Atlas of the Republic of Poland

Layout

The ATLAS OF THE REPUBLIC OF POLAND is a one-volume publication comprising four thematic parts with loose-leaf map sheets. This allows for the later exchange of maps, or for the addition of new sheets. The different thematic parts of the ATLAS contain between 29 and 45 map sheets and the total number of sheets is 157. The basic maps are at the scale 1:1 500 000. In terms of format, this is the maximum size for an atlas map, and one large enough to allow for the quite-detailed presentation of different phenomena on the scale of the country as a whole. In addition, the ATLAS includes many maps on the derivative scales of 1:3 000 000, 1:4 500 000 and 1:6 000 000. Maps on other scales are also to be found occasionally. The content of the topographic base-map (the water network, the main towns and cities and the borders) seeks to be uniform in relation to different task categories. The permanence of the ATLAS assumed by the editorial concept is manifested in the system used to number the sheets. Thus, the first number (e.g. 21 or 101) denotes the thematic division, and the num-ber following the full stop the number of the sheet within it. The 39 thematic divisions are brought together in 10 groups distinguished by the different colours of the edges of the map sheets. Thus, for exam-ple, 14.3 denotes the third sheet in the thematic division "Administra-tion", which belongs to the first group gathering together all the maps of the initial part entitled "State - Territory - Organization"). It is antici-pated that replacement or additional sheets produced later will gain appropriate numbers within the thematic divisions so as to facilitate their placement among sheets already possessed. Sheets designed to replace previous ones will be identified by letters of the alphabet, e.g. 14.3 A, while additional sheets will simply be given the next number in the division, e.g. 14.7. The reverse sides of the different map sheets provide lists of the maps included, and of basic source materials, as well as brief, mainly methodological comments in Polish and English.

Contents Description

Part I COUNTRY – TERRITORY – ORGANIZATION

This first, introductory part of the ATLAS contains basic information on Polish lands past and present, from the points of view of the territo-ry covered and its history, as well as in relation to spatial organization. These issues are presented on map sheets numbered 11.1 to 15.3 and grouped in five thematic divisions.

11. GENERAL MAPS

The maps on the first two sheets of this division show Poland against the background of the world and of Europe, with account taken of relationships in terms of natural conditions, demography, politics and the economy. Maps on selected issues allow for the tracing of Poland's place and role among European countries and in the world as a whole. The general geographical map provides an overall picture of the country and is a new, original presentation with relief shown by way of shading. This traditional map (sheet 11.3), and the image of the country from satellite (sheet 11.4) constitute a kind of transition into the next thematic division.

12. DETAILED MAPS

These maps are planned to bring to the user a picture of Poland’s territory as close as an atlas can do it. The main part of this division consists of a six-sheet general map at the scale of 1:500,000. Based on the topographic map at the scale of 1:100,000, it provides an uniform picture of the main elements of geographic environment for the whole country. An effort has been made to present a rich image of the natural environment (relief, hydrography, forests) as well as man- made features of the landscape (settlements, roads, railways). This main map is completed with the map of the Upper Silesian Industrial District at the scale of 1:250,000. The three remaining sheets with 1:125,000 maps complement and enrich the image of the geographic environment as regards to the major cities and urban complexes of Poland by presenting them in a different manner, through taking into

account functions of urban areas and land use. They include 14 largest Polish cities, agglomerations or conurbations, of at least 250,000 population each. For the first time in history of Polish cartography these maps give a comparative image of functional structure and physiognomy of all country's more important urban centres.

