov
Director, Institute of Geography
of the USSR Academy of Sciences, Moscow

REPORT OF THE MEETING

The First Polish-Soviet Geographical Seminar on the contemporary problems of Developing Countries was held in Warsaw, November 18–25 1973. The seminar was organized by the Section of Geography of Developing Countries of the Institute of Geography, Polish Academy of Sciences. The group of geographers from the Soviet Union consisted of scientific-research workers of the Institute of Geography of the USSR Academy of Sciences in Moscow. The Soviet delegation was headed by Professor Yakov G. Mashbits, the other members of the group were: Dr. Michaił B. Gornung, Dr. Galina V. Sdasyuk, Dr. Georgy N. Utkin. The Polish group was headed by Assistant Professor Marcin Rościszewski and involved: Professor Andrzej Wróbel, Dr. Bronisław Czyż, Dr. Zuzanna Siemek, Dr. Stanisław Herman, Assistant Professor Jerzy Grzeszczak, Mr. Maciej Jakubowski, Mr. Wiesław Rozłucki, Mr. Andrzej Żeromski, and from Warsaw University — Assistant Professor Augustyn Ponikiewski and Mr. Maksymilian Skotnicki. There were also invited guest-participants taking part in the sessions of special interest to them.

On behalf of the Board of the Institute of Geography of the Polish Academy of Sciences, the meeting was opened on November 21st by the deputy director, Professor A. Wróbel. The successive sessions were presided over by Dr. G. V. Sdasyuk, Assistant Professor J. Grzeszczak, Professor Y. G. Mashbits, and Assistant Professor M. Rościszewski. The papers read during the seminar presented a wide range of scientific interests, composing a contemporary complex problem of socio-economic development in the Third World countries. The topics of discussion could be divided into four groups. First, transformations in socio-economic space and their character; second, natural resource potential as an important source of development; third, modernization of the agricultural sector; fourth, population growth and related questions. A broad and scientifically very fruitful discussion, provoked by almost every paper, marked the end of each session.

In the final resolution the innovative and creative character of the seminar was underlined. There is a wide scope of mutual research interests, especially in the field of organization and evolution of socio-economic space and regional development in the Third World countries. There were also disclosed very cognate methodological approaches. Both sides considered it justified and purposeful to maintain, and further develop, mutual scientific co-operation between the Section of Geography of Developing Countries of the Institute of Geography, Polish Academy of Sciences, and the Department of Developing Countries of the Institute of Geography of the USSR Academy of Sciences.

The papers submitted at the seminar were subsequently revised and in some cases extended for print, forming thus the contents of this volume of "Geographia Polonica". The printing of this volume was possible thanks to generous sponsorship on the part of the Institute of Geography and Spatial Organization of the Polish Academy of Sciences.

GEOGRAPHIA POLONICA 35, 1977

PROBLEMS OF SPATIAL STRUCTURE IN THIRD WORLD COUNTRIES

Marcin Rościszewski

One of the main problems now facing Third World countries is not only that of securing over-all economic growth, but also that of evening out gross inequalities which prevail in regional socio-economic development. Aside from the disproportions existing between highly and less-developed countries, there are also large differences within the group of developing countries. The necessity of ensuring harmonized development also becomes a basic condition for over-all development. On this account much hope has recently been placed on any type of activity in the field of development and regional planning.

The implementation of plans proposed for regional development requires, however, thorough prior studies of the spatial structure of these countries. Two reasons may be given here. Firstly, these countries posses extremely inadequate statistical data which do not allow a proper picture of the situation prevailing there. This is true not only of data of a general nature but also of any other data in a regional cross-section rendering it impossible to make a diagnosis and work out an appropriate development strategy for a given area. Secondly, in our studies the view is still too frequently held that transformations occurring in Third World countries have, or have had, similar features to those in countries already developed. In consequence, methods which are transplanted and adjusted to qualitatively different conditions too frequently fail, producing undesirable effects from the economic or social point of view. Moreover, such types of view and methods make it impossible to explain the whole range of phenomena which take place in the group of countries under discussion. The spatial structure of developing countries both from the point of their character and genesis departs considerably from that observed in already developed countries. Meanwhile, the whole methodology and methodics of research on regional development are based, for the time being, on realities and experiences drawn from developed countries. Utilization of these experiences with respect to the Third World countries is not always possible and may lead to undesirable effects (Angelopulos 1973).

Assuming dissimilarity in the formation of the socio-economic space of Third World countries, the problem boils down, above all, to a discussion of the fundamental components defining this dissimilarity (Rościszewski, 1974 a, d, e).

The main problem refers to the formation of this space under the impact of the external domination effect in the long period of economic and political expansion of the West-European countries into overseas areas. Thus, sources of space formation in Third World countries should be sought in the periods when this expansion began, whilst simultaneously drawing attention to the transformations which have occurred in countries undergoing this expansion. In each case changes in the targets and needs of the dominating system found

their reflection, sooner or later, in the nature of evolution of the systems subject to the domination (Santos 1972). They influenced the formation and differentiation of the space in which this system was included. In other words, dominated space in dependent areas was functionally subordinated to the dominating space constituting, in a sense, its extension. In this sense, we may refer to the notion of a "derived space" (Sorre 1961).

This state of affairs influenced the formation of economic and social structure of Third World areas in a number of definable ways, since subordination of the development process to external factors moulded their spatial structure.

This seems to be the fundamental reason for shortcomings and deficiences in economic and social studies on Third World countries as well as studies on the organization of their space. This was clearly pointed out by F. Perroux when he stated that, for the time being "we do not possess a comprehensive theory, internally coherent and readable for applying the notion which I propose to call the 'domination effect' in economy" (Perroux 1950 and 1964). Attempts to fill this gap have been and frequently still are undertaken, nevertheless some authors point very clearly to the fact that these are only beginnings and many things within this field remain to be done (Amin 1970; Kuzmin 1972; Myrdal 1957). It is worth mentioning that the economy of the Third World countries is often defined as peripheral capitalism with, for this category, specific development regularities (Tyulpanov 1969). This notion calls attention to the fact that not only do developing countries have their own development rythm (pace) but that they are also not isolated from highly developed ones. They constitute only a part of a much wider system, the functioning of which is based on capitalist economic mechanisms as well as the system covered by the international division of labour within world trade (Amin 1970).

To single out these mutual relationships does not, however, mean that the peculiar character of mechanisms operating within the economic and social structure of Third World countries is effaced. Due to the external domination effect the development of the Third World countries has acquired a heterogeneous character (Turin 1965). This has covered only some spheres, and a small part of the population. As a result, the social and economic structure of the countries discussed here have attained dual features. Only part of the economic activities and part of the population have been involved in the mechanisms of world markets, the remaining part living in its original conditions, in which the traditional mechanisms of socio-economic organization, traditional attitudes and behaviour patterns prevail. Such a dual socio-economic model of Third World countries is now, undoubtedly, a simplified one. From the very beginning one should take into account the varying nature of influences on the evolution of population groups in these countries, and their activities. Thus, we may single out direct and indirect external influences, the impact of newly established internal structures and, finally, influences on the part of areas where the traditional economy still prevails. The problem of the gradation of these influences, and combinations of their mutual relations shows its importance here also. However, despite these reservations, the dual model could be clearly observed in many countries prior to the beginning of the decolonization process after World War II, and now may be seen more clearly still in many other countries and areas.

Within new conditions of political independence in the Third World countries, both the modern system and the traditional one undergo very rapid differentiation. The modern system has ceased to fulfil the sole function of raw-materials supplier to the industrialized countries. It continuously develops and evolves towards meeting more fully the internal needs of particular coun-

tries (Kukliński 1970). The traditional system is subject to marked transformation as well. Part of it has been covered by modernization processes and is being included in the modern system, whereas part of it is subject to intense processes of socio-economic degradation and marginalization. Both in the former and latter system we may witness the formation and disappearance of different transitory forms.

The movement from discussion of economic structure to the analysis of the structure and organization of socio-economic space acquires theoretical and methodological significance. It seems that this issue has been correctly stated in the following words: "every economic activity, each economic space, even if defined in the more abstract form, cannot be totally detached from geonomical space (geographic and geodetic) since each economic activity pertains to material activity, i.e. production, exchange and consumption which take place within a specific material milieu to be still, as a rule, confined to the earth (cover), thus to the geographic environment" (Dziewoński 1967). In other words, "since the area of any economic activity is the geographic space, changes in functional space (organizational and industrial) which occur in the course of economic growth, can be projected, and in reality manifest themselves in geographic space" (Hermansen 1971). As in the earlier discussion of economic structure, it should be stressed from the outset that space in Third World countries constitutes a part of over-all (global) socio-economic space. Such a conclusion is vitally important because, when following a given space in time — both from the quantity and quality angle — we are in a position to define and locate those factors which decide the nature of this evolution.

The framework of this paper does not allow a wider discussion of problems referring to the origin of the division of the world into developed and developing countries, as well as to the internal differentiation of the latter group (Alayev 1973). However, it is worth indicating that the prerequisites of this division should be sought in the period when, in some West-European countries, the fundamentals of the capitalist system and market economy were coming to life, and later when expansion of these countries into overseas areas started. It entailed the gradual process of economic integration on a world scale and the formation of the two types of space — of which one covered dominating countries and the other dominated countries — central and peripherial in character (Ikonikoff 1971).

The notions "centre" and "periphery" introduced into our discussion are linked with the utilization of notional apparatus and methods referring to the theory of polarized development. It is, however, rightly underlined that it is not a theory "which can be regarded as complete. Particular elements are under continuous modification and enlargement". Neither is it "a consistent and clearly singled out theory. Apart from totally original formulations, it accepts, adjusts and develops elements of more recent location theories, growth theories, theories of space organization and other theories of regional development" (Grzeszczak 1971). One may add that elements of the theory of information diffusion are frequently included here, especially with reference to innovations and modernization factors (Hägerstrand 1966). There are close links between concepts represented by the theory of growth poles in the form shaped by F. Perroux and developed by other authors (e.g. J. Boudeville), and a concept of central and peripheral space initiated by J. Friedmann (1967).

Differences which do exist between those two concepts are not fundamental ones (Buttler 1973). Without going into details, we must call attention to the different meaning of the very term "pole" in the French and Anglo-Saxon schools (Hermansen 1971). In contrast to the French approach, that of the Anglo-

Saxon school assumes the existence of only two poles and this, perhaps, was the reason for accepting the new terminology. However, it seems that the pole theory in the French approach becomes, as a result of its expansion and improvement, in a sense, less flexible. In particular, its links with location theories caused the problem of the detailed location of the development pole and attempts to define its precise space delimitation makes more difficult the analysis of these variables, which cannot be unequivocally located in space and time. It refers particularly to the Third World countries where the nature of socio-economic space organization has not yet been fully crystallized, and where numerous mutations and "transitory zones" prevail, being an outcome of evolution of the system characterized by pluralizm of social and economic structures. Many phenomena and issues are still not identified.

For these reasons, the concept of central and peripheral spaces, being more general and more flexible, allows the use of the methodological contribution of the pole theory and, to a much wider extent, the inclusion, within research of problems referring to the flow of goods, innovations, information or ideas between central spaces (areas) of different levels and the surrounding hinterland. This also permits in many cases the avoidance of a too rigid framework of classification schemes and typology in branch cross-section which often makes it difficult to take into account the complex and rich reality of regional development of the Third World countries.

This complexity of spatial reality makes it necessary to take a critical stand as far as the concept of central and peripheral spaces is concerned in the form suggested by J. Friedmann (Rościszewski 1974 b). We may agree with the statement that "discussions exlusively on technical, model and methodological issues are of limited 'carrying capacity' and that these deliberations cannot be isolated from prevailing problems of development and regional planning in particular countries" (Kukliński 1974). J. Friedmann's theory involves such a danger. The next problem, which is clearly formulated by this author, reduces to the tendency of the specific *laisser-fair* in shaping the relations between these two types of space; in consequence, the over-all system of spatial relations is *a priori* determined by the propagation of innovations and modernization processes and this system is also, to a certain extent, verified by means of the spatial location of the actual main centres emitting innovations (Rościszewski 1974 d). Such an attitude is, of course, unacceptable taking into consideration the nature of space evolution in time hitherto including also the disappearance of one and the formation of other centres. Moreover, it would be very difficult to assume *a priori* that such movement will not also occur in the future.

Taking into account all the above-mentioned stipulations one may, nevertheless, accept that at the present stage of research, the concept of central and peripheral spaces, reduced to the proper dimensions, may constitute a useful instrument in works on planning and regional development in Third World countries. It is necessary to make some remarks pertaining to matters of routine in this connection. Assuming a distinct feature in the formation of space in developing countries, it should be noted that in the conditions prevailing there it is not proper to restrict the concept of central space exclusively to big cities and to their direct hinterland. In such a way the remaining areas are treated as more or less homogeneous peripheral space, disregarding the fact that there does exist pluralism of socio-economic structures, including traditional and modern systems.

The widening of the concept of central space in the Third World countries to include the whole existing modern system may give rise to a number of doubts. It would lead, however, to a break with the almost exclusive identific-

ation of the space hitherto with large, multi-functional metropolitan centres which possess favourable conditions for the generation of various innovations, and later for the transmission of modernizing effects on areas of surrounding periphery which, in consequence, come under the domination effect.

In conditions shaped by the economic structure of the Third World countries, in conditions of dual economy, the modern part of the economy as a whole conforms, to a certain degree, to the conditions of central space. Through innovation impulses, it influences areas covered by traditional economy, which constitute the real peripheral space. We must, however, place the central space of developing countries defined in this way in the much wider context of over-all (global) socio-economic space. In this case, it is essential to take the time factor into consideration. As we all know, the development of the modern system in Third World countries was linked with the formation of "derived spaces" which at first were fully subjected to the central spaces (external). Functional dependence did not always come through intermediate links such as the cities; those particular areas covered by the modern economy were directly subordinated to the decision centres in dominating countries. In an over-all approach, all these areas would be peripheral spaces, nevertheless, in the scale of a given continent, country or region they would acquire features of central spaces. It is understandable that the number of functions here was different. In the case of plantations, these were single-function spaces, nevertheless, they influenced neighbouring areas (with traditional economy) by transmitting innovation impulses and, consequently, modernization became so obvious that the problem of their "centrality" cannot be questioned.

The establishment of a hierarchy for the central spaces is an important problem arising from this. Together with the development of productive forces and productive relationships with dependent areas, existing central peripheral spaces had to be differentiated. Some of the central spaces still maintained their single-function nature while others, above all big cities, became multi-functional spaces.

With such an approach one can doubt whether these single-function spaces may still be regarded as central or as "modern peripheral space". It seems to the author that, at least for practical reasons, when one is concerned with regional development in conditions of dual economic structure, it would be advisable to preserve the concept of single-function central space. Otherwise, parallel to the traditional peripheral space, the notion of "traditional central space" should be introduced, and in the present situation of Third World countries it would be very difficult to define this precisely. Nevertheless, the discussion itself reveals the complexity of the evolution of the modern economic system of the countries discussed, in its spatial expression, and calls for further research in order to arrive at its proper definition (Lefeber and Datta-Chaudhuri 1971).

From the foregoing remarks we are led to conclude that there is a necessity for research on hierarchization and typology both of central and peripheral spaces. An attempt at such typology and hierarchization is presented below. Although very general in nature, it seems that this may be considered as a basis for wider research and discussion in this area.

STRUCTURE AND TYPOLOGY OF CENTRAL SPACES

With reference to the central spaces of Third World countries, the main dividing line runs between areas with a predominance of exogenous functional links, and areas with a predominance of endogenous links (Rościszewski 1974 c).

Such difierentiation is based on the fact that the former type of areas where activities are predominantly oriented towards exports (exogenous links) is directly subordinated to the centres of external economic command (or world market) often being their actual extension. The introduction of an innovating element in these areas is realized directly under the influence of decisions taken in external decision-making centres, and these decisions are highly selective, coming from their very nature and the aims they have to serve.

Central spaces with a predominance of functional exogenous links have, as a rule, an incomplete spectrum of functions. In reality we have to do with one primary, dominating function (production for export) to which all others, independent of number and complexity are, on a given territory, closely subordinated. The formation of such spaces and their evolution in time was not an outcome of self-sustained development but a consequence of external intervention under conditions of domination. In this connection the character of the impact of these spaces on surrounding areas shows, in its very nature, its difference in type from that in countries where the process of formation of central spaces was accomplished in a self-sustained way, being linked with internal needs and often supported also by the possession of dependent territories. This impact, in the sense of the adoption of new patterns of behaviour, on peripheral areas covered by traditional systems of socio-economic relations, was of limited scope (Myrdal 1971). Modernization factors have been introduced almost exclusively from the point of view of needs of the primary function and the highest possible efficiency, as defined by external decision-making centres. Hence, the adoption, e.g., of a specified form of technical and social infrastructure in such areas, the selection of innovations introduced, etc. The next problem is closely linked with this issue: such modernization was by no means adjusted to the existing mechanisms of the traditional socio-economic system so as to allow eventual adoption by it (Patel 1974). There was too large a gap, both in civilization and in a technical as well an organizational sense, and ultimately too large a difference in aims for an integration of these two systems. However, one should stress the role of space with exogenous links in the process of destabilization and disintegration of socio-economic and cultural relations in traditional areas. Here we can speak about the problem of influence, although in this case there are significant differences both in time and space, as well as dependence on the character of activities in the modern system.

Destabilization and disintegration effects acquired common features in such situations. Nevertheless, with reference to Third World countries, the decisive aspect is that difference in aims as far the introduction of modernizing elements is concerned. For a long time these were "by-products of colonial expansion" (Soja 1968) — but not incidental to the development of the given country as a whole.

The marked internal differentiation of central spaces with a predominance of external functional links should also be stressed (Problèmes de l'industrialisation ..., 1973). Depending on the nature of production, we may have to deal with areas of elementary structure (homogeneous plantation type coal-mine exporting its total output) as more complex one. The latter can include the agricultural regions of, e.g., Maghreb or Kenya organized by the European colonists settled there, as well as some regions of raw material extraction — for example, the so-called copper belt in Central Africa. Parallel to the dominant, primary function, we have the development of the whole set of hierarchized and mutually linked concurrent functions, the development of a hierarchized network of urban centres, service and production networks for satisfying population needs and securing adequate exports. There exists here a specific continuity in

the dominating function increase which, in turn, is conducive to the accumulation and development of different concurrent functions. However, the problem of integration of these types of areas with the rest of the country is still open. Economic history points to the well-known examples in which with the disappearance of the dominating function all other activities lose their justification and the central space discussed here is forced, at last, to change its previous character (Furtado 1963; Fereira 1973).

A significant change which actually takes place with reference to the spaces discussed should be also noted here. Two general factors can be distinguished. The first one — the gaining by countries previously dependent of political personality by the political process of decolonization. Although attaining political independence does not in itself automatically lead to independence in an economic sense, nevertheless, some countries have gained, at least formally, the possibility of influencing the process of evolution of such types of space. This introduces new elements in differentiating the previous typological scheme.

The second factor, linked with the previous one, is a result of the newly recognized problem conventionally known as the "energy crisis" or the much wider "raw materials crisis". With reference to some groups of raw materials, increase in their prices induces the search for arrangements, on new principles, between raw material producing countries and industrialized ones. We are probably witnessing the formation of a new functional space of central character, on the basis of new organizational forms, within a framework of wider international co-operation. This refers not only to the so-called oil-producing countries, although this case comes most strongly to the fore. Moreover, we must also note the appearance, in developed countries, of a tendency to utlize existing resources of their qualified labour force, and investing these in certain countries of the Third World, in different branches of industry. This is linked partly with the fact that developing countries are still regarded as the so-called countries of "cheap ecology", and partly with social problems which come to the fore when the necessity of importing a larger labour force becomes acute in the industrialized countries.

The tendencies presented above, undoubtedly exert a significant influence on strengthening both the central features of some of the spaces discussed, as well as their linkage with external decision-making centres. However, qualitative change in the situation is clearly visible. On the one hand, these tendencies can be, and frequently are utilized profitably for the internal needs of particular countries. Of course, a condition *sine qua non* is to adopt a proper strategy of socio-economic development. The possibility arises for internal integration and the inclusion of exogenous central spaces in the economic and social life of a country. On the other hand, a one-sided functional dependency of such spaces on external factors seems to be transformed towards more equal participation by the international division of labour, tightening and consolidating internal links and spatial dependencies. By the same token the type of space discussed here starts to integrate with spaces with a predominance of endogenous links, thus creating new (for the Third World countries) spatial tissue with new hierarchized dependencies and functinonal links. It should be stressed that such a situation occurs only in a small number of countries and in view of its novelty requires closer studies. However, the fact remains that exactly this group of countries is not hindered by the foreign trade barrier, these countries are facing another barrier, hitherto unknown — difficulties in absorbing the available capital by the economy.

*
* *

Among central spaces with a predominance of functional endogenous links the main place is occupied by big metropolitan cities. In Third World countries very distinct domination by that type of organism is pronounced and often it is the only big city of a country, its capital or main port. Almost all modern industrial activities oriented towards satisfying internal needs, all political and social decisions are, as a rule, concentrated in such a city. From that place, above all, diffusion of innovations and information begins. These are, in the full sense of the word, central spaces (in the scale of a given country) performing both productive and service function oriented towards meeting internal needs of the urban organism and its hinterland, the needs of the whole country. These are at the same time centres with strong external links. However, only a small number of countries, and mainly the biggest ones (e.g. Brasil, India) have more than one metropolitan city of such a type.

Development processes of big urban centres in Third World countries are marked by many peculiar features and mechanisms typical of them. Their very formation and development occurred under the impact of external domination. European expansion led to the establishment, mainly along the sea-coast, of trading posts, fortified military stations, etc. from where the subjugation of internal territories was launched. In time many of these centres became the capitals of colonies and subsequently, after liberation, capitals of independent states. Economic and social structures of the more or less vast surrounding areas had been subordinated to, and later polarized by the centres discussed; this refers, above all, to the newly-born modern economic sectors as well as the existing developed infrastructure and network of links. At the same time, the old, traditional socio-economic organization of the territory as well as links within the range of influence of these centres were destroyed. Above all, the functions of the majority of traditional urban centres were exposed to an erosion which eventually led to their stagnation or downfall. It is worth pointing out that in countries with a long urban tradition, the majority of colonial cities remained outside the traditional network of urban centres. The location and functions of these cities reflected the fact that modern economic systems in Third World countries acquired certain extrovert features from the spatial point of view, oriented towards cities mostly located by the sea-coast. These cities were, in turn, more strongly linked with external centres of a dominating power than with their own hinterland.

The development of such cities in the period of colonial expansion, although very rapid in some cases, was not followed by industralization processes. They were mainly centres with service functions in relation to the draining activities performed. Nevertheless, the first industrial functions oriented towards meeting internal needs (initially of immigrant population, later on of other population groups of these cities and, finally, of the hinterland) were also located in these centres due to the prevailing agglomeration economies there.

The development of productive functions was and still is limited by the consumption potential of the city itself and its hinterland (country) not to mention the financial resources available and the problem of qualified labour. On the other hand, a rapid development of service functions was still on its way. This led to the increasing attractiveness of big cities and their population explosion due to the inflow of rural population pushed out by degradation and marginalization processes occurring in the traditional system of the countryside. In this connection we may speak about the process of "ruralization" of cities in the Third World countries (McGee 1967).

The development of big cities in Third World countries influenced the for-

mation of strong draining functions in relation to the subordinated areas. This drainage refers not only to material resources and economic surplus obtained from rural areas and seized by the city as a result of internal terms of trade unfavourable to the countryside, land rent accumulated in the cities by absentee landlords, profits from usury, excessive taxes, etc. It also refers to the population migrating from the countryside to the cities — on the whole the most dynamic persons, which in consequence put limits on the further expansion of agriculture. One of the problems in the regional development planning programmes in these countries is that of limiting this drainage function.

The internal structure of a big city in the developing countries is not homogeneous. It is characterized by clear socio-economic pluralizm. Here we are concerned with: (i) strong elements of the sector with exogenous links, (ii) developing elements of the sector of modern economy with internally oriented needs, (iii) dynamic expansion of activities connected with the development of marginal districts. Each of these components of the functional structure of a big city is further differentiated in an economic, social, ethnic and cultural sense or, finally, in terms of mutual links and influences. This, undoubtedly makes a study of these organisms difficult, especially as many of these elements are not yet adequately identified.

The problem of medium-sized cities occupies a prominent place in research on the spatial structure of the countries discussed. They are to be found both in areas of central and peripheral spaces. In the majority of cases they do not have conditions conducive to their development. Their position is determined, of course, each time by the size of the territory of the given country and also by the dominating character of big cities and their polarization and drainage functions, as well as by the character of the economic and social policy of the given country. There is, on the whole, agreement on the necessity to activate small and medium-sized centres. This would eventually help to check the adverse effects of big city expansion, secure more uniform development of the whole country and to restrain the process of increasing the peripheral features of particular areas, and inequality in regional development (Rosciszewski and Siemek 1973; Santos 1969).

To-day, in Third World countries, the process of shaping different types of space organism, more or less central, with a predominance of functional endogenous links, is taking place. These areas are developed mainly according to planned targets — industrial centres and regions, agricultural areas. In the majority of cases domination of one or several functions is visible, and by the same token these spaces are incomplete in character. Nevertheless, they constitute or should constitute, an important factor in transforming the former socio-economic and spatial structure of a country. As a result the modern socio-economic system undergoes transformation and differentiation. It is not exclusively limited to one or several big metropolitan cities but gives a basis for the formation of the rudiments of a hierarchized network of central spaces of different categories and importance, as well as with their mutual links. It may be assumed that under favourable conditions, the integration may take place of the spatial organisms discussed with some spaces with exogenous links.

It is worth mentioning that changes occurring to-day give rise to the tendency to develop specific growth "channels" which result in the transformation of the former "insular" structure of the economy of developing countries into a network structure. It seems necessary, however, to undertake more comprehensive studies on the formation and evolution, in time and space, of such types of structures as well as on a possible strategy for guiding their development.

PERIPHERAL SPACES

A prominent place in the spatial structure of Third World countries is occupied by areas with a predominance of the traditional system of socio-economic relations. These areas are, in the full sense of the word, peripheral spaces since the traditional system of socio-economic relations prevailing there is less vulnerable to accepting and adopting innovations coming from the outside (Rosciszewski 1972). In the majority of cases these are also areas which are dominated, from the social and economic angle, both by relations existing within the traditional and modern system and last but not least — because, from the point of view of their location, these areas are actually mostly on the periphery of regions covered by modern development processes.

The traditional system is, internally, extremely differentiated. All types of pre-capitalist socio-economic systems exist here although in the majority of cases they do not appear in a "pure" or stable form. Their former internal cultural and productive harmony has been irreversibly infringed as a consequence of external domination and the development of commodity-money relations. Traditional relations have been overlaid by degradation and marginalization processes with different degrees of intensity, thus giving rise to the formation of new mutations and systems with their own development dynamics.

These territories have acquired great significance. The largest proportion of the population lives here although this population and its activities are, in a sense, "redundant" and even burdensome to the actual functioning and development of the whole economy and society of a given country or region. In spite of basic differences in the structure of traditional and modern systems, their interaction has acquired vital importance for the character of the whole socio-economic space of the countries referred to. The problem of the impact of the central spaces on the character of evolution of peripheral spaces has already been discussed in this paper. However, a reverse action is of no less significance, bearing in mind the fact that dualism does not assume a hermetic closure of each of the systems discussed. By way of example we may recall one of the roles of traditional élites in the process of decision-taking, as far as the directions of the country's development are concerned. The position and financial resources of élites are drawn from the situation prevailing in peripheral areas and on this account they are not interested in bringing about structural changes there.

From the point of view of research on regional development possibilities, it is necessary to find a proper criterion for the typology of peripheral spaces. We may find interesting a suggestion (Stohr 1972) as to the classification of this space into three groups from the point of view of potential development factors (economic, social, political). The first group, the so-called "active regions", includes those which, on account of existing natural resources (raw materials, soils, etc.), communication availability, demographic resources, nature of social, cultural and other relations, are in a position to attract more development factors rather than to lose them due to "drainage" mechanisms on the part of central spaces. The second group, i.e. "passive regions", covers peripheral regions where drainage effects predominate over advantages obtained from central spaces. Finally, the group of "neutral" or stagnating regions includes those peripheral regions in which these two tendencies are equalized. However, with reference to agricultural regions (which predominate in a peripheral space) it may be quite useful to accept the criterion of the degree of commercialization of the traditional economy, as well as the extent to which a given community is included in the commodity-money mechanisms (Rosciszewski 1972 and 1973).

From that point of view we may have to deal with traditional agricultural areas: (i) territories characterized by full autarchy, (ii) territories with predominance, above all, of subsistence economy, i.e. of consumer type without distinctly developed accumulation tendencies. This may be called a type of family economy often, however, distorted by outside influences; (iii) territories with a predominance of family-commodity economy and in some cases even of a commodity-family economy. Within the latter type intensive transformation processes are taking place. The prevailing traditional socio-economic relations are subject to partial disappearance in favour of capitalist relations. Nevertheless, existing relationships still hamper the full success of development factors.

The above-mentioned classification of peripheral spaces is not, of course, meant to exhaust the possibility of other useful divisions in work on the planning of regional development. One should always bear in mind the fact that peripheral space is, ultimately, an integral part of the space of a given country or region. Therefore, the planning of regional development should take its proper place, taking into account prevailing mechanisms of socio-economic activities (Waters 1974).

*
* *

The outline presented above can be regarded as an attempt at pointing out the complexity of the socio-economic space structure of Third World countries. The necessity arises for undertaking intensive studies and for permanent verification of already accepted views. The latter are closely linked with rapid changes, both in the socio-economic and political sphere, taking place in the group of countries discussed. Without taking these changes into consideration our knowledge of the processes occurring in these countries would not be complete and this, in turn, would lead to adverse effects on work relating to regional planning and development as well as on possibilities of predicting the directions of space evolution.

Institute of Geography and Spatial Organization
Polish Academy of Sciences, Warsaw

BIBLIOGRAPHY

Alayev, E. B., 1973, *Regionalnoye planirovaniye v razvivayushchikhsya stranakh*, Nauka, Moskva.

Amin, S., 1970, *L'accumulation à l'échelle mondiale*, Anthropos, Dakar.

Angelopulos, A., 1973, *Le Tiers Monde face aux pays riches; perspectives pour l'an 2000*, *P.U.F.*, Paris.

Buttler, F., 1973, *Entwicklungspole und räumliches Wirtschaftswachstum*, J. C. B. Mohr, Tübingen.

Dziewoński, K., 1967, Teoria regionu ekonomicznego (Sum.: The theory of the economic region), *Przegl. Geogr.*, 1.

Fereira, M., 1973, *Traditional agrarian structure and its impact in the urban growth (the case of Brasilian Northeast in a context of regional unbalance)*, Inst. Soc. Stud., The Hague.

Friedmann, J., 1967, *A general theory of polarized development*, Santiago (mimeogr.).

Furtado, C., 1963, *Formação económica do Brasil*, Fundo de Cultura, S.A., Rio de Janeiro.

McGee, T. G., 1967, Croissance et caractéristiques des grandes villes du Sud-Est asiatique: Foyers du nouveau culte, *Rev. Tiers-Monde*, 3.

Grzeszczak, J., 1971, *Koncepcje polaryzacyjne w przestrzennym zagospodarowaniu kraju* (Sum.: Concepts of polarization in the spatial economic development of a country (on the example of France)), Studia KPZK PAN, 34, Warszawa.

Hägerstrand, T., 1966, Aspects of the spatial structure of social communication and the diffusion of innovation, *Reg. Sci. Assoc. Pap. Proc.*

Hermansen, T., 1971, *Development poles and related theories; a synoptical review*, UNRISD/71, C. 76, Geneva.

Ikonikoff, M., 1971, Les étapes de la prospective, *Rev. Tiers-Monde*, 48.

Kukliński, A., 1970, Pôles de croissance et centres de croissance en matière de politique et du planification régionales, in: *Pôles de développement et centres de croissance dans le développement régional*, Dunod, Paris.

Kukliński, A., 1974, Wstęp (Introduction), in: *Planowanie rozwoju regionalnego w świetle doświadczeń międzynarodowych. Wybór opracowań*, ed. A. Kukliński, PWE, Warszawa.

Kuzmin, S. A., 1972, *Sistemnyi analiz ekonomiki razvivayushchikhsya stran*, Nauka, Moskva.

Lefeber, L. and Datta-Chaudhuri, M. 1971, *Regional development. Experiences and prospects in South and Southeast Asia*, Mouton, Paris–The Hague.

Myrdal, G., 1957, *Economic theory and under-development regions*, G. Duckworth and Co., Ltd., London.

Myrdal, G., 1971, *The challenge of world poverty*, England Pelican Books, London.

Patel, S. J., 1974, The technological dependence of developing countries, *J. Modern African Studies*, 12.

Perroux, F., 1950, The domination effects and modern economic theory, *Social Research.*

Perroux, F., 1964, *Economie du XX-ème siècle*, P.U.F., Paris.

Problèmes de l'industrialisation des pays en voie de développement, 1973, Novosti, Moscou.

Rościszewski, M., 1970, *Kierunki ewolucji rolnictwa w krajach Maghrebu* (Sum.: Trends of agricultural evolution in Maghreb's countries), Prace Geogr. IG PAN, 88, Warszawa.

Rościszewski, M., 1972, *Zagadnienia rozwoju regionalnego w krajach Trzeciego Świata: kryteria analizy obszarów peryferyjnych*, KPZK PAN, Warszawa (mimeogr.).

Rościszewski, M., 1973, *Azja Zachodnia*, Uniw. Warsz., Warszawa.

Rościszewski, M., 1974 a, *Approche méthodologique aux problèmes de la typologie de l'espace des pays en voie de développement*, Paper transmitted to the Seminaire "Espace Maghrebien", Alger, February.

Rościszewski, M., 1974 b, Przestrzeń krajów Trzeciego Świata — problemy metodologiczne, *Przegl. Zagr. Liter. Geogr.*, 1–2.

Rościszewski, M., 1974 c, *Konsekwencje społeczno-gospodarcze formowania się przestrzeni centralnych o przewadze powiązań egzogenicznych na przykładzie krajów Trzeciego Świata*, Komitet "Człowiek i Środowisko" PAN, Warszawa (mimeogr.).

Rościszewski, M., 1974 d, Organization and typology of socio-economic space in Third World countries, *Norsk Geogr. Tidsskr.*, 28.

Rościszewski, M., 1974 e, Społeczno-gospodarcze aspekty organizacji przestrzeni i rozwoju regionalnego w krajach Trzeciego Świata, *Kultura i Społ.*, 1.

Rościszewski, M., Siemek, Z., 1973, Problemy rozwoju urbanizacji w krajach Trzeciego Świata, *Przegl. Zagr. Liter. Geogr.*, 2.

Santos, M., 1969, *Aspects de la géographie et de l'économie urbaines des pays sous-développés*, Fasc. 1–2, C.D.U.. Paris.

Santos, M., 1972, Dimention temporelle et systèmes spatiaux dans les pays du Tiers Monde, *Rev. Tiers-Monde*, 50.

Soja, E. W., 1968, *The geography of modernization in Kenya*, Syracuse Geogr. Ser., 2.

Sorre, M., 1961, *L'homme sur la terre*, Hachette, Paris.

Stöhr, W. B., 1972, *Regional planning as a necessary tool for the comprehensive development of a country*, Interregional Symposium of Training of Planners for Comprehensive Regional Development, ESA/SP Meeting, UN, Warszawa (mimeogr.).

Tyulpanov, S. I., 1969, *Ocherki politicheskoy ekonomii (razvivayushchikhsya strany)*, Mysl, Moskva.

Turin, L., 1965, *Combat pour le développement*. Ouvrière, Paris.

Waters, A. R., 1974, Understanding Africa agriculture and its potential for change, *J. Modern Africa Studies*, 12.

GEOGRAPHIA POLONICA 35, 1977

SOME ECONOMIC-GEOGRAPHIC FEATURES OF UTILIZATION OF NATURAL RESOURCES AND DEVELOPMENT OF TERRITORY IN THE DEVELOPING COUNTRIES

Yakov G. Mashbits

It is becoming an increasingly important task of constructive geography to study geographic aspects and spatial problems of economic development. An economic-geographic analysis of the causes, genesis and consequences of poor economic development should undoubtedly become a constituent part of the interdisciplinary approach to the complex and controversial problems of the developing countries. It may also be fruitful developing a scientifically valid strategy to overcome the backwardness of the Afro-Asian and Latin American countries which was caused by capitalism. No less important is the fact that fundamental social and economic problems of the Third World countries are essentially of a geographic nature (Gornung *et al.* 1971).

It can be said that the economic geography of the developing countries as a theoretically and practically important scientific trend had taken shape by the early 1970's. This conclusion has been reached, among others, by the Institute of Geography of the USSR Academy of Sciences (Mashbits 1974).

No doubt, the questions of natural resources and environment rank high in the economic geography of the developing countries. This is determined by the fact that the advance of the developing countries strongly depends on the available natural resources and on their deeper and more rational utilization in the national interests.

The economic geography of the developing countries is above all the geography of their natural resources and basic socio-geographic types of economy whose development depends on their own natural resource base to a far greater extent than in the industrial states.

The economic-geographic and typological distinctions of the whole group or of individual developing countries and their internal spatial "anatomy" are greatly influenced by the supply of natural resources and the character of their utilization. No deep and comprehensive study of these questions has been made so far.[1]

[1] In many publications dealing with the problems of the developing countries their economic-geographic features are usually identified with qualitative and quantitative parameters of economic and social development. This is typical of many works written by geographers (see, e.g. Gornung *et al.* 1971 and Rozin *et al.* 1971). The importance of formulating of certain criteria of social and economic backwardness is obvious, but they should be combined with economic-geographic features of the territorial organization of economy.

The level of economic development, the character of utilization of natural resources, the development of territory and the spatial organization of economy are dialectically interconnected. Karl Marx wrote, "A definite amount of space is always required at any given level of productivity" (K. Marx, *Capital*, Vol. III, Book III, Moskva 1962, p. 761).

Apparently, the geography of the economy and the population of most of the developing countries and their economic-geographic "anatomy" are characterized by the following structural features:

(1) The extent of development mainly of those types of natural resources and those territories which are related to the advance of export industries and to the foreign market.

(2) Poor economic integration of national territories, of inter-branch, and especially of inter-regional ties, due to the predominance of primary industries, the continuing specialization in one type of agricultural produce or raw material, the external orientation of the economy, and limited development of the infrastructure.

(3) Territorial concentration of the economy (especially the manufacturing industry), of business activity and the population in one or several leading economic regions and their centres of national importance, which is much higher than in industrial countries.

(4) The limited scope of formation of urban systems beyond the leading economic regions; hypertrophy of the main centres in all spheres in a given country often to the detriment of development of other areas.

(5) Sharp differences in the character and disproportions in the level of development of both main economic regions (of the first order) and especially smaller political and administrative units, the interlacing of archaic and modern socio-geographic types of economy.

(6) Steadily growing complexity of the branch and territorial structure of economy and forms of population settlement, due, among other things, to the intensification of internal factors of socio-economic development, above all the role of the state in economy.

(7) Growing importance of new development areas in the economic and political life of these countries.

There are some important features of territorial development related to the character of distribution and utilization of natural resources. Outside the most developed and populated areas where the exploitation of natural resources is concentrated, extensive forms of their utilization predominate on vast territories. The so-called "pressure of the population on natural resources" is the case both in the most developed areas and beyond their bounds (particularly in zones of shifting cultivation in the plains and in agricultural mountain areas). Shifting cultivation which is one of the interesting manifestation of adaptation of the native population to the ecological conditions of humid tropics is accompanied by destruction of huge tracts of forests and by the spread of the blight of erosion.

In the group of the developing countries the share contributed to the gross national product by industries directly connected with extraction of raw materials and with primary processing of natural resources is as high as 25%, whereas in the group of the industrially developed capitalist countries it amounts to about one-fifth of that figure. On the whole, fuel, raw materials and food-stuffs, i.e., the products of "primary" branches in which at least half of the wage-earning population are engaged, account for 85 to 90% of the value of exports from the developing countries. The economy and the entire life of the

developing countries are shaped by the "primary" branches to a much greater extent than in the industrial states.

The dependence on the production and exports of products of the "primary" branches in which foreign capital retains strong positions makes the economy of the developing countries especially sensitive to the situation in world commodity markets, and to the foreign economic policy of the industrial capitalist states. Even increased receipts of some developing countries (above all those which have big oil resources), resulting from higher prices of oil in the 1970's, cannot significantly improve the position of the Afro-Asian and Latin American countries in the system of capitalist economy. Nor can it be improved by certain progress made by some developing countries in expanding the capacities and production in the manufacturing industry. The thesis which was formulated by Raul Prebisch, a well-known scientist and UN official, in the early 1950's is still valid in its essential aspects. He stated that in the capitalist economic system it is the lot of the "peripheral part of the world economic system" (that is how the group of the developing countries is sometimes called in the West) "to produce foodstuffs and raw material for large industrial centres. This pattern leaves no place for industrialization of new countries" (*The economic development* 1950).

In the developing countries, the study, development, utilization and protection of natural resources have acquired great political importance. The solution of key social and economic problems there is inseparable from establishing genuine sovereignity over all types of natural resources and from their protection against encroachments by foreign and "local" monopolies. This could promote better knowledge of natural resources and territory; more rational and fuller utilization of the nature potential, labour resources, production base and infrastructure; completion of the existing industrial and technological cycles and complexes by developing the manufacturing industry; establishment of up-to-date industrial-territorial complexes; reduction of "the pressure of the population on resources" in densely populated areas; diversification of industrial and agricultural production; incorporation of new types of natural resources and new territories in the economy in the national interests.

A most important national problem for the developing countries is posed by the plunder of their natural resources. Many rich deposits of raw materials for steel-making and chemical industry have been worked out and depleted. The monopolies exploit first of all the richest and most accessible deposits. The danger of depletion of many deposits of minerals and oil becomes a reality, which poses a direct threat to the economy and the prospects of advance for the developing countries.

The situation in the utilization of renewable natural resources is even worse. Long, unchanging cultivation of crops under conditions of high density of rural population, land hunger, and primitive agronomic techniques result in general erosion and a lowering of soil fertility. Shifting cultivation which has been in use for many centuries lays waste vast areas in the zone of humid tropical forests.[2]

[2] Nitrogen content in the soil in shifting cultivation zones of East Peruvian plains is twice or three times less than normal, and it is rapidly decreasing. Crop yields in the areas of shifting cultivation in the Andes are very low — about 100 kg of wheat per hectare, corn 200–250 kg, potatoes 400 kg. Low yields of staple crops and the concurrent growth of the population require further expansion of areas under cultivation. Therefore more and more forests are cleared for cultivation (Watters 1971).

