



CENTRAL STATISTICAL OFFICE



STATISTICAL OFFICE IN KATOWICE

Sustainable Development Indicators for Poland

Katowice 2011

SYMBOLS

| | | |
|------------|---|--|
| – | – | magnitude zero |
| 0 | – | magnitude not zero, but less than 0,5 of a unit |
| 0,0 | – | magnitude not zero, but less than 0,05 of a unit |
| . | – | data not available or not reliable |
| x | – | not applicable |
| "Of which" | – | indicates that not all elements of the sum are given |
| , | – | used in figures represents the decimal point |

MAJOR ABBREVIATIONS

| | | | | | |
|------------------|---|-------------------------------|----------|---|--|
| thous. | = | thousand | CSO | = | Central Statistical Office |
| mln | = | million | NTS | = | Nomenclature of Territorial Units for Statistics |
| zł | = | zloty | LFS | = | Labour Force Survey |
| g | = | gram | MNE | = | Ministry of National Education |
| kg | = | kilogram | MIA | = | Ministry of the Interior and Administration |
| Gg | = | gigagram | NBP | = | National Bank of Poland |
| t | = | tonne | EU | = | European Union |
| kWh | = | kilowatt hour | Eurostat | = | Statistical Office of the European Union |
| MW | = | megawatt | OECD | = | Organization for Economic Cooperation and Development |
| TJ | = | terajoule | UNICEF | = | United Nations International Children's Emergency Fund |
| kgoe | = | kilogram oil equivalent | | | |
| dam ³ | = | cubic decametre | | | |
| hm ³ | = | cubic hectometre | | | |
| ha | = | hectare | | | |
| GDP | = | gross domestic product | | | |
| DMC | = | domestic material consumption | | | |



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I. Introduction

We would like to present the publication "Sustainable Development Indicators for Poland" showing results of works conducted within the project "Support the Development of Indicator Sets for Monitoring National SD Strategies – Developing and Implementing a Polish Set of SD Indicators" realized according to the agreement concluded between the European Commission and the Central Statistical Office. Basic aim of the project was to elaborate a set of indicators for monitoring sustainable development of the country.

Sustainable development of the country, accepted as a Constitutional Principle of the Republic of Poland, has been defined in the Law on Environmental Protection as such a socio-economic development, in which the process of integrating political, economic and social actions occurs, taking into account preservation of the equilibrium of nature and stability of basic natural processes, to guarantee the possibility of fulfilling basic needs of societies or citizens not only of the present generation, but for future generations as well.

In Poland there is a lack of separate sustainable development strategy of the nation, nevertheless there are numerous strategic documents defining – in a long-term perspective – socio-economic aims and directions of actions according to the rule of stable and sustainable development, taking into consideration social, economic and ecological cohesion; these aims and directions have become the basis for choosing indicators and monitoring their realization.

The set of indicators worked out by authors of the project should become the basis for further works aiming at updating the range of indicators and searching for indicators which would illustrate well the idea of sustainability, particularly under conditions of elaborating new strategic documents.

The basic part of the publication is composed of analytic description of indicators enriched with tables and graphs with data starting from 2004. For analytic purposes, data for Poland are presented in comparison with data for the EU and all member countries of the EU. Year 2009 was accepted as a basic year for comparisons with EU member countries. Indicators have been grouped into four domains: social – identifying strategic goals aiming at improvement of the quality of life of the society, economic – identifying strategic aims generating an effective socio-economic development, environmental – presenting conditions and strategic goals of protection and rational shaping of the natural environment and institutional-political – including challenges connected with global partnership and good governance. Within each domain, themes have been separated constituting the reflection of sustainable development aims and priorities.

The analytic part of the publication is preceded by a part describing international initiatives connected with sustainable development and with the concept of sustainable development in Polish law, as well as the concept of sustainable development indicator and criteria of their choice and grouping.

We would like to express our gratitude to professor Tadeusz Borys for cooperation and support during the realization of the undertaking and his valuable remarks on the stage of preparation of the publication, as well as for the transmission of materials for the chapter concerning theoretical basis of the sustainable development indicator concept and criteria for the choice and grouping. We also would like to thank professor Andrzej Barczak and experts of the Statistical Office of the Czech Republic for valuable recommendations, which influenced the realization of the project and final contents of the publication.

We would be grateful for comments and suggestions, which may constitute the basis for further works connected with updating the range of indicators and improving next editions of the publication.

II. International initiatives concerning sustainable development

Sustainable social and economic development is one of the most important challenges of the modern world. This concept was defined in the most transparent and commonly used way by G. Brundtland's World Commission for Environment and Development founded in 1983. The Commission defines sustainable development as the one in which the needs of the present generation should be met without compromising the ability of future generations to meet their own needs. This development relates to environmental, economic and social aspects. The Commission mentioned above contributed to organising the 2nd Earth Summit in Rio de Janeiro in 1992 which was the most crucial event for implementing the idea of sustainable development. During the Conference five key documents were enacted i.e. Agenda 21, Rio Declaration on Environment and Development (containing 27 rules and being a kind of the code of human behaviour with respect to natural environment), Framework Convention on Climate Change, Convention on Biodiversity and Forests Declaration. The Agenda 21 as the most important document is the programme of activities to undertake in the 21st century in the field of environment and development. The document underlines the necessary conservation of natural resources and their rational usage in order to guarantee sustainable development. The Agenda 21 consists of four parts. The first one emphasises social and economic issues. The second part draws attention to the problems of environmental protection and natural resources management. The next part refers to the role of social groups in the implementation of the Agenda 21. The last part of the document stresses the possibility of implementation of particular recommendations. Ten years later the resolutions of the 1992 Conference were renewed in Johannesburg and the achievements of the Summit were redeveloped.

The Earth Summit, called Rio+20 and planned for 2012, is currently being prepared. The conference aims at reinforcing political commitments to act in favour of sustainable development, evaluating the progress and gaps in implementing recommendations of the previous Earth Summits as well as at setting new challenges. The central theme of the conference will be: green economy in the context of sustainable development and poverty elimination as well as institutional frameworks of sustainable development.

Another event inseparably connected with sustainable development and its promotion all over the world is the United Nations Millennium Declaration signed by heads of 189 states during the summit in 2000. With eight Millennium Development Goals the countries committed to strive to achieve the following: eradicate extreme poverty and hunger, achieve universal primary education, promote gender equality and empower women, reduce child mortality rates, improve maternal health, combat HIV/AIDS, malaria, and other diseases, ensure environmental sustainability, develop a global partnership for development. It is agreed that the goals should be achieved by 2015.

One of the newest strategies of the OECD, the Green Growth Strategy, emphasises the need for activities in favour of restoring ecological sustainability and preventing climate crisis that threatens us. Green growth is understood as actions aiming at achieving economic growth together with preventing environmental degradation, preserving biodiversity and managing natural resources in an ecologically sustainable way. The strategy, which was adopted in 2011, builds a framework for the policy enabling the closer economic integration and the change in consumption and production patterns leading to wise usage of limited natural resources.

Sustainable development also is one of the EU priorities. According to the Treaty on EU the EU institutions work for the sustainable development of Europe based on balanced economic growth and price stability, a highly competitive social market economy, aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment. The EU intends to combat social exclusion and discrimination, and promote social justice and protection, equality between women and men, solidarity between generations and protection of the rights of the child. The EU promotes scientific and technological advance. The Treaty regulations also support creating international means of protection and improvement of the state of environment, sustainable management of world natural resources in order to guarantee sustainable development.

Actions connected with sustainable development in the EU

The main instrument defining detailed objectives and actions which heads above all for achieving full sustainability but also enables developing the right standards is the long-term Sustainable Development Strategy of the EU.

Development priorities and goals of the EU are also contained in many other EU strategic documents. Apart from the EU Sustainable Development Strategy this topic was also one of the key interests of the Lisbon Strategy and its elements can be found in the proceeding document – "Europe 2020" Strategy.

"Europe 2020" Strategy is planned for years 2010-2020 and it is the EU answer to intensifying phenomena and new challenges, including among others growing competitiveness of the emerging economies such as China and India. The document presents the vision of a social market economy which main principles are: smart, sustainable and inclusive growth. This results in supporting innovation and developing knowledge, effective resource management, competition and environmental protection as well as increasing employment, social and territorial cohesion.

Monitoring the implementation of the "Europe 2020" Strategy provides publishing annual reports of the European Commission based on a set of indicators. The indicators cover employment, investment in research and development, CO₂ and energy emissions, education and poverty. Eight indicators were established as essential monitoring indicators and targets for them were agreed. All member states were obliged to set their targets enabling to implement the Strategy for the EU.

Apart from the above mentioned strategies the idea of sustainable development is also included in other documents and initiatives, among others.:

- White Papers – i.e. documents of the European Commission including official suggestions on the directions of common policies, which have the form of political declarations, although they are not binding, their informal significance induces respecting their rules – e.g. Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system;
- Green Papers – i.e. sectorial documents of the European Commission covering narrow specialist field of EU integration, which aim at starting a discussion or consultation on problems connected with the particular topic, they do not include projects of legislative acts but the consultations resulting from them can lead to issuing a White Paper – e.g. TEN-T: A policy review – Towards a better integrated transeuropean transport network at the service of the common transport policy;
- Communications of the Commission of the European Communities, e.g. "GDP and beyond: Measuring progress in a changing world" (one of the initiatives aiming at complementing GDP in a way that social and political priorities are reflected; GDP is often misinterpreted as

a measure of social development despite the fact that it does not contain the social dimension but only economic aspect, it does not include ecologic aspect either, so these limitations should be taken into account in analyses and political debates);

- Opinions of the European Economic and Social Committee, e.g. on perspectives for sustainable development.

As part of works on sustainable development the Sponsorship Group on Measuring Progress, Well-being and Sustainable Development was established. It is co-chaired by Eurostat and National Institute of Statistics and Economic Studies of France (INSEE) and 16 EU member states (including Poland) and representatives of OECD and UNECE participate in the work. The work has been split in four task forces dealing with four following strategic issues: households perspective and distributional aspects of income, consumption and wealth, environmental sustainability, multidimensional measures of quality of life and cross-cutting issues.

Among other organisations Eurostat works on sustainable development also within the *Joint UNECE/OECD/Eurostat Working Group on Statistics for Sustainable Development*. The group is concentrated on particular measures of sustainable development and the whole set as well as on identifying key indicators for international comparisons. Moreover, the ways of collecting data, especially statistical surveys and administrative sources of data, as well as the interconnections between sustainable development and national and environmental accounts are also the point of interest.

Sustainable Development Strategy of the EU

The Sustainable Development Strategy of the EU was agreed in 2001 and then renewed in June 2006. The overall objective of the renewed Strategy is "to identify and develop actions to enable the EU to achieve continuous improvement of quality of life both for current and for future generations, through the creation of sustainable communities being able to govern and use resources efficiently and to draw the ecological and social innovation potential of the economy, ensuring prosperity, environmental protection and social cohesion". In the document sustainable development also means that the needs of the present generation should be met without compromising the ability of future generations' needs.

The key objectives of the Sustainable Development Strategy of the EU contain:

- environmental protection,
- social equity and cohesion,
- economic prosperity,
- meeting international responsibilities of the EU.

The key challenges of the Strategy are the following:

- climate change and clean energy,
- sustainable transport,
- sustainable consumption and production,
- conservation and management of natural resources,
- public health,
- social inclusion, demography and migration,
- global poverty and sustainable development challenges.

Clear operational objectives and actions allowing accomplishment of above mentioned purposes have been agreed within each challenge.

Basic coordination work connected with implementation of the Sustainable Development Strategy of the EU is done by the Eurostat Working Group on Sustainable Development. It gathers representatives from the EU member states, in particular representatives from national statistical institutes, ministries and institutions responsible for sustainable development policy, international organisations and Directorates General. The working Group was established in 2005 and has continued the work of the Task Force operating before that time. One of its main tasks is to develop and bring up-to-date the set of sustainable development indicators in a way that it best enables monitoring of the progress in specific areas.

The Working Group meetings give opportunity to exchange experience on implementation of national sustainable development strategies and on developing ways to monitor them. The Working Group is also involved in other activities related to sustainable development, e.g. in measuring well-being, "Beyond GDP" initiative and the report by the Commission on the Measurement of Economic Performance and Social Progress (so-called Stiglitz Commission). All initiatives mentioned are connected with supplementing GDP.

System of sustainable development indicators of the EU

The current set of sustainable development indicators of the EU consist of nine themes (reflecting among others seven key challenges of the Sustainable Development Strategy). The themes go through economic, social and environmental issues to institutional issues and connected with global partnership. They contain the following:

- socio-economic development,
- sustainable consumption and production,
- social inclusion,
- demographic changes,
- public health,
- climate change and energy,
- sustainable transport,
- natural resources,
- global partnership,
- good governance.

The themes are divided into sub-themes presenting operational objectives and actions of the Strategy. They naturally reflect the overall aim – to achieve a prosperous economy based on the rules of sustainable development as well as priorities of good governance.

In order to better reflect and enable the proper understanding of the functioning and structure of the set of sustainable development indicators these indicators are presented in a three-level pyramid (Fig. 2.1) illustrating overall objectives (level 1), operational objectives and targets (level 2), indicators of actions (level 3) and contextual indicators used for analytical background. Overall objectives, operational objectives and targets as well as actions are presented on three basic levels. The pyramid is supplemented by contextual indicators, which only provide additional information in particular topics and do not monitor the Strategy implementation directly.

The quality of particular indicators is constantly monitored by quality profiles, which contain basic metadata for indicators (definition, evaluation of accuracy, comparability and availability).

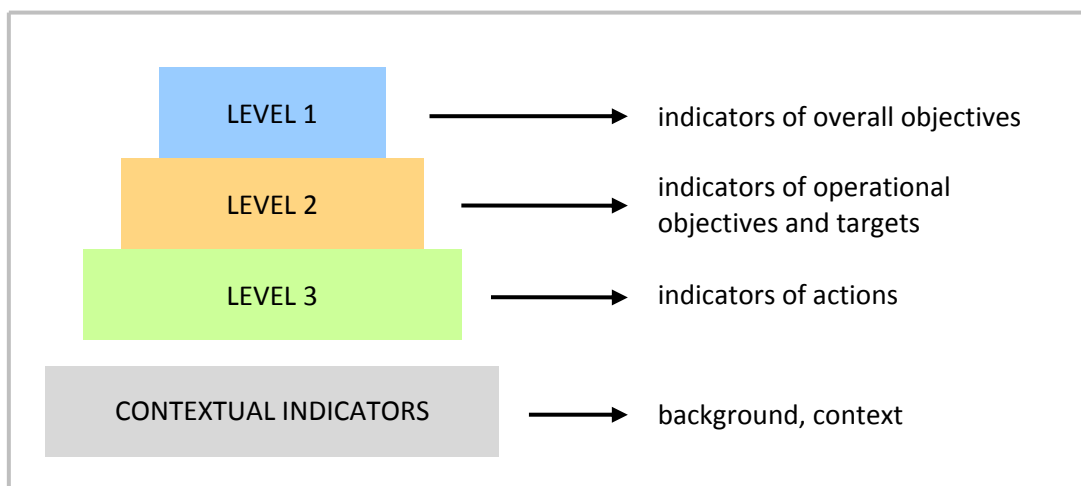


Fig. 2.1. **The pyramid of sustainable development indicators of the EU**

Source: own compilation – based on Eurostat.

Eurostat collects data from member states regularly and publishes them on the website in the bookmark *"Selected statistics – Sustainable development indicators"*. Every two years European Commission publishes the report (on the basis of the Eurostat report) monitoring the implementation of the Sustainable Development Strategy of the EU. The document with the use of sustainable development indicators depicts economic and social situation of the EU. The next edition of the report is planned for the second half of 2011.

Eurostat database for sustainable development is supplied mainly by transmission of data from member states. In order to ensure full methodological consistency and international comparability Eurostat often compiles indicators from raw data originated from member states. In some cases this results in differences in data compiled and disseminated in member states and data published in Eurostat database.

In Poland data for the sustainable development database by Eurostat are compiled by a few institutions, above all: Central Statistical Office and Regional Statistical Offices, Ministry of the Environment, Ministry of Finance, National Bank of Poland, Chief Inspectorate of Environmental Protection and Main Inspectorate of Agricultural and Food Quality.

III. Sustainable development in Polish legislation

Poland as a participant of the United Nations Conference “Environment and Development” who had signed three documents of a declarative character: The Rio Declaration on Environment and Development, Agenda 21 – Global Programme of Action on Sustainable Development, Statement of principles for the Sustainable Management of Forests and two global agreements: Framework Convention on Climate Change and Convention on Biological Diversity undertook an obligation to implement sustainable development principles.

In 1991 the Sejm of the Republic of Poland accepted the Ecologic Policy of the State, in which aims and directions of activities for improvement of the state of environment were determined. It was first of that type strategic and complex action programme in the country. Creation of this document approximated Poland to countries, which accepted the idea of stable and sustainable development as a basis for further social and economic development.

In 2003 the Polish government adopted the document “Obligations of Poland resulting from provisions included in the “Action Plan” of the Earth Summit in Johannesburg – “Implementation Programme”. Six activity groups were recognized as priority obligations: change of production and consumption patterns, rational use of natural resources and ensurance of biodiversity protection, increase of the use of renewable energy, minimization of unfavourable influence of chemicals on human health, accomplishment of obligations concerning aid for the least developed countries and creation of institutional frameworks for sustainable development.

A crucial moment in implementation of the sustainable development concept to national legislation was in 1997, when the concept of sustainable development was recognized as a constitutional rule.

Sustainable development in the Constitution of the Republic of Poland and in legal acts

Constitution of the Republic of Poland

In Poland the sustainable development concept has been recognized as a constitutional principle. According to Article 5 of the Constitution of the Republic of Poland, dated 2 April 1997, it is stated, that *the Republic of Poland shall safeguard the independence and integrity of its territory and ensure the freedoms and rights of persons and citizens, the security of the citizens, safeguard the national heritage and shall ensure the protection of the natural environment pursuant to the principles of sustainable development.*

Moreover, a reference to sustainable development issues is found in Article 74 in the context of ecologic security and the rule of generation justice and environment protection:

1. *Public authorities shall pursue policies ensuring the ecological security of current and future generations.*
2. *Protection of the environment shall be the duty of public authorities.*
3. *Everyone shall have the right to be informed of the quality of the environment and its protection.*
4. *Public authorities shall support the activities of citizens to protect and improve the quality of the environment.*

This notation obligates public authorities to conduct a policy ensuring the ecological safety for present and future generations.

Recapitulating issues connected with sustainable development in the Constitution of the Republic of Poland, its direct occurrence in article 5 and indirect occurrence in article 74 in relation to ecologic safety should be pointed out.

Legal acts

Important legal acts, in which the concept of sustainable development had been defined very widely were those connected with environmental protection. Most important among these acts is **the Law on Environmental Protection** dated 27 April 2001, in which environmental protection rules and conditions connected with the use of its resources were regulated in a complex way.

In article 1 of the Law environmental protection rules and conditions connected with the use of its resources, with regard to sustainable development requirements were specified, and particularly:

- *rules connected with the establishment of conditions of environmental resources protection, conditions of introducing substances or energy into the environment as well as costs of the use of environment;*
- *duties of the organs of administration;*
- *responsibilities and sanctions.*

The concept of sustainable development occurs in many other articles, of which the most important ones refer to the definition of the concept of sustainable development, definition of environmental protection and contexts of policies, strategies, plans and programs.

The concept of sustainable development is defined in article 3 point 50 of the Law, according to which:

Sustainable development is understood as such socio-economic development in which the process of integrating political, economic and social actions occur, taking into account natural balance and stability of basic natural processes, in order to guarantee possibilities of fulfilling basic needs of separate societies or citizens not only of the contemporary generation, but future generations as well.

The concept of sustainable development appears in regulations of this law, concerning among others:

- the definition of environmental protection
Environmental protection is understood as undertaking or ceasing activities, enabling or restoring natural balance; this protection is based particularly on: rational shaping of the environment and managing environmental resources according to the principle of sustainable development, counteracting pollution, restoration of natural elements to their proper state (article 3 point 13).
- contexts of policies, strategies, plans and programs
Policies, strategies, plans or programs concerning particularly industry, energetics, transport, telecommunication, water economy, waste management, spatial development, forestry, agriculture, fishing, tourism and use of the territory should take into consideration the principles of environmental protection and sustainable development (article 8).

The next act, in which the concept of sustainable development is found, is the act dated 27 March 2003 – **the Law on Land Development Plan**. Spatial order and sustainable development is accepted as a basis for actions in the field of shaping the spatial policy, and when preparing the concept of spatial development of the nation rules of sustainable development are taken into account basing on natural, cultural, social and economic conditions. This Act is of great importance not only for environment protection, but also for the whole spatial economy, which has an influence on social and economic activities (article 1).

From the point of view of realization, the concept of sustainable development is found in **the Law** dated 6 December 2006 **on Principles of Conducting Development Policy**. Development policy is defined in article 2: *Development policy is understood as a complex of mutually connected activities undertaken and realized in order to ensure **stable and sustainable development** of the nation, socio-economic, regional and spatial cohesion, raising competitiveness of the economy and creating new workplaces on a national, regional or local scale.*

Stable and sustainable development is a basic aim of the development policy. This policy is conducted by:

- Council of Ministers (on the level of the country),
- territorial self-government (on the level of the voivodship),
- powiat and gmina self-government (on the local level).

The policy is realized on the basis of development strategy and operational programs, in which activities serving the achievement of aims are framed.

Long-term strategies and programs

From the definition of sustainable development written down in the Law on Environmental Protection and from the Constitutional principle it results, that all activities of a socio-economic character conducted basing on aims presented in strategies, policies and sector programs as well as other documents on social and economic development, or protection of the environment and its resources should be mutually connected and realized according to the sustainable development principle.

A significant role in creating aims and priorities connected with long-term development of the country in concordance with the sustainable development principle is fulfilled by the "National Development Strategy 2007-2015". It is a strategic document, defining conditions, main aims and directions of socio-economic development of the country as well as direction of spatial development of the country with regard to sustainable development rules.

In this Strategy the vision of Poland in 2015 has been presented, according to which it shall be a country characterized by a high level and quality of life and strong and competitive economy, able to create new workplaces. The state has obligated itself to realize the sustainable development policy through the integration of activities in the economic, social and environmental spheres in the interests of future generations.

Main aim of the strategy is *to raise the level and quality of lives of citizens of Poland: individual citizens and families*. Obtaining the above mentioned aim is possible only under conditions of realization of sustainable development principles and cultivation and preservation of the cultural heritage of Poland. The Strategy as a superior, multi-year strategic document of socio-economic development of the country constitutes a guideline for other strategies and programs.

Moreover, strategic aims for realization in concordance with sustainable development principle have been defined in the following strategic documents:

- "National Strategic Reference Framework 2007-2013" – document, which strategic goal is to create conditions for the growth of competitiveness of knowledge based economy and entrepreneurship which are to assure an increase in the employment and in the level of social, economic, and territorial cohesion.
- "Poland 2030. Development Challenges" – document defining direction of development of Poland till 2030 in the sphere of the following policies: social, economic, infrastructural, energetic safety and efficient governance. It is a basis for the currently created Long-term Development Strategy of the Country.

The concept of sustainable development has appeared in many strategies, policies and sector programs as well as other strategic documents. Examples of chosen documents are presented below:

- "National Environmental Policy for 2009-2012 and its 2016 Outlook" – document which main strategic aim is to ensure ecologic safety of the nation (inhabitants, natural resources, social infrastructure) and to create basis for sustainable socio-economic development.
- "Poland's Climate Policy – the Strategies for Greenhouse Gas Emission Reductions in Poland until 2020" – the document was created as a result of undertaking activities protecting from permanent climate changes on the basis of recommendations presented in the "United Nations Framework Convention on Climate Changes" and "Kyoto Protocol". Main aim of activities is the inclusion of Poland to join the efforts of the international community for the protection of the global climate through the implementation of *sustainable development principles*, particularly in the scope of the improvement of energy consumption, the expansion of the national forest and soil resources, rationalization of the use of raw materials and industrial products as well as rationalization of waste disposal in a manner ensuring the achievement of maximum, long-term economic, social and political benefits.
- "Energy Policy of Poland until 2030" – the document defines basic directions of the energetics policy of the nation. Main aim is to increase the energetics safety of the nation retaining at the same time the sustainable development principle.
- "Strategy of Changing Production and Consumption Patterns to Favour the Implementation of Sustainable Development Principles" – presenting directions of necessary changes aiming at restructuring of resource-absorptive sectors. Separation of the interrelationship between economic growth and consumption of natural resources as well as the impact on the environment and improvement of the quality of life is the strategic aim.
- "National Transport Policy for 2006-2025" – outlining main direction of development of transport, stressing the necessity of quality improvement and competitiveness of Polish transport and increasing the safety of all users, retaining at the same time requirements of environmental protection. Main objective of the policy is a substantial improvement of the quality of transport system and its development following the principles of sustainable development.

Integrated Development Strategies

On 24 November 2009 the Council of Ministers accepted the document *Plan of putting in order development strategies*. This document constitutes one of the elements of an undertaking aiming at putting in order obligatory strategic documents and limiting the number of obligatory strategies to 9 new development strategies, basing on the diagnosis and recommendations resulting from the report “Poland 2030. Development Challenges”¹.

According to amendment to the Act on Rules of Conducting Development Policy dated 6 December 2006 the development policy is conducted with the help of the following development strategies defined in Article 9 of the above mentioned act:

- **long-term national development strategy** (LNDS) – document defining main trends, challenges and scenarios of socio-economic development of the country as well as direction of spatial development of the country, taking into account sustainable development principles, covering the period of at least 15 years;
- **medium-term national development strategy** (MNDS) – document defining main conditions, aims and directions of the development of the country in social, economic, regional and spatial dimension, covering the period of 4-10 years, realized with the help of development strategies and programs,
- **other development strategies** – documents defining basic conditions, aims and directions of the development in areas shown in medium-term national development strategy, connected with the development of regions, spatial development, sectors or themes, realized with the help of programs.

Produced strategies, as well as development programs will take into account in actions the following principles:

- sustainable development principle (balance of economic aims, social aims and aims connected with environment protection; overall look on social, economic and environmental issues);
- non-discrimination principle in political, social and economic life;
- solidarity principle (of which also intra- and intergeneration solidarity);
- cohesion principle (territorial, regional and regulating cohesion);
- public interest and democratic nation principle.

To realize development aims of the Medium-term National Development Strategy 9 elaborated at the moment integrated strategies will serve:

1. Strategy of Innovativeness and Effectiveness of the Economy
2. Human Capital Development Strategy
3. Transport Development Strategy
4. Energetic Safety and Environment Perspective 2020
5. Efficient State 2011-2020
6. Social Capital Development Strategy
7. National Strategy of Regional Development 2010-2020: Regions, Urban Areas, Rural Areas
8. Sustainable Development Strategy of Rural Areas, Agriculture and Fishing
9. Strategy of Development of the National Security System of the Republic of Poland 2011-2022.

¹ Report elaborated by the Board of Strategic Advisors to the Prime Minister of Poland (www.zds.kprm.gov.pl).

IV. The concept and criteria of grouping sustainable development indicators

The concept of sustainable development indicator

Sustainable development indicators are the basic tool for monitoring this conception of development, reflecting its essence in a measurable manner. As in this publication, these measures enable creation a statistical picture of a country in terms of implementing the new paradigm of the development.

In the literature there is no universally approved definition of “an indicator”. In general, “the indicator” and “a measure” are terms used alternatively. The most important feature of the indicator is its value comparability (as opposed to the characteristics generally expressed in absolute values), which enables ranking the object/country compared with other objects/countries. In this sense, the indicator is a function of one or more features, and usually occurs as a so-called measure of intensity, e.g. GDP per capita (indicator as a function of GDP [feature 1] and population [feature 2]) or particulate matter emissions per km² (the indicator as a function of particulate matter emissions [characteristic 1] and the area [characteristic 2]).

In practice of a ratio analysis, the distinction between “an indicator” and “an index” still causes some misunderstandings. In order to avoid them it can be assumed that an indicator refers to some state of the phenomenon, and the index expresses the change of the phenomenon in time. Index thus expresses the dynamics or rate of change during the index value or values of statistical features.

The selection of indicators and their classification

The basis for creating the sustainable development indicators sets is different kind of specification of this development conception which would be made for monitoring the realization of many planning documents (strategies, programmes, policies etc.) that are elaborated on the local, regional and country level and also on the level of European Union as a whole. This specification of sustainable development conception is made by determining the agreed and well defined set of measures for each level.

Diagnosing the progress of realization of sustainable development concept is impossible without a precise answer to the fundamental question:

⇒ what do we want to measure? – what elements of this development concept are the subject of measurement?

The answer to this question allows to assess how the current official statistics can help in creating a coherent system for monitoring the progress (or regress). This question also points to the foundations of this monitoring. They consist of a concretisation of the new paradigm of development by identifying:

⇒ the principles of development, being a basic ‘filter’ for the selection of indicators,

⇒ the targets, as the positive target states of development, presented in different planning documents,

⇒ domains: social, economic, environmental and institutional and political.

The principles of sustainable development are the key test for checking if the declaration of conception realization included in the policies objectives (strategies, programs, etc.) is consistent with the core of this conception. The key here is certainly the principle of intergenerational justice (*“All future generations have the right to live and use all the known values of the environment, just*

like you, or even better¹). The particular importance for the correct operation of this criterion of indicators selection should be assigned to principles collection adopted in the “Rio de Janeiro Declaration” (the Earth Charter – 27 principles), in the European Union (7 principles), in the Polish national environmental policy (12 rules) and in the Johannesburg Declaration.

Other levels of specification of sustainable development conception, which can be measured by indicators, are models in their character that are to be achieved by sustainable development changes. This applies to categories like orders and development goals. The interconnections between these categories (fundamental to the measurement of sustainable development) are depicted in Fig. 4.1.

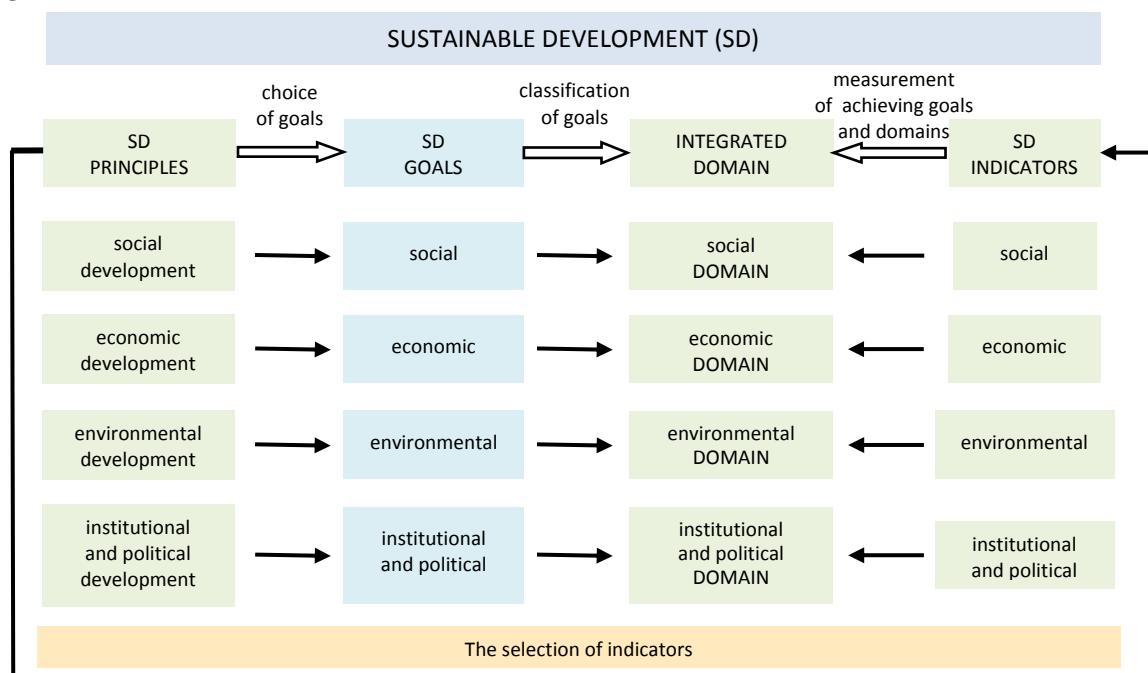


Fig. 4.1. **Construction and classification of national sustainable development indicators**

Source: own compilation.

The category of the integrated domain presented in the Fig 4.1. is a key term connected with sustainable development. Integrated domain involves, in short, coherent, simultaneous creating of a social, economic, environmental and institutional and political domain based on moderate anthropocentric approach or, in other words, integration of social, economic, environmental and institutional and political phenomena based on moral and ethical domain. The integrity of domains is realised through sustainable preservation of environmental, social and human capital as well as capital created by human, especially cultural and economic capital.

The system of strategic social, economic, environmental (ecological) and institutional and political goals constitutes a structural basis for developing integrated domain. Achieving these goals as positive target state in particular temporal perspective is monitored by sustainable development indicators.

Among many correctness requirements for sustainable development indicators the most important are:

- its factual connection with the described area (phenomenon) of sustainable development through clear answer to the question: does the indicator reflect the essence of sustainable development, which domain (e.g. environmental), specific area (e.g. climate change), principle and development goal does the indicator describe;
- formal correctness assessed on the basis of general correctness rules of creating indicators.

¹ In the Commission report for World Commission on Environment and Development (WCED) “Our Common Future” (United Nations, New York 1987, p.47).

The structure of indicators by domains

Table below shows the structure of national sustainable development indicators classified by four domains. It also introduces the structure of the this publication content.

National sustainable development indicators by domains

| Sustainable development of the country | | |
|--|---|----------------------|
| Domains | Areas | Number of indicators |
| 1. Social | 1.1. Demographic changes | 4 |
| | 1.2. Public health | 5 |
| | 1.3. Social integration | 4 |
| | 1.4. Education | 3 |
| | 1.5. Access to labour market | 5 |
| | 1.6. Public safety | 2 |
| | 1.7. Sustainable consumption patterns | 3 |
| Total | | 26 |
| 2. Economic | 2.1. Economic development | 8 |
| | 2.2. Employment | 3 |
| | 2.3. Innovativeness | 4 |
| | 2.4. Transport | 1 |
| | 2.5. Sustainable production patterns | 3 |
| Total | | 19 |
| 3. Environmental | 3.1. Climate change | 3 |
| | 3.2. Energy | 4 |
| | 3.3. Air protection | 4 |
| | 3.4. Sea ecosystems | 1 |
| | 3.5. Fresh water resources | 3 |
| | 3.6. Land use | 3 |
| | 3.7. Biodiversity | 2 |
| | 3.8. Waste management | 4 |
| Total | | 24 |
| 4. Institutional and political | 4.1. Global partnership | 1 |
| | 4.2. Policy coherence and effectiveness | 2 |
| | 4.3. Openness and participation | 3 |
| | 4.4. Citizens activeness | 1 |
| Total | | 7 |
| Total indicators | | 76 |

Source: own compilation.

V. Sustainable development indicators

Social domain

List of indicators

Demographic changes

- Natural increase rate
- Total fertility rate
- Life expectancy of persons aged 65
- International migrations indicator

Public health

- Life expectancy of infant in health
- Infant deaths
- Disability free life expectancy at the age of 65
- Standardised death rates caused by circulatory system diseases and malignant neoplasms
- Euro Health Consumer Index EHCI

Social integration

- At-risk-of-constant-poverty
- At-risk-of-poverty or social exclusion
- Inequality of income distribution
- Debt of households

Education

- Life-long learning of adults
- Children aged 3-5 undergoing pre-primary education in rural areas
- Public expenditure on education in relation to GDP

Access to labour market

- People living in jobless households
- Long-term unemployment rate
- Unemployment rate
- Employment rate of disabled persons
- Gender pay gap

Public safety

- Rates of detectability of delinquents in crimes
- Road traffic accidents fatalities per 1 million population

Sustainable consumption patterns

- Number of vehicles per 1000 population
- Electricity consumption in households per capita
- Consumption of vegetables per capita in households

Social domain

Natural increase rate

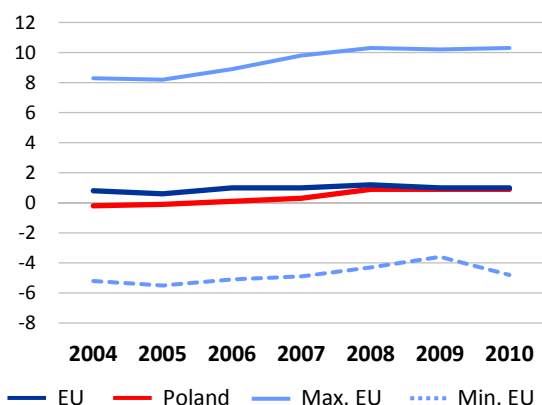
| | |
|-----------------------|--|
| Name of the indicator | Natural increase rate |
| Area | Demographic changes |
| Definition | <p>Natural increase rate is the relation of natural increase to the number of population (as of 30 VI according to permanent place of residence) and it is calculated per 1000 population.</p> <p>Natural increase of population is the difference between the number of live births and deaths in the given period.</p> |
| Meaning | The indicator is an important tool for monitoring demographic processes influencing the socio-economic situation of the country. Their cognition enables to plan actions aiming at adaptation of social policy to results of occurring changes and counteracting unfavourable occurrences. |

Table 1.1. **Natural increase rate**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------|------|------|------|------|------|------|
| -0,2 | -0,1 | 0,1 | 0,3 | 0,9 | 0,9 | 0,9 |

In the end of 2010 the population of Poland amounted to 38200,0 thous. persons, by about 33 thous. more than a year ago. In 2010 natural increase was positive and amounted to 34,8 thous. It indicates, that there were 9 persons per 10 thous. population (8 a year ago, while in the beginning of 90-ties of the previous century – more than 40 persons). Systematic increase in the number of births is observed since 2004, and a positive natural increase is noted since 2006 showing a growing tendency. It is undoubtedly connected with the fact, that the demographic boom generation from the beginning of eighties of the previous millennium has become adult. Despite positive tendencies a low natural increase is a serious problem in Poland. Natural increase rate on the level 0,9‰ causes, that the position of Poland is in the end of the second tenth among EU countries. Therefore, Poland is among countries characterized by a slow ageing of the population with a tendency of growing natural increase.

Graph 1.1. **Natural increase rate**



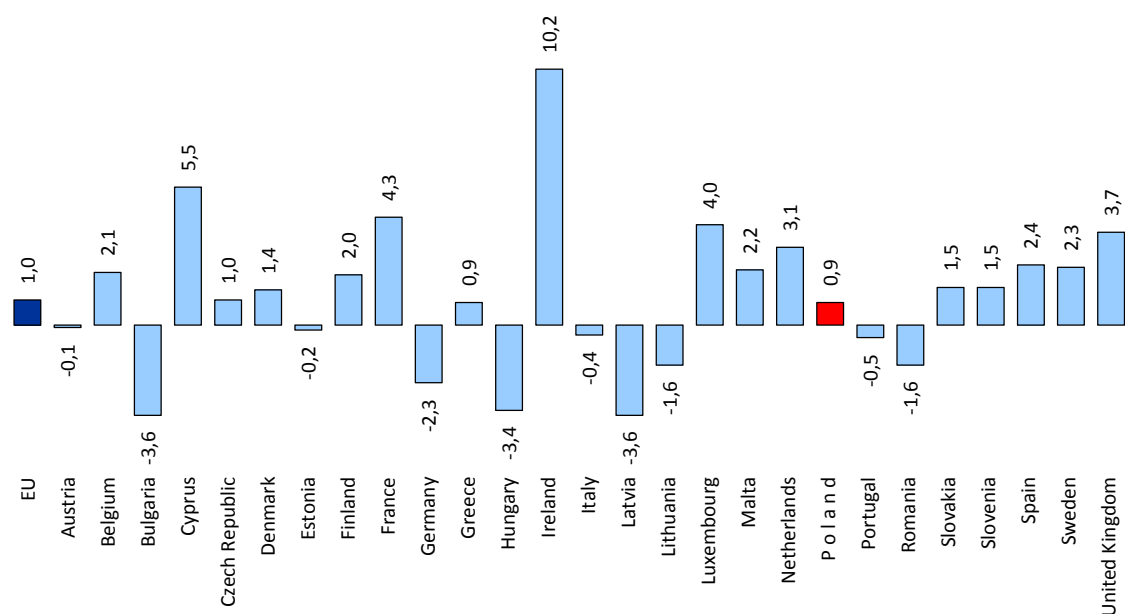
| Years | EU | Poland | Max. EU | Min. EU |
|-------|-----|--------|---------|---------|
| 2004 | 0,8 | -0,2 | 8,3 | -5,2 |
| 2005 | 0,6 | -0,1 | 8,2 | -5,5 |
| 2006 | 1,0 | 0,1 | 8,9 | -5,1 |
| 2007 | 1,0 | 0,3 | 9,8 | -4,9 |
| 2008 | 1,2 | 0,9 | 10,3 | -4,3 |
| 2009 | 1,0 | 0,9 | 10,2 | -3,6 |
| 2010 | 1,0 | 0,9 | 10,3 | -4,8 |

Source: data of the Eurostat.

International comparisons

In 2009 values of the natural increase rate for most of the EU countries were positive. The highest rate was noted in Ireland (10,2%), while the lowest in Latvia and Bulgaria (minus 3,6%).

Graph 1.2. **Natural increase rate in EU countries in 2009**



Source: data of the Eurostat.

Social Domain

Total fertility rate

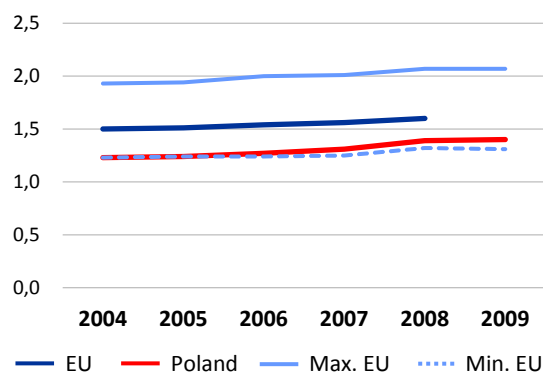
| | |
|-----------------------|--|
| Name of the indicator | Total fertility rate |
| Area | Demographic changes |
| Definition | Total fertility rate refers to the average number of children that would be born by a woman during the course of her entire reproductive period (15-49 years old), assuming that in particular phases of this period she would give birth with an intensity observed during a given year, i.e., assuming that age specific fertility rates for this period are constant. |
| Meaning | Demographic transformations are one of the most important challenges in the nearest years. They are connected with, among others, low natural increase, decrease in fertility and connected with it process of ageing of the society. A longer period of lasting of the low fertility rate and an increase in life expectancy as well as the fact, that the demographic boom generation is entering the retirement age is a great challenge in relation to financial stability of pension systems and the labour market. |

Table 1.2. **Total fertility rate**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------|------|------|------|------|------|------|
| 1,23 | 1,24 | 1,27 | 1,31 | 1,39 | 1,40 | 1,38 |

On the eve of the 21st century in Poland a rapid change of patterns of creation of families and procreative attitudes have occurred, resulting in a decrease of fertility, and in consequence the process of ageing of the society. Despite the growing in previous years number of births, the level of reproduction still does not guarantee common generation replacement, what indicates, that the number of population in working age shall still be decreasing. The most profitable demographic situation is described by the indicator on the level 2,10 – 2,15, i.e., when in a given year a woman aged 15-49 has two children on average. In years 2004-2010 in Poland a systematic raise of the described indicator has been observed. In 2010 it amounted to 1,38, giving an increase by 0,16 percentage point compared to 2003, when the lowest level of this indicator has been observed since over 50 years.

Graph 1.3. **Total fertility rate**



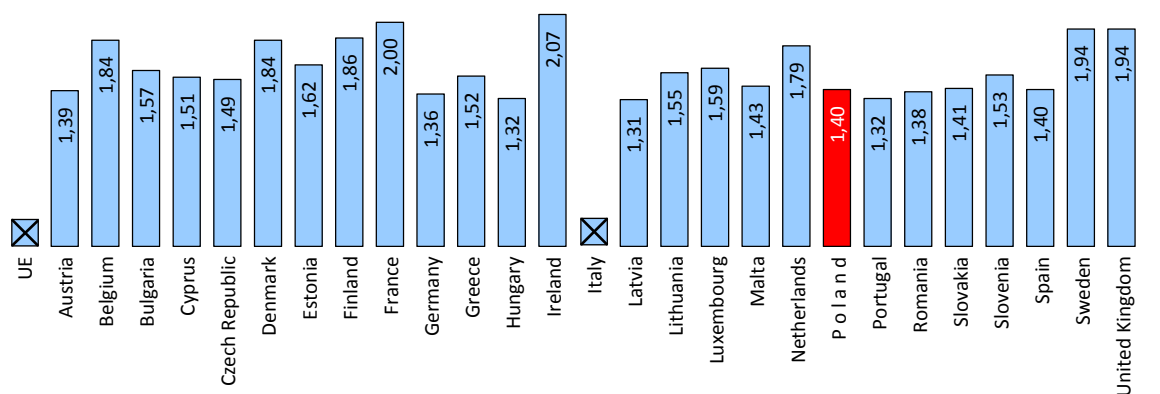
| Years | EU | Poland | Max. EU | Min. EU |
|-------|------|--------|---------|---------|
| 2004 | 1,50 | 1,23 | 1,93 | 1,23 |
| 2005 | 1,51 | 1,24 | 1,94 | 1,24 |
| 2006 | 1,54 | 1,27 | 2,00 | 1,24 |
| 2007 | 1,56 | 1,31 | 2,01 | 1,25 |
| 2008 | 1,60 | 1,39 | 2,07 | 1,32 |
| 2009 | . | 1,40 | 2,07 | 1,31 |

Source: data of the Eurostat.

International comparisons

Comparing to EU countries, the fertility rate in 2009 in Poland was one of the lowest. The highest value of the indicator, approximating the most favourable one for the demographic situation was noted in Ireland and France. On the other hand, the lowest was noted in Portugal, Hungary and Latvia.

Graph 1.4. **Total fertility rate in EU countries in 2009**



Source: data of the Eurostat.

⊗ lack of data

Social domain

Life expectancy of persons aged 65

| | |
|-----------------------|--|
| Name of the indicator | Life expectancy of persons aged 65 |
| Area | Demographic changes |
| Definition | <p>Life expectancy of persons aged 65 is defined as the average number of years still to be lived by a person who has reached the age 65, if subjected throughout the rest of persons life to the current mortality conditions.</p> <p>The indicator is presented for males and females.</p> |
| Meaning | <p>The rise of the length of life of women and men signifies the improvement of the quality of life of citizens and it is a reflection of the state of health of the population. Longer life of the population and connected with it ageing of the society is an important challenge for the society in connection with financial stability of retirement systems, labour market and social welfare.</p> |

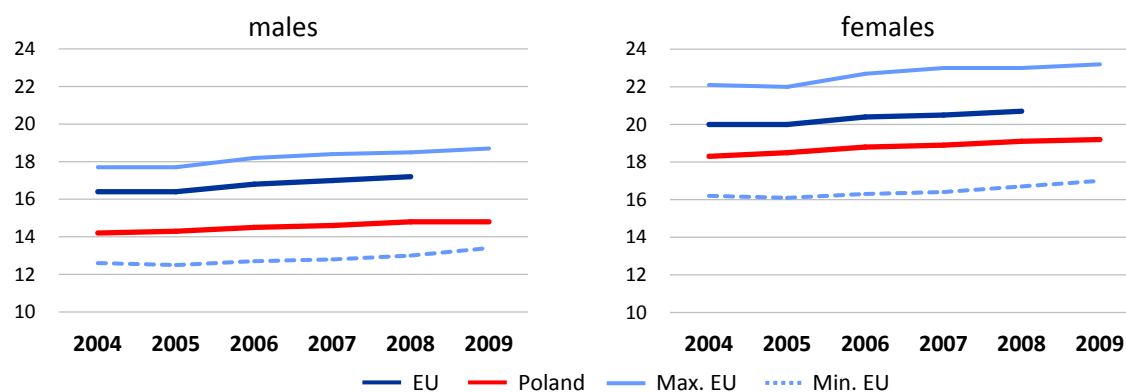
Table 1.3. **Life expectancy of persons aged 65 by gender (years)**

| Gender | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---------------|------|------|------|------|------|------|------|
| Males | 14,2 | 14,3 | 14,5 | 14,6 | 14,8 | 14,8 | 15,1 |
| Females | 18,3 | 18,5 | 18,8 | 18,9 | 19,1 | 19,2 | 19,4 |

Life expectancy is an important indicator for the evaluation of the state of health of the population. In the period 2004-2010 a systematic increase of life expectancy of inhabitants of Poland, observed since many years, has been lasting. Life expectancy for men, who in 2010 were at age 65 was by 0,9 year longer than for men at age 65 in 2004. Life expectancy for women has increased during the last six years by 1,1 year. Due to the occurring in Poland phenomenon of high excess mortality of men the difference between life expectancy of women and men at age 65 is considerable and it is increasing – in 2004 it amounted to 4,1 years, and in 2010 already 4,3 years.

In spite of positive tendencies connected with the raise of lifetime of inhabitants of Poland, life expectancy of men as well as women at age 65 considerably differs from average values of the EU. Data concerning life expectancy of persons at age 65 show, that this indicator will be increasing, in other words the number of older people shall be growing.

Graph 1.5. **Life expectancy of persons aged 65 by gender (years)**



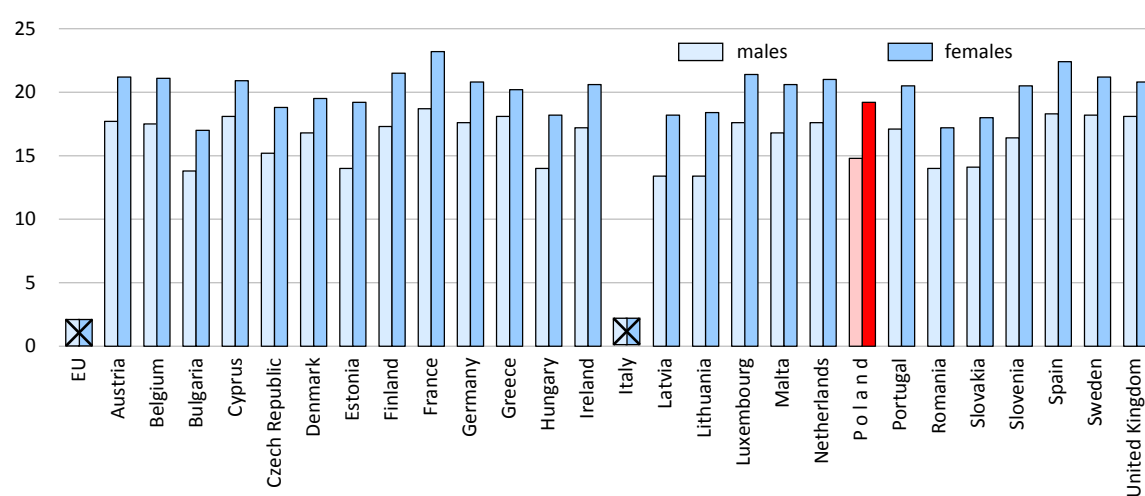
| Years | EU | Poland | Max. EU | Min. EU | EU | Poland | Max. EU | Min. EU |
|-------|------|--------|---------|---------|---------|--------|---------|---------|
| Males | | | | | Females | | | |
| 2004 | 16,4 | 14,2 | 17,7 | 12,6 | 20,0 | 18,3 | 22,1 | 16,2 |
| 2005 | 16,4 | 14,3 | 17,7 | 12,5 | 20,0 | 18,5 | 22,0 | 16,1 |
| 2006 | 16,8 | 14,5 | 18,2 | 12,7 | 20,4 | 18,8 | 22,7 | 16,3 |
| 2007 | 17,0 | 14,6 | 18,4 | 12,8 | 20,5 | 18,9 | 23,0 | 16,4 |
| 2008 | 17,2 | 14,8 | 18,5 | 13,0 | 20,7 | 19,1 | 23,0 | 16,7 |
| 2009 | . | 14,8 | 18,7 | 13,4 | . | 19,2 | 23,2 | 17,0 |

Source: data of the Eurostat.

International comparisons

In 2009, among EU countries the highest life expectancy for men and for women at age 65 was observed in France (18,7 years and 23,2 years respectively). The lowest value for men was observed in Latvia and Lithuania (13,4 years), and for women in Bulgaria (17,0 years).

Graph 1.6. **Life expectancy of persons aged 65 in EU countries in 2009 (years)**



Source: data of the Eurostat.

lack of data

Social domain

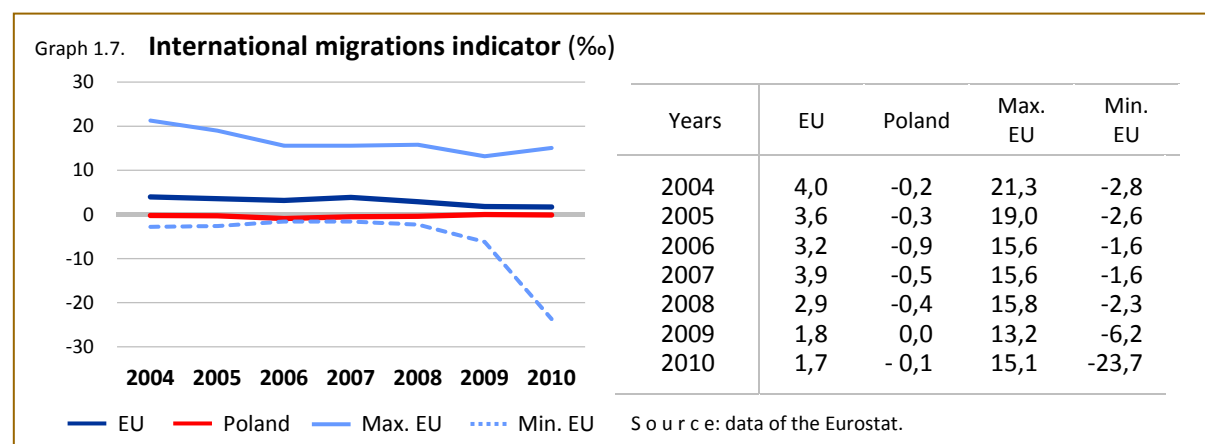
International migrations indicator

| | |
|-----------------------|---|
| Name of the indicator | International migrations indicator |
| Area | Demographic changes |
| Definition | <p>International migrations indicator is defined as the ratio of the number of net international migrations for permanent residence during the year to the number of population registered for permanent residence as of 30 VI of a given year per 1000 population.</p> <p>Net migration is the difference (negative or positive) between the inflow (immigration) or outflow (emigration) of the population.</p> |
| Meaning | Migration is an important element of demographic changes undergoing on the national level, it can partly balance consequences of ageing of the society, it also influences the magnitude of labour force and economic development of the country. |

Table 1.4. **International migrations indicator (‰)**

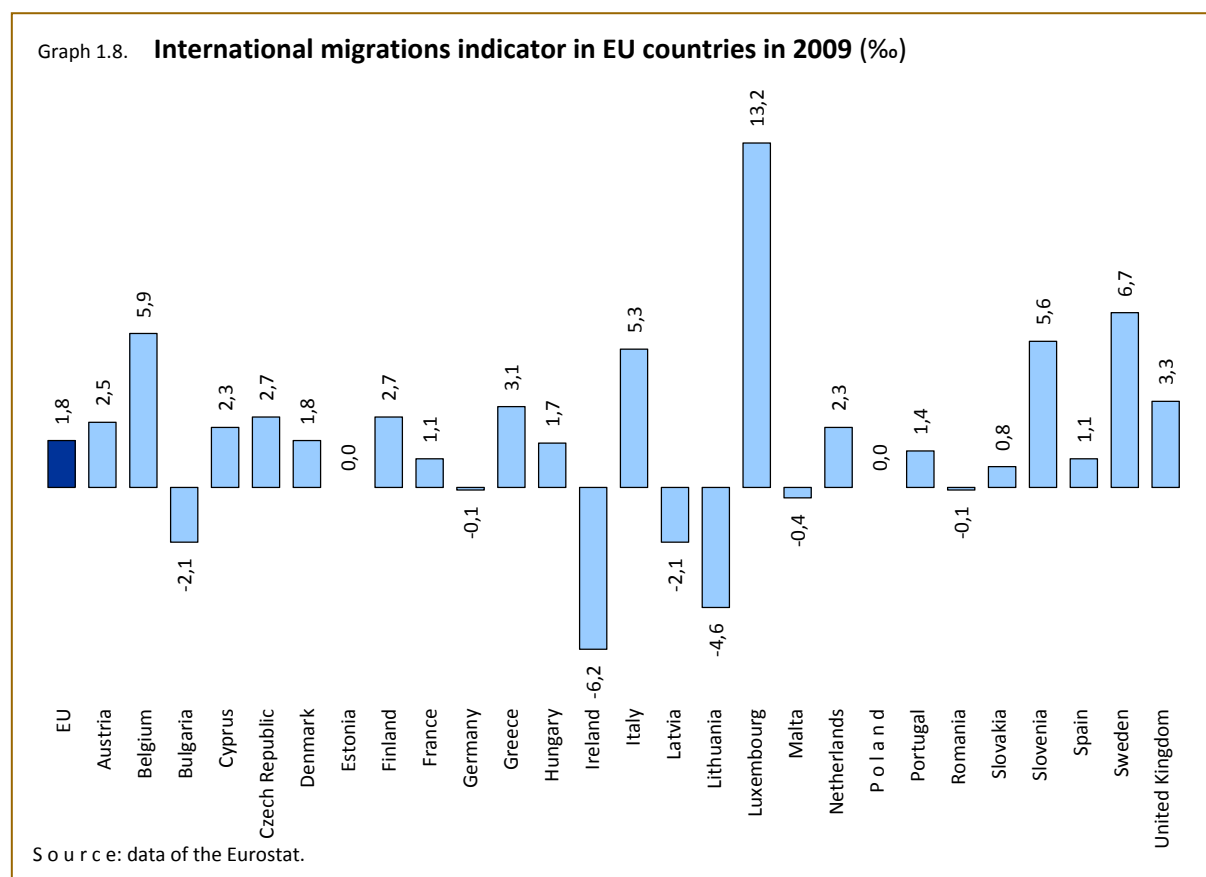
| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------|------|------|------|------|------|-------|
| -0,2 | -0,3 | -0,9 | -0,5 | -0,4 | -0,0 | - 0,1 |

Migration of population and natural increase are factors shaping the number of population. In years 2004-2010 a higher increase of the population of the country for permanent residence than inflow for the purpose of permanent residence was noted. In 2010 a negative international migration, the so-called definite amounted to 2,1 thous. persons. About 17,4 thous. of Poles departed abroad for permanent residence – by 29,6 thous. persons less than in 2006, in which the highest number of persons departing abroad for permanent residence was observed. A systematic decrease in the number of international emigrations in years 2004-2010 was accompanied by an increase in the number of immigrations (from 9,5 thous. in 2004 to 15,2 thous. in 2010).



International comparisons

For most of the EU countries the international migrations indicator was positive in years 2004-2009. A negative value of this indicator in the described periods was noted in Lithuania and Latvia. On the other hand, the highest positive value of the indicator was observed in Luxembourg not only in 2009, but also in previous years.