13. HISTORY

Historical conditioning is often an important factor in the economic and social development of the country. For this reason, the task of the maps included in this division of the ATLAS is to show the historical changes which occurred in the area that is now Poland. The adoption of the principle that a base-map of contemporary content (even down to voivodeship level) be used in historical maps is considered to facilitate the relating of facts from the past to the present-day situation. The historical information taken into account on the maps consists of two layers:– the political situation, expressed in terms of the political status of different areas, as well as the state and administrative boundaries and borders;– the economic situation, of which manifestations are the towns and cities located by the right to self-government. These localities are characterized by their ages and sizes expressed in terms of the num-ber of inhabitants. Shown in addition to the towns and cities existing at the time presented on the map are localities which ceased to be categorized as towns in the preceding period. Augmenting the pres-entation of the settlement system are depictions of the more important trade routes, as well as of railway lines from the 19th century onwards. Limitations on the capacity of the ATLAS made it necessary to select the most representative historical periods. Thus, the series of 1:1 500 000 scale maps takes account of:– the state in the days of Kazimierz the Great (the 14th century),– the flowering of the Commonwealth of the Two Nations (Poland and Lithuania) in the 16th century,– the attempt at the rebirth of the state at the time of the Great Sejm (the end of the 18th century,– the time of the Partitions in the period of Europe's economic devel-opment (1900),– Poland after the First World War,– the shaping of the Polish State after the Second World War.In the case of each of these historical periods, the main map is sup-plemented by one showing the political situation of Poland against the background of East-Central Europe. In turn, map sheet 13.7 shows changes in the territory occupied by Poland from the 10th century onwards. The aforementioned series of maps is an original one drawn up in unified form for the whole country and the different periods. The lack of a collected source work on the issues concerned necessitated the use of a great many part-works of varying value. As a result, the deci-sions taken may arouse controversy. What is in some ways a continuation of this division is the map of towns and cities shown on sheet 66.1 of Part III of the Atlas.

14. ADMINISTRATION

Maps in this thematic division are meant to acquaint the user of the ATLAS with the various kinds of administrative division of the country. Since 1945 when the present territory of the Polish State was estab-lished, the internal administrative division of the country have often changed. In the 1950í s the ubiquitous, dominant slogan Ñthe authori-ties closer to the peopleî caused the collective communes to be replaced with smaller units called gromadas (the were more than 7 thousand such units, including towns and urban settlements), and the number of poviats and voivodships to be increased. After 1970 the idea of Ñeconomic self-sufficiency of the basic unitsî was promoted. Thus, the larger collective communes were restored in 1 January 1973 and at that time there were 3,201 units of the lowest administrative level (towns and communes). Then, in 1 June 1975 a radical change took place in the concept of the organization of state administration. A two-lewel structure was introduced: 392 poviats were disbanded and the number of voivodships increased from 22 to 49. The new low on territorial self-government of 1990 stipulated that there be just one legal category: the commune. By September 1993 there were 2,464 such communes. The present state is shown in the sheet 14.2. The other maps in this set show division of organization in which the populationí s interest is vital, namely, the fiscal service, the jurisdic-tion and the church. The territorial division related to the most important denominations shown in the maps of sheet 14.5 reflect the situation of 1991. The territorial organization of the Catholic Church in Poland underwent an essential change while the ATLAS was inits final editing stage. Therefore, the new Church division is shown in the additional map in sheet 14.6. Due to considerably frequent changes in the spatial organization of the country, the Editorial Board of the ATLAS intends to provide systematic completion chiefly of division devoted to that issue with additional sheets illustrating the current status of the problem.

15. CARTOGRAPHY

In this division a small part of the history of Polish map making has been presented by the fragments of maps. These are, of course, only selected examples, but they characterize the state of cartography in particular historical periods. The review set starts with the oldest known Polish map of 1526, elaborated by Bernard Wapowski (sheet 15.1) and ends with examples of the latest topographic maps. Special attention should be paid to the first Polish topographic map of the first half of the 19th century, the so called Quartermasters map. These pround traditions of Polish topography were continued in the inde-pendent Poland by the Military Geographical Institute, in the form, for instance, of the 1:100,000 tactical map. Doubtlessly, this map was one the best of this kind in the world, both in contents and graphic design. However, the Second World War unterrupted this promising development of Polish cartography. In the 1950s the military topogra-phic service was subordinated to the common principles observed by the armies of the Warsaw Treaty, the maps made by it having been inavailable for the public use. Only simplified maps, deprived of much significant information, were available for civilian purposes. It is only since the turn of the 1970s that also the national geodetic and carto-graphic service has been developing the production of modern topographic maps.