Irrational and often predatory utilization of renewable resources in the developing countries has brought about a general deterioration of the environment, above all in the settled areas.[3]

Investigation of the existing resource-export cycles,[4] which are determined by the main historical and geographic stages in the development of natural resources and territory, and by the specialization and external orientation of the economy, seems to be useful in studying the role of the resource factor in the economy of the developing countries and in its geography.

Each of the resource-export cycles occupies a definite place in the system of the international division of labour. They strongly influence the geography of the economy and the population. Each resource-export cycle has specific features as regards utilization of labour resources, territorial organization of the economy, distribution of the population, and the role in the formation of branch and integral economic areas.

The special features of the oil resource-export cycle stem both from the specific part played by oil in the economy and politics of the present-day world and from the position of the "oil-rich" developing countries as chief oil producers and exporters. Almost in none of the oil-producing developing countries, not even in the case of the biggest oil producers, has the development of this resource-export cycle resulted in the creation of a large oil-refining industry. The incomes from exports of oil and products, a sizable part of which goes to the monopolies, promote primarily the development of non-productive branches. The latter are mainly located in large centres, often beyond the bounds of the main oil-producing areas.

The mining, metallurgical and chemical resource-export cycles are typified by dispersed location, often in high mountain areas of low accessability and in arid zones, and by weak economic ties with other branches and regions. As a rule, areas of concentration of enterprises included in these resource-export cycles form "enclaves" in the economic structure of the developing countries. They mostly become nuclei of mining areas but, as in the previous case, their part in the formation of integral economic areas is usually rather limited.

The land-climatic (agricultural) resource-export cycle is characterized by vast areas (including reserve areas), mainly in coastal plains and foothills; influx of large numbers of agricultural workers, especially to the areas of plantations of perennial tropical and subtropical crops as well as most important annual crops of export value; a rather ramified transport network and systems of towns. This resource-export cycle often lies at the basis of formation of integral economic areas. Sometimes they become areas of development of the manufacturing industry concentrated in the main centres.

A particular case is here presented by cattle-breeding for exports (for example, in South-Eastern Latin America). This subcycle is characterized by an extensive character of utilization of vast territories, limited influx of labour

---

[3] In the developing countries the environmental problems are not yet so acute as in the industrially developed capitalist states. But in the Third World countries, too, the consequences of ecological imbalance are becoming more manifest, especially in urbanized areas. It is in the largest urban agglomerations of India, Brazil, Argentina, Columbia, Venezuela and some other countries that the deterioration of the environment is felt most strongly.

[4] The concept of resource-export cycles is based on I. V. Komar's research on resource cycles. These cycles encompass the whole range of transformations and movements of natural substances or their groups (discovery, extraction, processing, consumption and return to nature) in the system of social production.

force, poor production ties with plant-growing, and predominance of large land estates.

The timber industry resource-export cycle is distinguished by primitive utilization of the huge reserves of tropical timber. This cycle is gradually moving to different zones because of the destruction of forests in the settled areas, caused, i.a., by the tenacity and wide use of shifting cultivation. As the technology of processing and industrial utilization of hardwood of tropical varieties is improving, this cycle may acquire great significance in the world economy. The timber industry resource-export cycle opens vast prospects for the tropical developing countries of Latin America, Africa and South-East Asia.

The fishing industry resource-export cycle in most of the maritime developing countries just begins to evolve as a result of the growing demand for sea food and for fishmeal in the industrial capitalist states. This cycle, even in Peru which holds the first place in the world in the catch of fish, is characterized by low-standard technical equipment of the fishing fleet and by a relatively narrow range of its operations; also, by poor processing industry and shortage of the network of ports and refrigerators.

Different production-export complexes with their own territorial and social organization and respective infrastructure appear and develop within the framework of the above-mentioned leading resource-export cycles, organically linked with the mono-commodity specialization and export orientation of the economy.

The historical and geographic features of the developing countries are often very closely connected with both utilization of certain types of natural resources and development of areas of their concentration, and with changes in the "resource" specialization. For example, the development of territory and formation of the modern territorial structure of the economy in Brazil are connected with the successive change of the basic export commodity — noble metals, cane sugar, cocoa, rubber, coffee. Thus, a historical-geographic analysis of the resource-export cycles is necessary for determining both the basic types of specialization of the economy and the character of colonization of territories drawn into the world capitalist economy. But it is still more important to have an "inside view" of the situation, i.e. to determine the effect of the resource-export cycles upon the branch and territorial structure of the economy, the distribution of population and settlements, the economic pattern of the territory, the development and transformation of branch and integral economic areas, and the utilization of labour resources. The areas of specific resource-export cycles with their infrastructures and formative urban systems, frequently make up a peculiar framework of the geography of the economy and population of the developing countries.

In many cases the areas of concentration of export industries are more closely connected with industrial capitalist states than with other areas in the given country. Frequently the key positions in these areas, including the so-called "dynamic" branches of the manufacturing industry, are controlled by foreign capital and international companies. Such areas which are especially closely connected with the markets in industrial capitalist states are often called "enclaves of imperialism". It is becoming an important task of state policy of the developing countries to take hold of the key positions in the economy of the resource-export areas (Alayev 1973).

The utilization of natural resources in the developing countries is distinguished by important economic and geographic features of structure, above all by poor development of manufacturing industries ("upper stories") and the low

level of completion of technological cycles.[5] Some figures showing incompleteness of technological cycles and of external orientation of "primary" branches in Latin America are indicative in this respect.

But Latin America presents the most industrialized region in the developing countries' group. The ratios between the output and local processing of raw materials are even less favourable in other less industrialized regions of this group of countries.

TABLE 1. Ratio of output and full-scale industrial processing of the most important raw materials in Latin America, per cent

Type of raw material	Share in world indicators			Share of raw materials processed in the region	
	output	exports	home consumption	early 1950's	1965–1966
Oil	14	29	5.2	36	58
Iron ore	10	23	2.7	26	14
Copper	17	29	2.9	69	47
Lead	15	16	3.6	79	74
Zinc	12	17	1.6	19	28
Timber	13	—	13	14	15

Source: Grunwald and Masgrove 1970.

Areas of development of resource-export cycles are connected with ports where huge amounts of export products are delivered. The developing countries account for 28% of the volume of world shipping freight (Rozin *et al.* 1971). This is due to immense flows of products of "primary" industries from the developing countries to Western Europe, USA and Japan.

Economic ties between the areas of resource-export cycles are maintained but on a limited scale. A low degree of economic integration of national territories and slim interbranch and inter-regional ties are among the main structural features of the economic geography of the developing countries. For the same reasons the share of the developing countries in inland cargo transportation in the world amounts to only one-third of their share in sea transportation and reaches about 9%, in railway transportation only 5.4% and in inland water transportation 4% (Rozin *et al.* 1971).

Territorial depth of economic development in most Third World countries remains insignificant. For example, in Brazil the boundaries of the plantation farming and the "centre of gravity" of its development have shifted in the last two centuries for not less than 2000 km. But 80% of the population and produc-

[5] In some developing countries multi-national companies establish large enterprises, such as steel-making, machine-building and electrical engineering plants on a fairly wide scale. They are based on rich deposits of natural resources and huge water resources, as well as on cheap and abundant manpower. The critical state of the environment in some old industrial areas of capitalist countries is also an important contributing factor. But such transfer of individual industries to the developing countries does not yet mean a more comprehensive utilization of natural and labour resources there.

tion in this country are still concentrated in a strip on the Atlantic coast, 250–300 km wide.

The special importance of the external factors of development has in many respects predetermined the considerable extent of territorial concentration of the economy and population. About one-third of the cost of the manufacturing industry output in Latin America falls to thre agglomerations — São-Paulo, Buenos Aires and Mexico. In Venezuela, Caracas accounts for 40% of the manufacturing industry products and home trade. In Mexico, one of the most developed Third World countries, at least 70% of the manufacturing industry products originate in 16 centres, including 47.5% in the capital agglomeration (38% in the capital within its administrative bounds); 80% of the manufacturing industry output in Brazil come from the agglomerations of São-Paulo, Rio de Janeiro and Belo Horizonte. In Peru (Lima-Callao) and Costa Rica (San Jose), the share of the main areas of the manufacturing industry concentration is 56% and in Uruguay (Montevideo) 75%.

It is hardly possible to give a clear answer whether this high (and in many cases hypertrophied) degree of territorial economic concentration will be increasing.

However, it can be assumed that in the more developed countries of the Third World where the scope of internal factors of social and economic development is tangibly growing, a certain "threshold" of territorial concentration is being reached. In particular, the prospects for 1975–1980 for Mexico, Argentina and Brazil show a certain decrease in the share of the biggest agglomerations in the overall indices of the size of the population, the output of the manufacturing industry and in some other important economic indices.

In other developing countries, particularly in Africa where external factors of economic development continue to grow stronger, the degree of territorial concentration of the population and economy is rising, due in particular to the "agglomerate effect of attraction" of big centres.

New tendencies in the utilization of natural resources both in developed areas and in new economic territories under development are gradually gaining ground in the developing countries. Large power engineering, ore mining and smelting, and agricultural-industrial complexes are being created, on a growing scale and often on an up-to-date basis, and different programs of regional development are being worked out and implemented. These projects are connected with the local resource and power base, and the role they play in the economic and political life of the developing countries is growing in importance. Scientific and technical assistance rendered by the USSR and by other CMEA member states is very important in the creation of such complexes.

In most developing countries tropical river basins and deserts and semi-deserts occupy vast areas, which undoubtedly creates difficulties for their economic development, including stable plant-growing and cattle-breeding. The latter acquire paramount importance, especially in view of the rapid growth of the population and of the aggravation of the food situation in the developing countries.

The experience of the USSR, the USA, Australia and a number of other countries proves the possibility of efficient development of territories even under extreme natural conditions. This is exemplified by the complex hydropower construction built with Soviet assistance in Egypt, Syria and Iraq; by the cultivation of deserts in Mexico and Peru; by the development of power engineering, agriculture and industry in tropical river basins in Venezuela, Mexico and Brazil. The number and importance of projects of multi-purpose development of natural resources are gradually increasing.

The development of territories of extreme natural conditions requires respective studies and well-grounded technical and economic solutions.[6]

Large and up-to-date power engineering, mining and agricultural enterprises which often acquire features of complexes are now being constructed in the new zones of development of resources in the Third World countries. Sometimes the development of a territory and its resources is more multiprolonged (for example, the Guianan zone in Venezuela and Aswan).

Considering the resource and geographical problems of the developing countries and especially their new areas, it is particularly important to study territorial combinations of natural resources, that important factor of advance of new industries in territories under development.

In literature one often comes across straight forecasts of possibilities of allround and speed industrialization of the developing countries on the basis of their rich and diverse natural resources. However, the complexity and contradiction of the processes of overcoming the economic and technical backwardness should be taken into consideration. The presence of a rich resource base does not necessarily guarantee the creation and rapid development of a diversified economy. Many factors should be considered, including internal and external financing possibilities; the extent and efficiency of state interference in the economic life; positive and negative aspects of a given country's position in the system of international division of labour and tendencies towards their change; the extent of knowledge and development of territory and natural resources; the presence of infrastructure; the availability of trained personnel, and many other aspects. The questions of a long-range plan relating to utilization of natural and labour resources should become an organic part of the national strategy of long-range socio-economic development which would clearly set priorities, tie up different projects with the resource-export base and the prospect of its development in the interests of progress of the developing countries (achieved, in particular, on the basis of regional cooperation, within the framework of integration associations).

Institute of Geography
USSR Academy of Sciences, Moscow

BIBLIOGRAPHY

Alayev, E. B., 1973, *Regionalnoye planirovaniye v razvivayushchikhsya stranakh*, Moskva.

Bassols Batalla, A., 1969, El subdesurrollo: un enfoque geoeconomico, *Problems del Desarrollo*, 2.

Gornung, M. B., Sdasyuk, G. V., Utkin, G. N., 1971, Geograficheskiye problemy razvivayushchikhsya stran, *Izv. AN SSSR, ser. geogr.*, 3.

Grunwald, J., Masgrove, Ph., 1970, *Natural resources in Latin American development*, Baltimore–London.

[6] Only 10 to 15% of the area of the developing countries have been surveyed and plotted on topographic maps of the 1 : 100,000 scale. The percentage of territory plotted on large-scale thematic maps is much lower. The cartographic and scientific-geographic base of complex research of natural conditions and resources, including those in the settled areas, is still to be established.

Lacoste, Y., 1965, *Géographie du sous-développement*, Paris.
Mashbits, Y. G., 1974, Osobennosti i problemy geografii prirodnykh resursov i khozyastva razvivayushchikhsya stran, *Vopr. Geogr.*, 95, Moskva.
Rozin, M. S., Vasilevsky, L. I., Volf, M. B., 1971, *Geografiya mirovogo khozyastwa*, Moskva.
The esconomic development of Latin America and its principal problems, 1950, United Nations, N.Y.
Waters, R. F., 1971, *Shifting cultivation in Latin America*, Rome.

DEVELOPING COUNTRIES IN THE THIRD POST-WAR DECADE

Bronisław Czyż

INTRODUCTORY NOTE

The world, and its many diversified parts, is the proper area of geographic studies. With the progress of specialization, a variety of criteria have been developed for the selection of research regions or problems. Developing countries are doubtless among more recent research fields in geography. Although it is arguable whether studies on the Third World should be regarded as a specific branch of geographic studies or merely a distinct area of scientific interest, the very existence of a distinct group of developing countries is unquestionable. Geographers have been contributing to studies on these countries for a long time now, though treatment of them as a separate research subject — as a result of interdisciplinary studies — is of quite recent date.

The countries of the Third World became a major world issue mainly, though not exlusively, because of their importance to the world economy. Pursued from this point of view, social and economic studies of Third World countries acquired a specific character, not related to their geographical situation on various continents, to their population size, or to particulars of their internal social and political organization.

The early stage of research, starting after the Second World War when the now current term "the Third World" was first popularized, was frequently marked by an unduly generalized approach to the problems under study. It was soon realized that the developing countries could not be viewed as a compact whole, as they are considerably different from each other in many respects. Though it may be admitted that these countries stand apart from the rest of the world in some respects, a closer study will reveal that within the group of developing countries (to use the other current term adopted for the countries of the Third World), there are as many economies as there are countries. It took some time before this opinion could be taken for granted, and the period that elapsed in between abounded in theoretical misconceptions and their misguided practical applications in the Third World, steming from these over-simplified approaches.

Inequality of development is quite a regular feature in world history; that is to say, countries have never developed at an equal pace, and mankind has never experienced a uniform living standard. Therefore it is not the inequality of social and economic development alone that made the problem of developing countries emerge as a world issue. It is new circumstances, and an unprecedented accumulation of obstacles hindering the economic development of the Third World, that account for the dramatic and precarious situation of to-day's divided world. The problem of unequal development was never as acute in the past

as it is now. In the broadly conceived geographic studies on the Third World, problems have been found to be more appealing than the countries themselves. Still problems of development are rooted in the countries themselves and this cannot be helped. In an ever-changing world it would be unrealistic to expect problems to be quickly classified and dealt with. The dynamics of social and economic changes are ever-increasing, and the opinion is occasionally ventured that the rate of various changes is so fast as to defy their correct definition. How different, for example, was the picture of the developing world during the U.N.-promoted First Development Decade from what it looked like at the close of the Second Decade!

The present paper attempts to survey some of the major elements of the social and economic development of the Third World, which became apparent in the early 1970's. These new phenomena, especially cumulative ones, are having a substantial effect on our previous conceptions of the Third World. Developmental processes occurring nowadays point to new opportunities for an ever-increasing number of unpredicted developments to take place. In consequence the number of possible development alternatives to be chosen from is ever multiplying. This statement, however, cannot be interpreted as a general rule, and the choice of alternative courses of action in the development process may prove, in many respects, to be very limited indeed.

The present age is characterized by great interest taken in the Third World, and the problems of the developing countries are seen as of vital importance for the future of the entire world. This situation poses some definite tasks for the student of geography who — to keep pace with recent developments — must closely follow emerging trends and ways of organizing life in particular areas, and among particular nations. Since his beginnings man has taken a strong interest in his surroundings. It is clear that he was not motivated by mere curiosity but also by a need to continuously bring up to date his knowledge of the world in which he lived. This is especially true of our time when — to steer clear of shortages and conflicts — mankind should increase the exchange of commodities and international co-operation.

1. WIDENING OF THE DEVELOPMENT GAP

Whatever view one takes of the world's division into more and less advanced parts, one thing immediately springs to mind. One of the principle reasons behind this state of affairs is the divergence between different nations in their productive capacity with respect to goods and services, calculated per inhabitant (Hartshorne 1960). Which factors have brought about the divergence in productive capacity observed today has not so far been elucidated in a totally convincing manner (*Obshchee* 1966). The long-term and complex process of development is most probably affected by both measurable regularities and mere chance. Such factors as geographical situation, area, climate, population size, and natural resources, viewed in historical perspective, all differ in their impact, depending on the historical period (*Politics and Change...* 1969). As long as approximately the same manufacturing techniques were used throughout the world, the divergence in living standards was not as marked as it is now. It was mainly related to the unequal distribution of income within a community. In the period of industrial revolution a new quality in the area of productivity appeared on a world scale. On the one hand traditional manufacturing techniques based on animated energy continued to persist in some areas but, parallel to these, new centres of production utilizing inorganic power embodied in raw

materials and machinery sprang up rapidly. Machines helped to multiply productive capacity and — another important consideration — they brought along with them a need for their continuous improvement. This brings us to another stage of development — the scientific and technological revolution. Countries which are still in their embryonic industrial stage find it extremely difficult to achieve the stage of advanced co-operation between science and technology. Beginning with the industrial stage, the economic gap between areas using traditional techniques and those using modern techniques has been constantly widening. The flow of information proved insufficient to offset the differences in modes of production. The literature on the subject supplies us with a store of examples proving that the development gap has not remained stable but has continued to widen. In trading simple artifacts for industrial production it was from the beginning very hard to balance exchange values and even to ensure equal rights to the two groups of producers in their mutual contacts. We have been repeatedly reminded that big economic and political powers have many ways of directly and indirectly manipulating their weaker partners; this implies the great responsibility of the former imperialist states for the modern drama of backwardness observed in many countries.

2. GROWTH OF ASPIRATIONS FOR DEVELOPMENT

It is highly probable that people forming communities have always harboured a desire to improve their situation in life. Within the framework of a rigid social structures, however, they stood little or no chance of satisfying that desire. For centuries the rate of change on a world scale was so slow that members of communities had practically no grounds for expecting any perceptible advancement even within the lifetime of one generation. People put their pride in maintaining or raising the economic position of their families within the framework of a community, the economic level of which was assumed constant. When elements of the capitalist system started penetrating the countries of the Third World, the predominant forms of government were various forms of feudal relationships, typical of the late stages of the tribal system. This was, however, feudalism of the descending type, incapable of inspiring economic progress (Polanyi 1971). This type of "oriental" feudalism, with which we are concerned in the present work, was more often than not a product of the disintegration of once centralized states headed by absolute rulers. As these states lost their resilience, representatives of local *élites* tended to usurp economic and social power, transforming the former state law, including the control of public order, into private laws and customs (Gerschenkron 1962). Due to overpopulation, the market price of land disappeared altogether in the most densely populated parts of Asia. Land became an economic advantage as well as a prestigious and political asset owned by the *élite*. With overpopulation and a low influx of capital and technology to the countries of the Third World (in the absence of sufficiently vigorous non-agricultural productive centres which would absorb the surplus rural population), the economy of backward countries was caught in the low-level equilibrium trap; in other words, it was falling further and futher behind the dynamic development of industrialized countries.

An important feature of the present situation in developing countries is the fact that they are surrounded by countries which have already attained a higher stage of economic development, and now demonstrate patterns of superior economic and social development. This so-called "demonstration effect", combined

with an outbreak of nationalist trends and feelings (the impact of which seems to have long been underestimated by the former colonial powers) created new motivations in the young states of the Third World, inevitably making them search for accelerated ways of achieving social and economic advancement. The world has never known such intense aspirations for development as those observed nowadays in dozens of countries.

The demonstration effect is understood to imply both individual and collective efforts in the countries of the Third World, directed towards acquiring those material attributes possessed by the affluent, who demonstrate benefits to be derived from their use. The scope of the demonstration effect is not precisely understood. If we exclude from our considerations the well-known extravagances of the parasitic classes, it will remain to be seen whether the effect has an affect on a dual-development community in a negative or a positive way (*Dualism*... 1973). Or perhaps its action has a mixed impact?

Does the positivie pattern of possesing more beautiful things with higher material value have a favourable effect on development? Does it help by releasing energy to achieve goals which others can be seen to have reached? This question, which is here only posed, will show how helpful geographic studies may be in tracing patterns of human behaviour in everyday life, varying with social environment and standard of living (*Sotsyalno*... 1966). How various are the goals of inhabitants of American megalopolises and the opportunities to atain them, and how different from these are the goals and oportunities of members of farming and nomadic tribes in the Sudan!

Even if we allow for the diversity of aims among communities aspiring to economic and social development (consequent upon their differences in cultural background and ways of management), we will still see that a striking characteristic of the present great expectations shared by entire communities is their desire for rapid improvement of their conditions of existence (Galbraith 1971). Hardly anyone wishes to leave improvements in life for future generations to bring about. The present generation desires to participate in progress. A prerequisite to this is the possibility of changing one's inherited social status during one's lifetime. The example of socialist countries where a rapid rate of social and economic development is combined with opening broad access to goods and values formerly reserved for the *élite*, acts as a stimulus inspiring these processes elsewhere.

The Third World, generally speaking, is characterized by intense aspirations for social and economic development occurring concomitantly with the attainment of political independence; the easy access of these countries to examples of achievements secured by developed countries; and, not infrequently, their own successes, e.g. the exploitation of valuable natural resources. These features are contrasted with a low ability for capital formation and — more often than not — an unfavourable social situation (Tyulpanov 1969). As is well-known, social modifications are achieved more slowly than technological progress. In many developing countries their former social structures were broken under the pressure of innovations advancing simultaneously from many directions. The market economy which penetrated from the outside shattered the closed circle of the natural economy. National interests outgrew the local isolationism of historic regions. And, finally, growing state control broke — or at least tended to break — the traditional tribal system of the post-feudal communities. Traditional structures continue to be modified and transformed (Paauw and Fei 1974).

The development aspirations of the Third World are in most cases not com-

patible with their capacity for action. This situation has given rise to multifarious activities aimed at discovering, under local conditions, possibilities for accelerated development (Galbraith 1968). In the divided world of today the possible steps and measures may range from mobilization of national feelings and appeals to good citizenship, social reforms, adoption of complicated and not always equally efficient economic measures, to various attempts at political actions related to the social situation of a developing country (Klatt 1971).

3. ACCUMULATION OF DIFFICULTIES HINDERING DEVELOPMENT

The early 1970's were marked by an unparalleled accumulation of difficulties facing the developing countries. Apart from a host of problems such as pluralism in development, regional differentiation, differentiated systems of external connections and other difficulties, other developments cropped up. These developments, born on the international economic and political scene, added a tragic aspect to the problems already facing the Third World. This grievous situation resulted from a number of economic "crises" which took place almost at the same time.

A very high natural growth of population in the Third World were the subject of a large number of studies, which could be grouped under one common heading "Population and Resources". Researchers anxiously considered whether the available resources would feed the steadily increasing population. Although this major question is far from being settled (if it can be settled at all), the fact is that the world population is increasing and that this gives rise to many difficulties.

Traditional agriculture cannot satisfy the increasing demand and many indispensable conditions are lacking to organize agricultural production along modern lines (Brown 1970). This was the first time that the food shortage had come to be noticed as an impending danger on a world scale. It is remarkable that the situation could alter without a moment's warning and that these alterations would not be predicted even within a short span of time. In the middle of the 1960's we were warned that a famine disaster would kill dozens of millions of people in the poorest section of the world. But a solution was almost immediately detected by FAO experts. This was the "green revolution", a new stage of economic development which was expected to multiply the world's food resources. Tens of millions of farmers, deprived of their traditional occupation as a result of the modernization of agriculture, seemed to pose a major problem then. But the years 1971, 1972 and 1973 brought a serious failure of crops, and the upheaval in the international raw-material and currency market deprived the "green revolution" of the necessary backing of assets, mineral fertilizers and power. On the other hand, the modernization of agricultural production was nowhere preceded by proper social and organizational preparations.

Millions of people from overcrowded rural areas were forced to move to urban centres. The Third World is characterized by dynamic urbanization, though the degree of this continues to be low. It should be clearly understood that urbanization in the Third World differs from the hitherto known patterns of urban development, and the immediate future is likely to pose many serious problems in this respect. A lack of autonomous economic development, apart from a few sectors invaded by international industrial corporations, has caused the Third World's urban development to be heavily burdened by the monster of slums. In the opinion of urban planners numerous towns of the Third World became such unhealthy and congested centres of population that it

would be advisable to give up any idea of their redevelopment. A decision based solely on health considerations would be to demolish them and start building anew (Maddison 1970). The Third World, however, cannot afford such a fundamental modernization of its urban areas.

Housing shortages occur in even the most advanced countries. New housing projects are going up at too slow a rate. Poorly appointed old housing is ageing; part of the population is destined to continue to occupy it for long years to come (Leontief 1966). Estimating the urbanization prospects of the Third World over the coming decades, it seems dubious — considering increasing labour difficulties — whether thousands of new towns could be constructed. It should rather be expected that the distressing slums will continue growing. A considerable number of rural emigrants will shelter in dwellings built by themselves of scrap material. If we accept 7 per cent average "regular" growth of "temporary quarters" per annum, the slum population of the Third World will double during the next ten years. This estimate is further corroborated by the fact that the population of many large cities, especially Asiatic ones, is accustomed to double over a decade. To expect that this population explosion will be paralleled by an equally rapid growth of industry in these towns, would be too much to hope for (Friedman 1969), when the growth of municipal infrastructure fails even to comply with the rate of population increase, as indicated by examples coming from developing countries.

The vast needs of the growing population with regards to subsistence has stimulated discussions on development models and patterns to be adopted by the Third World (Ranis and Fei 1964). The question has emerged whether the developing countries should adopt an urban and industrialized pattern as their goal or whether they should strive to develop into a raw-material base and agricultural area. With very complicated and diverse situations in these countries, differing from region to region, we can hardly reach a conclusive statement as to which line of development they should follow. In fact their serious situations call for progress in every sphere of life, from education and health care, to manufacturing.

Meanwhile, in the early 1970's, new hidrances cropped up to supplement those which had already been experienced by these countries on their way to development. Namely, these countries were affected by a rapid rise in the price of foodstuffs and energy raw materials, and disturbances on the world currency market. The poorest countries of the group were struck the heaviest blow. With shrinking provisions of foodstuffs and increasing prices, more and more countries had to resort to substantial imports to supplement their food supplies. Food shortages were experienced by most Asian and African countries, and the number of countries requiring free food provisions was on the increase. Were the poorest countries forced to draw on their scanty financial reserves for food purchases, they would have had to wind up their programmes of industrialization and welfare programmes aimed to ease congested populations. Increases in the price of petroleum made it necessary to revise many economic programmes. Regions which located their hopes for self-sufficiency in modernizing their rural economy found it increasingly difficult to provide it with power, irrigation (in cases where mechanical pumping was used), and mineral fertilizers. Despite what has been said, it seems that in the long run there is no surer way of meeting the Third World's demand for food products than by increasing their agricultural production by every means available. In those overpopulated rural-economy areas where no long-term investments are possible due to inadequate capital and economic organization, the situation may immediately be

improved — geographic conditions permitting — with intensification of livestock breeding. In the Third World the coming years should feature greater mobilization of efforts to assist improvements in agriculture than was the case hitherto.

4. DIVERSIFICATION OF THE THIRD WORLD COUNTRIES

The Third World countries have never been uniform in their level of development, but modern developments have even helped to intensify their diversification, bringing into relief their contrasting features. An outward manifestation of this phenomenon is the present recurring use of the terms "Third World" and "Fourth World". Ambiguous as the terms are, they serve to indicate the dichotomy of the developing group of countries, clearly differing in their economic situation. The dividing line is between the countries richly endowed with precious natural resources, such as petroleum, copper, bauxites, tin, uranium, phosphates, etc., easily exchangeable for convertible currency, and those which have no such natural resources. The later have poor prospects for self-sustained economic take-off. This so-called Fourth group consists of almost a hundred countries whose economic situation is very bad indeed. Assuming that the world communities are willing to assist them, this group of countries will be ever more dependent on their donors for relief. Any improvement in their situation will spring solely from a broad solution which at present we are unable to envisage.

The national income per head index may serve as another example to illustrate the yawning gap between the two groups of developing countries. While in the 1950's the average per capita income ratio was estimated at 1 : 5, two decades later, in the early 1970's, the corresponding ratio was 1 : 200. This ratio is obtained by taking the extreme per capita income for the poorest countries (e.g., Ethiopia, Bangla Desh, Burundi) which is below the 100-dollar level and that of the oil sheikdoms (Arab Emirate of Abu Dhabi) whose income exceed 20,000 dollars per capita. Even if we exclude these extreme cases, it is quite clear that the gap between these two sections of the developing countries continues to grow.

The poorer countries should take into account that terms of trade and foreign trade deficits may worsen still further. A further decline in the national per capita income is an imminent danger. In 1970–1973, twenty countries, totalling 1.5 billion inhabitants, experienced a decrease in their income per capita indices. The countries with their average income per capita index falling below the 200 dollar mark will attain no more than 2 per cent increase in their national product in 1975–1980 and this is less than their population growth.

Apart from their diversified financial situation, there are many other factors having a decisive bearing on their economic situations. In addition to natural conditions (of major importance in agricultural production), population numbers and density, we have diversified patterns and levels of inner social development and institutional and organizational services (Sherman 1972). The nationalization of enterprises and properties owned by non-nationals, proceeding in the developing countries, is differing in intensity from country to country. In parallel to this trend in certain countries there is a notable tendency to increase the scope of foreign investments. Although this helps to enhance an overall picture of spectacular economic activity, it always accounts for a partial escape of the national income abroad and in consequence the long-term pace of economic growth of these countries is slowed down even more. Increasing eco-

nomic needs are responsible for trade activization. Within the entire group of the developing countries, the early 1970's brought an increase in the volume of exported raw materials, accompanied by price fluctuations. The situation of non-exporting countries has deteriorated, compared to the situation of the exporting group, especially as the increase in the prices of industrial commodities was almost parallel to the remarkable increase in prices of foodstuffs.

Attempts to fix "tie-in prices" for raw materials and industrial commodities, as postulated by representatives of the developing countries have so far not been so successful since trading partners' interests were not mutually compatible. As a result, the Third World countries have been observed to launch a campaign against the foundations of the present world trade system.

It is likely that during the present decade prices of raw materials — despite possible fluctuations — will not revert to their level in the 1960's. This is also inferred from an increase in the costs of agricultural production, and especially cereal production, consequent upon an increase in the price of fertilizers and engine-fuel, the tendency among producers of raw materials to increase their gains, triggered off by general changes in price relations on the raw materials market, also comes into play here. There is a notable tendency towards an equation of supply and demand on the raw material market (until recently supply was usually slightly higher than demand). This tendency is likely to to help to upgrade prices. The world trade market will feature, for some time at least, downward and upward price fluctuations varying with economic conditions, and these are related to the formation of new financial dealings characteristic of the present decade.

It may happen that underdeveloped countries, harbouring many well-justified grudge against the industrialized countries, will occasionally tend to extend that reclaiming attitude of theirs to all the developed countries and blame them for the deficiencies and shortcomings of their economies, even those resulting from their inadequate inner mobilization and organization. This plane in the mutual relations between the "two worlds" may form another gulf dividing the world into conflicting areas.

Considering the world situation as it looked in 1972–1975, with critical developments in India, Pakistan, Bangla Desh, Indonesia, Ethiopia, Malaysia, the Philippines, and countries of the African Sahel, food shortages experienced by the Third World countries could in principle be made up by the support of many forms of international assistance (worth some 20 billion dollars over the period 1974/1975). It has been a major problem to ensure an efficient distribution of imported foodstuffs and their provision to all those standing in need of help. As experience has shown, governmental aid failed to reach the poorest sections of the population in remote areas due to the inefficiency of some sections of the aid-handling bodies (red tape, corruption, underdeveloped systems of communication, insufficient control).

There can be no better way of illustrating the diversification of the Third World countries than by pointing to those Asian countries which have grown to become the world's financial powers and those which are hardly discernible on the international economic market. The latter include such a big country as India. In general, Asia accounts for approximately 18% of the world's total area, and 60% of its population and produces slightly over 10% of the world's income. Some 80% of the continent's population is dependent for its living on agriculture, burdened with such relics of feudalism as the sharecropping system, ignorance, malnutrition, usury, disease, and individual insecurity. These are accompanied by "a population explosion". As the age group under 20 is increas-

ing in number, and at present over half of the Asia population is under 20 in age, the birth rate continues to be high. With incomes hardly above 100 dollars per capita most people live at subsistence level. In India approximately 70% of the population is illiterate. No literacy campaigns are contemplated for adults. But the fact that, due to financial and organizational shortages, the education system will not cover the entire school-age population, has a tragic ring to it in the longer prospective.

The Third World countries differ so much in their economic situation that the very term "Third World" becomes misleading, as a common denomination for them. It is no longer possible to attempt any comprehensive economic study of the entire area without a preliminary delineation of some regions having certain principal characteristics in common (Galbraith 1968). No study of the Third World can put side by side Bangla Desh and Saudi Arabia; and the student of development problems will find little in common between South America and Black Africa. It seems that in the present decade the relationships between the area traditionally known as the Third World and the economically advanced part of the world are marked, more than before, by political co-operation. The present system of outward connections and dependencies is changing in character, and further new configurations are possible. This may help to create some real opportunities for upgrading the partnership principle in economic exchange, and decreasing the position of international monopolies now dominating the economy. One is led to believe that in the long run the disintegration of a block formed by backward, formerly colonial territories, and the development of many regional and international centres engaged in various forms of economic activities, will bring about the expansion of the world market. It will result in an increase in trade turnover and will, finally, make for real social and economic progress in the developing countries.

Fast economic progress achieved by the oil producing countries (population of 260 millions) upon an increase in the price of energy materials surpassed even the most risky estimates of development forecasts. These achievements cannot fail to induce the economies of at least the poorest countries, bereft — for all we know — of natural resources.

Cooperation and gradual, even slow, progress has more promise than the previous stagnation of the entire block of former colonial territories at variance with the rest of the world. Far-reaching transformation of the world economic system have started, the next stage in the evolution of the developing countries will undoubtedly occur under conditions hard to conceive as they will be a product of many concurrent and interdependent processes now in action.

5. THE POSSIBILITY OF LEAVING THE THIRD WORLD CATEGORY

It is only logical to expect that development efforts will bring the developing countries to the level where it will be possible for at least some of them to leave the underdeveloped group and advance to the group capable of self-sustained growth. This process is, however, very complicated and the course of events is, understandably enough, hard to predict. In our observations we regularly follow production growth rather than combined social and economic development.

These radical changes in the economic situation of the raw material and primarily oil-exporting countries are a new phenomenon within the Third World (Mosley 1973). The oil-exporting group of seven countries obtained an almost 80 billion dollar revenue from oil proceeds in 1974, where six years earlier the

oil proceeds of the group had amounted to $ 5.5 billion. Whatever level of oil prices and whatever their fluctuations during the coming decade, these countries will continue to derive large incomes amounting to hundreds of billions of dollars. How these revenues are going to be recycled on the world fiscal market remains to be seen. The world has so far never known such large-scale recycling operations. The oil countries, which were considered to be underdeveloped only a few years ago, now possess finacial resources often exceeding their current possibilities for spending. Large oil-exporting countries underwent surprising transformations which made them into financial, and indirectly also political, powers, assisting the World Bank and, through their financial aid, deciding on the future of many poor countries. As increased oil prices particularly hit the international balances of payment of the poorest countries, the OPEC countries — in the name of Third World solidarity — offered them their assistance. According to the Algiers declaration of February 1975, the OPEC countries lent their aid, amounting to $ 14.5 billion, to the other developing countries; this surpasses the total value of assistance from all other sources. Thanks to its oil industry, Iran attained an economic potential comparable, say, to that of India, a great Asiatic country possessing an immense area and population number (Looney 1974). In 1973 Iran's foreign exchange proceeds amounted to $ 5 billion, and in 1974 they increased sharply to $ 20 billion, $ 7 billion of which were designated for loans to 30 developing countries. Saudi Arabia, another big oil exporter, derived only slightly less oil revenues over the period, compared with Iran; it is estimated to be the world's third largest holder of free exchange reserves.

Apart from the OPEC countries, there are some countries which were, until recently, unanimously lumped with others as the Third World countries, but their inclusion in that category seems no longer justifiable. To provide examples, one may name Brazil, Hong Kong, Singapore, or Gabon. Encumbered as they are with many shortages and deficiencies, these countries cannot be placed within the same group as Mali, Sudan or Chad.

The ever increasing part played by natural resources in improving the economic situation of the Third World has been illustrated above by the example of oil. However, oil, that "raw material of the decade", is but one of raw mineral and agricultural products of importance to the economy of the developing countries (Stephens 1973). The economic questions of raw material extraction and exporting have sometimes involved other local and international issues, such as, say, a complex knot of political interests and concerns within the area of the Persian Gulf (Burrell 1974). At present oil proceeds are such a tempting source of income that many non-oil countries spare no expense in prospecting for oil deposits on their territories. The location of oil deposits brings the promise of resources they stand so much in need of for financing their interventionist policies aimed at economic uplift (Fenelon 1973). It is well known that, apart from financial considerations, the Third World countries differ in their capacity to invest because, among other reasons, of their insufficient or underdeveloped facilities and equipment.

In their present circumstances the developing countries place their hopes for economic and social improvement on industrial development rather than on modernization of the agricultural sector of the economy, which is proceeding at a much slower pace. In consequence there is a strong preference for investing in industry (Shorter 1966). This preference for industrial over agricultural investment is particularly clearly observed in countries possessing foreign currency reserves and comparatively large resources of manpower (e.g., countries of

the Near East and South America). This trend of development is not, however, devoid of difficulties.

In backward countries a drive towards industrialization often involves overpayment or excessive expenditure of effort and resources. Although sectional investments are capable to some extent, of relieving economies from inner strains, they provide no grounds for self-sustained industrial expansion. Expansionist states going through the stage of advanced capitalism introduce, through market competition, elements of disturbance and suppression; possessing a dominant position on the market, they tend to choke the feeble production of young industries.

Raw-material producers strive to break their dependence on industrialized countries for imports of industrial commodities, and industrial powers desire not to rely on raw-material producers for raw materials. In absolute dimensions these tendencies are quite absurd, and impossible to achieve. Endeavours to correct the terms of international exchange are quite common and involve a waste of funds and efforts which could have been more rationally used for the mutual benefit of the parties involved. Considering "economies of scale" involved in mass-production related to market size and the ability of markets to absorb products, the developing countries set their hopes for the improvement of their bargaining position on regional economic planning involving large supra-national areas. But when one considers, say, the example of the oil countries in the Middle East (which strongly emphasize their wish for co-operation), one can see how difficult it is, on many accounts, to put into practice the idea of an economic supra-national union. Since, however, world trade is always on the increase despite all the difficulties, and the Third World countries continue to play their part in world trade, it is justifiable to expect that at least some developing countries will succeed in overstepping the development treshold during the next decade, while the situation of other countries of the Third World group may even deteriorate.

6. ECONOMIC CO-OPERATION AMONG THE THIRD WORLD COUNTRIES

Although it would be far from precise to consider the end of the Second World War to be the turning-point in social and economic evolution in all the countries of the Third World, it should be admitted that the last two decades have been marked by the appearance of at least three features characteristic of the present situation of the developing countries. First, the countries belonging to this group have awoken to an understanding of the idea that their situations are comparable. Second, the advancement in social and economic evolution, varying from country to country, has formed preliminary conditions for the emergence of co-operative activities among these countries. Third, the international economic situation has revealed a need for the Third World states to co-operate with each other, within the framework of larger, and therefore stronger economic units.

On numerous occasions at international events, meetings, conferences and in commercial contracts, the developing countries are manifesting their newly acquired awareness of the fact that they have much in common as regards their economic situation. These are well-known facts and there is no need to dwell upon them any longer in this paper.

Direct co-operation between interested countries of the Third World is a new development of great import. Some countries may have trained specialists in some fields of activity and these may be sent to friendly countries. India and

Egypt immediately suggest themselves as examples of co-operating countries in this respect. Allso, it may be remembered, some oil-producing countries in the Middle East have consented to finance the construction of an oil refinery and petrochemical works in India and they have thus secured long-term contracts for large exports of crude oil to India. Trade in products of the textile, food and chemical industries is expanding within the Third World. Although this commercial exchange is so far meagre, this is a new trend, likely to expand in coming years. Furthermore, technical and organizational assistance extended by the socialist countries, helps to break the monopoly of the Western states in technical aid and credits.

When at least some of the developing countries succeed in accumulating foreign trade surpluses, they will have at their disposal the means of co-ordinating activities aimed at alleviating food shortages. This field of activity is directly related to the geographical environment. The Third World still has large reserves of potentially arable land which is at present neither cultivated nor properly used. The largest land reserves are to be found in South America, Southeast Asia and Africa. Modern cultivation techniques and combined international efforts are likely to bring about progress in this field despite temperature and precipitation patterns which are, according to present concepts, unfavourable for land cultivation. The improved management of water resources, irrigation, draining and desalination of impoverished areas will also disclose new and large productivity reserves in agriculture. It is quite obvious that further economic improvements in the Third World will give rise to extensive modifications of the tropical zone, particularly in West Asia where large parts of what are at present deserts, may be placed under cultivation. Mesopotamia is potentially a large oasis bordered by the Middle Eastern deserts. The area under cultivation has hardly changed during this millennium; it is practically limited to the river valleys and is in fact even smaller than the cultivated area of the ancient period. It may also be supposed that soils are now less fertile than in those remote times. North African lands, traditional agricultural provinces of the ancient Romans, have also deteriorated. True, the steppes have been ploughed over but little or nothing more has been done to conserve soils which have been impoverished over the centuries, or have soil contents making them unsuitable for agricultural use. Modern methods of water management will also transform some designated parts of present desert in Iran into flourishing agricultural areas.