Social domain

Life expectancy of infant in health

| | |
|-----------------------|--|
| Name of the indicator | Life expectancy of infant in health |
| Area | Public health |
| Definition | <p>Life expectancy of infant in health defines the number of years, which a person, at the moment of birth, shall live in good health. It is an indicator of the expected health, which combines data on incidence of illness and mortality.</p> <p>Indicator is calculated using parameters of life expectancy and frequency of occurrence of limitation of fitness. Population by age groups, in good or bad state of health as well as information on mortality by specific age groups is used for the calculation of the indicator.</p> <p>Good health is defined as a lack of limitations in functioning or no disability.</p> <p>Indicator is presented for males and females.</p> |
| Meaning | <p>Life expectancy in health is one of the basic indicators evaluating the state of health of the society reflecting on health of the whole population and the quality of health care and living conditions. It serves for the evaluation of the health condition of the population. It is an effective indicator monitoring the so-called healthy ageing of population process.</p> |

Table 1.5. **Life expectancy of infant in health (years)**

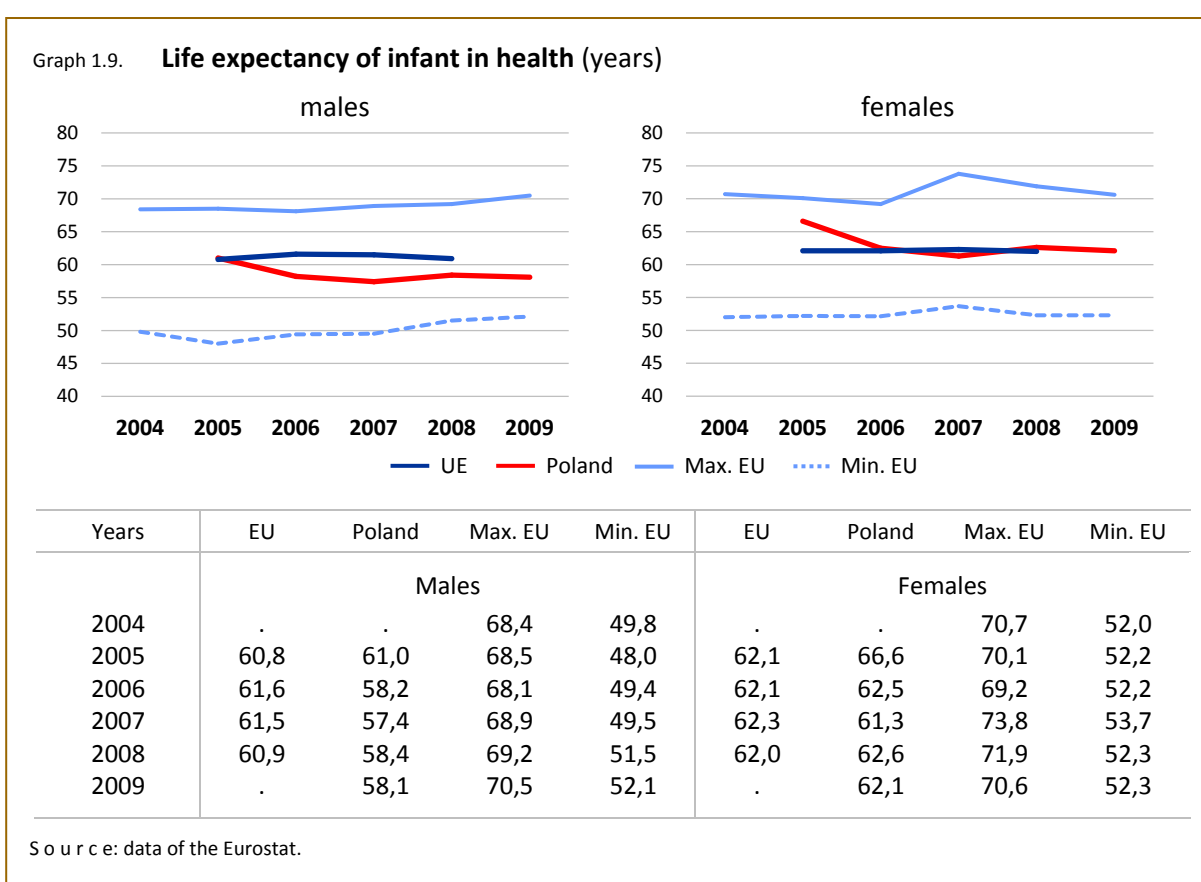
| Gender | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---------------|------|------|------|------|------|------|
| Males | . | 61,0 | 58,2 | 57,4 | 58,4 | 58,1 |
| Females | . | 66,6 | 62,5 | 61,3 | 62,6 | 62,1 |

Source: data of the Eurostat.

Life expectancy of infant in health is also defined as the healthy life years free of disability rate. It defines the length of lifetime and quality of life in relation to health. The healthy life years indicator has been elaborated on the basis of observation, that not all years, defined by life expectancy, are in good health. In relation to both – life expectancy and healthy life years – Poland still is lagging behind most of EU countries.

Despite a considerable progress, the life expectancy of men and women were shorter than the average in the EU. Usually there is a difference of life expectancy between men and women in favour of women, being the result of the phenomenon of excess male mortality.

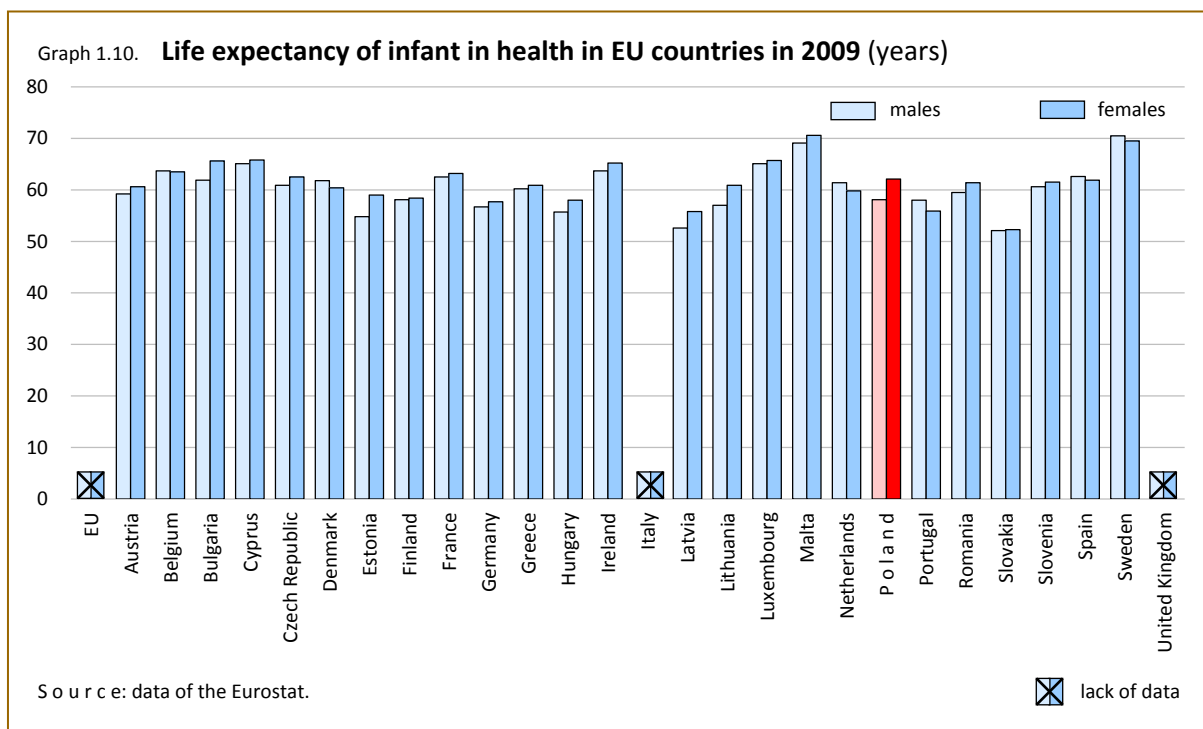
In 2009 in Poland healthy life years, from the moment of birth, amounted to 62,1 years, constituting almost 74% of their life expectancy. A male infant's life expectancy in health was 4 years lower amounting to 58,1 years, constituting over 73% life expectancy of men. In 2009 the difference between life expectancy of women and men was 4,0 years; compared to 2005 it diminished by 1,6 year.



International comparisons

In 2009 in Poland average life expectancy in health of women was on a similar level to that of the EU member countries. It was by 9,8 years higher compared to the minimum noted in Slovakia and by 8,5 years shorter than the most favourable indicator noted in Malta (70,6 years).

In the case of men life expectancy of infant in health was by 6,0 years longer than in Slovakia, having the lowest value of the indicator among EU member countries and by 12,4 years shorter than average life expectancy noted in Sweden – 70,5 years (the highest value of the indicator among EU member countries).



Social domain

Infant deaths

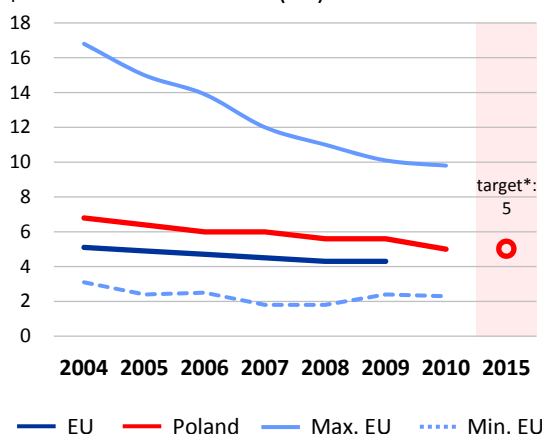
| | |
|-----------------------|--|
| Name of the indicator | Infant deaths |
| Area | Public health |
| Definition | Infant deaths rate is calculated as the quotient of infant deaths (children under 1 year of age) and the number of live births in the given period calculated per 1000 live births. |
| Meaning | Infant deaths rate describes in a synthetic way the state of health of the society and the level of health services. The decrease of the indicator will result from, among others, the improvement in the standard of living, development of pro-healthy behaviours of pregnant women, development of medicine in the direction of improvement of the quality of medical care connected with pregnancy, childbirth and puerperium. |

Table 1.6. **Infant deaths (‰)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------|------|------|------|------|------|------|
| 6,8 | 6,4 | 6,0 | 6,0 | 5,6 | 5,6 | 5,0 |

Infant mortality, i.e. mortality of children aged under one year decreases systematically in the course of time. In 2010, 2057 children under the age of 1 year died, that is 366 less than in 2004. Infants deaths rate was on the level 5,0‰ and was lower by 1,8 percentage point compared to 2004. From the total number of infant deaths in 2010, 52,8% concerned the first week of life, and 18,6% – the first month of life (in 2004 – 52,8% and 19,9% respectively). The most frequent causes of infant deaths are connected with conditions originating in the perinatal period, that is during the period of pregnancy and in the first 6 days of the infant's life. The following causes of deaths are congenital anomalies. Other deaths are caused by diseases acquired in the infancy period or injuries. In 2010 perinatal mortality rate (still births and infant deaths at the age 0-6 days per 1000 live and still births) amounted to 6,8‰ and similarly to the total infant mortality rate, showing at the same time a falling tendency (in 2004 it amounted to 8,5‰).

Graph 1.11. **Infant deaths (%)**



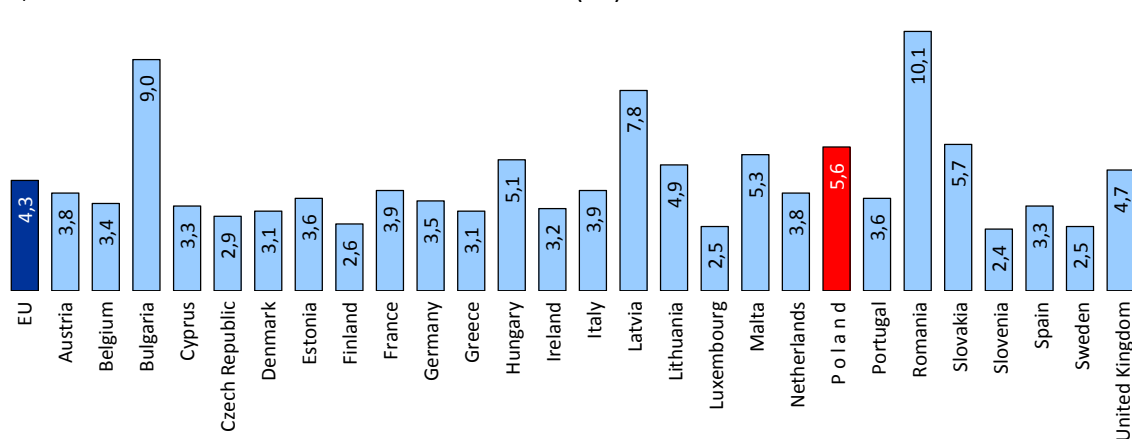
| Years | EU | Poland | Max. EU | Min. EU |
|-------|-----|--------|---------|---------|
| 2004 | 5,1 | 6,8 | 16,8 | 3,1 |
| 2005 | 4,9 | 6,4 | 15,0 | 2,4 |
| 2006 | 4,7 | 6,0 | 13,9 | 2,5 |
| 2007 | 4,5 | 6,0 | 12,0 | 1,8 |
| 2008 | 4,3 | 5,6 | 11,0 | 1,8 |
| 2009 | 4,3 | 5,6 | 10,1 | 2,4 |
| 2010 | . | 5,0 | 9,8 | 2,3 |

* According to the "National Development Strategy 2007-2015".
Source: data of the Eurostat.

International comparisons

In 2009 the infant deaths rate in Poland was on the level of 5,6 deaths per 1000 live births and it was higher from the rate noted in the EU (in 2009 - 4,3 per 1000 live births). Among EU countries, the worst situation was noted in Romania (10,1 deaths per 1000 live births) and in Bulgaria (9,0 per 1000 live births). The lowest infant deaths rate was observed in Slovenia (2,4 per 1000 live births) and in Sweden and Luxembourg (2,5 per 1000 live births).

Graph 1.12. **Infant deaths in EU countries in 2009 (%)**



Source: data of the Eurostat.

Social domain

Disability free life expectancy at the age of 65

| | |
|-----------------------|--|
| Name of the indicator | Disability free life expectancy at the age of 65 |
| Area | Public health |
| Definition | <p>Disability free life expectancy at the age of 65 indicator measures the number of years, that a person aged 65 is still expected to live in a healthy condition defined as lack of limitations in functioning or no disability.</p> <p>Indicator is calculated using parameters of life expectancy and frequency of occurrence of limitation of fitness. Population by age groups, in good or bad state of health as well as information on mortality by specific age groups is used for the calculation of the indicator.</p> <p>Indicator is presented for males and females.</p> |
| Meaning | <p>It is one of the basic indicators of evaluation of the state of health of the population, reflecting on the state of health of the whole population, quality of health care and living conditions. It serves to evaluate the health situation of the population. Life in health is a measure of full efficiency of man's action and productivity, in other words the state of full vital activity. It is an effective indicator monitoring the so-called healthy ageing of population process.</p> |

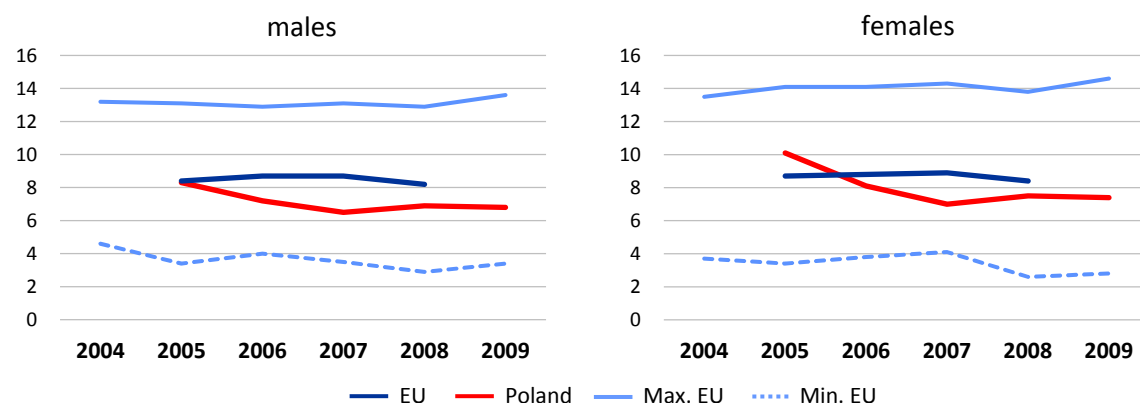
Table 1.7. **Disability free life expectancy at the age of 65 (years)**

| Gender | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---------------|------|------|------|------|------|------|
| Males | . | 8,3 | 7,2 | 6,5 | 6,9 | 6,8 |
| Females | . | 10,1 | 8,1 | 7,0 | 7,5 | 7,4 |

Source: data of the Eurostat.

Among older persons, disproportions of the disability free life expectancy indicator are inconsiderable, the average woman in Poland at the age of 65 lat had in 2009 still 7,4 years of life in health, a little bit less than the average man – 6,8 years. Taking into account the age 65 as a basis, it indicates the possibility of healthy life up to the age of 72. On the background of EU member states indicators for Poland are on the level below the average calculated for 27 members of the EU and are higher not only for women, but for men as well.

Graph 1.13. **Disability free life expectancy at the age of 65 (years)**



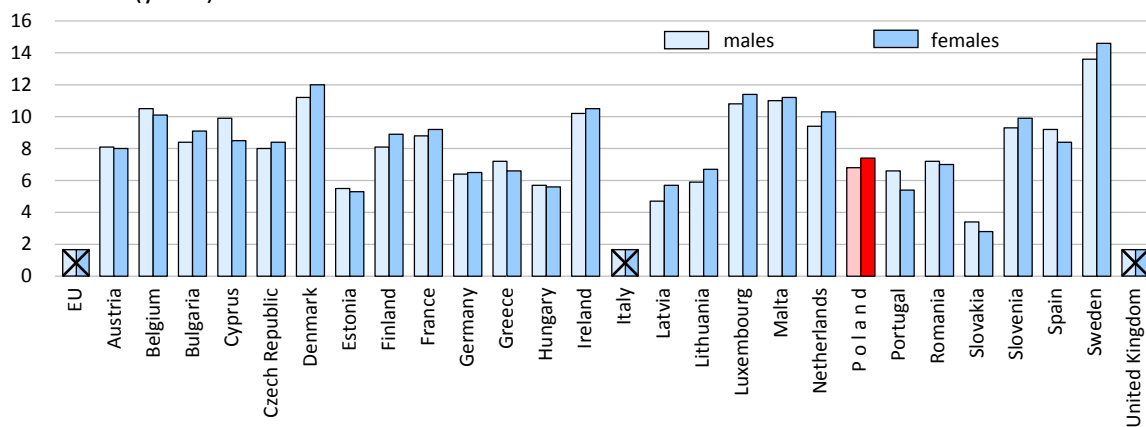
| Years | EU | Poland | Max. EU | Min. EU | EU | Poland | Max. EU | Min. EU |
|-------|-------|--------|---------|---------|---------|--------|---------|---------|
| | Males | | | | Females | | | |
| 2004 | . | . | 13,2 | 4,6 | . | . | 13,5 | 3,7 |
| 2005 | 8,4 | 8,3 | 13,1 | 3,4 | 8,7 | 10,1 | 14,1 | 3,4 |
| 2006 | 8,7 | 7,2 | 12,9 | 4,0 | 8,8 | 8,1 | 14,1 | 3,8 |
| 2007 | 8,7 | 6,5 | 13,1 | 3,5 | 8,9 | 7,0 | 14,3 | 4,1 |
| 2008 | 8,2 | 6,9 | 12,9 | 2,9 | 8,4 | 7,5 | 13,8 | 2,6 |
| 2009 | . | 6,8 | 13,6 | 3,4 | . | 7,4 | 14,6 | 2,8 |

Source: data of the Eurostat.

International comparisons

In 2009 the minimal indicator among EU countries is observed in Slovakia, where a woman at age 65 has about 2,8 years of healthy life. A little more, that is further 3,4 years of life with no disability has a man at the age of 65. It indicates the possibility of disability free life expectancy till the age about 68. The most profitable indicators among EU countries were observed in Sweden, where disability free life expectancy at the age 65 was on the level 14,6 years for women and 13,6 years for men. It shows that an average person can live with no disability to the age of about 79.

Graph 1.14. **Disability free life expectancy at the age of 65 in EU countries in 2009 (years)**



Source: data of the Eurostat.

⊠ lack of data

Social domain

Standardised death rates caused by circulatory system diseases and malignant neoplasms

| | |
|-----------------------|--|
| Name of the indicator | Standardised death rates caused by circulatory system diseases and malignant neoplasms |
| Area | Public health |
| Definition | <p>Standardised death rates caused by circulatory system diseases and malignant neoplasms describe how many deaths caused circulatory system diseases and neoplasms would occur in a given population (calculated per 100 thous. population) if the age structure of this population was the same as the age structure of the population accepted as a standard.</p> <p>The indicator is presented for total population and by sex.</p> |
| Meaning | <p>Circulatory system diseases and neoplasms are civilization diseases. They constitute a growing health and economic problem; are a cause of premature mortality; they are one of the most important causes of sick leaves, hospitalization and disability. They considerably influence the quality of life of Polish inhabitants. Mortality rate shows the real endangerment for the population, and at the same time it reflects on: the level of the society's consciousness in the field of applying health prophylaxis and the efficiency of treatment as well as the quality of functioning of the national system of medical care.</p> |

Table 1.8. **Standardised death rates caused by circulatory system diseases and malignant neoplasms**

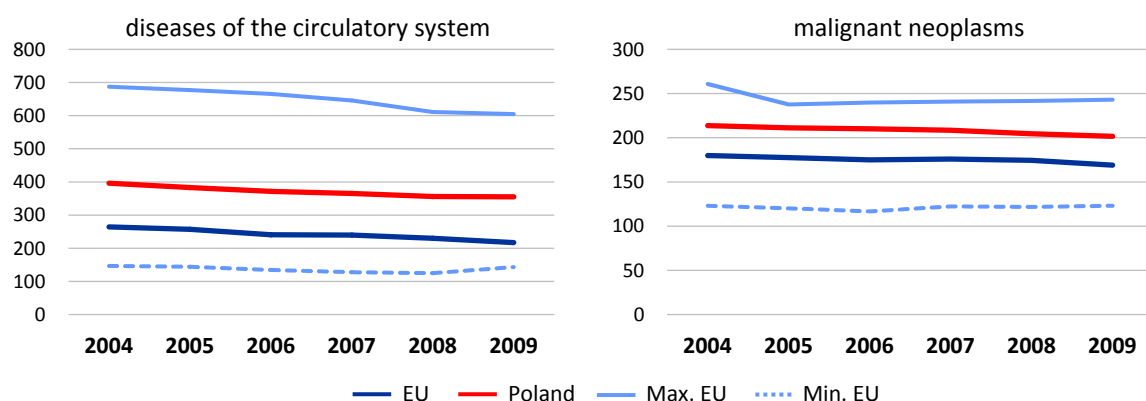
| Specification | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|--|-------|-------|-------|-------|-------|-------|
| Diseases of the circulatory system: | | | | | | |
| total | 396,3 | 383,2 | 371,5 | 365,2 | 356,4 | 355,4 |
| males | 509,0 | 491,4 | 479,1 | 471,9 | 463,0 | 463,6 |
| females | 313,7 | 303,2 | 291,3 | 285,3 | 276,8 | 275,2 |
| Malignant neoplasms: | | | | | | |
| total | 213,8 | 211,3 | 210,1 | 208,6 | 204,6 | 201,6 |
| males | 302,5 | 295,6 | 293,2 | 290,6 | 284,1 | 279,5 |
| females | 154,9 | 155,3 | 154,8 | 154,4 | 152,0 | 150,0 |

Source: data of the Eurostat.

Diseases of the circulatory system are a dominating cause of deaths in Poland. In years 2006-2009 an increase in the number of deaths due to these diseases was noted. Almost every second citizen of Poland dies because of circulatory system diseases. In 2009 these diseases were the cause of 94,4 thous. deaths of women and 83,6 thous. deaths of men.

The most frequent causes of mortality are: ischaemic heart diseases (47,8 thous. deaths), of which acute myocardial infarction (18,8 thous. deaths), cerebrovascular diseases (36,4 thous. deaths), arteriosclerosis (33,2 thous. deaths) and cardiac insufficiency (30,3 thous. deaths).

Graph 1.15. **Standardised death rates caused by circulatory system diseases and malignant neoplasms**



| Years | EU | Poland | Max. EU | Min. EU | EU | Poland | Max. EU | Min. EU |
|------------------------------------|-------|--------|---------|---------|---------------------|--------|---------|---------|
| Diseases of the circulatory system | | | | | Malignant neoplasms | | | |
| 2004 | 264,3 | 396,3 | 687,3 | 146,7 | 179,9 | 213,8 | 260,8 | 123,1 |
| 2005 | 257,2 | 383,2 | 677,4 | 144,1 | 177,6 | 211,3 | 237,7 | 120,3 |
| 2006 | 240,6 | 371,5 | 665,7 | 134,4 | 175,0 | 210,1 | 239,9 | 116,8 |
| 2007 | 239,6 | 365,2 | 645,7 | 128,0 | 175,9 | 208,6 | 240,9 | 122,4 |
| 2008 | 230,2 | 356,4 | 611,3 | 124,7 | 174,5 | 204,6 | 241,7 | 121,8 |
| 2009 | 217,3 | 355,4 | 605,0 | 143,2 | 169,0 | 201,6 | 243,3 | 123,1 |

Source: data of the Eurostat.

In 2009 the share of deaths due to myocardial infarction in the total number of deaths caused by circulatory system diseases was by 4,1 percentage points lower than in 2004, and it may be a proof of a more effective fight against myocardial infarction than against other circulatory system diseases.

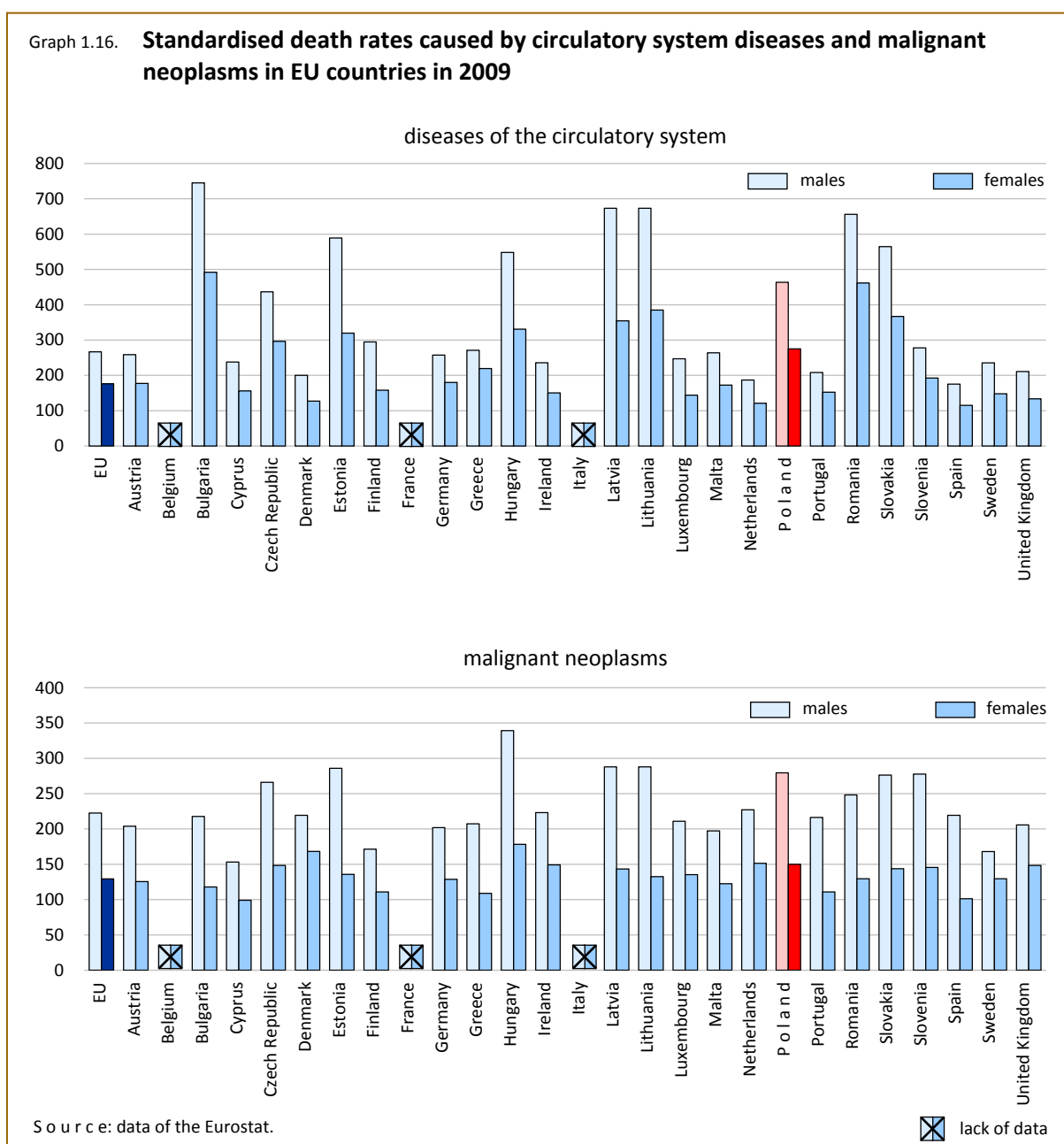
In 2009, compared to 2004, the level of death rate of men caused by circulatory system diseases decreased from 509 per 100 thous. to 463,6 per 100 thous. Death rate of women caused by these diseases also shows a declining tendency. Value of the death rate amounted to 275,2 in 2009 (313,7 in 2004).

Malignant neoplasms are the second cause of deaths in Poland. Because of these diseases 93,3 thous. persons died in 2009, more than in 2004 (by 3,5 thous. persons). In 2009 the share of malignant neoplasms in the total number of deaths was 24,2% (compared to 24,7% in 2004).

The following dominate among malignant neoplasms: lung cancer (22,3 thous. deaths in 2009 compared to 21,2 thous. in 2004), large bowel cancer (7,0 thous. compared to 6,1 thous.), urinal system cancer (5,8 thous. compared to 5,3 thous.), stomach cancer (5,3 thous. compared to 5,7 thous.) and among women breast cancer (5,2 thous. compared to 4,9 thous.) and female genital organs cancer (6,1 thous. compared to 5,9 thous.). Malignant neoplasms are more often the cause of death of men than women. In 2009 the standardised death rate due to malignant neoplasms among men amounted to 279,5 per 100 thous., and among women 150,0 per 100 thous.

International comparisons

The analysis of dominating causes in European countries shows, that similarly to Poland, in almost all countries civilization diseases such as diseases of the circulatory system and neoplasms dominated in the structure of deaths. Generally, males are characterized by a higher level of the deaths rate. Hungary is the country characterized by the highest level of male and female mortality caused by malignant neoplasms comparing to inhabitants of European countries. In 2009 the standardised death rate of men amounted to 339,3 and of women amounted to 178,2 deaths per 100 thous. population of women. The lowest level of the indicator was noted in Cyprus (153,1 for males and 99,0 for females). Mortality caused by diseases of the circulatory system is on a higher level than mortality caused by neoplasms.



Social domain

Euro Health Consumer Index EHCI

| | |
|-----------------------|---|
| Name of the indicator | Euro Health Consumer Index EHCI |
| Area | Public health |
| Definition | <p>European Health Consumer Index EHCI (<i>Euro Health Consumer Index</i>) is defined as a summary evaluation of indicators separated in 6 areas (subcategories) connected with health care. Obtained for the given country total result in points (minimal – 333 points, maximal – 1000) is the sum of points obtained in six separate areas (the so-called average weighted subcategories) including the total of 38 indicators in 2009:</p> <ol style="list-style-type: none">1. Patients rights and information;2. e-Health;3. Waiting time for treatment;4. Results of treatment (outcomes);5. Range and reach of services provided;6. Pharmaceuticals. |
| Meaning | <p>The result expressed in points enables to get acquainted with the evaluation of the quality of functioning of the health care system. A complex evaluation of the surveyed areas points out how the needs and expectations of the society are guaranteed in the field of functioning of the health care. For patients the most important are: conditions of treatment, easiness to get a request, certainty of getting aid in critical situations as well as the result of treatment.</p> |

Table 1.9. **Euro Health Consumer Index EHCI (points)**

| Specification | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|--|------|------|------|-------|-------|-------|
| Poland | . | . | 409 | 447 | 511 | 565 |
| EU min. | . | . | 340 | 435 | 449 | 448 |
| EU max. | . | . | 576 | 806 | 839 | 863 |
| Number of points which can be scored | . | . | 750 | 1 000 | 1 000 | 1 000 |

S o u r c e: data of the Health Consumer Powerhouse.

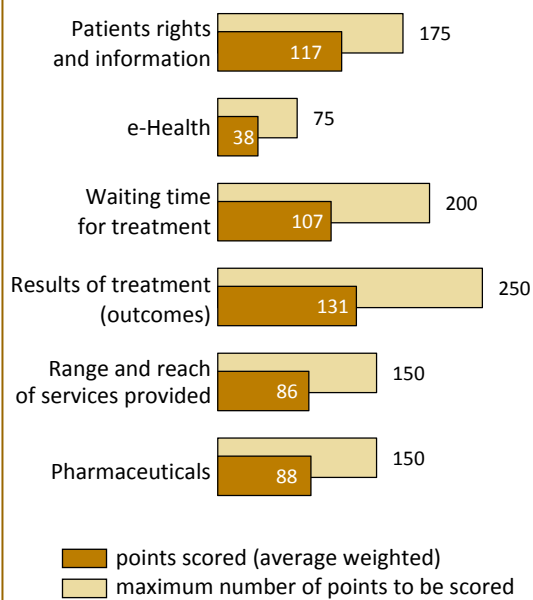
From the health consumer ranking published by the Health Consumer Powerhouse (*Euro Health Consumer Index, EHCI*) it results, that Poland has at its disposition one of the worst European systems of health care taking into account its quality. The Euro Health Consumer Index, EHCI is an annual survey, which aim is to obtain information concerning the national health care system from an European consumer's viewpoint.

In a complex evaluation of indicator taken into account in all 6 disciplines (subcategories), Poland obtained total 565 points (per 1000 which can be scored) and was on the 23rd place among EU countries. The necessity of undertaking essential actions in the described areas and directions is emphasized not only in national long-term strategies, (Poland 2030. Development Challenges, National Development Strategy 2007-2015), but in strategic aims of branch documents (Health Care Development Strategy 2007-2013, National Health Program for years 2007-2015) as well.

International comparisons

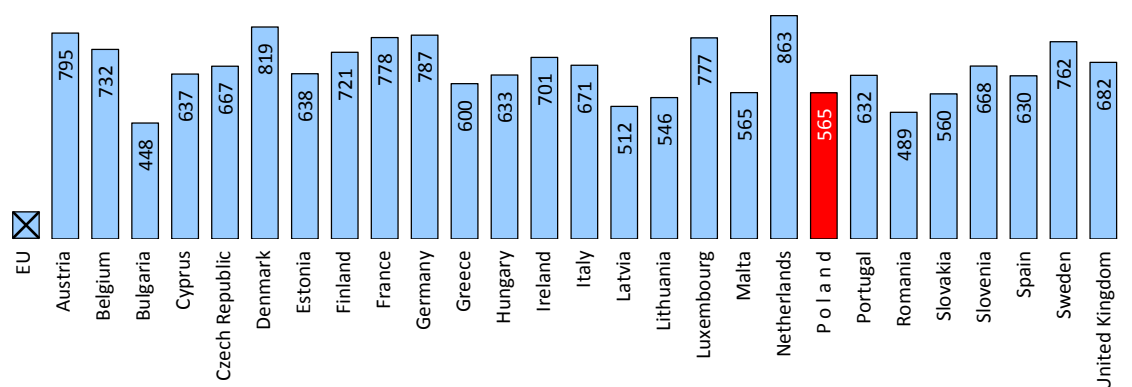
In the ranking Euro Health Consumer Index 2009 (EHCI) evaluating the quality of public health care we are far behind the Netherlands (863 points), Denmark (819), Austria (795), or neighbouring Germany (787). Among the surveyed European countries Poland is also outdistanced by Slovenia, Czech Republic and Estonia, which accessed the European Union the same year as Poland, in 2004. The weakest results evaluated by EHCI were obtained by Bulgaria (448 points) and Romania (489).

Graph 1.17. **Euro Health Consumer Index by separate disciplines in the systems of health care in Poland in 2009** (points)



Source: data of the Health Consumer Powerhouse.

Graph 1.18. **Euro Health Consumer Index in EU countries in 2009** (points)



Note: the amount of scored points per 1000 points possible to score.

Source: data of the Health Consumer Powerhouse.

lack of data

At-risk-of-constant-poverty

| | |
|-----------------------|---|
| Name of the indicator | At-risk-of-constant-poverty |
| Area | Social integration |
| Definition | <p>At-risk-of-constant-poverty rate is defined as the share of persons with an equivalised disposable income – after including social transfers in incomes – below the poverty level assumed as 60% of the median of equivalised disposable income in a given country in the current year and at least in two of three years preceding the survey (total).</p> <p>Data are presented for total population as well as by sex and age groups.</p> |
| Meaning | <p>The indicator illustrates the phenomenon of poverty and social exclusion, which are basic challenges for sustainable development. Combat with poverty and social exclusion should be based on economic growth and employment as well as efficient social protection. As a result of these actions, persons endangered by poverty and social exclusion shall have a dignified life and shall actively participate in social life.</p> |

Table 1.10. **At-risk-of-constant-poverty (%)**

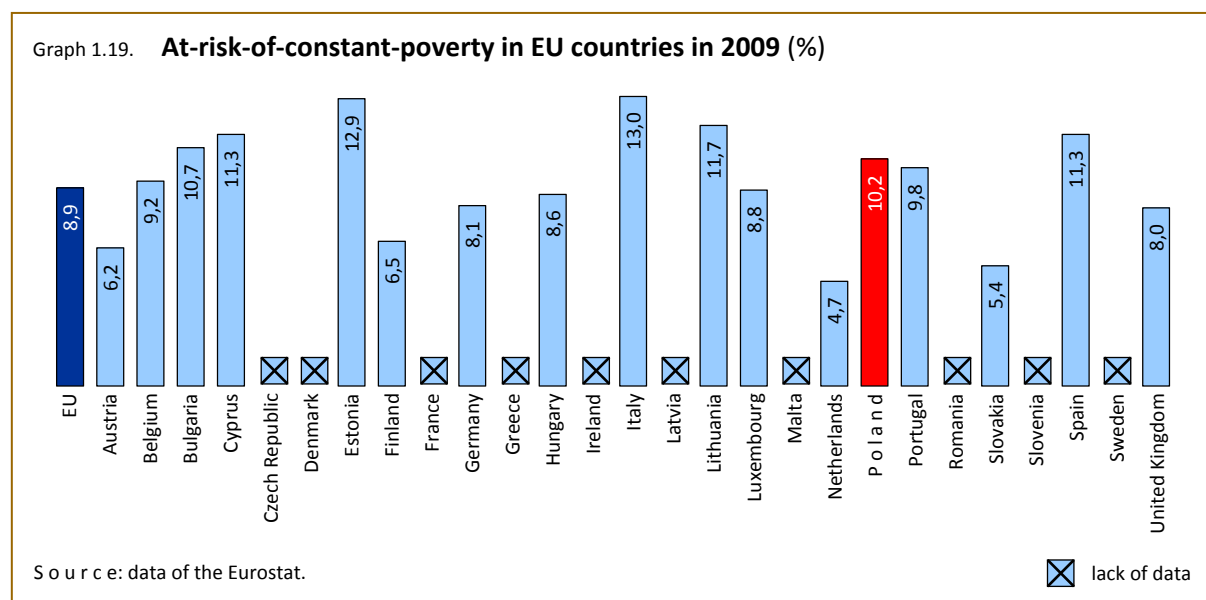
| Specification | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|-------------------------|------|------|------|------|------|------|
| Total | . | . | . | . | 10,4 | 10,2 |
| By gender: | | | | | | |
| males | . | . | . | . | 10,7 | 10,4 |
| females | . | . | . | . | 10,2 | 10,1 |
| By groups of age: | | | | | | |
| Below the age 18 | . | . | . | . | 15,8 | 15,8 |
| 18 – 24 | . | . | . | . | 13,0 | 13,6 |
| 25 – 49 | . | . | . | . | 10,6 | 8,5 |
| 50 – 64 | . | . | . | . | 8,1 | 10,1 |
| 65 years and more | . | . | . | . | 5,4 | 5,5 |

Source: data of the Eurostat.

In Poland in 2009 and in two from three previous years preceding the survey equivalised disposable income lower than the poverty level was obtained by over 10% of persons. Men were more often at-risk-of-constant poverty than women. The at-risk-of-constant-poverty rate was higher for men than for women by 0,3 percentage point. Taking into account age groups, the highest at-risk-of-constant-poverty was observed among children. It was by 5,6 percentage points higher than for the total society. The lowest at-risk-of-constant-poverty was observed among older people, aged 65 and more.

International comparisons

In 2009, among EU countries (for which data were available), the lowest, in other words the most favourable value of the at-risk-of-constant-poverty indicator was observed in Netherlands. The highest level of the at-risk-of-constant-poverty indicator was observed in Italy.



Social domain

At-risk-of-poverty or social exclusion

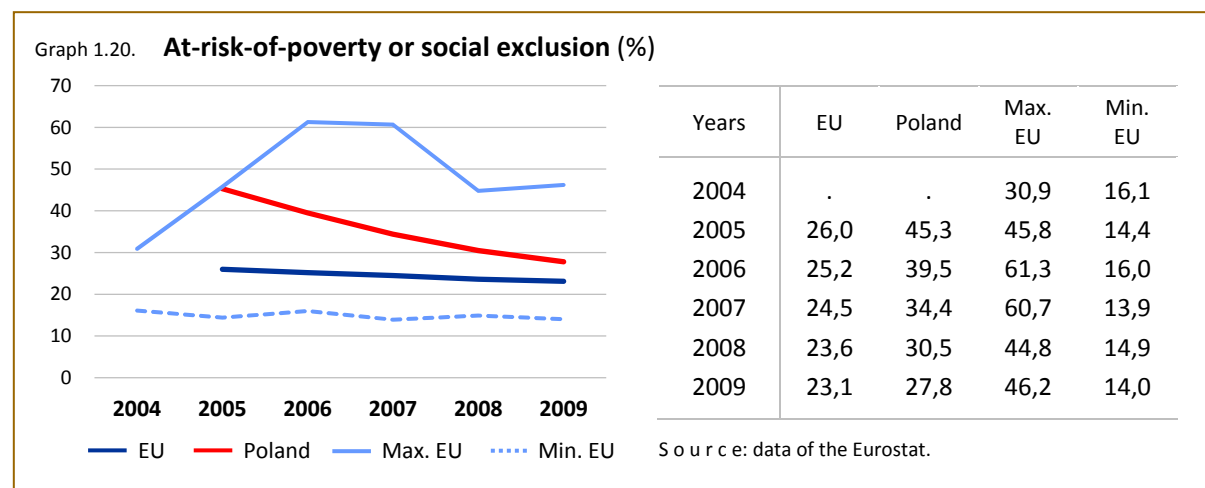
| | |
|-----------------------|---|
| Name of the indicator | At-risk-of-poverty or social exclusion |
| Area | Social integration |
| Definition | At-risk-of-poverty or social exclusion is a synthetic indicator and it is expressed as a percent of persons endangered by poverty and/or experiencing serious material deprivation and/or living in households characterized by a low labour intensity in total population. |
| Meaning | This indicator reflects the many-sidedness of the poverty and social exclusion phenomena, which is an important challenge of the sustainable development. It shows the lack of possibility of fulfilling, due to financial reasons, needs considered under European standards as basic, and the influence of low incomes and the absence on labour market on the quality of life. |

Table 1.11. **At-risk-of-poverty or social exclusion (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|
| . | 45,3 | 39,5 | 34,4 | 30,5 | 27,8 |

Source: data of the Eurostat.

Social exclusion because of poverty is one of the main problems faced by Poland, making a barrier in obtaining economic growth and high quality of life. Presenting time series of the at-risk-of-poverty or social exclusion indicator should enable to monitor and analyze the changes, and to evaluate the undertaken actions. The indicator is a summary indicator composed of three indicators i.e., at-risk-of-poverty after including social transfers in incomes of households, material deprivation and living in households characterized by a low labour intensity.



In the period 2005-2009 in Poland at-risk-of-poverty or social exclusion lowered by 17,5 percentage points, but still it was higher than in EU countries. Decreasing values of this indicator show the improvement of living conditions, limitation of poverty and social exclusion, nevertheless, Poland is in the group of countries characterized by higher values of this indicator.

Persons at-risk-of-poverty, are persons whose equivalised disposable income (after including social transfers in incomes) is lower than the poverty threshold set on the level of 60% of median equivalised disposable income. In the period 2005-2009 at risk-poverty rate after including social transfers in incomes of households in Poland decreased by 3,4 percentage points. During the last three years the at-risk-of-poverty rate for Poland was on a higher level comparing to the average level of EU countries (by 0,6 percentage point). In case of excluding social benefits (but including benefits connected with age) and family pensions from incomes of households the at-risk-of-poverty rate would increase in Poland to 23,6%, and in EU countries to 25,1% in 2009.

In Poland in the period 2005-2009 the poverty gap among elder persons was lower than in EU countries. Children were the most endangered by poverty group, at-risk-of-poverty of elder people – aged 65 and more – increased, and the at-risk-of-poverty rate in 2009 amounted to: 23,0% and 14,4% respectively (in 2005: 29,3% and 7,3% respectively). Poverty of parents means poverty for children. In Poland children were at a higher risk of poverty than children in the EU (by 3,1 percentage points in 2009) and the risk of poverty was also higher for total Polish society (by 5,9 percentage points in 2009).

The risk of poverty increases together with the number of children in households. In 2009 at-risk-of-poverty rate among households composed of two adult persons maintaining three or more children reached the value 37,8% (25,8% in EU), while in households composed of single parents maintaining children it reached the value 34,8% (34,0% in EU).

One of the measures of financial poverty is the material deprivation indicator. Persons experiencing material deprivation are those in households who cannot afford - due to financial reasons – at least 4 from 9 following needs: a week holiday away from home once a year; to eat meat, fish (vegetarian equivalent) every second day; to keep home adequately warm; to face unexpected expenses; to pay rent or utility bills, to have a colour TV; to have a car; to have a washing machine; to have a telephone (fixed line or mobile).

In 2009 almost 15,0% persons in Poland were not able to afford at least 4 from 9 needs, the so-called deprivation symptoms, almost twice more comparing to EU countries. Almost 60,4% persons could not afford to have a week holiday away from home once a year, 18,8% could not afford to eat meat or fish every second day. Every fifth inhabitant of Poland could not afford to keep home adequately warm and almost 52% of households declared no possibility to face unexpected expenses.

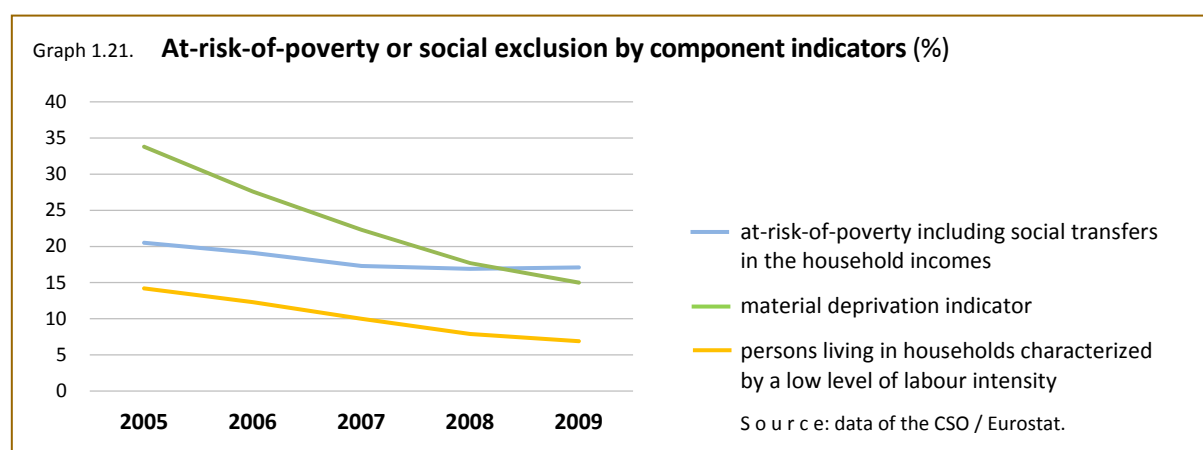


Table 1.12. **At-risk-of-poverty or social exclusion by component indicators (%)**

| Specification | 2005 | 2006 | 2007 | 2008 | 2009 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|------|------|------|------|------|--------|------|------|------|------|
| | UE | | | | | Poland | | | | |
| At-risk-of-poverty including social transfers in the household incomes | 16,4 | 16,5 | 16,7 | 16,4 | 16,3 | 20,5 | 19,1 | 17,3 | 16,9 | 17,1 |
| Material deprivation indicator..... | 11,0 | 9,8 | 9,1 | 8,4 | 8,1 | 33,8 | 27,6 | 22,3 | 17,7 | 15,0 |
| Persons living in households characterized by a low level of labour intensity | 10,0 | 10,5 | 9,7 | 9,0 | 9,0 | 14,2 | 12,3 | 10,0 | 7,9 | 6,9 |

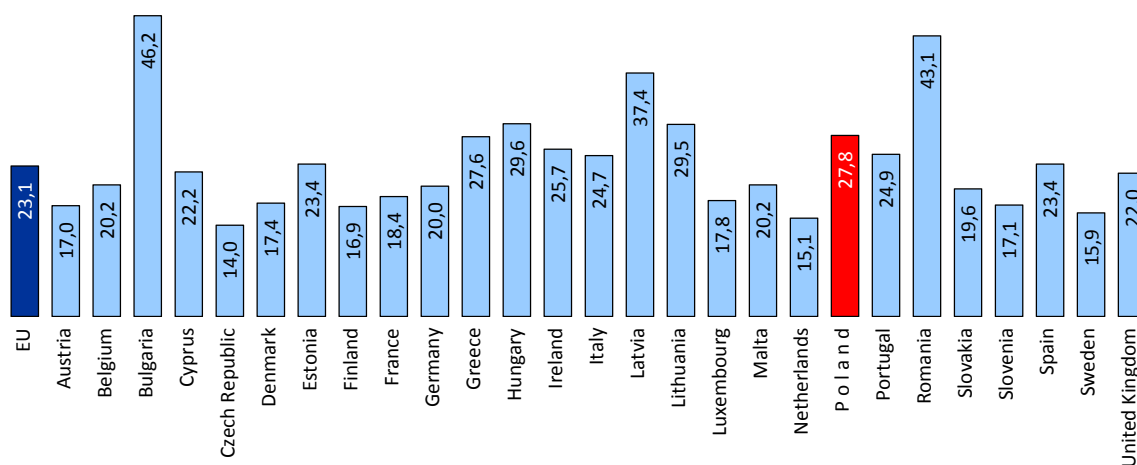
Source: data of the CSO / Eurostat.

One of the main causes of poverty is the lack of work. In the period 2005-2009 there was a decrease (by two times) of the number of persons living in households characterized by low labour intensity, i.e. persons aged 0-59 in households, in which adults worked less than 20% of their total labour potential during the last year.

International comparisons

In 2009 the value of the indicator in Poland was by 2-times higher than in the Czech Republic and in the Netherlands. Among EU countries most of persons at-risk-of-poverty or social exclusion were noted in Bulgaria, Romania and Latvia.

Graph 1.22. **At-risk-of-poverty or social exclusion in EU countries in 2009 (%)**



Source: data of the Eurostat.

Social domain

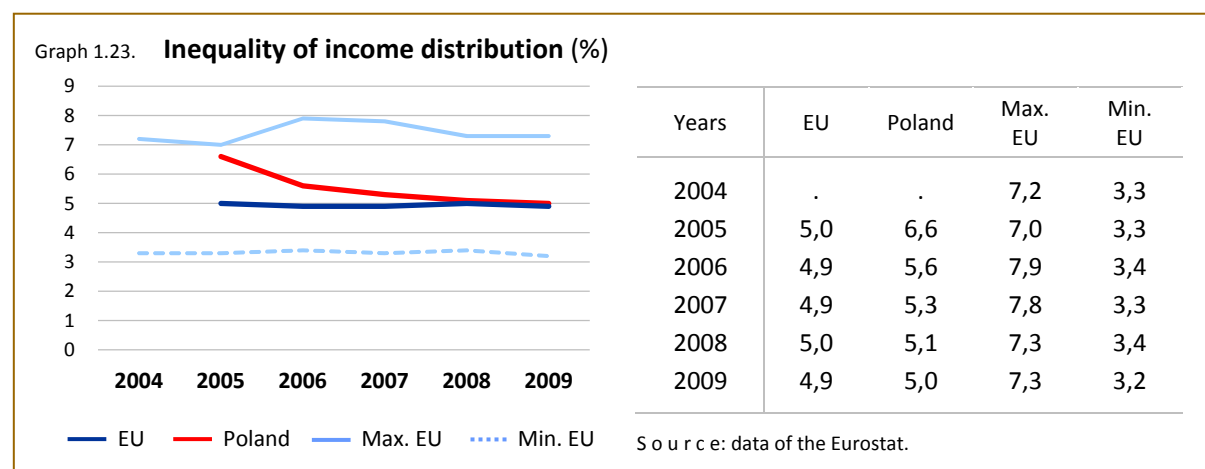
Inequality of income distribution

| | |
|-----------------------|---|
| Name of the indicator | Inequality of income distribution |
| Area | Social integration |
| Definition | The income quintile share ratio is calculated as the ratio of total income received by the 20% of the population with the highest income (top quintile) to that received by the 20% of the population with the lowest income (lowest quintile). |
| Meaning | Main aim of policy is fight with poverty and social exclusion. High level of social cohesion is the aim of sustainable development. Diminishing inequalities in incomes helps to diminish marginalization of the weakest social groups. |

Table 1.13. **Inequality of income distribution (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|
| . | 6,6 | 5,6 | 5,3 | 5,1 | 5,0 |

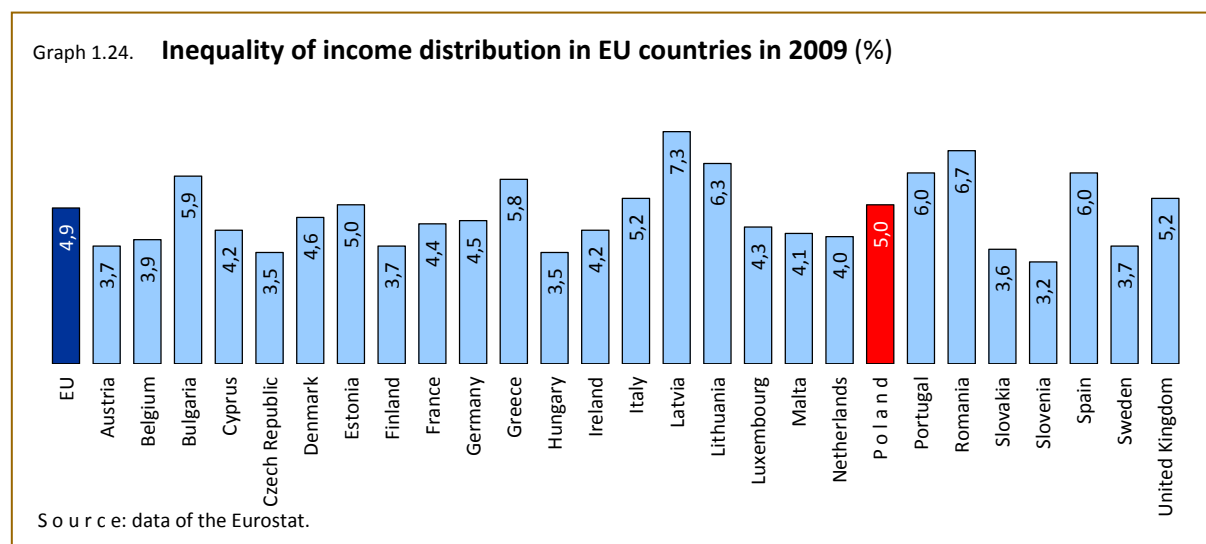
Average income of the household is accepted as one of the basic measures describing the wealth and the achieved standard of living. But it is an insufficient information for defining the level of differentiation of the society in regard to obtained incomes. The income quintile share ratio, which measures disproportions in incomes between the richest and the poorest classes of the society, is the most suitable one.



In years 2005-2009 a systematic decrease of the income quintile share ratio is observed in Poland, what indicates that disproportions between incomes received by the richest and by the poorest classes of the society have decreased. It is a positive tendency. In 2009 about 20% population with the highest income had at their disposal 5-times higher incomes than 20% of the population with the lowest income.

International comparisons

The income quintile share ratio in Poland is characterized by a slightly higher value than the value estimated for EU countries. Less noticeable than in Poland differences between the ratio of total income received by the 20% of the population with the highest income to that received by the 20% of the population with the lowest income were noted in most of the EU countries, of which the least noticeable occurred in Slovenia, Hungary and the Czech Republic. The highest income quintile share ratio was noted in Latvia, Romania and Lithuania.



Social domain

Debt of households

| | |
|-----------------------|---|
| Name of the indicator | Debt of households |
| Area | Social integration |
| Definition | <p>The indicator presents the relation of debts of households (credits, loans and other obligations of the households in banks) to their disposable incomes gross (quota remaining for disposition, which can be designated for consumption or savings).</p> <p>Disposable income gross in households sector is obtained as a result of correcting primary income gross by current taxes on income and wealth, contributions to compulsory social security, social assistance benefits other than social transfers in kind (social security benefits in cash, social assistance benefits in cash) as well as other current transfers.</p> |
| Meaning | Information on the level of the debt of households enables to monitor the susceptibility to risk and poverty endangerment, and in consequence social exclusion. Fight with poverty and social exclusion is in concordance with the idea of sustainable social development. |

Table 1.14. **Debt of households (%)**

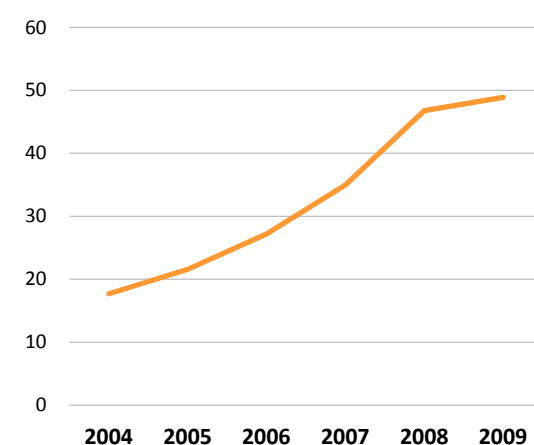
| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|
| 17,7 | 21,6 | 27,2 | 35,0 | 46,8 | 48,9 |

Source: own calculations on the basis of NBP / CSO data.

In years 2004-2009 the debt of households in relation to disposable income gross had been systematically increasing and in 2009 the indicator reached the magnitude 48,9%. In comparison with 2004 it increased by 31,2 percentage points.