Part II NATURAL ENVIRONMENT

The second part of the ATLAS includes map sheets numbered 21.1 to 53.4. Here, the task of the maps is the widest possible familiarization of readers with the country's natural conditions. The basic information in this field is to be found in 11 thematic divisions.

21. GEOLOGICAL STRUCTURE

One of the elementary factors affecting the whole of the natural environment is the geological base. A more detailed presentation of the geological structure would call for a considerably larger number of maps than it is possible in the ATLAS. All maps of this division have been elaborated in the National Geological Institute. Emphasis has been put on the youngest periods of the history of Earth, for approx. Three quarters of the area of Poland are covered with Quaternary sediments. This is comprehensively presented by the map opening this thematic division. Its contents have been supplemented by the next map which presents pre-Quaternary formations, both those that are covered by younger sediments and those that come to the surface in the south of the country. The tectonic map completes the presentation of the geological structure. It shows the structure of the deep base of Polandí s territory. The said structure is characterized by the old pre-Cambrian platform of the north-eastern part of the country verging upon younger Palaeozoic ones. Such tectonic stucture caused that almost all mineral raw materials occur south-west of that line (sheet 21.4). Only usable sedimentary rocks of the Tertiary and Quaternary periods are to be found also upon the pre-Cambrian platform. Rocks of this type have been presented on a sheet 21.5.

22. GEOPHYSICAL PHENOMENA

The maps of the only sheet devoted to those issues present the cognitively most important results of reaserch in this line. These are chiefly gravimetric, magnetic and seismic studies. Poland belongs to non-seismic areas, however, deep seismic research makes it possible to study the tectonic structure of the crust of the Earth.

23. RELIEF

Relief is one of the most important elements of natural landscape. Most of it has been formed in Poland by Pleistocene glaciations. It is merely the relief of the southern part of the country that is older. The hypsometric map opening this division is a completely new small-scale approach based upon topographic material of the newest generation. A detailed analysis of the origin and age of the relief is presented by the map on sheet 23.2 which is the result of generaliza-tion of the geomorphological map, scale 1:500,000. Examples of characteristic relief types have been presented on sheet 23.4. Relief is a constantly changing element, which is plain to see over recent historical periods. Sheet 23.3 is devoted to those phenomena; it contains a typological map of contemporary processes of relief modelling and examples of some elements thereof, such as karstic phenomena, soil washing out and landslips.

31. CLIMATE

Poland lies in the temperate climate zone, in the area where oceanic and continental climates merge. Thus considerable variability of the weather is characteristic here. A new presentation method has been applied for some climatic phenomena. Namely the maps show the probability of occurrence of a definite intensity of the presented phenomenon. Thus, for example, probability 10% means that once every ten years there may occur intensities higher than those shown on the map, whereas probability 90% means that intensities higher than those presented on the map repeat nine times within a decade, or in other words, once every ten years there may occur intensities lower than the enclosed ones. The maps of this division present the particular elements that make up the climate, such as sunshine, radiation, temperature of air, precipitation, winds and the character-istic weather phenomena (freeze, snow cover, twenty-four hours precipitation). The presentation is completed by two map sheets of synthetic character. The first one (31.7) shows exemplary synoptic situations together with precipitation phenomena and temperature anomalies connected with them. The last sheet (31.8) provides a new synthesis of the climate of Poland in the form of weather typology and an original climatic regionalization of the country.

32. WATERS

Despite the existing considerably dense water network, as a matter of fact Poland does not belong to water abundant areas. Therefore the natural water problems have been paid remarkably more attention to, underground waters in particular. The role of water in national eco-nomy will be shown in the fourth part of the ATLAS. The division is opened by the map of surface waters. It provides a new approach in this scale, accomplished on the basis of up-to-date topographic mate-rials. Map sheets 32.3 and 32.4 contain typology of river regimes and characteristics of runoff of rivers together with the accompanying phenomena (denudation of drainage areas, ice phenomena, etc.). Underground waters have been devoted three map sheets to. The first one (32.5) shows the general status of underground waters in Poland and the regionalization thereof. The remaining

sheets present the first layer of underground waters, and at great length ñ due to their importance ñ mineral and thermal waters. The division is completed by presentation of water balance (sheet 32.8), containing its typology connected with the physico-geographical features of drainage areas.