As experiences gathered in the Third World countries show, development policies restricted to increasing relative productivities do not necessarily result in a nation's economic success. Efforts directed at the modernization of the country's economic structure are clearly conditioned by social progress. Endeavours towards broad transformations of the social system often give rise to acute clashes or even civil wars (Hunter 1969). A socially just state policy has to ensure a possibly uniform distribution of the national income. If that condition is not fulfilled, serious internal disturbances may be expected, as testified by examples from the Philippines, Pakistan or Ethiopia. The disparities between 130 developing countries in their internal situations do not invalidate trade exchanges between these countries and the opportunities for trade expansion. In their early stages commercial contacts take the form of contracts stipulating export preferences and the formation of payment unions. The first steps in this direction have already been taken.

With an ever-growing network of interdependencies in the world economy, an isolated and economically weak country has little or often no chance what-

soever to deal with unfavourable circumstances, such as natural calamities, food shortages, deficiencies in energy and technology. A small country finding itself in a predicament can nowadays turn for help to its partners belonging to the same large strong economic group. It would be advantageous if free trade exchange, not bound by other non-economic considerations, could avert difficult situations threatening the world with local and international conflicts. It may be expected that, with the formation of economic-blocks, world trade will reach a stage of open and mutually advantageous exchange of commodities.

CONCLUSIONS

As a highly differentiated complex of countries, the Third World forms an extremely interesting area of geographic studies. Complicated patterns of internal relations observed in this area are rapidly modified by new developments. According to demographic estimates, the world population (mainly the population of the developing countries) will continue to increase and is likely to exceed the 10 billion mark. This implies further multiplications of complex social and economic problems to be dealt with by the growing population over the coming decades. Development processes in the Third World contain a great number of unknown quantities, greatly surpassing in number those in the developed countries. They are also more strongly affected by various supra-economic factors than is the case with the economically advanced countries. It should also be noticed that some major variable factors greatly affecting development processes in the Third World countries (for instance, social and political factors governing their international situation) cannot even be envisaged; they can neither be anticipated nor estimated by quantitative methods. This is an extremely important feature of the present situation of the developing countries.

Should it be inferred from the above that development forecasting for the Third World is hardly realistic? Taking all in all, forecasting seems to be completely justified, on the condition that it is directed at approximate alternative developments. Competent authorities responsible for decision making are aided in these processes by forecasts featuring, as it were, a general and incomplete picture of future developments depending on which project variant or forecast variant is adopted. It should be admitted that this approach is more theoretical than practical. Conditions of development met with in the Third World, are such that it is hardly practical to expect that "development variants" can be freely manipulated (Meier 1971).

The above remark is futher corroborated, as well as illustrated, by the fact that no complete development programme for the Third World has so far been prepared by world scientists. Two studies devoted to world economic development have recently received world-wide publicity. The first of these, entitled *Limits to Growth*, was prepared in 1972 by a team of research workers on the staff of the Massachussets Institute of Technology. The report brought a warning that, unless the rate of the world's economic development is slowed down, the world's raw material reserves will run out. However, after the lapse of a few years since its publication, it may be said that this warning has brought no practical results and moreover it has been found to contain many weak points in its construction, and as a result the publication has failed to be approved as a binding theory.

The other study was *Mankind at the Turning Point* (1974), mainly known from its numerous reviews and surveys as the complete materials were too

extensive to appear in book form. It laid even greated emphasis on the world's differentiation into many areas but — perhaps inadvertently — supported the opinion that many factors of fundamental importance for the nation's development defy "scientific examination". In this respect a set of 100,000 equations for development variants, in ten separate world areas, proved of little help. Like the former, the latter work was approved as one more scientific approach at possible development directions, but not as a forecast based on sufficient documentary evidence. Despite the use of modern methods and instruments, the principal thesis of the study was no revelation. It is pretty axiomatic to state that the world is highly differentiated and divided into the poor and the rich parts, or to admit that the quicker the poor countries are helped the better for the world as a whole. The work once again supported the thesis that many phenomena related to development and many consequences of development processes cannot be either estimated or predicted since they defy the law of the market and escape direct quantitative analysis. According to Beckerman (1975), the statement that the second report of the so-called Club of Rome is less deterministic than the first one, and that it gives a more precise description of the consequences of various variants or development policy variants is not valid in the light of advances achieved in this research field.

Nowadays geography does not hold exclusive rights for the traditional study of remote countries and continents. The actual picture of the world's countries is composed of many sections studied by specialists in many scientific areas. Geographic studies can, however, bring profitable results if they are pursued in conjunction with other scientific disciplines. Co-operation with other branches of science opens new research fields to students of geography. A synthesis of social and economic spatial configurations and development situations occurring in groups of countries or regions is undoubtedly a scientific area of great practical interest. The complexity of development processes and the consequent difficulties to be faced by the developing countries, far from discouraging interest in these studies, help to increase the general demand for studies of these countries. In most countries geographic studies are pursued to meet the requirement for information on the Third World area.

Institute of Geography and Spatial Organization
Polish Academy of Sciences, Warsaw

BIBLIOGRAPHY

Beckerman, W., 1975, *Requisitoire contre le Club de Rome*, L'Expansion, Mars.

Brown, L. R., 1970, *Seeds of Change: The Green Revolution and Development in the 1970's*, London.

Burrell, R. M., 1974, Iranian Foreign Policy during the Last Decade, *Asian Affairs*, Feb.

Dualism and Rural Development in East Africa, 1973, Copenhagen.

Fenelon, K. G., 1973, *The United Arab Emirates. An Economic and Social Survey*, London.

Friedman, J., 1969, The Role of Cities in National Development, *Amer. Behav. Sci.*

Galbraith, J. K., 1968, *Three Models of Developing Nations*, Kuwait.

Galbraith, J. K., 1971, *The Causes of Poverty: A Classification*, Boston.

Gerschenkron, A., 1962, *Economic Backwardness in Historical Perspective*, Cambridge.

Hartshorne, R., 1960, *Geography and Economic Development*, Chicago.
Hunter, G., 1969, *Modernizing Peasants Societies. A Comparative Study in Asia and Africa*, London.
Klatt, W., 1971, Models of Asian Development, *Asian Affairs*, Oct.
Leontief, W., 1966, *Essays in Economics: Theories and Theorizing*, New York.
Looney, R. E., 1974, *The Economic Development of Iran. A Recent Survey with Projections to 1981*, New York.
Maddison, A., 1970, *Economic Progress and Policy in Developing Countries*, London.
Meier, G. M., 1971, *Leading Issues in Economic Development. Studies in International Poverty*, Oxford.
Mosley, L., 1973, *Power Play: The Tumultuous World of Middle East Oil 1890–1973*, London.
Obshchee i osobennoye v istoricheskim razvitii stran vostoka, 1966, Moskva.
Paauw, D. S. and Fei, J. C. H., 1974, *The Transition in Open Dualistic Economies. Theory and South-East Asian Experience*, New Haven.
Polanyi, K., 1971, *Primitive Feudalism and the Feudalism of Decay*, New York.
Politics and Change in Developing Countries: Studies in the Theory and Practice of Development, 1969, Cambridge.
Ranis, G. and Fei, J. C. H., 1964, *Development of the Labor Surplus Economy: Theory and Policy*, Homewood.
Sherman, R., 1972, Theories of Economic Growth and Development. Methodology and Content, *Econ. Devel. Cult. Change*, Oct.
Shorter, F. C., 1966, The Application of Development Hypothesis in Middle Eastern Studies, *Econ. Devel. Cult. Change*, April.
Sotsyalno-ekonomicheskiye posledstviya agrarnykh reform i sotsyalnaya struktura v razvivayushchykhsya stranakh Azii i Afryki, 1966, Moskva.
Stephens, R., 1973, *The Arab New Frontier*, London.
Tyulpanov, S. I., 1969, *Ocherki politicheskoi ekonomii*, Moskva.

GEOGRAPHIA POLONICA 35, 1977

THE SPATIAL STRUCTURE OF THE DEVELOPING ECONOMY AND SOME GENERAL TRENDS OF ITS DEVELOPMENT

GALINA V. SDASYUK

The structure of any system, including an economic system, consists of elements — which are the basic units of the system — and the links between them. The basic elements of a territorial-economic structure are the spatial concentrations of economic activity (regions, nodes, centres) with many-sided production-territorial and socio-economic linkages operating between them.

The analysis of the territorial-economic structure may involve geographical objects varying in scale, i.e. countries, economic regions varying in types and scale, separate branches of the economy, etc. Economic regions, nodes and centres which are regarded as elements of the spatial structure of the national economy, would in turn constitute systems at a different hierarchical level; systems of agricultural and industrial regions, regional urban systems, cities as systems within systems of cities, etc.

An analysis of the spatial structure of the economy (which has become the central concept of modern economic geography) is especially important for the developing countries, undergoing a rapid process of change in the spatial structure of their economies in order to overcome its colonial nature.

In the former colonies and dependent countries, the sectoral and socio-economic structure that has taken shape by the time of independence has a number of specific features. This makes it possible to speak of their economies as being of a colonial type. Similarly, their spatial structure may be described as being of a colonial type. Their general development has been determined by the fact that for a long time the sectoral and territorial structure of their economies had been taking shape not so much on the basis of the immanent laws of development and of an intra-state geographic division of labour, as in the process of an unequal international division of labour steered to suit the interests of the metropolitan countries. A colonial-type economy is noted for the incomplete production cycle; that is to say, for an almost total absence of heavy industry and of many key consumer-goods industries. The demand for these goods was largely met by imports from the metropolitan countries, so long distances sundered the single cycle of economic production. This situation was supported and preserved by the political domination of the colonial powers, and served as a material basis for the economic exploitation of the colonies, keeping them as a "world village".

The incompleteness of the production cycle, the overall effect of an unequal international division of labour, and the depressed character of the processes of the internal geographical division of labour determined the main features of the colonial-type territorial-economic structure and the special features of the economic regions which were being formed there. In the industrially advanced

countries the main features of the spatial structure are connected with the location of industry and this plays a system-forming role. In the former colonial and dependent countries, the economy is at a much lower level of development, being essentially agrarian, while modern industry is in its cradle. Therefore, the productive forces and the population gravitate to the traditional agricultural regions. The emerging isolated mining centres, which were usually owned by Western monopolies, directly served the world capitalist market (Rozin 1962), forming an "exogeneous" economy (Rościszewski 1974); alien bodies (Alayev 1973) in the economic organism of the colonial and dependent countries. The plantation regions were also in essence an alien formation. Thus, "economic fragmentation", extremely uneven development, and disintegration are salient features of the colonial-type economy.

A striking manifestation of this interdependent development was a hypertrophied growth of one or more seaports which focussed the division of labour between the colony and the metropolitan country and were citadels of the latter's economic and political domination. The main transport-economic arteries, oriented to without, branched off from these centres. The territories which gravitated to these chnnels and were drained by them were involved in fairly intensive market relations and were marked by a relatively high level of economic development. The hypertrophied growth of one or a few seaports in the developing countries originated in the colonial period, when these seaports were the centres via which the countries were involved in an unequal international division of labour. At the same time, most of the productive forces, which had taken centuries to form in these countries of ancient agricultural civilization, were located in the regions where the traditionally basic branch of their economies was predominant. Its extreme dependence on fertile alluvial soils and irrigation predetermined the historical gravitation of the main centres of agricultural production and population (kernels for the formation of many nations) to river deltas and valleys.

Natural boundaries play a very important role in a society which has poorly developed productive forces and a weak technological base. Agricultural colonization bypassed territories of rugged terrain and comparatively poor agricultural resources. Small national groups and tribes were usually made to settle on such territories. It may often be observed that natural regions, especially those with clear-cut boundaries, coincided with historical-geographical regions. Vast inland territories in the developing countries had usually been semi-isolated; they were dominated by lower subsistence and semi-subsistence economies with their relatively closed cycles of production. The co-existence of tenuously connected production-territorial spheres in different structures determined the conglomerative nature of the developing economy's spatial structure. Accordingly, the processes of regionalization developed unevenly; they embraced only a fraction of a country's territory and widely differed in the stages of development attained. The production-territorial cycle was incomplete even in more developed economic regions which gravitated to the major seaports. Specialization of those economic branches in which the metropolitan countries were interested prevailed, while inter-regional production-territorial consolidation was lagging behind. Import and export-oriented linkages prevailed over intra-regional and inter-regional ones.

Thus the early stage of region formation and a general production-territorial disintegration characteristic of the developing countries are largely explained by weak production links between urban industries and agriculture owing to the general economic backwardness, the low level of accumulation in the coun-

tryside, multistructural nature of the economy, and the preservation of a more or less closed rural communities in several countries. The principal production elements in backward agriculture (primitive implements draught by cattle as the main driving force, etc.) are reproduced mainly in the identical system of the agricultural production cycle. The cities of the Third World have a weak industrial base. They are marked by a prevalence of non-productive functions (*The city* 1969) and mass unemployment. This accounts for the inadequate operation of the mechanism of extension of industrialization and up-to-date farming methods from large cities through a system of towns and market centres to rural areas. Thus, urban centres and the transport network, which constitute "a skeleton, ... a framework that shapes a territory and gives it a specific configuration' (Baranskii 1956) and which determine the macropatterns of developing economies' spatial structure are at the same time operating as a relatively closed system.

The diversity of structures in separate parts of the Third World countries accounts for the drastic regional disparities of their development which differ both quantitatively (e.g., in the level of *per capita* incomes) and qualitatively (i.e. belong to different historical periods). The long-range objective involving the self-sustained growth of the developing countries, the overcoming of mass poverty and the ensuring of self-sufficiency requires a rapid acceleration of the economic growth rate and a qualitative change in their development. This is only possible if all sectors of the countries' multistructural economies and all populated areas are involved in the general process of economic development and if the natural, labour and economic resources are used rationally and comprehensively in all regions, thereby setting up a single economic organism.

Some Western economists advocate a conception (which seems debatable) according to which the economic development of the Third World countries must be based on the established international division of labour, which presupposes the preservation of the colonial sectoral structure of their economies. It can hardly be conceded that "in the initial stages of the economic growth of those (developing — G.S.) countries, the regional problems are relatively less important' and that "if a developing country is preparing a long-run programme of economic growth, the solution of regional problems should be planned in the final rather than the intial stages of the implementation of this programme" (*Criteria for...* 1967, p. 100). This approach means, to all intents and purposes, a desre to preserve the trends underlying the formation of the territorial-economic structure, which are typical of the colonial type of development and which intensify regional disparities and disintegration. This is objectively at variance with the interests of the national development of the Third World countries. Several objective factors are responsible for the urgency of the regional development problems in the developing countries.

The economic progress of the developing countries involves, to a great extent, the economic exploitation of backward territories with rich natural endowment — for example, the Amazon basin in Brazil, the Guaiana region in Venezuela, and the Sahara in Africa. In India, the mineral and forest resources in the central part of the country, the hydropower potential of the Himalayas, and the land resources of the Thar desert have great prospects for utilization.

In the multinational and ethnically heterogeneous countries, national factors are often added to the difficulties involved in the development of the territorial-economic structure. The economic progress of these countries is accompanied by the accelerated formation of nations, and the consolidation of small national groups and national minorities. This influences all aspects of life in these coun-

tries, and plays an important part in the formation of economic regions. Many developing countries are going through a stage of involved national processes bearing on the formation of the all-national and regional markets and the national and economic consolidation of their respective territories. They have now attained the stage of development about which Lenin wrote: "In the whole world the epoch of the final victory of capitalism over feudalism was connected with national movements. The economic basis of these movements is that the bourgeoisie must establish itself on the home market to ensure the full victory of commodity production, and the state must unite territories with a population speaking one language..." (Lenin, vol. 25, p. 258).

The formation of the spatial structure of the Third World countries is accompanied, as Lenin said, by a clash of two historically emerged tendencies which are typical of developing capitalism — the awakening of the national life and national movements for the administrative unification of national territories, on the one hand, and the break-up of national partitions and national isolation, on the other (Lenin, vol. 24, p. 124). These movements are based on two fundamental processes: the economic consolidation of the national markets and regional markets, on the one hand, and the development of economic integration on the scale of a country, on the other. The national factors, in turn, exert a strong influence on the territorial-economic development. At times the trends towards national-economic autarchy intensify and thus do harm to the development of the countries concerned. In many of these countries the advancement of backward territories becomes extremely urgent, quickly acquiring great social and political significance.

The problem of reducing the "population pressure" in old, agricultural areas is also acute. The situation in these regions could somewhat be alleviated if a stimulus were given to the migration to the interior, relatively sparsely populated territories.

The need to change the sectoral and territorial structure of the economy does not rob the question of the rate and sequence of these structural changes of its importance. The resources for setting up new industries are made available by the traditional economic sectors. Heavy industries require large capital investments and it takes a long time for them to become self-supporting and profitable. This demands that the development of the traditional and the new industries should be well balanced. In the same way the question arises of the correlation between the old and the new regions. This problem bears to a great extent on the effectiveness of capital outlays. Capital investments usually take a shorter period to yield a return in the old, relatively advanced economic regions which gravitate to the major metropolitan centres and are thus provided with infrastructure, markets, possibilities for co-operation, skilled personnel and other important advantages. This factor is of paramount importance in view of the limited capital available for investment and the shortage of material resources. On the other hand, in the long run capital investments are often most effective on the new, weakly developed territories which are richer in natural resources. Obviously, it is necessary to work out, on a scientific basis, the optimal combination of the two types of regional development for each particular stage.

In the developing countries the major cities are the centres of attraction for the population and for new industries. This is explained mainly by the general economic backwardness. This intensifies the continual concentration and superconcentration of production and population in mushrooming major centres. These trends can only be countered by state regulation of the sectoral and territo-

rial structure of the economy. Even in countries which have not yet taken the non-capitalist path of development, the state usually plays a decisive role in the overall economic advance (*Ekonomicheskaya rol...* 1971), including regional economic development. The multistructural economy, with its leading capitalist structure and a variety of persisting pre-capitalist formations, makes planning, including regional planning, of productive forces a difficult matter. Nevertheless, the state can actively influence this process within the framework of the public sector and through state control. Its influence is expressed in the location of public sector enterprises, of finance, and in various measures of control and regulation of the private sector (licensing, railway tariffs, agricultural market zoning, price control, etc.).

The public sector and state control play a progressive role in these countries and create the material prerequisites for the changeover — given certain political conditions — to the non-capitalist path of development. The influence exerted by the state on the country's economic growth presupposes regional planning, the necessity for which is recognized in most of the developing countries. The scientific basis for regional planning is provided by an analysis of the established territorial economic structure and its trends of development, and by the elaboration, on this basis and in accordance with the nation-wide tasks, of the direction of its transformation.

Under the impact of new factors and stimuli the sectoral structure of the economy is greatly diversified in the Third World countries striving for economic independence. This is accompanied by a deepening and expansion of the formation of economic regions, and the emergence of a new-type territorial-economic structure. Needless to say, the main elements of the territorial-economic structure which carry out different functions and have a different spatial configuration, play an unequal part in these processes. Agriculture is the most sluggish component of the economy, marked by a continual spatial pattern and by relatively short (especially in the developing countries) production-territorial linkages. Industry, noted for discrete location and intricately intertwined "horizontal" and "vertical" linkages which determine its high region-forming potential, exerts a strong influence on the whole spatial structure of the economy. Transport arteries, power transmission lines and other key elements of the infrastructure and urban systems have a network pattern. The transformation of the key elements of the spatial structure of the economy results in a change in the pattern of linkages — their composition capacity and directions.

By way of a broad generalization it can be said that the colonial period was marked by centrifugal tendencies whereby separate territories were involved in the world capitalist market. This intensified the internal production-territorial fragmentation and the conglomerative structure of the economy. In the period of independence, the centripetal trends working towards production-territorial integration become increasingly important. In India, for example, this is especially clearly seen in the central part of the country, which is evolving from its former status of an isolated territory to become an important link in the country's spatial structure: it forms a part of the country's coal and metallurgical base and serves as a massive source of key raw and industrial materials for other regions.

But the new trends contributing to the shaping of the spatial structure of a new type do not follow a smoothly ascending line. They are countered by the inertia inherent in the economic structure inherited from the colonial past and the continuing and often accentuated role played by the traditional factors of location: the orientation of many industries toward the foreign market, and the

strong pull of the existing large industrial nodes and developed regions in which the concentration effect is in evidence. The spatial structure is marked by very high stability and fails to keep pace with changes in the sectoral structure. The existence of a variety of structures and their wide spreading result in weak economic links between industry and agriculture, between large- and small-scale industry, and between town and country. The growing surplus of manpower and snowballing unemployment make themselves felt in all spheres of economic development, both on the branch and on the territorial plane. The weak production base in the Third World towns, inflated functions of the services sector, in which the manpower surplus finds its reflection, and acute unemployment among the urban population deform the linkages between town and country and weaken the capacity of the towns to absorb the surplus rural population.

The colonial period saw concentrated development along the "lines of penetration" radiating out of the major seaports. Since independence, the lines of penetration have gradually been converging, forming the framework of the territorial-economic structure in the developing countries. This is one of the trends inherent in the formation of a new-type spatial-economic structure which comes to replace the one that had taken shape under colonialism. In this process, the major metropolitan centres play an increasingly important role; they serve to a great extent as a base of this process. A further important trend is that the lines of penetration grow, converge and become "corridors of growth (development)". The latter can be defined as special belt-like spaces stretching along the main transport routes and connecting the largest cities. These spaces are equipped with a production infrastructure, have emerging systems of towns marked by accelerated growth rates, and possess most favourable opportunities for further economic growth. They develop rapidly under the powerful influence of the metropolitan centres they connect. Many major projects gravitate to them, and this also reflects one of the leading trends in the formation of the territorial-economic structure of the developing countries.

An analysis of extensive evidence reflecting the formation of the territorial structure of Indian economy made it possible to reveal with sufficient comprehensiveness how these processes manifest themselves in this largest country of the Third World. Calcutta, Bombay, Madras and Delhi spread their influence throughout the country and to a great extent determine the spatial structure of India's economy. These oppositely located largest Indian conurbations are the centres of the highest urban population potentials in the country and the region-forming cores of the most mature economic regions. They form the apexes, as it were, of a huge quadrangle: the main "frame" of the territorial structure of India's economy. The sides and the latitudinal diagonal of this quadrangle are the "corridors of growth". These are the main railway lines and national highways which are "studded' with rapidly growing towns and to which many projects gravitate.

An important part in the analysis of the corridors of growth in India (as part of the study of the country's territorial-economic structure) was played by the maps of the potential fields of the Indian urban population for 1961 and 1971. The configuration of these fields changed substantially during this comparatively short period; in particular, closed areas gravitating to the four main metropolitan centres expanded considerably and absorbed separate areas with higher inner potentials which stood out as autonomous formations in the 1961 map (e.g., Akola and Dhulia eastward of Bombay, Ajmer southward of Delhi, Raipur westward of Calcutta, and Anantapur and Dharwar in southern India).

The zones of major metropolitan centres stretched in the direction of one another, reveal a tendency to converge. The changed configuration of the potential fields of the major metropolitan centres expresses the linearly directed — along the corridors — concentrated economic development, as is exactly the case with urbanization. It also graphically demonstrates the acceleration of the nation-wide production-territorial integration. Unlike this, a region-wide analysis of urban rank-size distribution graphs for 1961 and 1971 shows that the regional structures are particularly stable. Hence an important conclusion that a greater production-territorial integration on a nation-wide scale is combined with the preservation and not infrequently even accentuation, of a great diversity of the regional structures.

Geographers, dealing with the spatial structure analysis, sometimes use the terms "axes" or "pivots". The term "corridors of growth" (development) appears, however, preferable for a number of reasons. For one thing, intensive and concentrated development of the economy takes place not linearly, in the "axis direction", but in a belt-like stretch of space which is formed by the immediate surroundings along the principal transport routes connecting major centres. This space — i.e. the corridor — possesses high potentialities for further economic expansion. Like other geographical phenomena the growth corridors are hierarchical. The term is not often met with in specialist geographical literature (*Regional development...* 1969), it is more common in some countries, e.g. in Canada, where a specific "geometry" of the economy makes it indispensable. In India it was used, for example, when the plan for the capital region development was being worked out. The map of the spatial-economic structure — featuring the regions, the nodes (poles) and centres of growth, the corridors of development connecting them, and the new potential centres of development — reflects the existing pattern of location of the productive forces and to a certain extent, their future configuration. It gives a comprehensive picture of the emerging production-territorial complexes, urban systems, poles and centres of growth. In this case the latter are represented not as separate isolated growth centres, but as components of a single territorial structure of the economy. We believe that the "growth corridors" concept may prove useful in establishing a closer correlation between the best-known present-day theories of spatial development; notable, the Soviet theory of production-territorial complexes and economic regionalization; the theory of "poles" and centres of growth propounded by F. Perroux; T. Hägerstrandt's "diffusion of innovations" concept; P. R. Friedmann's general theory of polarized development, etc. These theories, which have been worked out by prominent scientists and contemporary schools of geography, reflect, from different viewpoints, the objective and exceedingly complex processes involved in the development of the territorial-economic structure. They are well-known throughout the world, and the developing countries use them as a basis in their attempts to give regional planning a scientific foundation. Obviously, the need for the proponents of different lines of thought on spatial regional development to consider and appreciate one another's views is of great importance.

The concept of the "corridors of growth" is directly connected with the theories of regionalization, being a kind of an "integrating" supplement to them. The systems of natural and socio-economic regions, whose development is governed by qualitatively different laws, interact and form the intricate spatial intertwinings which constitute the country's economic fabric. In our view, an analysis of objective trends in the formation of the territorial-economic structure must include a study of natural resources regions and demographic

regions, both as "prime bases" of economic regionalization and as autonomous systems. A promising line of research for constructive geography is to bring to light imbalances in the development of these systems and to elaborate coordinatory measures for improving the situation.

Economic regionalization also includes a complex system of branch (special) types and comprehensive economic and integral socio-economic regionalization (mono- and poly-system models of regional development). They are greatly influenced by the existing administrative boundaries which are very stable.

Studies of regionalization should reflect the "merger zones" ("transitional zones") of economic regions which are fairly clearly revealed, for example, when transport flows of basic types of produce are analysed. With the country's general economic advance, new cores appear in backward areas; not infrequently, this takes place in the areas bordering on the more developed territories. It is, incidentally, in this way that new economic regions take shape, which radically change the overall territorial structure of the economy. Identifying the "transitional zones" of economic regions seems to be more appropriate than just relying on a conditional, often artificially drawn line of the boundaries of regions. These zones symbolize the continual interconnection of regions forming a single nation-wide economic organism, and the continuity in the organization and development of the productive forces in space. This can be compared with the sliding scale of planning which reflects the continuous development of the productive forces in time.

Alongside individual economic regionalization, which is necessary for the elaboration of individual plans of regional development, typological socio-economic regionalization is very important. It is indeed a must when the aim is to establish certain general laws governing the evolution of the territorial structure of the economies of the developing countries. Typological socio-economic regionalization must concentrate, among other things, on the comparison of the following basic indices which represent, in turn, a whole body of initial data: (a) regional levels of socio-economic development, (b) peculiarities of the structure of urban regional systems, (c) the intensity and nature of production-territorial linkages, (d) the character and stage of the formation of economic regions. In the developing countries the highest level of socio-economic development is characteristic of two main types of economic regions:

— *industrial-metropolitan regions* which gravitate to major metropolitan centres, and

— *agricultural-industrial regions* in which commercial farming is combined with fairly developing factory-type industry and crafts.

Regions of commercial farming and emerging urban systems are at a medium level of socio-economic development. *Areas of backward agriculture* and sparse urban development have a low level of socio-economic development. These territories have no clearly defined economic character, dominated as they are by backward agriculture of a semisubsistence type and having a negligible economic potential. The major problem involved in the development of these territories is to fit them into regional and nation-wide economy. Finally, there are vast, *most backward territories almost devoid of towns* at the lowest level of socio-economic development. These territories are often populated by tribes and national minorities. They include both areas with extremely unfavourable natural conditions and regions rich in natural resources and offering opportunities for economic development.

The formation of macro-economic regions is largely a process whereby the five-stage "pyramid" of the above-mentioned typological regions is gradually

integrated. This takes place under the impact of most developed industrial-metropolitan and agricultural-industrial areas, cities and major projects, as these establish production-territorial links with one another and with more backward regions. The available data show how qualitatively different are the tasks and development prospects of regions belonging to different types, levels and stages of formation, on the one hand, and how closely they are interconnected, on the other. The solution to specific problems in some regions largely depends on the conditions of other territories and on the nation-wide rate and strategy of development. In particular, it is impossible to solve the problem of how to promote the advance of backward territories in isolation, i.e. outside the development of other regions, and the system of the country's integral socio-economic regionalization as a whole. (Incidentally, attempts at such a solution "in isolation" have been repeatedly made in the developing countries and vast sums have been spent on them).

The identification of the "corridors of growth" as lines determining the formation of the spatial structure of the economy makes it possible to understand the phenomenon of persisting regional imbalances in the levels of socio-economic development in the countries of the Third World. Often these would even intensify despite the declared tasks of smoothing them out and a desire for decentralization. Decentralization of industry and the advance of backward regions are usually understood as synonymous processes. But the practical realization of the advance of vast backward areas through the decentralization of large-scale industry seems to be a most difficult and objectively contradictory problem. In the first place, restricted financial resources exclude the possibility of decentralizing large-scale industry in the short term, let alone all at once. Also, it is hardly feasible to move enterprises dependent on the mineral base or on other strictly localized factors elsewhere. A direct connection between an enterprise's capacity and profitability, and the stringent requirements of our day also determine the need for a high concentration of newly organized (on the decentralization principle) industries. Hence two fundamental conclusions: first, new large-scale industries can only be decentralized on a limited scale; second, the selective decentralization which is currently practiced and must be planned, actually leads to the appearance of new nodes of centralization gravitating to the "corridors of growth".

The term "advance" of backward territories must also be cleared of all ambiguity. It is naturally, first of all, a matter of an advance in the living standards of the people who inhabit these territories. Elementary public health services, opportunities for primary education and employment, etc., are the ABC of social services which must be set up every-where and in the shortest possible time. But to implement such programmes, financial resources have to be mobilized to the maximum and on a nation-wide scale. One of the ways in which such mobilization can be carried out is through profits acquired from the "agglomeration of scales", i.e., from production concentration and integration. Obviously, the priorities for the proliferation of vital social benefits and the economic advance of territories should be considered separately, as these processes do not always occur together. The dialectics of development is such that the all-out proliferation and decentralization of social benefits can, at a certain stage, be accompanied by the centralization of production. It is natural, however, that social progress is closely connected with economic advance, and economically backward areas, especially if they are isolated as a result of poor transport services, are much more difficult to supply with improved social services. The feasibility of carrying out such grand-scale tasks has been shown by the ex-

perience of the Soviet Union. The USSR, with its vast territory, had inherited backwardness from pre-revolutionary times, and the social and economic situation was especially acute in the areas which had made up the outlying national provinces of the Czarist empire. Nevertheless, by the late 1930's (according to the 1939 census) the USSR had attained universal literacy and set up a comprehensive public health system. The country had also achieved considerable success in the economic development of the national republics where priority had been given to the establishment of industrial bases.

The objective difficulties and contradictions involved in the "branch" (sectoral) and "regional" approaches to the location of production are often exaggerated. Moreover, the "sectoral" approach is identified with the territorial concentration of production and the "regional" approach with its decentralization. In this interpretation the "regional approach" seems to be artificial and to contradict the interests of economic progress, in comparison with the obvious advantages offered by the "agglomeration" of production. Unfortunately, the concept of "regionalism" is sometimes identified with parochialism and separatist tendencies. Therefore, it seems that attention should be paid to the working out of the scientific economic-geographical concept of the "regional approach to planning". This essentially means a thorough study and evaluation of the territorial combinations of resources, and the choice of the most rational methods for the development of regions within the framework of the geographic division of labour.

"Specialization" and "integration" are two interconnected concepts. Increased specialization of the economic regions of the developing countries helps to solve such vital problems as: (a) acceleration of economic progress on the strength of economic advantages resulting from a scientifically based territorial division of labour, and (b) consolidation of territorial-production integration on a nation-wide scale.

The state plays an active role in the transformation of the sectoral and spatial structures of the economy in most of the developing countries. Its assistance is most effective in the field of direct state construction which usually makes up for the links of economic production which are weakest or even lacking, and is often carried out in backward regions. The state also indirectly influences the private sector, its sectoral structure and location, through state construction (the latter usually involves the infrastructure and basic lines of production and invites cooperation of appropriate private enterprises), and through licensing, financing, railway tariffs, price control, etc.

As a result of the increased role played by the state in the developing countries' economies, the need arose to work out a scientific basis for regional planning. This has made the questions of economic regionalization, which were not given enough attention before, especially important for the emerging national geographic schools. The science of geography is called upon today to play an important role in cognising the laws governing the formation of the territorial structure of the Third World countries, and in working out the scientific basis for regional planning. In this way it is making its contribution to the solution of the complex problems of development which these countries must face.

Institute of Geography
USSR Academy of Sciences, Moscow

BIBLIOGRAPHY

Alayev, E. B., 1973, *Regionalnoye planirovaniye v razvivayushchikhsya stranakh*, Moskva.

Baranskii, N. N., 1956, *Ekonomicheskaya geografiya. Ekonomicheskaya kartografiya*, Moskva.

Criteria for location of industrial plants. Changes and problems. 1967, U.N., New York, E/ECE/652.

Ekonomicheskaya rol gosudarstva v razvivayushchikhsya stranakh (Tezisy wystuplenii na nauchnoy konferentsii), 1971, Moskva.

Lenin, V. I., *Kriticheskiye zametki po natsionalnomu voprosu*, vol. 24.

Lenin, V. I., *O pravye natsii na samoopredeleniye*, vol. 25.

Regional development and planning. A reader, 1969. Eds. Y. Friedmann and W. Alonso, M.I.T., Cambridge, Mass.

Rościszewski, M., 1974, Voprosy territorialnoy struktury khozyaystva v razvivayushchikhsya stranakh, *Izv. AN SSSR, ser. geogr.*, 4.

Rozin, M. S., 1962, *Geografiya gornodobyvayushchey promyshlennosti kapitalisticheskogo mira*, Moskva.

Sdasyuk, G. V., 1974, Geographical approach to the problem of regional inequalities and development in the developing countries. A case study of India, in: *Proceedings of the...*, IGU, vol. 1: *Methodology and case studies*, Canada.

17th [Seventeenth] *Annual Town and Country Planning Seminar*, 1968, Delhi Development Authority, Delhi.

The city in newly developing countries. Readings on urbanism and urbanisation, 1969, Ed. G. Breese, Princeton University.

GEOGRAPHIA POLONICA 35, 1977

FORMATION OF A SPATIAL STRUCTURE OF THE ECONOMY AND REGIONAL PLANNING IN AFRICAN COUNTRIES. SOME METHODOLOGICAL ASPECTS

Georgy N. Utkin

The problems of a spatial organization of the forces of production, especially the working out of constructive concepts and practical methods for controlling regional processes in a national economy, attract more and more attention of state organizations and scientific institutions in developing countries because their first steps towards the development of an independent economy have shown an urgent necessity for the application of the principles of planning, including regional planning.

Experience shows that to ignore regional peculiarities, differences and disproportions in the development of the forces of production means to sharply decrease, and in a number of cases even to undermine the efficiency of general economic evaluations and of corresponding programmes and plans of social and economic development. That is why the improvement of the spatial structure of economy according to rational use of natural, labour and technical resources for the best location of production is considered to be the current task of all the countries of the Third World, including sovereign states of Africa, especially those which have chosen an non-capitalist way of development.

In the methodological respect, this imperative may be explained, first of all, by the fact that the formation of a spatial structure of economy is an important integral component of the general process of the social-and-economic development of any country. The social, including geographical, division of labour in this case acts as a link and as a determining principle. The deepening and the intensification of the division of labour lead to the formation and differentiation of social, economic and spatial-production structures, comprising a certain unity within a country.

The basis of an economy's spatial structure is formed by more or less stable sets of the forces of production. The outstanding Soviet economico-geographer N. N. Kolosovskiy has shown that they "have a character of social-and-spatial combinations of population, tools, resources of the natural environment, used in labour processes of production and transport enterprises, and, naturally, combinations of settlements, towns and villages" (Kolosovskiy 1969). Spatial division of labour provides for a maximum economic effect by using in the production the best combinations of natural and social-and-economic conditions; it serves as a driving force of an objective process of forming economic regions (Mints 1968).

This multiple approach and the regional concept were worked out and used at the beginning of the 1920's when a long-term plan of social-and-economic development of the country — the Lenin plan of electrification of the RSFSR (GOELRO) — and the successive five-year plans were developed, for the first time, in the Soviet Union (*Plan elektrifikatsii...* 1955; *Ekonomicheskaya geografiya...* 1972).

After the Second World War, problems of regional policy and regional planning attracted the attention of developed capitalist countries as well, which is accounted for by a number of reasons: the strengthening of state-and-monopolistic tendencies, the deepening of spatial disproportions in their economies, etc. However, the present situation in these countries shows that the opportunities for solving regional problems on a national scale are quite limited under the capitalist system.

Regional development of the forces of production in countries of the Third World has a number of specific features conditioned by the following factors: the inequality of the situation of these countries in the system of capitalist world economy, an unbalanced growth of their population and production, the heterogeneity of their social and economic structures, a relatively low level of the development of the forces of production, the weakness or absence of intersectoral links, and sharp regional disproportions (*Atlas...* 1968; Babintseva 1971; Gornung, Sdasyuk, Utkin 1971). Continuous formation of the national economy of a developing country preconditions a corresponding transformation of its former spatial structure, which had developed in the colonial period, and the development of new, rational regional and economic proportions (Lipets 1970; Mashbits 1969; Pularkin 1968; Sdasyuk, Utkin 1971).

The formation of a spatial structure of an economy is a long and complicated social and economic process which, under the conditions of a market economy in many respects is determined by the law of irregular development. There is a necessity for state interference and for the introduction of a scientifically substantiated regional policy for controlling this process in Latin American, Asian and African countries (Mashbits 1972). In the majority of African states the main task of regional policy is to resolve the most urgent contradictions between one or a few centres and knots (poles) of growth represented by large cities and mining regions on the one hand, and vast underdeveloped rural areas on the other; and between regions of a market (export) economy and a subsistent (traditional) one, in order to ensure for a more balanced development of the principal regions of the country for the benefit of the whole nation and in a number of cases, for that of the interestate regional co-operation (Lipets 1972; Utkin 1972).

Many western experts-economists often do not take into account the fact that, contrary to the developed capitalist countries, in the majority of multistructure countries, especially in Africa, regional disproportions are relatively great and more definitely expressed, as there are much more profound discrepancies in the levels of the social-and-economic development of separate parts of the countries. According to a Soviet economist E. B. Alayev, a specialist in regional problems, differencies in a regional income per head between the main (metropolitan) region and a backward region come up to the ratio of 19 : 1 in Ethiopia and 22 : 1 in Zambia (by provinces; Alayev 1973).

In Africa the principal economic centre (city) of a country accounts for one third of a half of the whole employed population working in industry, of the general number of industrial enterprises or of the gross industrial product. According to a Nigerian economico-geographer A. Mabogunje, of the general

number of 658 enterprises located in the cities of Nigeria which comprise 85% of all the enterprises of the country, 216 were located in Greater Lagos; of 90,000 people employed in the industry in Nigerian cities, which makes up 94% of the total number of the employed, 31,000 people worked in Greater Lagos. The gross industrial product produced in Lagos and in all Nigerian cities was estimated correspondingly as 82.7 and 216.2 million Nigerian pounds, while the latter figure makes up 97% of the whole gross industrial product of the country (Mabogunje 1971). 80% of all industrial enterprises of Senegal are concentrated in the area of Dakar. 60.6% of the population employed in industry and 58.5% of all the enterprises of Kenya are situated in its capital Nairobi and in the city's industrial area (Asoyan 1971).

None the less contrasting in this respect is the situation in North African countries where the principal African cities-millionaires: Cairo, Alexandria, Algiers, and Casablanca are situated. The economic capital of Morocco, Casablanca, where live 10% of the country's population, at the end of the 1950's and early in the 1960's, contained 52% of all the population employed in industry and 57% of all the industrial enterprises of the country, and in the whole industrial zone of Casablanca — Kenitra there were 70% of all workers and 80% of industrial enterprises of Morocco (those having not less than 20 employees). This circumstance gave grounds to a French sociologist A. Adam, the author of a two-volume monograph on Casablanca, to entitle one of the chapters of his book "Casablanca and the Moroccan Desert" (Adam 1968).

Although the above may certainly seem an exaggeration in the evaluation of this phenomenon in Morocco, we may state that in the majority of Arican countries these disproportions are associated with the peculiarities in the location of not only processing industries, but to a considerable extent of the market agriculture as well. For instance, in 1960 the rural provinces of Casablanca, which employed 14% of the Moroccan agricultural population, issued 23% of the agricultural product of the country.

Taking into account the insufficient development of natural resources and the fact that, on the whole, the continent is sparsely populated, a number of investigators have come to the conclusion that the economic activity in Africa, especially in the countries south of the Sahara, is characterized by an extreme dispersion and it is mainly situated in the form of separate small "economic areas", "economic islands" or "enclaves" whose production links only start forming (Alayev 1973; Asoyan 1971; Babintseva 1971; Green and Fair 1965).

Sharp regional disproportions in the location of the forces of production in African countries are aggravated by mixed combinations of social-and-economic structures and of the ethnic composition of the population, as well as by an extreme political-and-spatial divisibility of the African continent. Many of these differencies are reflected even on small-scale thematic maps of the Soviet Atlas of Africa (*Atlas...* 1968).

In particular, studies of social-and-economic structures show a very wide range of the phenomenon of structural multiplicity in African countries. According to V. G. Solodovnikov, Corresponding Member of the USSR Academy of Sciences, depending on the combination of certain social-and-economic relations in the African states — besides the imperialistic and rasist South African Republic — they may be distinguished as: (1) countries with feudal and tribal relations at different stages of transformation; (2) countries with the predominance of feudal relations; (3) countries with an insignificant development of capitalism and with widespread feudal and sometimes prefeudal relations; (4) countries with a moderate development of capitalism and the presence of strong

feudal survivals; (5) countries of socialist orientation (Solodovnikow 1972). Moreover, developing countries of Africa differ by the size and population numbers, as well as by the specific features of natural conditions and natural resources, which serve as preconditions of the general social-and-economic development of the countries and of the formation of economic regions (*Ekonomicheskoye rayonirovaniye...* 1968).

Thus we may observe not only general features, but also considerable concrete peculiarities in the contents, forms and methods of regional policy evolving in the majority of African countries in the recent decade. From a methodological point of view, it is important to analyze both of them. However, being limited by space we shall mainly consider here the general features.