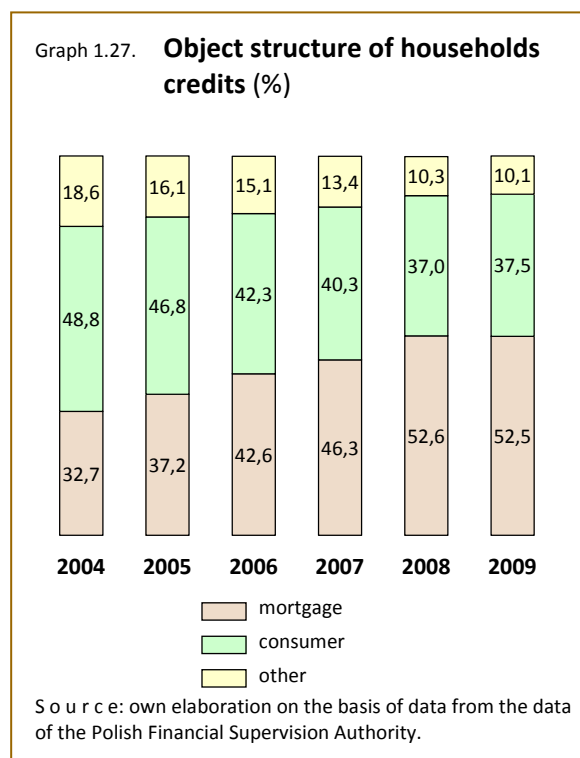
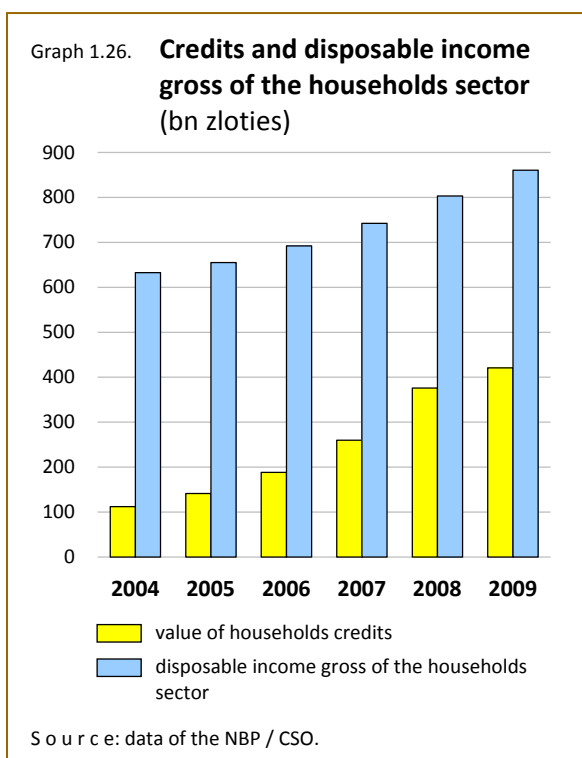
In the described period, the value of credits undertaken by households increased by 276%, while disposable income gross of households increased by 36%. The highest increase in the value of credits of households, compared to previous year, was observed in 2008 – 44,6%, and the lowest in 2009 – 12,0%.

Graph 1.25. **Debt of households (%)**



Source: own calculations on the basis of NBP / CSO data.

In years 2004-2009 the object structure of household credits had been changing. In 2004, consumer credits (48,8%), then mortgage (32,7%), and other credits (18,6%) had the highest share in total households credits. In subsequent years of the described period there was a decrease in the share of such credits as consumer credits (by 11,3 percentage points) and other credits (by 8,5 percentage points) on behalf of mortgage, which share increased by 19,8 percentage points in years 2004-2009.



According to data presented in the "Report on the situation of banks in 2009" of the Polish Financial Supervision Authority, in 2009 a strong increase of irregular claims [credit exposure, in the case of which a delay in payment exceeding 3 months (for retail credits 6 months) or/and the situation of the debtor indicating, that the risk of prompt repayment may occur] of the households sector was observed. The value of endangered credits in 2009 increased by 73,5% comparing to previous year. The quality of consumer credits had decreased in the highest degree, the value of endangered credits in this group increased by 86,0%. However, the value of endangered mortgage increased by 64,3%.

It turns out from the analysis of data, that the importance of credits for Polish households is growing, though the degree of their participation in the financial market is still small. Participation of households in the financial market through undertaking obligations increases the endangerment, that in situation when the necessity or willingness to undertake a loan occurs, households shall undertake irrational decisions and part of the households shall face problems connected with the repayment of their obligations.

Social domain

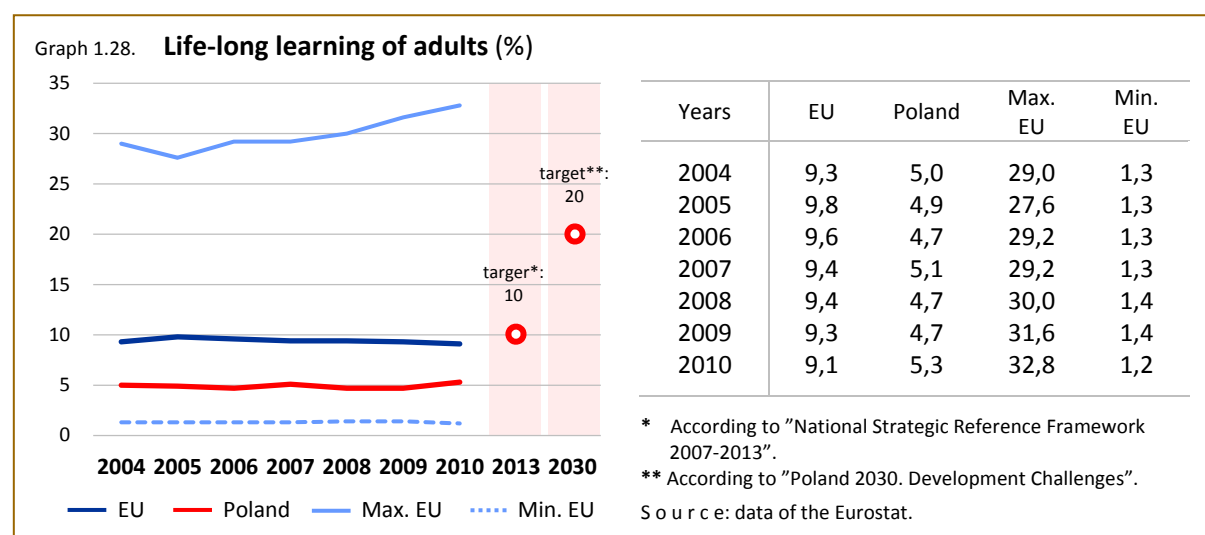
Life-long learning of adults

| | |
|-----------------------|--|
| Name of the indicator | Life-long learning of adults |
| Area | Education |
| Definition | <p>Life-long learning of adults is calculated as the percentage of the population aged 25-64 participating in education and training in total population of the same age group.</p> <p>Data are presented for total population and by sex.</p> <p>Indicator is calculated on the basis of results of Labour Force Survey.</p> |
| Meaning | <p>Education is of a crucial importance for social and economic transformations. Participation in life-long learning enables individuals to update and supplement knowledge, competences and skills, and at the same time it contributes to the strengthening of the position on the labour market. Participation of citizens in the process of life-long learning strengthens in them readiness to undertake challenges, innovative actions and the feeling of self esteem, supports their personal development and enables a free circulation on the modern labour market.</p> |

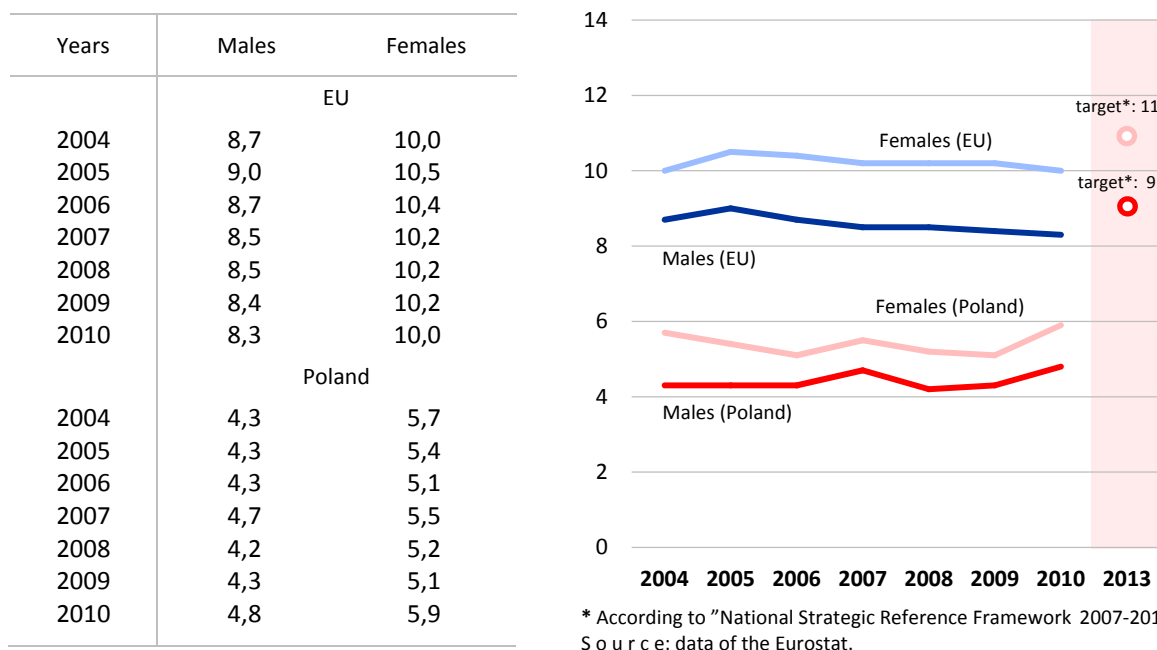
Table 1.15. **Life-long learning of adults (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------|------|------|------|------|------|------|
| 5,0 | 4,9 | 4,7 | 5,1 | 4,7 | 4,7 | 5,3 |

Participation in life-long learning is one of the basic conditions of success at work and development of knowledge-based economy. Life-long learning ensures an improvement of the situation of an individual on the labour market. Supplementing education, knowledge and capabilities diminishes the risk of loss of work and contributes to the increase of incomes from labour.



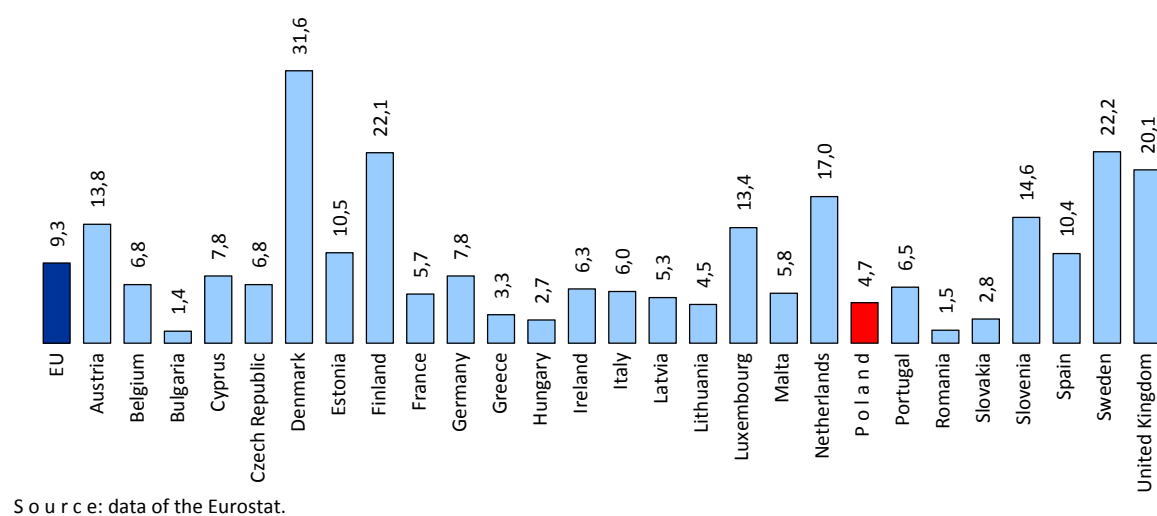
Graph 1.29. **Life-long learning of adults by gender (%)**



Participation of adults in life-long learning is not satisfactory in Poland. Despite a considerably high level of education of our society, we rarely participate in further education. In 2010 only every nineteenth adult citizen of Poland took part in further education and training (in the EU every eleventh citizen), the result was worse comparing to the level obtained in such countries as Denmark, Sweden or Finland. In Denmark every third adult citizen took part in different forms of education and training, and in Sweden and Finland every fourth one. Unfortunately, the last years are characterized by a unfavourable tendency for Poland. In regard to the above stated, improvement of the situation is a difficult challenge facing Poland.

International comparisons

Graph 1.30. **Life-long learning of adults in EU countries in 2009 (%)**



Social domain

Children aged 3-5 undergoing pre-primary education in rural areas

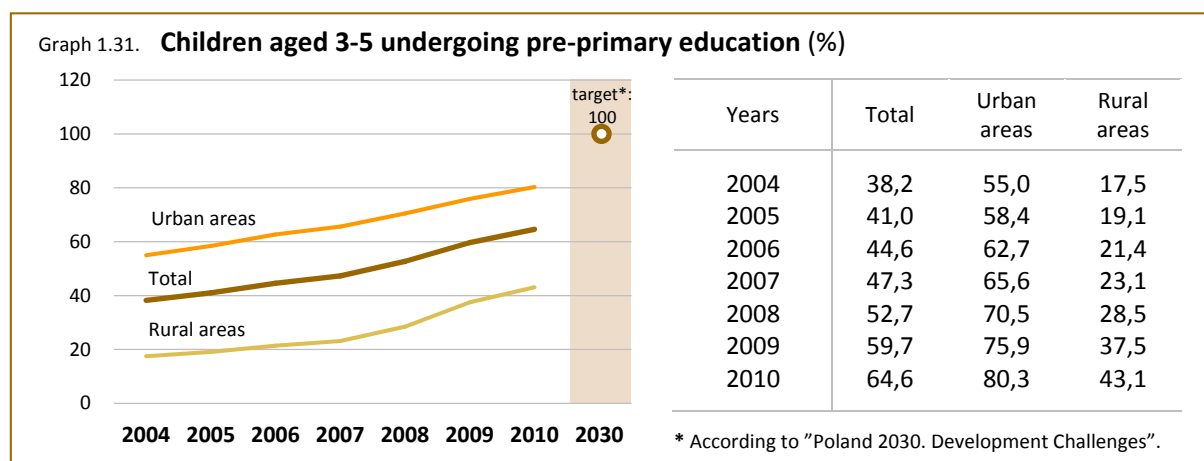
| | |
|-----------------------|---|
| Name of the indicator | Children aged 3-5 undergoing pre-primary education in rural areas |
| Area | Education |
| Definition | <p>The indicator is calculated as the percent of children aged 3-5 undergoing pre-primary education in establishments in rural areas in total number of children of the same age group in rural areas.</p> <p>Children in establishments of health care institutions are not included in calculations.</p> |
| Meaning | <p>The indicator is the most popular measure of the level of development of education. Pre-primary education is a good basis of further education, and a good start at school determines further educational fate of the child and success at school. It is the first stage for the increase of the level of education of population in rural areas and for equalizing the level of education of population in urban areas.</p> |

Table 1.16. **Children aged 3-5 undergoing pre-primary education in rural areas (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------|------|------|------|------|------|------|
| 17,5 | 19,1 | 21,4 | 23,1 | 28,5 | 37,5 | 43,1 |

Pre-primary education is the first stage of education in the educational system for children aged 3-6. Due to the introduction since 2004 of an obligatory 1 year pre-primary education for children at the age of 6 in nursery schools and pre-primary sections of primary schools, and since 2012 of a school obligation for children at the age of 6, the statistics for children aged 3-5 show the real image of the ordinary nature of pre-primary education. In the period 2004-2010 the number of children aged 3-5 undergoing pre-primary education in rural areas shows a growing tendency, similarly like the percent of these children in total number of children aged 3-5 in rural areas. In the 2010/2011 school year 203,0 thous. children aged 3-5 living in rural areas were included in pre-primary education, i.e. by 18,2% more than in the 2009/2010 school year. Over 43% of children aged 3-5 in rural areas participated in lessons, while in urban areas over 80% of children. These considerable disproportions in disseminating pre-primary education between rural areas and urban areas have been lasting since many years, nevertheless a decrease from year to year can be observed. According to the UNICEF report published in 2005 pre-primary education gives a good base to acquire capabilities on higher levels of education and considerably increases educational chances of children. Moreover, pre-primary education produces a positive influence on social development of the child and his interpersonal skills as far as the peer group is concerned ^a.

^a Educational Development Program on Rural Areas for 2008-2013, Ministry of National Education, Warsaw 2008.



For Poland the target value of the indicator "children aged 3-5 undergoing pre-primary education in rural areas" was defined in three strategic documents. In case of two of them, i.e. the *National Development Strategy 2007-2015* and the *National Strategic Reference Framework 2007-2013* the target value was: 35,0% and 30,0% respectively, and these values were reached. *Poland 2030. Development Challenges* is the third strategic document, in which the target value of the described indicator is 100,0% in 2030, but there may be some problems with realization of this goal.

Pre-primary education is carried out in nursery schools and pre-primary sections of primary schools, and since 2008/2009 also in pre-primary education groups and pre-primary points. The highest percent of children aged 3-5 undergoing pre-primary education in rural areas compared to total number of children aged 3-5 in rural areas was noted in nursery schools, and the lowest in pre-primary education groups.

Table 1.17. **Children aged 3-5 undergoing pre-primary education in rural areas by type of establishments (%)**

| Type of establishment | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|------|------|------|------|------|------|------|
| Nursery schools | 14,0 | 15,4 | 17,2 | 18,9 | 22,1 | 25,2 | 27,3 |
| Pre-primary education groups | x | x | x | x | 0,2 | 0,4 | 0,3 |
| Pre-primary points | x | x | x | x | 0,4 | 2,1 | 3,0 |
| Pre-primary sections of primary schools | 3,5 | 3,7 | 4,2 | 4,2 | 5,8 | 9,8 | 12,4 |

Table 1.18. **Children undergoing pre-primary education in rural areas by age (%)**

| Age | 2005 | 2006 | 2007 | 2008 | 2009 |
|---------|------|------|------|------|------|
| 3 | 10,4 | 11,9 | 13,4 | 17,1 | 22,0 |
| 4 | 17,1 | 19,2 | 21,8 | 26,8 | 34,4 |
| 5 | 29,1 | 32,6 | 33,8 | 41,8 | 56,5 |

Percent of children undergoing pre-primary education in rural areas is differentiated depending on the age of children. The highest level of this indicator was observed in the group of children at the age 5, and the lowest in the group of children at the age 3.

Social domain

Public expenditure on education in relation to GDP

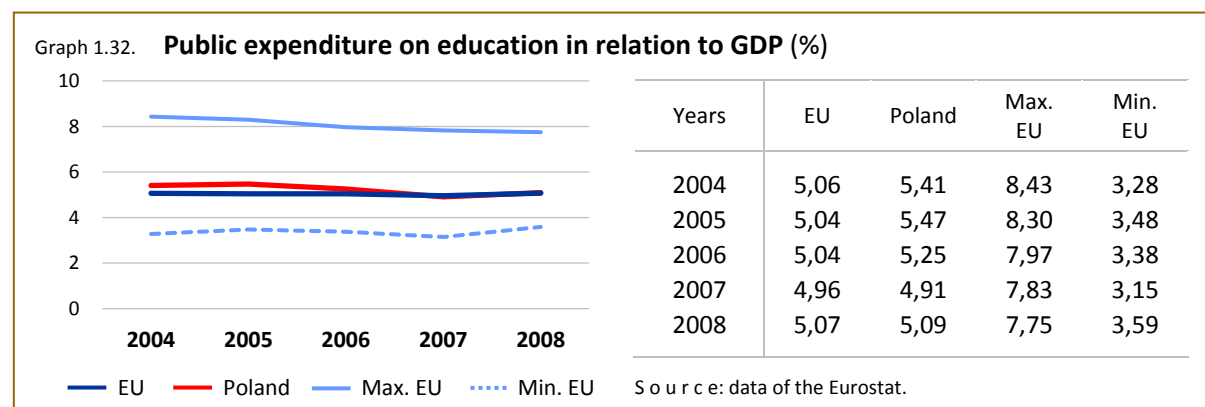
| | |
|-----------------------|---|
| Name of the indicator | Public expenditure on education in relation to GDP |
| Area | Education |
| Definition | Total public expenditure on education expressed as a percent of GDP. Public expenditure on education include financial means incurred by the state in order to fulfil public needs in the field of education, educational care and tertiary education. |
| Meaning | Education is a determinant of the standard of living and it is perceived as a condition enabling raising the quality of life. Education brings greater social cohesion and social welfare. It is a condition for promoting changes in behaviour and ensuring competences indispensable for reaching sustainable development, and effective financing is an important element of management, particularly when funds are limited. Expenditure on education is an investment in human resources, which may contribute to the increase of labour productivity, economic growth and decrease in social inequalities. |

Table 1.19. **Public expenditure on education in relation to GDP (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 |
|------|------|------|------|------|
| 5,41 | 5,47 | 5,25 | 4,91 | 5,09 |

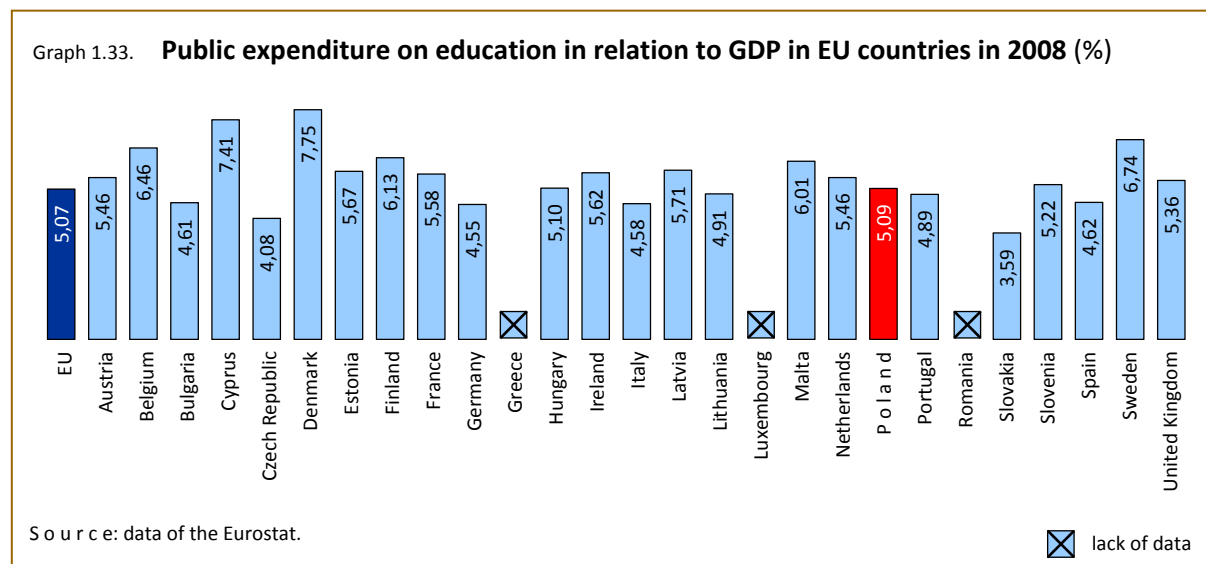
Source: data of the Eurostat.

Education is of great importance not only for the individual, but for the society as well. Its role for the individual results in future financial well-being and holding the position on the labour market. In the period 2004-2008, expenditure on education in relation to GDP was on a comparable level to the average level in EU countries. Public expenditure on education, including tertiary education, increased in the period 2004-2009, and the value of gross domestic product increased as well.



International comparisons

In years 2004-2008 the highest value of this indicator among EU countries was noted in Denmark, and the lowest – taking into account years 2004-2005 – in Romania, 2006-2007 in Luxembourg, and in 2008 in Slovakia.



Social domain

People living in jobless households

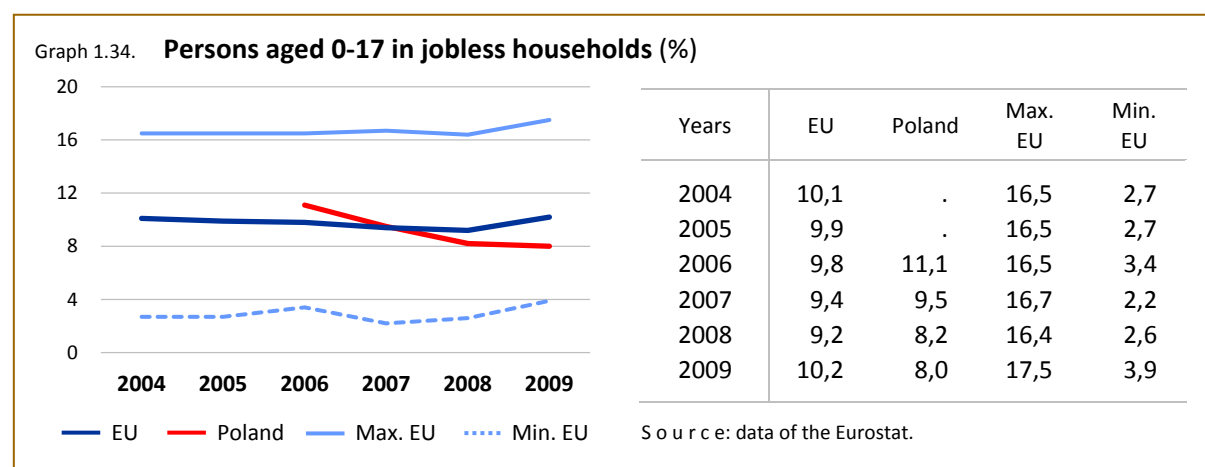
| | |
|-----------------------|--|
| Name of the indicator | People living in jobless households |
| Area | Access to labour market |
| Definition | <p>The indicator is calculated as the share of the number of persons in the respective age groups living in households where none of the members are working in total population in households in the respective age groups.</p> <p>Data are presented for age groups: 0-17 and 18-59.</p> <p>Indicator is calculated on the basis of the Labour Force Survey.</p> |
| Meaning | Growth of employment is a basic factor of decreasing endangerment connected with social non-cohesion. Position on the labour market fundamentally decides of the social status, of which of the material situation of the individual and the family. All unemployed persons and their families are endangered by poverty. |

Table 1.20. **People living in jobless households (%)**

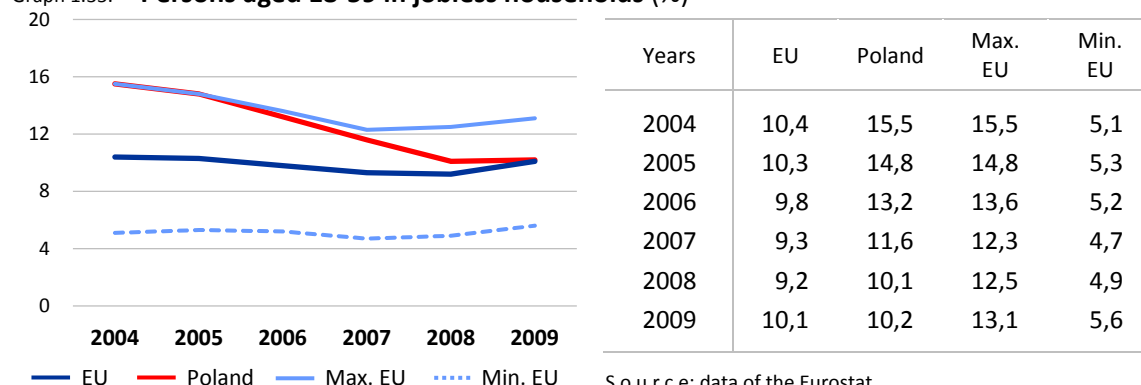
| Groups of age | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---------------|------|------|------|------|------|------|------|
| 0 – 17 | . | . | 11,1 | 9,5 | 8,2 | 8,0 | . |
| 18 – 59 | 15,5 | 14,8 | 13,2 | 11,6 | 10,1 | 10,2 | 10,3 |

Source: data of the Eurostat / CSO.

The most frequent cause of poverty is the lack of work. Growing up in a household, where none of the members are working has a great influence on present and future living conditions of children as well as their physical and mental capabilities. In 2009 in Poland the percent of children aged 0-17 living in households where none of the members were working amounted to 8,0% and diminished by 3,1 percentage points comparing to data from 2006. In 2008 and in 2009 the obtained values were more profitable comparing to the EU average.



Graph 1.35. **Persons aged 18-59 in jobless households (%)**



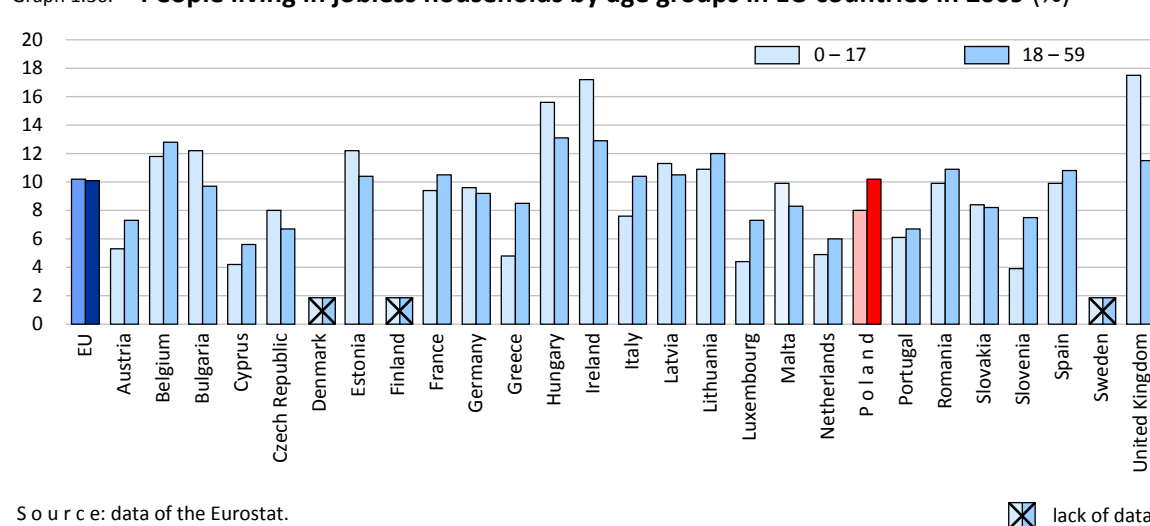
Source: data of the Eurostat.

In the period 2004-2009 a considerable decrease of the percent of persons aged 18-59 living in jobless households was observed (by 5,3 percentage points). Despite positive tendencies, value of the indicator is still higher than the EU average.

International comparisons

In 2009 the percent of children in jobless households in EU countries varied considerably. The lowest level of this indicator was noted in Slovenia (3,9%), Cyprus (4,2%) and in Luxembourg (4,4%), while the highest was observed in United Kingdom (17,5%), Ireland (17,2%) and Hungary (15,6%). The most profitable level of this indicator was noted in Cyprus (5,6%) and in the Netherlands (6%), while the most unprofitable level was noted in Hungary (13,1%), Ireland (12,9%) and Belgium (12,8%).

Graph 1.36. **People living in jobless households by age groups in EU countries in 2009 (%)**



Source: data of the Eurostat.

⊗ lack of data

Social domain

Long-term unemployment rate

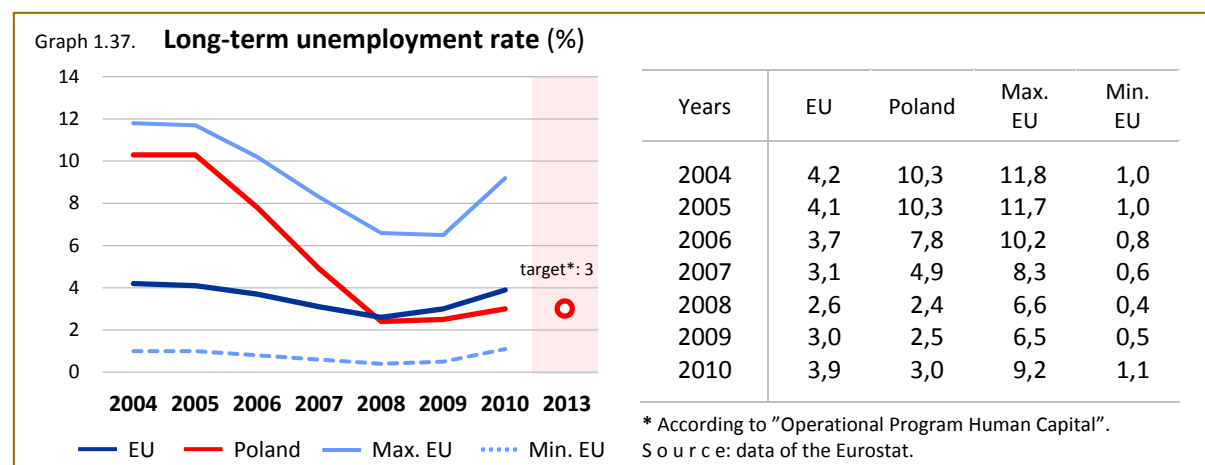
| | |
|-----------------------|--|
| Name of the indicator | Long-term unemployment rate |
| Area | Access to labour market |
| Definition | <p>Long-term unemployment rate is calculated as the share of unemployed persons seeking work 12 months and more in the economically active population.</p> <p>Data are presented for total population and by sex.</p> <p>Indicator is calculated on the basis of the Labour Force Survey.</p> |
| Meaning | <p>Long-term unemployed persons, as a result of long-lasting exclusion from professional life, lose their motivation to undertake actions aiming at improvement of their situation, and as a result become professionally inactive. Long-lasting exclusion from labour market leads to social exclusion. Chances for returning to work by persistently unemployed persons are very small, and therefore poverty of these persons and their families deepens.</p> |

Table 1.21. **Long-term unemployment rate (%)**

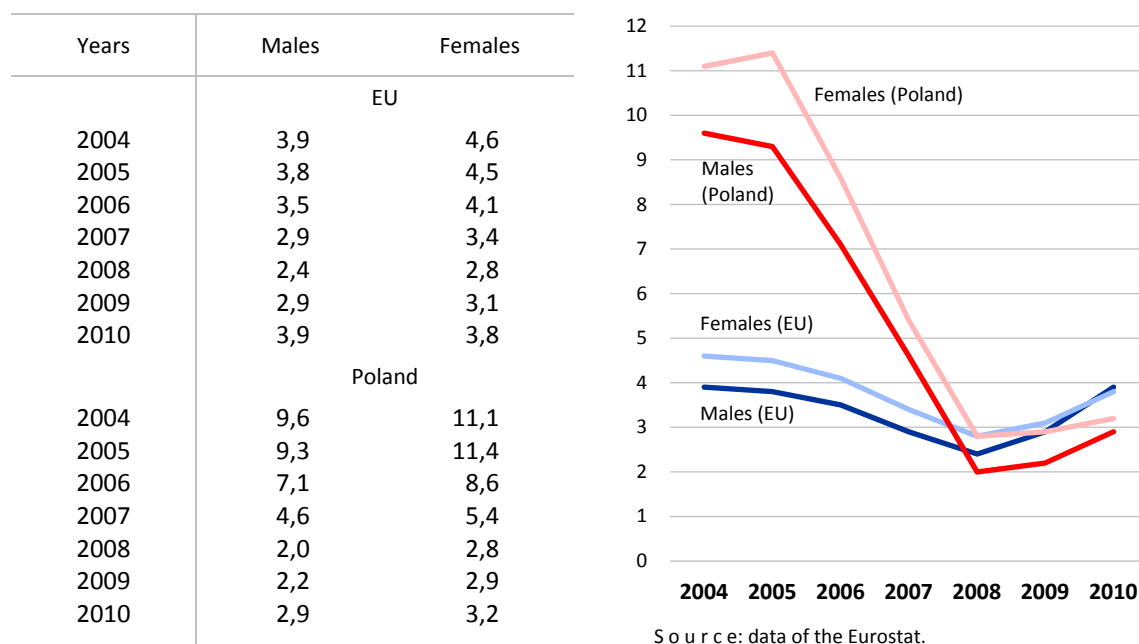
| Gender | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---------------|------|------|------|------|------|------|------|
| Total | 10,3 | 10,3 | 7,8 | 4,9 | 2,4 | 2,5 | 3,0 |
| Males | 9,6 | 9,3 | 7,1 | 4,6 | 2,0 | 2,2 | 2,9 |
| Females | 11,1 | 11,4 | 8,6 | 5,4 | 2,8 | 2,9 | 3,2 |

Note. Starting from data for 2008, time spent for seeking work is counted from the moment of termination of the break in seeking work if the break has occurred and if it lasted at least 4 weeks. Data are not fully comparable with previous years.

In years 2004-2005 the share of unemployed persons seeking work 12 months and more in the economically active population remained on an unchanged level – 10,3%. In subsequent years 2006-2008 a systematic decrease of long-term unemployment rate was observed. In 2008 the share of unemployed persons seeking work 12 months and more in the economically active population amounted to 2,4% and in relation to 2004 and 2005 decreased by 7,9 percentage points respectively. Since 2009 a decrease of long-term unemployment rate due to slow pace of economic growth has been noted.



Graph 1.38. **Long-term unemployment rate by gender (%)**

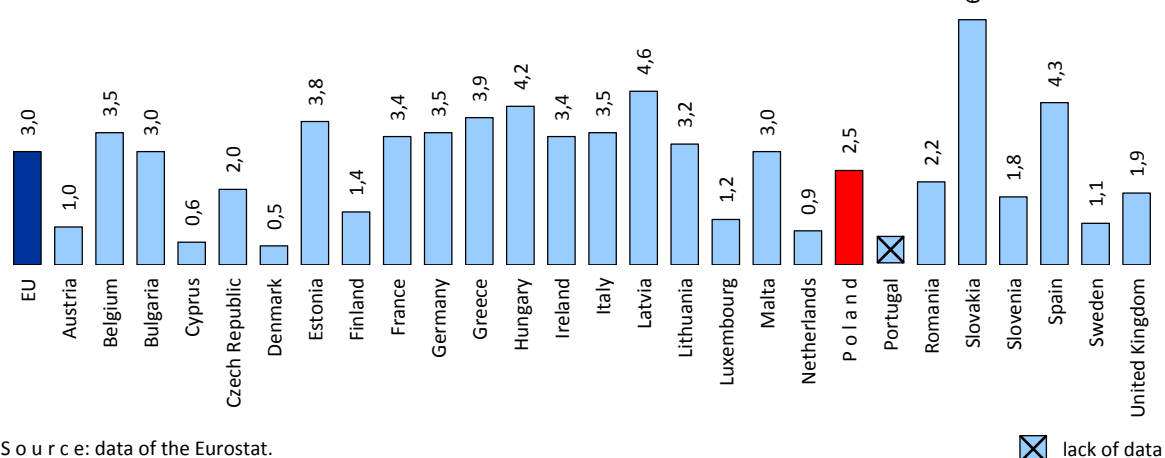


Women were those, who were more affected by long-lasting search for work than men. In 2010, long-term unemployment rate for women amounted to 3,2% and was by 0,2 percentage point higher than for total population.

International comparisons

In 2010, the share of unemployed persons seeking work 12 months and more in economically active population in Poland was lower than the EU average by 0,9 percentage point. Among member countries of the EU, a definitely more profitable (comparing to Poland) long-term unemployment rate was observed in Denmark, Cyprus, the Netherlands, Austria and Sweden. The highest percent of long-term unemployed persons seeking work 12 months and more in the economically active population was noted in Slovakia, Latvia, Spain and Hungary.

Graph 1.39. **Long-term unemployment rate in EU countries in 2009 (%)**



Social domain

Unemployment rate

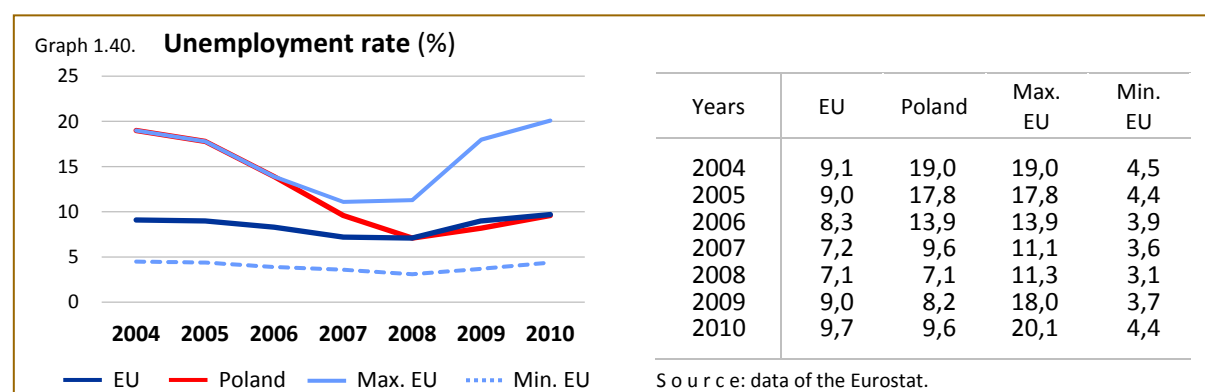
| | |
|-----------------------|--|
| Name of the indicator | Unemployment rate |
| Area | Access to labour market |
| Definition | <p>Unemployment rate is calculated as the share of unemployed persons in a given category in the economically active population in a given category (age is the discriminant).</p> <p>Unemployment rate is presented for total and by age groups (15-24; 25-74).</p> <p>Indicator is calculated on the basis of the Labour Force Survey.</p> |
| Meaning | <p>Low unemployment rate is one of the conditions of dynamic economic development in a longer perspective. Unemployment influences the standard of living, increases the risk of poverty and is one of the causes of social exclusion. Employment policy is directed towards full employment promotion and the increase of employment rate among groups mostly endangered by unemployment. The aim of employment policy is the improvement of the adaptation of employees and employers, effectiveness of labour market policies and processes of labour intermediation and professional consultancy. The aim of institutional solutions within the tax system and the system of social security is to prevent from poverty and to have an influence on mechanisms encouraging to undertake economic activity.</p> |

Table 1.22. **Unemployment rate (%)**

| Groups of age | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---------------|------|------|------|------|------|------|------|
| Total | 19,0 | 17,8 | 13,9 | 9,6 | 7,1 | 8,2 | 9,6 |
| 15 – 24 | 39,6 | 36,9 | 29,8 | 21,7 | 17,3 | 20,6 | 23,7 |
| 25 – 74 | 16,1 | 15,1 | 11,8 | 8,1 | 5,9 | 6,8 | 8,1 |

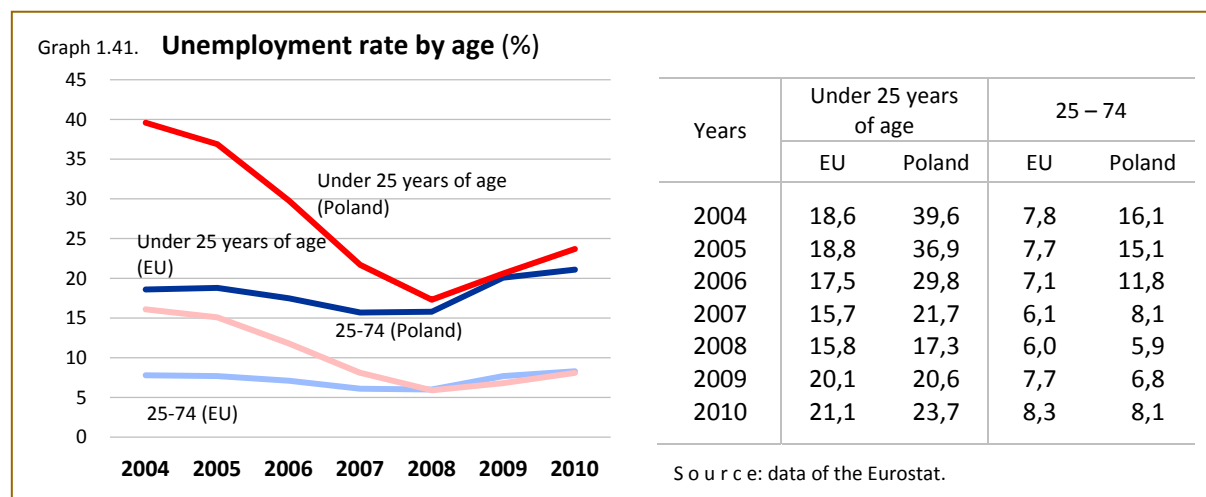
Source: data of the CSO / Eurostat.

In the period 2004-2008 a systematic decrease of the unemployment rate was observed in the Polish economy. In the described period this decrease amounted to 11,9 percentage points.



Starting from 2009 due to a weaker pace of economic growth this tendency reversed, causing the rise of unemployment rate in 2010 by 1,4 percentage points comparing to previous year. In 2010, unemployment rate in Poland was lower by 0,1 percentage point compared to the EU average.

Situation on the labour market is unprofitable for young people aged 15-24. Labour intensity for this age group is by twice higher than the total unemployment rate. In 2010, unemployment rate of young persons amounted to 23,7% and increased by 3,1 percentage points comparing to 2009.

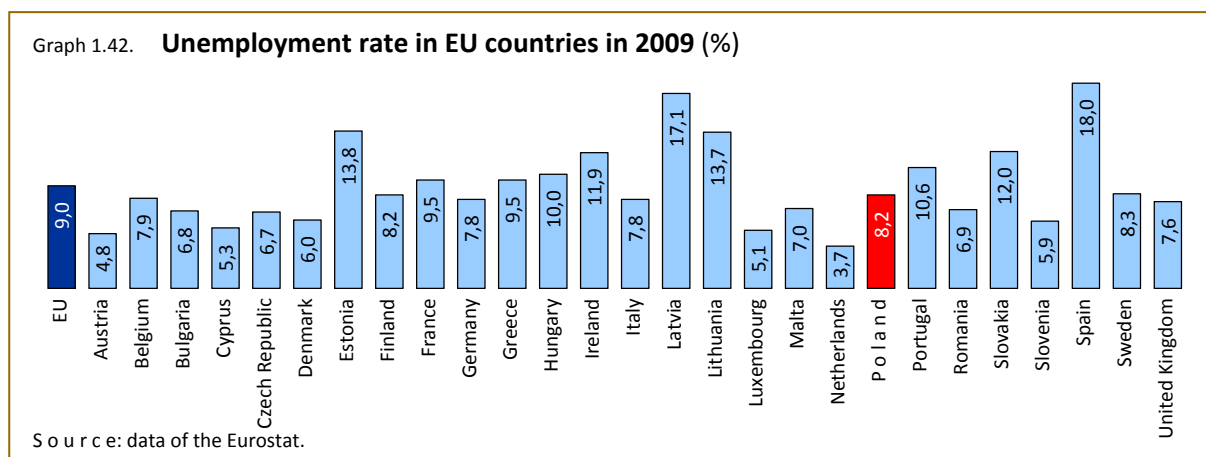


International comparisons

In 2009 the lowest unemployment rate among EU countries was observed in the Netherlands (3,7%), Austria (4,8%), Luxembourg (5,1%) and the highest in Spain (18,0%), Latvia (17,1%), Estonia (13,8%) and Lithuania (13,7%).

Unemployment rate of persons aged not more than 25 in the EU amounted to 20,1% and increased by 4,3 percentage points comparing to 2008. The highest unemployment rate of young persons was noted in Spain and Latvia – more than 30% of professionally active young persons were jobless there. The lowest unemployment rate among persons aged 15-24 was observed in the Netherlands (7,7%), Austria (10,0%) and in Denmark and Germany (11,2%).

In 2009, in comparison with previous year, among EU countries a decrease of the unemployment rate of persons aged not more than 25 was observed only in Luxembourg - by 0,8 percentage point. In other EU countries an increase of the described indicator was noted from 20,5 percentage points in Latvia to 0,6 percentage point in Germany.



Social domain

Employment rate of disabled persons

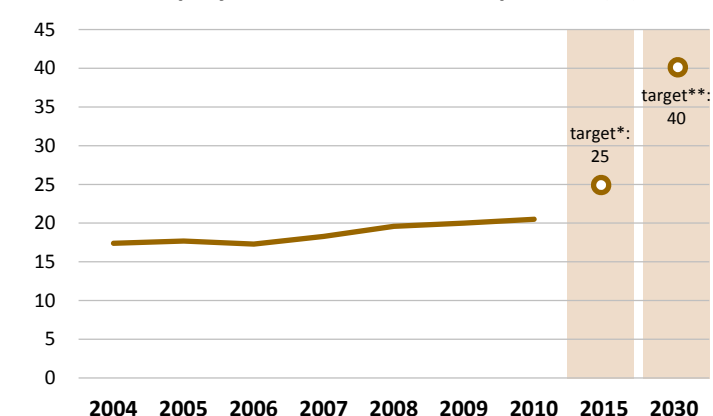
| | |
|-----------------------|--|
| Name of the indicator | Employment rate of disabled persons |
| Area | Access to labour market |
| Definition | The indicator is calculated as the share of employed disabled persons aged 16-64 in total disabled persons of the same age group. Indicator is calculated on the basis of the Labour Force Survey. |
| Meaning | Creation of conditions for an increased professional activity of disabled persons is the basis for social integration and improvement of living conditions. An important issue is facilitating the disabled persons the access to labour market through undertaking actions aiming at obtaining qualifications and improving mechanisms encouraging to employ these persons. |

Table 1.23. **Employment rate of disabled persons (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------|------|------|------|------|------|------|
| 17,4 | 17,7 | 17,3 | 18,3 | 19,6 | 20,0 | 20,5 |

Disabled persons are persons, who are granted a medical certificate on the degree of disability or inability to work. In Poland disabled persons are characterized by a low employment rate. In the period from 2004 to 2006 the level of professional engagement of disabled persons remained on a similar level. A visible increase of the employment rate of disabled persons occurred in years 2007-2010 (by 2,2 percentage

Graph 1.43. **Employment rate of disabled persons (%)**



* By "National Development Strategy 2007-2015".

** By "Poland 2030. Development Challenges".

points). Target value of this indicator for Poland to be obtained in 2015 is 25% ("National Development Strategy 2007-2015"), and in 2030 an "increase of the employment rate is assumed (...) in case of disabled persons to the level equal to 40%" ("Poland 2030. Development Challenges").

Social domain

Gender pay gap

| | |
|-----------------------|---|
| Name of the indicator | Gender pay gap |
| Area | Access to labour market |
| Definition | Gender pay gap indicator is the difference between average gross wages and salaries per hour of men and women expressed as a percent of average gross wages and salaries per hour of men. |
| Meaning | The indicator, which relates to gender equality and equal chances, describes the differences in chances between women and men on the labour market. Equality of chances is of great importance for sustainable development and for the raise of the quality of social life. |

Table 1.24. **Gender pay gap (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|
| . | . | 7,5 | 7,5 | 9,8 | 9,8 |

Source: data of the Eurostat.

Situation of men and women in the area of professional work and taking into account fair remuneration is not equal. Difference between average gross wages and salaries per hour of men and women expressed as a percentage of average gross wages and salaries per hour of men in Poland in years 2006-2009 were one of the lower ones among EU countries, and in the last two years it was lower by twice than the average for EU countries. In October 2008, average gross wages and salaries per hour of women were by 13,5% lower than average gross wages and salaries per hour of men. Average gross wages and salaries of women were also lower than average gross wages and salaries of men - by 18,7%. Similar relations were observed in October 2006 (by 12,1% and by 17,8% respectively). The highest differences of average gross wages and salaries per hour of women in relation to men in October 2008 were noted for women with basic vocational education (lower by 32,2%), tertiary education (with the title of engineer, bachelor's degree, chartered economist or equivalent – by 31,7%) and primary and incomplete primary education (by 28,9%).

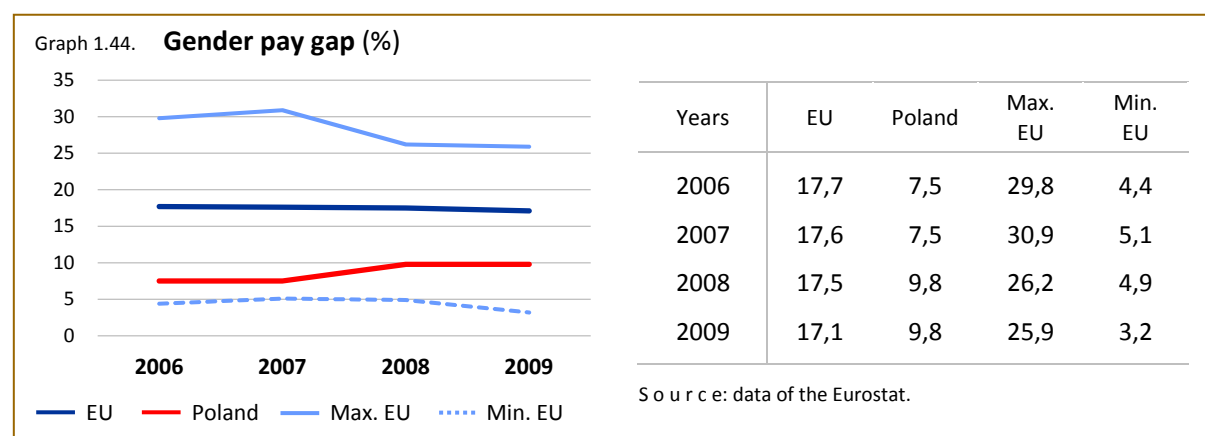
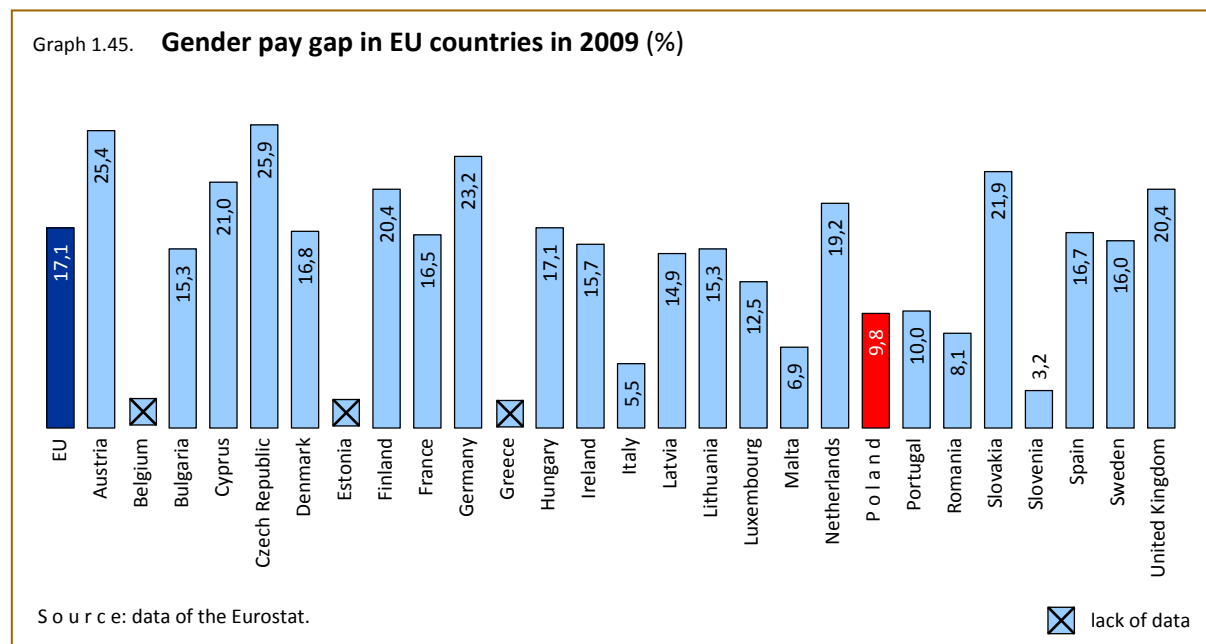


Table 1.25. **Average gross wages and salaries per hour of women in relation to average gross wages and salaries per hour of men by occupational groups in October (%)**

| Occupational groups | 2004 | 2006 | 2008 |
|--|-------|------|------|
| T o t a l | 89,6 | 87,9 | 86,5 |
| Public government representatives, senior officials and managers | 70,9 | 69,6 | 70,5 |
| Professionals | 90,2 | 84,0 | 83,2 |
| Technicians and associate professionals | 75,6 | 80,9 | 81,0 |
| Clerks | 101,3 | 97,5 | 97,3 |
| Service workers and shop and market sales workers | 83,9 | 84,6 | 84,7 |
| Skilled agricultural and fishery workers | 91,9 | 88,0 | 84,8 |
| Craft and related trades workers | 66,3 | 61,3 | 61,4 |
| Plant and machine operators and assemblers | 81,0 | 79,8 | 77,7 |
| Elementary occupations | 87,8 | 86,4 | 78,6 |

International comparisons

Difference between average gross wages and salaries per hour of men and women expressed as a percentage of average gross wages and salaries per hour of men in Poland in years 2008-2009 was on the level similar to Portugal. In 2008 this indicator was higher by twice comparing to Italy, and in 2009 by over three times comparing to Slovenia. In years 2006-2008 the lowest differentiation of remunerations taking into account gender was noted in Italy, and in 2009 in Slovenia.



Social domain

Rates of detectability of delinquents in crimes

| | |
|-----------------------|--|
| Name of the indicator | Rates of detectability of delinquents in crimes |
| Area | Public safety |
| Definition | The indicator is calculated as the relation of the number of detected crimes in a given year (including those detected after resumption following discontinuance) to the total number of crimes ascertained in a given year, plus the number of crimes recorded in commenced proceedings and discontinued in previous years due to undetected delinquents. |
| Meaning | The quality of life is also shaped by the feeling of internal and external safety. Integrated community requires mainly the feeling of local solidarity, and particularly ensuring safety and the feeling of safety. |

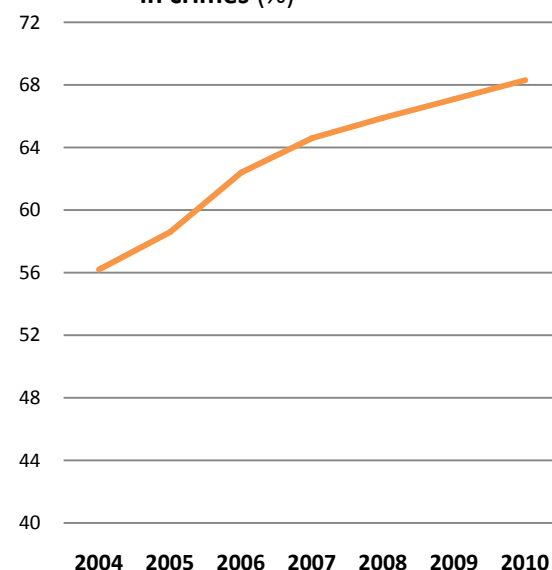
Table 1.26. **Rates of detectability of delinquents in crimes (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------|------|------|------|------|------|------|
| 56,2 | 58,6 | 62,4 | 64,6 | 65,9 | 67,1 | 68,3 |

Source: data of the National Police Headquarters.