41. SOILS

The soil cover of Poland is considerably diversified due to the great heterogenity of the bed-rock. Hence the mosaic character of soil maps. The ATLAS shows differentiation of soils in genetic and qualita-tive aspect (sheets 41.1 and 41.3). Good and very good soils make up a considerably small part of arable land. Besides, maps of sheet 41.2 present physical and chemical properties of soils significant for proper utilization, such as granulation, humidity and contents of calcium carbonate.

42. VEGETATION

Due to the long lasting intensive activity of man Polandí s vegetation has hardly preserved its original character. The growing civilization dangers make us look for optimal solutions in the sphere of vegetation formation. The map of potential natural vegetation comes much in handy. It points out the directions of natural development of vegetation under the conditions in which all outer impact has been eliminated. The map enclosed in the ATLAS is the result of generalization of a general map, scale 1:300,000, made on the basis of field research. The map provides a basis for further research. Worth mentioning are here the problems of forestry. It has been approached in two aspects: as natural-forest regions (sheet 42.2) and as forest site structure (sheet 42.3). Those three elementary maps have been completed with maps of limits of some plants and the problems of peatlands. The division ends with two synthetic maps: vegetation landscapes and geobotanical regionalization.

43. FAUNA

Polish fauna is of transitory character. It is made up by species generally to be found in the entire temperate zone of Eurasia. There are few endemic and relic species, on the other hand, however, limits of many animal species pass through Poland. The maps in the ATLAS present limits of selected species and changes in distribution of cer-tain animals. That information is completed with the map of zoogeo-graphical regions and comparative diagrams of the structure of vertebrates in Poland and in the world.

51. TRANSFORMATION OF ENVIRONMENT

This thematic division is meant for issues connected with the impact of maní s activity in natural environment. At present the main subject are the problems resulting from environmental degradation. The map on sheet 51.1 presents in the scale of the entire country the negative effects of maní s economic activity. They chiefly pertain to waters and forests. The map also shows the sources of gaseous pollution, municipal and post-industrial waste having been taken into account as well. The division is expected to be completed with new maps as the development of pro-ecological investigations goes on.

52. ENVIRONMENT PROTECTION

The map devoted to natural protection (sheet 52.1) contains infor-mation on all legally established forms of protection: national parks, landscape parks, areas of protected landscape, nature reserves and nature monuments. Legal protection in its various forms covers over 23 % of the area of the country, yet bare 0.6 % of Polandí s territory is covered by close protection. However, protected areas are expected to be remarkably extended in the years to come.

53. PHYSICO-GEOGRAPHICAL SYNTHESIS

Particular elements of natural environment depend on one another by means of multiple links. This is why geographers for quite a time have been doing their best to carry out appropriate syntheses in the form of typologies and regionalizations. This is a difficult task, there-fore there are few studies of that kind. The ATLAS provides the latest version of such a study which came into being at the Warsaw University. Two map sheets have been devoted to landscape units. It is a map of types of natural landscape and a map of landscape utili-zation. Both of them are the result of generalization of appropriate maps, scale 1:500,000. The entire part II ends with physico-geograph-ical regionalization. This is the latest version of the concept of phys-ico-geographical regions of Poland by professor Jerzy Kondracki, for the first time set forth in the 1960s. This regionalization became the basis for many scientific and popular works, it was also oficially accepted in the list of geographical names of Poland.