The first steps undertaken by state bodies in the African countries towards the execution of regional policy were, as a rule, the following: the detection and definition of the most urgent regional problems of economic development, the working out and realizing of projects and programmes for the development of natural resources or for the strengthening of the forces of production in certain most backward or distressed overpopulated areas (regions). Most often these projects and programmes are not directly connected with the national plans of social-and-economic development of a country; they are one-time affairs intended to play an auxiliary role in the set of general undertakings directed towards the diversification of production. To illustrate the point, one could remind the reader of the project of agricultural development of the overpopulated area of Western Reef in Morocco, the programme of development of the backward province of Cazamans in Senegal, the project of developing the area of Gezira in Sudan and many others. However, some of the projects, providing for a complex development of the most important natural resources and involving large territories (the Aswan regional project, the programme of the industrial development of the resources of southern Tunisia, etc.), begin to exert a considerable influence on the transformation of the spatial structure of production in the given countries. A considerable number of papers have already been devoted to the analysis of regional planning. In particular, one may mention a review paper by R. Gersdorff on the regional development in Africa, which is a part of a multivolume series of international regional studies of UNRISD, with one reservation, however, namely that methodological problems of the formation and functioning of the development areas seem not to have been adequately treated in this work (Karpov, Sdasyuk, Utkin 1971, 1972).

In recent years, regional policy in a number of African countries (Algeria, Morocco, Zambia, Nigeria and others) is put into practice in the form of regional planning embracing the whole territory of the country, i.e. of regional planning on the national level. In some of the countries regional plans have become a constituent part of the general system of state planning. This is rather important, as, according to a well-known Polish specialist in the field of regional development, Dr. A. Kukliński, this may make it possible not only to register the location of capital investments by branch units and to introduce proposals for a partial improvement of decisions in separate branches of industry on a regional level, but also to carry out a more active regional policy (Kukliński 1970). The essence of such a policy is the planning of an effective and balanced regional development simultaneously with the providing of branch efficiency.

But it is natural that the national level of regional planning which is now under way in a number of African countries does not automatically abolish various differencies in the contents and forms of the planning. In Algeria, for instance, they have worked out a system of special programmes of regional de-

velopment of the forces of production for the main administrative units (vilaya), which formally are not included into the national plans, but which in fact constitute an integral part of the Government economic policy and are methodologically connected with the plans. In the four-year plan of Algeria (1970–1973), there is a special section formulating the general approaches and measures for exercising the policy of "decentralization and organization of the territory" (*Plan quadriennal*). The programmes themselves are, first of all, directed at the development of production and of infrastructure, at the raising of living standards in the most backward vilaya of the south and the centre: Oasis, Aures, Tizi-Ouzon (Grande Kabylie), Titterie (Medea), Setif, Tlemsen, Saïda, El Asmain. With that end in view these regions get additional Government credits.

In Morocco, the principles of regional development were formulated as far back as the five-year plan of 1960–1964, in its special section (*Le plan quinquennal 1960–1964*). In particular, they put forward the problem of defining the conception of an "economic region", the criteria of its delimitation and of its productive specialization, as well as of defining inter-regional differences and the weak points that retard the development. But there was no concrete scheme of regional development in the plan (Utkin 1968). It was also absent from the next three-year plan (1965–1967); this was conditioned by many reasons, including the fact that the problems of integral regional economic regionalization were still unresolved (*Le plan triennal*). In the last five-year plan of Morocco (1968–1972) consisting of three volumes and cartographic supplements, one volume is devoted to regional problems (*Le plan quinquennal 1968–1972*). In this case the planning of regional development is concretized and is carried out within 17 provinces. But on the whole the plan's regional policy is passive rather than active, as the main priorities of the plan are not determined by regional decisions, but by the branch ones. Moreover, because of the comparatively small size of the regional units — provinces, the regional section of the plan could not organically unite such independent regional projects as the Project of Sebu, the Project of the Western Reef. They could probably not but take into account this circumstance when passing in 1971 a law (*dahir*) to form seven economic regions on the basis of the existing provinces. Within these regions uniting the provinces according to stable links, they intend to put into practice the programmes of development and to carry out corresponding studies.

In the opinion of E. B. Alayev, the first national plan of the development of Zambia is rather characteristic as far as the regianal aspect is concerned. Firstly, the plan proceeds from the fact that one of the most important national tasks lies in the elimination of sharp disproportions between developed and backward regions, industrial and agricultural regions; secondly, the regional programmes in the plan are fully coordinated both with branch programmes and on the whole, while the former comprise two thirds of the total contents of the plan (Alayev 1973).

In many other countries of Africa regional aspects of the plans are represented to a much lesser degree and in some countries they are absent altogether, although regional analysis in the process of working out the plans becomes, undoubtedly, more and more important. But on the whole, regional planning in the developing countries of Africa is at the present time in its initial stage. That is why certain success in the elaboration and realization of these plans, which has been achieved by the, African states, more advanced in this respect, has not so far resulted, even there, in the desired changes in the spatial structure of their economy. Moreover, often spatial disproportions in the economy would even increase, as a result of a tendency to spontaneously locate

principal capital investments in the most developed region of the country. Sometimes the state-controlled sector is not able to oppose this tendency, as the latter is supported by the majority of foreign national and private firms.

At the same time, an analysis of the attempts to control the process of regional development in the developing countries of Africa shows that the main difficulties and drawbacks of regional planning there result from specific features of the modern stage of "transition", as well as from other general reasons of a social-and-economic character. In many respects they are also conditioned by the weakness of methodological foundations of regional plans (Gaud 1967, *Régionalisation* 1968). Such foundations that can be used in the conditions of African countries of different types, are still waiting to be profoundly worked out on the basis of complex regional studies (Gornung, Sdasyuk, Utkin 1971; Utkin 1971; Gersdorff 1968; *Industrial location* 1971). In this connection one cannot but underline the efforts of a number of specialized agencies of the United Nations, including its Institutes UNITAR and UNRISD, to work out some general programmes of studies including the principal approaches to the problems of regional development of the countries of the Third World (Gersdorff 1968; *The United Nations Programme...* 1972).

However, it is a rule that the conceptions and principles characteristic of the western schools of spatial economics serve as a methodological basis for these approaches. They usually treat the purpose pragmatically and, in particular, they do not recognize an objective process of the formation and development of economic regions. Thus, the questions of integral regionalization as a basis of a rational regional planning are not considered to be important enough. In such an approach the regionalization of a country is recommended to be carried out by delimiting "homogeneous spatial units", divided only by "real natural borders", proceeding from the assumption of the homogeneity of the planned region (Utkin 1968). Such mechanical regionalization cannot, naturally, satisfy the requirements of a comprehensive development of the forces of production both on a subnational and national levels. Recommendations for a direct use for this purpose of a network of the existing administrative-and-territorial division of the developing countries do not fully and always correspond to the tasks of an effective regional planning; in the majority of cases the principal administrative units have evolved in the colonial period and have not been intended for the purposes of economic development.

All this emphasizes the importance of working out of a theory of regional development and planning in conformity with the conditions of the developing countries and with definite peculiarities of their separate groups. It may probably be very interesting from the point of wiew of both science and practice to elaborate the principles and methods of the rational combination of branch and regional proportions in a multistructural economy, of natural resource and social-and-economic conditions and specific features of the formation of integral economic regions; also, to analyze the impact of the plans of regional development on the transformation of the spatial structure of national economy, the correspondence of economic and administrative regionalization of a developing country, etc. (Sdasyuk, Utkin 1969; Sen Gupta, Sdasyuk 1968).

As it is shown by the historical experience of the Soviet Union, in particular that of the Soviet Republics of the East, the improvement of regional proportions in the development of the forces of production yields great economic and social-and-political effect. A wide and creative use of this experience may be especially fruitful in those countries of Africa where the leading role of the state sector is being strengthened, where deep social-and-economic transforma-

tions are directed towards a non-capitalistic development (Kolosovskiy 1969; *Plan elektrifikatsii...* 1955; *Ekonomicheskaya geografiya...* 1972; *Ekonomicheskoye raycnirovaniye...* 1968).

Institute of Geography
USSR Academy of Sciences, Moscow

BIBLIOGRAPHY

Adam, A., 1968, *Casablanca. Essai sur transformation de la société marocaine an contact del'Occident*, Paris, vol. 1, pp. 288–299.

Alayev, E., 1968, *Planned location of industries and regional development in the East-African Sub-region*, UN, Minsk, Doc. ID/WG, 9/B.

Alayev, E. B., 1973, *Regionalnoye planirovaniye v razvivayushchikhsya stranakh*, Moskva.

Annenkov, V. V., 1969, K kharakteristikye struktury ekonomiki Senegala v kontse kolonialnogo perioda, *Strany i narody Vostoka*, 9, Moskva, pp. 117–124.

Asoyan, N. S., 1971, Osobennosti razvitiya i razmeshcheniya promyshlennosti w stranakh Vostochnoy Afriki (Keniya, Uganda, Tanzaniya), in: *Sovremennyye problemy razvitiya i razmeshcheniya proizvoditelnykh sil v Afrike*, Moskva, pp. 308–318.

Atlas Afriki, 1968, GUGK pri SM SSSR, Moskva.

Babintseva, N. S., 1971, Nekotoryye voprosy razvitiya mezhotraslevykh svyazey v Afrike, in: *Sovremennyye problemy razvitiya i razmeshcheniya proizvoditelnykh sil v Afrike*, Moskva, pp. 14–24.

Ekonomicheskaya geografiya i territorialnoye planirovaniye, 1972, *Vopr. Geogr.*, 90, Moskva.

Ekonomicheskoye rayonirovaniye razvivayushchikhsya stran, 1968, *Vopr. Geogr.*, 76, Moskva.

Gaud, M., 1967, *Les premiéres expériences de planification en Afrique Noire*, Paris.

Gersdorff, R., 1968, *Regional development: Experiences and Prospects*, vol. 1: *A preliminary report on Africa*, UNRISD, Geneva.

Gornung, M., 1969, *Some problems of natural resources. Research for natural resources. Research for development in Africa*, UNECA, Addis Abeba.

Gornung, M. B., Sdasyuk, G. V., Utkin, G. N., 1971, Geograficheskiye problemy razvivayushchikhsya stran, *Izv. AN SSSR, ser. geogr.*, 3, pp. 20–28.

Green, L. P. and Fair, J. D., 1965, *Development in Africa. A study in regional analysis with special reference to Southern Africa*, Johannesburg.

Industrial location and regional development, 1971, Proceedings of Interregional Seminar, Minsk, 14–26 August 1968, UNIDO, New York.

Karpov, L. N., Sdasyuk, G. V., Utkin, G. N., 1971, Analiz osnovnykh napravleniy i metodologii regionalnykh ekonomicheskikh issledovaniy v sisteme OON, in: *Regionalnoye razvitye i geograficheskaya sreda*, Moskva, pp. 376–394.

Karpov, L. N., Sdasyuk, G. V., Utkin, G. N., 1972, Problemy regionalnogo razvitiya i planirovaniya za rubezhom, in: *Ekonomiko-geograficheskiye problemy formirovaniya territorialno-proizvodstvennykh kompleksov Sibiri*, vol. 4, Novosibirsk, pp. 83–112.

Kolosovskiy, N. N., 1969, *Teoria ekonomicheskogo rayonirovaniya*, Moskva, p. 28 ff.

Kuklinski, A., 1970, Rol regionalnogo planirovaniya v ratsionalizatsii razmeshcheniya obshchestvennoy deyatelnosti, *Izv. AN SSSR, ser. geogr.*, 4, pp. 88–91.

Le plan quinquennal 1960–1964, Royaume du Maroc, Rabat 1960.

Le plan quinquennal 1968–1972, Royaume du Maroc, Rabat 1968.

Le plan triennal 1965–1967, Royaume du Maroc, Rabat 1968.

Lipets, Y. G., 1970, Obshchiye voprosy modelirovaniya territorialnykh sotsialno-ekonomicheskikh sistem razvivayushchikhsya stran, in: *Analiz i prognozirovaniye ekonomiki razvivayushchikhsya stran*, Moskva, pp. 86–103.

Lipets, Y. G., 1972, Problema regionalnykh disproportsiy i ekonomicheskiy rost stran Afriki, idushchikh po nekapitalisticheskomu puti ravzitiya, in: *Opyt sotsialisticheskikh preobrazovaniy v SSSR i ego mezhdunarodnoye znacheniye*, part 1, Moskva, pp. 78–80.

Mabogunje, A. L., 1971, *Growth poles and growth centres in regional development of Nigeria*, UNRISD, Geneva, 45 p.

Mashbits, Ya. G., 1969, *Latinskaya Amerika. Problemy ekonomicheskoy geografii*, Moskva, pp. 155–166, 201–206 ff.

Mashbits, Ya. G., 1972, Territorialnaya struktura khozyastva i regionalnaya polityka v stranakh Latinskoy Ameriki, in: *Imperializm i razvivayushchiveysya strany ...*, Leningrad, pp. 151–153.

Mints, A. A., 1968, *Yestestvennyye resursy kak faktor formirovaniya proizvodstvenno-territorialnykh (rayonnykh) kompleksov*, UNIDO, Minsk, dok. ID/WG9/W. II.

Nekrasov, N. N., 1972, Metodologiya i metodika regionalnykh issledovaniy i prognozirovaniya, in: *Voprosy metodologii regionalnykh issledovaniy*, SOPS, Moskva, pp. 142–160.

Note sur la planification an Maroc (Document présenté par la Governement royal du Maroc), NUCEA 1967, 7 nov., Doc. E/CN, 14/CAP, 2/IN F5.

Plan elektrifikatsii RSFSR, 2nd ed., Moskva 1955.

Plan quadriennal 1970–1973, République Algerienne Démocratique et Populare. Rapport Géneral, Alger 1970, pp. 155–156.

Pularkin, V. A., 1968, Osnovnyye cherty struktury ekonomicheskikh rayonov (formirovavshikhsya v kolonialny period) w razvivayuschikhsya stranakh Yuzhnoy i Yygo-Vostochnoy Azii i puti yeyo preobrazovaniya, *Izv. Vsesoyuz. Geogr. Obshch.*, 5, pp. 450–456.

Régionalisation et développement, 1968, Centre National de la Recherche Scientifique, Paris.

Sdasyuk, G. V., Utkin, G. N., 1969, Strany „tretyego mira": „aktualnyye voprosy razmeshcheniya promyshlennosti i regionalnogo razvitiya, *Izv. AN SSSR, ser. geogr.*, 3.

Sdasyuk, G., Utkin, G., 1970, Regional development, planning and scientific and technological progress in the Third World countries, in: *The scientific and technological revolution and modern society*, Indian Statistical Institute in collaboration with Academy of Sciences of the USRR, Calcutta, pp. 107–128.

Sdasyuk, G. V., Utkin, G. N., 1971, Nekotoryye printsipy regionalnogo razvitiya industrializiruyushchikhsya stran "tretyego mira", in: *Regionalnoye razvitye i geograficheskaya sreda*, Moskva, pp. 395–421.

Sen Gupta and Sdasyuk, G., 1968, *Economic regionalization of India: problems and approaches*, New Delhi.

Solodovnikov, V. G., 1972, *Sovremennyy etap nekapitalisticheskogo razvitiya v Azii i Afrike*, Moskva, p. 6 ff.

The United Nations Programme in regional development. An introduction to sub-national planning, 1972, United Nations, New York.

Utkin, G. N., 1968, Theoretical and practical questions of integral economic regionalization of African countries, in: *Problems of economic regionalization in the developing countries*, Moscow, pp. 158–175.

Utkin, G. N., 1971, Industrializatsiya i regionalnoye razvitiye proizvoditelnykh sil v Afrike, in: *Sovremennyye problemy razvitiya i razmeshcheniya proizvoditelnykh sil v Afrike*, Moskva, pp. 283–292.

Utkin, G. N., 1972, Nekotoryye voprosy regionalnogo razvitiya i planirovaniya v afrikanskikh stranakh sotsialisticheskoy orientatsii (na primere Alzhira), in: *Opyt sotsialisticheskikh preobrazovanii v SSSR i yego mezhdunarodnoye znacheniye*, part 1, Moskva, pp. 216–219.

GEOGRAPHIA POLONICA 35, 1977

THE THEORY OF DEMOGRAPHIC TRANSITION AND STUDIES ON THE SPATIAL DIFFERENTIATION OF POPULATION DYNAMICS

Maciej Jakubowski

1. INTRODUCTION

In the volume devoted to geographical studies of less developed countries a paper is included only partly concerned with this subject, and mainly devoted to methodological problems and reflections on certain general population problems. It is not by mere chance that this article is published here, since, beside the always relevant need to study particular countries and regions, among them the large group of less developed ones, it is necessary to envisage and attempt a new approach to some of the phenomena and processes occurring on a world-wide scale. This need is particularly urgent nowadays in view of the rapid and frequently baffling changes which take place in both developed and less developed countries.

Owing to the changes currently taking place in various countries and regions, even such common notions as 'developed countries', 'developing countries' and 'less developed countries' become relative. Therefore it seems necessary to attempt a new approach to a number of world-wide phenomena and to advance new concepts of an interdisciplinary character. Such new approaches and concepts are also necessary from the point of view of a more adequate scientific description and a more satisfactory elucidation of social processes currently occurring in less developed countries, and ultimately to allow prediction of these processes in the future.

In many fields of science, however, the achievement of interdisciplinary scientific syntheses continues to be a need rather than a fact. To this sphere belong demographic sciences, and among them population geography.

Investigations in the field of population geography, particularly when concerning less developed countries, meet with serious difficulties in the form of a lack of an integral theory of demographic evolution. The usefulness of many up-to-date theoretical and methodological approaches is questioned but convincing new concepts are not available. There are wide differences of opinion as regards the perspectives of demographic evolution in the immediate future and following decades. The views advanced range from extremely pessimistic to highly optimistic.

It would seem that between this extreme pessimism and optimism a place could be found for a more realistic point of view, on the grounds of which an integral theory of demographic evolution might be formulated. Such a theory would serve as the basis for further demographic analyses and prognoses and also for studies in the field of population geography.

One of the pathways conductive to the formulation of an integral demographic evolution theory might lead to considerations on some chosen popula-

tion problems envisaged on a world-wide scale, to critical analysis of the theories of demographic evolution prevailing today, and also to a search for new methods which would reveal new aspects of certain population phenomena.

In accordance with these postulates, a method is here presented permitting a graphic picture of spatial (and temporal) differentiation in the elements of population dynamics — births, deaths and natural increase. The picture of these trends in the world for the period 1970–1972, obtained by the above method, is analyzed. On this basis two questions are advanced: how should this picture be interpreted according to one of the most popular contemporary theories of demographic evolution — the theory of demographic transition, and does this theory provide a sufficiently certain basis for interpretation of the current demographic situation and for prognosticating demographic changes in the future? The theory of demographic transition is critically evaluated and several hypotheses are outlined concerning the current differences in births, deaths and natural increase the world over, and changes in this respect in the future, with particular reference to less developed countries.

2. METHOD OF PRESENTATION OF THE ELEMENTS OF POPULATION DYNAMICS

In contemporary demography use is frequently made of a diagram in which rates of births and deaths are plotted against the axis of ordinates, whereas the axis of abscissae represents time. Natural increase, which is the difference between births and deaths, is read on the diagram as the "space" between the curve of the birth-rate and that of the death-rate. This method allows us to follow the changes in births and deaths and natural increase in particular countries and regions, and to confront particular graphs for more detailed comparison (Fig. 1). A method was sought for, however, which would allow a comparison between differences in births, deaths and natural increase in various territorial units (countries, regions, cities, etc.) within the same time interval. To construct such a diagram the following procedure was applied: the birth-rates were plotted on the ordinate axis, and then the death-rates on the abscissae. The rate of natural increase can then be read as the difference between these two rates at any point on the graph. To facilitate the reading of the natural increase rate one can join by lines all the points representing the same value of natural increase, e.g., 5, 15, 25 per 1000, etc. In this way the diagram is divided into slanting zones representing certain natural increase classes, thus introducing order, and facilitating the reading of the graphic presentations (Fig. 2).

This method is most suitable for illustrating the spatial differentiation of natural population dynamic elements within the same time period. Then each point on the graph represents a geographical or administrative unit — a country, region, city, etc. If we circumscribe distinct groupings of points, we can additionally obtain a very clear picture of the classification of countries or regions into groups characterized by a similar natural population dynamics (Fig. 3). This method also gives a picture of changes with time in the three coefficients in one or several territorial units (Figs. 6 and 7).

By means of several variants of this simple method a series of pictures may be obtained, illustrating the current state, and changes in the birth, death and increase rates at various times and in various geographical regions.[1]

[1] Interesting results might be obtained by plotting general fertility rates on the ordinate axis and infant mortality rates on the abscissae.

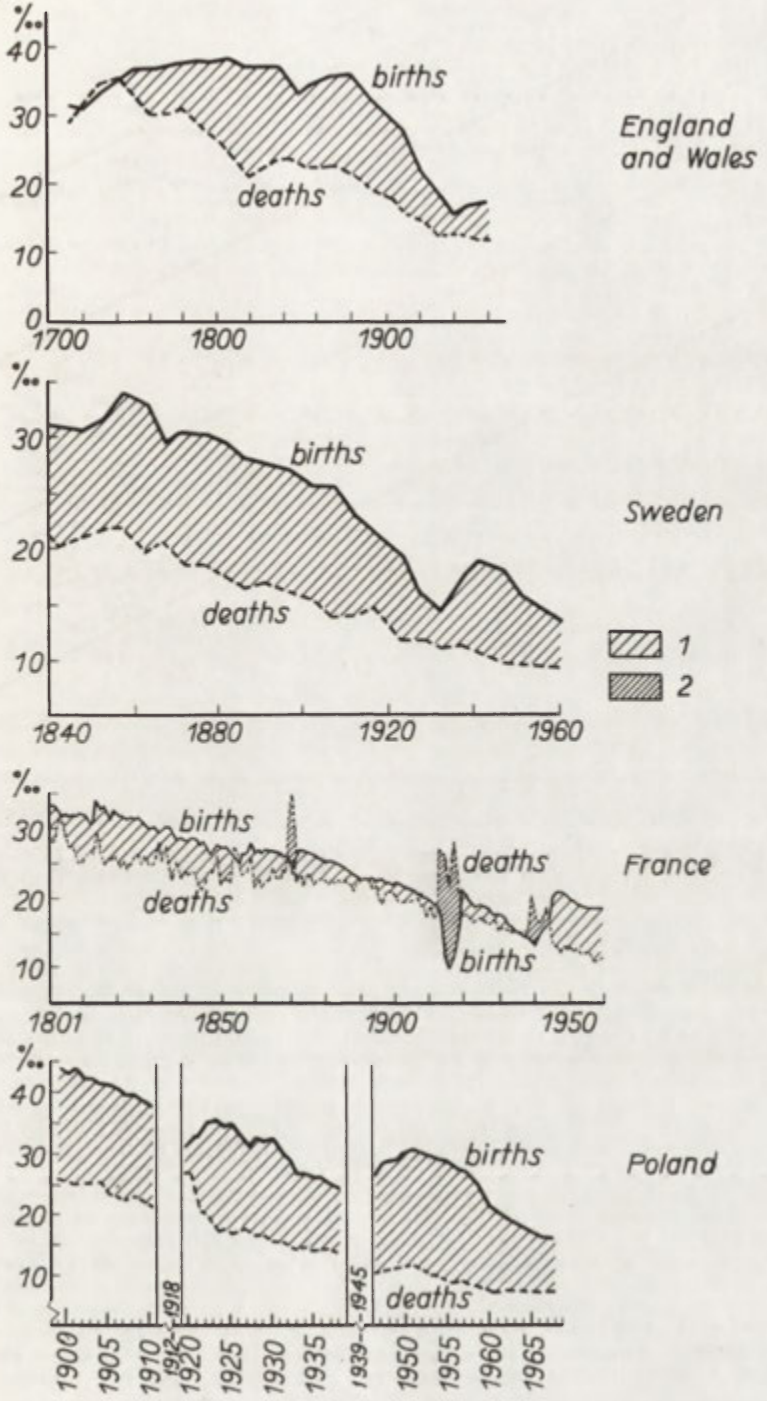


Fig. 1. Evolution of birth rates and death rates in several European countries
1 — prevalence of births, 2 — prevalence of deaths

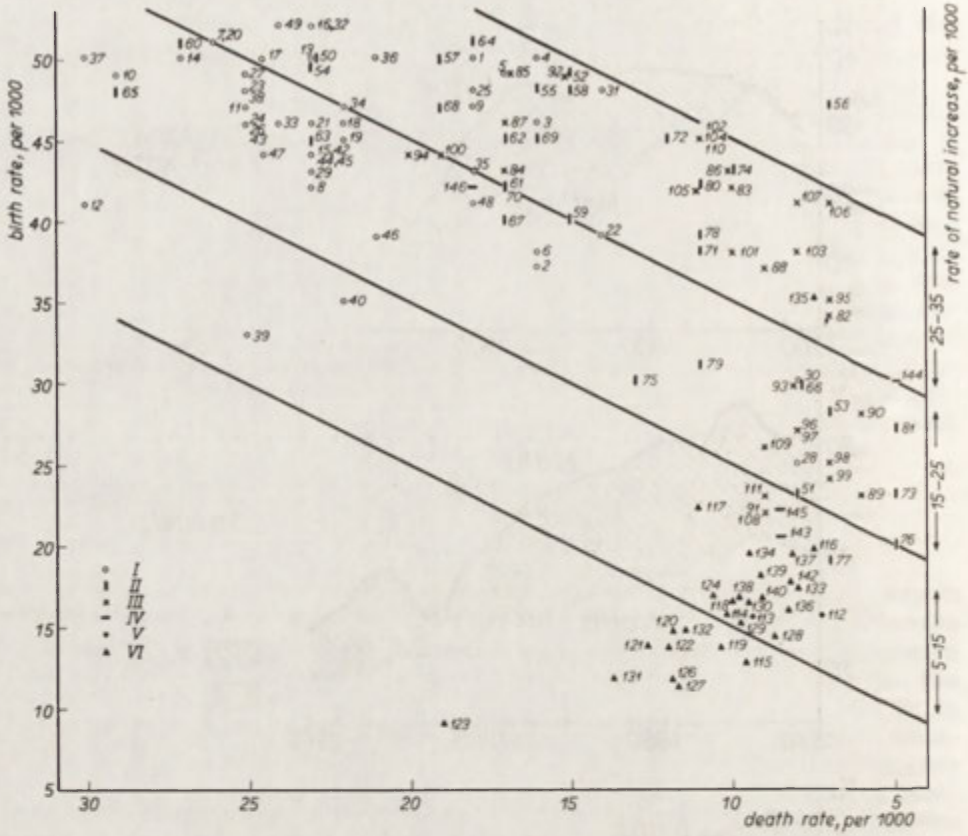


Fig. 2. Births, deaths and natural increase in the world in the period 1970–1972 I — Africa, II — Asia, III — Latin America, IV — Australia and Oceania, V — Northern America, VI — Europe and USSR

Countries represented in Fig. 2: 1. Algeria 2. Egypt 3. Libya 4. Morocco 5. Sudan 6. Tunisia 7. Dahomey 8. Gambia 9. Ghana 10. Upper Volta 11. Guinea 12. Guinea-Bissau 13. Liberia 14. Mali 15. Mauritania 16. Niger 17. Nigeria 18. Senegal 19. Sierra Leone 20. Togo 21. Ivory Coast 22. Cape Verde Islands 23. Burundi 24. Ethiopia 25. Kenya 26. Malagasy Rep. 27. Malawi 28. Mauritius 29. Mozambique 30. Reunion 31. Rhodesia 32. Rwanda 33. Somalia 34. Tanzania 35. Uganda 36. Zambia 37. Angola 38. Chad 39. Gabon 40. Equatorial Guinea 41. Cameroon 42. Congo 43. Central African Republic 44. Zaire 45. Botswana 46. Lesotho 47. Namibia 48. Rep. of South Africa 49. Swaziland 50. Saudi Arabia 51. Cyprus 52. Iraq 53. Israel 54. Yemen Arab Rep. 55. Jordan 56. Kuwait 57. Oman 58. Syria 59. Turkey 60. Afghanistan 61. India 62. Iran 63. Nepal 64. Pakistan 65. Sikkim 66. Sri Lanka 67. Burma 68. Indonesia 69. Khmer Rep. 70. Laos 71. Malaysia 72. Philippines 73. Singapore 74. Thailand 75. China 76. Hong Kong 77. Japan 78. Dem. People's Rep. of Korea 79. Rep. of Korea 80. Mongolia 81. Taiwan 82. Costa Rica 83. El Salvador 84. Guatemala 85. Honduras 86. Mexico 87. Nicaragua 88. Panama 89. Antilles 90. Bahamas 91. Barbados 92. Dominican Rep. 93. Guadeloupe 94. Haiti 95. Jamaica 96. Cuba 97. Martinique 98. Puerto Rico 99. Trinidad-Tobago 100. Bolivia 101. Brazil 102. Ecuador 103. Guiana 104. Colombia 105. Peru 106. Surinam 107. Venezuela 108. Argentina 109. Chile 110. Paraguay 111. Uruguay 112. Canada 113. United States 114. Denmark 115. Finland 116. Iceland 117. Ireland 118. Norway 119. Sweden 120. United Kingdom 121. Austria 122. Belgium 123. Berlin West 124. France 125. Netherlands 126. Luxembourg 127. German Federal Republic 128. Switzerland 129. Bulgaria 130. Czechoslovakia 131. German Democratic Republic 132. Hungary 133. Poland 134. Romania 135. Albania 136. Greece 137. Spain 138. Italy 139. Yugoslavia 140. Malta 141. Portugal 142. USSR 143. Australia 144. Fiji 145. New Zealand 146. Papua-New Guinea

Based on data from: *World Population Data Sheet*, Population Reference Bureau, Washington, 1973

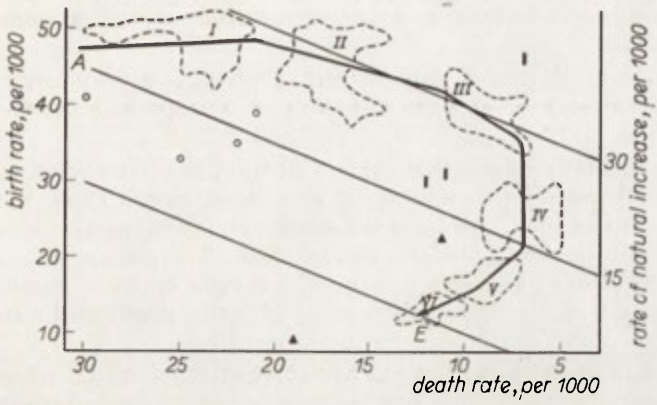


Fig. 3. Demographic provinces in the period 1970–1972 and supposed tendency of changes in births, deaths and natural increase (line A–E)

3. SPATIAL DIFFERENTIATION OF BIRTHS, DEATHS AND NATURAL INCREASE IN THE PERIOD 1970–1972

Figure 2 shows the differences in births, deaths and natural increase all over the world, on the basis of data for the period 1970–1972.[2] The picture indicates above all the existence of several groups of countries (cf. also Fig. 3).

In group I may be classified most countries of Tropical Africa, and such Asian countries as Afghanistan, Nepal, Sikkim and Saudi Arabia. These countries are characterized by a high or very high birth-rate and mortality exceeding 20 per 1000.

In group II, Arab countries of the Middle East and North Africa dominate, beside several large countries of South and South-East Asia (India, Pakistan, Burma, Indonesia), several small Latin American countries (Bolivia, Guatemala, Nicaragua, Haiti) and some of the African countries south of the Sahara (Ghana, Uganda, Rhodesia and the Republic of South Africa). Thus this group includes the most highly developed countries of Africa and the least developed ones in Asia and Latin America.

In group III the large countries of South America (Brazil, Equador, Colombia, Mexico, Paraguay, Peru, Venezuela) prevail. Here also belong several countries of Central America, and some smaller Asian countries (Costa Rica, Jamaica, The Philippines, Malaysia, Thailand) as well as one European country — Albania.

To group IV belong, beside Chile, mainly small Asian, mostly insular countries (Taiwan, Sri Lanka, Singapore, Hong Kong), some countries of Central America (Puerto Rico, the Antilles, Bahamas, Guadelupe) and East-African ones (Mauritius and Reunion Islands) as well as Israel.

Group V comprises the "white" countries of South America (Argentina and Uruguay), Australia and New Zealand, Japan, the USA and Canada, the USSR

[2] Our elaboration is based on the statistical data given in *"Population Information for 163 Countries"* (1973). The data given in this publication concerning developed countries are valid as of 1972, those for most of the less developed countries were compiled at earlier dates. It is therefore assumed, with a certain approximation, that this publication shows the general state of births and deaths for the period 1970–1972.

and most countries of Central and Southern Europe as well as some West European countries.

The last group, VI, the dominant trait of which is a very low birth-rate, includes the countries of Northern and Western Europe and the German Democratic Republic.

This classification proves that certain distinct characteristics, specific "demographic laws" prevail in each region or subcontinent. Thus, the six distinct groups of countries might be termed demographic regions or "provinces", since they are not identical with geographical regions. The picture obtained may also suggest the existence of certain dynamics, a certain trend of demographic evolution manifested in a gradual diminution of birth, death and natural increase rates (Fig. 3).

The suggestion of the existence of these regularities would have to be accepted as an axiom if the graphic picture in point could be interpreted according to one of the most popular contemporary theories of demographic evolution — the theory of demographic transition. According to this theory, we would have to assume that the graphic picture discussed is the expression of the degree of advancement of demographic evolution in the particular world regions, that group I, e.g. the countries of Tropical Africa, are the most retarded from the point of view of demographic evolution and that group VI (Western and Northern Europe) represent the most advanced position in this respect. To make this clearer we give a short outline of the theory of demographic transition.

4. THEORY OF DEMOGRAPHIC TRANSITION

This theory, developed mainly by Anglo-Saxon demographers after World War II, has gained great popularity, mainly owing to the publications of the United Nations Population Division. Numerous widely known demographic analyses and prognoses, as well as a division of the world into demographic regions, have been based on it.

"The axiom of the transition theory is the affirmation that the natural regularity of population dynamics consists in a balance between births and deaths. The 'artificial' disturbance of this balance which occurred owing to the reduction of deaths in the course of demographic revolution led, therefore, of necessity to the establishment of a new equilibrium".[3] Where this balance, that is the low level of births and deaths, has not yet been established in this new equilibrium it will appear as the result of social and economic development.

It is assumed that the differences in demographic evolution in particular countries, regions and continents exist only in that the particular stages and phases of the evolution are shifted in time and occur with different intensity, always tending to the same goal. The spatial differentiation of the demographic evolution is considered to be regional or local types of the same general scheme.

It should be added that the theory of demographic transition postulates that with the end of the first stage of evolution, characterized by wide variations of mortality, the further course would be harmonious without crisis or depression. Thus the advocates of the theory of demographic transition assume — consciously or unconsciously — that demographic evolution will occur

[3] M. Okólski (1974), p. 106.

in favourable or at least neutral circumstances, that social and economic development is and will be everywhere of linear and durable character.[4]

By compiling various classifications known in the literature we can present a scheme of demographic transition as follows (cf. also Fig. 4):

(1) Primary stage (terms used in the literature: pretransitional, high-fluctuating, *régime primitif*). Natality and mortality are high and undergo (particularly mortality) wide and frequent variations; natural increase is low, the average life span is short.

(2) Transition stage (*régime intermédiaire*).

(2a) Phase one (early transitional, early expanding, *régime jeune*). Natality remains high or even temporarily increases, mortality decreases at first slowly, then faster; natural increase is considerably enhanced.

(2b) Phase two (late transitional, late expanding, *régime mur*). A rapid fall in natality occurs, mortality still decreases slowly and reaches in this phase its lowest level; natural increase continues high.

(3) Final stage (post-transitional, low-fluctuating, *régime vieux*).

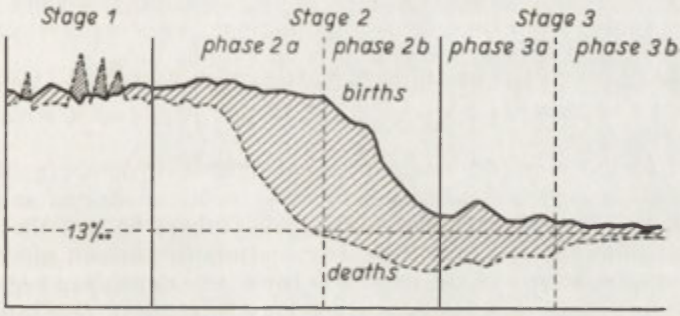


Fig. 4. Model of evolution of births and deaths according to the theory of demographic transition

It is not possible to give an unequivocal description of the end stage, since the advocates of demographic transition do not agree in their opinions as regards the course of this stage. The authors of this theory, e.g. C. P. Blacker (1947), no doubt under the impact of the experience of West European countries before World War II, were inclined to suppose that in the end stage of evolution natality will inevitably decline below mortality and a process of depopulation will progress. Some demographers, who in the 1950's and 1960's developed

[4] Compare for instance the view expressed in the documents prepared by the UN Population Division for the World Population Conference in Bucharest: "It is admitted that catastrophic events can occur at unforeseen moments exacting a huge toll in human lives ... Such calamities, however, find no place in the present speculations which concern a world in which human efforts at maintaining acceptable living conditions will not be so severely defeated" (*Concise report* ... 1974, p. 49). "In considering the attenuation of population growth, it should be kept in mind that in terms of human welfare and quality of life, of the two extreme ways of achieving low population growth rates, namely the high mortality — high fertility pattern, and the low mortality — low fertility pattern, only the latter is acceptable... Once mortality rates have declined and population growth accelerated, no one would argue that a sensible way of returning to lower rates of population growth is through raising mortality" (*Demographic trends*... 1974, p. 7).

the theory of demographic transition, such as D. Bogue (1969), claimed that the end stage of evolution will be characterized by oscillations leading to an automatic adaptation of natural increase to economic growth tendencies. This view was certainly influenced by observation of the changes which occurred in West European countries after World War II. Other followers of the demographic transition theory affirm that demographic processes should be consciously managed by an active demographic social and economic policy. At this point some authors postulate that an attempt should be made to stabilize natural increase at a very low level, whereas others adopt the concept of zero population growth (ZPG) claiming that demographic evolution should always end with this situation.[5]

This standpoint has been favoured lately by the United Nations Populations Division as may be seen from the documents prepared by them in connection with the World Population Conference in Bucharest. Let us consider the version of the theory of demographic transition expounded in these documents. According to the classification given in one of them, in the end stage of evolution two phases could be distinguished: [6]

— Phase one (3a): natality continues to decrease, but more and more slowly, undergoing at the same time certain oscillations, whereas mortality begins to increase somewhat; natural increase is moderate or low;

— Phase two (3b): fertility falls to the level of simple reproduction; natality and mortality approach a level of about 13 per 1000 and a situation of ZPG begins to stabilize.

We find in the same document regional models of demographic transition, that is models of current and future changes in births, deaths and natural increase (Fig. 5). These models prove that their authors believe that Europe and other industrialized regions have already reached the second phase of the end stage or are approaching it. On the other hand, less developed regions are supposed to be in a stage of transition which may be more or less intensive in the particular regions, but which will gradually evolve everywhere into the end stage of evolution. Then natural increase on a world scale will decrease, so that the number of inhabitants of this planet will approach a stabilization level.

If the models mentioned above supplemented by data from other sources, are represented by the graphic method already described (Fig. 6), the picture obtained is strikingly similar to the previously analyzed one of differences in births, deaths and natural increase all over the world (Fig. 2). The similarity of these pictures indicates how the current differences in births, deaths and natural increase should be interpreted on the basis of the theory of demographic transition, or, strictly speaking, the version of this theory advocated by the UN Population Division. It would then have to be assumed — as already mentioned — that the current picture of the differences expresses the degree of advancement of demographic evolution in the particular world regions; an evolution which follows in particular regions somewhat different pathways but tends in the same direction, that is, towards the ZPG state.

Such a concept is, doubtless, very attractive. Since it does not expect any major disturbances in the demographic processes, division and classification

[5] Among the demographers postulating a stabilized natural population increase at low level may be quoted one of the authors of the theory of demographic transition F. W. Notenstein (1970), and among the supporters of zero population growth, the demographers responsible for the report: *"Population and American Future"* (1972) and those working in the UN Population Division. Cf. M. Okolski (1974), pp. 111–113.

[6] *Concise report...* (1974), pp. 52–53.