In years 2004-2010 a fall in the number of ascertained crimes in completed preparatory proceedings by 310 thous. was observed. The most recent data show, that a positive trend in the field of combat with delinquency and the effectiveness of chasing delinquents are maintained. Analyzing the last 7 years, an increase of the rate of detectability of delinquents in crimes was observed from 56,2% in 2004 to 68,3% in 2010 (by 12,1 percentage points). The National Development Strategy 2007-2015 assumes 65% as a target value of this indicator for Poland to be reached in 2015. The assumed level of the indicator has already been reached in 2008.

Graph 1.46. **Rates of detectability of delinquents in crimes (%)**



Source: data of the National Police Headquarters.

Social domain

Road traffic accidents fatalities

| | |
|-----------------------|--|
| Name of the indicator | Road traffic accidents fatalities per 1 million population |
| Area | Public safety |
| Definition | <p>The indicator is calculated as the relation of the number of road traffic accidents fatalities to the number of population.</p> <p>It is presented per 1 million population.</p> <p>Road traffic accidents fatalities include drivers and passengers of motor vehicles, cyclists and pedestrians. A road traffic accident fatality is understood as a person who died as a result of injuries at the scene of the accident or within the course of 30 days.</p> |
| Meaning | The indicator illustrates the level of safety of road traffic. It shows several factors influencing the road traffic accident fatalities – the quality of road infrastructure, safety standards of vehicles, drivers behaviour, obligatory traffic regulations and their enforcement. |

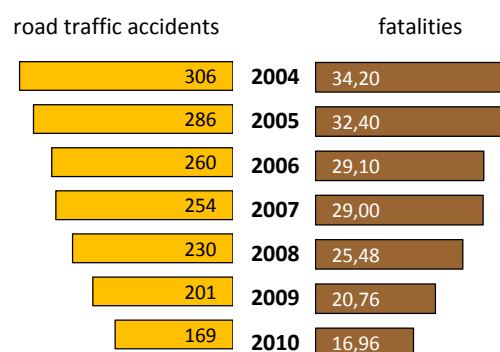
Table 1.27. **Road traffic accidents fatalities per 1 million population**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------|------|------|------|------|------|------|
| 150 | 143 | 137 | 146 | 143 | 120 | 102 |

S o u r c e: data of the National Police Headquarters / CSO.

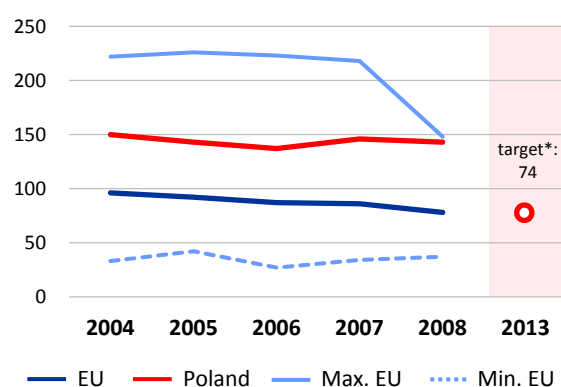
In Poland the percent of fatalities on roads is one of the highest in the EU. Only Lithuania has a worse result in these disgraceful statistics. Each year the number of fatalities on Polish roads is lower; comparing to 2004, the number of fatalities has fallen by 32%. In 2010, due to road traffic accidents almost 49 thous. persons were injured, and almost 4 thous. persons died. The value of road traffic accidents fatalities indicator per 1 million population had been falling from 2004.

Graph 1.47. **Road traffic accidents and fatalities per 100 thous. vehicles**



S o u r c e: data of the National Police Headquarters / CSO.

Graph 1.48. **Road traffic accidents fatalities per 1 million population**



| Years | EU | Poland | Max. EU | Min. EU |
|-------|----|--------|---------|---------|
| 2004 | 96 | 150 | 222 | 33 |
| 2005 | 92 | 143 | 226 | 42 |
| 2006 | 87 | 137 | 223 | 27 |
| 2007 | 86 | 146 | 218 | 34 |
| 2008 | 78 | 143 | 148 | 37 |

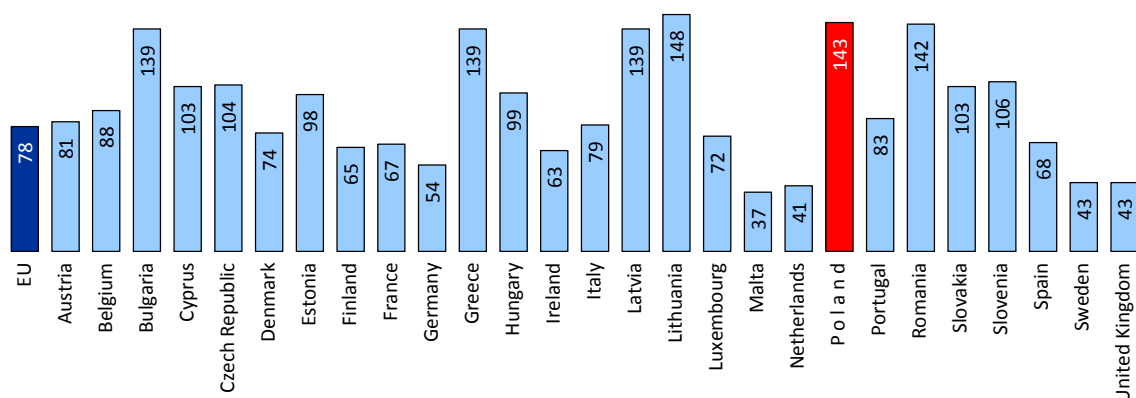
* By "National Strategic Reference Framework 2007-2013".
Source: data of the Eurostat.

International comparisons

In years 2004-2008 in EU the average number of road traffic accidents fatalities per 1 million population decreased by almost 19% (from 96 in 2004 to 78 in 2008).

In 2008 the number of road traffic accidents fatalities 1 million population in Poland exceeded almost by twice the average noted for EU countries. The most safe among EU countries are Malta, the Netherlands, United Kingdom and Sweden.

Graph 1.49. **Road accidents fatalities per 1 million population in EU countries in 2008**



Source: data of the Eurostat.

Social domain

Number of vehicles

| | |
|-----------------------|---|
| Name of the indicator | Number of vehicles per 1000 population |
| Area | Sustainable consumption patterns |
| Definition | <p>The indicator is defined as the number of passenger cars per 1000 population.</p> <p>A passenger car is a road motor vehicle designed to transport no more than 9 persons including the driver and baggage.</p> |
| Meaning | Shaping the sustainable model of transport in a situation of rapid development of mass motorization in Poland accompanied by the rapid decrease of the share of railway and public transport in passenger and freight transport is an important action connected with the change of consumption patterns. |

Table 1.28. **Number of vehicles per 1000 population**

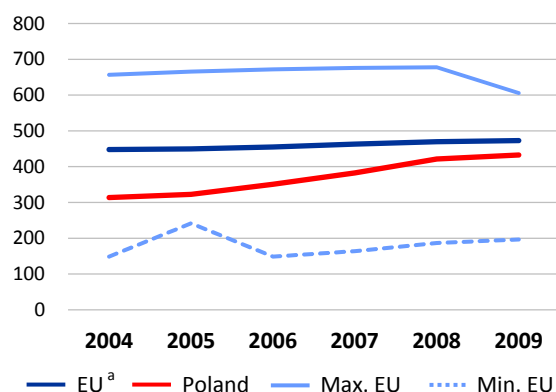
| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------|------|------|------|------|------|------|
| 314 | 323 | 351 | 383 | 422 | 432 | 451 |

S o u r c e: the Central Records of Vehicles Ministry of Internal Affairs and Administration.

Vehicle transport systematically increases and has a greater impact on the environment influencing the increase of air pollution with products from combustion of fuels and the raise of the occurrence of smog. Moreover, a dynamic raise in the number of passenger cars has an influence on public communication means causing the decrease of the number of passengers. The increasing number of passenger cars is a result of the aspiration to greater mobility and improvement of the quality of life. In years 2004-2010 a systematic increase of the number of passenger cars per 1000 population has been observed in Poland, on the average by 7,0% per year. In 2010 this indicator has increased by 43,6% in comparison with 2004. In the end of 2010 almost every second inhabitant of the country was in possession of a passenger car, while in 2004 – every third one. The indicator for Poland was lower than the one estimated for 27 EU countries.

The growing number of passenger cars causes that the road traffic intensity increases on national roads. Actions aiming at decreasing the share of vehicle transport in passenger transport and transport of goods should be undertaken on behalf of other types of transport (mainly railway), which are far more environmentally friendly.

Graph 1.50. **Number of vehicles per 1000 population**



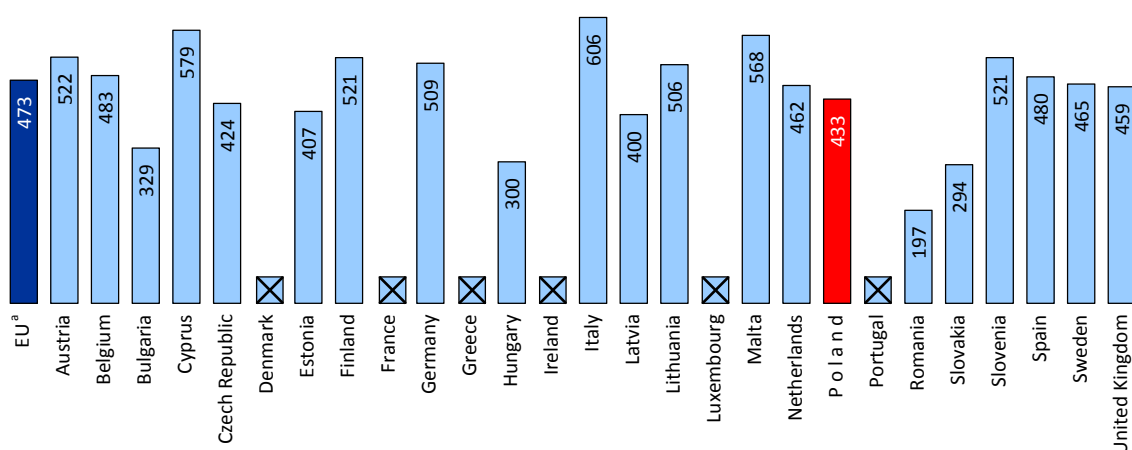
| Years | EU ^a | Poland | Max. EU | Min. EU |
|-------|-----------------|--------|---------|---------|
| 2004 | 448 | 314 | 657 | 149 |
| 2005 | 450 | 323 | 666 | 242 |
| 2006 | 455 | 351 | 672 | 149 |
| 2007 | 463 | 383 | 676 | 164 |
| 2008 | 470 | 422 | 678 | 187 |
| 2009 | 473 | 433 | 606 | 197 |

^a Estimated data.
Source: data of the Eurostat.

International comparisons

In 2009 in EU countries (for which data are available), the highest number of vehicles per 1000 population was noted, among others, in Italy, Cyprus and Malta, and the lowest in Romania, Slovakia and Hungary.

Graph 1.51. **Number of vehicles per 1000 population in EU countries in 2009**



^a Estimated data.
Source: data of the Eurostat.

X lack of data

Social domain

Electricity consumption in households

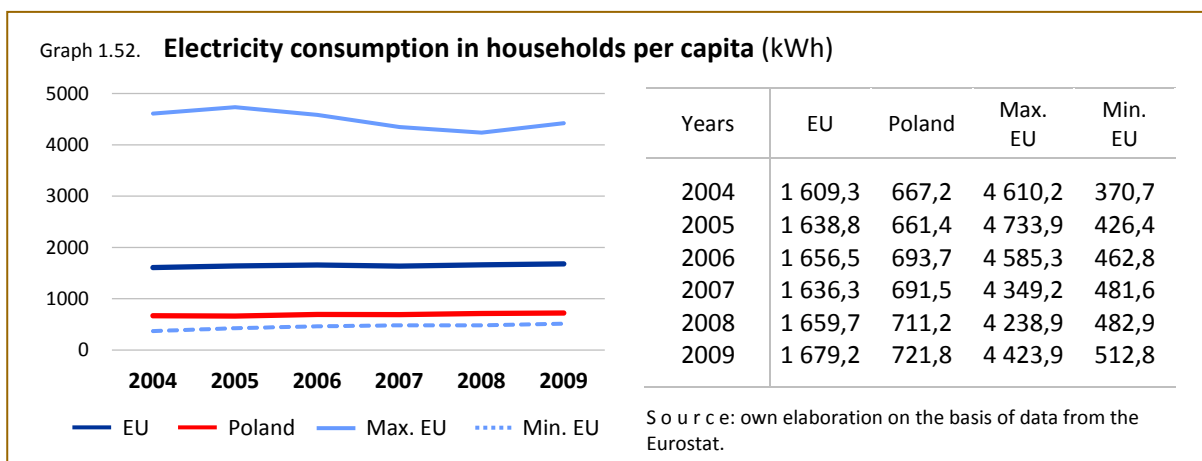
| | |
|-----------------------|--|
| Name of the indicator | Electricity consumption in households per capita |
| Area | Sustainable consumption patterns |
| Definition | <p>The indicator is defined as the total quantity of electricity consumed by all households per capita.</p> <p>Electricity consumption in households includes all uses of electricity for space and water heating and all electrical appliances.</p> |
| Meaning | Electricity consumption in households is the main indicator for monitoring sustainable consumption. The indicator presents changes of electricity consumption by users in time. Growth of the indicator due to changes in lifestyles (e. g. more electrical appliances in the households) causes the maintenance of "unsustainable tendencies" in consumption of energy by households, what has considerable effects on the natural environment. |

Table 1.29. **Electricity consumption in households per capita (kWh)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|-------|-------|-------|-------|-------|-------|
| 667,2 | 661,4 | 693,7 | 691,5 | 711,2 | 721,8 |

Source: own elaboration on the basis of data from the Eurostat.

Consumption of durable goods creates an environmental pressure mainly by consumption of electricity and other non-renewable resources. During the last years a high dynamics of the increase in the number of electric appliances (washing machines, freezers, dishwashers, etc.) as well as electronic appliances (e.g. computers, RTV) is observed in households.

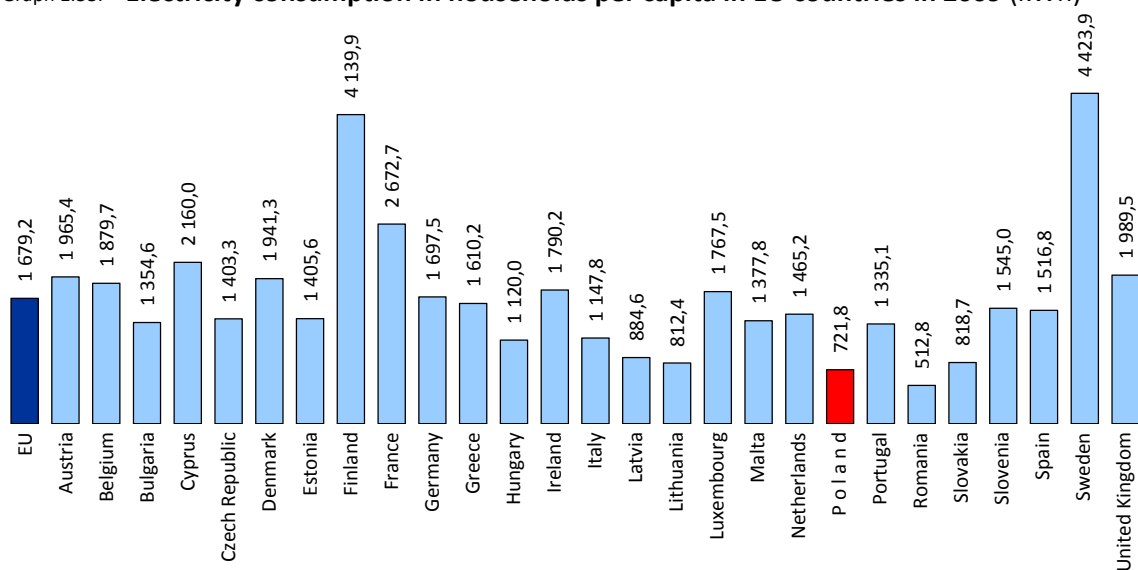


An increased use of electricity resulting from a greater number of used appliances and an increased frequency of their use should be compensated by the introduction of new, more energy-saving appliances. In years 2004-2009 the consumption of electricity in households per capita in Poland had increased by 54,6 kWh. At that time, the lowest use of electricity per capita amounted to 661,4 kWh in 2005.

International comparisons

In 2009 the consumption of electricity per capita in Poland was almost by 6 times lower than in Sweden, where it amounted to 4423,9 kWh and by 1,5 times higher than in Romania, where the consumption of electricity per capita amounted to 512,8 kWh.

Graph 1.53. **Electricity consumption in households per capita in EU countries in 2009 (kWh)**



Source: own elaboration on the basis of data from the Eurostat.

Social domain

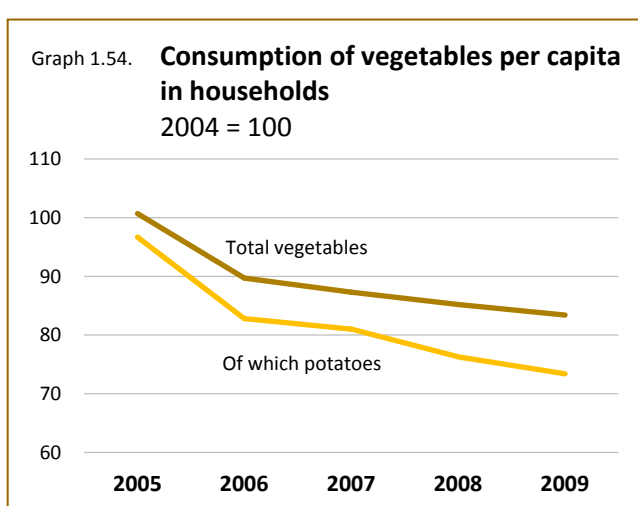
Consumption of vegetables per capita in households

| | |
|-----------------------|--|
| Name of the indicator | Consumption of vegetables per capita in households |
| Area | Sustainable consumption patterns |
| Definition | <p>The indicator is calculated as a average consumption of vegetables per capita in households. Consumption of vegetables is calculated for the following groups of vegetables: cabbage, cauliflowers, tomatoes, cucumbers, other vegetables having edible fruit, carrots, beetroots, onions, other root and bulb-like vegetables, mushrooms, edible pulses grains, other dried vegetables and mushrooms, sauerkraut, vegetable mixes, other processed vegetables and mushrooms, other bulb-like vegetables, processed potatoes.</p> <p>The indicator is calculated on the basis of results from the Household Budgets Survey.</p> |
| Meaning | <p>Health, being an indispensable condition of man's achievement, his physical and mental state, depends on many mutually correlated factors, among others of which lifestyle is very important, and within it, among others, nourishing oneself. Rational nutrition is an enormously important element in pro-healthy prophylaxis. The indicator enables to monitor changes in the consumption pattern. Shaping of the indicator in time enables to notice profitable pro-healthy changes.</p> |

Table 1.30. **Consumption of vegetables per capita in households (kg)**

| Specification | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|-------------------------|-------|-------|-------|-------|-------|-------|
| Total | 12,33 | 12,42 | 11,06 | 10,77 | 10,51 | 10,28 |
| Of which potatoes | 6,91 | 6,68 | 5,72 | 5,60 | 5,27 | 5,07 |

In the hierarchy of nutritional human needs vegetables and preserves are the basic products. Taking into account the importance of health, as a value especially endangered, health criteria are of an important role in consumption behaviour of households. In the last years, changes in the relation of consumer to the quality of food and its nutritional values are clearly observed. The consumer more often pays attention to the healthiness and nutritional value of dishes and their ecological values.



Results of the CSO's Household Budgets Survey conducted during the period of last 6 years show, that the average consumption of vegetables per capita in households has reached its highest level in 2005 – 12,42 kg. The following years were characterized by an unfavourable falling tendency. In 2009 the level of average consumption of vegetables, of which potatoes (compared to 2005 – the most favourable year), has lowered by about 2 kg. Decrease in the consumption of vegetables could be the result of the economic situation of many households connected with the increase of prices, as well as the result of the change in consumption model – limiting the consumption of potatoes.

The level of consumption of vegetables is differentiated depending on the level of incomes and socio-economic groups of households. Moreover, it is connected strongly with the place of residence. Inhabitants of rural areas compared to inhabitants of urban areas consume per capita more vegetables (11,52 kg and 9,51 kg respectively).

Analyzing the functioning in the country programs, on the basis of which actions are undertaken in the direction of improvement of health and nutrition method of the society, one should suppose, that in the nearest years features characterizing consumption patterns shall be the following: further limitation of consumption of highly caloric meals, on behalf of dietetic meals and the increase of the importance of vegetables and fruit in daily diet. At the same time, on the background of endangerments such as circulatory system diseases and neoplasms, preventive actions such as: health education, participation in prophylaxis and shaping the so-called healthy lifestyle, of which good nutritional habits, become of special importance.

Table 1.31. **Per capita consumption of vegetables by selected types of vegetables and socio-economic groups of households (kg)**

| Specification | 2004 | 2009 |
|---|-------|-------|
| T o t a l | 12,33 | 10,28 |
| Types of vegetables: | | |
| potatoes | 6,91 | 5,07 |
| vegetables and mushrooms (fresh, chilled or frozen) | 4,97 | 4,35 |
| vegetable and mushroom preserves | 0,37 | 0,81 |
| Households: | | |
| employees | 10,02 | 8,99 |
| farmers | 15,47 | 13,21 |
| retirees and pensioners | 15,42 | 13,38 |

Economic domain

List of indicators

Economic development

- Growth of gross domestic product per capita
- Gross fixed capital formation in relation to GDP
- Dispersion of regional GDP per capita (NUTS 3)
- Public debt in relation to GDP
- Energy intensity of the economy
- Water intensity of the economy
- Transport intensity of GDP (freight transport as well as passenger transport)
- Energy consumption of transport in relation to GDP

Employment

- Employment rate of persons aged 20-64
- Average exit age from the labour force
- Employment rate of persons aged 55-64

Innovativeness

- Innovative products
- Human resources in science and technology
- Labour productivity
- Expenditure on R&D activity in relation to GDP

Transport

- Intermodal freight transport by standard gauge railway transport

Sustainable production patterns

- Resource productivity
- Area under organic farming
- Organizations with Eco-Management and Audit Scheme EMAS

Economic domain

Growth of gross domestic product per capita

| | |
|-----------------------|---|
| Name of the indicator | Growth of gross domestic product per capita |
| Area | Economic development |
| Definition | <p>The indicator growth of gross domestic product per capita defines percentage change GDP in real terms per inhabitant in reference year in comparison with previous year.</p> <p>Real GDP per capita is calculated as the ratio of annual value of gross domestic product at constant prices to the average population of country (territorial units).</p> <p>Gross domestic product (GDP) presents the final result of the activity of all entities of the national economy. GDP is equal to the sum of gross value added generated by all national institutional units, increased by taxes on products and decreased by subsidies on products. Gross domestic product is calculated according to obligatory in the European Union countries the principles of the European System of National and Regional Accounts (ESA 1995) and recommendations of Eurostat.</p> |
| Meaning | <p>Gross domestic product (GDP) is the basic measure of economic development, which in synthetic form represents the most complete picture of the national economy and changes in economic structure. GDP is value in relation to which level of other phenomena is referred, e.g. deficit or public debt.</p> <p>GDP per capita is a very important indicator of the level of economic development and its long-term growth is the main objective of economic policy of the state.</p> |

Table 2.1. **Growth of gross domestic product per capita (%)**
previous year = 100

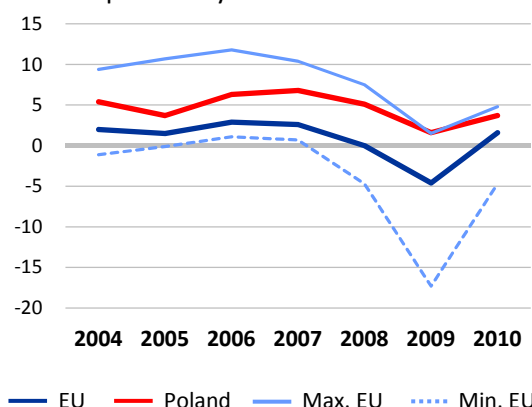
| | | | | | | |
|------|------|------|------|------|------|------|
| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
| 5,4 | 3,7 | 6,3 | 6,8 | 5,1 | 1,5 | 3,7 |

The indicator "Growth of gross domestic product per capita" in real terms is the best measure of economic development. Economic development in the context of realization of sustainable development principles should be reached reducing at the same time the impact on natural environment.

The highest real growth of GDP per capita was noted in 2007 – 6,8%, and the lowest value of this indicator was observed in 2009 – 1,5%. In EU countries the growth of GDP per capita in real terms ranged from -4,6% in 2009 to 2,9% in 2006. In 2010 the value of the described indicator in Poland amounted to 3,7% and was by 2,1 percentage points higher than the average for 27 EU countries.

In years 2004-2010 average yearly pace of real growth of gross domestic product per capita was on the level 4,5% for Poland, and 0,6% for EU.

Graph 2.1. **Growth of gross domestic product per capita (%)**
previous year = 100



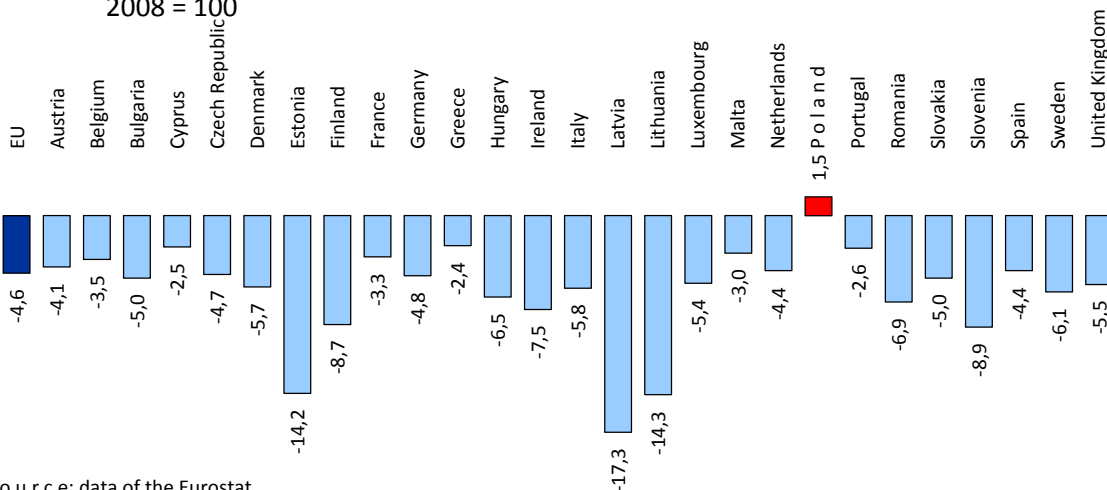
| Years | EU | Poland | Max. EU | Min. EU |
|-------|------|--------|---------|---------|
| 2004 | 2,0 | 5,4 | 9,4 | -1,1 |
| 2005 | 1,5 | 3,7 | 10,7 | -0,1 |
| 2006 | 2,9 | 6,3 | 11,8 | 1,1 |
| 2007 | 2,6 | 6,8 | 10,4 | 0,7 |
| 2008 | 0,0 | 5,1 | 7,5 | -4,7 |
| 2009 | -4,6 | 1,5 | 1,5 | -17,3 |
| 2010 | 1,6 | 3,7 | 4,8 | -4,7 |

Source: data of the Eurostat.

International comparisons

In 2009, taking into account EU countries, a growth of gross domestic product per capita, comparing to previous year, was observed only in Poland (1,5%). In the remaining 26 EU countries negative values of this indicator were observed, of which the greatest decrease was observed in Lithuania and Latvia – (-14,3% and -17,3% respectively). In three countries (Estonia, Lithuania and Latvia) the decrease of the described indicator was 3-times greater comparing to the average for 27 EU countries (-4,6%).

Graph 2.2. **Growth of gross domestic product per capita in EU countries in 2009 (%)**
2008 = 100



Source: data of the Eurostat.

Economic domain

Gross fixed capital formation in relation to GDP

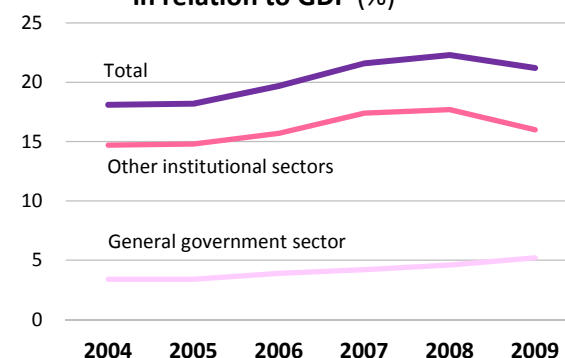
| | |
|-----------------------|--|
| Name of the indicator | Gross fixed capital formation in relation to GDP |
| Area | Economic development |
| Definition | <p>The indicator concerning gross fixed capital formation defines the percentage share of gross fixed capital formation in the value of gross domestic product.</p> <p>The indicator is presented for the total national economy, the general government sector and other institutional sectors.</p> <p>Gross fixed capital formation are expenditures increasing the value of tangible fixed assets designated for tangible fixed assets, intangible fixed assets as well as for renovation of fixed assets. These expenditures do not include initial investments and interest on investment credits and loans for the period of investment realization.</p> |
| Meaning | Gross fixed capital formation is a factor of economic growth. It affects the growth of innovation and competitiveness of enterprises. |

Table 2.2. **Gross fixed capital formation in relation to GDP (%)**

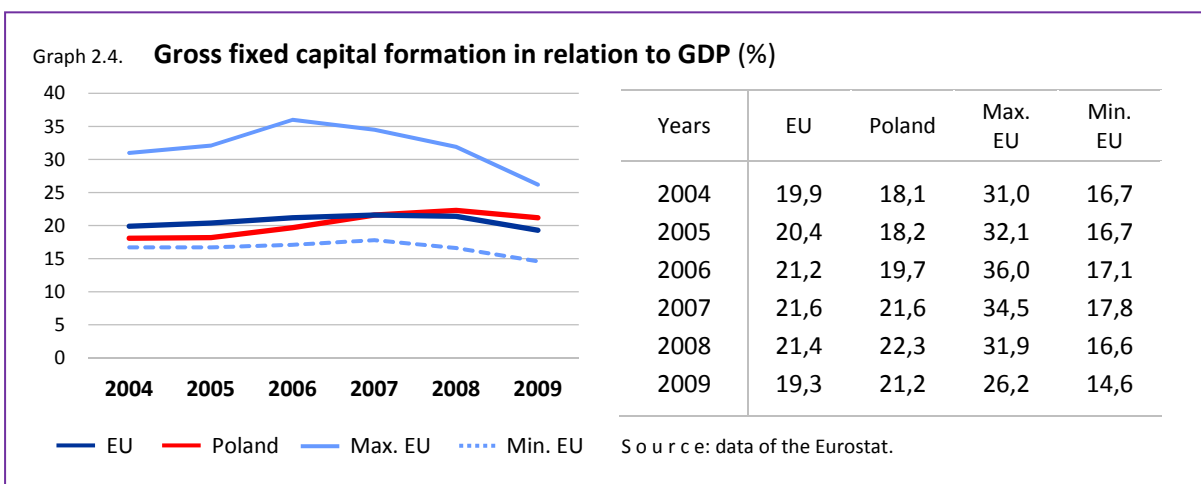
| Specification | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|-----------------------------------|------|------|------|------|------|------|
| Total | 18,1 | 18,2 | 19,7 | 21,6 | 22,3 | 21,2 |
| General government sector | 3,4 | 3,4 | 3,9 | 4,2 | 4,6 | 5,2 |
| Other institutional sectors | 14,7 | 14,8 | 15,7 | 17,4 | 17,7 | 16,0 |

The indicator gross fixed capital formation in relation to GDP in years 2004-2008 systematically increased its value and in 2008, compared to 2004 increased by 4,2 percentage points, of which in the general government sector by 1,2 percentage point, and in other institutional sectors by 3,0 percentage points. In 2009, comparing to 2008, the indicator gross fixed capital formation in relation to GDP decreased by 21,2% (by 1,1 percentage point), a similar situation was observed for the EU average, where the value of this indicator had fallen to the level 19,3% (by 2,1 percentage points).

Graph 2.3. **Gross fixed capital formation by institutional sectors in relation to GDP (%)**

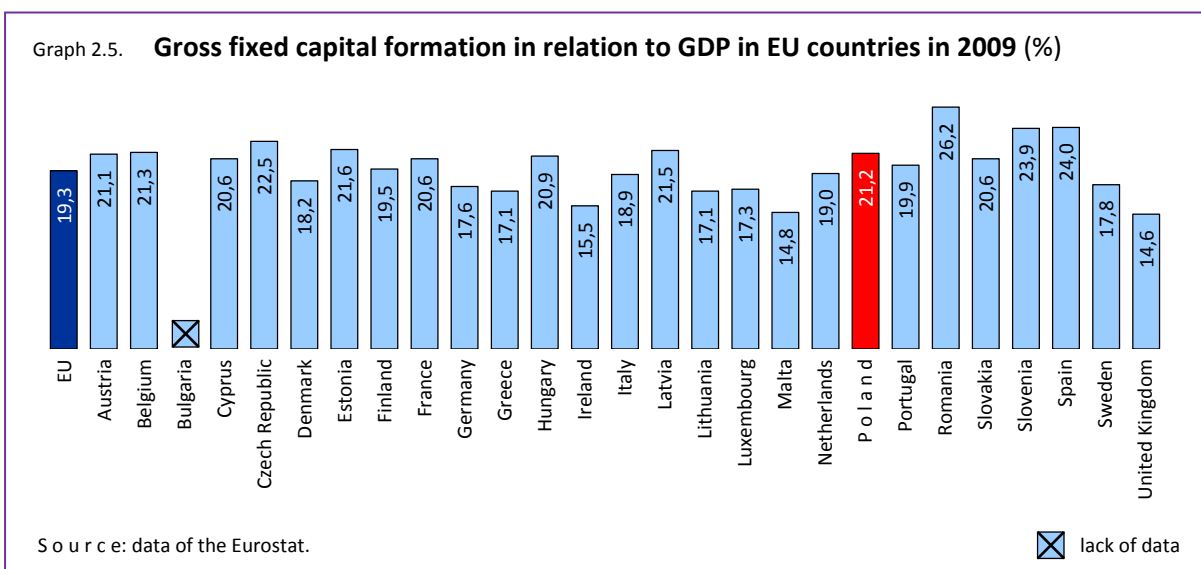


Taking into account institutional sectors of the national economy, in 2009 the described indicator for the general government sector increased by 0,6 percentage point, while for other institutional sectors the value of the indicator decreased by 1,7 percentage point. Despite the noted decrease in the share of gross fixed capital formation in GDP in 2009, the pace of growth of gross fixed capital formation (in constant prices) in years 2004-2009 was higher than the pace of growth of GDP (in constant prices) amounting to 9,3% compared to 4,6%.



International comparisons

In 2009 the indicator “gross fixed capital formation in relation to GDP” in EU countries was on the level from 14,6% in Great Britain to 26,2% in Romania. In 11 EU countries the indicator obtained the value lower than the EU average. Poland is in the group of countries, in which the value of the indicator in 2009 exceeded the average value for EU countries (21,2% compared with 19,3%).



Economic domain

Dispersion of regional GDP per capita (NUTS 3)

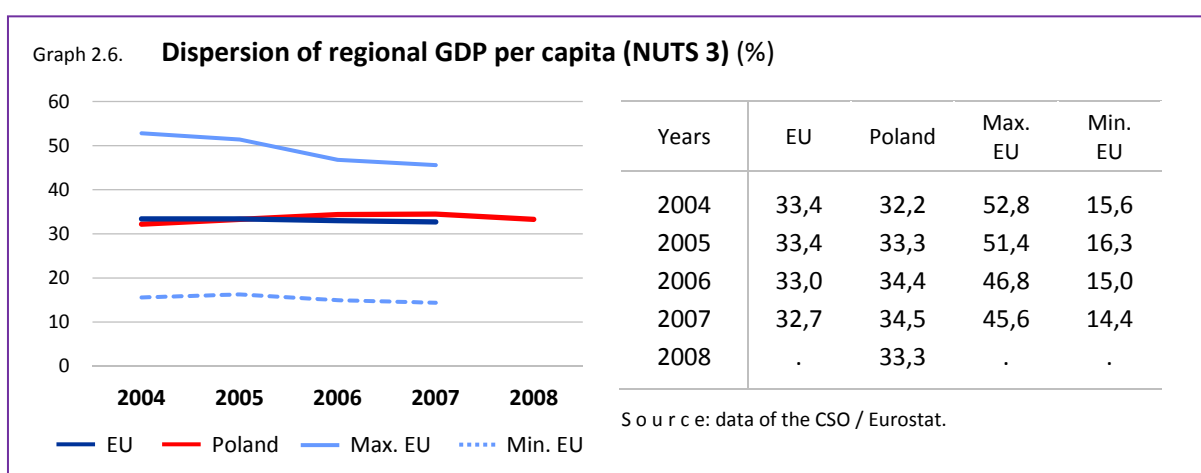
| | |
|-----------------------|--|
| Name of the indicator | Dispersion of regional GDP per capita (NUTS 3) |
| Area | Economic development |
| Definition | The indicator of dispersion of regional GDP per capita is calculated at subregions level (NUTS 3) as a sum of the absolute differences between subregions and national GDP per inhabitant, weighted with the share of population in particular subregions and expressed in percent of the national GDP per inhabitant. |
| Meaning | Dispersion of regional GDP per capita reflects a diversity of economic development between the subregions (NUTS 3). Reducing of regional disparities in economic development is the core of sustainable development and is a challenge for the EU. |

Table 2.3. **Dispersion of regional GDP per capita (NUTS 3) (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 |
|------|------|------|------|------|
| 32,2 | 33,3 | 34,4 | 34,5 | 33,3 |

Source: data of the CSO / Eurostat.

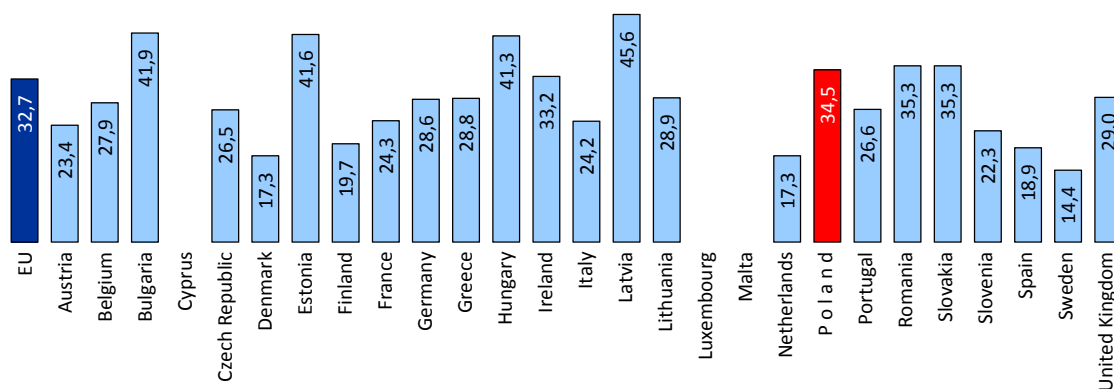
The indicator "dispersion of regional GDP per capita" in years 2004-2008 testifies of a considerable differentiation of Polish subregions taking into account economic development. In years 2004-2007 this indicator was growing, indicating the unfavourable tendency. Only in 2008, a decrease of the value of dispersion indicator was observed for the first time to the level 33,3%.



International comparisons

In the European Union, disproportions among territorial division units of the NUTS 3 are becoming smaller, and the dispersion indicator decreases. In years 2004-2007 the most favourable change of the dispersion indicator had been observed in Latvia, where this indicator had fallen by 7,2 percentage points, while the most unfavourable changes of this indicator were noted in Bulgaria, where its value increased by 11,9 percentage points.

Graph 2.7. **Dispersion of regional GDP per capita (NUTS 3) in EU countries in 2007 (%)**



Note. In such countries as: Cyprus, Luxembourg and Malta filling in this position is pointless.

Source: data of the CSO / Eurostat.

Economic domain

Public debt in relation to GDP

| | |
|-----------------------|--|
| Name of the indicator | Public debt in relation to GDP |
| Area | Economic development |
| Definition | <p>The indicator is calculated as a ratio of value of the general government sector debt to the gross domestic product.</p> <p>General government sector debt is the nominal indebtedness of entities of the general government sector established, after elimination cash flows between entities belonging to this sector (consolidation).</p> <p>Data on general government sector debt are prepared within the framework of the EDP Excessive Deficit Procedure notification. The scope of the sector is defined according to the principles of the European System of National and Regional Accounts (ESA 1995).</p> |
| Meaning | <p>General government sector debt is one of the elements of the Maastricht fiscal criterion, which defines maintaining the value of public debt at the reference level (60% of GDP).</p> <p>Public debt in relation to GDP reflects the state of public finances. This ratio indicates the risk in the sustainability of public finances and is a vital tool for shaping public policy. Consequently, the level of public debt has a significant impact on economic development.</p> |

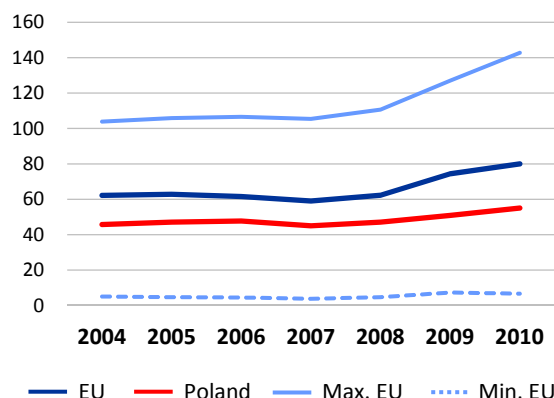
Table 2.4. **Public debt in relation to GDP (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------|------|------|------|------|------|------|
| 45,7 | 47,1 | 47,7 | 45,0 | 47,1 | 50,9 | 55,0 |

Bad state of public finance is an endangerment for the stable and sustainable economic growth. The increasing public debt causes essential limitation of the budget's expenditure abilities. The tax duty of the society is not designated for goals of social and economic importance, but for the debt servicing.

In years 2004-2010 the relation of public debt to GDP was on the level from 45,0% in 2007 to 55,0% in 2010, when the value of public debt amounted to 778212 million zloties. Starting from 2008, the relation of public debt to GDP has been increasing and in 2010 the described indicator has raised comparing to previous year by 4,1 percentage points. Increase in the value of the described indicator resulted mainly from the increase of the value of public debt, which in 2010 decreased by 84,2% comparing to 2004, but the increase of GDP amounted to 53,1% (in current prices).

Graph 2.8. **Public debt in relation to GDP (%)**



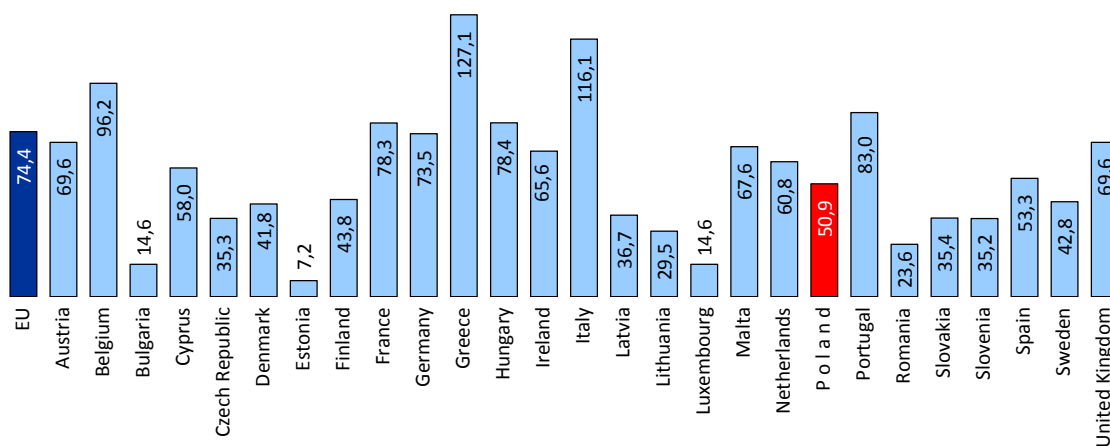
| Years | EU | Poland | Max. EU | Min. EU |
|-------|------|--------|---------|---------|
| 2004 | 62,2 | 45,7 | 103,9 | 5,0 |
| 2005 | 62,8 | 47,1 | 105,9 | 4,6 |
| 2006 | 61,5 | 47,7 | 106,6 | 4,4 |
| 2007 | 59,0 | 45,0 | 105,4 | 3,7 |
| 2008 | 62,3 | 47,1 | 110,7 | 4,6 |
| 2009 | 74,4 | 50,9 | 127,1 | 7,2 |
| 2010 | 80,0 | 55,0 | 142,8 | 6,6 |

Source: data of the Eurostat.

International comparisons

In 2009, according to data from the Eurostat, the lowest public debt in relation to GDP was observed in: Estonia (7,2%) and Luxembourg and Bulgaria (14,6%). On the other hand, the highest level of this indicator was observed in Greece (127,1%) and in Italy (116,1%) – the relation of public debt to GDP in these countries was higher by 52,7 percentage points and 41,7 percentage points respectively in comparison with the EU average.

Graph 2.9. **Public debt in relation to GDP in EU countries in 2009 (%)**



Source: data of the Eurostat.

Economic domain

Energy intensity of the economy

| | |
|-----------------------|--|
| Name of the indicator | Energy intensity of the economy |
| Area | Economic development |
| Definition | <p>Energy intensity of the economy is the ratio between the gross inland consumption of energy and the gross domestic product (in constant prices in 2000, converted into euro at the exchange rate of 2000).</p> <p>The indicator defines amount of energy consumed to produce one unit of GDP (expressed in kilogram of oil equivalent per 1 000 EUR).</p> <p>The gross inland consumption of energy includes the consumption of coal, electricity, oil, natural gas and renewable energy sources.</p> |
| Meaning | The indicator is used to assess the effectiveness of sustainable energy policy pursued with regard to energy conservation and environmental issues. Reducing energy consumption in the economy means that less energy is needed to produce the same amount of GDP and is associated with an increase in energy efficiency. |

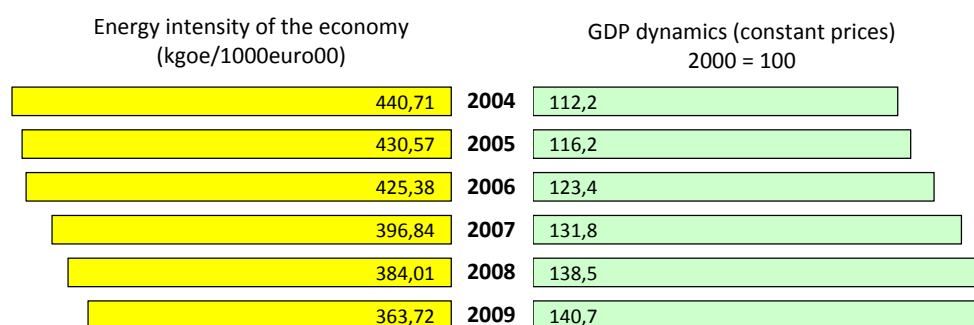
Table 2.5. **Energy intensity of the economy** (kgoe/euro00)

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|--------|--------|--------|--------|--------|--------|
| 440,71 | 430,57 | 425,38 | 396,84 | 384,01 | 363,72 |

Source: data of the Eurostat.

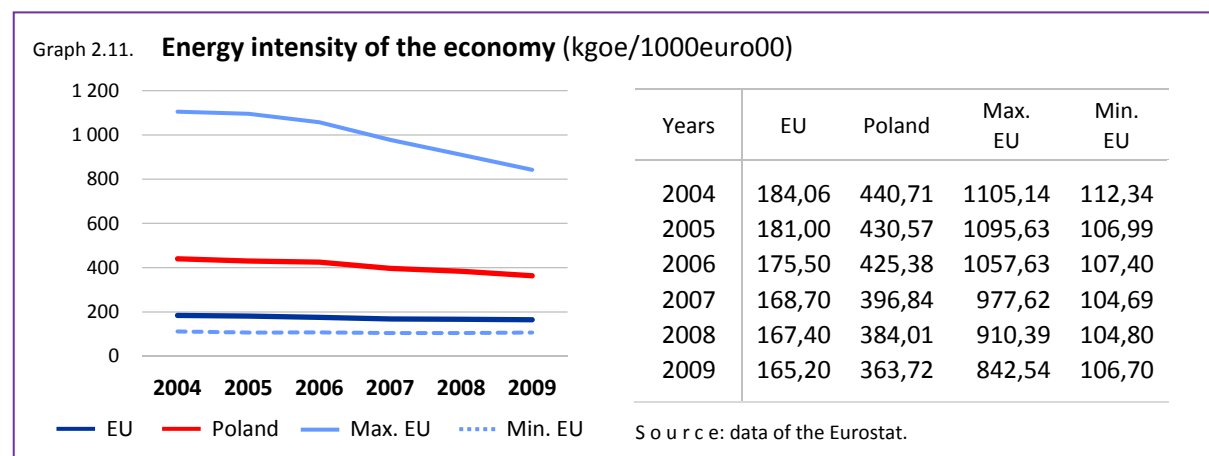
In years 2004-2009, a gradual improvement of the energy intensity of the economy indicator had been occurring, the value of the indicator has been falling by almost 4% on the average year by year, what was the result of a stable use of energy and growing value of the gross domestic product, which average yearly pace of growth in the described period amounted to 4,6% (in constant prices).

Graph 2.10. **Energy intensity of the economy and GDP dynamics**



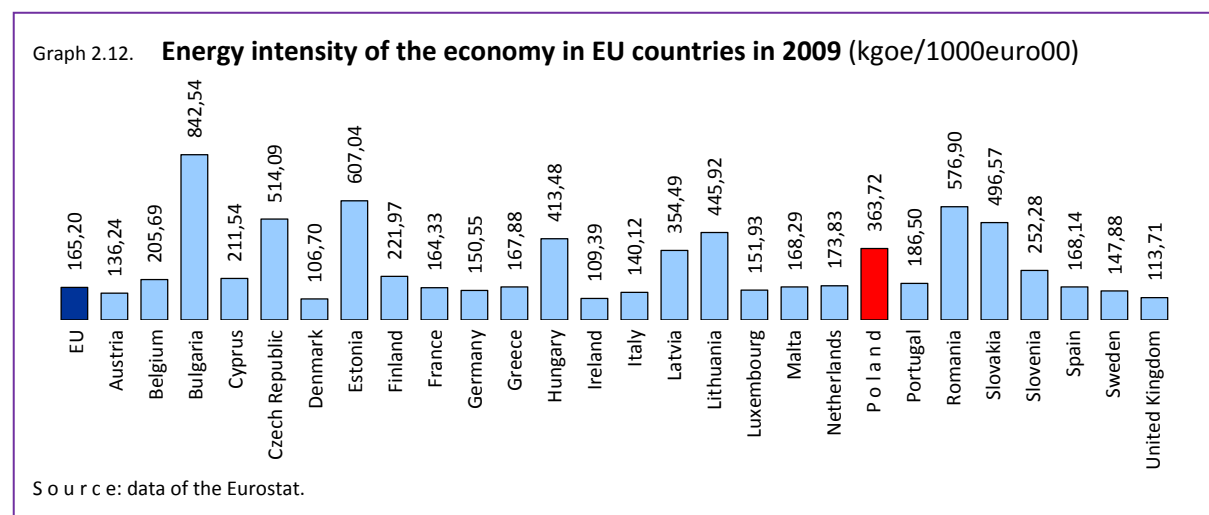
Source: data of the CSO / Eurostat.

The indicator "average energy intensity of the economy" for EU countries was of a falling tendency in the described period by 2% yearly, in concordance with assumptions of the sustainable energy policy, which aim is to keep the balance between energetic safety and fulfilment of social needs of present and future generations, competitiveness of the economy and environmental protection.



International comparisons

Among EU countries, the highest value of the energy intensity of the economy in years 2004-2009 was observed in Bulgaria, exceeding by 5 times the average value of this indicator for 27 EU countries. In the described period, the energy intensity indicator for Poland was by over 2 times higher than the average value of this indicator for EU countries and by over 3 times higher comparing with Denmark, which had the best result – energy intensity of the economy in 2009 amounted to 106,7 kgoe/1000euro00.



Economic domain

Water intensity of the economy

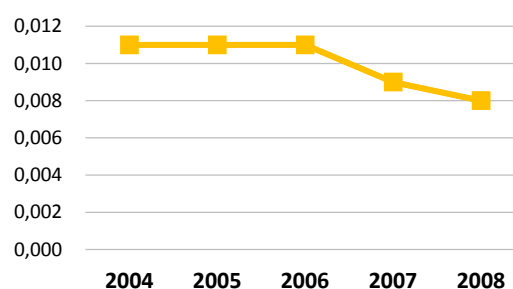
| | |
|-----------------------|--|
| Name of the indicator | Water intensity of the economy |
| Area | Economic development |
| Definition | <p>Indicator is calculated as the ratio of water consumption for the national economy and population needs to the value of GDP.</p> <p>Water consumption for the national economy and the population needs includes:</p> <ul style="list-style-type: none"> • water consumption for the industry (since 1986 applies to all organizational entities making payments for the annual withdrawal of 5 dam³ or more of underground water, or 20 dam³ or more of surface water from their own sources, or discharging 20 dam³ or more of waste water annually), • water consumption in agriculture and forestry for irrigating agricultural or forest land of 20 ha or more in area, and for the purpose of exploiting fishponds of 10 ha or more in area, • water consumption for exploitation water-line system (since 1999 concerned all entities responsible for the management of water-line system, including housing co-operatives, water companies, waterworks, workplaces, etc.) |
| Meaning | The indicator defines the amount of water used for industry, agriculture and forestry, and exploitation of water-line system, per unit of GDP (the degree of exploitation of water resources to produce one unit of GDP). |

Table 2.6. **Water intensity of the economy** (dam³/thous. zł)

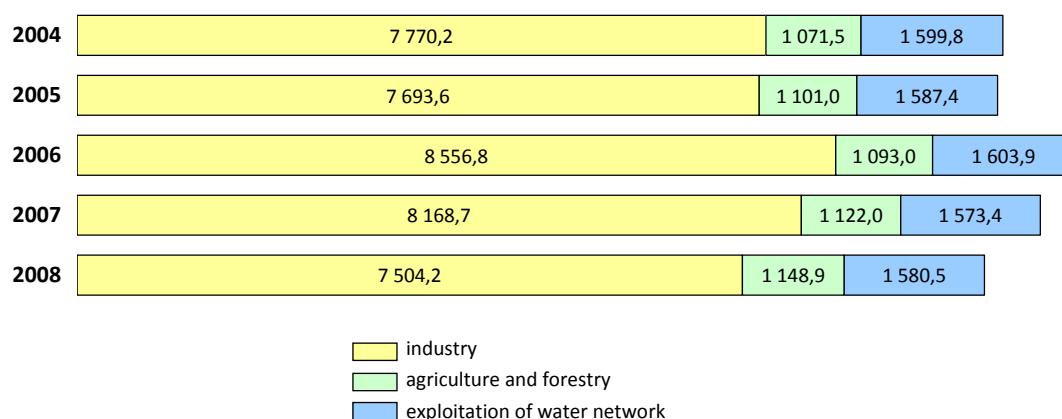
| 2004 | 2005 | 2006 | 2007 | 2008 |
|-------|-------|-------|-------|-------|
| 0,011 | 0,011 | 0,011 | 0,009 | 0,008 |

In years 2004-2006 the indicator “water intensity of the economy” in Poland had remained on a stable level 0,011 dam³/thous. zł. In 2007, a decrease in the value of the indicator was observed comparing to previous year by 0,002 dam³/thous. zł. A favourable falling tendency indicating a smaller use of water for the needs of national economy and population in relation to GDP was also observed in 2008, in which the indicator reached the value 0,008 dam³/thous. zł (by 0,001 dam³/thous. zł lower compared to previous year).

Graph 2.13. **Water intensity of the economy** (dam³/thous. zł)



Graph 2.14. **Water consumption for the needs of economy and population (hm³)**



In 2008 water consumption for the needs of economy and population in Poland amounted to 10233,6 hm³ and was by 2,0% lower in relation to 2004. In years 2004-2008 a dominating share of industry in the national consumption of water was observed. In 2008, this share constituted 73,3% of total consumption of water for the needs of national economy and population and it decreased by 1,1 percentage points comparing to 2004, reaching at the same time the lowest level in the period 2004-2008.

The share of the use of water for exploitation of water network was crucial in the structure of national consumption of water. In 2008 this share was 15,4% and was by 0,1 percentage points higher than in 2004.

The smallest use of water is observed in irrigation of agricultural or forest land and in exploiting fishponds. In 2008 the share of agriculture and forestry in water consumption for the needs of economy and population amounted to 11,2% and increased by 0,9 percentage points in relation to 2004.

Transport intensity of GDP

| | |
|-----------------------|---|
| Name of the indicator | Transport intensity of GDP (freight transport as well as passenger transport) |
| Area | Economic development |
| Definition | <p>The indicator defines the percentage change in transportation expenses incurred to produce a unit of gross domestic product compared with 2000.</p> <p>Transport intensity for freight transport is calculated as the ratio between the volume of inland freight transport measured in tonne-kilometres (road, rail and inland waterways) and gross domestic product.</p> <p>Transport intensity for passenger transport is calculated as the ratio between the volume of inland passenger transport measured in passenger-kilometres (passenger cars, bus and coach, train) and gross domestic product.</p> |
| Meaning | Transport intensity of GDP is a measure of evaluating the relationship between transportation expenses and the value of the generated gross domestic product. The increase in gross domestic product should not be a consequence of increased transportation expenditures. |

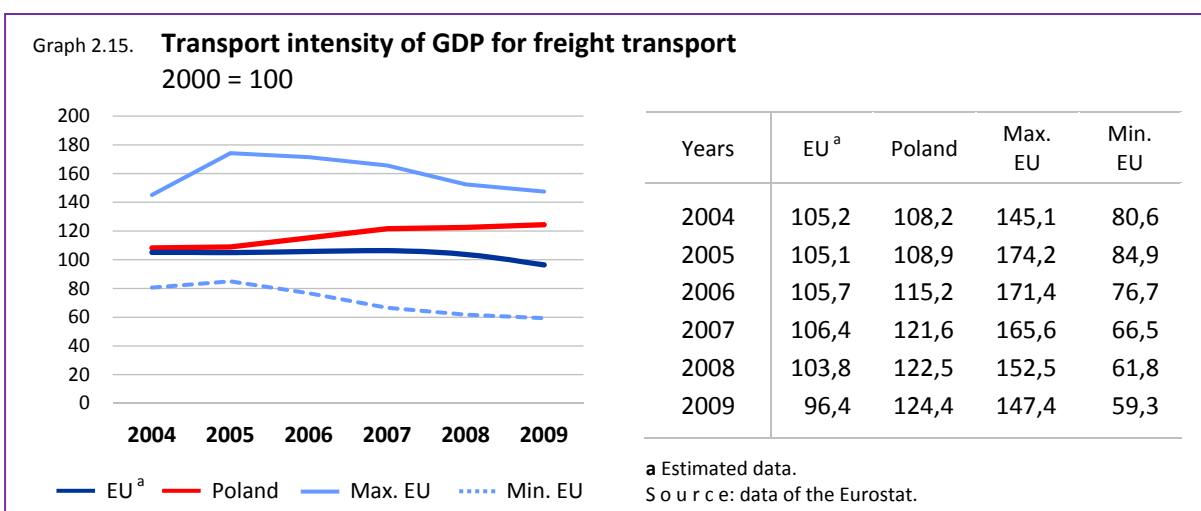
Table 2.7. **Transport intensity of GDP**
2000 = 100

| Specification | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---------------------------|-------|-------|-------|-------|-------|-------|
| Freight transport | 108,2 | 108,9 | 115,2 | 121,6 | 122,5 | 124,4 |
| Passenger transport | 99,6 | 102,2 | 104,5 | 105,6 | 112,5 | . |

S o u r c e: data of the CSO / Eurostat.