Part III SOCIETY

61.1 POLANDí S DEMOGRAPHIC PAST

An understanding of contemporary demographic and social phenomena requires an awareness of phenomena existing in the recent past whose consequences are still to be felt. Presented in this section is the density of population and degree of urbanization in East-Central Europe at the beginning of the 20th century, prior to the emergence of the Second Polish Republic, as well as in the years 1930/1933, in the second decade of its existence (sheet 61.1). Also depicted (in sheet 61.2) is the distribution of the Polish population in 1900 as well as the structure in terms of language and faith in 1931. Sheet 61.3 seeks to present the greatest movements of people in our history that were brought about by the Second World War. To do this, it makes use of various estimates of wartime migration, as well as of deportations by the Germans (including of Jews to concentration camps) and by the Soviets, and of the later settlement of the western and northern lands of Poland..

62. DISTRIBUTION OF POPULATION

This aspect is presented in two different ways. The distribution of Poland's population in 1992 has been presented using the dot method along with graduated symbols to give a picture quite closely linked with the areas inhabited. Choropleth maps illustrate population density by communes at three points in time (1950, 1970 and 1992), as well as the changes which have taken place in the course of the forty-year period.

63. STRUCTURE OF POPULATION

This is the broadest thematic section treated in this part of the ATLAS. With the aid of bar diagrams, the development of the urban and rural population is presented for successive census years, as well as for 1993. Against this background, choropleths present the dy-namics of this development in the years 1950ñ 1970 and 1971ñ 1993, accepting that the year 1970 marks a kind of watershed between two different periods of development in Poland's socio-economic history. The structure of the population by age and sex is presented on sheets 63.2 and 63.3. The sheets devoted to the education of the population show differences in the level of education in the population as a whole, as well as among those working in agriculture. A synthesis of society's level of education is provided by maps drawn up using the method of division into Ossan triangles. Shown for the first time in the atlas context is the detailed structure of households (sheet 63.6), the structure of the population by main source of upkeep (sheet 63.7) as well as the new socio-economic phenomenon that unemployment represents in Poland. It should be made clear that the authors have included in this section maps based on the results of censuses, with the exception of those on sheets presenting the employment of the population and unemployment (sheets 63.8 and 63.9), which made use of the results of statistical reporting. It is particularly difficult to show the most recent changes in the structure of the population in work, on account of the ongoing systemic changes and changes in statistical methodologies.

64. VITAL STATISTICS OF POPULATION

Figures present the course of the different components of the vital statistics of population (births, deaths and natural increase) in relation to the population of Poland as a whole and its urban and rural seg-ments for the period 1946ñ 1992. 1:3,000,000 scale maps present the components of vital statistics by voivodship, as well as again in rela-tion to urban and rural areas. To be found against the background of coloured choropleths are figures portraying the changes in coeffi-cients of vital statistics in ten selected years. The 1975 changes in administrative divisions (from 17 voivodships and 5 cities into 49 new voivodships) make it impossible to make direct use of statistical data from the Central Statistical Office. Retrospective components of the vital statistics of the population for the new voivodships are based on published estimates by Adam Jelonek. The components in question are presented in the form of coefficients per 1000 individuals in the population as a whole, making it possible to compare data inde-pendently of the size of the population of an administrative unit at different points in time.

65. POPULATION MIGRATIONS

The results of the censuses from 1970 and 1988 are used as a basis by which to present the effects of past migrations of the popula-tion. Shown are the proportions of the population that are settled, i.e. living from birth in the same voivodship, as well as the types of popu-lation structure by period of habitation, as identified using Ossan's triangles. Analysis of the types should be of assistance in defining the degree of social and cultural integration of the population in particular areas. Internal migrations are presented by reference to inflows, ouf-lows and the migration balance in the years 1976-1992 by voivodship, as well as these same constitutents by commune in the period 1990ñ 1992. Also shown is the magnitude of intra-voivodship and inter-voivodship migrations and the main directions that these have taken. Sheet 65.3 presents separately the migrations abroad from Poland in the years 1980ñ 1993. The authors stress that the incompleteness and lack of uniformity of data ensure that the picture of migration in the 1980s can only be treated as a representation of general trends. To augment information concerning migrations, reference is also made to journeys to work, which are synthesized by identifying the main regions of such commuting, as well as the peripheral zones asso-ciated with particular centres.