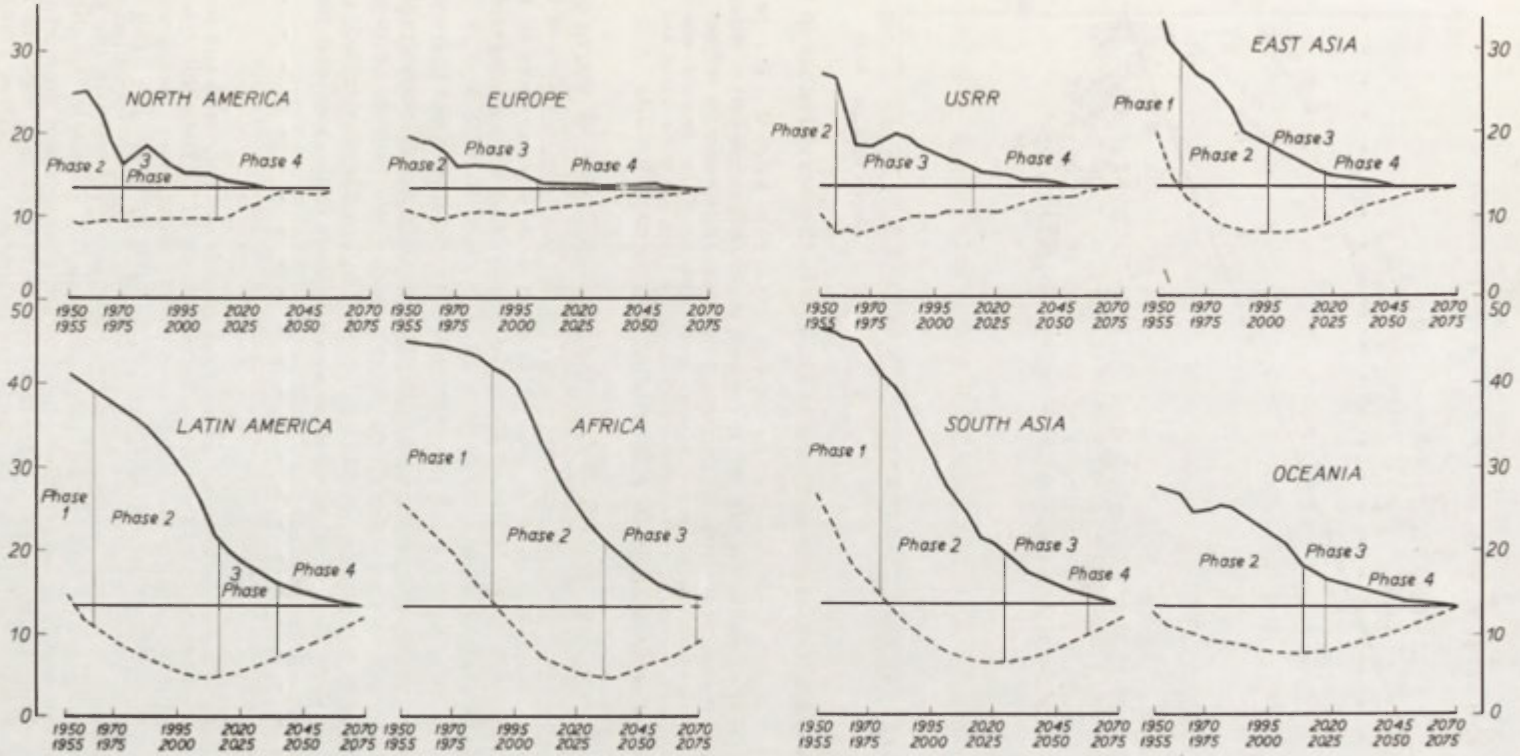


Fig. 5. Birth-rates and death-rates, per thousand population, 1950–2075, in eight major areas of the world and the phases of demographic evolution according to UN estimates and projections. Note: phases 1, 2, 3, 4 UN classification correspond to phases 2a, 2b, 3a, 3b in the classification here applied

Source: *Population Studies*, No. 56, 1974, pp. 52-53

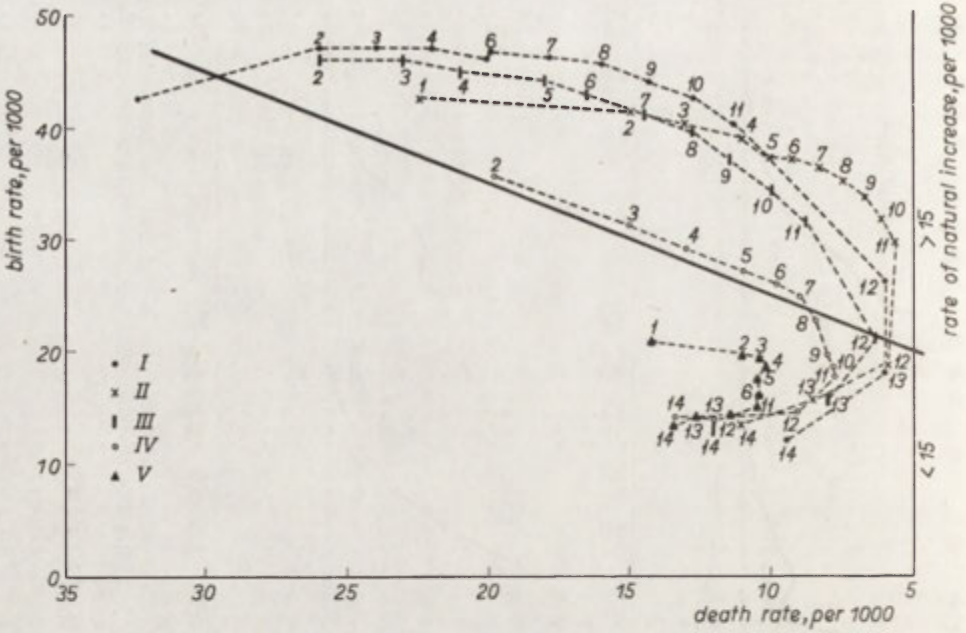


Fig. 6. Evolution of births, deaths and natural increase in five world regions in the period 1935–2075

I — Africa, II — Latin America, III — South Asia, IV — East Asia, V — Europe

1–14 years: 1) 1935–1939; 2) 1950–1955; 3) 1955–1960; 4) 1960–1965; 5) 1965–1970; 6) 1970–1975; 7) 1975–1980; 8) 1980–1985; 9) 1985–1990; 10) 1990–1995; 11) 1995–2000; 12) 2020–2025; 13) 2045–2050; 14) 2070–2075

Based on data from: *Demographic Trends in the World and its Major Regions 1950–1970*, E/Conf.60/CEP/14, Bucharest 1974, p. 17; *Population Studies*, No. 56, 1974, pp. 52–53; *World and Regional Population Prospects*, E/Conf.60/CBP/15, Bucharest 1974, p. 11

both in time and space become very easy; thus the distinction of stages and phases of evolution and their regional types, or, on the contrary, division of the world into demographic regions from the point of view of advancement of the demographic evolution. In the light of the concept described here demographic forecasting would also be simple.

Unfortunately the simplicity and logic of a scientific theory do not guarantee its correctness. Thus, doubt arises as to whether the theory of demographic transition, which explains so simply and unequivocally the process of demographic evolution, is not incorrect or at least over-simplified and onesided, and as to whether in view of this, it is a useful tool in the investigation and forecasting of demographic processes? [7]

[7] It is necessary to stress once more that we have consciously restricted and facilitated our task by presenting only the version of the theory of demographic transition found in the UN documents. Many followers of this theory view demographic evolution in a more complex manner. Let us, for instance, compare the following declaration: "Despite broad similarities among nations in demographic transition, diversities in culture, economic development, social organization, etc. have in the past determined a wide variety in patterns and rates of population growth in the different countries of the world. If interrelationship of social, economic and demographic factors have been complex in the past, there is no reason to think that they will become simpler and easier to interpret in the future..." (*Future Population Trends*.. 1967, p. 202).

5. CRITICAL REVIEW OF THE THEORY OF DEMOGRAPHIC TRANSITION

Quite a few doubts arise regarding the theory of demographic transition if a more detailed analysis of the changes in births, deaths and natural increase is performed with reference to particular countries. Figure 7 shows these changes in a number of highly industrialized and less developed countries. The diagram was plotted by the same method as the preceding ones. Its analysis leads to the following observations.

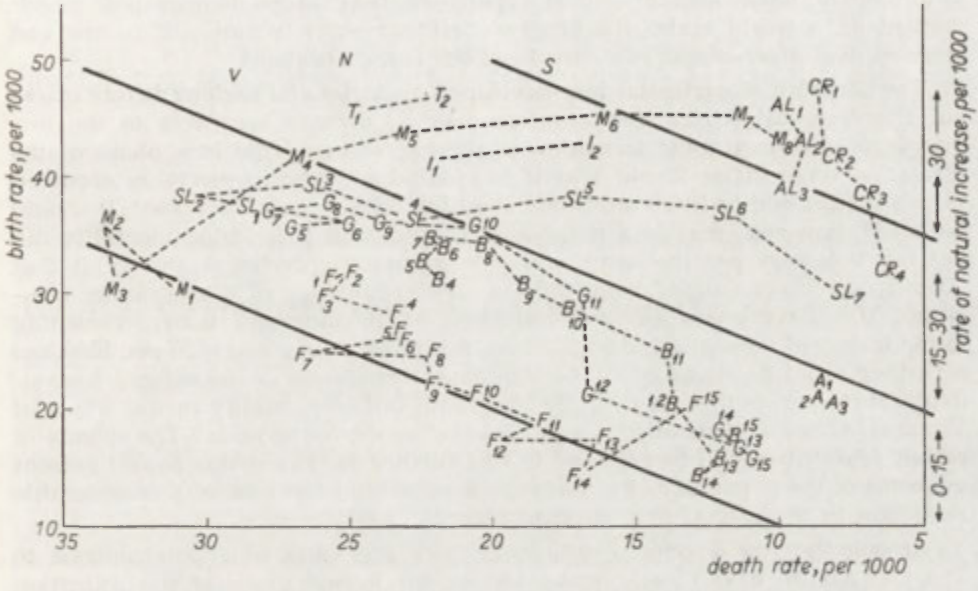


Fig. 7. Evolution of births, deaths and natural increase in several countries of West Europe, Africa, Latin America and Asia

V — Upper Volta 1970?; N — Nigeria 1970?; S — Sudan 1970?; T — Tanzania: T_1 — 1955, T_2 — 1972?, AL — Algeria: AL_1 — 1966; AL_2 — 1967, AL_3 — 1968; CR — Costa Rica: CR_1 — 1960, CR_2 — 1965, CR_3 — 1967, CR_4 — 1970–1971; M — Mexico: M_1 — 1895, M_2 — 1900, M_3 — 1910, M_4 — 1930, M_5 — 1940, M_6 — 1950, M_7 — 1960, M_8 — 1970; A — Argentina: A_1 — 1960, A_2 — 1965, A_3 — 1966–1969; I — India: I_1 — 1951–1961, I_2 — 1965–1970; SL — Sri Lanka: SL_1 — 1901–1910, SL_2 — 1911–1920, SL_3 — 1921–1930, SL_4 — 1931–1940, SL_5 — 1941–1950, SL_6 — 1960, SL_7 — 1970; B — England and Wales; F — France; G — Germany (1945–1950: Federal Republic): G_1 — 1808–1812, G_2 — 1818–1822, G_3 — 1828–1832, G_4 — 1838–1842, G_5 — 1848–1852, G_6 — 1858–1862, G_7 — 1868–1872, G_8 — 1878–1882, G_9 — 1888–1892, G_{10} — 1898–1902, G_{11} — 1908–1912, G_{12} — 1918–1922, G_{13} — 1928–1932, G_{14} — 1938–1942, G_{15} — 1946–1950

Based on data from: *UN Demographic Yearbook*, 1971; *UN Monthly Bulletin of Statistics*, 1961, no. 5; *Middle East and North Africa, 1974–1975*, Europa Publ., London 1974; *Population* (Paris), 29 (1974), No. 3; *Proceedings of the World Population Conference* 1954, New York 1955, vol. 1; W. S. Thomson, *Population Problems*, New York 1953; *World Population Data Sheet*, Population Reference Bureau, New York 1973

The difference between the pathways on which the developed countries embarked in the course of the past 100–150 years, and these followed in the last decades by the less developed countries, is pronounced. The natural increase in the industrialized countries of Western Europe did not exceed, in the transition stage, 15 per 1000 per year, whereas in less developed countries it was, as a rule, above this value in the last decades. The different pathways of demographic evolution observed in the past and at the present moment suggest that their

harmonious concurrence in the future may be doubtful and so may be the identity of the postulated destination trend.

The example of France is significant. It proves (and many such examples may be quoted) that demographic evolution does not occur harmoniously everywhere according to the postulates of the theory of demographic transition. In the demographic evolution of France we see numerous critical situations and depressions, as well as processes of demographic compensation, so that it would be difficult to distinguish, in the history of this country a distinct transition stage characterized by an elevated natural increase. Is it therefore possible to assume, notwithstanding past experience, that future demographic development on a world scale will progress without obstacle and will in the end stage of evolution subsist at a zero level without oscillation?

The situation of particular less-developed countries and regions differs markedly. In Tropical Africa this situation may be defined according to the terminology of demographic transition as the beginning of the first phase of the transition stage. After World War II, a gradual decrease in mortality occurred in this region, and fertility continued at a high level or even increased. It should be noted, however, that in a number of countries in this region mortality did not fall below 20 per thousand, and it is probably only below this limit that "demographic revolution" begins, or in the terminology of demographic transition, the first phase of the transition stage develops fully. According to the theory of demographic transition a fall in mortality below 20 per 1000 and a further rapid decrease in all African countries should be considered unavoidable. However, is this perspective of a rapid fall in mortality in the whole of Tropical Africa and in other less developed countries obvious? The events of recent years (they will be referred to in a further section of this paper) present evidence of the possibility of a quite opposite trend, or at least of a considerable reduction in the rate of mortality decrease.

Among the less developed countries there are some which, in contrast to Tropical Africa, have clearly embarked on the second phase of the transition stage, in which a marked depression of mortality occurs with a rapid fall in births. It is doubtful, however, whether this fall will be as pronounced as it was in the European countries in which demographic evolution had a quite different course. Let us now consider the case of Argentina. In this country a certain state of equilibrium set in the last decade and has continued to exist since; natality was moderate, mortality low so that natural increase stabilized at a moderate level. Should this situation be considered transitional? Is its only possible evolutionary trend an approach to the present situation in West European countries?

Let us discuss another situation. In a number of less developed countries, above all large ones such as India or Mexico, the death-rate decreased below 20 per 1000, but the birth-rates in these countries remain at a high level. Applying the terminology of demographic transition it could be said that in these countries phase I of the transition stage persists refractorily. What will be the course of further demographic evolution in these countries? The theory of demographic transition foresees only one possibility — the setting in of the second phase of the transition stage, that is a drastic fall in the high natality level with a further gradual decrease in mortality.

Is this the only possible trend of evolution? Theoretically, at least three other eventualities are possible:

— external expansion, notwithstanding its character (to quote the classical example of overpopulated Ireland);

— a versatile development and internal expansion (e.g. by cultivating previously uncultivated land, if such is available) which may favour a prolonged period of high natural increase;

— a critical situation which, independent of particular causes, would bring about an increase in deaths and a fall in births and thus a reduction of natural increase.

The latter possibility in particular should be taken into account.

6. SIGNIFICANCE OF RECENT EVENTS

Notwithstanding theoretical arguments and past experience, the events of recent years provide a strict verification for the theory of demographic transition.

In recent years there has occurred a distinct demographic depression in most West European countries, while in several of the poorest countries there has been a demographic crisis (Fig. 8). These are not hypotheses but facts. In so far as the demographic depression in the western countries might be considered, according to demographic transition principles, as an acceleration of the end stage of demographic evolution, the demographic crisis in the poorest countries reveals the deficiency in the theory of demographic transition.

The crisis phenomena are not of a general character. In some countries an intensification of demographic dynamics is even observed or else it subsists at an unchanged level. Within continents and smaller regions (or within the demographic provinces) certain regroupings occur. If the most recent data concerning births, deaths and natural increase were available, we would no doubt find that the current picture is more "diffuse" than that shown in Fig. 2, which corresponds to the world situation at the beginning of the 1970's. A superficial analysis of the situation at this data could — as we have tried to demonstrate —

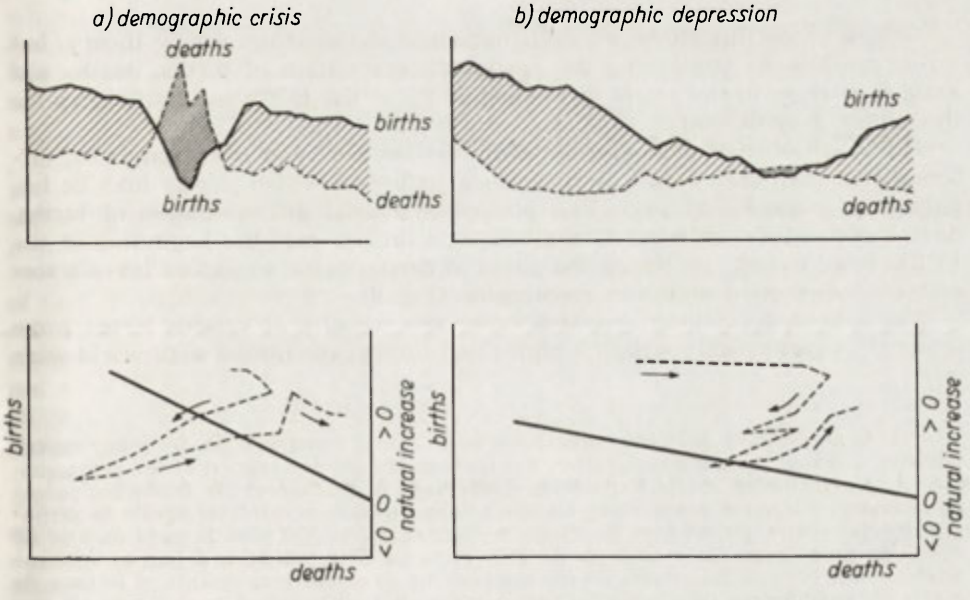


Fig. 8. Demographic crisis and depression (abstract situation).

Note: The demographic crisis and depression phenomena are presented by two graphic methods

have suggested that demographic evolution actually advances in a definite direction towards a goal determined by the present situation of West European countries. The events of recent years, on the other hand, seem to indicate that demographic evolution is a much more complex process than could have been expected in the light of the theory of demographic transition. Such facts as the tragedy of the Sahel prove that approaches based on this theory cannot be considered realistic.[8] If the authors of the theory of demographic transition disregard the alternative of the appearance of critical situations in the course of demographic evolution, such an attitude would seems rather to hamper advances in science and in practical activities. Only a projection of the true alternatives of evolution will lead to the formulation of the pertinent questions: Is there a possibility of avoiding a critical situation? What conditions should be fulfilled for demographic evolution to run its most favourable course?

Analysis of changes in births, deaths and natural increase in the past, and observation of recent events, lead to the conclusion that the theory of demographic transition does distinguish certain characteristics of demographic evolution. It is, however, an over-simplified, and apparently too culture-centred a concept to be a sufficiently reliable foundation for interpreting the current demographic situation and predicting further demographic evolution both in developed and less developed countries.

The limitations of the theory of demographic transition — one of the most popular theories in contemporary demography — point to the urgent need for an integral theory of demographic evolution which would be free from the simplification of a culture-centred approach and could serve as a solid basis for analysis and prediction of demographic processes and investigations in the field of population geography.

7. CONCLUSIONS AND HYPOTHESES CONCERNING THE CURRENT DEMOGRAPHIC SITUATION AND ITS FUTURE EVOLUTION

Of course, in this study we shall not attempt to outline a new theory, but a few conclusions concerning the spatial differentiation of births, deaths and natural increase in the world at the beginning of the 1970's and hypotheses for the future, may be useful.

It is assumed that demographic evolution has run, and runs, somewhat differently in each region and country along pathways which jointly may be imagined as a bundle of rays. The picture of spatial differentiation of births, deaths and natural increase at a given time (in our case the beginning of the 1970's) is a "screen" on which the paths of demographic evolution leave traces of their intersection points in each region (Fig. 9).

The course of evolution deviates under the pressure of various forces, some internal, operating only within a region or country, and others with world-wide

[8] It is noteworthy that this unrealistic approach is remarked on, by many representatives of less developed countries. For instance in the declaration of the representative of Egypt to the World Population Conference in Bucharest the following passage is found: "...De cet écart entre les deux taux résulte ce que l'on apelle la démographie galopante. Or cet état de choses ne saurait durer. Ou bien le pays en voie de développement gagne la course au progrés et la natalité y tendra a baisser immanquablement, ou bien les efforts de développement s'averent insuffisants et le taux de mortalité augmentera de nouveau. Cette dernière hypothèse n'est pas une simple vue d'esprit, il suffit de voir les ravages de la sécheresse en Afrique pour s'en convaincre" (*Delegation...* 1974, p. 3).

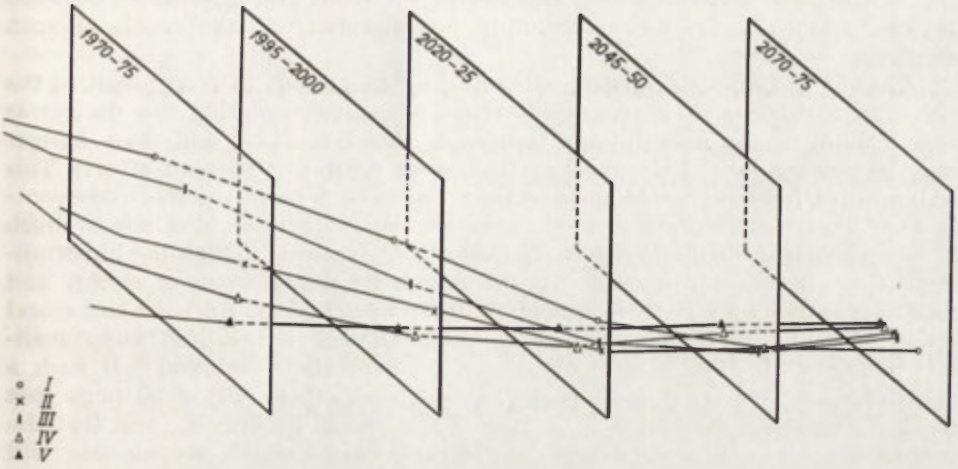


Fig. 9. Evolution of births and deaths in five large regions of the world in the period 1970–2075 according to UN prognoses

I — Africa, II — Latin America, III — South Asia, IV — East Asia, V — Europe

Based on data from: *Demographic Trends in the World and Its Major Regions, 1950–1970, World Population Conference*, E/Conf.60/CBP/14, Bucharest 1974, p. 17; *Population Studies*, No. 56, 1974, pp. 52–53; *World and Regional Population Prospects*, World Population Conference, E/Conf.60/CBP/15, Bucharest 1974, p. 6 and 11

or even cosmic impact. It is obvious that in the contemporary era the pathways of demographic evolution have undergone modifications in all regions and countries, owing to the expansion of scientific-technological civilization. Particularly between World War II and the 1970's there has been a marked tendency to a decrease in deaths everywhere (with some few local exceptions) where it had previously been high. Where mortality had, however, diminished earlier, a very low level of deaths continued to prevail. On the other hand, natality, which results from more complicated conditioning than mortality, showed a much more irregular course, significantly influencing changes in the evolution pathways in particular countries and regions.

According to the version of the theory of demographic transition discussed previously further evolution would consist in a shift of all pathways in the same direction and their harmonious convergence at one point defined as zero population growth (cf. Fig. 9).

This perspective, however, seems improbable. In recent years the effect of factors depressing natural population increase has become more pronounced, either owing to an increase in mortality or a decrease in natality. In extreme cases a demographic crisis or depression has developed. These phenomena are not of a general character, but occur by certain regroupings within the particular demographic provinces and the pathways of evolution are shifted in particular regions.

Let us now consider the possibility of further changes. A realistic point of view obliges us to take into account the serious danger of a deepening and extension of the present crisis symptoms into the appearance of a world-wide demographic crisis. In such a case not only a considerable reduction in population growth must be envisaged, but even an absolute diminution of the world's population. When the crisis was over, particularly if it were violent but short-lived the process of demographic compensation should be planned, and new ty-

pes of relations between births and deaths foreseen. The differences between regions and countries would certainly not disappear as the result of such changes.

A realistic approach consists, according to the author, in recognition of the threat of a world-wide demographic crisis, without considering this danger as unavoidable in the near future. Imminent armed conflicts and mass hunger may be averted or at least greatly reduced by constant strenuous efforts. This will require, however, great perseverance. The view is more and more frequently expressed that the fate of the coming decades will be decided not so much by economic transformations or technological innovations, though the importance of these is beyond question (e.g. the search for new sources of energy and food) but rather by a great mobilization and renewal of the spiritual and moral forces of humanity. Some scientists speak of the need to mobilize "supplementary energies",[9] of an ethical or scientific-humanistic revolution.[10] If such a transformation could, at least partly, be achieved, there would be hope that the looming crisis would not be extended and would be averted, and that the coming era would produce a new "demographic law" which, we suppose, will not be the state of ZPG, but will probably consist of a reduction in present contrasts and stabilization, on a world scale, at a moderate rate of natural increase with the preservation of regional and national individualities.

From a scientific point of view this concept may be treated as a hypothesis to be developed. It should be presented in the form of a graph according to the method described here. The tasks outlined here, however, greatly exceed the scope of this paper, and require a separate study.

Institute of Geography and Spatial Organization
Polish Academy of Sciences, Warsaw

BIBLIOGRAPHY

Blacker, C. P., 1947, *Stages in population growth* (after J. Condé 1971).

Bogue, D. J., 1969, *Principles of demography*, J. Wiley, New York.

Concise report on the world population situation in 1970–1975 and its long-range implications, 1974, UN Dep. of Econ. and Soc. Affairs, *Population Studies*, 56, New York.

Condé, J., 1971, *La transition démographique appliqué à l'Afrique tropicale*, OCEDE, Paris.

Delegation de la République Arabe d'Egypt, Allocution du... Ministre de la Planification, 1974, Conference mondiale de la Population, Bucharest.

---

[9] Introducing the notion of 'supplementary energies' A. Wielowieyski writes: "*«Supplementary energies» are such energies which stimulate and make possible the undertaking of efforts without expecting therefrom immediate advantages* (stressed by the author). Wherever people are active, although fear, social obligation or immediate benefit motivation are lacking, their 'supplementary energies' have been set in motion... Without them all great social ventures are achieved very slowly and at a high cost, and frequently are impossible. On the other hand, all eminent achievements in the world of ideas, art, and probably also in science cannot be imagined without 'supplementary energies'. The reserves of 'supplementary energies' can be mobilized in the first place by changes, extension and deepening of motivation of activity". (A. Wielowieyski, 1968, pp. 386–387).

[10] *Rewolucja naukowo-humanistyczna*, 1974.

Demographic trends and economic and social development, 1974, World Population Conference, E/Conf. 60/4, Bucharest.

Demographic trends in the world and its major regions, 1950–1970, 1974, World Population Conference, E/Conf. 60/CBP/14, Bucharest.

Festy, P., 1974, Evolution de la population en Amerique Latine, *Population*, 29, 3, pp. 609–632.

Future Population Trends and Prospects, 1967, World Population Conference, 1965, Beograd, vol. 1.

Middle East and North Africa 1974–1975, 1974, Europa Publ., London.

Notenstein, F. W., 1970, Zero population growth, *Population Index*, 4(36).

Okólski, M., 1974, *Polityka demograficzna. Zagadnienia społeczno-ekonomiczne* (Population policy. Socio-economic problems), PWN, Warszawa.

Population and American future, 1972, Report of the Commission on Population Growth and the American Future, Washington.

Population information for 163 countries, 1973, Population Reference Bureau, Washington.

Proceedings of the World Population Conference 1954, 1955, United Nations, New York, vol. 1.

Rewolucja naukowo-humanistyczna (Scientific and humanistic revolution), 1974, ed. J. Aleksandrowicz, WP, Warszawa.

Thompson, W. S., 1953, *Population problems*, McGraw-Hill, New York.

Wielowieyski, A., 1968, *Przed trzecim przyspieszeniem. Szkice do zagadnień rozwoju społecznego* (Before the third acceleration. Essays on social development), Warszawa.

World and Regional Population Prospects, 1974, World Population Conference, E/Conf. 60/CBP/15, Bucharest.

UN Demographic Yearbooks.

UN Monthly Bulletin of Statistics.

GEOGRAPHIA POLONICA 35, 1977

TRANSITIONAL AREAS IN THE CITIES OF THE THIRD WORLD COUNTRIES

Zuzanna Siemek

"The growing number of people who live in large cities is one of the most important factors shaping the human geography of the modern world". This opinion quoted from J. Johnson (1973, p. 20) emphasizes the predominant feature of contemporary urbanization processes. It applies, therefore, to any study of changes occurring in human economic and social life under the conditions of large cities. Thus, the world over, cities, whether of international or only national rank, have grown and are growing rapidly. The standard of large city life captivates and pervades wider and wider circles of population. Everywhere large cities account for the principal, and, in many countries of the Third World, the only areas of modern activities. They comprise the centres of modernization and innovation, as well as of the decision-making bodies, thus being the convergent points of important political, productive and service functions.

The universality of urbanization phenomena, however, refers to their general symptoms. In actual fact it is a complex process afected by multifarious factors, so that its dynamics and character are dependent also on existing conditions. Historical and modern development conditions which make the countries of the world different from one another, are reflected in unequal ecological and socio-cultural dimensions of urbanization processes (Friedmann 1969).

To return in this context to the opinion quoted at the outset, the influence of large cities on human geography in the modern world should be analyzed from the political and economic as well as socio-cultural viewpoints. It refers also, if not above all, to the division of the world into developed countries and those of the Third World.

The subject mater of this paper has been confined to the problems of large cities of the Third World, the main trend discussed being a rapid flow of population from small towns and rural areas into the cities, together with the increase in the so-called urban transitional areas.

PREMISES OF URBANIZATION IN THE THIRD WORLD COUNTRIES

Symptoms concomitant with the development processes of large urban centres in the Third World are widely known, and so general are the causes of their establishment and growth, these having already become truisms. It is undeniable that the present state of affairs issues, to a great extent, from handicaps imposed on these countries over the period of their political or economic dependency. Colonial empires relentlessly pursued the policy of absolute primacy of their own interests, regardless of whether this might be adverse for

the "dominated countries". No wonder that such a policy led to the existence in the Third World countries of regional socio-economic disparities, and of the dual pattern of functional structure which should be numbered among its regularities. More developed regions accounted for only smallish parts of the backward territory. They, as a rule, coincided with the enclaves of the modern sector, being weakly integrated with the indigenous traditional sector. Apart from areas of export trade, main importance was acquired here by large cities. Very often they alone in a country were in touch with the world economic system. In this way, they were partially developed and adopted to the patterns and requirements of external origin.

All the systems of spatial development and organization of the internal life of a country are characterized, as a rule, by a state of specific inertia. Their transformation requires longer periods of time and changes in the foundations underlying them. The new political and economic situation which was created after World War II in the Third World countries, failed decisively to improve their development, hitherto fashioned by external needs and factors. National governments, and also general conditions existing in these countries, were not prepared for coping with the newly emerged tasks. Attempts conceived on the basis of high efficiency were undertaken, aimed above all at dynamic growth of the modern sector. Hence, the investment programs, both private and public, consciously or not, preferred cumulative accretion of productive-service activities in the more highly developed urban centres. Undoubtedly, economies of scale and of agglomeration played here a prominent role (E. Johnson 1970; Koenigsberger 1973; Weissman 1973). Other smaller cities and most rural areas were seldom included in plans of extension and development. Consequently, the earlier regional disparities began even to deepen. Against this background further factors aggrevating the situation also arose. First of all, there occurred a considerable natural increase in population and in the labour force, for which employment openings were insufficient. Secondly, liberation slogans released among most societies aspirations to break away from stagnation and improve their living conditions. Their realization, however, benefitted only a few population groups.

Disequilibrium of economic and social forces always brings about tensions and leads to clashes of contradictory tendencies. A field of these collisions in the Third World countries is, above all, a large city, where a concentration takes place of population migrating from unprivileged rural areas and small urban centres, under the influence of various material, social and psychological incentives. Moving to the capital, this population expects to find a way out of their troubles and a fulfilment of their hopes.

In the greater part of the Third World countries, the population increase of the large cities assumed an impetuous pace and tremendous proportions. The rush of migrants was not and cannot be regulated, nor can living conditions and dwelling be afforded for all the new inhabitants of the cities. The economic base of the large urban centres is still too weak in relation to their incessantly growing needs. Post-war expansion, it is true, produced in many cities a widening of the modern productive and service sector; nevertheless it is still far from being satisfactory. Moreover, in consequence of its highly developed technology and labour utilization, this sector is characterized accordingly by low labour intensity. The vast majority of population migrating to large cities finds no employment opportunities. Having predominantly no occupational qualifications it blocks the time-honoured municipal sector, in particular unduly crowded, marginal service sections (Albertini 1967; Rosciszewski 1970). In addi-

tion to all these subsistence hardships, very difficult housing circumstances may be added. Neither existing resources nor housing of generally accepted standards comes into prospect for masses of the poorest population of large cities.

THE POSITION OF TRANSITIONAL AREAS IN LARGE CITIES

Problems of spontaneous urbanization are most strongly pronounced in the development of large cities in the Third World. Many a time they enabled a participation of the crises of large urban agglomerations in these countries. Besides, it is unquestionable that the difficulties connected with urbanization processes will continue to grow in the immediate future, so that attempts to overcome them will require greater and greater efforts (*Human...* 1974; *Uncontrolled...* 1968). An adequate evaluation of the urbanization phenomenon in the Third World countries is therefore of major importance for selecting a line of conduct. A favourable symptom seems to be the more and more frequent treatment of its particular forms — as processes leading to the development of societies and of difficulties associated with this — as manifestations of a transitional stage. Adoption of such a mode of thinking throws a different light on the problem of transitional areas and their inhabitants (Dwyer 1974; *Rural-urban... Preface* 1971; Ward 1974).

A high proportion of migrants moving to metropolitan cities boosts their population at a rate of 6% annually, whereas the population of transitional settlements therein grows, generally, at a rate of 12% or even higher. As a consequence, it often numbers from 1/4 to a half of the whole population of cities--metropolises in the Third World countries (*Human...* 1974; Weissman 1973).

Transitional settlements belong to the typical forms of large urban centres. Defined by forbidding outward appearances, they give a general impression of ugliness and poverty, aggravated by the fact that communities settled there reveal many unfavourable traits. This was a reason why until quite lately only negative aspects of these settlements seized upon and why they were considered a burdensome ballast to be rid of.

At present, the opinion is gaining predominance that in actual fact the problem of transitional quarters in the cities of the Third World is exceedingly more complicated and should not be examined in terms of European stereotyped urban civilization (*Final Report...* 1973; *Human...* 1974; Laquian 1969). Under conditions of accelerated urbanization in Afro-Asiatic or Latin American countries, there is no possibility for progressive transformation of rural migrants into town dwellers. Meanwhile the process of adaptation to sometimes quite different ways of life and of securing the necessities of existence in a milieu so far unknown must proceed quickly. Such circumstances give rise to peculiar norms of behaviour and economic activities of migrants which are not always acceptable to the resident population (Mayer 1962; Mitchel 1966).

Care should be taken, however, not to make the mistake of considering transitional settlements to be "exclusively a product of poverty" (Lindauer 1972) and all their inhabitants to be a socially passive element. Population coming to the cities is often characterized by high mobility and a desire to join the stream of the modern way of life, as well as by energy and ability to overcome the difficulties encountered (Ward 1974). Theoretically, the population of transitional areas might be considered a potential source of national welfare, and should

not be disregarded in studies on development of the large cities and of whole countries of the Third World. Besides, there exists a danger that the same population for lack of possibilities to satisfy the necessaries of life may become a source of serious social conflicts.

DEFINITIONS AND CLASSIFICATION OF TRANSITIONAL AREAS

How far the transitional settlements are widespread in the cities of the Third World countries, is evidenced by their rich terminology. Generally accepted terms are: coined in the French language — bidonville, and in English — slum, shanty town, squatter settlement, marginal settlement, or as often used in the UN publications — spontaneous settlement, uncontrolled settlement, unlegal settlement and transitional areas/settlements. The latter term is precisely aimed to stress that these are settlements where processes of economic and social transformation take place (*Human...* 1974). Countries or even regions have their own local names which reflect specific features, e.g. the topographic position of a settlement (*zageh* — hole in Persian), the type of constructive material (*tanakes* — sheet metal, Lebanon), the method of settlement (*gecekondu* — house constructed overnight, Turkey; *barrios invasiones*, Mexico), the social and economic nature of settlement (*bustees* which "are among the worst of slums" in India; *villas miserias*, Argentine), type of inhabitants (*barrios pirates*, Colombia; *pueblos jovene*, Peru), or terms referring to the legal status of a settlement (*colonias illegales*, El Salvador; *quartier clandestine*, Morocco) and many others. [1]

The universality of transitional settlements, however, is by no means a factor facilitating their deeper analysis. Most inhabitants of these settlements are not embraced by any systematic official censuses (*Human...* 1974; *Uncontrolled...* 1968). Regional studies carried out and factual data collected within this realm, are of a random nature both from the regional standpoint and with regard to their merits. However, in recent years, a certain extension of detailed studies on transitional areas has been noticed, since apart from specialists from developed countries, work in this direction is more and more frequently undertaken by experts from the Third World countries (J. T., 1974, *Foreword...*). The significance of these works is not limited, of course, to the simple increase in information or statements of fact. Research workers studying their own homeland exhibit not only better knowledge of local conditions, but also a greater capacity of gaining the confidence of the community under investigation. In this way the identification and understanding of the most crucial problems in given areas becomes much easier.

The low rate of advancement in theoretical works on transitional areas is an indirect consequence of the scarcity of representative statistical data. As was stated at the topical conference held in 1970, in Paris, common methodological and terminological bases have not yet been formulated. The same applies to criteria enabling the phenomena observed to be compared and classified (Pletsch 1973a), let alone the lack of a generally accepted definition of transitional areas. In the relevant literature we find only certain ascertainments concerning the notional scope of some generally accepted terms.

One of the first to discuss the problem of a definition of a slum and to point out the ambiguities in the concept was Ch. Stokes (1962, p. 188). His explana-

[1] Terms collected from many sources, i.a.: Abrams 1971; Flinn 1968; *Uncontrolled...* 1968; *Human...* 1974 quoted from Pletsch 1973a; George 1967; Naciri 1970; Torres 1970.

tion was: "What is slum in the city landscape is of spontaneous origin... the slum is the home of the poor and the stranger, if nothing else... The function of the slum at any moment in city development is to house those classes which do not participate directly in the economic and social life of the city". This definition characterized the slum as the area of marginality. But, Stokes also rightly stated, that: "A good descriptive definition must be capable of fitting a wide range of apparently analogous situations. We must in the definition account for the community housing standards, the community's evaluation of its housing requirements, as well as the community's techniques for handling and absorbing the poor and the stranger".

According to another author, W. Alonso (1964, p. 168), the word "slum" is commonly used to define "an area of very inferior housing in which there is a high incidence of social pathology" but he applies this term here "to denote an area that serves to receive unacculturated immigrants of low income, and in which they remain during the period of acculturation to urban life". In this definition not only an indication of the functions of transitional areas may be found, but also some elements of forecasting the evolution of the population flow to the city.

R. Sturm (1969) singles out the category of "slums" and "squatter districts". The former he defines as "overpopulated quarters", the latter as "wild settlements formed on city fringes", both being characterized by housing conditions threatening the health and morals of their inhabitants. Contrary to W. Alonso, his description underlines only negative aspects of slum and squatter areas, and in spite of applying two different names, denotes both by the same qualities.

J. Turner (*Uncontrolled...* 1968, p. 107) draws attention to the complexity of the areas under discussion. Referring to G. Duggar (1965), Turner says: "there are millions of shacks that are neither built nor occupied by squatters and there are hundreds of thousands of squatters who do not live in shacks but in solidly built houses". Any clear-cut division being here out of the question, a general term "uncontrolled urban settlement" has been accepted in the present paper. Its meaning is: "urban settlement, whatever its duration or expectation may be, that takes place independently of the authorities charged with the control of local building and planning".

When thinking about the definition of "marginal areas" J. Friedmann (1969) considers the possibility of separating a group which he calls the "marginal urban sub-proletariat". He takes into account above all the state of unemployment, but jointly under-employment, low productivity employment and illiterate population. He quotes also the complex index of marginality drawn up by A. Mattelard (1967) which comprises the employment level, education level, housing conditions and median family income. According to Friedmann none of these proposals gives, however, a plain criterion enabling the number of families or population living in transitional settlements to be evaluated objectively.

Ch. Abrams (1971) in a dictionary of terms relating to urban problems uses words "slum" and "squatter". The former refers to "a building or area that is deteriorated, hazardous, unsanitary, or lacking in standard conveniences; also the squalid, crowded, or unsanitary conditions under which people live irrespective of the physical state of the building or area" (p. 285). The word "squatter" means — according to Abrams — "one who settles on the rural or urban land of another without title or right ... A squatter has no rights except what he may acquire by pressure or by statute" (p. 294). In these definitions Abrams defines primarily the physical state and housing conditions of settlements, and the formal-legal position of inhabitants in relation to the area occupied.

A comparison of the afore-mentioned descriptions points to a conclusion that the question of an adequate definition of transitional areas and settlements is not to be dealt with quickly. It can well be assumed that certain symptoms, to a lesser or greater extent, are almost inseparably connected with every settlement of this type, e.g. the spontaneous and illegal nature of their formation, and the lack or weakness of integration with the city proper. A less dependable index, however, is the provisional or primitive type of construction. Not all houses with low standards are inhabited by the non-urbanized population, and vice versa — not all settlements considered to be marginal are on the verge of misery. One may also agree with statements of other authors (J. Racki, R. Racki, P. Prakash 1974, p. 282), that "in any city there is a variety of housing subsystems". These subsystems are characterized by different complexes of negative and positive physical and social features. Thus, to specify a definition equally adequate for all transitional areas, not only a deep insight into their differentiations is necessary, but also an analysis of their principal features.

Similar remarks can be made when discussing the attempts to classify transitional areas. Objective difficulties mean that such attempts are undertaken very rarely.

In the already mentioned paper by Ch. Stokes (1962, pp. 189–190), we can find "picturesque" distinction between the slums. Stokes distinquishes slums of "hope" and slums of "despair", and remarks that this distinction must be to some degree intuitive.

J. Turner (*Uncontrolled...* 1968) makes an attempt to formulate a common criterion for analysis and comparison of "uncontrolled settlements". He adopts the physical state and direction of changes in settlements as a basis for such division. It appears, however, that — in spite of this being a step forward — the proposed classification is very difficult to apply in regional studies, as this criterion allows too wide a comprehension of subjective evaluation.

Types of "squatters" singled out by Ch. Abrams (1971, pp. 294–296) can be considered to be a kind of classification. He distinguishes "the owner squatter, the squatter tenant, the semi-squatter, the store squatter or even the speculator squatter". Abrams points here to the differentiation of the material position of individual squatters, and partly also to their functions. Moreover, he discloses the mechanisms which arise and operate within transitional areas in response to the housing difficulties.

Degrees of adaptation of the migrant to the new conditions in a city, and to different milieus he enters, discussed also in a number of general and regional studies (Berry, Spodek 1971; *Human...* 1974; Koenigsberger 1973; Rao 1974), may be treated as an indirect attempt to classify the transitional settlements. Different conditions and features of the place of residence are thus characteristic of every stage of the migrant's life in a city.

Finally, also Z. Wolak (1974) suggests another criterion of transitional area division. As a starting point, he assumes a chronology of formation of poverty settlements and quarters and their location on the background of the city building system.

In synthetic reports published at the suggestion of the UN on the urbanization of Asia, Africa and Latin America, elements of regional divisions of transitional areas may also be encountered. The best developed of them can be found in Latin America. It is based on the location principle and on the manner of their formation (*Recent ...* 1968). In the case of Asia, it is indicated only by the connexion between the length of stay of the migrant in the city, his material position, and the distance of his residence from the centre of the city (*Urban-rural...* 1968). The situation in Africa, however, is more complex (*Urban...*

1968), as has also been pointed out by M. Sautter (1972). Either by origin or by nature, African cities may be traditional, modern or both. Depending on the type of city, therefore, different types of transitional settlements may exist and to speak about a common pattern or criterion for their division is beside the point.