FREIGHT TRANSPORT

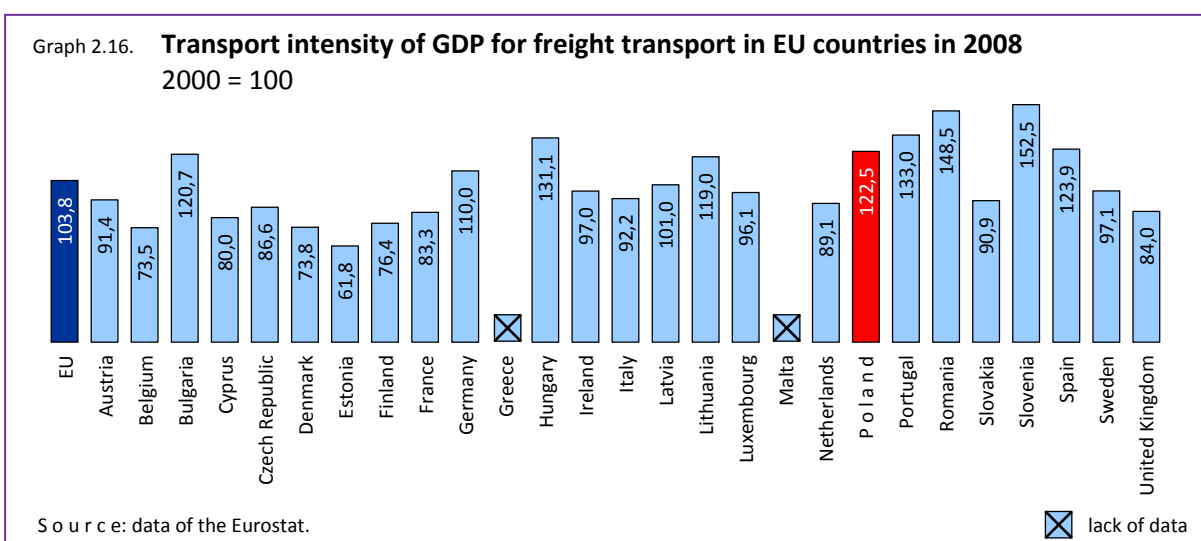
In Poland, in years 2004-2009, an increase in the transport intensity of GDP indicator had occurred, what is a unfavourable phenomenon, because economic increase should be reached accompanied by lower increase in freight transport. Relation of freight transport to gross domestic product obtained in 2009 was higher by 15,0% compared to the relation obtained in 2004.



Dynamics of the freight transport measured by the volume in terms of tons transported per 1 kilometre, in a greater degree exceeded the dynamics of gross domestic product.

International comparisons

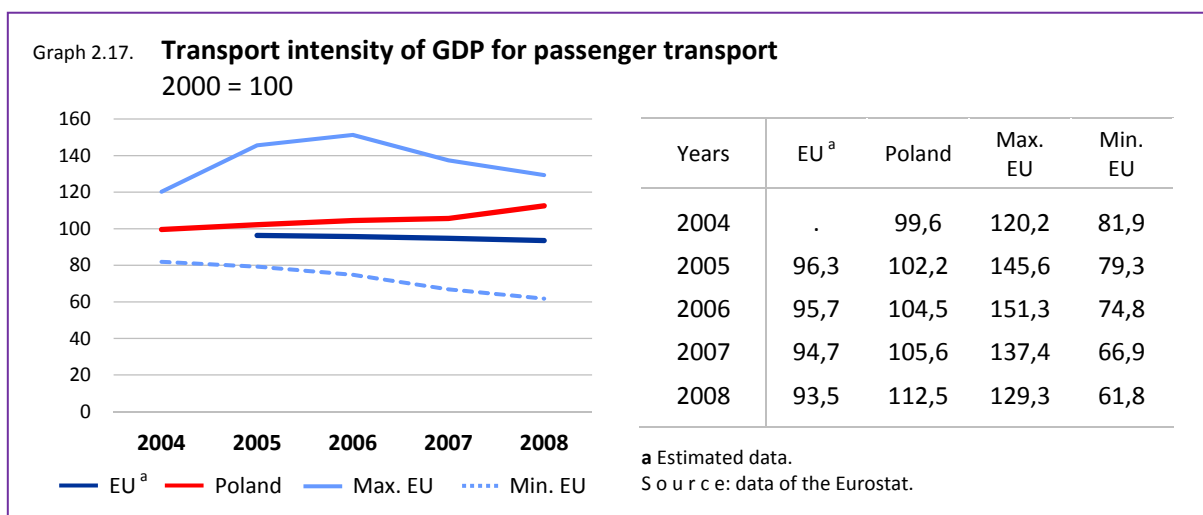
In EU the value of the described indicator had been increasing in the period 2004-2007, and in the years following this period the volume of freight transport measured in tons-kilometres had been increasing more slowly than the gross domestic product. Relation of freight transport to gross domestic product obtained in 2009 was lower by 8,4% than in 2004. It indicates a relative separation of the dependency between the size of freight transport and economic development, what is in concordance with the aim presented in the EU strategy.



PASSENGER TRANSPORT

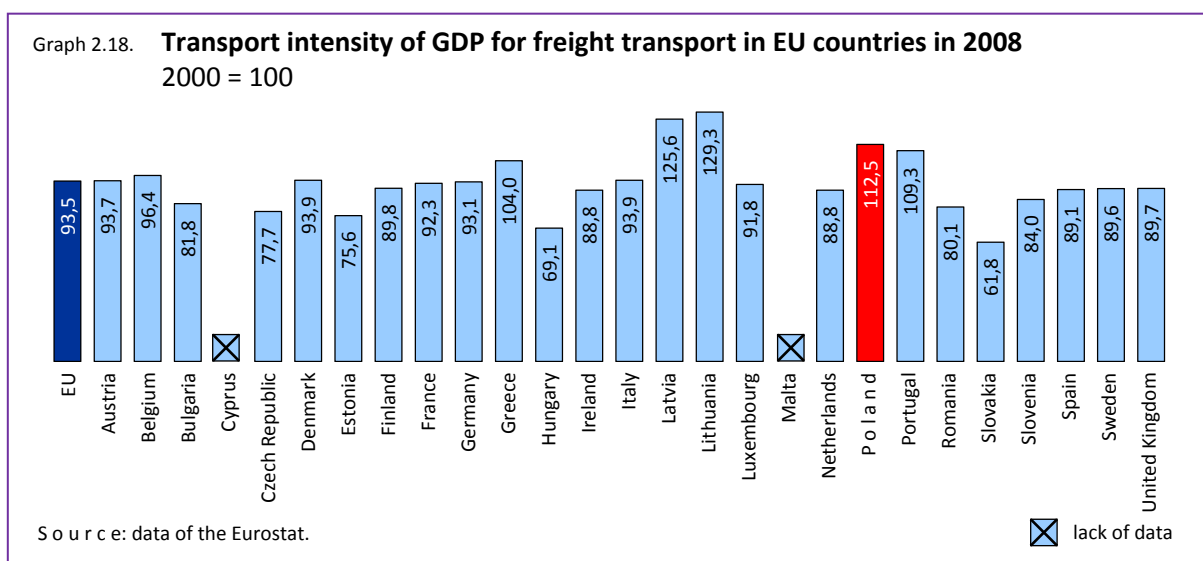
In Poland in years 2004-2008 an increase in the magnitude of the passenger transport intensity of GDP indicator had occurred. Relation of passenger transport intensity of GDP obtained in 2008 was higher by 13,0% compared with the relation obtained in 2004.

Volume of passenger transport measured by the number of passengers transported per 1 kilometre increased more quickly than the gross domestic product – the dynamics of transportation was higher than the dynamics of gross domestic product. Therefore, passenger transport still is strictly connected with economic development, though in a smaller degree than freight transport.



International comparisons

In EU the value of the described indicator had been decreasing, the relation of passenger transport to gross domestic product obtained in 2008 was lower by 2,9% than in 2005. The size of passenger transport in EU countries increases, though the pace is slower than the increase rate of gross domestic product, indicating that in the case of passenger transport, a relative separation of the dependence between the size of transport and changes of the gross domestic product occurs.



Energy consumption of transport

| | |
|-----------------------|---|
| Name of the indicator | Energy consumption of transport in relation to GDP |
| Area | Economic development |
| Definition | <p>The indicator defines the percentage change in final consumption of energy by transport per unit of gross domestic product compared with 2000.</p> <p>Final energy consumption includes the following types of transport: road, rail, inland waterway and aviation. It does not include energy used in maritime transport and pipeline transport.</p> <p>Data for energy consumption in transport are expressed in tonnes of oil equivalent (toe) and concerns consumption of petroleum, petroleum products, natural gas, electricity, solid fuels and renewable energy.</p> |
| Meaning | Using the indicator you can assess the relationship between energy consumption in transport and economic growth. The increase in gross domestic product should not be a consequence of growth in energy consumption in transport. |

Table 2.8. **Energy consumption of transport in relation to GDP**
2000 = 100

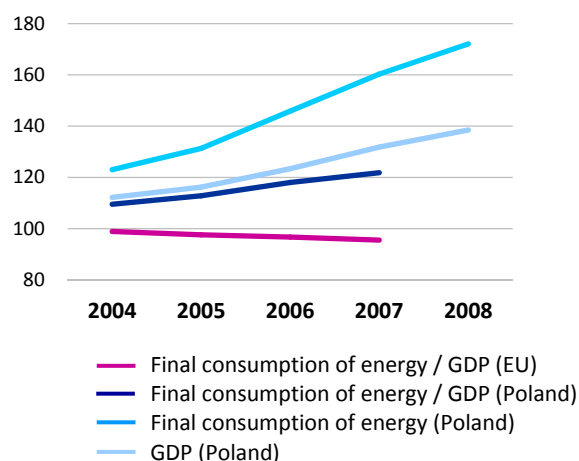
| 2004 | 2005 | 2006 | 2007 |
|-------|-------|-------|-------|
| 109,5 | 112,8 | 118,0 | 121,8 |

Source: data of the CSO / Eurostat.

Economic growth should be reached accompanied by a lower increase of energy consumption in transport, meanwhile in Poland the increase in the consumption of energy in transport is exceeding economic growth. Additionally, the relation of final consumption of energy and gross domestic product has changed unfavourably, the relation obtained in 2007 was by 11,2% higher than that obtained in 2004.

In years 2004-2008 a graduate increase of the final energy consumption of transport measured in tons of equivalent motor oil had occurred in Poland, mainly due to a constant increase in the use of fuels in road transport, accompanied by a simultaneous decrease in the volume of energy in railway transport. It is a result of the change of means of transport used for freight and passenger transport. An increase in passenger and freight transport was observed in case of vehicle transport, while in the case of railway transport a decrease was noted.

Graph 2.19. **Energy consumption of transport in relation to GDP**
2000 = 100

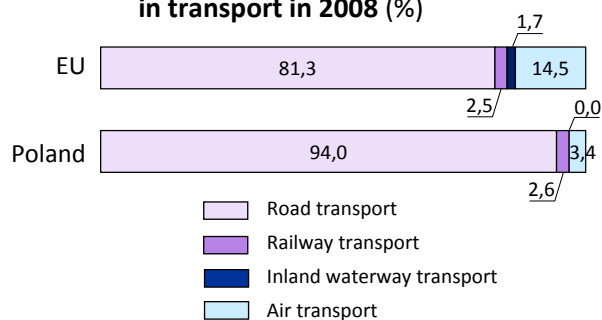


| Years | EU | Poland | | |
|-------|-----------------------------------|-----------------------------|-------|-------|
| | Final consumption of energy / GDP | Final consumption of energy | GDP | |
| 2004 | 98,9 | 109,5 | 123,0 | 112,2 |
| 2005 | 97,6 | 112,8 | 131,3 | 116,2 |
| 2006 | 96,7 | 118,0 | 145,9 | 123,4 |
| 2007 | 95,5 | 121,8 | 160,3 | 131,8 |
| 2008 | . | . | 172,1 | 138,5 |

Source: data of the CSO / Eurostat.

In the European Union, an increase in the final consumption of energy in air and road transport was observed, while a decrease was observed in railway transport in years 2004-2008. In Poland, most of energy is used in road transport, a constant development of road transport causes increase of the share of this sector in national consumption of energy. The remaining consumption includes railway and air transport. Inconsiderable amounts of energy are used by inland waterway and coastal transport.

Graph 2.20. **Structure of final energy consumption in transport in 2008 (%)**

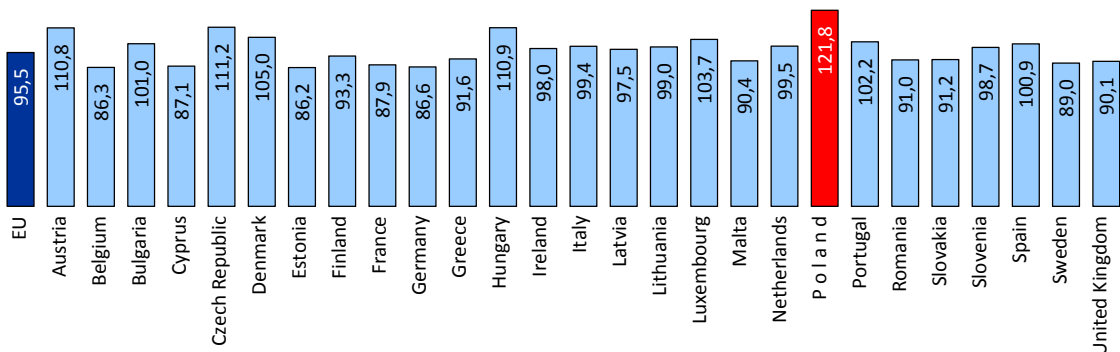


Source: data of the CSO / Eurostat.

International comparisons

The pace of demand for energy in transport in the European Union increased in a lesser degree than the gross domestic product. The relation of final consumption to gross domestic product was in 2007 lower by 3,4% compared to 2004. It indicates a relative separation of the dependency between the use of energy in transport and economic growth, what is in concordance with the aim outlined in the EU strategy.

Graph 2.21. **Energy consumption of transport in relation to GDP in EU countries in 2007**
2000 = 100



Source: data of the Eurostat.

Economic domain

Employment rate of persons aged 20-64

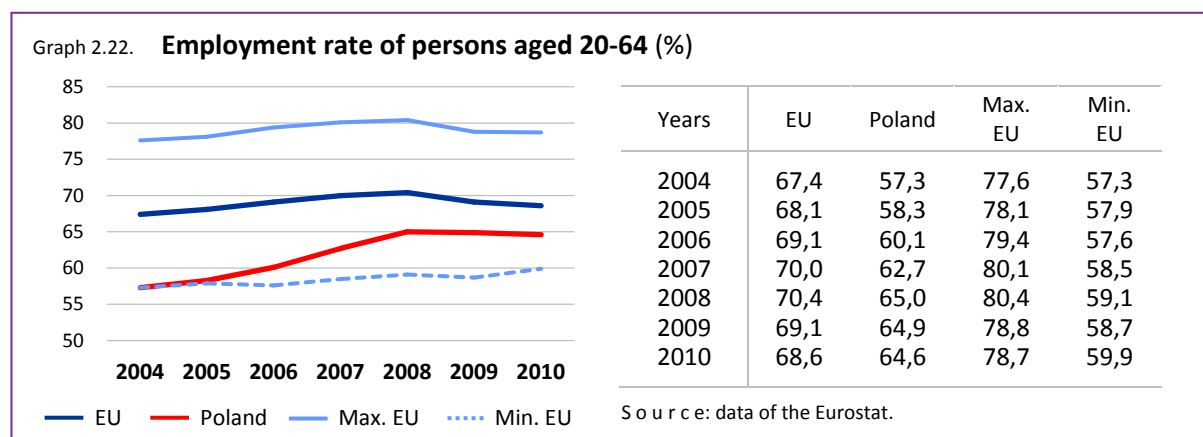
| | |
|-----------------------|---|
| Name of the indicator | Employment rate of persons aged 20-64 |
| Area | Employment |
| Definition | <p>The employment rate of persons aged 20-64 is calculated as the percentage share of the employed persons aged 20-64 in total population in the same age group.</p> <p>The employment rate of persons aged 20-64 is presented for total and by gender.</p> <p>Indicator is calculated on the basis of the Labour Force Survey.</p> |
| Meaning | The high level of employment is essential for socio-economic cohesion. Employment policy should be aimed at creating more workplaces, encouraging people to work, improving adaptability of workers and enterprises and increasing investment in human capital. |

Table 2.9. **Employment rate of persons aged 20-64 (%)**

| Gender | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---------------|------|------|------|------|------|------|------|
| Total | 57,3 | 58,3 | 60,1 | 62,7 | 65,0 | 64,9 | 64,6 |
| Males | 63,5 | 65,1 | 67,3 | 70,2 | 73,0 | 72,6 | 71,6 |
| Females | 51,2 | 51,7 | 53,1 | 55,5 | 57,3 | 57,6 | 57,7 |

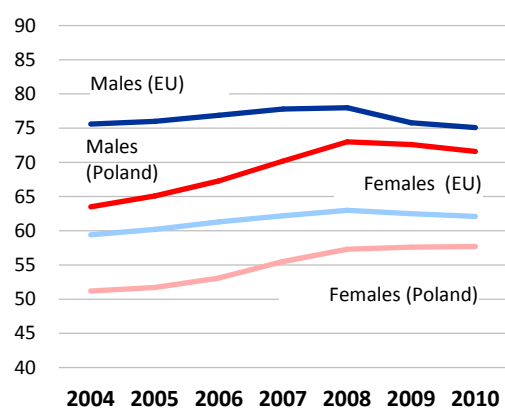
Source: data of the CSO / Eurostat.

In years 2004-2008, a systematic increase of the indicator “employment rate of persons aged 20-64” had been observed in Poland. Starting from 2009, due to a slow down in the pace of economic growth this tendency had turned, causing that the employment rate in 2010 decreased by 0,3 percentage point comparing to previous year. Employment rate of persons aged 20-64 in 2010 amounted to 64,6% and was lower than the EU average by 4,0 percentage points.



In 2010, a slight increase of the employment rate of females was observed in Poland (by 0,1 percentage point), accompanied by a decrease of the employment rate of males by 1,0 percentage point, indicating the diminishing disproportions in employment by gender. In 2010, the difference between employment rate of females and males decreased from 15,0 percentage points to 13,9 percentage points. Employment rate of females in Poland is still on one of the lowest levels in Europe – 57,7% compared to 62,1% in EU.

Graph 2.23. **Employment rate of persons aged 20-64 by gender (%)**



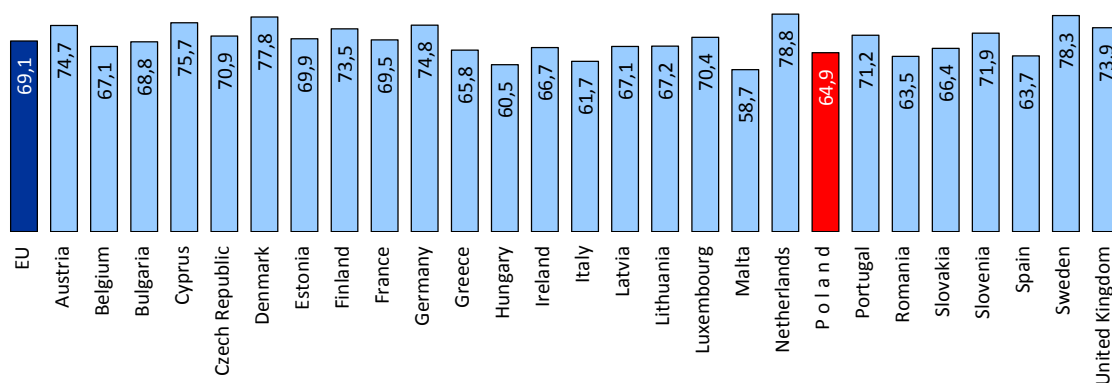
Source: data of the Eurostat.

International comparisons

Among EU countries, an increase of the employment rate in 2009 in comparison with previous year was observed in Luxembourg by 1,6 percentage point and in Germany by 0,2 percentage point. In the remaining countries a decrease of the employment rate was noted from 8,7 percentage points in Latvia to 0,1 percentage point in Poland and Netherlands.

In all EU countries the employment rate of females was lower than the one for males. Lithuania and Latvia were exceptions – the percent of employed females in Lithuania was higher by 0,6 percentage point and in Latvia these indicators were almost equal. Smallest differences in the magnitude of employment of males and females were also observed in Estonia (2,2 percentage points) and in Finland (2,3 percentage points), while the biggest differences occurred in Malta (37,3 percentage points), in Greece (26,1 percentage points) and in Italy (24,1 percentage points).

Graph 2.24. **Employment rate of persons aged 20-64 in EU countries in 2009 (%)**



Source: data of the Eurostat.

Economic domain

Average exit age from the labour force

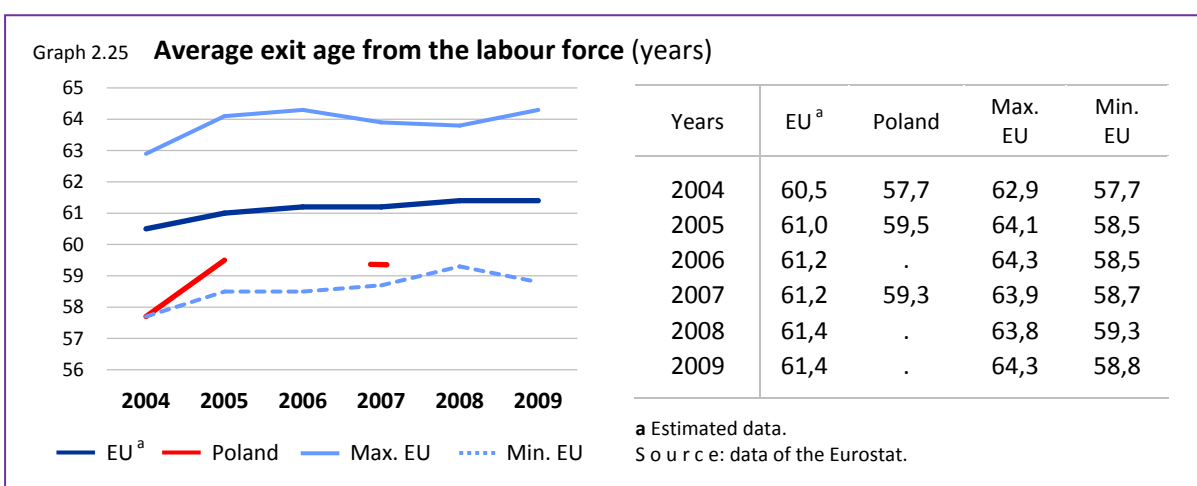
| | |
|-----------------------|---|
| Name of the indicator | Average exit age from the labour force |
| Area | Employment |
| Definition | The indicator defines the average age at which active people definitely leave the labour market. Indicator is calculated on the basis of the Labour Force Survey. |
| Meaning | Average exit age from the labour force is crucial for the supply of labour force in conditions of decreasing population in working age. It influences the full potential of the workforce and maintain economic growth, as well as the size of tax revenue and expenditure of the social security system. |

Table 2.10. **Average exit age from the labour force (years)**

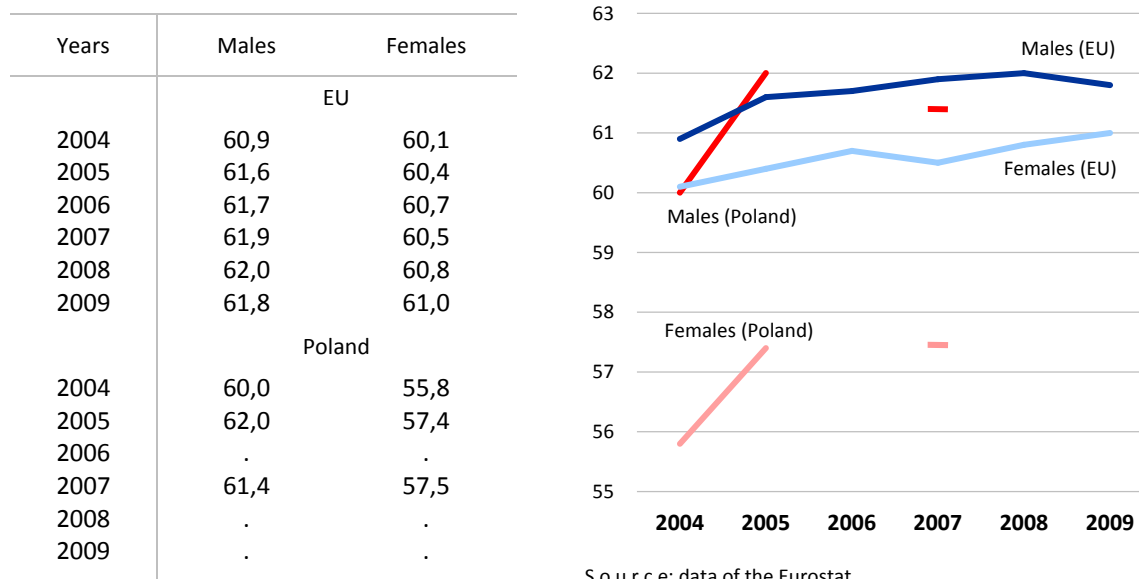
| Gender | 2004 | 2005 | 2006 | 2007 |
|---------------|------|------|------|------|
| Total | 57,7 | 59,5 | . | 59,3 |
| Males | 60,0 | 62,0 | . | 61,4 |
| Females | 55,8 | 57,4 | . | 57,5 |

Source: data of the CSO / Eurostat.

Almost in all EU countries average exit age from the labour force is much lower than the statutory retirement age. Nevertheless, in 2007 the retirement age in Poland was one of the lowest among EU countries. Women in Poland ended their professional activity about 2,5 years earlier than the statutory retirement age, and men about 3,6 years earlier.



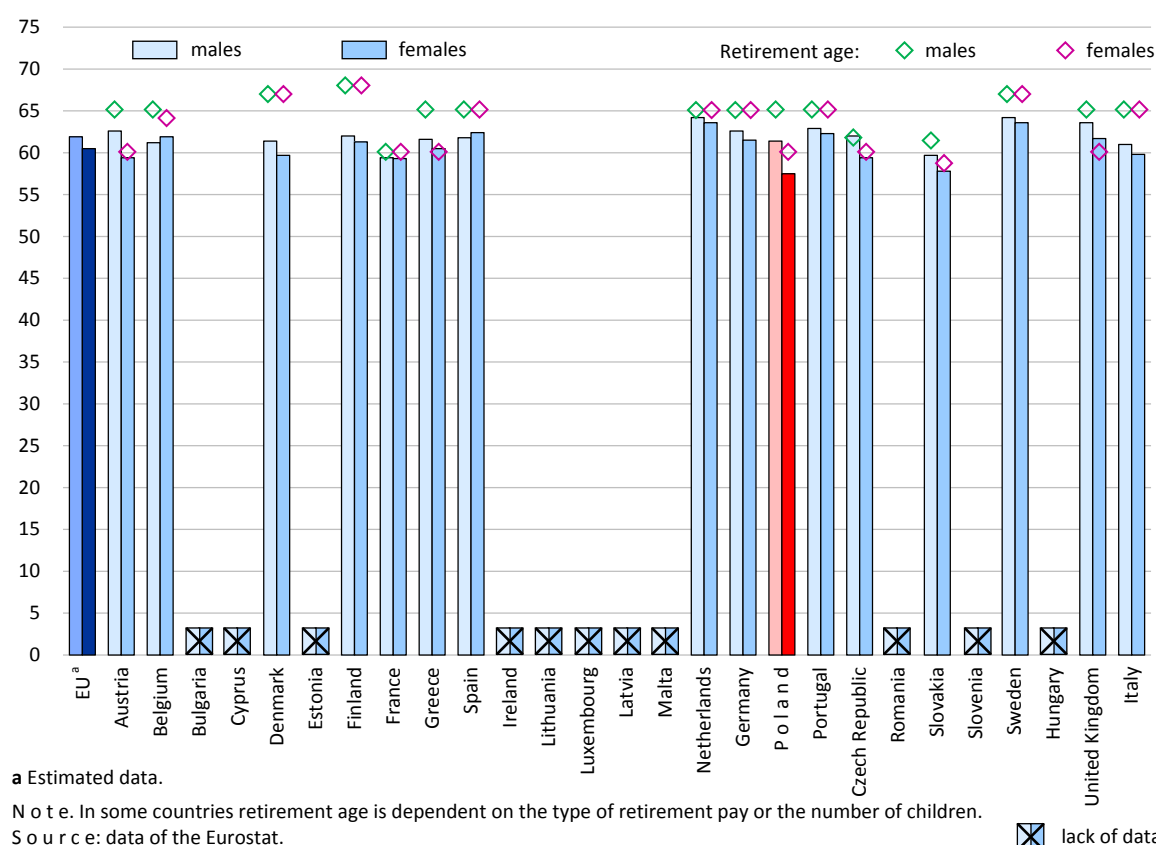
Graph 2.26. **Average exit age from the labour force by gender (years)**



International comparisons

In 2007, among EU countries (for which data were available), the most profitable value of the average exit age from the labour force indicator both for men and women was observed in Sweden; it amounted to 64,2 years and 63,6 years respectively.

Graph 2.27. **Average exit age from the labour force in EU countries in 2007 (years)**



Economic domain

Employment rate of persons aged 55-64

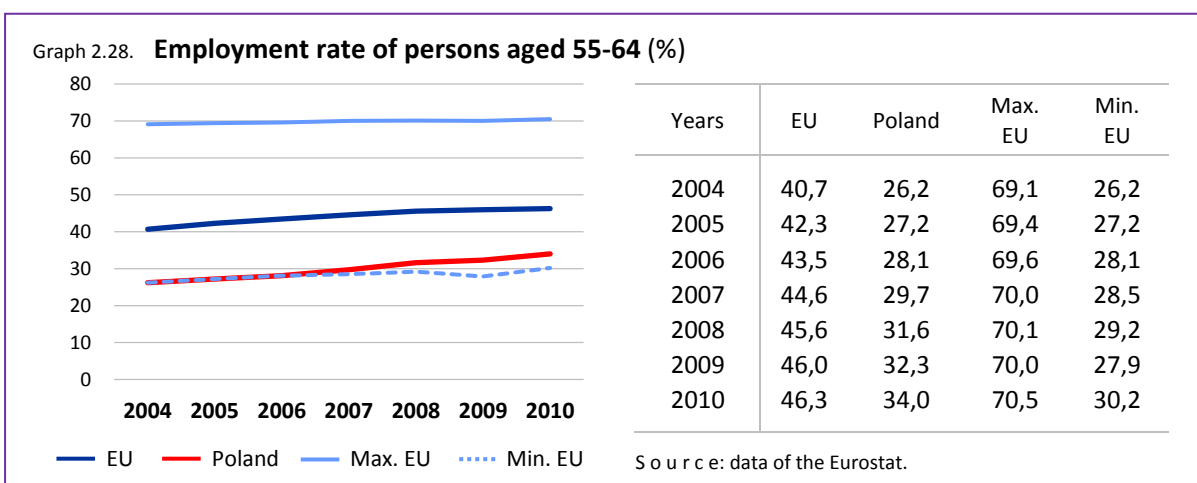
| | |
|-----------------------|---|
| Name of the indicator | Employment rate of persons aged 55-64 |
| Area | Employment |
| Definition | <p>The employment rate of persons aged 55-64 is calculated as the percentage share of employed persons aged 55-64 in the population of the same age group.</p> <p>The employment rate of persons aged 55-64 is presented for the total population and by sex.</p> <p>Indicator is calculated on the basis of the Labour Force Survey.</p> |
| Meaning | Working older persons do not burden the state budget through the use of social benefits. At the same time they pass on their experience and knowledge to the younger generation. |

Table 2.11. **Employment rate of persons aged 55-64 (%)**

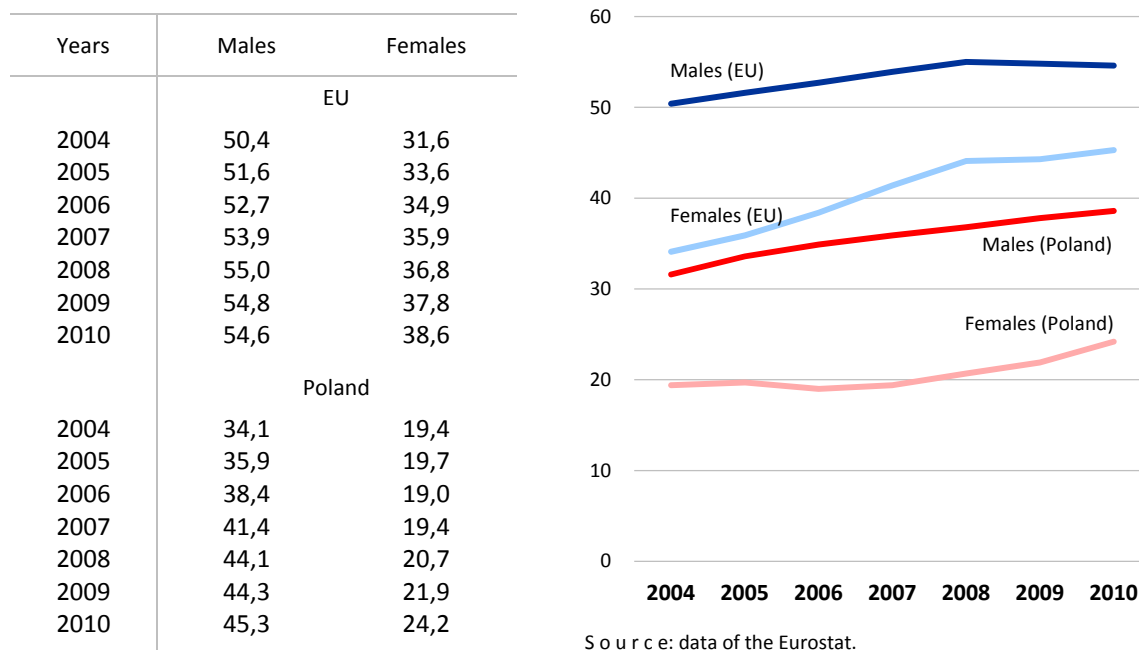
| Gender | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---------------|------|------|------|------|------|------|------|
| Total | 26,2 | 27,2 | 28,1 | 29,7 | 31,6 | 32,3 | 34,0 |
| Males | 34,1 | 35,9 | 38,4 | 41,4 | 44,1 | 44,3 | 45,3 |
| Females | 19,4 | 19,7 | 19,0 | 19,4 | 20,7 | 21,9 | 24,2 |

Source: data of the CSO / Eurostat.

Professional activation of persons aged more than 50 years is an important aspect discussed in all EU countries. A systematic increase of the employment rate of persons aged 55-64 was observed in Poland in years 2004-2010. This increase was noted not only in the case of men (by 11,2 percentage points), but also in the case of women (by 4,8 percentage points). In 2010 this indicator for men amounted to 45,3%, and for women – 24,2% and was lower than the EU average by 9,3 percentage points and by 14,4 percentage points respectively.



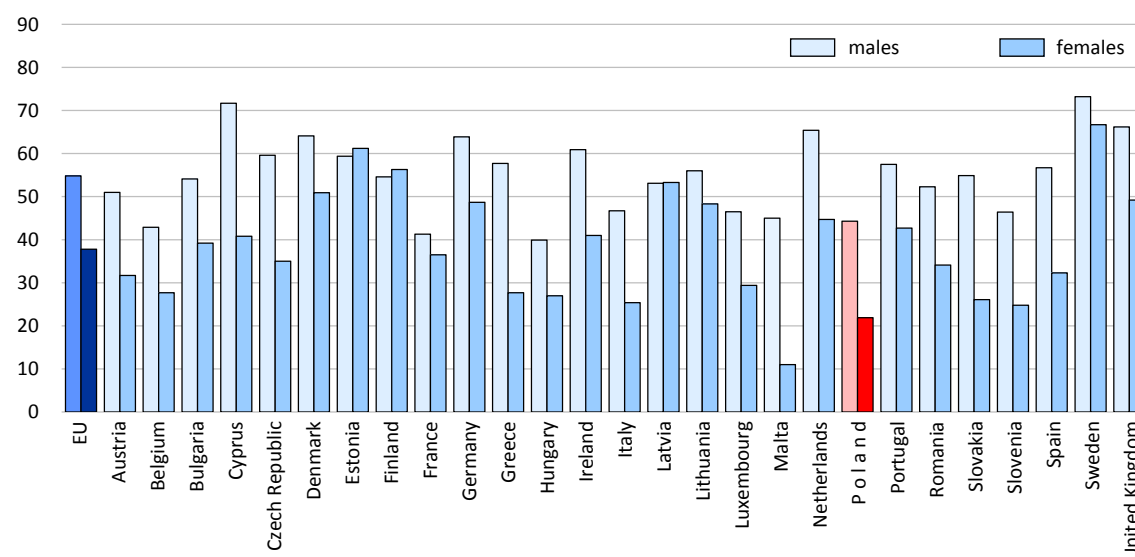
Graph 2.29. **Employment rate of persons aged 55-64 by gender (%)**



International comparisons

Employment rate in age group 55-64 in Poland is one of the lowest in the EU. In 2009, employment rate in age group 55-64 for men was lower by 10,5 percentage points and for women by 15,9 percentage points comparing to the EU average. Among EU countries in 2009 the highest level of the indicator for men and for women was observed in Sweden (73,2% and 66,7% respectively).

Graph 2.30. **Employment rate of persons aged 55-64 in EU countries in 2009 (%)**



Economic domain

Innovative products

| | |
|-----------------------|---|
| Name of the indicator | Innovative products |
| Area | Innovativeness |
| Definition | <p>The indicator concerning innovative products is calculated as a percentage of net revenues from the sale of new and significantly improved products introduced to the market in the last three years in the net revenues from total sales.</p> <p>Product innovation is the introduction of the product or service that are new or substantially improved within their properties or uses.</p> <p>Indicator is presented for the total, industrial enterprises and service sector enterprises.</p> |
| Meaning | <p>The indicator reflects the level of innovation of the economy.</p> <p>Innovation has a crucial role in the competition of products and service both in the internal and international market.</p> <p>Saturation of the economy through innovative products (high technology, based on modern technologies) increases its competitiveness, creating a solid basis for sustainable development.</p> |

Tabela 2.12. **Share of net revenues from the sale of innovative products in net revenues from total sale (%)**

| Specification | 2005 | 2006 | 2007 | 2008 | 2009 |
|--|------|------|------|------|------|
| Total | . | 10,2 | . | 9,8 | 7,2 |
| Industrial enterprises | 22,1 | 13,5 | 11,9 | 12,4 | 10,6 |
| Enterprises of the services sector | . | 6,4 | . | 6,4 | 3,2 |

Note. Data by Polish Classification of Activities 2007.

One of the basic indicators serving evaluation of results of innovation activities of the enterprises is the share of revenues from the sale of new and significantly improved products in revenues from total sale.

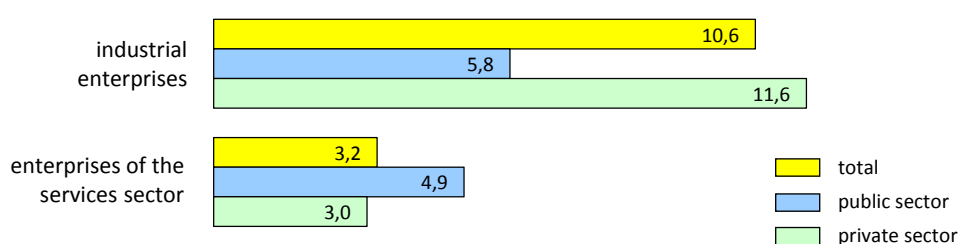
In 2009 revenue from the sale of new and significantly improved products introduced to the market in years 2007-2009 amounted to 134181 million zloties. Comparing to 2008, the sales of new and significantly improved products introduced to the market in years 2006-2008 decreased by 38819 million zloties, i.e. by 22,4%.

In 2009, the share of net revenues from the sale of innovative products introduced to the market in years 2007-2009 in net revenues from total sales amounted to 7,2% of total value of revenues decreasing by 2,6 percentage points to the level observed in 2008.

In industrial enterprises the share of net revenues from the sale of innovative products introduced to the market in years 2007-2009 in net revenues from total sales amounted to 10,6% and in 2009 was lower than the level from 2008 by 1,8 percentage point. In the services sector this share in 2009 was also lower comparing to 2008 - 3,2% and 6,4% respectively.

Taking into account the size of enterprises, the highest share of revenues from the sale of new and significantly improved products in total revenues in 2009 was observed in entities employing more than 249 persons, and the lowest share was noted in entities employing 10-49 persons.

Graph 2.31. **Share of net revenues from the sale of innovative products in net revenues from total sale by ownership sectors in 2009 (%)**

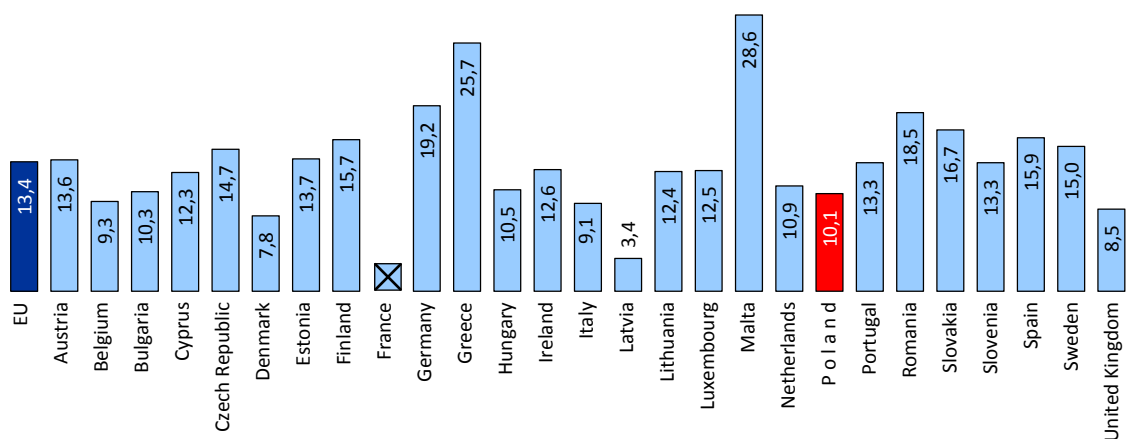


Note. Data by Polish Classification of Activities 2007.

International comparisons

Share of net revenues from the sale of innovative products in net revenues from total sales in 2006 in EU countries was on the level 13,4%. Taking into account EU countries, the highest level of this indicator was observed in Malta (28,6%) and in Greece (25,7%), and the lowest in Latvia (3,4%), in Denmark (7,8%) and in Great Britain (8,5%).

Graph 2.32. **Share of net revenues from the sale of innovative products in net revenues from total sale in EU countries in 2006 (%)**



Source: data of the Eurostat.

⊠ lack of data

Human resources in science and technology

| | |
|-----------------------|---|
| Name of the indicator | Human resources in science and technology |
| Area | Innovativeness |
| Definition | <p>The indicator is calculated as the percentage of human resources in science and technology in the economically active population in the age group 25-64 years.</p> <p>Human resources in science and technology (HRST) is composed of all persons engaged in or able to engage in work related to the creation, development, spreading and applying science and technology. Human resources in science and technology include persons who have completed at least one of two conditions:</p> <ul style="list-style-type: none"> • have formal qualifications, higher education in the fields of science and technology, • have no formal education, but they actually are employed in occupations in science and technology, where such education is usually required. |
| Meaning | <p>Providing human resources in science and technology is the basis for increasing the capacity of innovative knowledge-based economy.</p> <p>The higher the quality of human capital, the greater the choice of ideas and concepts to increase the innovativeness of the economy, making it more competitive.</p> |

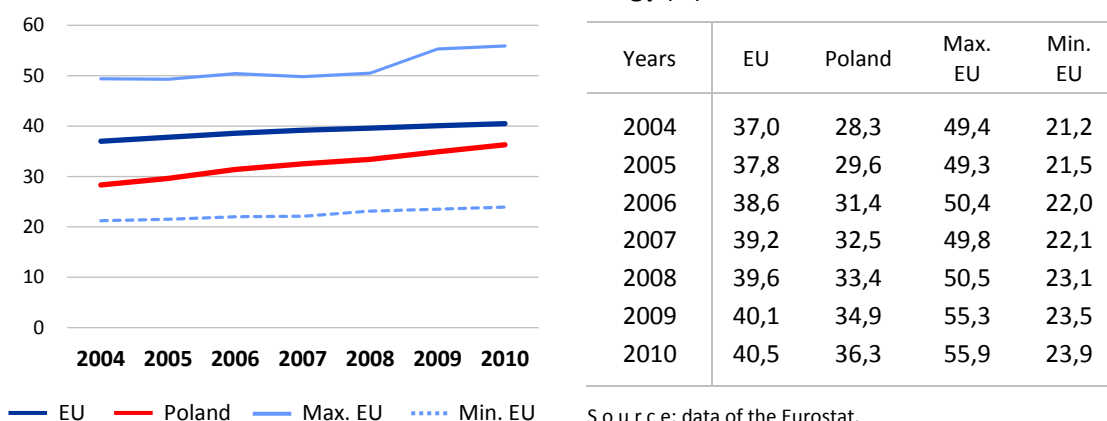
Table 2.13. **Human resources for science and technology (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------|------|------|------|------|------|------|
| 28,3 | 29,6 | 31,4 | 32,5 | 33,4 | 34,9 | 36,3 |

Human resources are of crucial importance for the development of knowledge-based economy. These resources, due to their obtained education, are engaged in creative work, development, promotion and application of scientific-technological knowledge. As a result, the interest in indicators connected with human resources for science and technology increases. One of the indicators enabling to monitor the magnitude of this phenomenon is the indicator “human resources for science and technology” calculated as a percent of economically active population in the age group 25-64.

In years 2004-2010, a systematic growth of the share of human resources in science and technology in economically active population in the age group 25-64 had been observed. In 2010 the described indicator reached the level 36,3% and increased by 1,4 percentage points in relation to previous year.

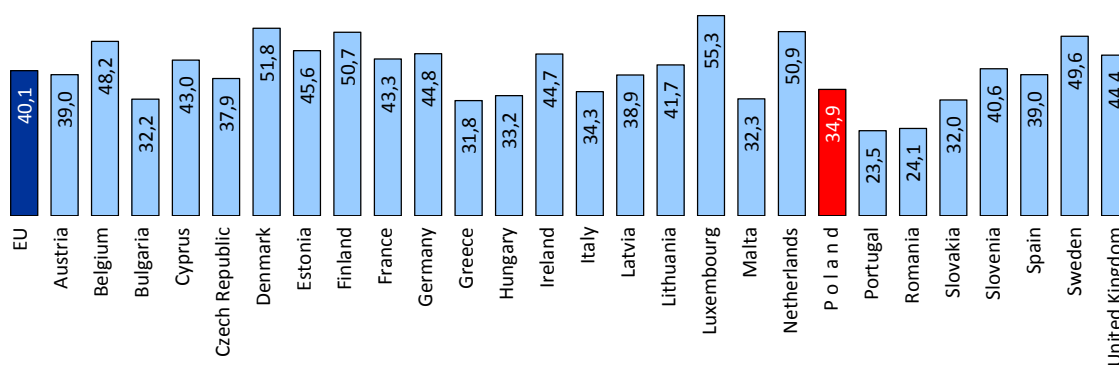
Graph 2.33. **Human resources for science and technology (%)**



International comparisons

Human resources for science and technology as a percent of economically active population in the age group 25-64 in Poland in 2009 were lower by 5,2 percentage points than the EU average. The highest level of the described indicator in 2009 was observed in Luxembourg (55,3%), Denmark (51,8%), Netherlands (50,9%) and Finland (50,7%), and the lowest in Portugal (23,5%) and Romania (24,1%).

Graph 2.34. **Human resources for science and technology in EU countries in 2009 (%)**



Source: data of the Eurostat.

Economic domain

Labour productivity

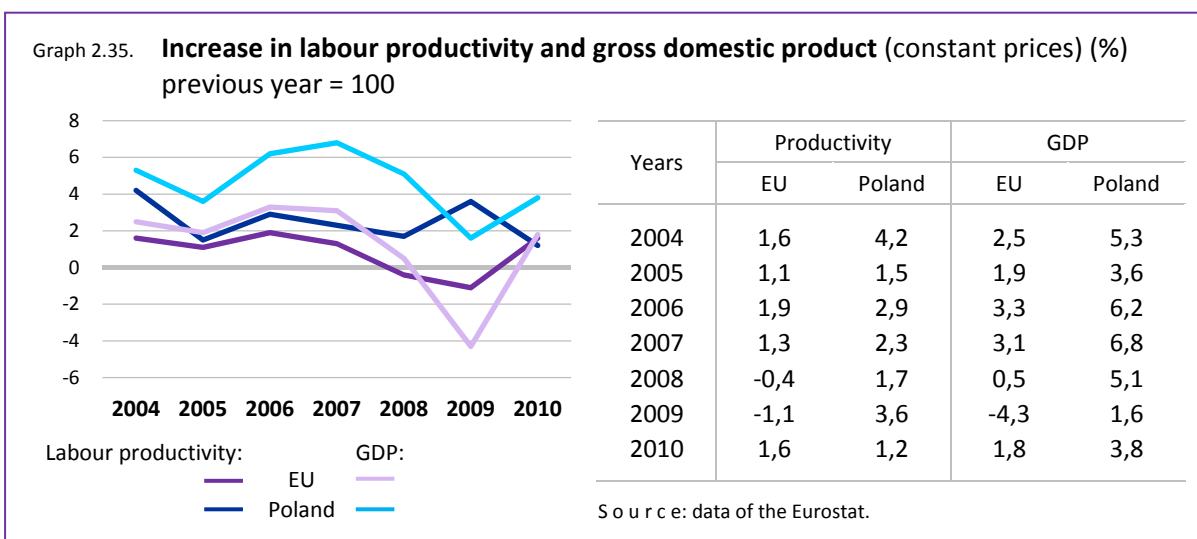
| | |
|-----------------------|---|
| Name of the indicator | Labour productivity |
| Area | Innovativeness |
| Definition | <p>The indicator is calculated as the percentage change in labour productivity in reference year in comparison with previous year.</p> <p>Labour productivity is measured by the value of gross domestic product in constant prices per unit of labour input, i.e. 1 hour worked.</p> <p>The value of gross domestic product is expressed in a common conventional currency PPS (<i>Purchasing Power Standard</i>).</p> |
| Meaning | Rate of change in labour productivity has a significant impact on economic development. The level of labour productivity is a factor of economic growth and determines the competitiveness of the economy. |

Table 2.14. **Increase in labour productivity (%)**
previous year = 100

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------|------|------|------|------|------|------|
| 4,2 | 1,5 | 2,9 | 2,3 | 1,7 | 3,6 | 1,2 |

Source: data of the Eurostat.

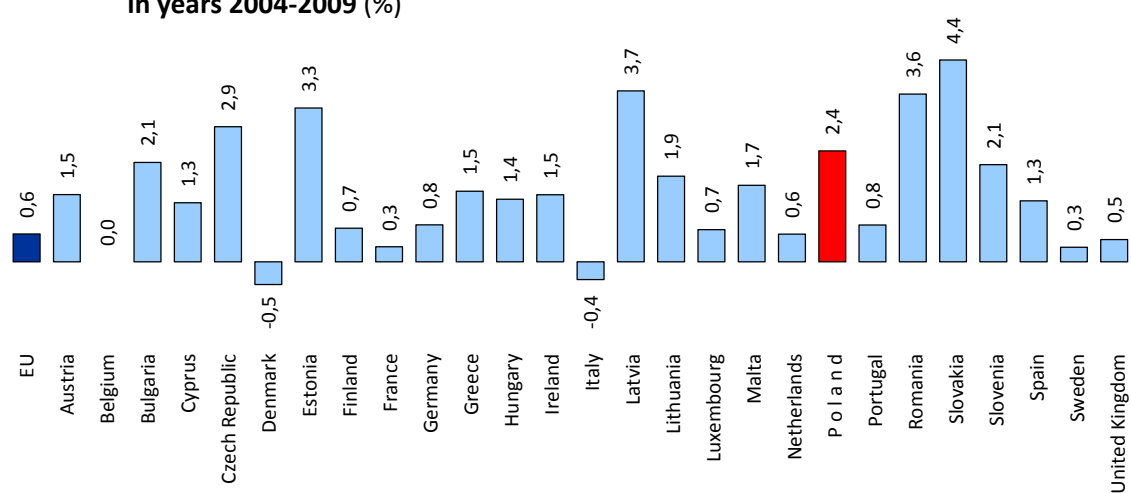
Labour productivity measured by gross domestic product per 1 hour worked is the deciding factor of the pace of economic development. Labour productivity in the Polish economy in years 2004-2010 had been increasing by 2,2% on the average compared to 0,7% in the EU. The highest increase of this indicator was observed in 2004, i.e. by 4,2%, and the lowest in 2010 - by 1,2% in relation to previous year.



International comparisons

In 2009, a decrease in labour productivity by 1,1% in the EU was observed comparing to previous year. The decrease in labour productivity was noted in 19 EU countries, of which the highest in Lithuania - by 6,4%, and the lowest in Luxembourg and Cyprus - by 0,2%. Increases of the described indicator were observed in only 8 member countries - from 3,6% in Poland and Ireland to 0,6% in the Czech Republic.

Graph 2.36. **Average yearly pace of growth of labour productivity in EU countries in years 2004-2009 (%)**



Source: data of the Eurostat.

Economic domain

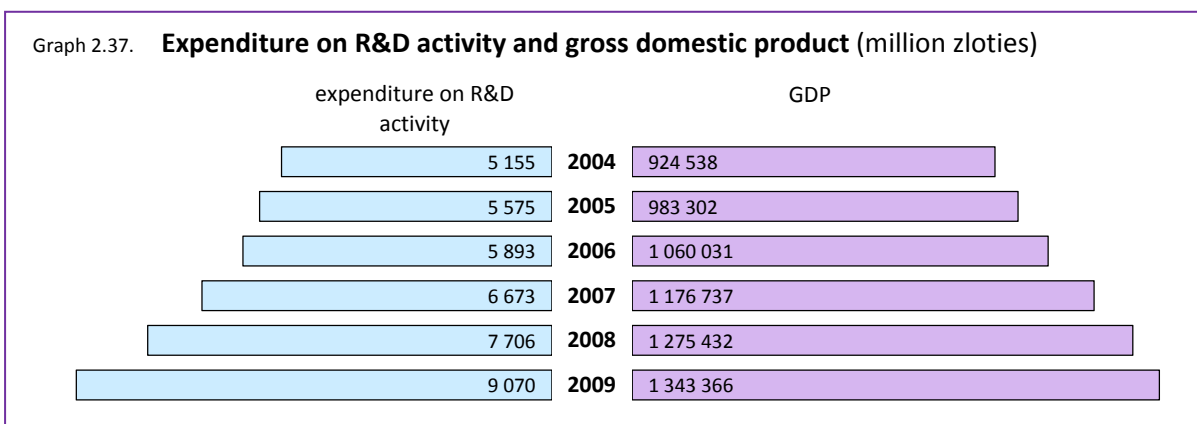
Expenditure on R&D activity in relation to GDP

| | |
|-----------------------|--|
| Name of the indicator | Expenditure on R&D activity in relation to GDP |
| Area | Innovativeness |
| Definition | <p>Indicator defines the percentage share of expenditures on research and development (R&D) in the value of gross domestic product (current prices).</p> <p>Expenditures on research and development (R&D) activity is the amount invested by all the units which conduct research and development, regardless of source of funds (in current prices).</p> |
| Meaning | Socio-economic development largely depends on the technological level of the economy. Research and development activities is its driving force. Increasing outlays on R&D leads to increasing of innovation and competitiveness of the economy. |

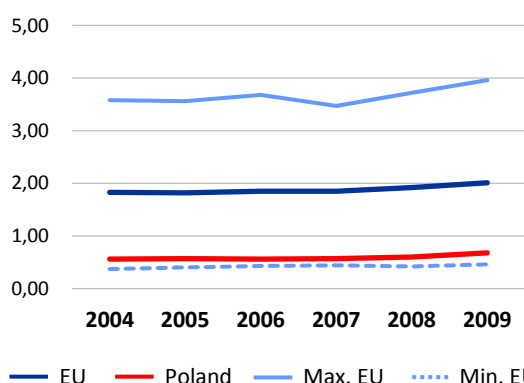
Table 2.15. **Expenditure on R&D activity in relation to GDP (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|
| 0,56 | 0,57 | 0,56 | 0,57 | 0,60 | 0,68 |

The share of expenditure on R&D activity in Poland is relatively low and since many years has been remaining on a similar level. In 2009 expenditure on R&D activity constituted 0,68% GDP and was higher by 0,12 percentage points comparing to the level obtained in 2004. Despite an increase in the expenditure on R&D activity in years 2007-2009 our country still is located on one of the last places in the European ranking.



Graph 2.38. **Expenditure on R&D activity in relation to GDP (%)**



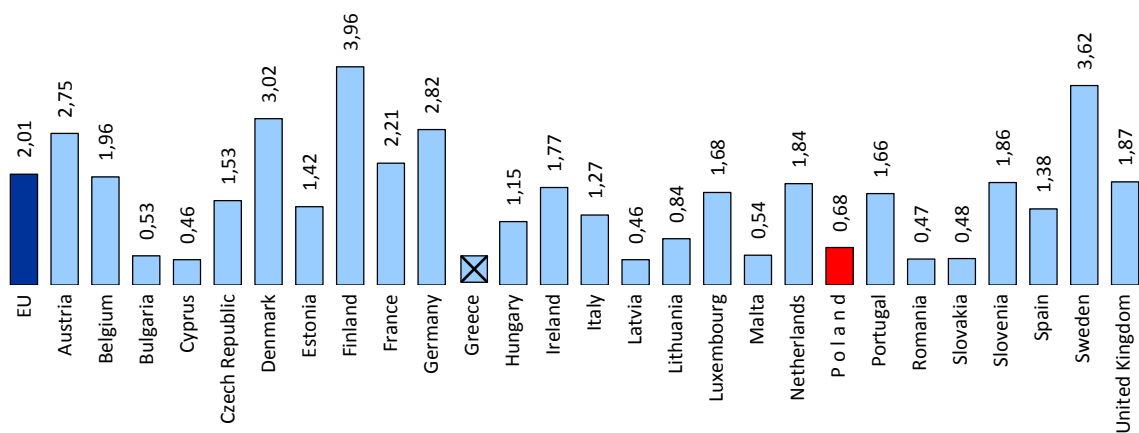
| Years | EU | Poland | Max. EU | Min. EU |
|-------|------|--------|---------|---------|
| 2004 | 1,83 | 0,56 | 3,58 | 0,37 |
| 2005 | 1,82 | 0,57 | 3,56 | 0,40 |
| 2006 | 1,85 | 0,56 | 3,68 | 0,43 |
| 2007 | 1,85 | 0,57 | 3,47 | 0,44 |
| 2008 | 1,92 | 0,60 | 3,72 | 0,42 |
| 2009 | 2,01 | 0,68 | 3,96 | 0,46 |

Source: data of the Eurostat.