66. URBAN SETTLEMENT

Included here among other things are two 1:1,500,000 scale maps. The first of these (66.1) depicts the distribution of urban settlement and thus links up with the historical maps 13.2ñ 13.7. It presents the 860 towns and cities in Poland in 1994, along

with the dates on which they obtained legal status as such and any changes in this legal sta-tus that occurred in the years 1946ñ 1994. The second of the afore-mentioned maps (66.2) presents the populations of the different towns and cities in 1950 and 1992, as well as the dynamics of the changes occurring in the intervening years. A separate sheet is devot-ed to the 12 urban agglomerations, whose surrounding zones are depicted.

67. RURAL SETTLEMENT

Sheet 67.1 presents the distribution of morphogenetic types of rural settlement divided up on the basis of retrogressive research going back to the middle of the 19th century. The main map is aug-mented by pattern examples of the morphogenetic types of village in that century as well as contemporary pictures of these pattern villag-es. Sheet 67.2 is devoted to a completely different issue, namely the functions of rural areas in 1988 by reference to 14 model functional types of cpmmune defined on the basis of 9 features.

68. HOUSING

The basic features of the country's housing stock are shown by commune for 1988, with recalculations made to comply with the administrative division of January 1st 1992. Reference is made to the distribution of dwellings by period of construction, number of rooms and usable area. In turn, the ownership structure of dwellings is pre-sented by reference to the four main forms of ownership of buildings. The housing conditions of the population are characterized by the number of dwellings per 1000 people, the usable area, the independ-ence of habitation of households and access to technical equipment.

71. STANDARD OF LIVING

To assess the standard of living of the population, use is made of the results of representative survey research on households carried out by the Central Statistical Office. Presented is the material situation of households and their equipment with certain items of permanent use, in accordance with the four basic socio-economic groups (employeesí households, farmersí and worker-farmersí households, pensionersí households) in the years 1985, 1990 and 1993. The measure of standard of living was not the absolute level of incomes but rather a subjective assessment of it.

72. EDUCATION, SCIENCE AND CULTURE

Sheet 72.1 presents the number and structure of establishments involved in pre-school care, primary and secondary education by voivodship. The second sheet presents the distribution of higher education establishments, the numbers of students and academic teachers by reference to the profile of the establishment, the distribut-ion of the main centres of learning and the level of central government expenditure on higher education and science. The third sheet shows the distribution of museums, theatres, cinemas and libraries as well as the most important monuments of architecture and planning.

73. HEALTH AND RECREATION

Health care is one of the more important indicators of quality of life. Sheet 73.1 shows the state of health care of the population by refer-ence to the distribution of doctors, nurses and pharmacies per 10,000 inhabitants by commune, as well as emergency aid and consultations with doctors by voivodship. This picture is augmented by information on the distribution of level of investments in health care. Sheet 73.2 is devoted to the state of health of the population, presenting indices for the incidence of the main diseases in society (tumours, diseases of the circulatory system) by gender. Use is made of unique maps showing the spatial distribution of incidences of lung and breast cancer. Sheets 73.3 and 73.4 present the issue of rest and recreation in the population. The first considers the issue from the statistical point of view, detailing the utilization of the tourist base, while the second considers the forms and methods of recreation in the light of special survey research on households carried out by the Central Statistical Office.

74. PUBLIC SECURITY AND SOCIAL PROBLEMS

This section does not at present have a large amount of statistical materials at its disposal. All that are presented are general issues relating to the judiciary, offences against property, life and health and the main social problems ñ drug addiction and alcoholism.

75. ACTIVENESS OF SOCIETY

Illustrated in this section are two forms of activeness of society, the religious and the political. One sheet is devoted to selective issues related to the first, very broad topic of religious denominations. Six maps show regional differences in the distribution of worshippers, members of the priesthood, sacral buildings, members of religious orders and selected religious practices (Sunday attendance and pilgrimages) of the Roman Catholic Church dominant in Poland. From the remaining churches and faiths consideration is given to the 5 attracting the greatest numbers of worshippers (above all the Polish Autocephalous Orthodox

Church), as well as the currently weakly-represented but for many centuries strong tradition of the Union of Jewish Communities. Sheets 75.2ñ 75.4 present the results of elec-tions following the changes in the political system in 1989, i.e. the presidential election of 1990, the parliamentary elections of 1991 and 1993 and the presidential election of 1995. Maps present regional differences in the results of different presidential candidates and political parties.