As follows from the foregoing, attempts to classify transitional areas are but in the initial stage. It goes without saying that further research is indispensable and must be undertaken on the basis of various scientific disciplines. The scope of subjects to be dealt with in research on transitional areas is, in point of fact, very extensive and for many of them the moment may still be too early. Nevertheless, their specification in itself would be useful for channelling and systematizing the accumulating research results. When surveying the earlier studies on the phenomenon under discussion, several questions come to the fore to be kept in mind in further research (*The Study...* 1965; Hoselitz 1974; *Human...* 1974; *Rural-Urban... Preface* 1971; Sautter 1972, and others). These questions can be combined in the following groups of problems.

The first group refers to the internal structure of transitional settlements and the characteristics of their inhabitants. Apart from basic demographic, occupational, employment, health and education indices, it is very important to state here whether, and to what extent, the community investigated produces informal groups, and whether it shows endeavours towards integration or dis-integration. Finally, whether and how the community concerned organizes itself in order to arrange living conditions and self-determination.

The second group is concerned with the links of transitional settlements with the city proper. A basic problem is here the degree of incorporation of settlements into the overall city life and their participation in socio-economic functions. It depends on the adaptation of the non-urbanized population to the city rhythm and on the form of integration with the urbanized population.

The last group contains the connexions between the transitional settlement population and the areas of its origin. The chief point of the problem is not exactly the nature of existing material and cultural links, but the process of their breaking off, thus weakening contacts, renouncing traditional attitudes and value systems and acquiring new patterns of life.

A GENERAL AND REGIONAL APPROACH TO THE PROBLEM OF TRANSITIONAL AREAS

An analysis of the results of research on transitional areas in the Third World countries obtained hitherto, shows that the problem has been examined using two models of approach: highly generalized and regionally differentiated.

The first one is to be considered a "model" of stages of stabilization of the migrant in the large city, and of the changes in his housing conditions. By virtue of a statement by J. Racki, R. Racki, P. Prakash (1974, p. 282), it can be said that "the categories of user groups in each dwelling situation are usually constant over the short run, the users themselves moving along particular patterns that evolve in different cities. In each situation the user plays a more or less active role in determining what is provided". This statement may be completed by a quotation defining in a more detailed way the conditions of transitional areas (*Human..* 1974, pp. 34–35): "the chief environmental problems vary according to whether the settlement is a central slum, whose population has been swollen by migrants and more rapid natural growth, or a previously vacant site invaded and settled in fashions outside the conventional framework

of urban development". Central slums are for the majority of migrants the first stopping place in a large city. After having reached a certain level of economic stabilization they most frequently seek opportunities for settlement in less congested districts, lying farther away from the centre of the city. They are usually organized into groups, occupy vacant lands and construct their own dwellings.

The varying sets of features and conditions which correspond to the two principal periods of inhabitant's life in the city are characteristic, as it were, of two types of transitional settlements. The first one, i.e. settlements or quarters located, above all, near or inside of already degraded city centres or near casual working places such as port shipyards, railway or bus stations. These are areas very densely populated but inhabited by an "unstable" population. These are in reality places of seasonal sojourn of the population flowing to large cities and having no material support in a new milieu. This type of transitional area reveals high indices of young men, single or living away from their families. The proportion of skilled workers is here very low in contradistinction to that of unqualified people, who perform all the simplest and lowest paid services which can be found in a centre of urban activities (Koenigsberger 1973).

The majority of migrants living here encounter the metropolitan milieu for the first time. Difficulties in adopting to unknown forms of life and a perilous material position give rise to feelings of lack of safety and of isolation. In the relevant literature these are depicted as areas with high social disorganization and weak integration capabilities. The only forms of organization to be found here, viz. closed associations of small regional or tribal groups, provide help in a situation of need. Usually they identify their attitudes with traditional values.

The second type is represented by the settlements which appear, above all, in suburban areas of large cities. Here, there is a more pronounced differentiation than in the first type. A common feature of such settlements, more or less strongly marked, is the process of passing from provisional to stabilized ways of life. The demographic structure of the inhabitants is also more balanced here. Young people already forming families prevail with a high birth rate. The majority of inhabitants has already passed the first stage of adaptation in the city. Some of them have already gained occupational qualifications. A high percentage of the population, however, lives by all types of services and marginal activities which, according to C. Geertz (1963), constitutes a "bazaar economy". The border-line between employment, underemployment and unemployment is, in point of fact, unsettled in this sector (Schirmer and Teisman 1968).

The level of development of social life is, in general, low. There are areas where migrants act jointly only during occupation of the land in constructing their huts or also in activities for timber procurement. Sometimes they unite in order to enforce the provision of the most essential communal services by the urban authorities. The experience of numerous settlements of the kind show, however, that their organizational flexibility declines upon attaining these aims (*Uncontrolled...* 1968). On the other hand the associations of informal groups such as religious, regional, tribal and others persist much more easily.

The contact of a transitional settlement with the main city is very weak, and sometimes even has an appearance of open conflict. Such settlements carry on their own economic activities based on labour-intensive production and family labour, according to traditional patterns but adopted to the urban system of functional organization.

The outlined characteristics of two types of transitional areas, or rather of two categories of new inhabitants of large cities of the Third World countries, is, as was said, a vast generalization of the phenomenon under discussion. The reality is, however, much more complex and cannot be easily fitted into a narrow framework. A regional approach, therefore, would be recommended as a next in the development of studies on transitional areas. This requires a certain level of individualization of these areas. Owing to the scarcity of results of local research obtained so far, it is difficult, for the time being, to get sufficiently representative data affording possibilities for a synthetic approach. Meanwhile it cannot be done other than by outlining the distinctions symptomatic for certain countries or regions against a background of resemblances. These distinctions are connected with different cultural spheres to which particular countries of the Third World belong, ethnical and demographic features of their population, the level of social development, and also with the genesis and age of the cities. Moreover, the situation is complicated by the fact that the "leading" features are often modified by various local circumstances. That is why the mosaic patterns of transitional areas are formed.

AFRICA

Generally speaking, tribal, ethnical[2], language and even civilization differences among immigrants cannot be ignored when characterizing the urban transitional areas in Africa. Likewise, the history of economic development and the features of the social milieu of the cities are important factors. Let us quote here excerpts of a statement of the Nigerian geographer, A. Mabogunje which illustrate the degree of differentiation of the cities in Tropical Africa: "In East and Central Africa... the growth (of cities — Z. S.) had no root in indigenous forms of agglomeration. It was a direct European creation, borrowing much from the European traditional conception of city life, city plan, and city functions... In West Africa, however, the roots of cities were already present in the form of indigenous towns..." (1964, p. 304); "there are those cities like Kano, Zaria and Ibadan which were traditionally important and which have in modern period been closely integrated into the new export-oriented exchange economy. Their traditional importance means that they have survived into the modern period with a relative large pre-industrial urban population, often uneducated enough to participate vigorously in the modern economy" (1969, pp. 4–5). Moreover, apart from the differentiation of cities in Tropical Africa, urban centres of North Africa have also their own history and specific cultural features, which ought to be taken into account (*Urban growth...* 1968). Thus, depending on conditions, various types of transitional areas can be formed in the African countries.

The tendency of immigrants to assemble according to different ties of blood or affiliations to specified groups, is a universal phenomenon in the transitional areas of Africa. It is a form of protection against the difficulties which may be encountered by new-comers to the new milieu. However, this becomes also a necessity of life in closed, traditional societies, since the impossibility of identification with a group means, in reality, the social isolation of a unit. The sense of duty to bear relatives or tribesmen a helping hand can be noticed everywhere in African countries but is particularly strong in certain tribes of Tropical Africa. Sometimes it leads even to the formation in the cities of something like

[2] According to M. Sautter (1972) the term ethnics includes now more territorial substance and less political and cultural one.

secondary rural communities based on slightly changed principles (Arsharuni 1974; Boutillier 1972; George 1952; Sautter 1972).

The first place of residence of an immigrant in the city is therefore determined in general by the possibilities of getting a foothold with his kinsmen and their assistance in finding some sort of accomodation. That is why it is difficult to perceive clear regularities in the accomodation of immigrants and in the location of transitional settlements, now common to all African cities. Admittedly, in a number of studies it is pointed out that these settlements in the traditional cities or quarters of Tropical Africa are, regardless of their type, located rather within the cities and enter the suburban areas in process of the expansion. According to A. Mabogunje's report (1968, p. 208), for example, „nearly half the area of the city (Ibadan) is classified as (existing) under slum conditions". On the other hand, the central reputable quarters in colonial cities are occupied by the more stabilized and well-to-do population, whereas the lower population strata are settled at greater distances from the centre (cf. studies by Harvey and Brand 1974 in Accra). This would be an example opposite to the abstract model. In the Arabian part of Africa the poorest population with no material support in the city seeks as a first place of residence the surroundings of the old part of a city known as *medina*. There are, however, many exceptions from this pattern (Wassim Ben Mahmoud and Santelli 1974; Pletsch 1973a; *Urban growth...* 1968).

When examining the population immigrating to large African cities from the view-point of their origin and education, it turns out to consist predominantly of rural emigrants with a low education standard and poor professional qualifications. However, the diversity of ethnic groups presents various cultural and traditional characteristics of the African people. Let us quote Nigeria as an example (Mabogunje 1962, p. 29), "the most distinctive cultural trait amongst the Yoruba is their organization into a system of towns", while the Hausas or the Ibo cultivate the time honoured tradition of artistic handicraft.

In detailed reports it is indicated that the inhabitants of transitional areas exhibit low social mobility. On the other hand, the durability of their traditional mentality is very often stressed (Giball 1969). However, in Sautter's (1972) opinion, these are, perhaps, superficial views. True, this population living in the urban milieu still preserves, for the most part, old forms of social organization, but their essence is undoubtedly subject to gradual transformation. In any case, the rigid social structures brought along from the rural environment are loosened.

The migrants' ties with their native places are close, and the erosion of these relations proceeds very slowly. Nevertheless, attention is drawn to the differences on that score between the Tropical and Arabian parts of Africa. In the first case, seasonal and periodic migrations are predominant, and the migrants easily continue to maintain the contacts with their relatives. Conversely, in the second case, when very often whole families leave home, such abandonment means a partial break of links with the area of their origin. Hence the home-coming of the migrant in Tropical African countries is, in general, a matter of course, whereas in Arabian Africa it is rather of rare occurrence (Blake 1974; *Human...* 1974; Lux 1972; Pletsch 1973b).

Internal organization of transitional settlements is weak everywhere and examples of the formation of communities [3] based on mutual aid happen only

[3] By Ch. Abrams (1971, p. 51), "community is a population group resided on the same area and participating in the matter of the whole group. Opposite to the word 'neighbourhood' — community includes more than geographical proximity. It requi-

occasionally, e.g. the settlement of George near Lusaka (Andrew. Christie, Martin 1974). Similarly the integration of transitional areas with the city proper, apart from exceptions observed in traditional urban centres, is loose for the most part.

ASIA

High density of population and mass emigration from rural areas are important factors conducive to the growth of urban transitional areas in Asiatic countries (Acaroğlu 1974; *Administrative...* 1964; Bartsch 1974). The enormous concentration of this population in large cities makes difficulties connected with the inflow of new inhabitants much more burdensome than in the cities of other continents. The consequences of unsolved problems are also much more drastic. Above all, massive unemployment — according to McGee (1971) — creates a particularly strong feeling of low spirits and helplessness in Asiatic countries, not to mention Calcutta which is an extreme case of a distressful situation of millions of inhabitants. The same applies also to a good number of other cities of Asia.

The proportion of illiterate and semi-illiterate persons is, in general, high among migrants, although more dynamic individuals, higher educated than their countrymen, move to the cities first of all. Their level of preparation for urban occupations is also low (Pahomova 1974; *Urban-rural...* 1968). This lowers the already meagre opportunities of finding regular employment. Only in certain cities of Asia may be encountered larger conglomerations of migrants with secondary or higher education, e.g. emigrants from former East Pakistan in the cities of India. A considerable proportion of them also remain for a long time without jobs refusing to take them when not in conformity with their qualifications (Friedmann and Sullivan 1974; Lubell 1973).

Migrants, unceasingly arriving in the cities, occupy all the yet free places and live cooped up there under unimaginable conditions. Hence, different types of settlements squeeze into the city quarters, surrounding them and settling in suburban areas without clear-cut divisions into zones (Guichard 1972). As regards new-comers and also seasonal migrants, it may be assumed that their first location will be often an old quarter of the city, or port and railway station districts — thus places of casual work (*Administrative...* 1970; Berry and Spodek 1971). This is not, however, a rule, other examples being encountered, too. Transitional areas existing in the city-centre are also settled by migrants with already longer urban residence, e.g. according to G. Payne (1974, p. 63) "in the case of Delhi, the greatest concentration of squatter settlements is in the central urban area adjacent to sources of employment". Moreover, new transitional areas are formed along with the development of industry, even if it is separated from the city itself (the example of Istanbul given by Tümertekin 1973a).

In some regions of Asia, as in those of Africa, the location of migrants in urban transitional areas is also influenced by ethnical and religious differences, and — peculiar to this continent — caste differences. Ethnical differences especially, lead not only to clear-cut divisions of the settlements but sometimes to conflicts among their inhabitants. As an example may be taken Kuala Lumpur, where Malays and Chinese — two of three main ethnical groups — raise a serious problem for a city. Both these groups cannot live in a close neighbourhood in view of differences in their way of life, work and mentality (*Rural-urban... Solution* 1971). This is an additional factor impeding eventual attempts to solve

res certain identification of members with an area and among themselves as well as of certain consciousness as social entirety".

the problem of transitional areas. Along with enormous difficulties of a general nature, obstacles of special character arise.

The social mobility of the population of transitional settlements in Asiatic as well as African countries cannot be considered to be high. Efforts to attain a better level of education and occupation may be noticed only exceptionally. On the contrary, among this population group conservative habits of thought and behaviour predominates. Also the close links of migrants with families living in the rural areas are of great importance. The majority of them pay visits to their families and come to their assistance (Brush 1967; Lubell 1973). The view is generally taken in the literature that migration processes in Asiatic countries are conducive to "ruralization" of the city (McGee 1971; *Urban-rural...* 1968). No doubt, the reasons for this are rooted in the general social and economic conditions of these countries.

Only few settlements are well-ordered internally. Among them may be numbered certain *gecekondu* from Turkey, e.g. Zeytinburnu and Gültepe in Istanbul, and Aktepe in Ankara. These are older settlements where a certain process of social differentiation of the population has already began and, where moreover, traditions of neighbourly help *imece* are also taken advantage of (Aru 1971; Ritter 1972; Tümertekin 1973b). There are also well-known cases of mutual aid and cooperation *gotong rojong* among inhabitants of transitional areas in Indonesia, Malaysia, Philippines (Purnaman Natakusumah 1971; Enche A. Bin Esa 1971; Viloria 1971).

As far as the integration of transitional settlements with urbanized quarters is concerned, the situation in Asiatic countries is similar to that in other countries of the Third World. These settlements usually develop their own market of staple commodities and services within the range of the financial ability of their inhabitants. Trade contacts with the city are mainly confined to rare cases of exceptional purchases. Nevertheless, the adults, and not infrequently the youths, from transitional settlements are not strangers to the central quarters of the cities. This is the principal area in which they search for opportunities to earn a living.

LATIN AMERICA

Latin America is characterized by a higher level of urbanization and socio-economic development than the other continents under discussion. This has a certain effect on the nature of transitional areas in the region concerned, but cannot reduce the scale and acuteness of the problem of millions of people living in depravation in the cities. These appear then to be transitional areas typical of the Third World countries. However, some individual features differentiate them from other countries.

The majority of the population which immigrates to metropolitan cities of Latin America comes from medium-size and small towns. Among those migrants the proportion of literate persons is relatively high. According to the studies carried out by Mar Matos (1967), the inhabitants of "*barriadas*" in Lima aged 7 years and more were 90 per cent literate. *Direccion Nacional de Estadistica y Censos* (No. 1, 1965) reports that among male migrants more than 15 years old, 43.1 per cent had completed at least the first year of secondary schooling upon their arrival in Lima. On the other hand, the remaining population, coming from the *sierra*, is for the most part illiterate and, what is more, without any occupational qualifications (Flinn 1968; Odell and Preston 1973).

As it follows from the O.E.C.D. documents (*Handelsblatt* 1970), unemployment in Latin American countries is lower than in Asian and African countries.

On the other hand, the percentage of the population working in the tertiary sector is equally high there (Friedmann and Sullivan 1974). It means that such an appraisal of the employment situation may after all be considered objectively relative. Activities numbered in developing countries among the tertiary sector, cover also occupations which — from the view-point of their economic efficiency — are marginal. In reality a part of the underemployed labour force with only casual jobs is concentrated in this sector.

Differentiation within the population of transitional areas as regards educational levels and occupational capabilities, makes social stratification proceed here at a much quicker pace. The endeavour to raise their living standards through supplementary schooling characteristic for at least a part of the inhabitants of these areas, favours that stratification. Evidence of this is the fact that the percentage of manual workers among migrants who stay longer in a city is on the decrease. It is especially characteristic of women, who furthermore, emigrate to large cities as frequently, or even more often, than men. Moreover, women take here an active part in the social and political life of their settlements (Sosa Franco 1971; Friedmann 1969).

The population of transitional areas of Latin America is also characterized by spatial mobility. The stages of a migrant's life in the city are here perhaps closer to the abstract model. Very frequently his first place of residence in a large city is located within the city proper (Cotler and Laquian 1971; Flinn 1968; *Recent...* 1968). After reaching a certain stability in the city, migrants try to acquire a plot to build their own habitable quarters. This frees them of the burden of paying rent, and they gain more useful space. Frequently they also rent a part of their dwellings for newly-coming persons. Plots for construction are rarely purchased or leased, and most often migrants unite illegally to take up vacant land. According to W. Mangin (1967), e.g., more than 100 such cases were observed in Lima within the last 20 years. The majority of the "invaders" resided earlier, very likely, in other quarters, and prior to settling in a large city, certainly changed their residence several times (E. and S. Kessler 1974; Solaun, Flinn, Kronus 1974).

The appearance of the transitional settlements is, in general, tiresomely uniform, their provisional, sporadic building up making a picture of forlorn ugliness. The settlements are destitute, moreover, of basic municipal services. Nevertheless, exceptions to this general picture are, perhaps, more often met within Latin America than in the other continents. Indisputably a certain differentiation is noticeable among the settlements. In their report on Mexico City, J. Racki, R. Racki, and P. Prakash (1974) have singled out five types of transitional settlements, whereas C. Delgado (1969) in Lima has found eight. As positive examples from the view-point of better social and functional organization, the following settlements can be mentioned: Alagados in Salvador City in Brasil, Papa de Comas, Ciudad de Dios in Lima, and Las Colinas and El Carmen in Bogota (Bell 1974; Flinn 1968; Mar Matos 1967; Solnit 1965). They are said to reveal many features of local communities and to undertake more often than elsewhere activities on the basis of self-help and self-improvement.

Unfortunately disadvantageous side-effects are also to be noted here. In Las Colinas, for example, the process of transformation has been initiated with the assistance of the municipal board of Bogota City. It was an experiment in including "barriada" inhabitants in the urban community. The outcome of this undertaking is only a partial success. The urban technical infrastructure was expanded to cover the area of settlement, diverse improvements of the holdings were introduced, and the outward appearance of the houses was also improved.

At the same time, however, unfavourable changes in the family structure occurred, with a partial return to expanded families in order to get larger money resources at their disposal, a reduction in the habitable space of the household in favour of lodgers with regard to the social structure of the settlement, high costs of modernization defrayed by the inhabitants compelled the indigent population to sell their property and leave the settlement (Solaun, Flinn, Kronus 1974).

Apart from a few settlements, however, the majority are in fact isolated from the city proper, and inhabitants have here little opportunity to participate in urban life and to avail themselves of the attributes of civilization. In spite of their staying and working in the city in conformity with urban customs, they live the life of their milieu.

CONCLUSION

Many studies on the subject of transitional areas in the large cities of the Third World have been initiated, accompanied by meetings of experts in different fields of science and practice. At the seminar organized by "The International Association for Metropolitan Research and Development" in 1970, Manila, e.g., the solution of the slum and squatter problem was discussed in depth. In 1972 a conference on the human environment under the auspices of the UN Centre for Housing, Building and Planning, was held in Stockholm. Similar questions were discussed at the UN Conference-Exposition on Human Settlements held in 1976, in Vancouver.

Great interest in transitional areas is self-evident, this problem being of prime concern not only to individual countries of the Third World. So many problems are interwoven here that no country can even appraise its real needs and the possibilities for their satisfaction, neither can it formulate a plan of action capable of getting positive results within a definite period. Many causes are responsible for this state of affairs. The most important of them are: the rapid inflow of population to large cities, the scarcity of funds for social and housing objectives, the segmentation of control over metropolitan areas among many administrative units, planning based on scanty or even false data, and the lack of regulations granting full power of disposal of urban territories to the municipalities (Dwyer 1974; *Human...* 1974; Ward 1969).

Many countries of the Third World have made, and are making efforts to solve the problem of transitional areas. Apart from drastic cases of destroying settler houses without providing any alternative, some ways to provide real assistance for the inhabitants of these settlements were also sought. According to P. Crook (1974), within the last 20 years three proposals came within the official programs concerning the construction of houses for low-income population: prebuilt low-cost housing, aided self-help-housing, site and service provisions.

From various practical experiences it follows that the last of the aforementioned projects is more and more often considered to be a feasible solution of the first stage of migrants' difficulties in large cities. It consists in the municipal board providing the migrants with a building site and connecting the new settlement to the infrastructure of the main city (*Human...* 1974; Rao 1974; *Uncontrolled...* 1968). Forms of aid on the part of the municipal board and the state may also include extensive credit assistance, as in Brasil (J. T., 1974, *Foreword...*; Pimenta 1973) and even partial control of the development of the settlements, as in Lima (Cotler and Laquian 1971).

So far, however, only a few examples of instituting such solutions were noted, apart from cases of unsuccessful implementation, as in Nairobi where project "sites and services" ran into a lot of difficulties (Morrison 1974). Of course, in solving the problems of transitional areas, cultural factors including the customary exigencies of the population, are important, as well as purely financial ones. All positive national programs based on general experiences, must be adopted therefore to national conditions.

Hardly ever in the history of city development, appeared problems of transitional areas on so large a scale with such intensity. There is reason to consider them a new quality of the present urbanization problems. We are not very familiar with the problems arising, so we have difficulty in solving them, not only for lack of technical and financial sources but also in default of practical experience. Let us then quote O. Koenigsberger's words (1973, p. 41): "We know too little of the type of urban planning needed to convert this growth potential (as presented by the growing transitional areas — Z.S.) into social and physical development and to transform 'cities in crisis' into 'cities on the move' ".

Institute of Geography and Spatial Organization
Polish Academy of Sciences, Warsaw

BIBLIOGRAPHY

Abrams, Ch., 1971, *The language of cities. A glossary of terms*, New York.

Acaroglu, I., 1974, Conditions for socioeconomic and spatial change in the *gecekondu* (squatter) areas round Turkish cities, *Ekistics*, 38, 224.

Administrative aspects of urbanization, 1970, U. N. Dept. of Econ. and Soc. Affairs.

Administrative problems of rapid urban growth in the Arab States, 1964, U.N. Technical Assistance Program, Report of a United Nations Workshop held at Beirut, Lebanon 11 to 22 March 1963.

Albertini, J. M., 1967, *Les méchanismes du sous-développement*, Paris.

Alonso, W., 1964, The form of cities in developing countries, *Papers Reg. Sci. Assoc.*, 13.

Andrew, P., Christie, M., Martin, R., 1974, Squatter settlements in Zambia: the evolution of a life style, *Ekistics*, 38, 224.

Aru, K. A., 1971, Istanbul, in: *Rural-urban migrants and metropolitan development*, ed. A. A. Laquian, INTERMET Metropolitan Studies Series, Toronto.

Arsharuni, N. A., 1974, Nizshiye gorodskiye sloi i problema zanyatosti v stranakh severnoy Afrikie, in: *Melkoye proizvodstvo goroda v Azii i Afrikie*, Moskva.

Bartsch, W. H., 1974, Unemployment in less developed countries: A case study of a poor district of Teheran, in: *The city in the Third World*, ed. D. J. Dwyer, London.

Bell, G., 1974, Banking on human communities in Brazil, *Ekistics*, 38, 224.

Berry, B. J., Spodek, H., 1971, Comparative ecologies of large Indian cities, *Econ. Geogr.*, 47, 2 (Suppl.).

Blake, G. H., 1974, Urbanization in North Africa: its nature and consequences, in: *The city in the Third World*, ed. D. J. Dwyer, London.

Boutillier, J. L., 1972, *Urbanisation et comportements socio-démographiques ..., La croissance urbaine en Afrique Noire et a Madagascar*, Colloques Internationaux du Centre National de la Recherche Scientifique, Talence 29, septembre–2 octobre 1970, Paris.

Brush, J. E., 1967, *Some dimensions of urban population pressure in India.* A paper submitted to the International Geographical Union's Commission on the Cartography and Geography of World Population for discussion at its Symposium on the Geography of Population Pressure on Physical and Social Resources, The Pennsylvania State University, September 17–23, 1973.

Cotler, J., Laquian, A. A., 1971, Lima, in: *Rural-urban migrants and metropolitan development*, ed. A. A. Laquian, INTERMET Metropolitan Studies Series, Toronto.

Crook, P., 1974, Towards participatory urban settlement and housing systems, *Ekistics*, 38, 224.

Delgado, C., 1969, Three proposals regarding accelerated urbanization in metropolitan areas: The Lima case, *Amer. Behav. Sci.*, 12, 5.

Detlef, H., 1972, Die weltweite Vergrossstädterung, *Abh. 1 Geogr. Inst. Freien Univ. Berlin*, 19.

Direccion Nacional de Estadistica y Censos, Migration survey in metropolitan Lima (Lima 1965), 1, Tab. 15.

Duggar, G., 1965, *Renewal of town and village, a world-wide survey of local and government experience*, The Hague, International Union of Local Authorities.

Dwyer, D. J., 1974, Attitudes towards spontaneous settlement in Third World cities, in: *The city in the Third World*, ed. D. J. Dwyer, London.

Enche Ali Bin Esa, 1971, Kuala Lumpur, in: *Rural-urban migrants and metropolitan development*, ed. A. A. Laquian, INTERMET Metropolitan Studies Series, Toronto.

Final Report, 1973, U.N. Seminar on New Towns, London 4–19 June 1973.

Flinn, W. L., 1968, The process of migration to a shantytown in Bogota, Colombia, *Inter. Amer. Econ. Affairs*, 22, 2, Autumn.

Friedmann, J., 1969, *Urban and regional development in Chile. A case study of innovative planning*, Santiago.

Friedmann, J., Sullivan, F., 1974, The absorption of labour in the urban economy: The case of developing countries, *Econ. Devel. Cult. Change*, 22, 3.

Geertz, C., 1963, *Peddlers and princes. Social change and economic modernization in two Indonesian towns* (acc. to T. G. McGee 1971, op. cit.).

George, P., 1956, *Miasto*, PWN, Warszawa (*La ville*, Paris 1952).

George, P., 1967, Habitat spontané, parasite de l'urbanisation en pays sous-développés, *Cah. Intern. Soc.*, 42, Paris (acc. to A. Pletsch 1973a, op. cit.).

Giball, J. M., 1969, *Adaptation à la vie urbaine et differenciation sociale dans deux quartiers récents d'Abidjan*, O.R.S.T.O.M., Paris.

Guichard, A., 1972, The social problem of slums and shanty towns, *Bull. SMUH*, 68.

Harvey, M., Brand, R., 1974, Spatial allocation of migrants in Accra, Ghana, *Geogr. Rev.*, 64, 1.

Hoselitz, B. F., 1974, The role of urbanization in economic development: Some international comparisons, in: *The city in the Third World*, ed. D. J. Dwyer, London.

Human settlements: The environmental challenge. A compendium of United Nations papers prepared for the Stockholm Conference on the Human Environment 1972, London 1974.

J. T., 1974, Foreword: Housing the poor in developing countries, *Ekistics*, 38, 224.

Johnson, E. A. J., 1970, *The organization of space in developing countries*, Cambridge.

Johnson, J. H., 1973, *Urban geography. An introductory analysis*, Oxford–New York.

Kessler, E., Kessler, S., 1974, Popular housing system in Colombia, *Ekistics*, 38, 224.

Koenigsberger, O., 1973, *Urban growth and planning in the developing countries of the Commonwealth: A review of experience from the past 25 years.* Interregional Seminar on New Towns, London 4–19 June, 1973.

Laquian, A. A., 1969, *Slums are for people*, Manila, Local Government Centre.

Lindauer, G. D., 1972, Urbanization and slum as socio-economic problems in the Far East and Southeast Asia, *Intern. Asien Forum*, 3, 1.

Lubell, H., 1973, Urban development and employment in Calcutta, *Ekistics*, 36, 217.

Lux, A., 1972, *Centres ruraux du Mayombé et villages environnants: problème de solidarité entre ouvriers et cultivateurs*, La Croissance Urbaine en Afrique Noire et a Madagascar, Colloques Internationaux du Centre National de la Recherche Scientifique, Talence 29 septembre–2 octobre 1970, Paris.

Mabogunje, A. L., 1962, *Land, people and tradition in Nigeria*, The Politics and Administration of Nigerian Government.

Mabogunje, A. L., 1964, The evolution and analysis of the retail structure of Lagos, Nigeria, *Econ. Geogr.*, 40, 4.

Mabogunje, A. L., 1968, Urban land-use problems in Nigeria, in: *A Memorial Volume to Sir Dudley Stamp*, I.B.G. Special Publication, 1, London.

Mabogunje, A. L., 1969, Industrialization within an existing system of cities in Nigeria, Presidential Address, *J. Geogr. Assoc. Nigeria*, 12, 1 and 2.

Mangin, W., 1967, *Sociological, cultural and political characteristics of some urban migrants in Peru*, Lima: Plan Lima Office, mimeo. MS. (acc. to J. Cotler, A. Laquian 1971, op. cit.).

Mar Matos Jose, 1967, *Estudio de las barridas Limenas*, Lima: Universidad Nacional Mayor de San Marcos, Departamento de Antropologia, Facultad de Letras y Ciencias Humanas (acc. to J. Cotler 1971, op. cit.).

Mattelard, A., 1967, La morfologia social de una capital latino-americana: Santiago de Chile, *Cuadernos de Economia*, 11 (acc. to J. Friedmann 1969, op. cit.).

Mayer, P., 1962, *Townsmen or tribesmen. Conservatism and the process of urbanization*, Capetown (acc. to T. G. McGee 1971, op. cit.).

McGee, T. G., 1971, *The urbanization process in the Third World. Explorations in search of a theory*, London.

Mitchel, C., 1966, Theoretical orientations in African urban studies, in: ed. M. Banton, *The social anthropology of complex societas*, London (acc. to T. G. McGee 1971, op. cit.).

Morrison, H., 1974, Popular housing systems in Mombasa and Nairobi, Kenya, *Ekistics*, 38, 227.

Naciri, M., 1970, Les formes d'habitat sous-intégrées. Essais méthodologique, *Bulletin du Secrétariat des Missions d'urbanisme et d'habitat*, Paris.

Odell, P. R., Preston, D. A., 1973, *Economies and societies in Latin America: A geographical interpretation*, London.

O.E.C.D.–Report, *Handelsblatt*, 249, 20 Dec. 1970.

Pahomova, L. F., 1974, Nekotoryye osobennosti nizshikh sloyev v Indonezii, in: *Melkoye proizvodstvo goroda v Azii i Afrikie*, Moskva.

Payne, G. K., 1974, Functions of informality: squatter settlements in Delhi, *Ekistics*, 38, 224.

Pimenta Priester, J. C., 1973, *Sao Paolo: The main industrial development centre in Brazil, also the main source of urban problems in the country*, Interregional Seminar on New Towns, London 4–19 June 1973.

Pletsch, A., 1973a, Wohnsituation und wirtschaftliche Integration in den marginalen Wohnvierteln der Agglomeration Rabat-Salé (Marokko), *Marburger Geogr. Schriften*, 59.

Pletsch, A., 1973b, Die Fondouks in den Medinen von Rabat und Salé (Marokko), *Marburger Geogr. Schriften*, 59.

Purnaman Natakusumah, 1971, Bandung, in: *Rural-urban migrants and metropolitan development*, ed. A. Laquian, INTERMET Metropolitan Studies Series, Toronto.

Racki, J., Racki, R., Prakash, P., 1974, Housing systems analysis: An aid to policy development, *Ekistics*, 38, 227.

Rao, D. V. R., 1974, Housing of squatters in Delhi: Search for a solution, *Ekistics*, 38, 224.

Recent changes in urban and rural settlement patterns in Latin America, in: *Urbanization: Development policies and planning*, Intern. Soc. Devel. Rev., U.N., New York, 1968, 1.

Ritter, G., 1972, Landflucht und Städtewachstum in der Türkei, *Erdkunde*, 26, 3.

Rościszewski, M., 1970, Zarys genezy i charakteru zróżnicowania przestrzennego w krajach rozwijających się (Sum.: Outline of origin and character of spatial differentiation in developing countries), *Przegl. Geogr.*, 42, 3.

Rościszewski, M., Organization and typology of socio-economic space in Third World countries, *Norsk Geogr. Tidsskr.*, 28.

Rural-urban migrants and metropolitan development, 1971, ed. A. A. Laquian, INTERMET Metropolitan Studies Series, Toronto.

Sautter, M. G., 1972, *Les rurax dans le villes. Genese et différenciation des sociétés urbaines*, La Croissance Urbaine en Afrique Noire et a Madagascar, Colloques Internationaux du Centre National de la Recherche Scientifique, Talence 29 septembre–2 octobre 1970, Paris.

Schirmer, P., Teisman, R., 1968, Aspekte des Verstädterungsprozess in Entwicklungsländer, *Arbeitsber. Ibero-Amerika Inst. Wirtschaftsfor. Univ. Göttingen*, 3.

Solaun, M., Flinn, W. L., Kronus, S., 1974, Renovation of a squatter settlement in Columbia, *Land Econ.*, 50, 2.

Solnit, A., 1965, Spontaneous towns: South American barriadas as a form of urban growth, *Landscape*, 14, 3. (acc. to A. Cotler, A. Laquian 1971, op. cit.).

Sosa Franco, P., 1971, Caracas, in: *Rural-urban migrants and metropolitan development*, ed. A. A. Laquian, INTERMET Metropolitan Studies Series, Toronto.

Stokes, Ch. J., 1962, A theory of slums, *Land Econ.*, 38, 3.

Sturm, R., 1969, Die Grossstädte der Tropen. Ein geographischer Vergleich, *Tübinger Geogr. Studien*, 33 (acc. to H. Detlef 1972, op. cit.).

The study of urbanization, 1965, ed. P. M. Hauser, L. F. Schnore, New York.

Torres, O., 1970, *Quelques exemples pour l'établissement d'un lexique désignant les formes de croissance urbaine sous-intégrées*, Documents No 3 pour la préparation du colloque sur les formes de croissance urbaine sous-intégrées, Paris (acc. to A. Pletsch 1973a, op. cit.).

Tümertekin, E., 1973a, Analysis of the location of industry in Istanbul, *Publ. Istanbul Univ.*, 1808.

Tümertekin, E., 1973b, Urbanization and urban functions in Turkey, *Publ. Istanbul Univ.*, 1840.

Uncontrolled urban settlement: Problems and policies, 1968, in: *Development policies and planning*, Intern. Soc. Devel. Rev., U. N., 1.

Urban growth and social development in Africa, 1968, in: *Urbanization: Development policies and planning*, Intern. Soc. Devel. Rev., U. N., 1.

Urban-rural population distribution and settlement patterns in Asia, 1968, in: *Urbanization: Development policies and planning*, Intern. Soc. Devel. Rev., U. N., 1.

Viloria, L. A., 1971, Manila, in: *Rural-urban migrants and metropolitan development*, ed. A. A. Laquian, INTERMET Metropolitan Studies Series, Toronto.

Ward, B., 1969, Processes of world urbanization, in: *Regional planning concepts, techniques, policies and case studies*, ed. R. P. Misra, Prasaranga University of Mysore.

Ward, B., 1974, United Nations Conference – Exposition on Human Settlements, Vancouver, Canada, 1976, *Ekistics*, 38, 227.

Wassim Ben Mahmoud, Santelli, S., 1974, What to do with Medina, *Ekistics*, 38, 227.
Weissman, E., 1973, *Settlement systems and regional development in rapidly urbanizing countries*, Interregional Seminar on New Towns, London 4–19 June 1973.
Wolak, Z. M., 1974, Rola obszarów przejściowych w aglomeracjach miejskich krajów rozwijających się (The role of transitional areas of urban agglomerations in developing countries), *Miasto*, 24, 5.

GEOGRAPHIA POLONICA 35, 1977

THE GREEN REVOLUTION AND THE DEVELOPMENT OF TRADITIONAL AGRICULTURE: A CASE STUDY OF INDIA

Wiesław Rozłucki

The development of new High Yielding Varieties of foodgrains by Professor Borlaug and his team as well as their implementation in numerous agricultural areas of the Third World countries has generated the process, commonly known as the Green Revolution.

The author of the present paper attempts to find the answer to the following questions:

(i) to what degree the Green Revolution is a process of development of traditional agriculture and

(ii) what changes in spatial organization occur after its implementation.

The discussion presented pertains mainly to Indian agriculture. For a proper evaluation of the Green Revolution, it is indispensable to introduce a general concept of traditional agriculture as well as to determine basic trends of spatial development. These problems will be presented in Parts I and II.

I. THE GENERAL CONCEPT OF TRADITIONAL AGRICULTURE

Indian agriculture similarly to that in other areas of the Third World countries shows, at a first glance, large diversity of types. Careful study, however, makes it possible to establish certain common properties which determine the essence of the underdevelopment of agriculture in these areas. This way of reasoning leads us to the division of agricultural areas into traditional and modern agriculture. The above-mentioned dichotomic division contains, naturally, some simplifications. Nevertheless it can be useful for general discussion since it emphasizes inherent properties. The criteria applied provide a synthetic notion of traditional agriculture as well as an explicit and clear-cut distinction between traditional and modern agriculture. Such conditions can be fulfilled, in the author's opinion, by the three following criteria:

(1) low labour productivity,
(2) primitive techniques of production,
(3) unfavourable social structure and organization.

1. LOW LABOUR PRODUCTIVITY

A quantitative index, which fairly accurately reflects the level of agricultural development attained, is the output per person employed in agriculture. The average level of labour productivity in Indian agriculture constitutes not more than 2 to 4 per cent of the respective amount noted in highly developed

countries (Table 1). This finds its direct reflection in the accumulation potential and the pattern of economic behaviour.

It can be argued that a low labour productivity constitutes an inseparable part of traditional agriculture, whereas other indices such as, e.g., yields per hectare or the degree of commercialization do not provide a clear-cut distinction between traditional and modern agriculture.

TABLE 1. Labour productivity and modern inputs in agriculture of selected countries

Country	Output in wheat units per worker in agriculture, around 1960	Current material inputs purchased from outside agriculture in US dollars, 1960–1962		Fertilizers in kg per ha of arable land, 1960–1961	Number of tractors in HP per 100 workers
		per worker	as per cent of gross output		
Austria	108	304	26	126	290
Belgium	389	1510	33	360	611
Denmark	307	1250	39	151	882
France	183	476	21	102	413
West Germany	151	732	35	266	510
Holland	314	1710	43	556	415
Great Britain	355	253	53	180	1 274
United States	706	3070	42	38	3 060
Spain	63	66	11	32	27
Poland	82	69	14	49	23
India	11	2.8	2.6	2.3	0.52

Source: *Output, Expenses* ..., 1965; *State of Food* ..., 1963; *Social* ..., 1966, pp. 120–123; Dovring, 1972, pp. 52–58; Hayami and Ruttan, 1971.

2. PRIMITIVE TECHNIQUES OF PRODUCTION

A second criterion of traditional agriculture, namely primitive techniques of production, requires more thorough consideration. Three aspects of the problem should be discussed.

2.1. *Techniques of production* in traditional agriculture are labour-intensive. This means that the traditional farmer has at his disposal only a small amount of material means of production. The share of agricultural equipment in the total assets of agricultural holdings in India amounted to merely 3% in 1961 (Panikar 1969). The absolute level and differences in technical endowment of agricultural holdings in India are so small that they hardly influence income differentiation of these holdings (Adelman and Dalton 1971).

2.2. *Labour productivity* is determined not only by the amount but also by the quality of productive techniques. Within traditional agriculture, equipment produced by rural handicrafts predominates. On the whole, there is a shortage of modern technology produced outside the domestic agricultural sector.

The value of the current operating inputs purchased from suppliers outside the domestic agricultural sector (the concept used by the UN Food and Agriculture Organization and Economic Commission for Europe) may be accepted as an

approximate indicator of the application of modern techniques. It covers expenses for fertilizers, seeds, feeding stuffs, pesticides, fuels and repair and maintenance of agricultural equipment. The amount of inputs purchased from outside agriculture determines the degree of integration between agriculture and modern industry, thus it constitutes, in a way, an index of modernization.

The data presented in Table 1 reveal a very low value of modern inputs in the traditional agriculture of India. It can be seen more clearly while comparing the value of modern current material expenses with the number of people employed in agriculture. Following this we obtain an index which fairly accurately reflects the level of agricultural modernization attained. In modern agriculture the work of each farmer is accompanied by the flow of modern material inputs which greatly increases the efficiency of his work. The value of such inputs per worker in countries like Poland is estimated to be more than 20 times higher than that in India, whereas in the highly developed countries the respective magnitudes are in the range of 600–1000 times higher. Similar differences are found in the case of modern fixed assets.

A minimum value of modern material inputs per worker in traditional agriculture gives the best evidence of the primitive techniques of production.

2.3. *A near constancy* constitutes a third feature of the techniques of production in traditional agriculture. In India over the period 1920–1960 a rate of growth of fixed assets (including machines, equipment, irrigation facilities and bullocks but excluding land and houses) amounted to 0.96% annually (Shukla 1965, p. 113). This rate was slightly smaller than the rate of growth of employment in agriculture. Thus, the stock of durable physical assets per worker in agriculture during the 40 years remained at the same level. The absence of significant changes in mutual proportions of the amount of labour capital and total output during 1920–1960 represents the stagnation of productive techniques, which are still based on traditional means of production with low efficiency.

3. UNFAVOURABLE SOCIAL STRUCTURE AND ORGANIZATION

The choice of this characteristic as a criterion of differentation is justified by two reasons. First, the structure and organization of traditional society is qualitatively different from that prevailing in modern systems. Second, in traditional agriculture socio-institutional factors have a much greater influence on the technical and productive sphere than in countries with a developed agriculture, both capitalist and socialist.