International comparisons

In 2009 expenditure on R&D activity in relation to GDP lower than in Poland, taking into account EU countries, was observed in Cyprus and in Latvia (0,46%), Romania (0,47%), Slovakia (0,48%), Bulgaria (0,53%) and Malta (0,54%). On the other hand, the highest share of expenditure on R&D activity in relation to GDP was noted in Finland, Sweden and Denmark (3,96%, 3,62% and 3,02% respectively). Only those three countries obtained the level of this indicator as defined in the European Union Strategy "Europe 2020" (3%).

Graph 2.39. **Expenditure on R&D activity in relation to GDP in EU countries in 2009 (%)**



Source: data of the Eurostat.

⊗ lack of data

Intermodal freight transport by standard gauge railway

| | |
|-----------------------|--|
| Name of the indicator | Intermodal freight transport by standard gauge railway transport |
| Area | Transport |
| Definition | <p>The indicator defines the percentage share of intermodal freight transport by standard gauge railway transport (including large gauge) transport:</p> <ul style="list-style-type: none"> • large containers loaded, • road goods vehicles. <p>Railway transport are measured in tonnes.</p> <p>Data for road goods vehicles include road vehicles (including accompanied), semi-trailers and swap bodies.</p> |
| Meaning | <p>One of the priorities of transport policy is the possibility of combining different forms of transport: road with rail, sea with rail and rail with air. Changes in the organization of large freight containers and heavy rail vehicles are monitored using this indicator. By moving heavy transport from road to rail, which is more environmentally friendly and safe means of transport, two objectives are achieved – environmental protection and improving road safety.</p> |

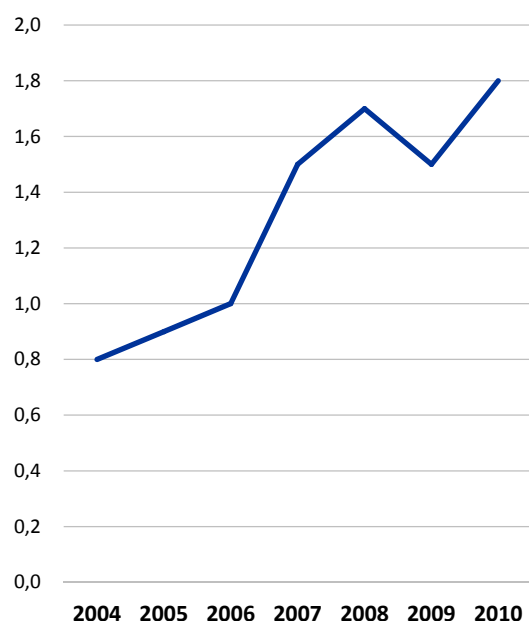
Table 2.16. **Share of large containers loaded and lorries transport in total standard gauge railway transport (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------|------|------|------|------|------|------|
| 0,8 | 0,9 | 1,0 | 1,5 | 1,7 | 1,5 | 1,8 |

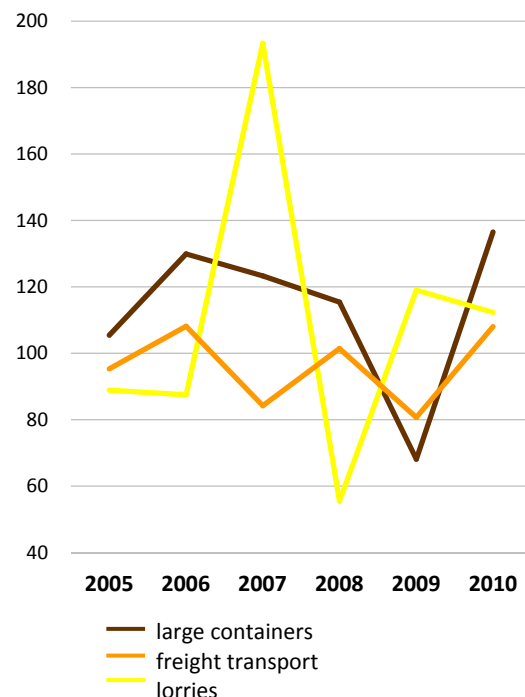
In years 2004-2010 the share of railway transport in freight transport had systematically decreased on behalf of road transport, and it is an unfavourable occurrence. Freight measured in tons transported by railway constituted 21,4% in 2004, and 11,8% in 2010 of transported freight, and by road transport 72,2% and 84,4% respectively. In 2010 the magnitude of freight by standard gauge railway transport (including wide gauge) was 217 million tons, i.e., decrease by 19,5% comparing to 2004.

More than one branch of transport is used in intermodal freight transport, most frequently combining road transport with railway transport. Containers, semi-trailers or swap bodies are used for freight transport. In 2010, comparing to 2009, within intermodal transport – railway transport carried by 30,2% less containers (with freight and empty), and by 44,6% more swap bodies.

Graph 2.40. **Share of large containers loaded and lorries transport in total standard gauge railway transport (%)**



Graph 2.41. **Intermodal freight transport by standard gauge railway transport previous year = 100**



In 2010 the magnitude of container freight in railway transport amounted to 4,3 million tons, comparing to 2004 there was an increase by 79,4%, and comparing to 2009 there was an increase by 30,2%. Average distance travelled by 1 tonne of goods in 2010 amounted to 431 kilometres. In 2010 the magnitude of transported swap bodies with freight measured in tons was higher by 40,1% in comparison with 2004 and by 11,6% in comparison with 2009. In years 2004-2010 the total share of large containers loaded and lorries loaded measured in tons systematically increased from 0,8% in 2004 to 1,8% in 2010.

Economic domain

Resource productivity

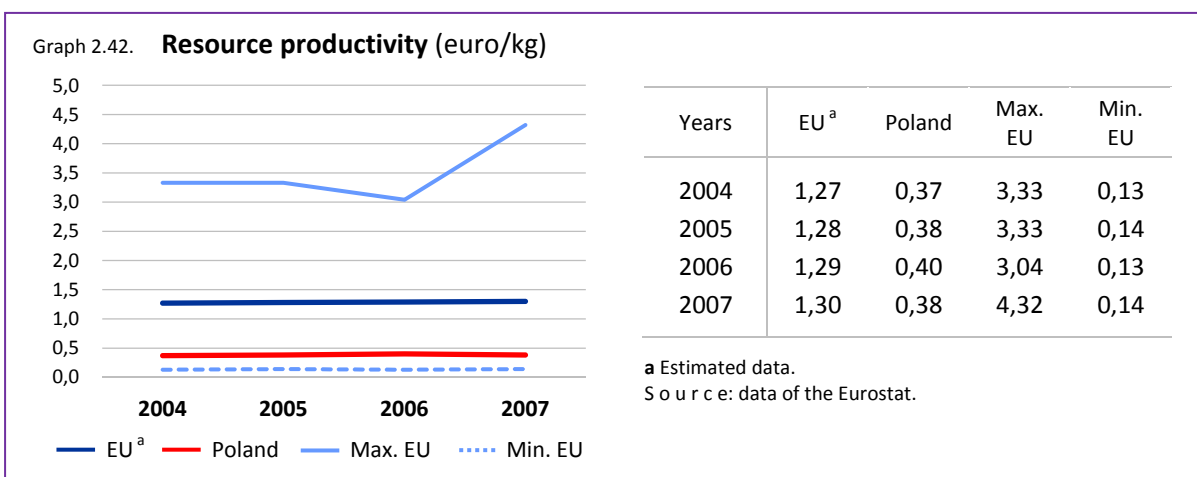
| | |
|-----------------------|--|
| Name of the indicator | Resource productivity |
| Area | Sustainable production patterns |
| Definition | <p>Resource productivity is the ratio between gross domestic product (GDP) and domestic material consumption (DMC).</p> <p>Domestic material consumption includes the total amount of materials directly used in economic processes for the needs of economy. It is the sum of raw materials extracted from the domestic territory of the total economy, plus all physical imports minus all physical exports.</p> |
| Meaning | The increase of indicator value in time indicates the efficiency of resource use in connection with an economic activity. |

Table 2.17. **Resource productivity** (euro/kg)

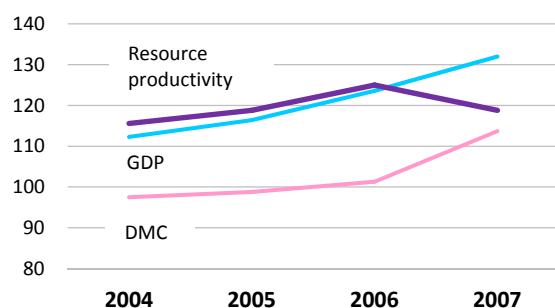
| 2004 | 2005 | 2006 | 2007 |
|------|------|------|------|
| 0,37 | 0,38 | 0,40 | 0,38 |

Source: data of the Eurostat.

Resource productivity is a measure of the total amount of materials directly used in the economy, measured as domestic material consumption (DMC) in relation to economic activity (measured as GDP). It gives information, whether the separation of the co-dependence of economic growth from the increase of the use of natural resources and the reduction of negative impact of the economy on the environment takes place. The resource productivity in Poland is lower by three times in comparison with EU countries. In years 2004-2006 the resource productivity indicator in Poland had increased from 0,37 to 0,40 euro/kg, and in 2007 there was a decrease and the magnitude of the indicator was 0,38 euro/kg.



Graph 2.43. **Resource productivity, GDP and DMC**
2000 = 100



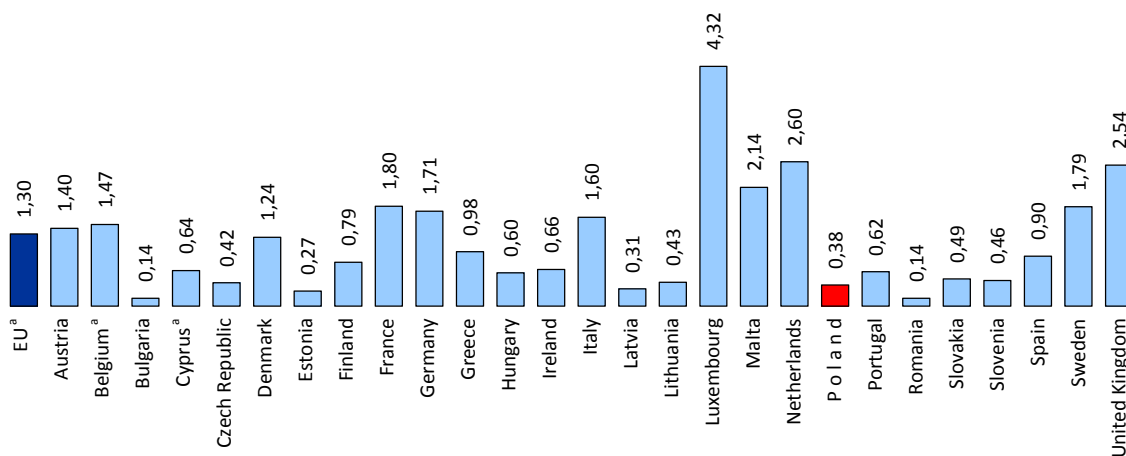
| Years | GDP | DMC | Resource productivity |
|-------|-------|-------|-----------------------|
| 2004 | 112,3 | 97,5 | 115,6 |
| 2005 | 116,4 | 98,8 | 118,8 |
| 2006 | 123,6 | 101,3 | 125,0 |
| 2007 | 132,0 | 113,7 | 118,8 |

Source: data of the Eurostat.

International comparisons

Average resource productivity in EU countries in 2007 amounted to 1,30 euro/kg. Taking into account EU countries the lowest value of the indicator in 2007 was noted in Bulgaria (0,14 euro/kg) and Romania (0,14 euro/kg), and the highest value of the indicator was observed in Luxembourg (4,32 euro/kg) and the Netherlands (2,60 euro/kg).

Graph 2.44. **Resource productivity in EU countries in 2007 (euro/kg)**



^a Estimated data.

Source: data of the Eurostat.

Economic domain

Area under organic farming

| | |
|-----------------------|--|
| Name of the indicator | Area under organic farming |
| Area | Sustainable production patterns |
| Definition | <p>The indicator defines the percentage share of total utilised agricultural area occupied by organic farming in total agricultural land computed by settlement of farm user.</p> <p>The farm is considered as organic (using organic methods of production) if it has a certificate granted to it by a certification body or which is under conversion to organic methods of agricultural production (under control of a certification body).</p> |
| Meaning | <p>Organic agriculture reduces the environmental burden, helping to improve the situation of ecosystems. This is the method of production, which puts the highest emphasis on environmental protection and animal welfare. This is achieved through the use of biological and mechanical production methods, crop rotation, reduction of chemical pesticides and synthetic fertilizers, prohibition of using genetically modified organisms, management based on farm's own resources (manure, feed), selection of plant varieties and animal breeds resistant to diseases, keeping livestock in the free-position system with access to catwalks and feeding with organic feed.</p> |

Table 2.18. **Area under organic farming (%)**

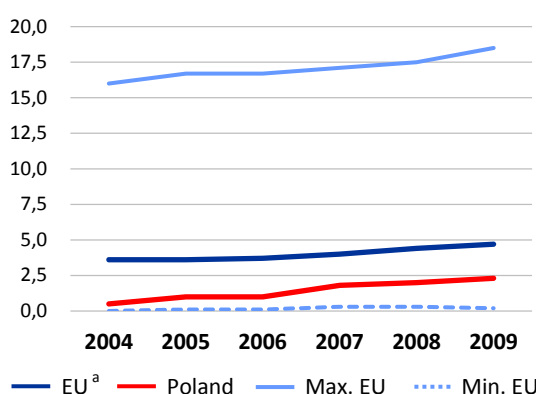
| | | | | | |
|------|------|------|------|------|------|
| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
| 0,5 | 1,0 | 1,0 | 1,8 | 2,0 | 2,3 |

Source: data of the Eurostat.

In years 2004-2009 a systematic increase of the share of area under organic farming in total area of agricultural land in Poland had been observed reaching the level 2,3%. During this period the increase was from 0,2 percentage point to 0,8 percentage point.

Moreover, in the period 2004-2009 a dynamic increase of the area under organic farming was observed. In 2009 this area amounted to 367,1 thous. ha and was by over four times larger than in 2004 (82,7 thous. ha).

Graph 2.45. **Area under organic farming (%)**



| Years | EU ^a | Poland | Max. EU | Min. EU |
|-------|-----------------|--------|---------|---------|
| 2004 | 3,6 | 0,5 | 16,0 | 0,0 |
| 2005 | 3,6 | 1,0 | 16,7 | 0,1 |
| 2006 | 3,7 | 1,0 | 16,7 | 0,1 |
| 2007 | 4,0 | 1,8 | 17,1 | 0,3 |
| 2008 | 4,4 | 2,0 | 17,5 | 0,3 |
| 2009 | 4,7 | 2,3 | 18,5 | 0,2 |

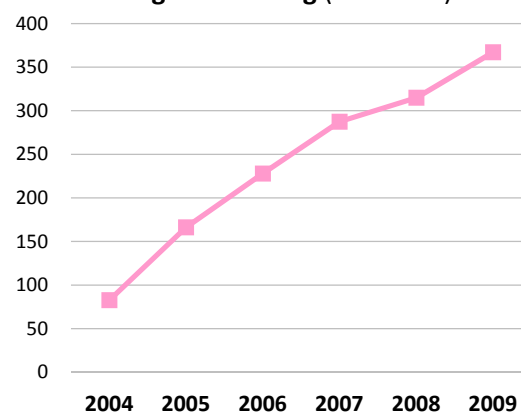
^a Estimated data. In 2004 – data for EU-25.

Source: data of the Eurostat.

International comparisons

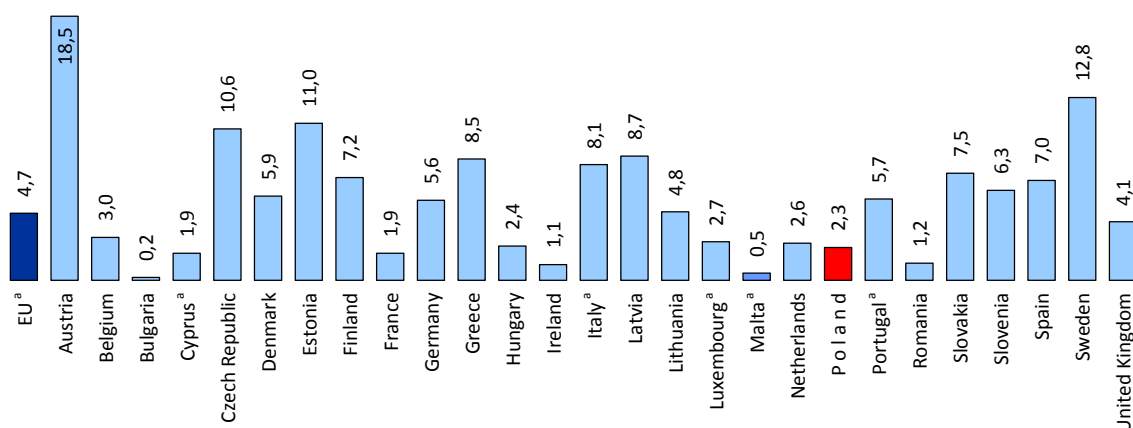
In the period 2004-2009 the share of area under organic farming in total area of agricultural land for 25 EU countries had increased from 3,6% to 5,1%. The highest increase of this indicator compared to previous year was observed in 2008 (by 0,4 percentage point). In years 2004-2009 the most dynamic increase in the share of area under organic farming in total area of agricultural land was observed in Latvia (by 7,1 percentage point). In 2009 the highest share of area under organic farming in total area of agricultural land among EU countries was noted in Austria (18,5%), and the lowest – not exceeding 1% – in Bulgaria and Malta.

Graph 2.46. **Area of agricultural land under organic farming (thous. ha)**



Source: data of the Agricultural and Food Quality Inspection.

Graph 2.47. **Area under organic farming in EU countries in 2009 (%)**



^a Estimated data.

Source: data of the Eurostat.

Economic data

Organizations with Eco-Management and Audit Scheme EMAS

| | |
|-----------------------|---|
| Name of the indicator | Organizations with Eco-Management and Audit Scheme EMAS |
| Area | Sustainable production patterns |
| Definition | <p>The indicator is defined as the number of organizations registered in EMAS.</p> <p>The EMAS – Eco-Management and Audit Scheme is an environmental management system, in which organisations may be voluntary involved (entities engaged in manufacturing and services, public administrations and local government, charitable institutions), aiming to achieve the best results of their actions to improve environmental protection. An organization that wants to register under EMAS must implement an environmental management system in accordance with the requirements of ISO 14001.</p> |
| Meaning | <p>This indicator shows the degree of responsibility for the environment.</p> <p>EMAS is an important tool of actions for sustainable production and consumption.</p> |

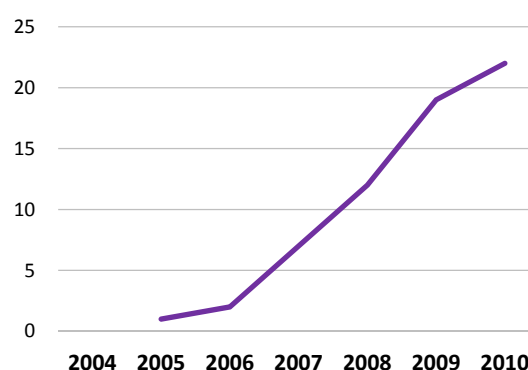
Table 2.19. **Organizations with Eco-Management and Audit Scheme EMAS**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------|------|------|------|------|------|------|
| – | 1 | 2 | 7 | 12 | 19 | 22 |

Source: data of the Eurostat.

Eco-Management and Audit Scheme EMAS is a voluntary obligation undertaken by enterprises and institutions to undertake specific activities of a technical or organizational character to reduce their impact on environment. After the Polish accession to the EU, already in 2005 the first national organization was registered in the EMAS system. In Poland, year by year the number of registered in this system organizations has been increasing (profitable occurrence), yet this system is still not widespread.

Graph 2.48. **Organizations with Eco-Management and Audit Scheme EMAS**



Source: data of the Eurostat.

International comparisons

Among EU countries the greatest number of organizations registered in the EMAS system in years 2004-2009 was noted in Germany (in 2009 – 1379), Spain (in 2009 – 1159) and Italy (in 2009 – 1037), while in Bulgaria and Latvia no organization in this system was registered.

Table 2.20. **Number of organizations with Eco-Management and Audit Scheme EMAS in EU countries**

| Countries | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|----------------------|------|------|------|------|------|------|
| Austria | 254 | 265 | 256 | 252 | 261 | 253 |
| Belgium | 31 | 34 | 39 | 42 | 46 | 49 |
| Bulgaria | – | – | – | – | – | – |
| Cyprus | – | – | – | – | 4 | 5 |
| Czech Republic | 15 | 18 | 21 | 28 | 33 | 31 |
| Denmark | 120 | 121 | 116 | 96 | 93 | 93 |
| Estonia | – | 1 | 2 | 2 | 2 | 2 |
| Finland | 40 | 43 | 42 | 41 | 42 | 25 |
| France | 20 | 17 | 17 | 13 | 12 | 17 |
| Germany | 1641 | 1491 | 1489 | 1464 | 1419 | 1379 |
| Greece | 6 | 27 | 51 | 56 | 62 | 69 |
| Hungary | – | 2 | 8 | 13 | 17 | 20 |
| Ireland | 8 | 8 | 8 | 6 | 7 | 8 |
| Italy | 253 | 394 | 570 | 755 | 939 | 1037 |
| Latvia | – | – | – | 8 | 8 | 6 |
| Lithuania | – | – | – | – | – | – |
| Luxembourg | 1 | 1 | 1 | – | 1 | 2 |
| Malta | 1 | 1 | 1 | 1 | 1 | 1 |
| Netherlands | 25 | 22 | 15 | 11 | 10 | 7 |
| P o l a n d | – | 1 | 2 | 7 | 12 | 19 |
| Portugal | 23 | 42 | 53 | 61 | 77 | 79 |
| Romania | – | – | – | 1 | 1 | 3 |
| Slovakia | 2 | 2 | 3 | 5 | 6 | 6 |
| Slovenia | 1 | 1 | 1 | 1 | 2 | 3 |
| Spain | 412 | 522 | 666 | 905 | 1033 | 1159 |
| Sweden | 118 | 100 | 84 | 71 | 74 | 75 |
| United Kingdom | 66 | 64 | 62 | 69 | 71 | 65 |

S o u r c e: data of the Eurostat.

Environmental domain

List of indicators

Climate change

- Total greenhouse gas emissions (in CO₂ equivalent) indexed to Kyoto base year
- Greenhouse gas emissions by sector
- Greenhouse gas emissions intensity of energy consumption

Energy

- Renewable energy in gross final energy consumption
- Biofuels in the consumption of transportation fuels
- Energy self-sufficiency
- Investment outlays on fixed assets in the field of non-conventional energy sources

Air protection

- The degree of reduction of gas pollutants (excluding CO₂) from plants generating substantial air pollution
- The degree of reduction of particulate pollutants from plants generating substantial air pollution
- Emission of air pollutants by means of transport
- Average emission of CO₂ from new passenger cars

Sea ecosystems

- Size of fishing fleet

Fresh water resources

- Water intensity of industry
- Consumption of water for needs of the population and national economy
- Population using waste water treatment plants

Land use

- Built-up and urban areas
- Devastated and degraded land
- Forest cover

Biodiversity

- Area of protected land
- Forest trees damaged

Waste management

- Non-mineral waste generated per capita
- Municipal waste generated per capita
- Municipal waste treated by landfilling per capita
- Recycling of packaging waste

Environmental domain

Total greenhouse gas emissions

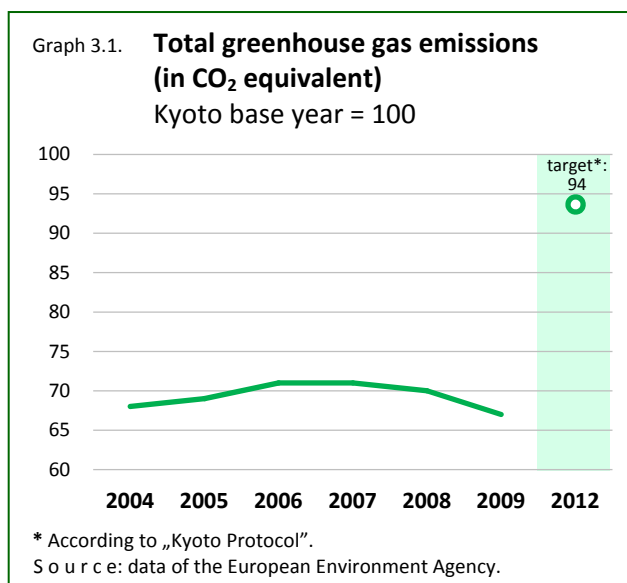
| | |
|-----------------------|--|
| Name of the indicator | Total greenhouse gas emissions (in CO ₂ equivalent) indexed to Kyoto base year |
| Area | Climate change |
| Definition | <p>The indicator shows total annual emission of greenhouse gases produced by a man ("Kyoto basket") in relation to Kyoto Protocol base year (for Poland 1988 = 100) excluding emissions resulting from international aviation and maritime transport as well as connected with land use and land use change and forestry (LULUCF).</p> <p>The "Kyoto basket" of greenhouse gases includes: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and the so-called F-gases: hydrofluorocarbons (HFC), perfluorocarbons (PFC) and sulphur hexafluoride (SF₆).</p> |
| Meaning | Arrangements accepted in Kyoto are assumed as one of the first steps of the international society undertaken to formalize actions on behalf of an effective nature protection. Reduction of carbon dioxide emissions and other greenhouse gases in the atmosphere is enormously essential for the protection against excessive warming of the climate. |

Table 3.1. **Total greenhouse gas emissions (in CO₂ equivalent) indexed to Kyoto base year**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|
| 68 | 69 | 71 | 71 | 70 | 67 |

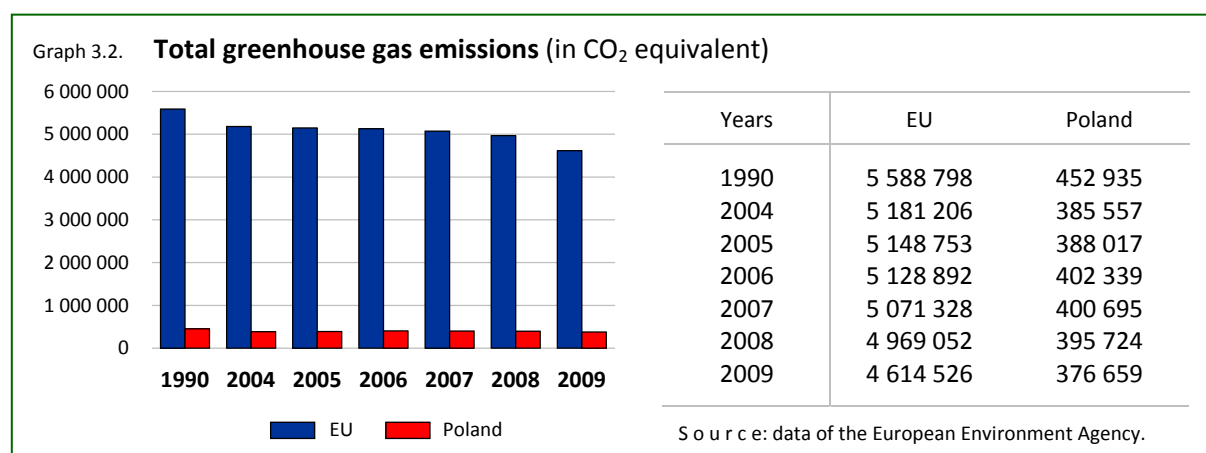
Source: data of the European Environment Agency.

Since 1994 Poland has been a party to the United Nations Framework Convention on Climate Change. It indicates the obligation to undertake actions connected with stabilization of the content of greenhouse gases in the atmosphere. The Convention obligated Poland to stabilize the emissions of greenhouse gas in the atmosphere on the level protecting from permanent changes of global climate.



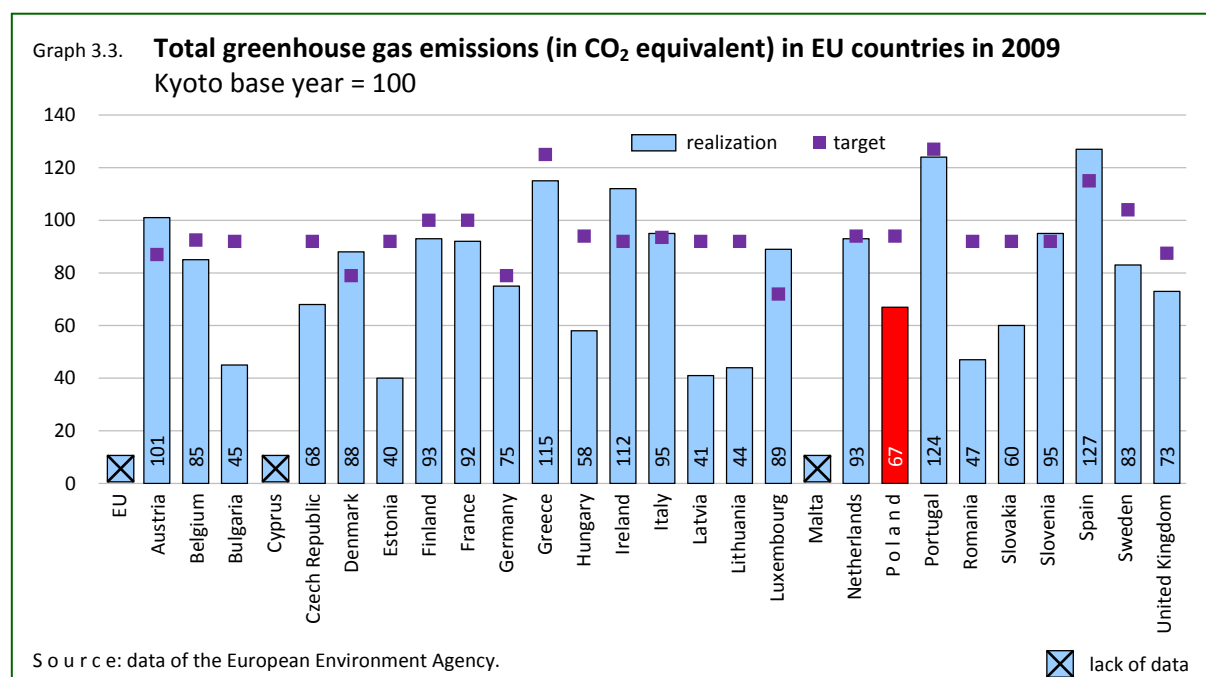
In 1998 Poland signed the Kyoto Protocol to the United Nations Framework Convention on Climate Change. It was ratified in 2002. At the same time, as a signatory to the Protocol, Poland has undertaken the obligation to fulfil its regulations, that is to reduce the emissions of greenhouse gas by 6% in years 2008-2012 in relation to base year emissions (for Poland it is 1988).

The commitment to reduce the emissions of greenhouse gas in the first period of obligations of the Kyoto Protocol (2008-2012) was fulfilled by Poland with a surplus, because the national emission of greenhouse gas was reduced by o 33% till 2009. Further limitation of emissions is indispensable to protect the climate. In Poland an increase of the level of reductions is planned – by 40% till 2020.



International comparisons

Most of EU countries noted a decrease of total emissions of greenhouse gas to the atmosphere in relation to base year emissions, fulfilling at the same time its obligations concerning the limitation of greenhouse gas emissions to support sustainable development. In 2009 the lowest emissions, comparing to base year, were observed in: Estonia 40% (target: 92%), Latvia – 41% (target: 92%), Lithuania – 44% (target: 92%).



Environmental domain

Greenhouse gas emissions by sector

| | |
|-----------------------|--|
| Name of the indicator | Greenhouse gas emissions by sector |
| Area | Climate change |
| Definition | <p>The indicator shows the magnitude of greenhouse gas emissions (expressed in CO₂ equivalent) produced by a man divided into main categories of sources (<i>sectors of the economy</i>).</p> <p>The source emissions are grouped according to Intergovernmental Panel Climate Change.</p> <p>Pursuant to the Act on trade of rights to emit greenhouse gases and other substances to the atmosphere equivalent means one megagram (1 Mg) of carbon dioxide or an amount of other greenhouse gas, which corresponds to 1 Mg of carbon dioxide, calculated using the warming factor.</p> |
| Meaning | Different sources of emission in regard to different sectors of the economy, such as energy industry, transport industry, construction and agriculture contribute to total emission of greenhouse gas in a varied degree. The indicator enables to evaluate the effectiveness of actions undertaken to reduce the emission of greenhouse gas. It also points out areas, where further works shall be necessary. |

Table 3.2. **Greenhouse gas emissions by sector^a** (in thous. tons CO₂ equivalent)

| Specification | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|----------------|----------------|----------------|----------------|----------------|----------------|
| T o t a l | 385 557 | 388 017 | 402 339 | 400 695 | 395 724 | 376 659 |
| of which from: | | | | | | |
| Energy industries | 181 306 | 179 562 | 184 504 | 181 993 | 174 424 | 167 574 |
| Manufacturing industries and construction | 38 349 | 32 038 | 33 375 | 35 203 | 33 288 | 30 472 |
| Transport | 34 624 | 36 443 | 38 700 | 40 219 | 44 138 | 44 439 |
| Industrial processes | 23 641 | 28 855 | 31 087 | 32 907 | 32 805 | 24 410 |
| Agriculture | 33 734 | 34 173 | 35 707 | 36 551 | 36 538 | 35 512 |
| Waste | 9 361 | 9 437 | 9 336 | 9 326 | 8 928 | 8 866 |

^a According to IPCC classification.

S o u r c e: data of the European Environment Agency.

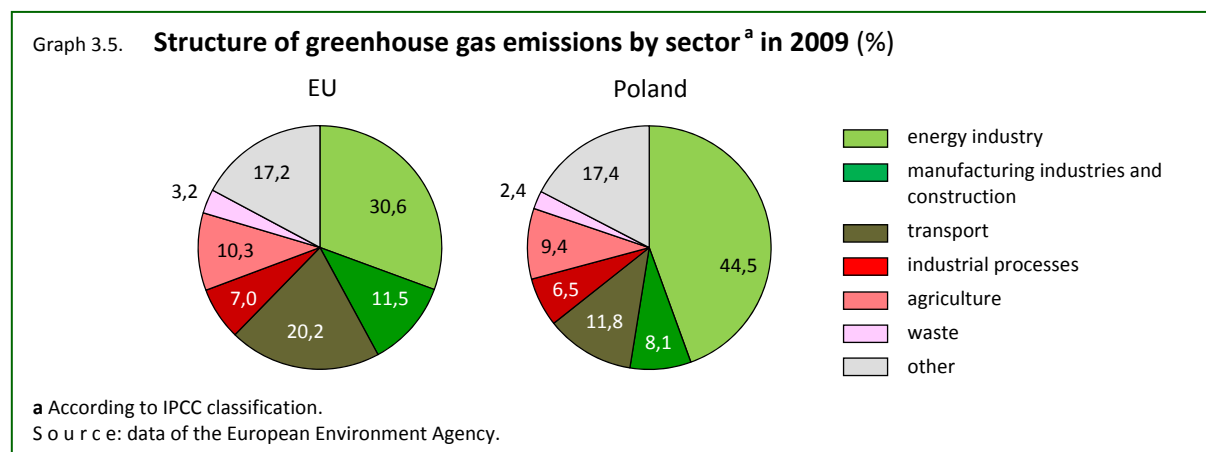
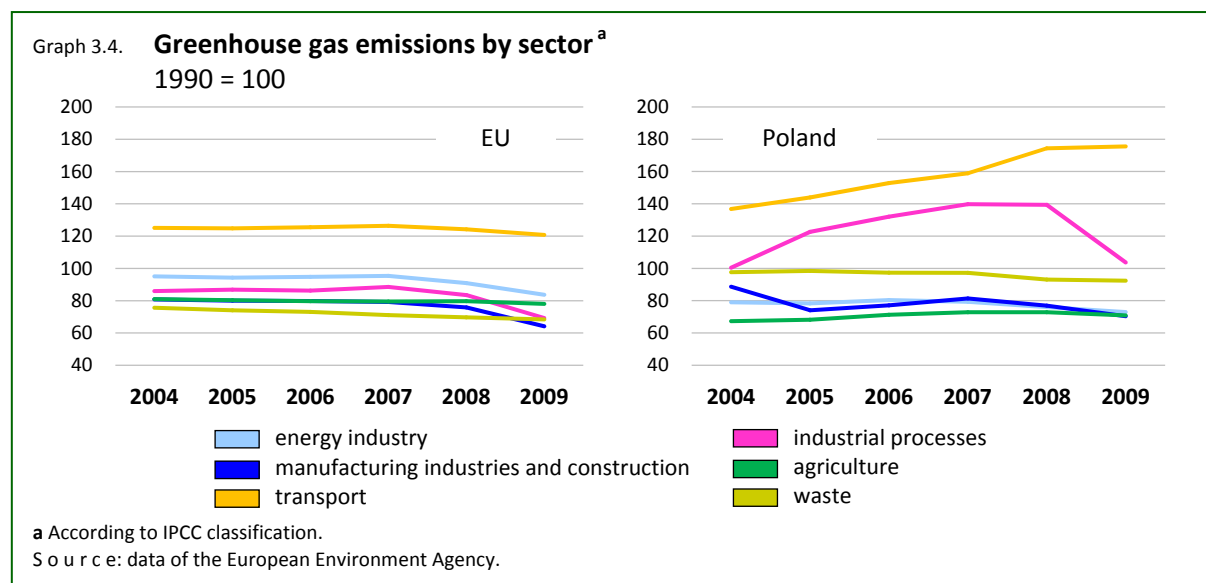
Sources of greenhouse gas emissions were divided into 6 main categories by IPCC classification:

- energy (of which: energy industry, manufacturing industry and construction, transport),
- industrial processes,
- use of solvents and other products,
- agriculture,
- land use, changes in land use and forestry,
- waste.

In 2009 greenhouse gas emissions in Poland constituted 8,2% of total EU emissions. Poland was located on the 5th position among EU countries taking into account greenhouse gas emissions (Germany – 919 698 thous. tons CO₂, Great Britain – 566 210 thous. tons CO₂, France – 517 248 thous. tons CO₂, Italy – 491 120 thous. tons CO₂). Processes connected with the generation of energy (energy industry, manufacturing industry and construction as well as transport), industrial processes and waste are the biggest source of greenhouse gas emissions in EU (over 80%). In 2009 in Poland energy industry, manufacturing industry and construction as well as transport were the main sources of greenhouse gas emissions – 64,4% of total amount of greenhouse gas emissions. The share of greenhouse gas emissions from the analyzed sectors (sources of emissions) in 2009, compared to total emissions of greenhouse gas was:

- energy industries – 44,5%,
- manufacturing industries and construction – 8,1%,
- transport – 11,8%,
- industrial processes – 6,5%,
- agriculture – 9,4%,
- waste – 2,4%.

From 1990 to 2009 the share of greenhouse gas emissions from sectors in total emission of these gases had decreased: in energy industry – by 6,2 percentage points, in manufacturing industries and construction – by 1,5 percentage points, in agriculture – by 1,6 percentage point; on the other hand increases were noted in the following sectors: transport – by 6,2 percentage points, industrial processes – by 1,3 percentage point, waste – by 0,2 percentage point.

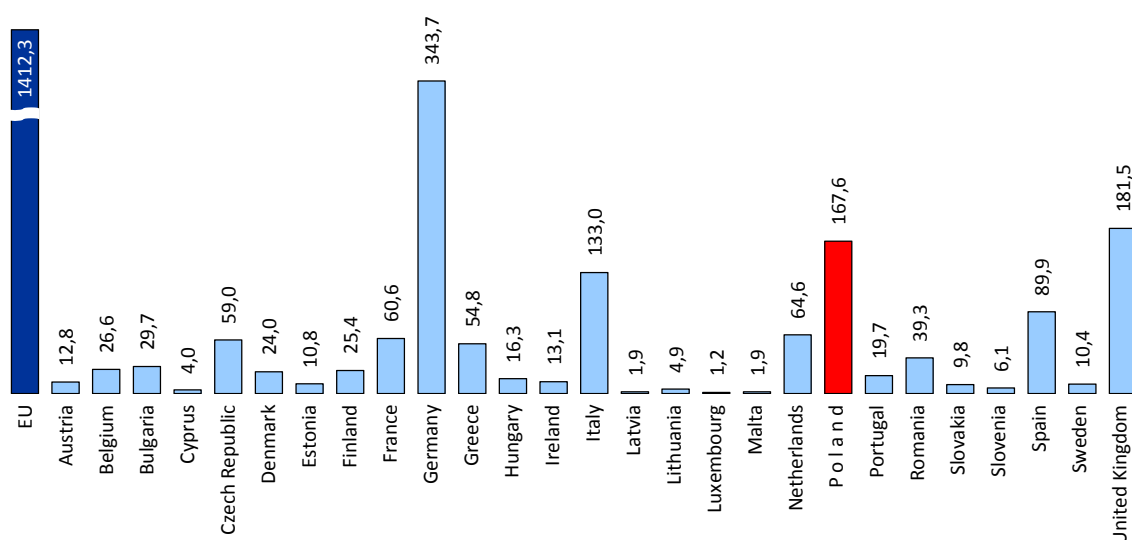


International comparisons

In 2009 Poland with its greenhouse gas emissions from the energy industry sector amounting to 167 574 thous. tons (CO₂ equivalent) was located on the 3rd position among EU countries. For 7 EU countries (of which Poland) the share of energy industry in 2009 constituted over 40% of total greenhouse gas emissions of the given country (Malta – 65,0%, Estonia – 63,9%, Bulgaria – 49,9%, Greece – 44,7%, Poland – 44,5%, Czech Republic – 44,4%, Cyprus – 42,6%). However, the lowest percent of emissions from this sector in the national emission of greenhouse gas from this sector (less than 20%) was noted in: Luxembourg – 9,9%, France – 11,7%, Austria – 15,9%, Sweden – 17,4%, Latvia – 17,6%.

In years 2006-2009 favourable, gradual changes connected with greenhouse gas emissions originating from energy industry can be observed in Poland. In 2009 these emissions decreased by over 17 million tons (CO₂ equivalent) in relation to 2006 (by 9,2%).

Graph 3.6. **Greenhouse gas emissions from "energy industry sector" in EU countries in 2009**
(in million tons CO₂ equivalent)



Source: data of the European Environment Agency.

Environmental domain

Greenhouse gas emissions intensity of energy consumption

| | |
|-----------------------|--|
| Name of the indicator | Greenhouse gas emissions intensity of energy consumption |
| Area | Climate change |
| Definition | <p>The indicator is calculated as the share of greenhouse gas emissions (carbon dioxide, methane and nitrous oxide) in the gross inland energy consumption in relation to based year 2000 = 100.</p> <p>Gross inland energy consumption is a sum of the supplies of all energy commodities to the domestic market (indigenous production of primary energy + recovered products + energy imports + stock change – energy exports – "bunkers").</p> <p>"Bunker" means the fuels purchased abroad by Polish shipping fleet (including fishing fleet), as well as purchase of fuels abroad by Polish aircraft as well as purchase of fuels abroad by other transport units.</p> |
| Meaning | <p>The indicator shows the interrelation of national energy use with the greenhouse gasses emissions (in other words, the impact of the energy sector on the environment). Use of fossil fuels is the main source of carbon dioxide emissions (CO₂). Due to the need for energy, this source is the driving force of greenhouse gas emissions.</p> <p>Transition into low-emission fuels is an important mean to reach sustainable development aims.</p> |

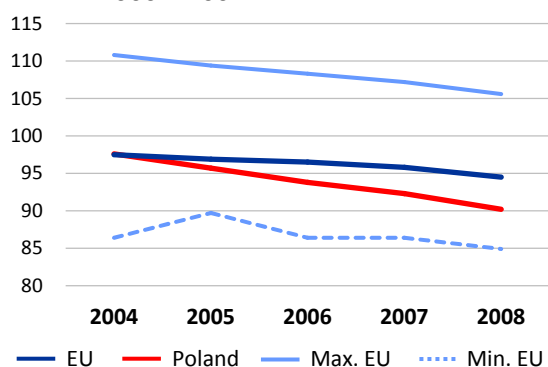
Table 3.3. **Greenhouse gas emissions intensity of energy consumption**
2000 = 100

| 2004 | 2005 | 2006 | 2007 | 2008 |
|------|------|------|------|------|
| 97,6 | 95,7 | 93,8 | 92,3 | 90,2 |

Source: data of the Eurostat.

The growing need for energy and connected with it emissions of gases contributing to global warming force to undertake all kinds of actions: legal, technological, investment aiming at limitation of the amount of energy used, and connected with it emissions of greenhouse gas. A decrease in emissions of greenhouse gas per unit of energy consumed is observed in Poland. In the period 2004-2008 a decrease by 7,4 percentage points was noted, and this is a favourable state for environmental protection.

Graph 3.7. **Greenhouse gas emissions intensity of energy consumption**
2000 = 100



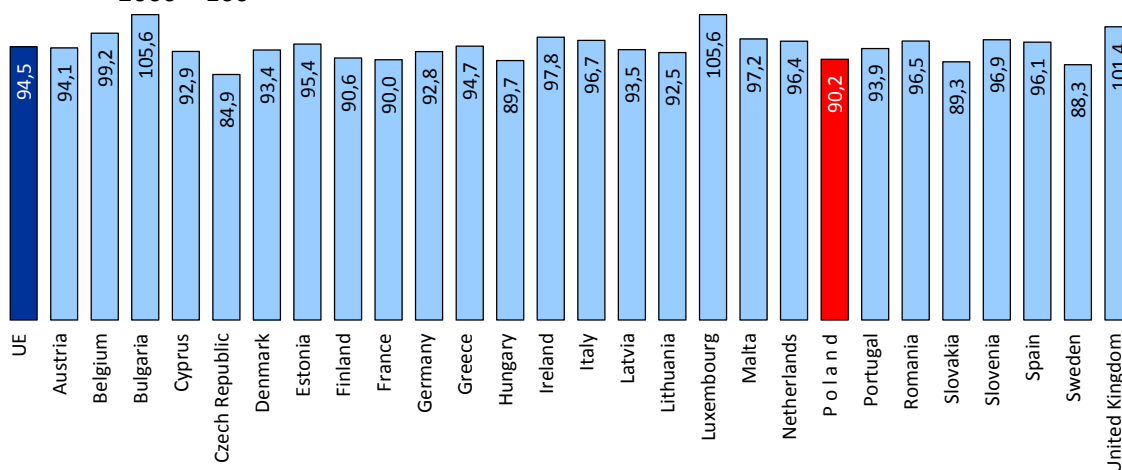
| Years | EU | Poland | Max. EU | Min. EU |
|-------|------|--------|---------|---------|
| 2004 | 97,5 | 97,6 | 110,8 | 86,4 |
| 2005 | 96,9 | 95,7 | 109,4 | 89,7 |
| 2006 | 96,5 | 93,8 | 108,3 | 86,4 |
| 2007 | 95,8 | 92,3 | 107,2 | 86,4 |
| 2008 | 94,5 | 90,2 | 105,6 | 84,9 |

S o u r c e: data of the Eurostat.

International comparisons

In EU countries a decrease of greenhouse gas emissions per unit of energy consumed was observed in the analyzed period - by 3,0 percentage points on the average. The reason of a constant, moderate decrease in the intensity of greenhouse gas emissions connected with the use of electricity in EU countries was the shift to low-emission fuels. The highest decrease was noted in Finland by 13,7 percentage points, and the lowest in Lithuania by 5,1 percentage points.

Graph 3.8. **Greenhouse gas emissions intensity of energy consumption in EU countries in 2008**
2000 = 100



S o u r c e: data of the Eurostat.

Environmental domain

Renewable energy

| | |
|-----------------------|---|
| Name of the indicator | Renewable energy in gross final energy consumption |
| Area | Energy |
| Definition | <p>The indicator is calculated as the share of renewable energy in gross final energy consumption.</p> <p>Renewable energy sources is energy originating from natural, repeatable natural processes, mainly energy generated from solar radiation, wind, water, geothermal resources, biomass, biogas and liquid biofuels.</p> <p>Final consumption is understood as the use of energy carriers for technological, production and existential needs, without processing into other carriers. Input and the need of energy transformation as well as producer and distributor losses are not taken into account. Consumption of fuels for the generation of heat totally used by the producer is included.</p> |
| Meaning | <p>Renewable energy sources are sources, which spontaneously regenerate and during their exploitation are generally treated as environmentally friendly due to the low emission of greenhouse gases and air pollutants. The indicator presents the share of energy consumption from renewable energy sources in total energy consumption of the country, facilitates the monitoring of effects of actions undertaken to promote production and use of renewable energy in all sectors. Legitimacy of use of this indicator results from challenges facing Poland in the field of limiting energy intensity of the economy in the medium- and long-term perspective.</p> |

Table 3.4. **Renewable energy in gross final energy consumption (%)**

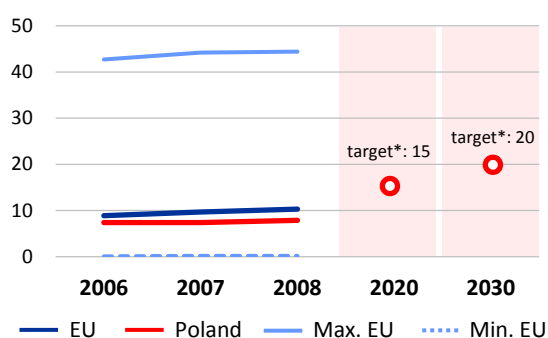
| 2004 | 2005 | 2006 | 2007 | 2008 |
|------|------|------|------|------|
| . | . | 7,4 | 7,4 | 7,9 |

Source: data of the Eurostat.

Development of renewable energy industry is of great importance for the realization of basic directions of energy policies. Increase in the use of these sources results in the improvement of energy consumption efficiency, and, moreover, it reduces the degree of dependency on supplies of energy from imports. Poland is at the disposal of big and diversified renewable energy resources. Nevertheless, the existing limitations in the infrastructure, and above all environmental and spatial limitations hamper the use of this potential.

From 2006 a slight increase in the share of renewable energy in gross final energy consumption has been observed. This process is developing slowly and therefore its influence on the sustainability of possessed natural resources and on environmental protection is unfavourable. In order to improve the energetic safety in the future, it was assumed that the share of renewable energy in gross final energy consumption should amount to 15% till 2020 and 20% till 2030.

Graph 3.9. **Renewable energy in gross final energy consumption (%)**



| Years | EU | Poland | Max. EU | Min. EU |
|-------|------|--------|---------|---------|
| 2006 | 8,9 | 7,4 | 42,7 | 0,1 |
| 2007 | 9,7 | 7,4 | 44,2 | 0,2 |
| 2008 | 10,3 | 7,9 | 44,4 | 0,2 |

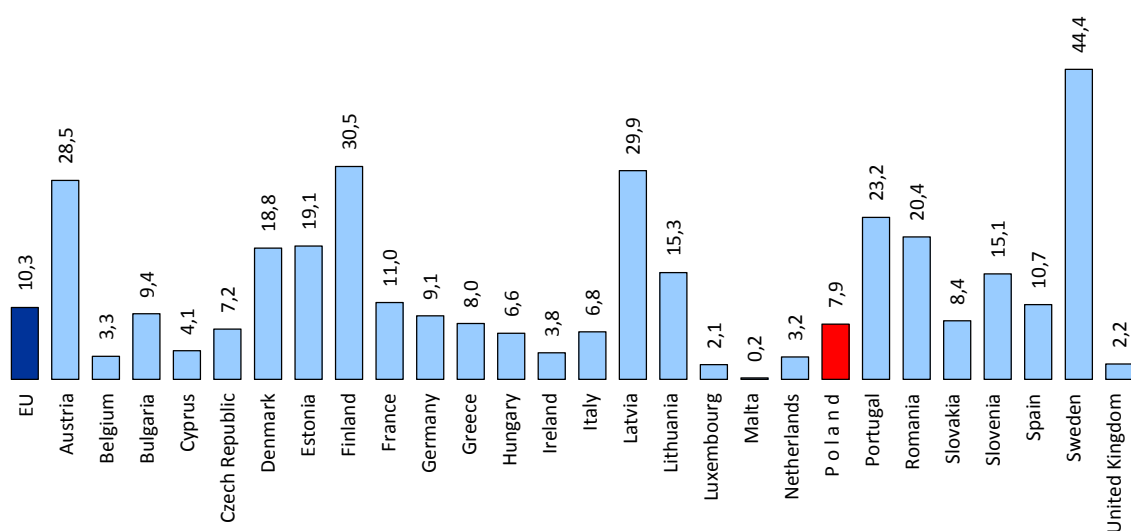
* According to the "Energy Policy of Poland until 2030".
Source: data of the Eurostat.

The observed increase in the volume of renewable energy (by 1,8% in 2007 comparing to previous year and by 11,4% in 2008) does not account for the increase of the share of separate sources in total acquisition of energy. In years 2004-2008 the highest share was that of energy originating from solid biomass (in years 2007-2008 – 95,0%, in 2006 – 95,6%, in 2005 – 95,3%, in 2004 – 95,4%); other sources were such as energy generated from water, wind, geothermal resources, solar radiation. Therefore, a dynamic development of renewable energy sources is expected in order to diminish CO₂ emissions and to increase the diversification of supply sources. The use of innovative technologies ensuring stability of operation of the power system is also essential.

International comparisons

On the background of EU countries, Poland with its share of renewable energy in gross consumption of energy on the level 7,9% is located on the 17th place, far behind countries such as Sweden (with its share equal to 44,4%) and Finland (30,5%).

Graph 3.10. **Renewable energy in gross final energy consumption in EU countries in 2008 (%)**



Source: data of the Eurostat.

Environmental domain

Biofuels in the consumption of transportation fuels

| | |
|-----------------------|--|
| Name of the indicator | Biofuels in the consumption of transportation fuels |
| Area | Energy |
| Definition | <p>The indicator is calculated as the share of biofuels in total consumption of transportation fuels. It is calculated basing on energy statistics described in Regulations of the Energy Statistics 1099/2008 and in the methodology of essential indicators described in the Renewable Energy Directive 2009/28/EC.</p> <p>Biofuels are produced either in a liquid or in a gaseous form from materials of an organic origin: biomass or biodegradable fractions of waste and they are mainly used in vehicle transport.</p> |
| Meaning | <p>As a result of using biocomponents, biofuels are characterized by a low level of CO₂ emissions into the atmosphere, therefore their use in transportation is extremely important taking into account environmental protection. The growing number of cars and at the same time growing amount of harmful gasses emitted into the atmosphere, requires undertaking actions to reduce this phenomenon in the future.</p> |

Table 3.5. **Biofuels in the consumption of transportation fuels (%)**

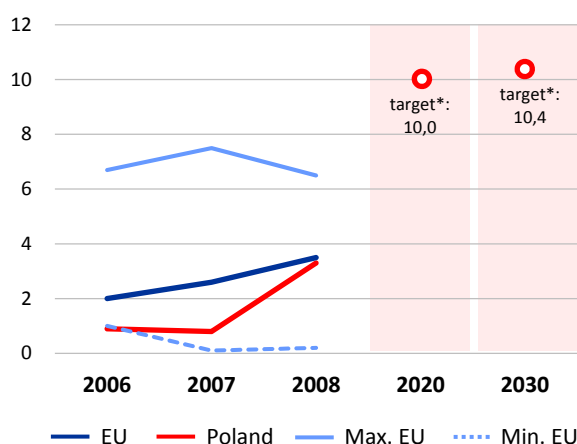
| 2004 | 2005 | 2006 | 2007 | 2008 |
|------|------|------|------|------|
| . | . | 0,9 | 0,8 | 3,3 |

Source: data of the Eurostat.

Production of energy from renewable sources is characterized by a low or zero emission of pollutants, bringing positive environmental effects. The growing number of means of transport and the need to protect the environment put a pressure on searching for new technologies of acquiring renewable energy, and biofuels in particular. Since 2006, an increase in the use of transportation fuels from renewable sources can be observed in Poland (in 2008 an increase by 2,4 percentage points compared to 2006). In order to increase the share of biocomponents on the market of liquid fuels, Poland has planned out an ambitious path of realization of the National Indicative Target^a, defining the target in 2013 on the level 7,1% of the share of biocomponents on the market of transportation fuels. As an effect of the planned actions it is assumed to reach the level of participation of biofuels on the market of transportation fuels amounting to 10,0% in 2020, and 10,4% in 2030 and to increase the use of II generation biofuels ("Energy Policy of Poland until 2030").

^a National Indicative Target is a minimal share of biocomponents and other renewable fuels in the total volume of liquid fuels and biofuels used during the calendar year in transportation, calculated according to combustion values.

Graph 3.11. **Biofuels in the consumption of transportation fuels (%)**



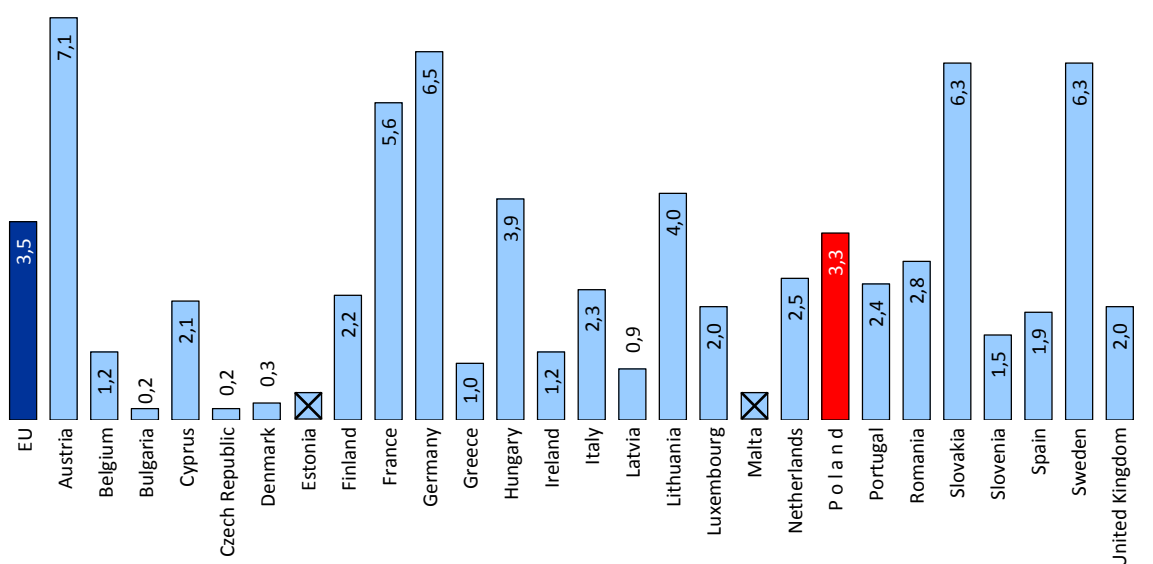
| Years | EU | Poland | Max. EU | Min. EU |
|-------|-----|--------|---------|---------|
| 2006 | 2,0 | 0,9 | 6,7 | 0,1 |
| 2007 | 2,6 | 0,8 | 7,5 | 0,1 |
| 2008 | 3,5 | 3,3 | 6,5 | 0,2 |

* According to "Energy Policy of Poland until 2030".
Source: data of the Eurostat.