Part IV ECONOMY

81. AGRICULTURE

This is one of the broadest sections of this Part of the ATLAS, in-cluding as it does all issues linked with agriculture. The first two sheets (81.1 and 81.2) present land use in the country as a whole and in selected areas, on the basis of satellite imagery worked upon at the Institute of Geodesy and Cartography. The next sheet, linked in its subject matter with Part Two, section 41 of the ATLAS, presents the natural conditioning which has underlain the development of agricul-ture. This is followed by seven sheets presenting specific issues relating to the structure of agriculture at the levels of the voivodship and commune. The issues in question are agricultural land use (81.4); agrarian structure (81.5); labour and capital inputs into agricul-ture (81.6); the crops, yields and production of the main cultivated plants (81.7), cultivation of fruit and vegetables (81.8), livestock breeding and animal production (81.9) and the productivity and commercialization of agriculture (81.10). A synthesis of the entirety of agricultural management is provided in relation to distinguished types of agriculture and selected elements of the food economy (81.11). The last sheet (81.12) is devoted to the changes which have occurred as a result of restructuring, as well as to the issue of organic farming.

82. FORESTRY

Two sheets are devoted to this sector of the economy. The first (82.1) presents forest cover on the scale of the commune, and then ñ at the level of the voivodship ñ the issues of forestry management, beginning with the species composition and ages of tree stands and proceeding through to the timber harvest and the state of health of forests. The second sheet considers selected aspects of hunting and hence spatial differences in the populations of game animals and the occurrence and "take" of these different species by voivodship.

83. FISHING

This sector of the economy is represented by marine fisheries management (83.1). Catches in the Baltic Sea, and those made by the ocean-going fleet, are presented, and account is taken of the changes resulting from the now-limited access afforded to the Polish fleet in many fishing grounds. Freshwater fisheries are also in a period of restructuring, but in this case one which has left up-to-date source materials so scarce that it has been necessary to postpone presentat-ion of this issue until a later date.

91.WATER MANAGEMENT

This issue, linked as it is to section 32, Part Two of the ATLAS (Waters), is nevertheless an integral part of the raw material economy and is thus the subject of one sheet (91.1). The first part of this presents surface resources, including retention reservoirs, and areas protected against flooding, while the second is devoted to issues relating to the management of water at the levels of the voivodship and selected cities (the greatest users of water). Presented here are exploitable resources, intake and the consumption of water to meet economic and households needs, as well as the problems posed by industrial wastewaters and sewage.

92. POWER MANAGEMENT

This sector is covered by two sheets showing the main problems of the fuel and energy economy. Sheet 92.1 deals with issues relating to coal mining and the fuel and energy economy largely based upon it. The main electricity transmission lines are also shown. Sheet 92.2. goes on to consider the issues of gas supply, and its development after 1960 ñ the extraction of gas, gas pipelines in Poland and Europe, balances for the (Polish and imported) resources, and information on the use of gas by industry and households.

93. INDUSTRY

This is another of the more extensive sections within this Part of the ATLAS. Nine sheets present all the various issues associated with industry, with the basis for the elaborating of the maps being data on employment in industry by locality. The first two sheets constitute a kind of a synthesis, presenting the development of the main industrial centres by showing their sizes in the years 1939, 1946, 1980 and 1985 (sheet 93.1), as well as the contemporary distribution of industry by localities with more than 100 people employed, with the structure of employment in 9 groups of industrial branches shown (93.2). The next seven sheets present different branches or groups of branches on the basis of the number of employees. Metallurgical

industry and the ore mining are considered on sheet 93.3, the machinery and metals industry on sheet 93.4, the chemical industry on sheet 93.5, the minerals industry on sheet 93.6 and wood and paper, food and light industry on sheets 93.7, 93.8 and 93.9 respectively.