Socio-institutional organization of traditional agriculture is undesirable from the point of view of development (Myrdal 1968, p. 1860). It does not mean that there is a homogeneous social organization, typical to traditional agriculture. Specific factors may play a bigger or lesser role depending on the area. Nevertheless, it seems that it is possible to distinguish three socio-cultural factors which, to a considerable extent, determine an undesirable pattern of social organization of traditional agriculture.

3.1. "Social inequality is present in one form or another in all complex societies but there are major differences in the degree of its rigidity, visibility and legitimacy" (Béteille 1970, p. 138). In agrarian societies, by contrast to industrial ones, inequalities assume the form of social hierarchy [1]. Social hierarchy is characterized by:

[1] L. Dumont (1966) distinguishes stratification and hierarchy as two different forms of social structuralization.

— general acceptance of inequality as a part of the natural order,
— rigid and accentuated boundaries between social strata,
— limited vertical mobility between strata,
— comulative inequalities of property, income, privilage and power.

The above-mentioned features of a hierarchical social structure can be commonly found in India. However, they are not universal to other areas of traditional agriculture.

A hierarchical system in traditional agrarian societies is based mainly on a given pattern of land ownership. Both systems are constructed on the basis of inequality and are mutually supported. The amount of owned land not only determines the economic and social status of the owner but also exerts direct influence on production patterns and investment behaviour.

In India, an average operated holding amounted to 6.57 acres in 1961, i.e. ca 2.5 ha. The concentration ratio of ownership holdings amounted to 0.68 and that of operated holdings to 0.58.

What is the impact of the existing land distribution in Indian agriculture on the way of running farms? The majority of holdings are located in the range below five acres thus below the limit of a viable holding. On the other hand, 70% of cultivated land belongs to holdings having at their disposal a certain surplus for accumulation. Nevertheless this surplus is, to a great extent, spent for different non-productive purposes such as luxury consumption, usury, land speculation, etc. In conditions of mass poverty, abundance of manpower and a high degree of inequality, land ownership offers a good income obtained from the work of others. A typical manifestation of this fact is a wide-spread tenure system.

Under prevailing ownership relations 70% of farmers have not an adequate amount of land nor material resources for raising the level of output. On the other hand, the majority of land in the possession of traditional elites is used extensively, whereas the surplus is consumed in the traditional way. In consequence, in aggregate terms both land and labour are misused. From the economic point of view, inequality in the size of holdings need not in itself be a serious drawback. The real fault in the traditional pattern of land distribution lies in the fact that land concentration within a certain group is determined by traditional privilege irrespective of economic efficiency.

3.2. Traditional agriculture operates within the social organization based on a characteristic type of social relations. The social network is governed not so much by impersonal norms and institutions but by relations based on kinship and locality (Béteille 1970, pp. 168–169). Social relations have a direct, multiplex, face-to-face character. The process of production and distribution not mentioning non-economic issues, is realized in the majority of cases on the basis of mutual obligations within joint family or — as in India — results from the co-operation between castes. The Indian system of *jajmani* determines in a very detailed way the rights and duties of specific castes towards each other.

A traditional pattern of personal dependence is so strong that it often penetrates modern institutions based on quite different principles. Apparent evidence of such influence are the obstacles to the implementation of land reform and corruption in the administrative apparatus.

A very important feature of the traditional social organization is the predominance of inward ties. Ties and dependence (mainly personal) concentrate mainly within small agrarian societies, whereas links within wider spatial units are less developed. Traditional agriculture creates a system of organization based on local agrarian societies which are to a high degree self-sufficient.

3.3. Traditional agrarian societies reveal considerable stability and resistance to changes. This results mainly from the predominance of tradition in societies of this type. Each product of culture fulfils simultaneously several economic, social and, not infrequently, religious functions. Any more significant change is disfunctional in relation to the entirety and produces a danger of the destruction of the cultural and productive harmony worked out by the experience of generations.

Tradition in industrial societies serves only as a symbol of continuity. A complex scientific and educational apparatus is involved in the transmission of skills and ways of thinking which are, above all, constantly changed and improved. In agrarian societies, on the other hand, due to the absence of information from outside, observance of tradition appears to safeguard the maintenance of social order and civilization. Something like an institutionalization of tradition can be noticed. Tradition determines very precisely a way of behaviour and marks off narrow limits for innovations. Individual self-interest still remains but is not the only or even the main motive of action. A decisive impact of tradition on agrarian societies is a feature commonly found in traditional systems.

*
* *

All the presented features of traditional agriculture are mutually interwoven, creating a cultural and productive harmony which ensures the stability of this system. A clear predominance of inward relations comes as an additional factor strengthening the equilibrium of traditional agriculture. Primitive techniques, low efficiency, traditional social organization do not necessitate numerous external contacts. In consequence, areas of traditional agriculture are organized in the form of "spatially restricted societies" designed to be sufficient (Morril 1974, pp. 25–39).

A deliberate conservatism of traditional elites as well as the inertia of wide social strata mean that within the traditional system there are, as a rule, no forces striving for its change. The fall of this system may be initiated only, following a strong and many-sided impact from outside.

II. BASIC REGULARITIES OF THE SPATIAL DEVELOPMENT OF TRADITIONAL AGRICULTURE

1. GENERAL DEVELOPMENT TREND

The traditional character of agriculture is an outcome of long persistence of this system in conditions of stagnation and static equilibrium. At the same time, it is evidence of the absence of a wider impact from outside. The fall of traditional agriculture proceeds in the course of development. Agricultural development encompasses the complex of interdependent changes in technical, economic and social conditions directed towards modern technology, higher efficiency and social organization which is more adequate to the new productive forces. As an outcome of the development process, a coherent system of modern agriculture comes into being. It is a universal, though a very general trend of the development of traditional agriculture.[2]

The development process involves complex changes. From that point of view one cannot speak about development whenever changes are confined only to

[2] No account is taken here of ways or strategies of agriculture development which refer to the more detailed issues.

some features, e.g. the degree of commercialization or land productivity. Such a situation, sometimes called "growth without development" was typical of countries under external colonial domination.

All the mentioned processes of transformation find their reflection in spatial dimensions. The most characteristic feature of the spatial development is an evolution towards the system with a higher degree of interdependence relations among its particular components. The development process requires the increase in the degree of spatial integration both in a socio-economic space and a geographical one. This stipulation must be observed in each model of development based on a spatial approach.[3]

A prerequisite for development, especially in the case of traditional agriculture appears to be the extension of external linkages, above all, with the modern sector. Hitherto, the organization of traditional agriculture was oriented towards self-sufficiency, whereas the few contacts did not disturb the established harmony.

Development towards modern agriculture implies the opening of relatively closed societies and their integration within larger communities. Modern techniques of production, increased commercialization, institutionalized education and specialized organizations of rural development lead to the integration of rural areas within the regional and national spatial systems. As a result, spatial organization undergoes deep transformations. Agriculture starts to operate within wider spatial systems. The increase of external dependencies is a *sine qua non* condition of agricultural development and simultaneously the most characteristic feature in the evolution of traditional rural areas.

2. DEVELOPMENT AS AN INNOVATIVE PROCESS

Apart from the general characteristics of development a very important issue, especially in a spatial context, is the mechanism of the development process. The driving force of development is generation and diffusion of innovations in a broad sense of the word. Innovations may have a technical, organizational or an ideological character. They cover not only the practical application of technical knowledge in production but also the replacement of old forms and traditions, the introduction of new specialities in production, the emergence of new industries, as well as types of social and industrial organization (Hermansen 1972, p. 7).

The development mechanism can be set into motion by autonomous development of productive forces or by innovations in other elements of the socio-economic system.[4] In the case of traditional agriculture where the evolutional development of productive forces has been checked, stimuli setting into motion the development mechanism come frequently from outside the system. If induced innovations possess an active and many-sided character, development proceeds according to the rule of circular and cumulative casuality described by G. Myrdal (1957, pp. 11–22). On the other hand, separate and not mutually related innovations do not constitute a development process.

Neither development nor innovations are evenly distributed in space. One may single out areas with a high innovation potential (central regions) and areas which, at best, adopt innovations generated outside their territory (peripheral regions). Areas with a predominance of modern sector constitute a cen-

[3] General regularities of changes in spatial organization are presented by J. Friedmann (1969, pp. 13–21).

[4] For instance, a pre-condition of the innovation process is, very often, the realization of political and institutional reforms.

tral space in the Third World countries. Many authors, however, confine central space only to the area of the biggest cities (Friedmann 1967, pp. 7–8). On the other hand, traditional agriculture can be entirely identified as typical peripheral space. In these circumstances it appears that the main dynamic force behind the development of traditional agriculture is the diffusion of innovations from the modern sector.

The spread of innovations does not proceed in a haphazard manner but is determined by a given system of socio-economic linkages. This system has a relatively stable nature and reflects the prevailing spatial organization. Socio-economic linkages cover all types of human, commodity, capital and information flows. The aggregate intensity of these flows determines a diffusion of information on innovations and subsequently innovations themselves.

The fall of traditional agriculture begins earlier in rural areas with well developed external contacts (Gałęski 1971, p. 283). A further development of agriculture leads to the extension of links with wider spatial systems. Thus, developed external links are both the source and the outcome of development according to the rule of circular and cumulative causality.

The nature of external linkages, not only their intensity, determines the spread of the innovative process. Permanent, multiple and activating linkages are indispensable for the diffusion of innovations. A telling illustration of this thesis is an example of the underdeveloped countries. Colonial governments developed only a specific type of links aiming, most frequently, at the exploitation of raw materials and economic surplus from the peripheral regions. Other market relations as well as educational, cultural and political contacts were not developed and sometimes even deliberately destroyed (cf. handicrafts in India). Selective growth of relations with a predominance of "drainage" effects did not induce the inflow of innovations and led to the petrification of traditional agriculture and the spatial disintegration of the country.

3. TRANSMISSION OF INNOVATIONS INTO TRADITIONAL AGRICULTURE

In the present situation of the developing countries two types of contacts or channels determining the transmission of innovations from the modern sector to traditional agriculture can be theoretically distinguished.

(i) Network of cities tied with market system

It is within this system that external links in highly developed countries were established. In spite of that, this mechanism operates much less efficiently in the Third World countries. What are the reasons for the absence of a stronger activating influence on the part of cities and the market?

In the light of the theory of development poles five basic factors can be put forward:

— the relatively small number of urban centres in comparison with that of villages surrounding the cities comes as a first limiting factor. In India this relation amounts to over 1 : 200 (Johnson 1970, p. 417);

— the traditional system still predominates in the majority of cities. The number of the population employed in the modern sector, in the strict sense of the word, constitutes the smaller part of manpower even in urban areas. Functions of the city in relation to its hinterland are seriously weakened by the existence of large unemployment within cities (Berry and Rao 1968, pp. 23–25);

— the cities of the Third World countries do not form a network or system of cities on the basis of modern functional interrelations;

— the market mechanism does not provide permanent and activating contacts between traditional agriculture and the modern system. The market system is controlled by numerous middle-men who seize a significant part of the surplus and hold up innovation impulses. As a consequence, agricultural areas have no possibility to establish direct contacts with the modern sector;

— non-economic contacts between city and village are confined only to traditional elements, e.g. pilgrimages, legal proceedings, etc.

Generally speaking, the impact of the urban sector on traditional agriculture is not substantial. Rural areas where one may empirically ascertain a certain impact of the city, is often confined to several kilometres (Lambert 1962, pp. 117–140). Many of the changes have a superficial nature and do not infringe the fundamental principles of the structure and organization of a given society (Gist 1968, p. 32). These urban centres where the modern system predominates being oriented towards co-operation with the rural hinterland possess the highest power of attraction. But such situations are rarely seen. The majority of cities resembles a more hypothetical pre-industrial city than centres of modernity. As a consequence, the cities of the Third World countries constitute a much less efficient system of the diffusion of modernization impulses than the cities of highly developed countries. Cities and villages function as two separate systems with traditional mutual relations which do not disturb the general equilibrium.

(ii) The system of direct linkages between the modern sector and traditional agriculture

In the developing countries it is impossible to rely exclusively on traditional paths of autonomous development which assume a spontaneous spread of development impulses as an outcome of market mechanism operation in connection with the network of central places (Lösch 1954, p. 508). The development process following traditional channels proceeds too slowly and does not lead to the country's functional and spatial integration. Recurrence of the West development model is not possible.

In order to accelerate development, governments of many countries strive to introduce new channels for transmission of innovations by means of establishing direct contacts between the modern sector and traditional agriculture parallel to the market organization and city system. This strategy covers various centres of rural development, credit and administration facilities, etc. All these measures tend towards achieving solid and active links between the traditional and modern sectors resulting in a quicker spread of innovations and consequently the change of the traditional character of agriculture. The network of agricultural development centres subordinated to a general development strategy should possess its own hierarchy independently of the existing, usually not sufficient, network of central places (Misra 1972, p. 158).

Many attempts have been made in India to activate rural areas. Among the main endeavours one may mention land reform legislation, attempts to regulate trade in agricultural products or special programmes such as the Community Development and Intensive Agricultural District Programme.

Measures employed so far have appeared, however, too weak to overcome the predominant role of traditional mechanism in the functioning of the system discussed (Mironova 1972, pp. 144–210; Desai 1969).

In conclusion, we may state that the causes of backwardness are not only to be found within agriculture itself but, to an equal degree, result from the wider system of spatial organization which does not warrant an inflow of innovations.

External linkages of traditional agriculture, as a rule, do not infringe its equilibrium. These links, in general, do not go beyond the frame-work of the wider traditional sector which predominates in the majority of urban centres. A basic role in external linkages of traditional agriculture is played by tradition-honoured flows which do not ensure the transmission of innovations. On the other hand, governmental measures of activating the agricultural areas have, so far, a quite limited range. Generally speaking, in India in the early sixties there was a shortage of forces capable of overcoming the stagnation of traditional agriculture.

III. SPATIAL EVOLUTION OF INDIAN AGRICULTURE UNDER THE IMPACT OF THE GREEN REVOLUTION

As appears from the above discussion, a fall of traditional agriculture does not proceed automatically due to the performance of internal forces nor as a result of weak development impulses trickling down from the modern sector. An integrated approach to agricultural development is here indispensable. Such a role, according to some experts, was to be accomplished by the so-called New Agricultural Strategy proclaimed by the Indian Food and Agriculture Ministry in 1966. In view of the mediocre results of previously adopted measures for agricultural development, the New Agricultural Strategy should, in a short time, result in the modernization of the major parts of agricultural areas in India.

1. BASIC OBJECTIVES AND CONSTRAINTS OF THE NEW AGRICULTURAL STRATEGY

The New Agricultural Strategy is based on the following assumptions:

— introduction of new high yielding varieties of foodgrains,

— considerable increase in supplies of modern inputs, above all, fertilizers and seeds,

— concentration of effort on the most efficient areas.

The introduction of the high yielding varieties of foodgrains developed in Mexico, the Philippines and partly in India, was regarded as a spearhead of technological progress. The High Yielding Varieties (HYV) of foodgrains, above all, wheat and rice are characterized by the following properties:

— a yield potential of up to 80 q per ha in comparison with 30 to 40 q in the case of traditional varieties,

— a high resistance to large fertilizers dosages,

— the necessity of an assured water supply.

Following the technological break-through in foodgrains a big rise in food production was expected in the near future. The Fourth Plan (1969–1974) envisaged over two-thirds of the additional production of foodgrains to come from the area under HYV. This meant that on selected areas yields per hectare should be three time higher than in the remaining regions. Since the total foodgrains output was to increase by 30 million tons, one may conclude that almost all the increments in output should originate from HYV concentrated on merely 12% of the total cropped area.

Despite widespread enthusiasm, however, even at the initial stage, one could notice that the strategy of agricultural development based on HYV would encounter several obstacles resulting from the predominance of the traditional system in Indian agriculture.

First, HYV should have an assured, controlled water supply. The irrigated area in India covers 20% of the total area under crops. Thus, at least 80% of

the cropped area in India cannot, in a full range, employ new, profitable technology.

A second important constraint is the size and, more precisely, the income status of agricultural households. Although HYV can be used both on large and small farms, their quite substantial capital intensity gives, however, priority to the large and rich farm units. New foodgrain varieties without application of fertilizers, pesticides and certain modern equipment are not much better than traditional ones. The adoption of HYV involves a great increase in cash expense, which immediately eliminates many of the holdings in India. The requirements of the new technology can be met, under present conditions, by not more than a dozen or so percentages of holdings.

2. THE SOCIO-ECONOMIC TRANSFORMATIONS IN AREAS COVERED BY THE GREEN REVOLUTION

With such enormous constraints in the spread of the new technology, its impact on the traditional character of agriculture can be investigated only in smaller areas which, to a large extent, have been actually covered by the Green Revolution. It should, however, be kept in mind that these areas constitute no more than 20% of the total cropped area in India.

The main region of the Green Revolution in India is the north-west area of wheat cultivation covering the states of the Punjab, Haryana, and West Uttar Pradesh. The HYV of rice are concentrated in the irrigated delta areas, mainly in the states of Tamil Nadu (Thanjavur district), Andhra Pradesh (West Godavari district) and Kerala.

The most significant changes were noted in the wheat growing regions. In a model district of Ludhiana (the Punjab), the acreage under Mexican wheat expanded from 18,000 acres in 1966–1967 to 245,000 in the next season and to 420,000 acres in 1968–1969, or an area accounting for 90% of the total acreage under wheat in this district. Yields per ha increased from 16 q to 35 q/ha. The area under irrigation increased two-fold in the district of Ludhiana in a period of eight years. Consumption of fertilizers reached the level of 132 kg (NPK) per ha in 1971–1972, whereas the country average amounted to 15 kg/ha. The number of tractors and pumps increased 15 times during the six-year period (Frankel 1971, pp. 12–46).

Ludhiana District is, however, an exception even in so rich a state as the Punjab. There are here favourable ground conditions for individual tubewell irrigation, a strong sector of small-scale industry and a dense network of small towns. Large holdings prevail: 80% of holdings operate 10 acres or above. In such a favourable environment, farming in Ludhiana District is no longer treated as a "way of life". The transformation assumed a clearly capitalist character.

This success is not possible in other areas which do not possess such favourable conditions. The diffusion of new technology proceeds at a significantly slower pace. Yet, even a casual review of the evidence reveals certain common features in areas covered by the HYV. Namely, as might be expected, the main role in introducing new technology is played by large and medium-sized holdings. The investigation into the process of the introduction of HYV indicates that in 17 out of 20 areas covered, there is a statistically significant positive correlation between the rate of the adoption of HYV and the size of holding (Schluter and Mellor 1972). The reason for such a trend is not only the conservatism of small farmers but mainly the lack of resources for financing cash expenses involved in the HYV Programme.

Characteristic changes can be noticed in the economic behaviour of large holdings in the areas covered by the Green Revolution as compared with the situation in the 1950's when large holdings showed lower intensity of production and lower yields than on small farms. The study carried out in 1968–1969 in Ferozepur (the Punjab) showed that the percentage of irrigated land, cropping intensity, and labour inputs per acre still declined with the increase in the size of holding (Rao 1972). However, a correlation between yields per ha and size of holding has no longer been noticed there. Large farms have taken a lead in adopting new capital intensive technology. The percentage of cropped area under the HYV of foodgrains, expenses on fertilizers per ha are the highest on large farms, whereas labour inputs is the lowest. Thus, substitution of labour by modern capital is evident in these holdings.

A leading role of large farms in the process of technical modernization determines the direction of the evolution of traditional agriculture. A rapid growth of agro-technical innovations fundamentally changes economic conditions in agriculture. An increasing profitability of agricultural production leads to the inflow of capital which is placed directly in the form of productive investments. Some investigations carried out in the Punjab pointed to the formation of a category of so-called "gentlemen farmers" represented by educated people engaged previously in other occupations. This group, although not numerous, indicates a significant change in the social attitude toward productive work in agriculture. The model of a progressive farmer is being formed in contrast with the traditional value system. In the areas covered by the Green Revolution the process of rapid commercialization of inputs is under way. A part of previously idle money is being transformed into productive investments. Modern farms hardly ever lease out their land but, on the contrary, try to augment their cropped area this way. The price of land under the impact of the Green Revolution has doubled within several years. On the whole, the position of landowners, especially big ones, has markedly strengthened. In the Punjab the acreage of holdings above 20 acreas increased by 9.5% in 1955–1968 of which holdings those of between 100 to 150 acraes increased by 40% (Rudra 1969). The position of tenants has deteriorated, often even in absolute figures. The increase in land prices was accompanied by the rise of tenurial rents. Rents have risen from the traditional, though illegal, 50% to as high as 70% of the crop (Ladejinski 1970). The situation of agricultural labourers depends, to a large extent, on local conditions. It seems, however, that with the exception of the Punjab, the actual income level of agricultural labourers did not rise as a result of the Green Revolution.

The benefits of the Green Revolution are, as a rule, proportional to the size of the holding. Large farms take the highest advantage of the high prices of foodgrains, subsidized modern inputs being at the same time not covered by tax progression.

The process of change in the areas of the Green Revolution implies the disintegration of the structure and organization of traditional agriculture and a simultaneous evolution towards capitalist economy.

Considerable transformations are taking place in all characteristics of agriculture, although not to an equal extent. The biggest changes can be noted in the fields of production technique and the level of efficiency. There has been an unprecedented increase in the utilization of modern agricultural inputs. As a result, land productivity has reached a level unattainable by traditional technology. It does not mean, however, that modern agriculture is already widespread even in areas actually covered by the Green Revolution. Modern farms

with typical capitalist features are not yet numerous. This is the reason why in the late 60's even in the Punjab it was statistically difficult to distinguish the group of holdings which would conform completely with the requirements of a capitalist mode of production (Rudra 1970). The modern sector is still at the formation stage and for this reason certain features of traditional agriculture still persist. The mojority of farms in highly developed areas found themselves at the transitional stage, i.e. from the traditional to the modern economy.

As far as the socio-institutional features are concerned (cf. 3.1, 3.2, 3.3) changes are not so profound. This refers particularly to the system of social stratification. The highest influence on the hierarchic system is still exerted by the amount of possessed land and caste status although increasing income disparities become the new basis for social inequalities. More rapid changes are, however, observed in relation to social organization and a predominant role of tradition. The customary system of mutual obligations is being replaced by contractual agreements based on cash payments. Economic calculus instead of the age-old tradition determines the way of farming. The position of agriculture is acquiring a higher rank in the value system. External contacts are intensified, resulting in further integration between rural communities and the modern sector. The influx of innovations to agriculture proceeds both by means of market relations and through different programmes and organizations for agriculture development.

3. THE ROLE OF THE GREEN REVOLUTION IN THE OVER-ALL DEVELOPMENT OF INDIAN AGRICULTURE

The High Yielding Varieties Programme (HYVP) has been delayed in view of the catastrophic drought in 1965 and 1966. The area under HYV represents a fast increasing trend (Table 2). However, it should be remembered that 17.9 million ha constitutes barely 14% of area under foodgrains and 10% of the total cropped area in India. In 1971–1972 new varieties covered 38% of wheat crops and 15% of rice crops.

TABLE 2. Development of area under HYV in India between 1966/1967 and 1971/1972 (in million ha)

1966/1967	1.8
1967/1968	6.0
1968/1969	9.2
1969/1970	11.4
1970/1971	14.6
1971/1972	17.9

Source: *Fourth Plan*..., 1971, p. 66.

The results point to the fact that a real success in terms of ouput is confined to the new wheat varieties. Wheat output in India has doubled within only four years. However, in the case of rice, which is the main staple food in India, there was no such technological break-through. The area covered by the HYV of rice is not expanding quickly. New rice varieties in comparison with traditional ones, give smaller increases in yields than in the case of wheat. Moreover, they show higher susceptibility to plant diseases and lower taste qualities.

Figure 1 presents the development of wheat and rice yields in India within the last 15 years. It follows that wheat yields have risen visibly since 1967,

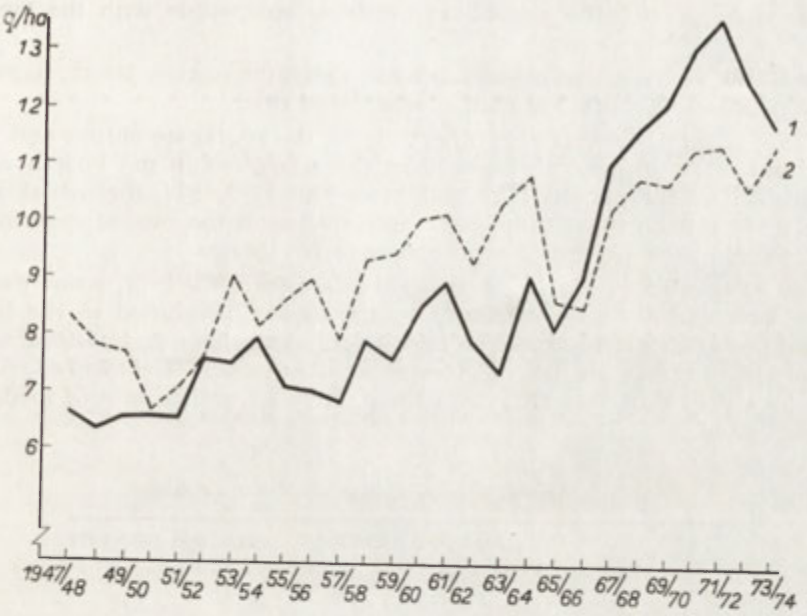


Fig. 1. Yields per hectare of rice (cleaned) and wheat in India (1947/1948–1972/1973)
1 — wheat, 2 — rice

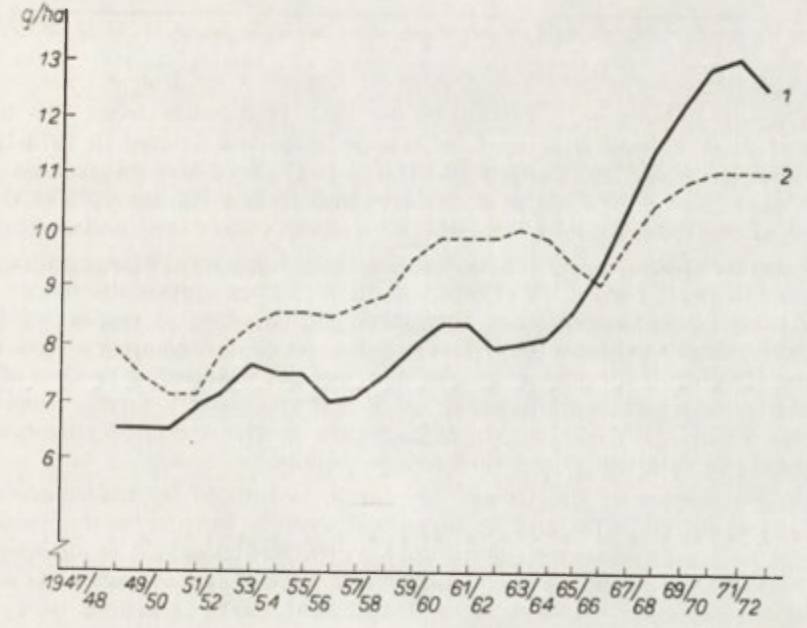


Fig. 2. Yields per hectare of rice and wheat in India (three year averages, 1948/1949–1972/1973)
1 — wheat, 2 — rice

whereas those of rice still remain at the level compatible with the long-run trend.

The HYVP covers three other types of foodgrains (maize, jowar, bajra) but their significance is much less than of wheat and rice.

In spite of a large increase in wheat yields, the aggregate output and yields of food crops are, in general, lower than those targeted in the Fourth 5–Year Plan. Instead of the planned 129 million tons in 1973–1974, the actual output is barely 104 million tons. There is no acceleration in the rate of growth after 1966 if we compare a trend of total output of foodgrains.

Table 3, as well as the latest available data for 1972–1974, point out that changes which have been introduced by the Green Revolution in the limited area, did not exert much impact on agriculture as a whole. Agricultural output in India still depends on the vagaries of weather which is evidenced, for example, by a very lean year 1972–1973 when only 95.2 million tons of foodgrains were harvested.

TABLE 3. Annual compound rate of growth of output

	1949/1950–1964/1965	1949/1950–1970/1971
Rice	3.48	2.92
Wheat	4.00	5.00
All cereals	3.24	3.13
Pulses	1.65	0.94
All foodgrains	3.05	2.89
Non-foodgrains	3.62	3.03
All commodities	3.25	2.93

Source: Narain, 1972.

The Green Revolution is located in the most favourable areas. The highest indices of the HYV share in the total cropped area were noted in 1970–1971 in the following states: The Punjab and Haryana (75% of the state's area under wheat), Tamil Nadu (60% of the state's area under rice), Kerala (30% of the state's area under rice), Andhra Pradesh (20% of the state's area under rice).

These states had already reached a relatively high level of agricultural development in India before HYVP started. In 1963 they topped the list of states with the highest consumption of fertilizers per ha. Also in respect of labour productivity in agriculture these states belonged to the country's first ranks. Thus, the Green Revolution has accelerated, but not initiated, a process of technological transformation in these areas. For that reason a term "revolution" would be much more adequate provided that accelerated modernization had begun in states relatively backward in development.

A further spread of the Green Revolution is limited by macro-ecological, technical and economic factors. An important obstacle constitutes the ownership structure. To create adequate conditions for new technology, it is indispensable to increase irrigation, the road network, trade, credit, and education as well as to introduce necessary social reforms. Traditional market relations being quite efficient in the first stages of the Green Revolution, will not be in a position to ensure diffusion of innovations in the less developed areas. Such a situation means that a main burden of the development promotion will be placed on go-

vernmental organizations for agricultural development. It seems that a further spread of the Green Revolution will be more difficult and expensive. As a consequence, the degree of inter-regional disparities is bound to increase.

4. CONCLUSION

The evidence of the impact of the Green Revolution on spatial development of Indian agriculture is mixed. On the one side, this process has led, in the most developed areas, to an unprecedented increase of productivity, the use of modern inputs, to the weakening of the role of tradition and especially its impact on production. The increase of external linkages was accompanied by an intensified inflow of innovations from the modern sector. A process of formation of modern agriculture with capitalist features has been started. A characteristic feature of this process is the orientation of the modern sector based on HYV on the internal market.

On the other hand, in view of the selective impact of the Green Revolution in functional and geographic space, its influence on the over-all performance of Indian agriculture is not significant. It leads to the increase of inter-regional disparities by way of the formation of modern sector enclaves with virtually no effects in the greater part of the territory with a predominance of the traditional sector.

The Green Revolution provides prospects of development to the well-endowed areas, whereas it does not ensure the transformation of the typical traditional areas which require more radical measures, especially in the pattern of land ownership. For these reasons the Green Revolution, in the present form, cannot be regarded as a universal strategy for the agricultural development in Third World countries.

Institute of Geography and Spatial Organization
Polish Academy of Sciences, Warsaw

BIBLIOGRAPHY

Adelman, I., and Dalton, G., 1971, Modernization in Village India, *Econ. J.* Sept.

Berry, B., and Rao, P., 1968, Urban-Rural Duality in the Regional Structure of Andhra Pradesh, *Geogr. Z.*, Wiesbaden.

Beteille, A., 1970, The Social Framework of Agriculture, in: *Regional Development: Experiences and Prospects*, UNRISD, Geneva, vol. 1.

Desai, D. K., 1969, Intensive Agricultural District Programme: Analysis of Results, *Econ. Polit. Weekly*, June 28.

Dovring, F., 1972, Macro Constraints in Agricultural Development in India, *Indian J. Agricul. Econ.*, 1.

Dumont, L., 1966, *Homo hierarchicus. Essai sur le systeme des castes*, Gallimard, Paris.

Fourth Plan. Mid-Term Appraisal, 1971, Government of India, New Delhi.

Frankel, F., 1971, *India's Green Revolution: Economic Gains and Political Costs*, Princeton.

Friedmann, J., 1967, *A General Theory of Polarized Development*, Santiago.

Friedmann, J., 1969, The Role of Cities in National Development, *Amer. Behav. Sci.*, May–June.

Gałęski, B., 1971, *Innowacje a społeczność wiejska* (Innovations and a rural society), Warszawa.

Gist. N., 1968, Urbanism in India, in: S. F. Fava (ed.), *Urbanism in World Perspective: A Reader*, New York.

Hanumantha Rao, C. H., 1972, Ceiling on Agricultural Land Holding, *Econ. Polit. Weekly*, June 24.

Hayami, Y., and Ruttan, V., 1971, *Agricultural Development. An International Perspective*, Baltimore.

Hermansen, T., 1972, Development Poles and Development Centres in National and Regional Development, in: A. Kukliński (ed.), *Growth Poles and Growth Centres in Regional Planning*, Mouton, Paris.

Johnson, E. A. J., 1970, *The Organization of Space in Developing Countries*, Cambridge.

Ladejinski, W., 1970, Ironies of India's Green Revolution, *Foreign Affaires*, 48, 4.

Lambert, R. D., 1962, Urban Society and the Village, in: R. Turner (ed.), *India's Urban Future*, Berkeley.

Losch, A., 1954, *Economics and Location*, New Haven.

Mironova, E., 1972, *Rynok prodovolstvennogo zerna v sovremennoy Indii*, Moskva.

Misra, R. P., 1972, Growth Poles and Growth Centres in the Context of India's Urban and Regional Development Problems, in: A. Kukliński (ed.), *Growth Poles and Growth Centres in Regional Planning*, Mouton, Paris.

Monthly Bulletin of Agricultural Economics and Statistics, 1975, 2. FAO, Rome.

Morril, R. L., 1974, *The Spatial Organization of Society*, North Scituate, Mass.

Myrdal, G., 1957, *Economic Theory and Under-Developed Regions*, London.

Myrdal, G., 1968, *Asian Drama: An Inquiry into the Poverty of Nations*, New York.

Narain, D., 1972, Growth and Imbalances in Indian Agriculture, *Econ. Polit. Weekly*, March 25.

Output, Expenses and Income of Agriculture in European Countries, Fifth Report, ECE, FAO, 1965, Geneva.

Panikar, P. G. K., 1969, Capital Formation in Indian Agriculture, Indian J. Agricul. *Econ.*, 4.

Rudra, A., 1969, Big Farmers of Punjab, *Econ. Polit. Weekly*, Sept. 27.

Rudra, A., 1970, In Search of the Capitalist Farming, *Econ. Polit. Weekly*, June 27.

Shukla, T., 1965, *Capital Formation in Indian Agriculture*, Bombay.

Schluter, M., and Mellor, J., 1972, New Seed Varieties and the Small Farm, *Econ. Polit. Weekly*, March 25.

Social and Economic Factors in Agricultural Development, 1966, Report No. 5, UNRISD, Geneva.

State of Food and Agriculture, 1963, FAO, Rome.

Statistical Abstract of the Indian Union, 1965 and 1969, Central Statistical Organization, New Delhi.

Statistical Yearbook for Asia and the Far East, 1972, United Nations, Bangkok.

GEOGRAPHIA POLONICA 35, 1977

SYSTEMS OF AGRICULTURE IN ANDEAN COUNTRIES

ANDRZEJ M. ŻEROMSKI

INTRODUCTION

The intention of this article is to analyze the development of agricultural systems in the Andean region, with particular consideration of the subsistence agriculture sector. This analysis is based on examples supplied by Bolivia, Ecuador and Peru, which since 1969 have been intensively revising their traditional agrarian structures.

The Andean region, which includes the mountainous areas of Bolivia, Peru and Ecuador as well as the Pacific coastal lowlands, has an area of 2.7 million sq km and a population of 26 million inhabitants (1972). The population is primarily rural. In the beginning of the 1960's the percentage of rural inhabitants in this region ranged from 53% in Ecuador to 72% in Bolivia. However, most of the rural population occupied the mountainous regions, and the fraction of rural inhabitants in the lowlands was smaller. In Peru, for example, the ratio of the number of rural inhabitants living in the mountains to those living in the lowlands was 2 to 1; in Bolivia it was much greater.

There are marked differences in the level of economic development between the mountainous and lowland regions of the area in question. The national per capita income is always lower in the mountainous regions than in the lowlands. In Peru, for example, where the monthly per capita income at the beginning of the last decade was about $ 180, the ratio of the incomes of inhabitants of mountainous regions and lowlands was about 3 to 1.

Agriculture in the lowland region, especially in Peru, is characterized by high indices of effectiveness (productivity) and has conditions conducive to its development, whereas most of the Andean region, inhabited by more than 60% of the total population, is traditional in nature. Subsistence agriculture in the Andean region has less advantageous ecological and economic circumstances for its development and weaker ties with the market economy.

There are three main ecological zones in the Andean countries (excepting Bolivia), and particular mountain chains of the Andes naturally divide each of the countries into a series of smaller regions. The location of the mountain chains is the reason that in all the Andean countries the development of a transportation network, which is the basic factor integrating particular agricultural production centres in the mountain regions with urban markets, is extremely expensive. The costs of developing transportation in the Andes are much higher than in the lowlands, for example those in the Pacific coast region. All of these factors contribute to the fact that the Andean region of Bolivia, Ecuador and Peru has low indices of production development and is one of the most backward areas of the less developed countries.

1. THE PRINCIPLES OF THE DEVELOPMENT OF AGRICULTURE IN THE ANDEAN REGION

Agriculture in the Andes is highly differentiated as to the composition of the crops, productivity of the soil and methods and techniques of cultivation. Because of the particular geographical situation existing here, there is often a lack of continuity between agricultural terrains and great natural differences can occur between areas relatively close to each other. More than 300 m difference in relative height in the Andes causes such significant ecological differences that on farms located in mountain slopes it is usually necessary to differentiate crop composition and methods of cultivation.

Extensive valleys, certain highland regions separated from one another by mountain chaims, and gentle slopes and hollows with arable soil and sufficient rainfall are all cultivated in the Andes.

In the lower regions average temperatures are high and there is no frost. The soil here is usually arable and the valleys usually lend themselves to irrigation.

Higher situated regions have lower temperatures; there is always a threat of frost or even at times freezing temperatures, so that the growing season is shorter. The soil is usually less productive and the slopes are constantly subject to erosion.

In the highest mountain regions "puna" and "jaleas" (zones more than 3500 m a.s.l. in Peru and Bolivia and more than 3000 m a.s.l. in Columbia) as well as on the Andean plateau "altiplano" — above 3800 m a.s.l. in Peru and Bolivia), there are extensive grasslands. Because of their low productivity they are used exclusively as pastureland for sheep, llamas and alpacas.

In the Andean region in Bolivia and Peru as well as in Chile and Argentina, rainfall is scanty and varies locally between 497 mm (Jacuja, Peru) and 1149 mm (Cajamarca, Peru). Precipitation is irregular and varied throughout the year. Differences in precipitation during the growing season can be up to 25% of the annual rainfall, which causes losses.

The short growing season and the low annual average temperatures make crops with short vegetation periods a necessity. Although these crops require more labour, the results are less satisfying than in tropical or moderate zones.

Most of the agricultural holdings in the Andes are small farms located on poor soil. The owners of these farms — small-holders — live at subsistence level. Often they do not possess legal titles to the land. Small-holders are usually not able to get credit. Even if credit is available, the network of financial institutions is not adequate to the need for them. In addition, small-holders often have no idea of how one can apply for credit. If they do get credit, they often do not know how to use it. In addition the ever-present risk of a climatic misfortune discourages even the most experienced small farmer from applying for financial aid. Thus most of the small-holders in the Andes farm without any additional financial aid.

Furthermore, small farmers do not use artificial fertilizers, selected seed or pesticides which are available solely in distant urban centres. The level of mechanization on small farms is very low. The majority of the farmers in this region rely exclusively on the strength of their hands and their animals.

According to the 1961 agricultural census in Peru, in three mountainous states of the Sierra region (Cuzco, Cajamarca and Ayacucho), only 0.7% of all the farms used a tractor and 36% used exclusively human labour. According to facts cited by the Economic Commission of Latin America (ECLA), in 1960 lowland farms in Ecuador produced 1.2 kg of corn for each hour of farm labur, whereas production in Argentina was 21 times higher (Millikan and Hapgood 1967).

The mountainous regions in the Andean countries are also a barrier to the development of other sectors of the economy including trade which is necessary for the development of a market economy. The network of roads in the Andes, in all of the countries discussed here, is inadequate. They are limited in range and are in poor condition. The main roads in parts of Bolivia, Ecuador and Peru, often the only interregional connections, are pack animal trails. The lack of a sufficient number of roads, practically speaking, isolates many mountain regions from markets for their agricultural products. Even the best roads between cities are periodically closed because of torrential rains or avalanches of falling stones. What roads do exist have relatively little traffic because of the high tolls.

The significant distance from markets effectively prevents a rise in productivity for farms in the region. Several kinds of potatoes, grains, wheat and other crops are grown in the Andes and delivered in small amounts to local markets. Most of the small farmers have no information as to price fluctuations. For this reason their incomes are much lower than they would be in a market economy.

2. THE AGRARIAN STRUCTURE

The basic feature of the agrarian structure in Andean countries is the highly unequal division of the land into large and small holdings. A characteristic feature of Peru, Ecuador and Bolivia are large agricultural holdings, latifundia on the one hand, and small peasant farms deprived of sufficient land (minifundia) on the other. Large and small farms form the basis of the agricultural system in these countries.[1]

2.1. THE RISE OF VARIOUS LAND-OWING SYSTEMS

Large property holdings appeared in the Andean region in the beginning of the 16th century as a result of the Spanish conquest which led to the downfall of the agrarian system of the Incas.

In the 14th and 15th centuries, when the culture of the Incas was in full bloom, there were small organized farms on the Andean plateau — today's Peru, Ecuador and Bolivia. The land was owned by the state, i.e. the king of the Incas and the chaplains, and was cultivated by the Indians in accord with the accepted principles. One third of the arable land was assigned to the use of Indian communities and was annually divided among the families. The land was allotted in such a way that each family would have enough to satisfy its own needs. In communities called *ayllu* the elders parcelled out the land and exploited the Indians belonging to the tribe.

The conquest brought about changes in the agrarian system. The state lands became the property of the Spanish crown and in time became the immense private estates, the so-called latifundia. In the beginning of the colony, the rulers of these great estates were the one-time conquistadors who were given life-long rights to the use of the land to the labour of the Indians who lived on it. These were called *economiendas* and lasted until 1720; later they became *haciendas* in which the erstwhile administrator of the estate became the owner while the Indians, as a result of economic, political and religious pressures, became his hired hands, the peons.