International comparisons

The need for the production of biofuels used in transportation is growing not only in Poland, but in EU countries as well. In 2008, the highest increases of the indicator compared to previous year were observed in Slovenia (by 5,9 percentage points) and in Austria (by 4,9 percentage points). The largest producers of biofuels among EU countries in 2008 were: Germany (162 383 TJ) and France (81 716 TJ). Poland, with its production amounting to 12 401 TJ was on the sixth position among EU countries. On the other hand, the share of biofuels in the consumption of transportation fuels had placed Poland on the eighth position among EU countries.

Graph 3.12. **Biofuels in the consumption of transportation fuels in EU countries in 2008 (%)**



Source: data of the Eurostat.

X lack of data

Environmental domain

Energy self-sufficiency

| | |
|-----------------------|--|
| Name of the indicator | Energy self-sufficiency |
| Area | Energy |
| Definition | <p>The energy self-sufficiency indicator is calculated as the relation of primary energy carriers (total) acquired in the country in their consumption.</p> <p>Primary energy is a sum of energy contained in primary energy carriers (hard coal and lignite, crude oil, natural gas, peat, fuelwood, plant and animal solid waste-derived fuel, industrial waste solid and liquid, municipal waste, other raw materials used for energy purposes, hydro energy, wind energy, solar energy, geothermal energy and biomass).</p> |
| Meaning | <p>The indicator measures the degree of energetic safety in the country, shows, to what degree the production from national primary energy careers (energy from hard coal, crude oil, natural gas, energy from renewable sources) satisfies the demand for the energy in the country and in what degree the country is dependent upon imports. Examination of this phenomenon is of crucial importance from the point of view of environmental protection. Moreover, it is important for the degree of sustainability of the use of natural resources for future generations. It gives information on the efficiency of undertaken activities on behalf of the change of the structure of use of national primary sources for the production of energy, i.e.: increase in the share of renewable sources (profitable for the environment) and decrease in the use of coal resources.</p> |

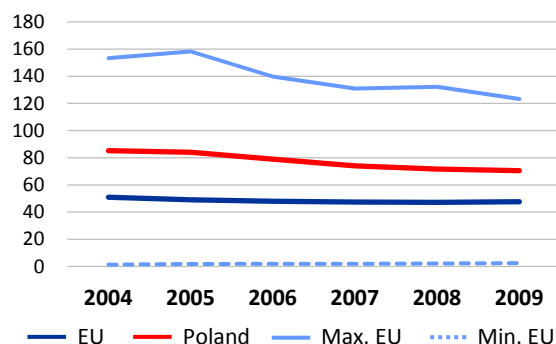
Table 3.6. **Energy self-sufficiency (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|
| 85,3 | 84,1 | 79,0 | 74,0 | 71,7 | 70,5 |

S o u r c e: own calculations on the basis of Eurostat's data.

Poland is in the possession of fuels and energy, of which renewable energy fully ensuring energy self-sufficiency and safety of the country. Solid fuels (hard coal, lignite, peat) are basic energy carriers in the Polish economy. Their dominating share in total generation of primary energy (87,7% in 2004 and 83,5% in 2009) still maintains the energetic safety on a high and stable level. However, renewable energy sources, which can be an alternative for solid fuels, are used in a very limited range (share in generation of primary energy from 5,5% in 2004 to 9,0% in 2009).

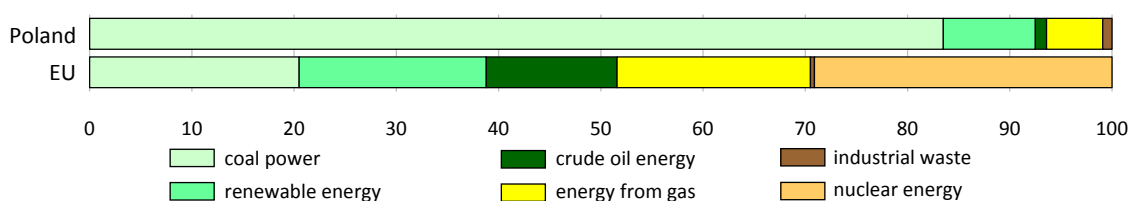
Graph 3.13. **Energy self-sufficiency (%)**



| Years | EU | Poland | Max. EU | Min. EU |
|-------|------|--------|---------|---------|
| 2004 | 51,0 | 85,3 | 153,4 | 1,4 |
| 2005 | 49,1 | 84,1 | 158,3 | 1,8 |
| 2006 | 48,0 | 79,0 | 139,8 | 2,0 |
| 2007 | 47,4 | 74,0 | 131,0 | 2,0 |
| 2008 | 47,2 | 71,7 | 132,3 | 2,2 |
| 2009 | 47,7 | 70,5 | 123,3 | 2,4 |

Source: own calculations on the basis of Eurostat's data.

Graph 3.14. **Structure of primary energy generation by energy carriers in 2009 (%)**



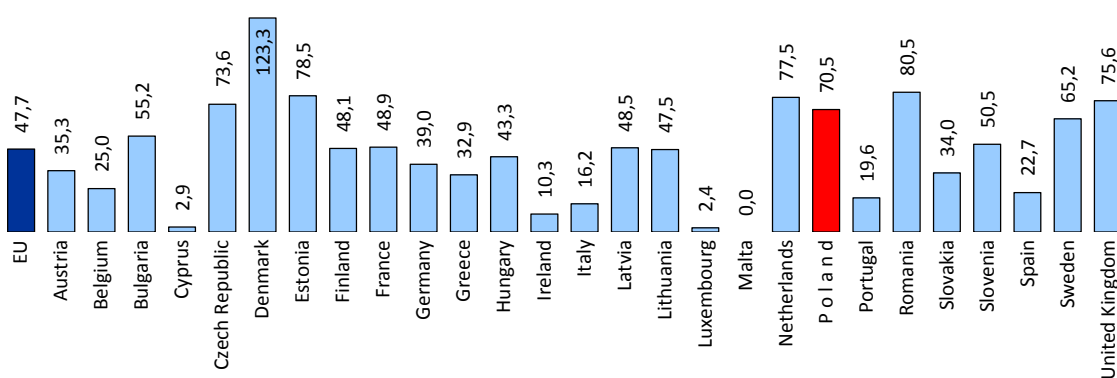
Source: own calculations on the basis of Eurostat's data.

Structure of primary energy generation in Poland considerably differs from the EU average, where nuclear energy is the basic energy carrier – 28,4% in 2009; renewable energy constitutes 18,3%. In the future, use of existing sources in a rational way and in concordance with sustainable development rules is a priority in order that the country should not be dependent on energy supplies. At the same time, the development and use of renewable energy sources is an indispensable factor, having an influence not only on the decrease of the amount of fossil fuels extraction, and at the same time prolongation of the duration of their use as well as for the energetic safety of the country.

International comparisons

In years 2004-2009 the value of the energy self-sufficiency indicator for Poland remained on a high level and considerably exceeded the average EU level. Among EU countries a higher energetic safety from primary sources was noted in Denmark (153,4% in 2004 and 123,3% in 2009). In years 2004-2009 the lowest values of energy self-sufficiency indicators were noted in w Luxembourg (from 1,4% to 2,4%) and Cyprus (from 2,0% to 2,9%).

Graph 3.15. **Energy self-sufficiency in EU countries in 2009 (%)**



Source: own calculations on the basis of Eurostat's data.

Environmental domain

Outlays on fixed assets in the field of non-conventional energy sources

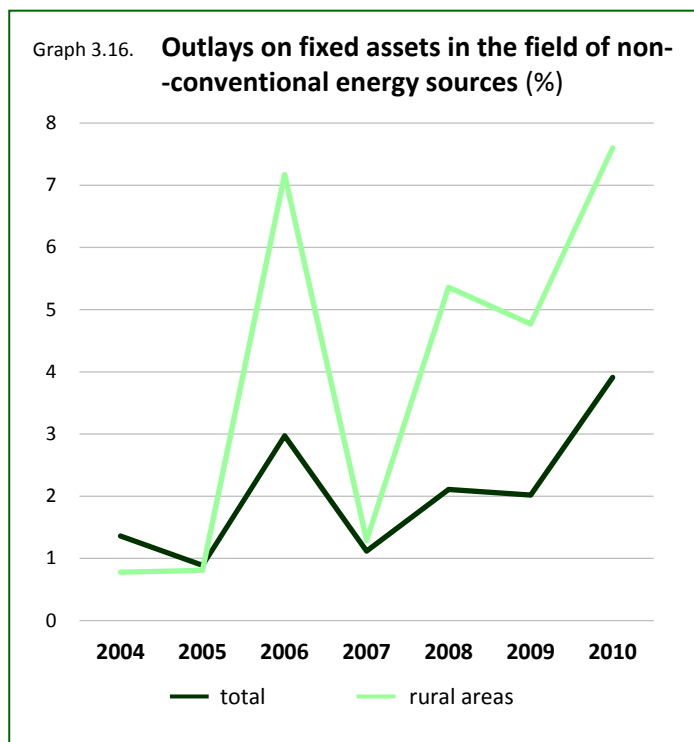
| | |
|-----------------------|---|
| Name of the indicator | Outlays on fixed assets in the field of non-conventional energy sources |
| Area | Energy |
| Definition | <p>The indicator shows the share of outlays on fixed assets serving environment protection in the field of non-conventional sources of energy in total outlays on fixed assets serving environment protection for the country and for rural areas.</p> <p>Outlays on non-conventional sources of energy constitute a part of outlays on fixed assets connected with atmospheric air and climate protection. They include mainly renewable sources of energy using the energy of rivers, wind, geothermal energy, biomass energy and solar energy from solar batteries in the process of transformation. Undertakings in this field concern usually: river hydroplants (without the possibility to store water) and reservoir hydroplants, wind power-stations, use of modern cells and solar collectors in industry, agriculture and households, use of: geothermal energy, energy from biomass, land heat or waste heat.</p> |
| Meaning | The indicator provides information on the value of outlays on renewable sources of energy, which decrease the costs of energy acquirement, which have an influence on the inexhaustion of energy sources, reduction of environment pollution and the decrease of illnesses caused by environment pollution. |

Table 3.7. **Outlays on fixed assets in the field of non-conventional energy sources (%)**

| Specification | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|-------------------|------|------|------|------|------|------|------|
| Total | 1,36 | 0,89 | 2,97 | 1,12 | 2,11 | 2,02 | 3,91 |
| Rural areas | 0,78 | 0,81 | 7,17 | 1,29 | 5,36 | 4,77 | 7,60 |

In 2010 in Poland outlays in the field of non-conventional sources of energy amounted to 427,1 mln zloties, constituting 4% of total outlays on fixed assets serving environment protection – increase by 354,6 mln zloties comparing to 2004.

In years 2004-2010 a considerable diversification of the magnitude of outlays on non-conventional sources of energy can be observed. An evident increase of dynamics in 2006 in comparison to previous year was caused mainly by high outlays connected with the construction of wind power station in the Zachodniopomorskie Voivodship.



Moreover, in years 2004-2010 in case of rural areas the magnitude of outlays on fixed assets serving environment protection in the field of non-conventional sources of energy had been changing constantly. In 2004 these outlays amounted to 16,3 mln zloties, constituting 0,8% of total outlays on fixed assets serving environment protection on rural areas, while in 2010 these outlays amounted to 353,5 mln zloties, and their share in total outlays on fixed assets serving environment protection was 7,6%. Rapid growth of the magnitude of these outlays (more than 9 times) comparing to previous year was observed in 2006.

This growth was caused (similarly as in the country) by the construction of wind power stations on rural areas. Another considerable increase of outlays on renewable energy sources can be observed in 2008 and 2010, caused mainly by new investments on the territory of gminas of Pomorskie and Zachodniopomorskie Voivodships connected with the construction of wind power stations and investments in the field of water power stations on the territory of Lower Silesia Region.

A visible increase of outlays on fixed assets serving environment protection and outlays on non-conventional sources of energy also noted in the next years (in the country and in rural areas) generates positive effects for environmental protection.

Environmental domain

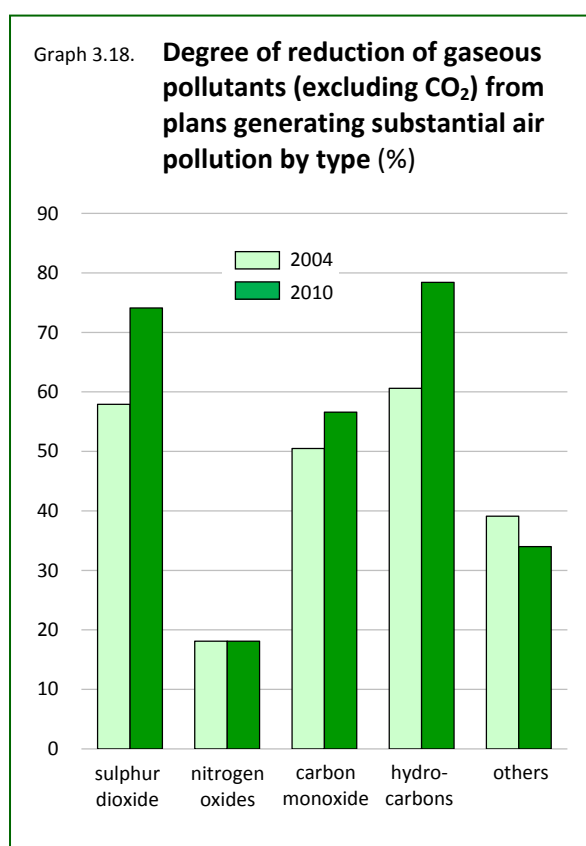
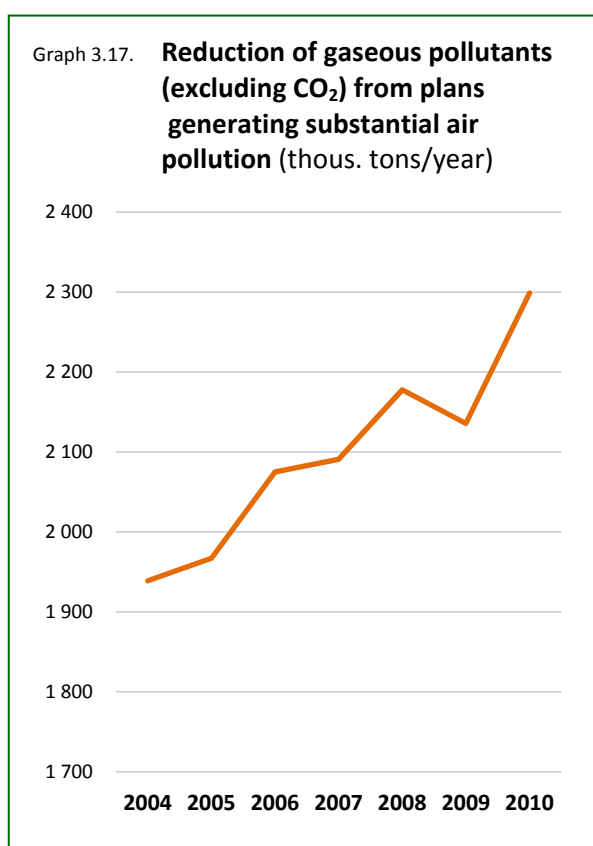
The degree of reduction of gas pollutants

| | |
|-----------------------|--|
| Name of the indicator | The degree of reduction of gas pollutants (excluding CO ₂) from plans generating substantial air pollution |
| Area | Air protection |
| Definition | <p>The indicator is calculated as the share of gaseous pollutants (excluding CO₂) retained and neutralized in cleaning devices of plants especially noxious for the air cleanness in the volume of total pollutants generated.</p> <p>The degree of reduction of pollutants is the measure of the efficiency of cleaning devices, and as a characteristic figure for equipment, shows what percentage of the given pollutant has been retained in the device.</p> <p>Plants especially noxious to air cleanness are the so-called point sources of pollution emission which included industrial plants (of which professional power engineering plants) recognized as especially burdensome for environment. The set may be enlarged only in particular cases e.g. newly launched entities or expanded entities of a high threshold pollution emission.</p> |
| Meaning | The indicator enables to monitor negative impact of plants of high point sources of gaseous pollution emission on the environment. |

Table 3.8. **The degree of reduction of gaseous pollutants (excluding CO₂) from plans generating substantial air pollution (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------|------|------|------|------|------|------|
| 49,0 | 49,5 | 49,7 | 50,5 | 54,9 | 57,3 | 57,4 |

From 2004 a growing share of gaseous pollutants (excluding CO₂) retained and neutralized in cleaning devices of plants in the volume of pollutants generated by plants especially noxious for the air cleanness in the country is observed. In years 2004-2010 this share increased by 8,4 percentage points, however, till 2006 it did not exceed the level equal to 50%. A considerable increase in the share of gaseous pollutants (excluding CO₂) retained and neutralized in cleaning devices of plants in the volume of pollutants generated by plants especially noxious for the air cleanness (by 4,4 percentage points) was noted in 2008. A profitable tendency was observed the next year too, in which the share amounted to 57,3% (increase by 2,4 percentage points compared to previous year). In 2010 the described indicator was much the same as in the previous year and amounted to 57,4%.



In 2010, similarly like in previous years, sulphur dioxide and carbon monoxide dominated among gaseous pollutants (excluding CO₂) retained and neutralized in cleaning devices of plants especially noxious for the air cleanness in the country, constituting respectively 64,5% and 19,5% of total pollutants retained and neutralized. Share of other gaseous pollutants (ammonia, carbon bisulphide, fluorine, sulphur hydrogen, organochlorine compounds) in pollutants retained and neutralized in cleaning devices of plants especially noxious for the air cleanness amounted to 10,9%, nitrogen oxides – 3,3%, and hydrocarbons – 1,8%.

Environmental domain

The degree of reduction of particulate pollutants

| | |
|-----------------------|---|
| Name of the indicator | The degree of reduction of particulate pollutants from plants generating substantial air pollution |
| Area | Air protection |
| Definition | <p>The indicator is calculated as the share of particulate pollutants retained and neutralized in cleaning devices of plants especially noxious for the air cleanness in the volume of total pollutants generated.</p> <p>The degree of reduction of pollutants is the measure of the efficiency of cleaning devices, and as a characteristic figure for equipment, shows what percentage of the given pollutant has been retained in the device.</p> <p>Plants especially noxious to air cleanness are the so-called point sources of pollution emission which include industrial plants (of which professional power engineering plants) recognized as especially burdensome for environment. The set is enlarged by newly launched entities or expanded entities of a high threshold pollution emission.</p> |
| Meaning | <p>The indicator allows to monitor the degree of retained and neutralized particulate pollutants in air pollution reduction systems in relation to pollutants produced by plants generating substantial air pollution.</p> <p>Retaining as many as possible particulate pollutants in air pollution reduction systems of the plants especially noxious is significant for the state of the quality of environment.</p> |

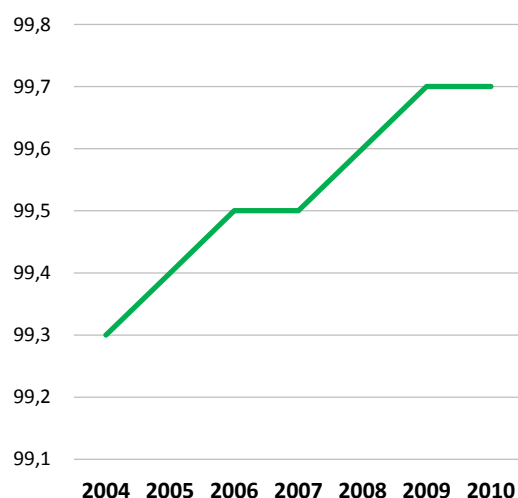
Table 3.9. **Degree of reduction of particulate pollutants from plants generating substantial air pollution (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------|------|------|------|------|------|------|
| 99,3 | 99,4 | 99,5 | 99,5 | 99,6 | 99,7 | 99,7 |

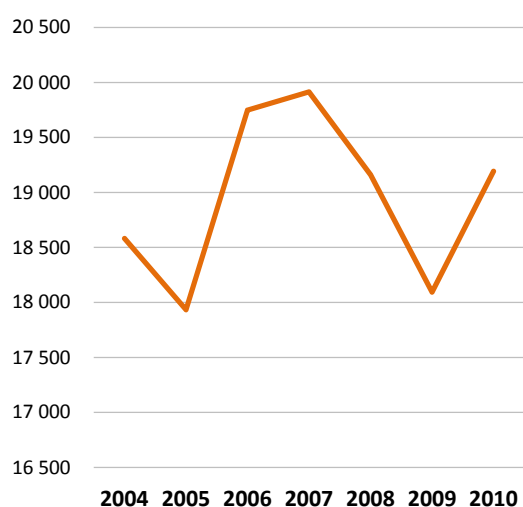
High degree of industrialization influences greatly the natural environment. Types of conducted technological processes and attention of plants to install and maintain installations for reducing emitted pollutants in a good technical state are of a great importance as far as air purity is concerned.

In 2010 there were 1358 plants especially noxious to air cleanness generating particulate pollutants in Poland. Most of plants (41,4%) were equipped with installations for the reduction of particulate pollutants of the degree of reduction of pollutants generated equal to 90,1% and more. Degree of reduction of particulate pollutants from plants generating substantial air pollution in years 2004-2010 remained on a considerably high level (in 2010 compared to 2004 it increased by 0,4 percentage point); it indicates, that more and more pollutants are retained in dust collection facilities.

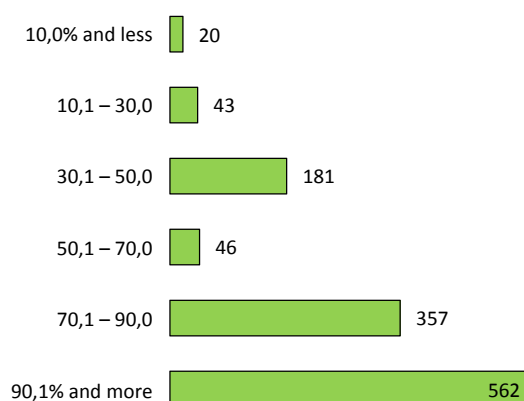
Graph 3.19. **Degree of reduction of particulate pollutants from plants generating substantial air pollution (%)**



Graph 3.20. **Reduction of particulate pollutants from plants generating substantial air pollution (thous. tons/year)**



Graph 3.21. **Plants generating substantial air pollution by the degree of reduction of particulate pollutants generated in 2010**



Environmental domain

Emission of air pollutants by means of transport

| | |
|-----------------------|--|
| Name of the indicator | Emission of air pollutants by means of transport |
| Area | Air protection |
| Definition | <p>The indicator shows the magnitude of emissions – from transport means of:</p> <ul style="list-style-type: none"> carbon oxide (CO) emitted during imperfect combustion of fuel (accompanied by insufficient inflow of oxygen), non-methane gaseous organic compounds (NMLZO) – organic compounds originating from anthropogenic and biogenic sources, other than methane, which can produce photochemical oxidants in reaction with nitrogen oxides, with sunlight participation, nitrogen oxides (NOx) – sums of the relation – in terms of volume – of the mixture of nitrogen oxides and nitrogen dioxides, expressed in weight concentration units of nitrogen dioxide, originating during the process of combustion of fuels, of which in combustion reactions in diesel engines of motor vehicles, contributing to the generation of photochemical smog, connected with considerable traffic, solid particulates (PM) – mainly soot and unburnt hydrocarbons, harmful due to deposition of carcinogenic substances originating from unburnt fuel. |
| Meaning | Traffic pollution has a considerable influence on air quality. The indicator serves to evaluate realization of the aim which is environment protection against effects of the development of motorization and enables to monitor the emission harmful for our health. |

Table 3.10. **Emission of air pollutants by means of transport^a (Gg)**

| Specification | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|-------|-------|-------|-------|-------|
| Carbon oxide | 655,4 | 601,3 | 687,0 | 711,2 | 718,5 |
| Non-methane gaseous organic compounds | 114,7 | 98,8 | 100,3 | 96,9 | 98,3 |
| Nitrogen oxides | 249,2 | 224,1 | 243,5 | 249,4 | 256,3 |
| Solid particulates | 15,52 | 15,79 | 16,52 | 17,76 | 18,95 |

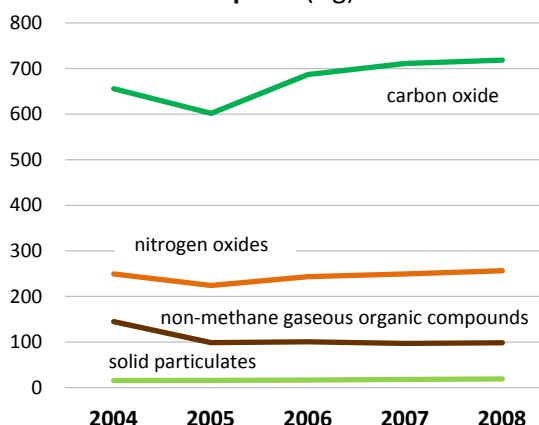
^a Only from road transport means.

S o u r c e: data of the CSO / Motor Transport Institute.

In years 2004-2008 a further change of the share of separate types of sources of emissions of selected air pollutants was observed. The share of energy industry and manufacturing industry decreased, while the importance of mobile sources increased (mainly in regard to nitrogen oxides and carbon oxide emissions). Increase of the influence of mobile sources on air quality is caused by the increase in the number of cars and an increase of the share of vehicle transport in passenger and freight transport.

In 2008, compared to 2004, an increase of emission of air pollutants by means of transport was observed in Poland. Emission of carbon oxides increased by 9,6%, nitrogen oxides by 2,8%, solid particulates by 22,1%. On the other hand, there was a decrease in the volume of non-methane gaseous organic compounds by 14,3% in the discussed years. The highest share in emission of air pollutants was reached by passenger cars, to which half of the total volume of fuel used had fallen. In 2008, passenger cars emitted 74,6% of carbon oxide and 50,3% of non-methane gaseous organic compounds. In 2008, compared to 2004 the volume of emissions of carbon oxides from passenger cars increased by 13,7%, and in the case of non-methane gaseous organic compounds there was a decrease by 24,7%. Half of the emissions of solid particulates came from lorries of total weight exceeding 3500 kg, in 2008 emissions increased by 10,1% comparing to 2004.

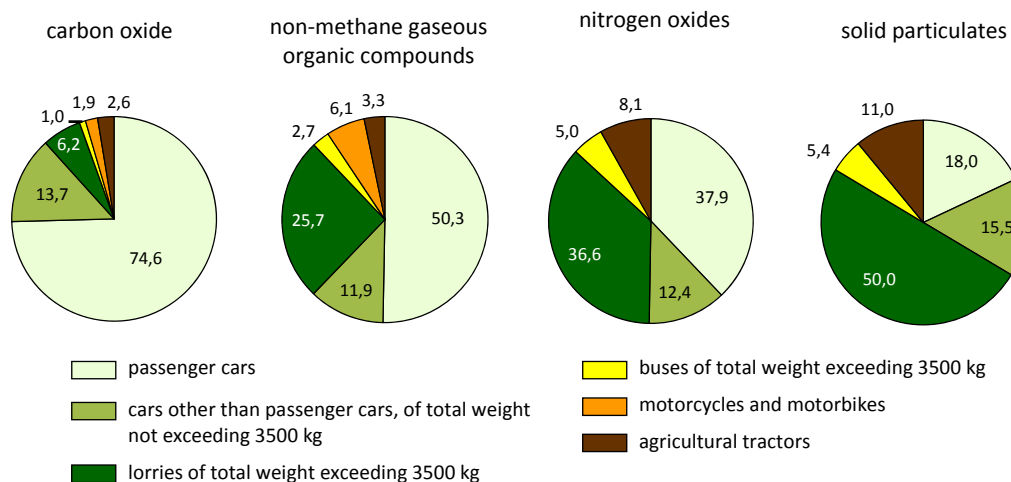
Graph 3.22. **Emission of air pollutants by means of transport^a (Gg)**



^a Only from road transport means.

Source: data of the CSO / Motor Transport Institute.

Graph 3.23. **Structure of emission of air pollutants by type of road transport means in 2008 (%)**



Source: data of the CSO / Motor Transport Institute.

Environmental domain

Average emission of CO₂ from new passenger cars

| | |
|-----------------------|---|
| Name of the indicator | Average emission of CO ₂ from new passenger cars |
| Area | Air protection |
| Definition | This indicator is defined as the average emissions of carbon dioxide per kilometre by new passenger cars registered in a given year. |
| Meaning | The indicator enables to monitor changes in the average level of carbon dioxide emissions – resulting from the combustion of fuels in engines of new vehicles – to the atmosphere. The volume of emissions from passenger cars undergoing continuous technological development is of great importance for the air quality. New vehicles emit less CO ₂ as a result of using more efficient power transmission systems, tyres of a low level of rolling resistance, start-stop systems, regeneration of energy during the brake or modernization of aerodynamics. |

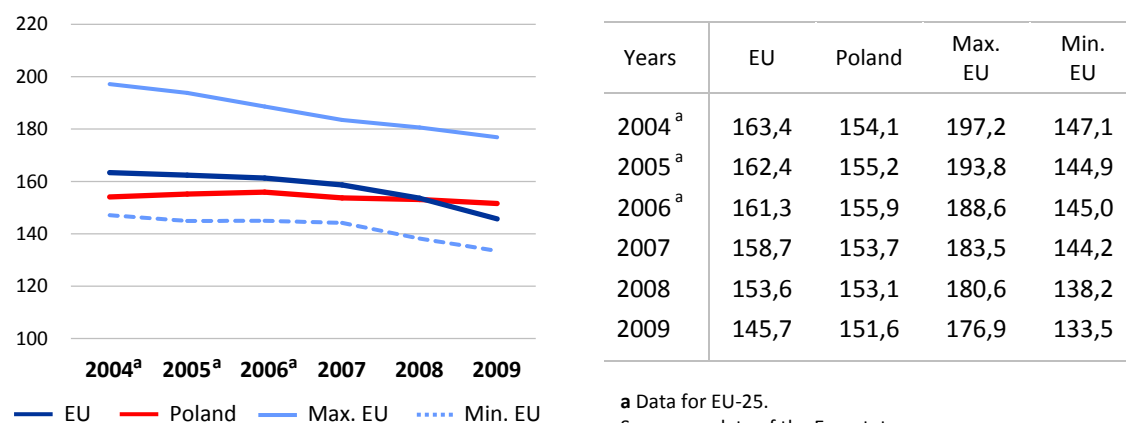
Table 3.11. **Average emission of CO₂ from new passenger cars (g/km)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|-------|-------|-------|-------|-------|-------|
| 154,1 | 155,2 | 155,9 | 153,7 | 153,1 | 151,6 |

Source: data of the Eurostat.

Transport activities contribute greatly to the creation of value added, but also carry serious negative consequences for the environment. One of these consequences is air pollution, contributing to the greenhouse effect and influencing human's health. Many improvements have been introduced in the motorization technology, yet they are insufficient.

Graph 3.24. **Average emission of CO₂ from new passenger cars (g/km)**



On the basis of the Kyoto Protocol the European Union has undertaken the commitment to reduce greenhouse gas emissions. Within the obligations it was proposed that developed countries reduce the CO₂ emissions by 30% till 2020 in comparison with 1990, while the European Union has undertaken the commitment to reduce greenhouse gas emissions by at least 20%.

Methods to reduce the pressure on the environment and the improvement of its state through introducing modern technological solutions less harmful for the environment should be searched for. Further reduction of the level of greenhouse gas emissions can be achieved, among others, replacing old vehicle fleet by a new one and increasing the percent of technologically modern cars characterized by a lower CO₂ emission per kilometre.

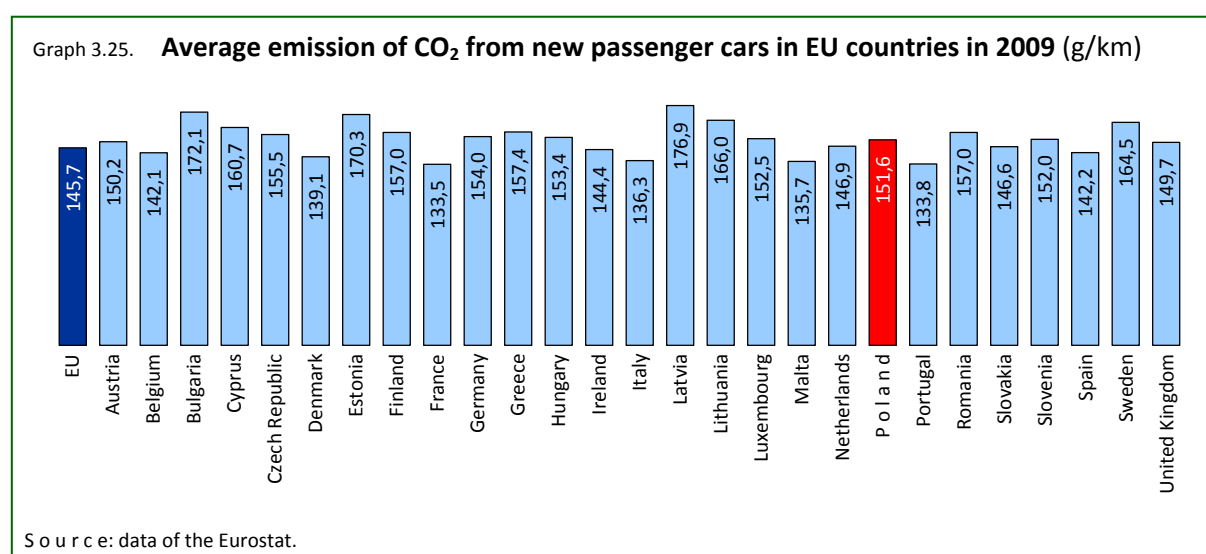
Poland is a country, where individual motorization still is developing, nevertheless most of the cars are old cars. In 2009 there were 864,3 thous. passenger cars registered, of which 232,1 thous. were new ones (in 2008: 1280,6 thous. and 317,9 thous. respectively).

Poland, similarly as other European countries is obligated to reduce greenhouse gas emissions. In years 2004-2009 average CO₂ emission originating from new registered (during the year) cars in Poland decreased by 2,5%.

International comparisons

In 2009 the lowest value of the indicator among EU countries (less than 134 g CO₂/km) was noted in France and in Portugal, while the highest value (more than 172 g CO₂/km) was noted in Latvia and in Bulgaria. Sweden and Denmark are countries, which during years 2004-2009 managed to reduce the emission of CO₂ to the largest extent. The lowest decrease of the indicator was observed in Slovenia, and an increase was noted in the Czech Republic.

Reducing CO₂ emissions is an enormously important factor, which may contribute to the minimization of the greenhouse effect.



Environmental domain

Size of fishing fleet

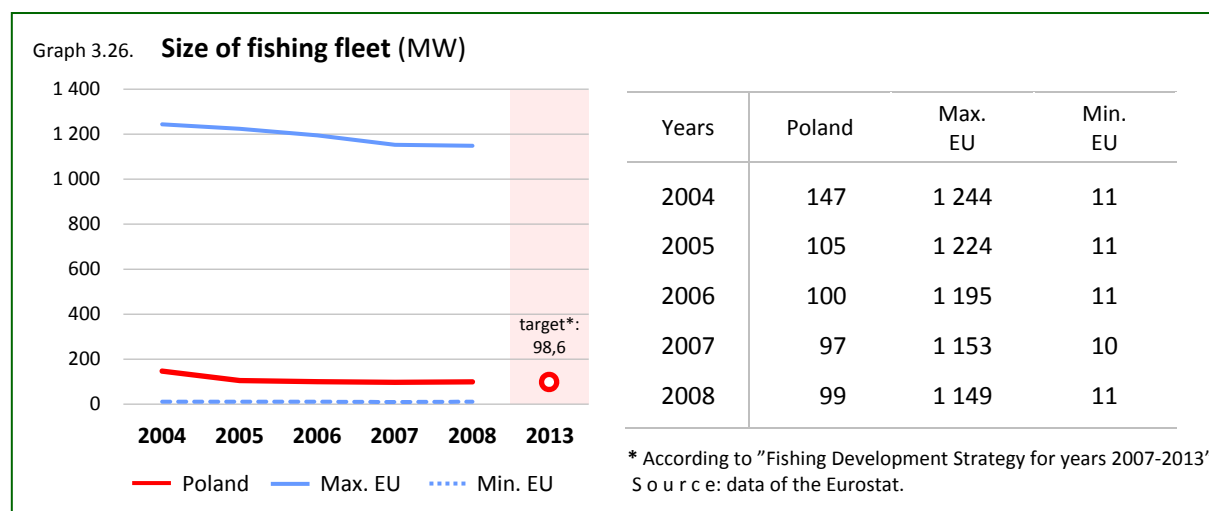
| | |
|-----------------------|--|
| Name of the indicator | Size of fishing fleet |
| Area | Sea ecosystems |
| Definition | The size of fishing fleet is defined as the total engine power of the fishing fleet. |
| Meaning | The indicator enables to monitor the size of fishing fleet, which is an important factor for the magnitude of the catch and it is connected with sustainable development. Excess of production capacities cause the increase of the exploitation of fish stocks, and as an effect causes the decrease of available fishery resources and the equilibrium disturbance in the population of marine ecosystems in the future. |

Table 3.12. **Size of fishing fleet (MW)**

| 2004 | 2005 | 2006 | 2007 | 2008 |
|------|------|------|------|------|
| 147 | 105 | 100 | 97 | 99 |

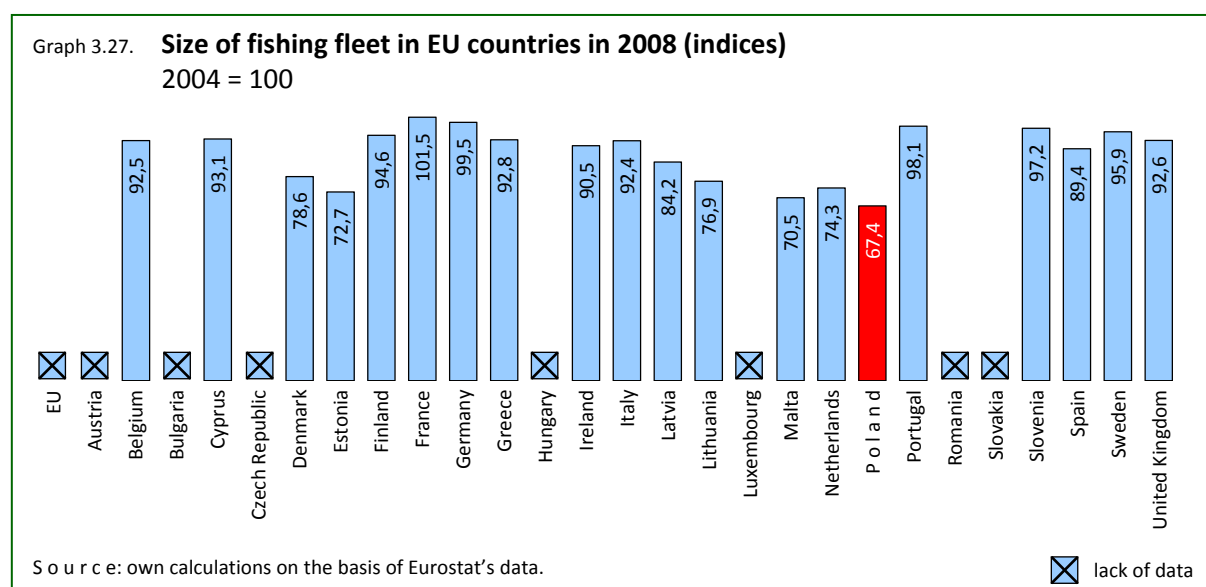
Source: data of the Ministry of Agriculture and Rural Development.

Protection of fish stocks indicates the necessity of ensuring their sustainable exploitation. Most of the fishing fleet in the European Union is too big comparing to available fish stocks. In order to limit overexploitation of fish stocks, and preserve the marine ecosystems balance, activities have been undertaken in Poland to reduce the size of fishing fleet. In years 2004-2008 the size of fishing fleet measured in MW considerably decreased. In 2008 comparing to 2004 the size of fishing fleet decreased by almost 33% and amounted to 99 MW, approximating the power level 98,6 MW established in the "Fishing Development Strategy" which is to be reached in 2013.



International comparisons

Among EU countries (for which data were available), the deepest fall in the size of fishing fleet (in 2008 in comparison to 2004), apart from Poland, is noted in Malta (by 29,5%), Estonia (by 27,3%) and the Netherlands (by 25,7%), while the fall is inconsiderable in Germany (by 0,5%), Portugal (by 1,9%) and Slovenia (by 2,8%).



Environmental domain

Water intensity of industry

| | |
|-----------------------|---|
| Name of the indicator | Water intensity of industry |
| Area | Fresh water resources |
| Definition | <p>The water intensity of industry indicator shows the relation of water consumption for the needs of industry to the value of sold production of industry.</p> <p>Water consumption for the needs of industry includes water used for production, exploitation, administrative and social purposes of industrial plants, excluding water supplied to habitable buildings (company or other).</p> |
| Meaning | <p>Limitation of the use of resources per a production unit is one of the main aims of the Strategy of Changing Production and Consumption Patterns to Favour the Implementation of Sustainable Development Principles. The indicator shows the degree of water used for industrial needs per the value of sold production of industry. The greatest challenge for Poland in the field of water management is the realization of requirements of the Water Framework Directive 2000/60/EC, and therefore the accomplishment of a good state of homogenous parts of waters and water-dependent ecosystems, as well as promoting sustainable use of water and to fulfil the need for water for the population, agriculture and industry till the end of 2015.</p> |

Table 3.13. **Water intensity of industry** (m³/thous. zloties)

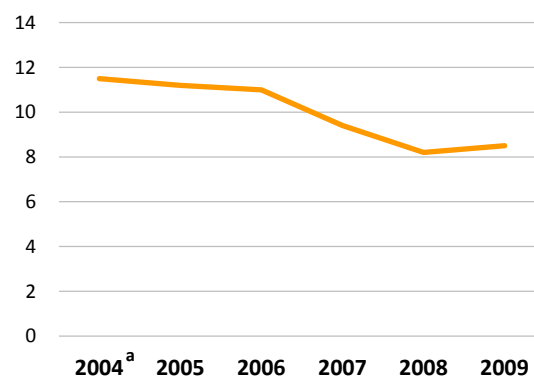
| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|-------------------|------|------|------|------|------|
| 11,5 ^a | 11,2 | 11,0 | 9,4 | 8,2 | 8,5 |

^a According to Polish Classification of Activities 2004.

Poland is a country possessing modest water resources. Efficient water resources management should be one of the most important national priorities, all the more so due to unavoidable climate changes a deepening water deficit is expected on the territory of Poland. On the other hand, the increasing climate changes shall cause more frequent periods of torrential rains, being the cause of summer floods.

In 2009 the highest consumption of water in Poland was noted in industry amounting to 7606,1 hm³ (73,8%). In comparison with 2004 there was a decrease by 2,1%. In years 2004-2009 a positive falling tendency of the water intensity indicator in industry can be observed.

Graph 3.28. **Water intensity of industry** (m³/thous. zloties)



^a According to Polish Classification of Activities 2004.

Environmental domain

Consumption of water for needs of the population and national economy

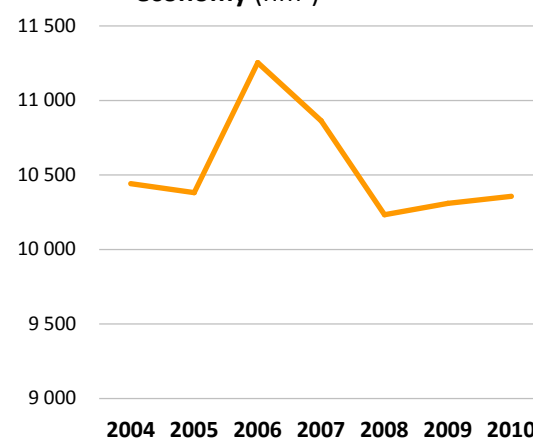
| | |
|-----------------------|--|
| Name of the indicator | Consumption of water for needs of the population and national economy |
| Area | Fresh water resources |
| Definition | The item "consumption of water for needs of the population and national economy in a given year" is understood as the volume of water supplied to the industry for production, exploitation and social needs, for agriculture and forestry – used for meliorations and filling fishponds as well as for the exploitation of water-line systems (of which in households). |
| Meaning | Water is indispensable for a man to live and conduct economic activities, and economic development and growing needs of a man influence the quantity and quality of water. The purpose of actions connected with fresh water resources is to improve the fresh water resources management and to avoid excessive exploitation, to achieve sustainable underground and surface waters management taking into account not only the volume, but quality as well. The indicator enables to evaluate the effectiveness of activities which aim is to protect water resources by monitoring water consumption for needs of the population and national economy. |

Table 3.14. **Consumption of water for needs of the population and national economy (hm³)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|----------|----------|----------|----------|----------|----------|----------|
| 10 441,5 | 10 382,0 | 11 253,8 | 10 864,0 | 10 233,6 | 10 309,5 | 10 356,5 |

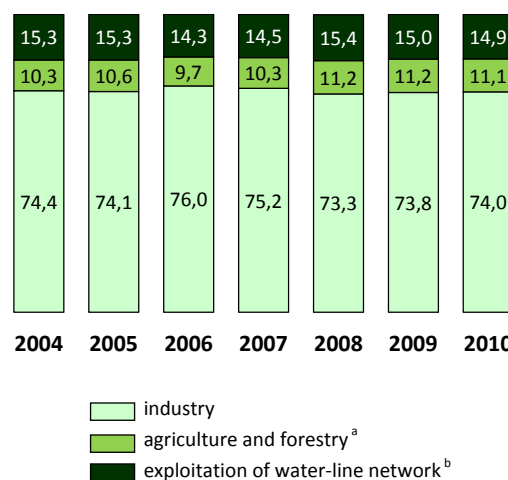
The greatest challenge for Poland in the field of water management is fulfilling requirements of the Water Framework Directive, of which promoting sustainable use of waters and fulfilling the needs of population, agriculture and industry for water. The indicator "consumption of water for needs of the population and national economy in a given year" is an indicator enabling the evaluation of the effectiveness of actions directed to protection of water resources. Prevention in this field is indispensable due to the relatively low magnitude of this indicator. Moreover, the necessity of monitoring the consumption of water results from inconsiderable progress in its limiting.

Graph 3.29. **Consumption of water for needs of the population and national economy (hm³)**



In 2010 consumption of water for needs of the population and national economy in Poland amounted to 10356,5 hm³. Comparing to 2004 there was a decrease of the consumption of water by 0,8%, and a definite improvement was observed in the municipal sector – decrease by 3,7%. Starting observations from 2004, it can be seen that the highest amount of consumption of water for needs of the population and national economy was noted in 2006 – 11253,8 hm³ (by 7,8% more than in 2004). Industry was decisive in the case of consumption of water (about ¾ of total consumption). In 2010 water consumption for industrial needs amounted to 7662,2 hm³ and was lower: by 1,4% comparing to 2004 and by 10,5% comparing to 2006, and in relation to 2008 there was an increase of consumption by 0,7%. At the same time, the amount of water used for irrigation in agriculture and forestry and for filling up and completing fishponds increased (an inconsiderable decrease in 2006), and in 2010 it amounted to 1541,1 hm³ – an increase by 7,6% comparing to 2004, and a decrease by 0,5% comparing to previous year.

Graph 3.30. **Structure of the consumption of water for needs of the population and national economy (%)**

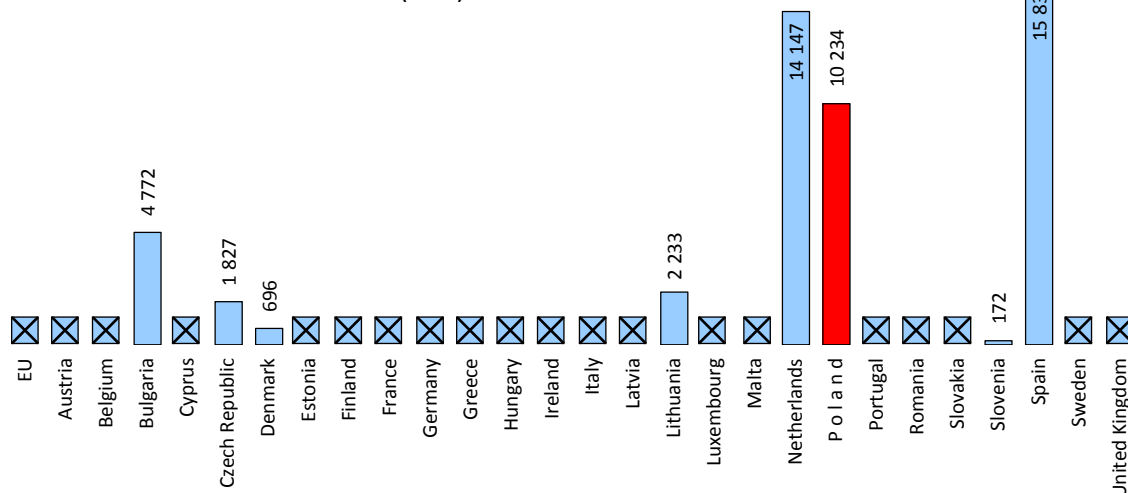


- ^a Water used for irrigation in agriculture and forestry and for filling up and completing fishponds.
^b Excluding water consumption for industrial needs by waterworks being the property of gminas, voivodship company of water services and water companies.

International comparisons

In 2008 in most of the EU countries for which data are available, a decrease in water consumption for needs of the economy and population was observed comparing to 2004. The highest decrease was observed in Lithuania (by 32,6%), and in such countries as Slovenia and the Netherlands the use of water has fallen by 11,8% and 10,4% respectively. At that time, water consumption for needs of the economy and population in Poland decreased by 2,0%. An increase in the use of water was noted in Denmark (by 11,0%) and the Czech Republic (by 3,2%).

Graph 3.31. **Consumption of water for needs of the population and national economy in EU countries in 2008 (hm³)**



Source: own calculations on the basis of Eurostat's data.

⊗ lack of data

Environmental domain

Population using waste water treatment plants

| | |
|-----------------------|--|
| Name of the indicator | Population using waste water treatment plants |
| Area | Fresh water resources |
| Definition | The indicator is calculated as the percentage of the population connected to waste water treatment plants with at least secondary treatment i.e. biological and with increased biogene removal in the total population. |
| Meaning | <p>The indicator shows to what degree wastewater produced is discharged to the environment in concordance with the rules.</p> <p>It helps to evaluate progress in the field of improvement of the quality of water (according to <i>Water Framework Directive 2000/60/EC</i> all member countries should attain a good condition of waters till 2015), and to monitor realization of regulations of the <i>Accession Treaty</i> concerning the implementation of directive 91/271/EEC on providing all agglomerations with collecting systems of urban wastewater.</p> |

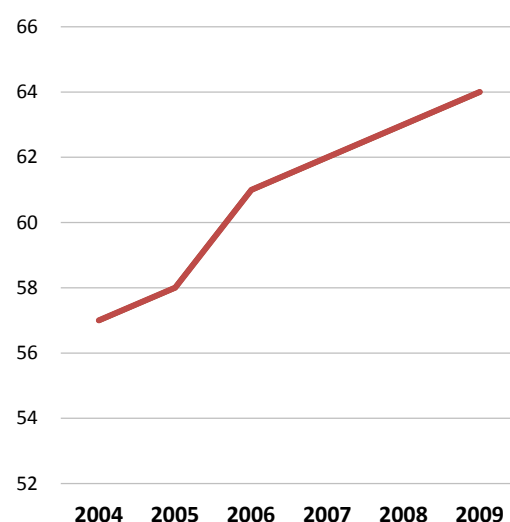
Table 3.15. **Population using waste water treatment plants (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|
| 57 | 58 | 61 | 62 | 63 | 64 |

The quality of natural environment has considerably improved in previous years. Development of appropriate infrastructure contributing to the reduction of the degree of water pollution was of great importance in this matter. The development of waste water treatment plants is a good example of these positive tendencies.

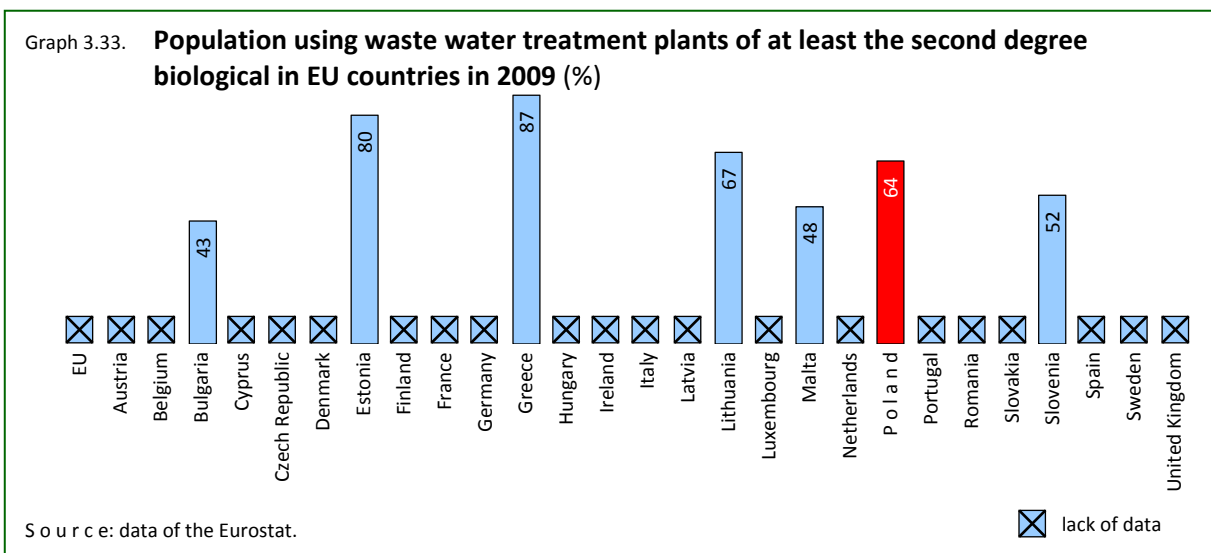
In years 2004-2009 there was a systematic increase in the number of people using waste water treatment plants of at least the second degree (biological and increased biogene removal) in Poland. In 2009 in comparison with 2004 the percent of population using waste water treatment plants of at least the second degree increased by 7 percentage points.

Graph 3.32. **Population using waste water treatment plants (%)**



International comparisons

In 2009, the highest increases of the share in EU countries (for which data were available) – comparing to 2004 – were noted in Slovenia (by 23 percentage points) and Malta (by 12 percentage points).



Environmental domain

Built-up and urban areas

| | |
|-----------------------|---|
| Name of the indicator | Built-up and urban areas |
| Area | Land use |
| Definition | The indicator is calculated as the share of built-up and urban areas i.e. residential areas, industrial areas, other built-up areas, undeveloped urbanised areas, recreational and resting areas, transport areas and mining grounds in the total land area. |
| Meaning | <p>The Earth's surface provides space and resources for the functioning of a man and the development of the economy. It is indispensable for conducting various production processes (i.a., cultivation of plants, extraction of natural resources), and for the distribution of different socio-economic activities of the man as well (i.a., construction of road, industrial, services and housing infrastructure). Human impact resulting in spatial changes is a multidimensional phenomenon causing frequently landscape transformation, fragmentation of ecosystems and natural habitats, air and water pollution, loss of the functions of soils.</p> <p>The indicator can support the monitoring of actions aiming at limiting the permanent built-up areas, especially in areas valuable due to natural or cultural features.</p> |

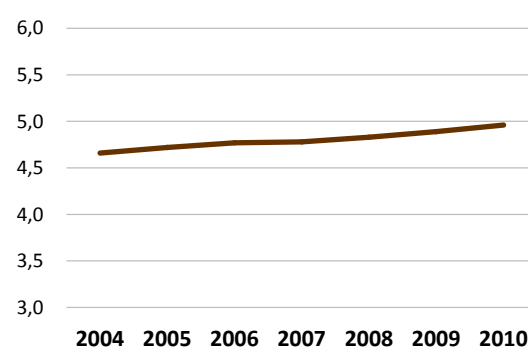
Table 3.16. **Built-up and urban areas (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------|------|------|------|------|------|------|
| 4,66 | 4,72 | 4,77 | 4,78 | 4,83 | 4,89 | 4,96 |

Source: own calculations on the basis of data from the Head Office of Geodesy and Cartography.

According to data from the Head Office of Geodesy and Cartography built-up and urban areas covered the area of 1550 thous. ha – 4,96% of total area of the country in 2010. Transport areas (of which particularly areas under roads) and residential areas were a dominating group among these areas. In 2010 their area was 891 thous. ha and 278 thous. ha respectively. The share built-up and urban areas in total geodesic area shows a growing tendency from 2003, in years 2004-2010 there was an increase by 0,3 percentage point.

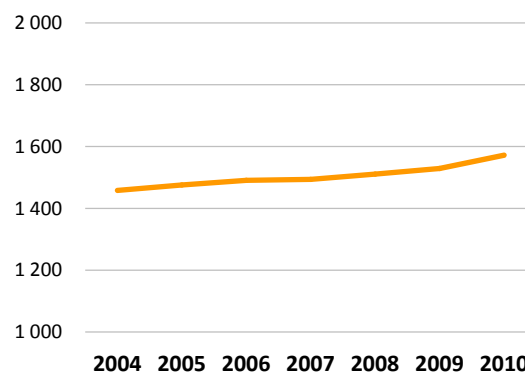
Graph 3.34. **Built-up and urban areas (%)**



Source: own calculations on the basis of data from the Head Office of Geodesy and Cartography.

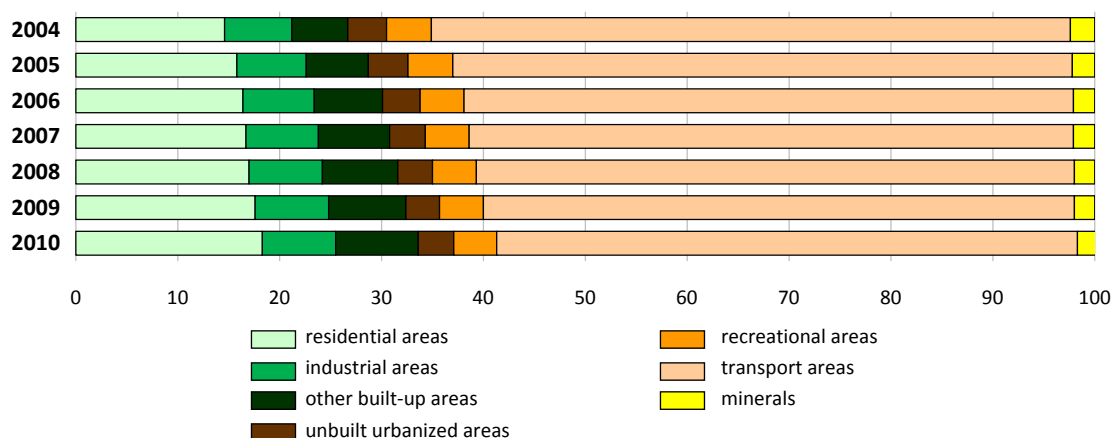
Built-up and urban areas in Poland increased at that time by 6,3%. An increase in comparison with 2004 was noted in the magnitude of residential areas – by 31,0%, industrial areas – by 15,8%, recreational areas – by 2,7% and other built-up areas, to which the following, among others, are counted: areas under buildings and equipment, urbanized areas connected with administration, health service, trade, religion, craft, services, education, culture and arts, recreation, communication, etc. – by 52,1%. On the other hand, there was a decrease of the area of minerals and unbuilt urbanized areas by 15,8% and 7,0% respectively.