94. CONSTRUCTION

This industry has endured a deep crisis in recent years. The ATLAS presents its fate on sheet 94.1, with consideration given to the numbers of dwellings given over for use in 1993 by communes, the overall level of housing construction in towns, cities and rural areas by voivodship and the changes which occurred in the years 1975ñ 1994 in the volume of buildings completed, in employment, in fixed assets and in investment outlays.

101. TRANSPORT AND COMMUNICATIONS

Transport is the technical, organizational and functional system involved in the movement of loads and passengers from place to place. It is differentiated into transportation by rail, road, water and air, and the ATLAS devotes 6 sheets to it. The first two address the railways and specifically the railway network and differences in its technical status (101.1), and railway as shown by flows of loads (101.2). The next three sheets present: the road network by road categories (101.3), the intensity of road traffic in relation to flows of loads (101.4) and transportation by bus with information on the number of journeys (101.5). A separate sheet (101.6) is devoted to seagoing traffic, air transportation and international transportation by coach. The related issues of communications are the subject of sheet 101.7, which presents selected issues relating to postal and telecommunication services: the distribution of post office and telecommunications institutions; the number of telephone subscribers by commune; and the density of the telephone system and of basic postal services per 1000 inhabitants at the level of the voivodship.

102. MATERIAL SERVICES

Six sheets in the ATLAS are devoted to presenting the basic divisions within this category, which are taken from the classification of economic activity legally binding in Poland up to 1992. The only service sectors to be treated separately are those of transport and communications, which provide the subject matter of the previous section. Otherwise, the present section deals with all the services, and more specifically with trade and gastronomy, tourism and recreation, financial services and selected aspects of municipal management. Trade has been the most rapidly-developing sector of the econo-my in recent years and is given two full sheets in the Atlas. The first of these (102.1) presents selected issues of retailing and gastronomy, including their ownership structure, as well as information on the very specific phenomenon of market trading. In turn, sheet 102.2 shows the level of, and differences in, foreign trade, as well as the changes in its targetting which have occurred recently with the shift from an east-ward to a westward, European Union, orientation. Efforts to cater for tourism and recreation are in fact linked closely with Part Three, sec-tion 74 (Tourism, sport and recreation), but are nevertheless also an integral part of the economy to which sheet 102.3 is devoted. Among other things, this sheet shows the distribution of travel agen-cies and places where overnight stays can be had, as well as the density of tourist routes. Two subsequent sheets deal with the very important financial services sector, and above all with the major element within it that banks and banking constitute. The distribution and sizes of banks are presented on sheet 102.4. The issue of municipal infrastructure is considered in part in section 68 (Housing) of Part Three of the ATLAS, but further aspects treated in the present Part are the levels to which large towns and cities (voivodship capitals and other centres with more than 50,000 inhabitants) are provided with communal installa-tions, and the degree to which the populations of these urban areas make use of it. In presenting these issues use is made of the original graphic method of the so-called Uhorczak typogram.

111. TRANSFORMATIONS IN THE NATIONAL ECONOMY

The last four sheets of the Atlas are devoted to the presentation of the post-1989 transformation of the national economy which has occurred and is still ongoing. Sheets 111.1 and 111.2 present select-ed issues and aspects of economic restructuring, with the former showing ñ among other things ñ employment in the economy by branch and ownership sector, the changes to this structure in the years 1989ñ 1994, the state enterprises subject to privatization and information concerning the National Investment Funds. Sheet 111.2 depicts the recent dynamic development of different forms of private enterprise, as well as the major foreign investments. Separate sheets (111.3 and 111.4) consider the situations of small private businesse in the years 1991 and 1994. Graduated symbols are used to show the numbers working in such businesses in seven economic sectors (other than agriculture), and by Finance Office districts. Comparison of the two sheets allows for a recognition of the important changes which have occurred in the distribution and structure of individual economic activity in what is in fact a short period of just three years.