[1] The notion of latifundium is not precisely defined. In Latin America it is used to describe large agricultural farms, i.e. plantations, haciendas and other manors, in which socio-economic relations are of traditional quasi-feudal character. The notion of minifundium comprises as a rule small peasant farms.

The communal lands were not expropriated and the Spaniards accepted without change the Indian system of tributes and payments. The owner of the state on whose terrain the communities were, collected their taxes and could at any moment demand additional work from them, for example during the harvest or when building a road or irrigation canal and so on.

During the colonial period the communal lands were constantly under threat of absorption into the large estates. In most cases, however, they managed to maintain their legal status. This was true especially of those communities which had less fertile lands, located in less accessible regions or far away from haciendas and administrative centres of the colony (Frankowska 1967).

As a result of the new socio-economic circumstances in which the communities found themselves during the colonial period, their internal structure began to change. Among other things, many of them ceased to divide the land annually and began to have private property. This tendency was strengthened by the acquisition of independence by the Andean countries in 1824–25 when the communities were officially dissolved by state decrees.[2] This cleared the way, in the Andean region, for the development of a group of small property owners. The offical dissolution of the communities in 19th century disclosed the existence of a very large group of landless people. Because of an insufficient amount of land on the altiplano, and because of the progressive increase in population, this group increased numerically and constituted seed of the future class of minifundists and hired agricultural workers.

2.2. THE CONCENTRATION OF LAND POSSESSION

In the beginning of the 1960's about 60% of all the arable land belonged to the latifundia and great plantations which consitituted about 0.4–1% of the total number of agricultural holdings. Small farms — minifundia — accounting for 80% of all holdings, occupied an average of barely 10% of arable lands; family and so-called average-size farms (1.8% of all holdings) occupied 30% of all the land (Table 1).

In Peru before the 1969 revolution the vast latifundia and plantations which constituted 1.4% of all the agricultural holdings controlled 62.8% of all the cultivated land whereas farms having less than 25 hectares — 94.5% of all the agricultural holdings-possessed barely 24.4% of all the land. Medium size farms (26–249 ha) occupied 11.8% of all the land.

The smallest farms, minifundia, could be found in all the ecological zones. According to the *Comissión de Reforma Agraria* there were 35,964 minifundia with an average area of 1.39 ha each on the Peruvian coast; in the Andes there were 16,436 farms whose area was no greater than 2.1 ha (Ministerio 1962). In Amazon valley, however, the number of minifundia was estimated to be 8,362, with an average area of 4.96 ha. Minifundia (less than 5 ha) were particularly concentrated in the southern part of the Peruvian Andes where they made up 64.5% of all the farms in this area; their average area did not exceed 1.62 ha.[3]

In 1954 in Ecuador the 705 largest latifundia (more than 1000 ha area), acco-

[2] In Peru, as a result of the change in gevernmental policy, Indian communities discriminated in 19th century, obtained their legal status according to constitutional act from 1920.

[3] Increase of the rural population on the one hand, and erosion of soil on mountain sides on the other, cause a constant decrease of ploughland per capita. In Ecuador, in 1940–1950 there was 0.1485 ha of ploughland per one Indian inhabitant of rural area, whereas for the parents there was 0.1757 ha, and for his grandparents — 0.2681 ha, and for grand-grand parent — 0.6401 ha. This generalization, slightly modified, is also true for Peru (Beals, 1952).

TABLE 1. The structure of large and small farms in Andean countries

Country	Latifundia and plantations		Minifundia	
	% of farms	% of land	% of farms	% of land
Peru	1.4	62.8	88.0	7.4
Ecuador	0.17	37.4	73.1	7.2
Bolivia	1.6	64.0	69.4	0.5

Source: *Economic Survey of Latin America 1966*, UN, New York 1968, p. 335; Holmberg A. R. and Dobyns H. F. 1970, p. 400.

unting for 0.17% of the total number of agricultural holdings, possessed 37.4% of the tillable land — each latifundium occupied an average of 3.180 ha. Holdings of more than 200 ha constituted barely 1.1% of the total number of holdings but occupied almost 56.7% of the total farmland. On the other hand, 250,000 minifundia (73.1% of the total number of holdings) possessed only 7.2% of the land and their average area was 1.7 ha. 25.8% of the farms in Ecuador were of medium size (5–200 ha) and they occupied 35.8% of the land. Inequalities in land distribution were even greater in the Ecuadorean Andes where minifundia in the mountainous regions represented 81.7% of all farms and occupied only 11.3% of the land, whereas estates over 200 ha (0.7% of the total number of holdings) had 58.4%. These large estates had an average area of 1032 ha (Holmberg 1971).

In Bolivia at the beginning of the last decade 64% of the land belonged to latifundia representing 1.6% of all holdings, and only 0.5% of the land belonged to minifundia (69.4% of all farms).

It is a fact that no farm of less than 5 ha in the mountainous areas of the Andean region can assure even the bare necessities for a family: For this reason owners of these farms are also farmworkers and are usually employed in nearby latifundia.

The Peruvian Indian farms located in villages near the Titicaca lakes are even smaller, their area varying between 0.5 and 5 ha. The area of minifudia on the Peruvian coast is also small. In the years 1950–1964 about 80% of all the farms in the Viru valley were minifundia occupying an average of 0.2 to 5 ha (Holmberg 1971).

The lack of land and the impossibility of maintaining themselves on the farm cause the peasants to search for better conditions; they emigate chiefly to the cities as well as to areas of agricultural colonization in the Amazon valley.

In one such colony, located near Tingo Mariá in the Peruvian part of the Amazon valley, small farms make up about half of all the holdings. Many of the settlers came hare from the Andean region where their farms had been composed of four or five separate parcels of land not infrequently separated by distances up to 3 km, with a total area of less than 1 ha. Small farms in Tingo Mariá are more prosperous, have more differentiated crops and have farm animals (*La actividad...*, 1962).

In other settlements, a typical small peasant farm has an area of 2–4 ha. In eastern Bolivia, settled by emigrants from the *altiplano*, these farms manage to sell up to 90% of their produce at the local market and their average area is 4.4 ha (Holmberg 1971). These facts indicate that within a short period of time many settlers from the Andes can farm more than 5 ha and make the transition from subsistence agriculture to a medium size market farm.

2.3. RURAL OVERPOPULATION IN THE ANDES

An analysis of socio-economic conditions in Andean agriculture reveals that where there are small holders and Indian tribes there is overpopulation. Overpopulation is a result of rapid population growth and a decrease in acreage of tillable land, and productivity of the soil in the small farm.

The extent of overpopulation in Andean countries is difficult to estimate. For one thing, it is difficult to recognize those minifundists who also work as hired farmhands and thus are sporadically employed outside their own farms. For similar reasons overpopulation in the Indian tribes is also not entirely clear. Thus all estimates of rural overpopulation are only approximations and can give only a general idea of the situation.

Approximations are usually made when calculating the population surplus in the agriculture of less developed countries. In 1960 CIDA (*Comité Interamericano de Desarrollo Agricola*) conducted such a study in the seven Latin American countries: Argentina, Brazil, Chile, Ecuador, Guatemala, Colombia and Peru. They showed that in Ecuador 90% of the small farms were too small to be able to fully provide a family with groceries and to employ all the family members during the year. In Peru this figure was 88% (Barraclough and Domike 1966). This means that in 1960 260,000 farms in Ecuador and 443,000 farms in Peru were overpopulated. Assuming that in each overpopulated minifundium there was at least one person not involved in production, overpopulation in this group of farms in Ecuador and Peru came to about 700,000 people. The figure, a very approximate estimate which could raise many doubts, is close to the theoretical calculations of several authors. They agree in general that the amount of the "unnecessary surplus" in agriculture in developing countries is about 1/4 to 1/3 of the agrarian population.[4] In addition, CIDA calculations indicate that only 0.7 million persons are necessary to farm the minifundia in the seven Latin American countries and not the 4.4 million people presently found there. Thus 3.7 million people, 84% of those employed in the minifundia in the countries in question are surplus labour (Barraclough and Domike 1966).

3. SYSTEMS OF AGRICULTURAL PRODUCTION

According to their productivity and level of marketable production several types of agricultural estates can be distinguished in the Andean region. These are: plantation, large livestock farm — rancho, medium farm, small peasant farm — minifundium, and large manor — latifundium.

On the basis of the above classification, two economic systems of agriculture can be distinguished: the system of marketable agriculture and the system of traditional (subsistence) agriculture. Plantation, rancho and medium farm belong to the system of marketable production. The remaining two types, e.g. minifundium and large manor belong to the system of traditional agriculture.

3.1. MARKETABLE AGRICULTURE

The basis for marketable agriculture in the Andean region are two specific types of farms: the plantation and the large livestock farm, the rancho.

---

[4] See: A. M. Zeromski, 1969, pp. 151–179.

The plantation

The plantation is a characteristic feature of the Pacific coast of Ecuador and Peru as well as, especially over the past few years, certain developed regions of the tropical forest located in eastern Peru and Bolivia. The basic crops cultivated on the plantation, and in constant demand on the world market, include sugar cane, cotton, rice, bananas and coffee. These crops obtain much credit from commercial banks and are highly mechanized.

The minimum area of a plantation is usually 100 ha, but there are plantations, especially on the western coast of Peru, where they are above 10,000 ha. The largest plantation in this area occupied 32,213 ha before 1969. All in all there were 200 plantations on the coast of Peru in 1964, with a total area of 338,266 ha. Thus the average area of a plantation in this region was 1691 ha (Malpica 1964).

The plantations are of great importance in Andean agriculture. It is sufficient to analyze the fact concerning their market production. In 1968 the export of sugar was responsible for 12% of Peru's total exports, while cotton and coffee accounted for 10% and 15% respectively. Altogether these three items accounted for 37% of this nation's total exports.

Rancho

The great livestock farms, the ranchoes, developed primarily in the mountainous regions where the height above sea level and uneven terrain hinder tilling of the land. The vast mountain meadows found here make excellent pastures for livestock. The ranchoes supply significant amounts of sheep wool and skins as well as mutton and milk intended for both domestic and foreign markets.

Generally speaking the ranchoes occupy much more space than do the plantations. In the mountainous regions of Peru before 1969, the 24 largest ranchoes had a total area of 2,883,290 ha which means that the average was 120,137 ha (Malpica 1964). It should be noted that the owners of these estates are among the 200 coastal plantation owners mentioned above. This is yet another sign of the great concentration of property in this region.

Both plantations and ranchoes supply primarily marketable goods. Production for internal use accounts for only a small part of total production. Plantations and ranchoes usually belong to producers' associations and can obtain large loans from commercial banks for the development of production. Both types of farms employ hired labour and are mechanized. These estates often have their own schools and health centres. Workers employed by the plantations and ranchoes are usually members of agricultural workers' unions.

The medium-size farm

The medium-size farm occupies less land than the plantation or rancho. Most of these farms are privately owned by people who are directly occupied with agricultural production. Labourers on the medium-size farms have working conditions similar to those of the plantation or rancho. These farms can also obtain capital credit from the state, though to a lesser degree than the estates discussed above.

The area of a medium-size farm ranges from 5 to 100 ha.

The so-called "fundo" in Peru belongs to it. The lowest group of medium--size farms are the so-called family farms with areas of 5–10 ha (on the Peruvian coast). In eastern Bolivia the family farm ("quinta") usually occupies 8–10 ha

of which only about half is cultivated. In Ecuador as well, the area of the family farm ranges from 5–10 ha (Holmberg and Dobyns 1970).

The production of the medium-size farm is intended chiefly for the market as well as to satisfy the needs of the family and the agricultural workers. Productivity in medium-size farms is greater than in the plantations. They also take advantage of technical and financial did to a greater degree than do the plantations.

3.2. SUBSISTENCE AGRICULTURE

The subsistence agriculture sector in the Andean region includes two types of farms: the small peasant farms, minifundia and the large manors, latifundia.

The minifundium

Several million farms in the Andean region belong in this group. They occupy much less land than do the medium-size farms.

The owners of these farms form a group of independent small holders who till the land autonomously or within the legal entity of an Indian comunity in Peru or Bolivia or a commune in Ecuador. Peasant farms have little or no capital. They are almost always small, often made up of several parcels of land as a result of multiple divisions.

The techniques used on the peasant farms are mainly traditional in character, and cultivation methods are based on human labour. The situation is similar on small Indian communal farms. Some of the tribes have commonly owned land which is tilled either by individuals or by all the members of the community. Communal land tilled by individuals belongs to the category of small peasant farms.

The Andean peasants make up the greatest supply of unskilled or semi-skilled labour in the area. The peasant who cannot feed his family must seek other sources of income. He thus works on neighbouring plantations and manors in order to obtain additional financial means for food, clothing and, rarely, luxury goods. Many peasants specialize in a trade (e.g., the production of sandals or hats) and obtain funds in this way. In other cases if there is a mine or factory nearby the peasant becomes a worker. As the Andean peasants slowly lose their land they emigrate to the city in order to find work.

The manors

The great manors are the least productive type of agricultural holding in the Andes. The latifundium includes the land of a large property-holder as well as the small subsistence farms run by peasants and belonging to the manor. A characteristic feature of the latifundium is the paternal attitude of the owner and his family to the peasants working on the land. This relationship is quasi-feudal in character and the peasants are in reality manor serfs.

The manor lands farmed by the peasants out of economic necessity have low productivity. The crops produced by the latifundium are intended to satisfy the needs of the owner's family. A small part can be sold on the local market only when the manor is in the direct control of the owner, and his family lives in a nearby city where the produce can be sold more easily. In other cases the latifundium does not contribute to the market. In Bolivia before 1954 the latifundia were virtually self-sufficient, and the agricultural production surplus was small (Holmberg and Dobyns 1970).

Latifundia require little capital for production. The substitute for mechanized farming on the latifundium is unqualified human labour. If it were reimbursed monetarily, many latifundia would go bankrupt. The latifundia do not rotate crops and do not cultivate pastures. The livestock graze extensively.

The small peasant farms that make up the latifundia are of the subsistence type. They are cultivated in accordance with the most traditional agricultural techniques. Production on these farms is often so low that people belonging to the manor and not obligated by debts or other factors are often forced to emigrate from the latifundium in search of work and food.

4. THE ECONOMIC EFFECTIVENESS OF AGRICULTURAL PRODUCTION SYSTEMS

In order to estimate the effectiveness of agricultural production in the Andean region, an analysis of the basic factors in production — land, labour and capital — was made for five chosen farms in Peru. The market agriculture sector was represented by a plantation, rancho and medium-sized farm, while the minifundium and traditional latifundium represented subsistence agriculture.[5]

In this group of holdings market production, as per cent of total production was as follows: plantation 99,9%, rancho 100%, including livestock 99.7%; medium-size farm 100% and latifundium 75.2% (livestock 7.9%). This is in contrast to the minifundia where the total produce was designated for home consumption. On the latifundium the index of home consumption was 24.8%, on the plantation 0.1%. Thus in the group of farms in question, belonging to the market sector, practically everything produced was intended for the market (Table 2).

TABLE 2. The marketable production of agricultural estates

	Plantation	Rancho	Medium farm	Minifundium	Manor
1. Income of estates net in thousand soles	6662	3819	387	3	232
2. Sale of products (%):					
— agricultural	99.9	0.3	100	—	67.3
— stock	—	99.7	—	—	7.9
— autoconsumption	0.1	—	—	100	24.8
Total	100.0	100.0	100	100	100.0

Source: *Tenencia...*, 1966, p. 93, 160 and 239.

In the group of holdings representing subsistence agriculture, only the latifundium had a significant per cent of total production not intended for consumption (75.2%). It should be noted, however, that the latifundium production was intended for the use of the family and its manor serfs. Part of its produc-

[5] Data for analysis after papers of CIDA comprise, among others, the results of regional research in the agriculture of Peru, conducted in 1962. The estates chosen for analysis were indicated in the study of CIDA in the following way: plantation C-1, rancho Si-1, medium-sized farm C-3, minifundium Si-7, latifundium Se-1 (*Tenencia...*, 1966).

tion was intended for the local market, which served only areas located near the farm. It should also be stressed that this farm was situated in the eastern part of Peru, in an almost inaccessible part of the tropical forest, so that practically speaking it was not influential in the market economy. [6]

The subject of this analysis is concerned with two problems: (1). the structure of the agricultural estate, and (2). the structure of the labour force.

4.1. THE STRUCTURE OF THE AGRICULTURAL ESTATE

The greatest asset of each of the estates was land. The value of this basic production factor has, however, undergone characteristic fluctuations (Table 3).

Land attains its greatest relative value on the plantation (91,8%) and the latifundium (89.2%). Its relative value is somewhat lower for the minifundium and the medium-size farm. The lowest relative value of land in the structure of the agricultural estate is on the rancho where livestock constitutes the greatest relative value (56.5%).

TABLE 3. The structure of agricultural estates

	Plantation	Rancho	Medium farm	Minifundium	Manor
1. Value of agricultural estate in thousand soles	49,012	22,349	1,163	17,3	5,207
2. Percentage of total value:					
— land	91.8	34.0	77.3	69.3	89.2
— buildings	0.3	2.3	0.3	28.9	1.5
— irrigation	0.6	—	0.9	—	—
— stock	×	53.4	0.2	0.6	1.3
— plantation	—	0.8	—	—	8.0
— agricultural machines	6.7	3.7	20.8	—	—
— tools	0.3	0.7	0.5	1.2	—
— others	0.3	5.1	—	—	—
Total	100.0	100.0	100.0	100.0	100.0

Source: *Tenencia...*, 1966, p. 86, 152 and 233.
× = below 0.1%

A characteristic feature of agriculture in the Andes is the lack of sufficient precipitation. For this reason an important consideration influencing the productivity of a farm is the irrigation system. The presence of an irrigation system is synonymous with a higher level of mechanization and land cultivation techniques. As the table shows, irrigation systems are found chiefly on the plantations, where they account for a relatively large part of the value of the estate. As far as mechanization is concerned, the highest level is seen on the medium farm where the value of machines and agricultural tools equalled 21.3% of the estate. On the plantation this figure was 7.3%. The lowest values were seen for the rancho (4.5%) and the minifundium (1.2%) which possessed hand tools only. The latifundium had no technical equipment and agricultural tools.

[6] *Tenencia...*, 1966, p. 239.

4.2. THE LABOUR FORCE

The labour pool on the farms studied was made up of permanent workers who might include the owner of the land and members of his family (e.g., on the medium-size farm and the minifundium) as well as seasonal workers. Seasonal workers are employed only during the harvest and at other peak times.

The structure of employment on farms is closely tied to the nature of their production. On subsistence farms permanent workers, members of the family, make up the entire labour pool. In market agriculture, however, the number of seasonal workers can be up to 50% of the permanent workers (e.g., on the plantation) or might even exceed the number of permanent workers (medium-size farms) (Table 4).

TABLE 4. Labour force

	Plantation	Rancho	Medium farm	Minifundium	Manor
Agricultural workers:					
— permanent	200	109	5	3	11
— seasonal	100	16	9	—	—
1. Number of labour days in a year:					
— total	72 500	39 482	4 200	120	3 300
— per 1 ha arable land	48	1	140	80	22

Source: *Tenencia...*, 1966, p. 89, 155, 185 and 236.

The number of work-days, especially the number of work-days per hectare of cultivated land is the highest on the medium-size farm and the minifundium. The medium-size farm which is also the most mechanized must be considered the most productive from an economic point of view.

The minifundia require so much labour per hectare because of a shortage of land and because of the low level of mechanization. These deficiencies are covered by the increased work of the owner and his family. The analysis of these farms shows, however, that this is an inefficient way of farming. The calculations indicate that each member of the minifundist's family works 40 days out of the whole year.

On the plantation the number of work-days per hectare of arable land was 1.5 times fewer than on the minifundium and twice that of the latifiundium. The lowest ratio was found for the rancho, for which agricultural production constitutes a small fraction of the total estate.

4.3. THE INTENSITY OF MANAGEMENT

The economic intensity of the agricultural economy depends on many internal and external factors of development in the agricultural sector. From an economic point of view, three basic factors govern increases in production: land, labour and capital. In the group of farms in this analysis the latifundium was found to have the lowest absolute indices of efficiency of production. Total productivity during the time of the study showed a deficit here, so that particular indices of productivity (efficiency) were negative.

Land

In 1962, in the holdings in question, the highest coefficient of productivity of land was found in the medium-sized farms, three times higher than the average for all farms together (1041 sols/ha). The minifundium was second with a relatively high index of 478 sols/ha, and the plantation had 387 sols/ha. The lowest productivity coefficient was calculated for the rancho (82 sols/ha) which was understandable in view of the nature of this type of farm (Table 5).

TABLE 5. Productivity of agricultural estates

	Plantation	Rancho	Medium farm	Minifundium	Manor
Land[1]	387	82	3223	478	–991
Labour[2]	8.1	55	23	6	negative
Capital[3]	56.0	8.3	12.0	19.2	negative

[1] Productivity of land — value of net production in sol per 1 ha of agricultural land.
[2] Labour efficiency — quantity of net production in sol per 1 day's work.
[3] Capital productivity — value of the capital necessary to produce 1 sol of net income.
Based on the data from: *Tenencia...*, 1966, p. 9, 89, 155, 185 and 236.

Labour

The labour efficiency coefficient was lowest for the minifundium (6 sols) and the plantation (8.1 sols). These values were one third of the average for all the farms studied, which was 23 sols. The rancho had the highest labour efficiency index (55 sols), more than twice the average. This index for medium-size farms was around the average value (23 sols).

Capital

The average capital productivity coefficient for these farms was around 24 sols. All of the farms except for the plantations were lower than this average. The lowest value (8.3 sols) was found for the rancho. The plantation, however, had the highest value: 56 sols of the value of the capital estate were necessary to create 1 sol of production value.

These indices of land, labour and capital allow us to divide farms according to the intensity of their management. Table 6 shows these holdings according to increasing values of particular coefficients.

An analysis of the summary coefficient points to two interesting conclusions. First, the minifundium — a farm belonging to the subsistence agriculture sector — is not among the most inefficient of farms, and secondly, the most efficient farm is not the plantation but the medium-sized farm.

TABLE 6. Agricultural estates according to productivity of main production factors

Rank	Land	Labour	Capital
1	latifundium	latifundium	latifundium
2	rancho	minifundium	rancho
3	plantation	plantation	medium farm
4	minifundium	medium farm	minifundium
5	medium farm	rancho	plantation

The minifundium occupies a middle place due to the relatively high productivity of land and capital and in this respect outdistances the latifundium. The rancho occupies a place between the latifundium and the minifundium and belongs to the market agriculture sector. The rancho has the highest labour efficiency coefficient, but as a result of extensive use of arable land (pasturelands) the coefficients of land and capital productivity are low.

The high position of the medium-sized farm is the result of the largest coefficient of land productivity and a large coefficient of labour productivity. The plantation, on the other hand, has a characteristically large coefficient of capital efficiency but land productivtity is lower than even the minifundium, and labour efficiency lower than for the medium-sized farm.

CONCLUSION

An analysis of the basic factors in agricultural production perimitted classification of the farms in the study according to the intensity of their management. In this study the farms arranged in order of increasing intensity were as follows: latifundium, rancho, minifundium, plantation and medium-sized farm.

It must be emphasized that this classification concerns the sample of farms studied in Peru in the beginning of the 1960's and there may be deviations in other countries of this region. At the same time, Peru can be considered to be a representative example of the Andean region, and the sample of farms is typical.

It is clear that because of the existing socio-economic conditions a significant increase in agricultural productivity in the Andean countries is tied to the need for revision of the existing agrarian structure, i.e., land reform.

Economic analysis of farm productivity shows that the most effective (economical) farming system in this region is the medium-size farm; agrarian reforms should aim to develop this type of farm. On the other hand, an analysis of the overpopulation and social situation in the rural Andes draws attention to the dispersed peasant farms. Farms belonging to the peasant small holders have relatively large coefficients of production factors in spite of their limited land and capital. Thus these small farms should be strengthened by increasing their area and giving them more financial aid. The development of these farms should take place at the cost of the latifundia which are the least efficient farms in the region. The minifundia and medium-sized farms should also take advantage of a reorganization of the ranchoes.

Special attention must be paid to the plantations, the most highly mechanized and modern farms. The plantation being an independent estate intended only for market production could be of importance in the revision of the rural economic structure of the Andes and the further development of these countries' export economies.

The success of agrarian reform is tied to the extent of the planned revision. Most radical of all the Andean countries, up till now, has been Peru. The revolutionary military government instituted the reform in 1969. The aim of the reform is to change the agrarian structure of the country by replacing the latifundia and minifundia with a more just system of land possession, to increase productivity and to raise the peasants' standard of living.[7]

The decree concerning agrarian reform aims to enlarge and support small and medium possessions worked directly by the owner; it guarantees Indian

[7] *Decreto Ley no. 17716, Reforma agraria,* Empresa Editora–"El Peruano", Lima 1969.

communities the right to collective possession, and promises more land to fully satisfy its members. The decree encourages the development of agrarian co-operatives and promises land to all those who wish to work it.

The agrarian reform program in Peru is planned for a five year period. By the end of 1971 the large coastal sugar plantations had been dispossessed and changed into co-operatives, with a membership of 23,000 peasant families.

By January, 1975, a total of 5 million ha had been given to the peasants in Peru. Agrarian reform should be complete by the end of 1975. The reform concerns a total of 11 million ha, which means that a total of 380,000 peasant families will benefit from it.

The enactment of land reform in Peru has gone smoothly, generally speaking. Thanks to this reform there is a real chance to improve the socio-economic situation of the poorest Peruvian peasants, as well as a chance to improve the undeveloped areas in the Sierra. A future goal of the reform is to include these areas in the sphere of influence of economic centres in the country, thus beginning the balanced development of the so-called peripheral regions.

The example of Peru serves to show the need for agrarian reform in the Andean countries and the practical possibility of achieving this goal. The necessity for land reform in the Andes is inescapable. The improvement of underdeveloped agriculture is one of the basic conditions in order to achieve rapid economic growth, and to level the great inequalities in the regional development of Bolivia, Ecuador and Peru.

Institute of Geography and Spatial Organization
Polish Academy of Sciences, Warsaw

BIBLIOGRAPHY

Barraclough, S. L., Domike, A., 1966, La estructura agraria en siete países de América Latina, *El Trimestr. Econ.*, 130.

Beals, R. L., 1952, Acculturation, Economics and Social Change in an Ecuadorian Village, in: *Acculturation in the Americas. Proceedings and Selected Papers of the 29th International Congress of Americanists*, pp. 67–73.

Ford, T. R., 1955, *Man and Land in Peru*, Gainesville.

Frankowska, M., 1967, *Podstawy gospodarki wiejskiej w Peru w ostatnim okresie panowania Inków i pierwszym stuleciu po konkwiście (wiek XVI i pierwsza połowa XVII w.)* (The basic pattern of rural economy in Peru during the last period of Inca Empire and the first century after the Spanish conquest: 16th cent. and the first half of 17the cent.), Prace Wydz. Fil.-Hist. U.A.M., Poznań, Ser. Etnogr., 5.

Holmberg, A. R., 1971, Vicos: A Peasant Hacienda Community in Peru, in: *Economic Development and Social Change. The Modernization of Village Communities*, American Museum Sourcebooks in Anthropology, New York, pp. 518–555.

Holmberg, A. R., Dobyns, H. H., 1970, The Cornell Program in Vicos, Peru, in: *Subsistence Agriculture and Economic Development*, Chicago, pp. 392–414.

Malpica, C., 1964, *Los Dueños de Perú*, Lima.

Millikan, M. F., Hapgood, D., 1967, The High Altitude Region, in: *No easy harvest. The dilemma of agriculture in underdevelopment countries*, Boston, pp. 158–175.

La actividad cafetalera en Tingo María, 1962 Ministerio de Agricultura, Promicion Agraria, Lima.

La Reforma Agraria en el Perú, 1961, Documentos I, Comisión para la Reforma Agraria y la Vivienda, Lima.

Tenencia de la Tierra y Desarrollo Socio-Económico del Sector Agrícola–Perú, 1966, Comité Interamericano de Desarrollo Agrícola, OEA, Washington, D.C.

Tenencia de la Tierra y Reforma Agraria en América Latina, 1971, Informe Regional y Resúmenes de los Estudios por Países, Comité Interamericano de Desarrollo Agrícola, OEA, Washington, D.C.

Żeromski, A. M., 1969, Przeludnienie wsi w krajach andyjskich (Sum.: The rural overpopulation in Andean countries), in: *Zmiany w rolnictwie tradycyjnym i migracje ludności wiejskiej w krajach rozwijających się (Irak, Maroko, kraje Afryki Zachodniej, kraje andyjskie)*, Prace Geogr. IG PAN, 98, Warszawa, pp. 151–179.

GEOGRAPHIA POLONICA 35, 1977

SELECTED PROBLEMS OF TROPICAL AFRICA AGRICULTURAL EVOLUTION

Maksymilian Skotnicki

In spite of the fact that so much has been written on traditional agriculture those aspects which are of particular importance in considering prospects for its further development and for studies on economic backwardness, have always been inadequately presented. Perhaps it follows from the continuing juxtaposition of the traditional sector to the modern one even if difficulties in determining criteria are perceived, on the basis of which division into these two sectors can be accomplished. The starting point of many more or less successful typologies is the degree of production commercialization. The higher the level of commercialization, the higher the level of development can be, especially in more "central" and less "peripheral" areas, to aply new, perhaps well-conceived terms. It is the simplest measurement easy to grasp and therefore to be recommended. Whilst not entering into its more detailed discussion, it can, however, be stated that the resultant types can underline different situations. They do not allow further differentiation of:

— character of production, since division into food and commercial crops is very superficial, e.g. groundnuts typically grown for export, can be grown exclusively for internal consumption, and millet and rice — traditionally for local consumption — are often the main source of income;

— cultivation methods, since the classical plantation system is amongst the exceptions and some typical annual commercial plants — such as cotton or groundnuts — can, of course, be produced even within a shifting cultivation system;

— agrarian relations, because commercial plants are cultivated within all types of land tenure with various forms of work and space organization, etc.

The traditional sector also contains many of the agricultural features which are generally assigned to the modern sector. In the present age of rapid changes, which are not always positive, it is, of course, obvious that without careful analysis of traditional agriculture carried out from the point of view of its possible transformation, without exploiting the positive elements of the traditional socio-economic pattern, adequate modernization of the African village cannot be achieved. From that point of view, it is thus worth recalling and considering aspects of the evolution of African agriculture.

CULTIVATED PLANTS

It should be stated first of all that the majority of cultivated tropical plants are not of African origin. This applies not only to typical commercial crops. The Africans, prior to external contacts, had at their disposal a relatively wide

spectrum of cereals (millet, sorghum, rice *Oryza glaberrima*, digitaria); but cultivation was ecologically limited to the savanna zone; root crops were represented but not numerously (coleus, one of yams); a considerable and often basic feeding role has been played by vegetables (e.g., voandzu). New plants brought about many changes, i.e., they allowed either an increase in their volume and production differentiation or facilitated it. Sometimes they produced conditions for new possibilities of cultivation, e.g., without Asiatic rice all irrigation programs for consumer purpose would have been useless. A universal maize gives higher yields than traditional dry cereals using similar labour input. Yams, requiring both better edaphic conditions and labour intensive input have been replaced by manioc which is easy to cultivate, satisfying in poor soils, resistant to pests, having edible leaves, and being easily stored. It is true that it is heavy-digestable and poor in proteins. Maybe for this reason many European scientists and experts warn against dissemination of this plant — not remembering that where it brought catastrophic consequences, it was generally not the fault of the Africans. When Oubangui-Chari was colonialized, people were forced to extend the cultivation of manioc to supply food for newly organized large villages; the increase in child mortality, and the general, even to this day, demographic degradation may be, to a certain extent assigned to this cause. But where manioc was disseminated without administrative pressure, the farmers did not succumb to its extraordinary qualities: although it gives good yields in savanna conditions, there, however, it constitutes only an extra crop, very rightly valued as particularly important only in the pre-harvest period. This is worth remembering.

Commercial crops brought about the largest transformation. Their introduction often had fatal consequences, particularly in savanna areas where all the most important field work should be accomplished during the short wet season. Since each crop needs planting or harvesting at the same time — there is no possibility here to speak about the attractive and easier cultivation of the perennial crops of tropical rain forest — thus the increase in areas earmarked for commercial crops can bring about, and actually did cause a reduction in food crop area, and so deterioration in consumption.

But this discussion is above all about situations caused by direct or indirect external intervention — at least in the form of administrative orders or the necessity to pay taxes not by traditional means of payments but in cash. While assessing adaptation to commercial crops by the African village, this should always be kept in mind. Would an African farmer — if no brutal intervention from outside existed — adjust himself properly? An answer is difficult to obtain but there is evidence that it can be positive. Upsetting food equilibrium is most dangerous but concern for its maintenance can be an interesting advisory field for us. In fact, in many areas a rapid growth of land earmarked for commercial crops brought about a risky dependence on purchases. But is it not, in essence, a normal phenomenon? If it is dangerous, it is no account of price fluctuations, over which an African farmer has no influence and which had not been foreseen by him. It is worth mentioning that he often showed great caution. For example, in the Joruba group: although cocoa gives high revenues at least 1/3 of cultivated land is earmarked for maize, bananas, yams and manioc. Without pressure or expert advice food has ben taken care of. Let us look at savanna: even in Senegal where groundnuts are the basis of the country's existence and where food is imported, Serers earmark only 1/3 of exploited fields annually. Finally, let us focus our attention on the correct selection of crops from the point of view of their profitability: when rice, millet and sorghum cultivation became

more profitable, Mali authorities could not induce the cultivation of cotton and groundnuts in many areas where they have traditionally been cultivated — and on the second extreme of Africa, i.e. in Nyanza, East Africa — farmers instead of growing cotton imposed on them by the administration, put in maize which appeared, in fact, more profitable.

The above lead us to the following conclusions:

— the widespread dissemination of crops of external origin points at extreme receptiveness of African farmers and their adaptive capabilities;

— we may find evidence that this was not, and is not, a passive adaptation but an active attitude, confirmed by the fact that it has not been hampered by administrative policy;

— it was expressed either in concern for the maintenance of feeding equilibrium or selection of those crops which really bring the highest income.

CULTIVATION METHODS

Both in the traditional systems and in the already highly processed ones, methods of cultivation were, and are, so different (depending on natural environment, demographic factors, social relations, degree of evolution, economic context) that even in such a general survey and with all possible reservation we may proceed too far in generalization. Thus we should confine ourselves only to remarks on the disseminated fallow system sometimes called the quern system — although it need not include burning: system which consists in leaving the land for a long rest after its cultivation. This system has always been much criticized. Disregarding existing large differences in its aspects, it is stated that typical mixed cultivation is characterized by:

— low density of settlement. In fact, its expansion leads immediately to catastrophy: shortening the fallow period, impoverishment of geographical environment, hunger. Thus, in view of the population increase, it may be considered that its prospects are limited;

— small settlement units which might not be conducive to certain forms of village modernization;

— based on manual work, more frequently of women (above all in forests);

— accomplished by way of primitive tools, almost always the hoe;

— low productivity;

— small labour inputs,

— poly-culture hampering the introduction of crop specialization;

— husbandry is not used for land cultivation;

— destroying natural environment;

— altogether, extremely extensive.

The above features are considered to be so negative that it is a widely-held view that this crop system has few evolution possibilities. However, let us focus our attention on its positive aspects:

— as a rule, very proper, scrupulously performed selection of crop location depending on conditions with good general knowledge of soils;

— differing methods of cultivation depending on local edaphic conditions; often selection of adequate types and varieties according to type and stages of soil depletion, climatic conditions, etc.;

— maintenance and protection of useful trees giving shade, supplementing food, protecting or enriching the soil (e.g., *Acacia albida*);

— commonly existing culture association. The appearance of a typical African field — with remnants of natural plants with crops of different types and

age — gives an impression of chaos (let us add that it exists, above all, in forest areas; in savanna specialization is, in general, more advanced). But it is often justified, not only from the point of view of convenience of cultivation but also for agrotechnical reasons since only in this way can one reach the whole soil cover, creating at the same time proper conditions for the development of particular plants. For that reason, although such a system must be considered an extensive one on regional scale, in the scale of fields with very difficult appraisal of their efficiency, this opinion becomes invalid;

— the use of the correct rotation of crops, e.g., in Ivory Coast where after 2 years of rice cultivation maize is frequently introduced and then the field is left to lie fallow for one year prior to the closure of the cycle with the most exhaustive for the soil— manioc;

— in fact, separation of husbandry from soil cultivation (there, where this husbandry is generally possible, where there is no tse-tse fly) was and is, alas, one of the most typical features of traditional agriculture. But one should not forget that manuring was sometimes applied on savannas;

— within that system a very characterictic feature is a voluntary shift to more stable forms of cultivation; sometimes they exist parallel to a typical rotation system. Even with the most traditional system we may find examples of such space organization where part of the land earmarked either for more intensive form (fallow instead of rotation) or annual cultivation (close to villages where manuring is possible; in river valleys using their floods), maintains less suitable, usually more distant parts for fallow systems;

— this system is well adjusted to natural (soil exhaustion), technological and, above all, demographic (low population density, still rarely approaching critical point) conditions in which and for which it has been established.

It follows from this that:

— African farmer shows good knowledge of things and conditions in which he had to adjust himself. Can low labour input be treated as biological adjustment? Can the common use of the hoe and lack of ploughs be interpreted as an expression of lack of invention — or as a manifestations of concern for skeleton soils? It is known how many mistakes were caused by the introduction of tractors or other heavy agricultural tools;

— this system is an absorptive one and its adaptive possibilities are high — both in the sense of new crops (including commercial crops) and new techniques.

Thus evolution of the rotation system is not only desirable but also possible — especially as in the majority of Black Africa the potential population density, assuming constancy of traditional techniques, exceeds the actual density. One should aim for such evolution and not towards a total change of the system (so far agronomers have found within non-irrigated cultivation very little new to be proposed). A more constructive approach though less spectacular, would be not throwing away but improving the traditional system using its positive merits and experiences.

WORK ORGANIZATION

It should be stressed, above all, that the main productive unit in Tropical Africa is, as a rule, not village but family. Its character and importance depends on existing social structures — but *grosso modo* it can be acknowledged that the more traditional relations, the bigger the family, the higher is the unit of production and consumption. It begins to disintegrate more and more towards individualization, especially in areas with wide-spread commercial cultivation.

This evolution is very distinct; a new phenomenon is overlapping here, extraneous to the traditional Africa: employment of one farmers by others. It refers, especially, or exclusively, to areas where attractive commercial crops are cultivated. Contacts between indigenous populations and immigrants which did not initially hamper traditional relations, frequently become a base for typical links which exist among employers and employees. They lead to social and economic conflicts, to the establishment of new differences between farmers in a better and worse geographical position. But they are, alas, a striking manifestation of the influence of capitalist relations.

But let us come back to the family productive units mentioned at the beginning. The statement that a village, although socially cohesive and harmonious, does not show, despite appearances, a similar economic homogeneity, must lead us to the conclusion that postulates of collective forms of work must be always very discreet and may encounter the same difficulties as in developed countries. At the same time as these changes were instituted, action was often taken in a light-hearted way, e.g., when farmers in Mali were forced to work jointly on specially selected plots not surprisingly these were later neglected. The undertaking was faulty, the more so since there already exist in Africa, and especially in the Sudan, long standing traditions of mutual help and co-operation. These are institutionalized forms linked organically with the African village. I mean here associations for collective work, which in the past performed defence functions and now play or may play a considerable economic role. Their structure is based on different bases: sex, age, kinship, place of residence, religion, social status. Works can be undertaken which would be impossible within the family alone, they can mitigate the consequences of temporary scarcities of manpower caused, e.g., by earning migrations. They are finally manifestation of village solidarity. In the same Mali where the deplorable "plots of collective work" could be observed — in the Bambara tribes of the central Niger valley collective projects, which constitute more than a quarter of the total field work, are always performed in the spirit of a great holiday. They were not an object of interest on the part of authorities. The disappearance of these traditions — a successive manifestation of occurring changes — is very clear in the whole of Africa. This is an example of wasted opportunities, not utilizing the positive forces rooted in African village, which are relatively easily adapted to new conditions and new ideas.

LAND TENURE SYSTEMS

It is well-known that in Tropical Africa there is a lack, as a rule, of absolute titles of land ownership, these are sanctified, in general, by beliefs, tradition. ancestral laws from the first founders of the village. But here one should also stress that this situation cannot lead us to overhasty conclusions, and above all to the conviction that we must now take agrarian issues into account. Common land ownership or non-existing ownership does not exclude laws for its utilization; laws which with a lapse of time can transform into more or less concrete forms. The existing, often very complex, crossed ownership depending, e.g., on the attractiveness of the area, distance from the village, on plants used — and above all on the position of cliques, houses, families or even persons who in reality may dispose of specified areas although they have no rights to do so. In other words, links between farmer and land are very complex and depend on different situations shaped, in general, by employment density and the character of production: together with the increase in density and more commercial-

ly-oriented output with land valorization there comes larger individualization of law, to make them private. Such is a general trend of evolution which may lead to the formation of striking differences and conflicts both in regional (poor savanna regions — rich sea-shore areas, located in forest zone) and in scale of particular rural communities — old social privilages may be supported economically and lead to material inequalities. It is in conflict with traditional patterns which did not lead to the formation of income differences.

Thus one should take into account that with the lapse of time agrarian problems in Tropical Africa may become pronounced. However, so far, apart from a few exceptions, the situation is not strained which does not mean that it should not awake any concern, especially as many inexcusable faults have been committed in this field. If in the colonial epoch — both for the sake of individual interests or due to a paternalistic attitude — traditional agrarian systems were not reckoned with, such behaviour could be considered, in a sense, as understandable. But has a change really occurred? In the Belgian Congo, in the 1940's, wide-spread action for the "rationalization of Bantu agriculture" was started, creating geometric blocks divided into hundred metre wide strips of land, not taking into account either settlement conditions or traditional systems of work organization, family, etc. Twenty five years later while developing the upper valley of Niger, practically the same idea has been introduced with similar effects. Does this not prove continuous neglect in attitude towards African peasantry, this time in different conditions and for different purposes?

The above remarks are confined only to some aspects of Tropical African agriculture. However, if the subject were properly extended the general conclusion would certainly be only supported: changes occurring now are not proceeding in a direction adequate for the adoption of traditional systems of agricultural economy, towards preserving value systems and human relations typical for Africa. No one, except the inhabitants of Africa themselves, is in a position to make an unanimous decision, and no presumptions should be made; thus it is essential to utilize all the possibilities of the traditional systems, with the co-operation and full acceptance of the African farmers. This is the basic condition for them to choose their own path.

Institute of Geography
Warsaw University

Cena 40.—