Graph 3.35. **Built-up and urban areas**
(thous. ha)



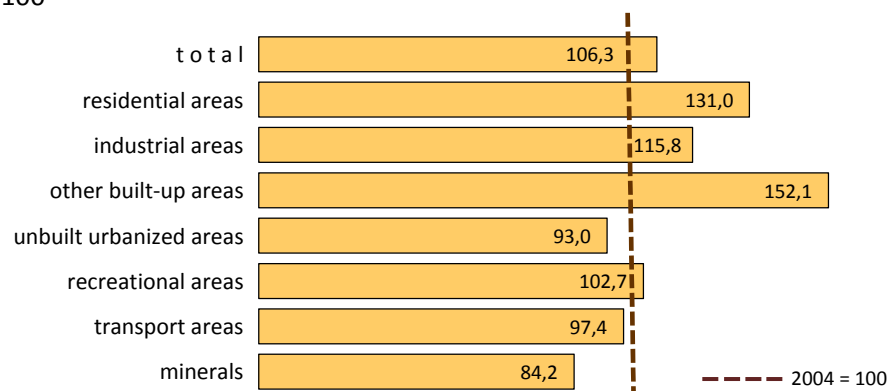
Source: data of the Head Office of Geodesy and Cartography.

Graph 3.36. **Structure of built-up and urban areas (%)**



Source: own calculations on the basis of data from the Head Office of Geodesy and Cartography.

Graph 3.37. **Built-up and urban areas in 2010**
2004 = 100



Source: own calculations on the basis of data from the Head Office of Geodesy and Cartography.

Environmental domain

Devastated and degraded land

| | |
|-----------------------|---|
| Name of the indicator | Devastated and degraded land |
| Area | Land use |
| Definition | The indicator is calculated as the share of devastated land (which lost its utility value due to the man's activities or other factors) and degraded land (which the utility value diminished due to deterioration of natural conditions or environmental changes as well as industrial activity and harmful agricultural activity) in total geodesic area of the country. |
| Meaning | <p>Priority aims in the field of soils and earth surface protection should consist of maintaining the quality of soils and earth above or on the level of required standards, obtaining the quality of soils and earth as required by standards, if they are not fulfilled.</p> <p>The indicator enables to monitor the level of land devastation and degradation in the country.</p> |

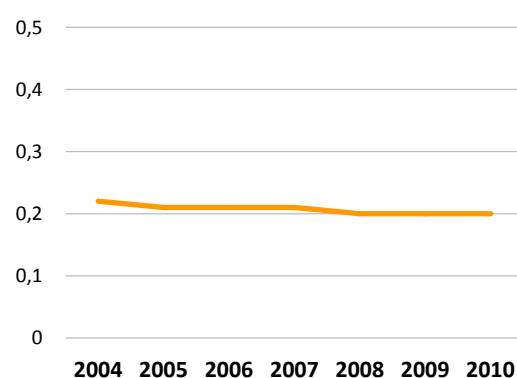
Table 3.17. **Devastated and degraded land (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------|------|------|------|------|------|------|
| 0,22 | 0,21 | 0,21 | 0,21 | 0,20 | 0,20 | 0,20 |

Source: own calculations on the basis of data from the Ministry of Agriculture and Rural Development.

Preventing from further degradation of soil and preserving its functions as well as restoration of devastated and degraded land to the condition suitable for present or planned use should be treated as priority aims in the field of protection of soils and the Earth's surface. On the basis of data from the Ministry of Agriculture and Rural Development, in the end of 2010 devastated and degraded land requiring reclamation covered the area of 61,2 thous. ha in Poland (by 9,5% less than in 2004). Devastated lands, which completely lost their utility value, constituted 89% of lands requiring reclamation. In years 2004-2010 a systematic decrease of the area of devastated and degraded lands was noted. A slight increase (by 0,2%) in comparison to previous year was observed in 2006. In the case of devastated land the tendency was a falling one, while in the case of degraded land the tendency was a rising one.

Graph 3.38. **Devastated and degraded land (%)**



Source: own calculations on the basis of data from the Ministry of Agriculture and Rural Development.

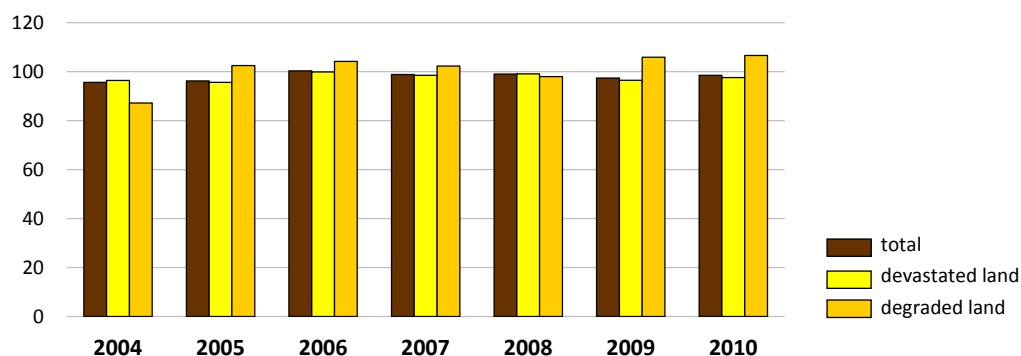
Share of devastated and degraded land in total area of the country decreased from 0,22% in 2004 to 0,20% in 2010. This share is on an unchangeable level starting from 2008. During 2010, 1222 ha of lands were recultivated, of which 634 ha for agricultural purposes, 440 ha for forestry purposes, and 581 ha underwent management, of which 299 ha for agricultural purposes and 212 ha for forestry purposes. In 2010 the area of recultivated land was smaller by almost 48% in comparison with the area of recultivated land during 2004 and by 14% smaller in comparison with 2009.

Table 3.18. **Devastated and degraded land requiring reclamation**
2004 = 100

| Years | Total | Devastated land | Degraded land |
|-------|-------|-----------------|---------------|
| 2005 | 96,2 | 95,6 | 102,5 |
| 2006 | 96,4 | 95,5 | 106,8 |
| 2007 | 95,3 | 94,1 | 109,2 |
| 2008 | 94,4 | 93,2 | 107,0 |
| 2009 | 91,9 | 90,0 | 113,3 |
| 2010 | 90,5 | 87,9 | 120,8 |

Source: own calculations on the basis of data from the Ministry of Agriculture and Rural Development.

Graph 3.39. **Devastated and degraded land requiring reclamation**
previous year = 100



Source: own calculations on the basis of data from the Ministry of Agriculture and Rural Development.

Environmental domain

Forest cover

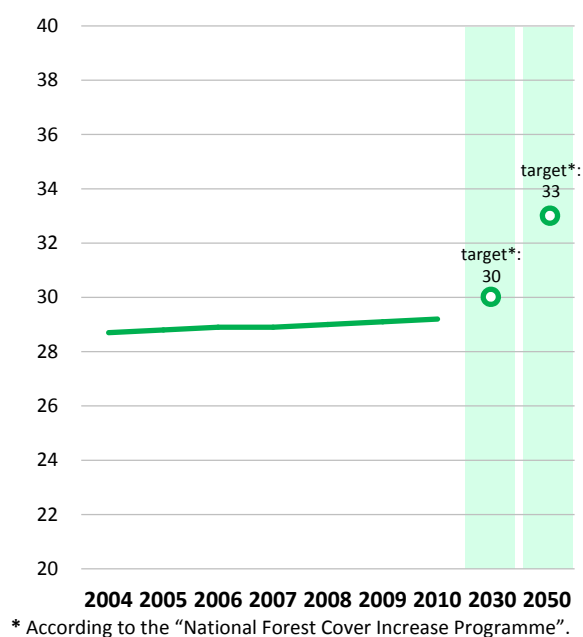
| | |
|-----------------------|---|
| Name of the indicator | Forest cover |
| Area | Land use |
| Definition | Forest cover index is calculated as the share of the forest area in the total geographical area of the country. |
| Meaning | Forests are an integral element of natural environment, having a positive influence on the shaping of climate, water balance, preservation of biological potential of species, counteracting the erosion processes of soils. They fulfil important production and social functions. There is a great need and great possibilities to enlarge the forest cover of the country through afforestation of non-effective (from the point of view of production) or not-managed arable lands. |

Table 3.19. **Forest cover (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------|------|------|------|------|------|------|
| 28,7 | 28,8 | 28,9 | 28,9 | 29,0 | 29,1 | 29,2 |

One of the more important elements of state forest policy is to increase the forest cover of the country successively as the lands unfit for agriculture are designated for afforestation and to obtain an optimal structure of forests in the landscape by protecting and using all the production capabilities of habitats. During the last years country's forest cover has been increasing systematically. In 2010 the forest area amounted to 9122 thous. ha, constituting 29,2% of the geographic area of the country. Comparing to 2004 the area of forests increased by 149 thous. ha, of which public by 36 thous. ha, and private by 113 thous. ha.

Graph 3.40. **Forest cover (%)**

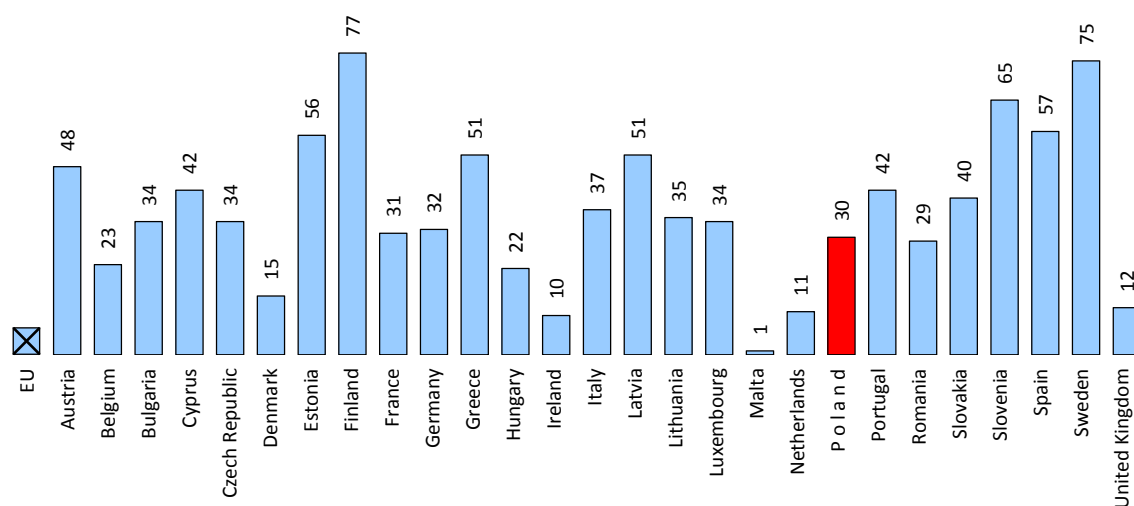


Graph 3.41. **Forest area** (thous. ha)



International comparisons

Graph 3.42. **Forest cover^a in EU countries in 2005 (%)**



a Forest cover is calculated as the percentage ratio of the forest area and other afforested area to the total land area of the country
b Data concern only forests.

S o u r c e: "State of Europe's Forests 2007: the MCPFE report on sustainable forest management in Europe".

☒ lack of data

In international comparisons data for Poland differ from the ones presented in the analysis due to application of different methodology of calculating the forest cover indicator. In international comparisons the land area of a given country is the basis of calculation of the forest cover indicator. In 2005 the highest forest cover in EU countries was observed in Finland (77%), and the lowest on Malta (1%).

Environmental domain

Area of protected land

| Name of the indicator | Area of protected land |
|-----------------------|--|
| Area | Biodiversity |
| Definition | <p>The indicator is calculated as the share of landscape protection total and according to the following forms of nature preservation:</p> <ul style="list-style-type: none"> • national parks, • natural reserves (without protection zone), • landscape parks (without protection zone, nature reserves area and the other forms of nature preservation), • protected landscape area (without nature reserves area and the other forms of nature preservation), • other forms of nature preservation situated on the landscape parks and protected landscape areas (documentation sites, ecological areas, natural and scenic complexes) <p>in total area of the country.</p> |
| Meaning | <p>Maintenance of natural values of the country is important not only from the point of view of ecology, but from the point of economy as well (through the development of tourism it contributes to the development of regions). Nature protection serves preservation of natural heritage and rich biological diversity of Polish nature. The indicator enables to monitor changes occurring in the size of protected areas on the background of the country's area.</p> |

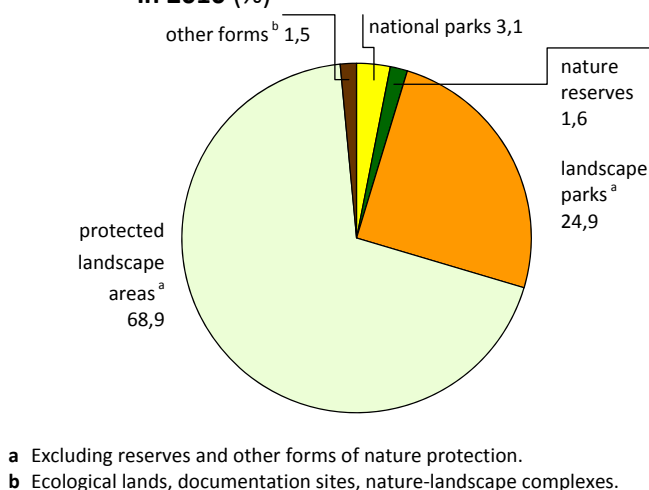
Table 3.20. **Area of protected land in total area (%)**

| Specification | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|--|-------|-------|-------|-------|-------|-------|-------|
| Total | 32,52 | 32,54 | 32,12 | 32,31 | 32,31 | 32,31 | 32,44 |
| National parks | 1,02 | 1,01 | 1,01 | 1,01 | 1,01 | 1,01 | 1,01 |
| Natural reserves | 0,52 | 0,53 | 0,53 | 0,54 | 0,56 | 0,52 | 0,53 |
| Landscape parks | 8,05 | 8,05 | 8,04 | 8,04 | 8,04 | 8,05 | 8,09 |
| Protected landscape area | 22,52 | 22,53 | 22,09 | 22,26 | 22,29 | 22,30 | 22,36 |
| Other forms of nature preservation ... | 0,41 | 0,42 | 0,44 | 0,45 | 0,42 | 0,43 | 0,47 |

Poland is among countries having considerable natural values. Nevertheless in years 2004-2010 the area of protected landscape (excluding areas of the Natura 2000 network) decreased from 10168 thous. ha to 10143 thous. Ha. In the end of 2010, 32,44% of the country's area was subject to national forms of environment protection. Comparing to 2004 it is by 0,08 percentage point less, but by 0,13 percentage point more than in 2009.

National parks, the highest form of nature protection, according to the end of 2010 covered the area of over 314 thous. ha – 1,01% of the area of Poland. Nature protection reserves with the area of 164 thous. ha covered 0,53% of the country's territory, similarly like in 2005 and 2006. Landscape parks are the next form of nature protection. In 2010 their area amounted to 2529 thous. ha and was by 12 thous. ha bigger than in 2004. The largest area among forms of legally protected areas is occupied by landscape protection areas (6990 thous. ha in 2010), nevertheless their share in total area of the country was by 0,16 percentage point smaller comparing to 2004, and by 0,06 percentage point greater than in 2009. Other forms of nature protection such as ecological lands, documentation sites and nature-landscape complexes increased their area from 129 thous. ha in 2004 to 146 thous. ha in 2010.

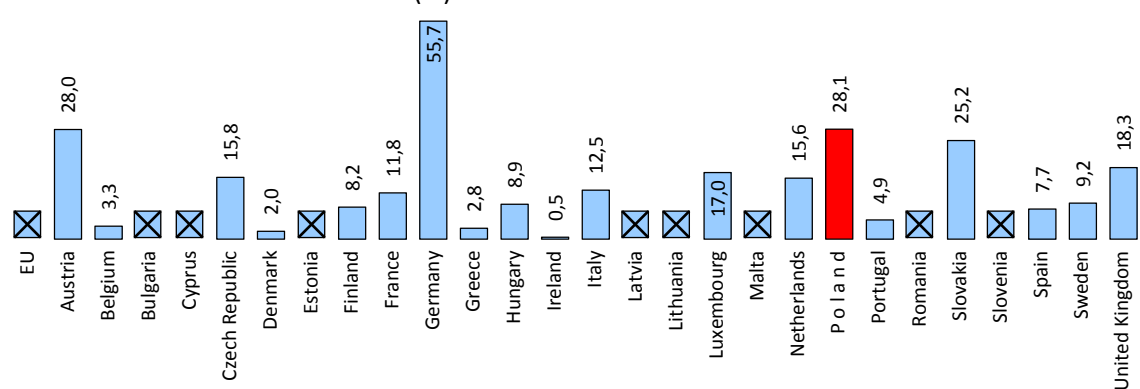
Graph 3.43. **Structure of legally protected landscape areas in 2010 (%)**



International comparisons

In 2007, the highest share of protected areas among EU countries, for which data were available, in total area of the given country was noted in Germany (55,7%), and the lowest in Ireland (0,5%). Poland was on a very high location occupying the second place (28,1%).

Graph 3.44. **Share of more important protected areas in the territory of the country in EU countries in 2007 (%)**



^a Data do not include the Bermudas, British Virgin Islands, Falklands, Cayman Islands, Saint Helena's Island and others. ^b Data do not include the Netherlands Antilles. ^c Data include Balearic Islands and Canary Islands. ^d Data include the Azoras and Madeira. ^e Data do not include Greenland.

Source: "OECD Environmental Data. Compendium 2008".

☒ lack of data

In international comparisons data differ from the CSO's data due to the application of the category of protected areas by OECD according to the International Union for Conservation of Nature (IUCN) classification. Definitions accepted by IUCN considerably differ from those accepted in national classifications.

Environmental domain

Forest trees damaged

| | |
|-----------------------|---|
| Name of the indicator | Forest trees damaged |
| Area | Biodiversity |
| Definition | Forest trees damaged indicator is calculated as the percentage of trees on forest and other wooded land with defoliation above 25%. |
| Meaning | The indicator monitors the health of forest through evaluation of the defoliation of tree-tops. Monitoring is based on collecting information on the health of tree stands to determine the differentiation of forest damage, determining the direction and dynamics of changes in forest damage, setting the cause-and-effect relationship between health of tree stands and environmental factors. Defoliation, in particular defoliation of tree-tops shows, that the tolerance for unfavourable environmental conditions is weakened. |

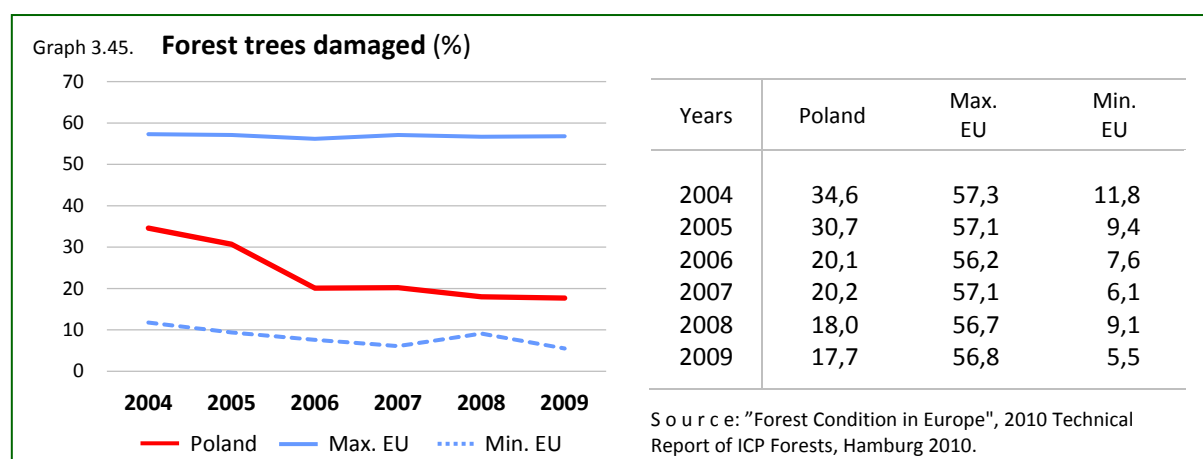
Table 3.21. **Forest trees damaged (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|
| 34,6 | 30,7 | 20,1 | 20,2 | 18,0 | 17,7 |

Source: "Forest Condition in Europe", 2010 Technical Report of ICP Forests, Hamburg 2010.

Forest damages in Poland are assessed annually within the programme of forest monitoring, being one of the elements of the State Environmental Monitoring led by the Chief Inspectorate of Environmental Protection.

During years 2004-2009 the condition of forests in Poland had been improving. The percent of trees in forests and other afforested areas with defoliation exceeding 25% (defoliation classes 2-4) decreased in 2009 by 0,3 percentage point comparing to previous year and by 16,9 percentage points comparing to 2004. Share of these trees in coniferous species amounted to 17,2%, and in deciduous species amounted to 18,5%.

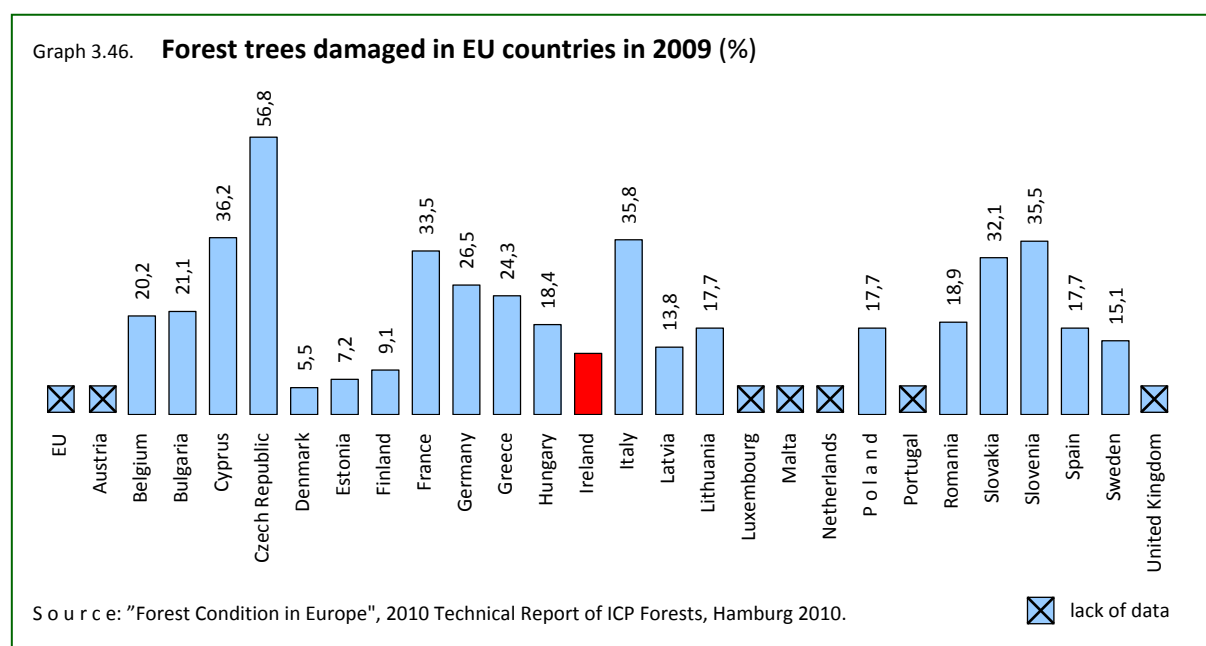


The highest share of damaged trees among coniferous ones was characteristic for spruce (28,7% trees of defoliation exceeding 25%), among deciduous ones – oak (29,3% of trees). The lowest percentage of damaged trees (defoliation exceeding 25%, defoliation classes 2-4) among coniferous species was characteristic for fir tree (15,5% of trees), and among non-coniferous species – beech tree (9,2% of trees).

In 2009, Poland was in the group of countries, in which the share of trees in defoliation classes 2-4 was average and amounted to 17,7%.

International comparisons

In 2009, the highest percent of damaged trees among EU countries, for which data were available, was observed in the Czech Republic (56,8%). Defoliation of over 35% of trees in defoliation classes 2-4 was also noted in Slovenia, Italy and Cyprus. The lowest defoliation (less than 10% of trees in defoliation classes 2-4) was noted in the tree stands of Denmark, Estonia and i Finland.



Environmental domain

Non-mineral waste generated

| | |
|-----------------------|--|
| Name of the indicator | Non-mineral waste generated per capita |
| Area | Waste management |
| Definition | <p>The indicator is calculated as the volume of non-mineral waste generated during the year in kilograms per capita.</p> <p>Non-mineral waste include harmful waste and waste other than harmful originating from all sectors of the economy and households, of which wastes from recycling, excluding the following categories of waste:</p> <p>12.1 – Construction and demolition waste 12.2 – Asbestos waste 12.3 – Waste from natural minerals 12.5 – Various mineral waste 12.6 – Contaminated soils and polluted dredging spoils 11.3 – Non-polluted dredging spoils.</p> <p>Division into categories of waste was made on the basis of the European Waste Catalogue EWC-Stat included in Annex III to the regulation (EC) No. 2150/2002 of the European Parliament and Commission from 25 November 2002 on Waste Statistics.</p> |
| Meaning | The indicator monitors the volume of waste generated in time. It enables to evaluate the progress in counteractions undertaken to prevent from the generation of waste, consisting in a better use of resources, lengthening the life cycle of the product by its re-use. |

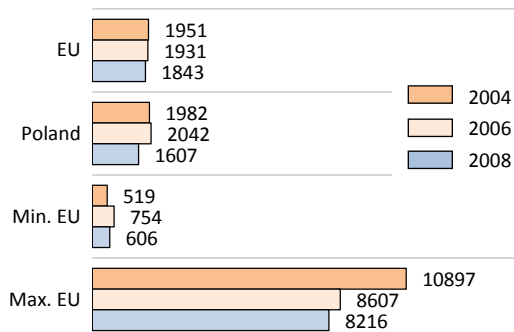
Table 3.22. **Non-mineral waste generated per capita (kg)**

| 2004 | 2005 | 2006 | 2007 | 2008 |
|------|------|------|------|------|
| 1982 | . | 2042 | . | 1607 |

Source: data of the Eurostat.

In 2008 in Poland the volume of non-mineral waste generated per capita amounted to 1607 kg. Comparing to 2004 the volume of these waste decreased by 18,9%, and it was a favourable situation. One of the basic conditions for limitation of the negative impact on the environment is undertaking actions aiming at reducing the generation of waste and effective use of natural resources by promoting recycling enabling to re-use the resources.

Graph 3.47. **Non-mineral waste generated per capita (kg)**

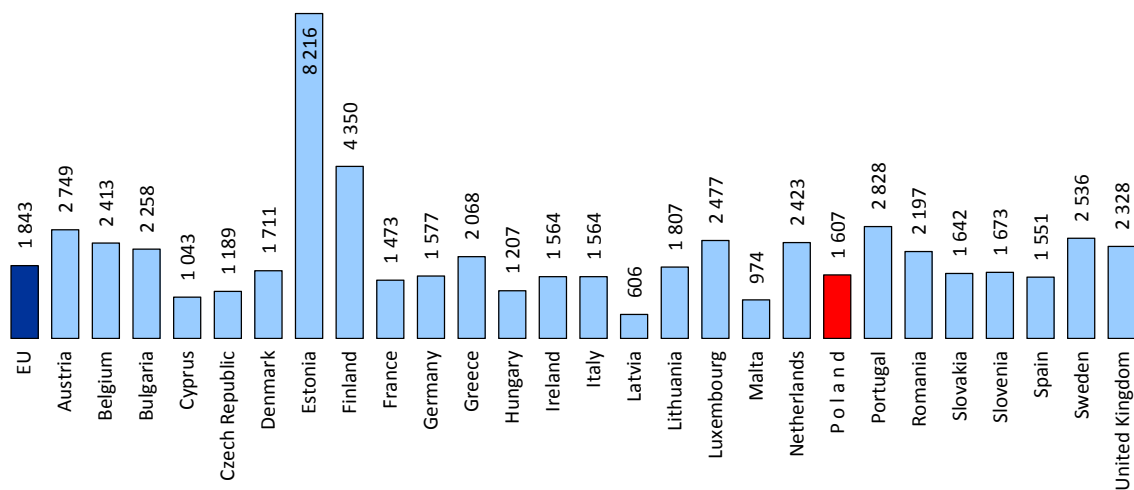


Source: data of the Eurostat.

International comparisons

In 2008, the highest volume of non-mineral waste generated per capita among EU countries was observed in Estonia – 8216 kg, and the lowest volume of non-mineral waste generated was noted in Latvia – 606 kg.

Graph 3.48. **Non-mineral waste generated per capita in EU countries in 2008 (kg)**



Source: data of the Eurostat.

Environmental domain

Municipal waste generated

| | |
|-----------------------|---|
| Name of the indicator | Municipal waste generated per capita |
| Area | Waste management |
| Definition | <p>The indicator shows the amount of municipal waste generated during the year per capita.</p> <p>The indicator was calculated basing on solid, collected municipal waste. On territories not included in the system of municipal waste collection, the amount of waste generated was estimated.</p> <p>Municipal waste is waste generated in households or by other waste producers (excluding dangerous waste) which on the account of its character and composition is similar to waste from households.</p> |
| Meaning | <p>The indicator monitors the negative impact of municipal waste on the environment: the more waste generated the greater pressure on the environment. One of the strategic aims for the implementation of the sustainable development idea is decreasing the volume of waste by propagation of adequate consumption patterns and development of ecological awareness of the society.</p> |

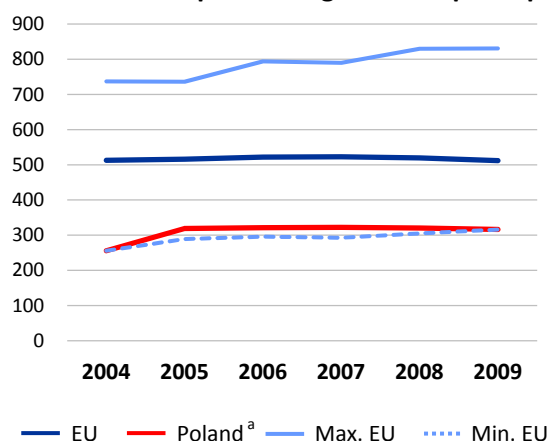
Table 3.23. **Municipal waste generated^a per capita (kg)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------------------|------|------|------|------|------|
| 256 ^b | 319 | 321 | 322 | 320 | 316 |

^a Estimated data. ^b Concerns waste collected.

One of the fundamental conditions of limiting the negative impact on the environment is undertaking activities connected with the decrease of generation of municipal waste by, among others, manufacturing and promoting articles with a prolonged period of usage, improvement of the system of recycling enabling repeated use of materials and developing pro-ecologic consumption patterns in households leading to the reduction of the amount of waste and their segregation. In Poland a very slow decrease of the amount of municipal waste generated is observed – in years 2005-2009 nearly 1%. Among all EU countries Poland is classified on the lowest level as far as the volume of municipal waste generated is concerned. In 2009 it amounted to 316 kg per capita, while the EU average was 512 kg.

Graph 3.49. **Municipal waste generated per capita (kg)**



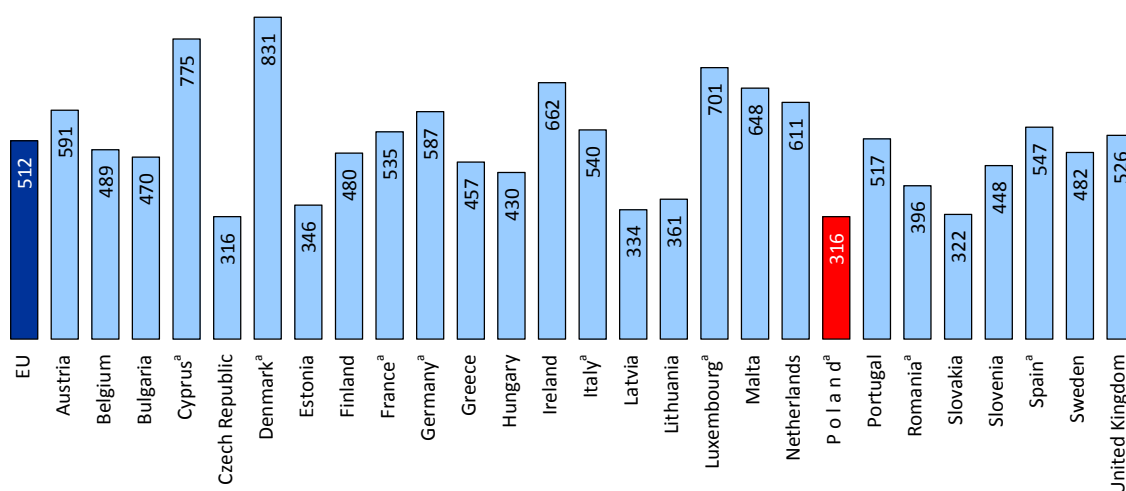
| Years | EU | Poland ^a | Max. EU | Min. EU |
|-------|-----|---------------------|---------|---------|
| 2004 | 513 | 256 | 737 | 256 |
| 2005 | 516 | 319 | 736 | 289 |
| 2006 | 522 | 321 | 794 | 296 |
| 2007 | 523 | 322 | 790 | 293 |
| 2008 | 520 | 320 | 830 | 305 |
| 2009 | 512 | 316 | 831 | 316 |

^a Estimated data. In 2004 – concerns waste collected.
Source: data of the Eurostat.

International comparisons

In 2009 the lowest amount of municipal waste generated per capita among EU countries was noted in Poland and the Czech Republic – 316 kg and Slovakia – 322 kg. The highest amount of municipal waste was generated in Denmark – 831 kg, Cyprus – 775 kg and in Luxembourg – 701 kg per capita.

Graph 3.50. **Municipal waste generated per capita in EU countries in 2009 (kg)**



^a Estimated data.
Source: data of the Eurostat.

Environmental domain

Municipal waste treated by landfilling

| | |
|-----------------------|---|
| Name of the indicator | Municipal waste treated by landfilling per capita |
| Area | Waste management |
| Definition | <p>The indicator shows the amount of municipal waste treated by landfilling during the year per capita. The indicator was calculated basing on solid, collected municipal waste.</p> <p>Municipal waste is waste generated in households or by other waste producers (excluding dangerous waste) which on the account of its character and composition is similar to waste from households.</p> <p>Treatment of waste by landfilling consists of depositing the waste exclusively in places designated for this purpose i.e. landfill sites-located and organized in concordance with the rules on an organized site of waste depositing.</p> |
| Meaning | <p>The indicator shows tendencies in treating waste after their generation. Waste landfilling is the least desired way of waste treatment due to the negative impact on the environment: air pollution (methane emission), underground waters and solid protection.</p> |

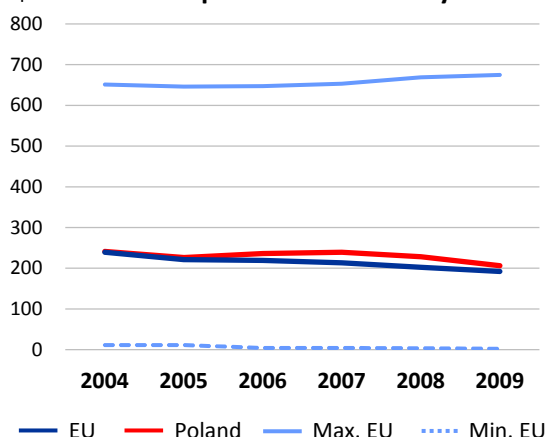
Table 3.24. **Municipal waste treated by landfilling per capita (kg)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|
| 241 | 226 | 236 | 239 | 228 | 206 |

The volume of municipal waste generated in Poland is the lowest among EU countries, nevertheless the share of municipal waste treated by landfilling is very high. In 2009 the volume of waste treated by landfilling per capita was 206 kg, while the EU average was 192 kg per capita.

In years 2004-2009 the indicator "municipal waste treated by landfilling" decreased in Poland by 14,5%. From 2008 a positive falling tendency of the volume of waste treated by landfilling per capita has been observed in Poland (in 2009 a decrease by 22 kg compared to 2008). These changes exert an influence on air protection by decreasing the emissions of methane, and on protection of underground waters and soil.

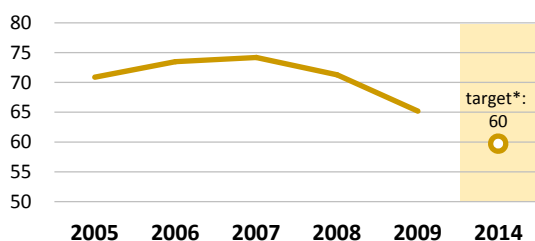
Graph 3.51. **Municipal waste treated by landfilling per capita (kg)**



| Years | EU | Poland | Max. EU | Min. EU |
|-------|-----|--------|---------|---------|
| 2004 | 239 | 241 | 651 | 11 |
| 2005 | 221 | 226 | 646 | 11 |
| 2006 | 219 | 236 | 647 | 4 |
| 2007 | 213 | 239 | 653 | 4 |
| 2008 | 202 | 228 | 669 | 3 |
| 2009 | 192 | 206 | 675 | 2 |

Source: data of the Eurostat.

Graph 3.52. **Municipal waste landfilled in % of waste generated (%)**



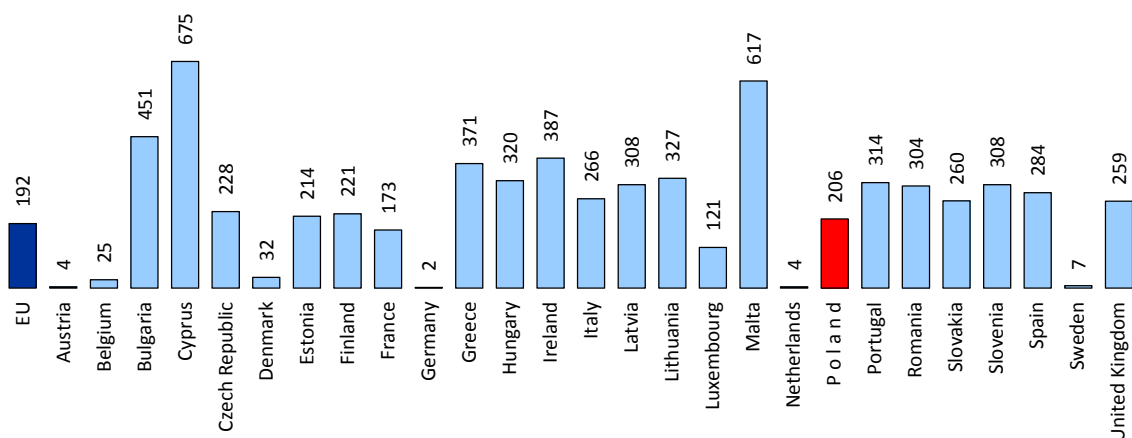
* According to "National Plan of Waste Management 2014".
Source: own calculations on the basis of CSO's data.

From 2008 a decrease of the volume of municipal waste landfilled in the volume of waste generated has been observed. According to assumptions of the "National Plan of Waste Management 2014" it is planned to reduce the share of municipal waste landfilled in the volume of waste generated to the max. level of 60% till the end of 2014.

International comparisons

In 2009 the lowest volume of waste treated by landfilling per capita among EU countries was noted in Germany – 2 kg, Austria and the Netherlands – 4 kg, and the highest on Cyprus – 675 kg and Malta – 617 kg.

Graph 3.53. **Municipal waste treated by landfilling per capita in EU countries in 2009 (kg)**



Source: data of the Eurostat.

Environmental domain

Recycling of packaging waste

| | |
|-----------------------|---|
| Name of the indicator | Recycling of packaging waste |
| Area | Waste management |
| Definition | <p>The indicator is calculated as the ratio of the volume of waste recycled to total volume of marketed packaging waste.</p> <p>The indicator illustrates the recycling of packaging waste in a given year.</p> <p>Packaging waste include all packaging, of which multiple use packaging withdrawn from reuse, constituting waste as defined in laws on waste, excluding waste generated in the process of packaging production.</p> <p>Recycling shall mean such recovery as consist in reprocessing of substances or materials contained in waste through a production process to recover substances or materials for their original or different uses, but excluding energy recovery.</p> |
| Meaning | <p>The indicator monitors the level of recycling (recovery) of packaging waste and active limitation of negative impact on the environment by its reuse. Multiple use of raw materials limits the use of resources and has an influence on diminishing the material consumption of production.</p> |

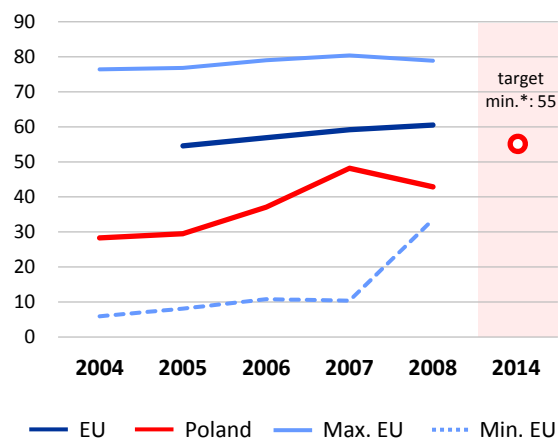
Table 3.25. **Recycling of packaging waste (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 |
|------|------|------|------|------|
| 28,3 | 29,5 | 37,1 | 48,2 | 42,9 |

Source: data of the Eurostat.

In years 2004-2008 an increase of the recycling of packaging waste indicator was noted in Poland. In 2008 the recycling of packaging waste amounted to 42,9% and was higher compared to 2004 by 14,6 percentage points. One of the Polish obligations, resulting from membership in the EU, presented in the "National Environmental Policy for 2009-2012 and its 2016 outlook" is accomplishment – till the end of 2014 – of recycling level minimum 55% of packaging waste. In Poland a profitable (growing) tendency of the indicator has been observed, aiming at the target value.

Graph 3.54. **Recycling of packaging waste (%)**



| Years | EU | Poland | Max. EU | Min. EU |
|-------|------|--------|---------|---------|
| 2004 | . | 28,3 | 76,4 | 5,9 |
| 2005 | 54,6 | 29,5 | 76,8 | 8,1 |
| 2006 | 56,9 | 37,1 | 79,0 | 10,8 |
| 2007 | 59,2 | 48,2 | 80,4 | 10,4 |
| 2008 | 60,5 | 42,9 | 78,9 | 33,5 |

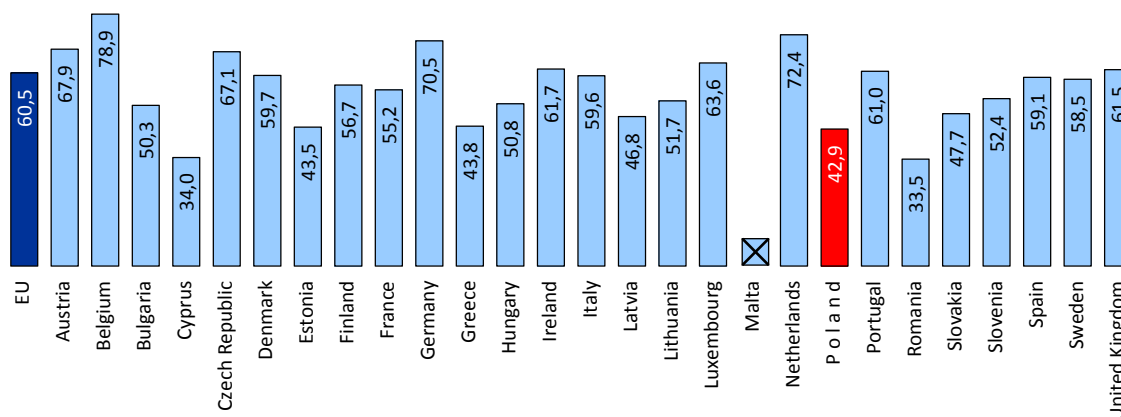
* According to the "National Environmental Policy for 2009-2012 and its 2016 outlook".

Source: data of the Eurostat.

International comparisons

In 2008 the highest level of recycling of packaging waste among EU countries was reached in Belgium – 78,9%, the Netherlands – 72,4% and Germany – 70,5%, and the lowest in Romania – 33,5% and Cyprus – 34,0%.

Graph 3.55. **Recycling of packaging waste in EU countries in 2008 (%)**



Source: data of the Eurostat.

⊠ lack of data

Institutional-political domain

List of indicators

Global partnership

- Official Development Assistance (ODA) for developing countries

Policy coherence and effectiveness

- Level of citizens' confidence in public institutions
- New infringement cases of EU law

Openness and participation

- Voter turnout in parliamentary and local elections
- E-government – on-line availability
- Households with broadband Internet access

Citizens activeness

- Overall indicator of involvement in social work

Institutional-political domain

Official Development Assistance (ODA) for developing countries

| | |
|-----------------------|--|
| Name of the indicator | Official Development Assistance (ODA) for developing countries |
| Area | Global partnership |
| Definition | <p>The indicator presents the share of grants or loans constituting the Official Development Assistance, given to developing countries by official governmental institutions of countries-donnors or international organizations for promotion of economic development in these countries in the Gross National Income. Loans can be treated as Official Development Assistance (ODA) only then, when they contain an element of grant amounting to at least 25% of the value of the assistance granted.</p> <p>Apart from financial flows technical aid aiming at development of human resources, raise of qualifications as well as technical and production potential of developing countries is also regarded as ODA. It consists in, among others, transfer of knowledge (or in a broader sense know-how) and experience in the form of trainings, delegating experts, initiating surveys and/or covering costs resulting from the above mentioned.</p> |
| Meaning | The indicator presents engagement of the state (responsibility and solidarity) in development assistance for developing countries. The basic aim of development assistance is to fulfil – in a global scale – the human right for development. The indicator shows information on the magnitude of financial flows transferred for the support of development and limitation of poverty in developing countries. |

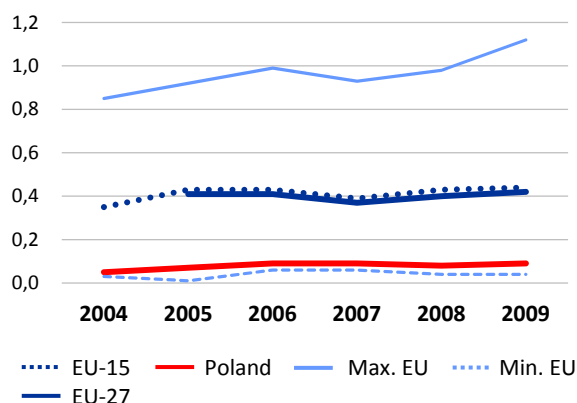
Table 4.1. **Official Development Assistance (ODA) for developing countries (%)**

| | | | | | |
|------|------|------|------|------|------|
| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
| 0,05 | 0,07 | 0,09 | 0,09 | 0,08 | 0,09 |

Source: data of the Ministry of Foreign Affairs.

In 1996 Poland acceded to the Organization of Economic Cooperation and Development (OECD), and in 2004 we became the member of the European Union. Polish membership in both institutions obligates our country to cooperate with third countries in the field of international development, of which to transfer development assistance. In 2005 the Council of the European Union obligated the "old" member countries to accept ceilings concerning ODA / GNI amounting to 0,56% till 2010 (whereas countries, which did not reach the level of official development assistance amounting to 0,51% should reach it in 2010) and 0,7% till 2015. As far as "new" member countries are concerned these targets are 0,17% and 0,33% respectively.

Graph 4.1. **Official Development Assistance (ODA) for developing countries (%)**



| Years | EU-15 | EU-27 | Poland | Max. EU | Min. EU |
|-------|-------|-------|--------|---------|---------|
| 2004 | 0,35 | . | 0,05 | 0,85 | 0,03 |
| 2005 | 0,43 | 0,41 | 0,07 | 0,92 | 0,01 |
| 2006 | 0,43 | 0,41 | 0,09 | 0,99 | 0,06 |
| 2007 | 0,39 | 0,37 | 0,09 | 0,93 | 0,06 |
| 2008 | 0,43 | 0,40 | 0,08 | 0,98 | 0,04 |
| 2009 | 0,44 | 0,42 | 0,09 | 1,12 | 0,04 |

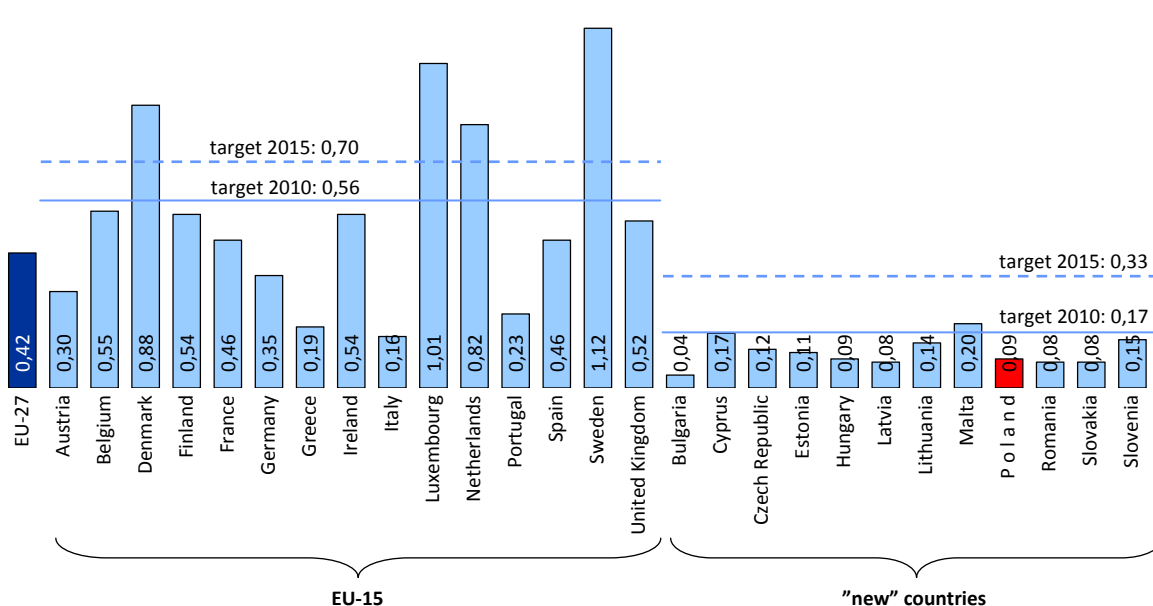
Source: data of the Ministry of Foreign Affairs (for Poland), OECD (for EU).

Following the accession of Poland to the EU a considerable increase of the value of Polish foreign assistance was observed. In 2003 the share of Official Development Assistance (ODA) constituted 0,01% of GNI, and in 2004 already 0,05% of GNI. In years 2004-2006 an increase in the value of the indicator was observed, and in years 2007-2009 the value of the indicator was on a similar level – 0,08%-0,09% of ODA in GNI.

International comparisons

Among European Union countries Poland is placed in the group of countries of the lowest share in official development assistance in gross national income. In 2009 the European Union (EU-27) spent 0,42% of its GNI for development assistance.

Graph 4.2. **Official Development Assistance (ODA) for developing countries in UE countries in 2009 (%)**



Source: data of the Ministry of Foreign Affairs (for Poland), OECD (for EU).

Institutional-political domain

Level of citizens' confidence in public institutions

| | |
|-----------------------|---|
| Name of the indicator | Level of citizens' confidence in public institutions |
| Area | Policy coherence and effectiveness |
| Definition | <p>Level of citizens' confidence in public institutions is expressed as the share of positive opinions (people who declare that they tend to trust) about the institutions. Potential replies to the question on the level of confidence include: "tend to trust", "tend not to trust", "don't know". Trust is not precisely defined and could leave some room for interpretation to the interviewees. The indicator presents results of the autumn survey (the survey is conducted twice within a year: in spring and in autumn).</p> <p>National public institutions: the government, national parliament, judiciary/legal system, the police, the army, political parties.</p> <p>EU institutions: European Parliament, European Commission, EU Council.</p> |
| Meaning | <p>The indicator presents the percent of citizens, who have confidence in public institutions. Confidence is the basis for undertaking cooperation in public life in such a way, that the communication between the institution and the society and enquirers proceeds in the form of dialogue of equal partners, and not in the form of unilateral medium. Moreover, confidence supports the sense of security.</p> |

Table 4.2. **Level of citizens' confidence in public institutions (%)**

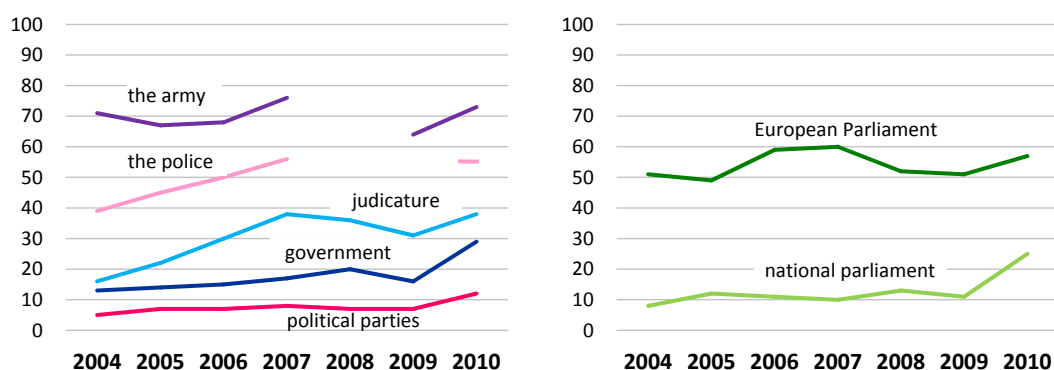
| Specification | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|--------------------------------------|------|------|------|------|------|------|------|
| National public institutions: | | | | | | | |
| government | 13 | 14 | 15 | 17 | 20 | 16 | 29 |
| national parliament | 8 | 12 | 11 | 10 | 13 | 11 | 25 |
| judiciary/legal system | 16 | 22 | 30 | 38 | 36 | 31 | 38 |
| the police | 39 | 45 | 50 | 56 | . | . | 55 |
| the army | 71 | 67 | 68 | 76 | . | 64 | 73 |
| political parties | 5 | 7 | 7 | 8 | 7 | 7 | 12 |
| EU institutions: | | | | | | | |
| European Parliament | 51 | 49 | 59 | 60 | 52 | 51 | 57 |
| European Commission | 51 | 46 | 58 | 61 | 47 | 48 | 53 |
| Council of the EU | 40 | 40 | 52 | 55 | 43 | 40 | 48 |

Source: data of the European Commission, Eurobarometer.

Traditionally, since many years people from Poland have the greatest confidence in the army (in 2010 – 73%), the level is similar to EU average (70%). Whereas, citizens of Poland have traditionally low confidence in political parties, amounting to not more than 8% in years 2004-2009. In 2010 a slight increase occurred – by 5 percentage points. In the last survey the highest increase of the citizens' confidence in the national parliament – by 14 percentage points – and in the government – by 13

percentage points – can be observed. About 25% of citizens of our country had confidence in the Parliament and 29% had confidence in the government. The level of confidence in these two institutions was similar to the EU average (31% and 28% respectively). In 2010 every third citizen of Poland (38%) trusted the legal system and this tendency, with slight deviations, lasted from 2006, while in 2004 only every sixth citizen of Poland declared his trust. And here we stand out from the EU average, where every second citizen says that he trusts the judicature. From 2004 a systematic growth of confidence in the police was observed, though in 2010 comparing to 2007 a minimal decrease was noted. Nevertheless, 55% of citizens trust in the police, while the EU average is 64%.

Graph 4.3. **Level of citizens' confidence in public institutions (%)**

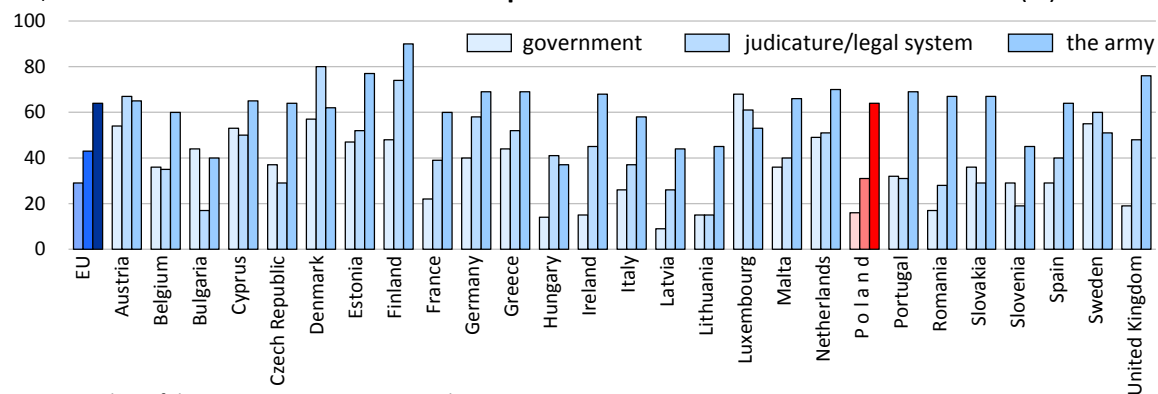


S o u r c e: data of the European Commission, Eurobarometer.

International comparisons

EU citizens, similarly to Poles have a highest level of trust in the army. In 2009, the EU average was on the level of 64%. Absolutely the highest confidence among EU countries is declared by Finland (91%), and the lowest by Hungary (37%) and Bulgaria (40%). On the other hand, there was a low level of trust to political parties (EU average in 2009 – 16%). The highest confidence in political parties is observed among electors in Denmark (50%), Luxembourg (41%) and in the Netherlands (37%). The lowest confidence was observed in Latvia (2%) and Lithuania (5%). The country having the greatest confidence in the national parliament is Denmark (74%), and the lowest (6%) was observed in Latvia, by three times lower compared to 2004. The greatest trust in the government is noted in Luxembourg (68%) and Denmark (57%), while a definitely low level of confidence was observed in Latvia (9%). Scandinavian countries are among countries characterized by a high level of trust to judicature: Denmark (80%), Finland (74%), Sweden (60%) and Austria (67%). Countries, in which confidence is definitely lower than the EU average are Lithuania (15%), Bulgaria (17%) and Slovenia (19%). Results of the conducted surveys show, that citizens of Scandinavian countries, Austria, Luxembourg, Netherlands declare the highest level of confidence to public institutions.

Graph 4.4. **Level of citizens' confidence in public institutions in EU countries in 2009 (%)**



S o u r c e: data of the European Commission, Eurobarometer.

Institutional-political domain

New infringement cases of EU law

| | |
|-----------------------|---|
| Name of the indicator | New infringement cases of EU laws |
| Area | Policy coherence and effectiveness |
| Definition | <p>The indicator is presented as the number of new actions (direct) brought before the Court of Justice, which concern the failure of a Member State to fulfil its obligations.</p> <p>Institution of this complaint enables the Court to exercise control over fulfilling by Member Countries its obligations, which – on the basis of EU law – are of their responsibility.</p> |
| Meaning | The indicator presents the country level in introducing the Community Law. It illustrates one of the aspects of policy coherence between the European Union and Member State. |

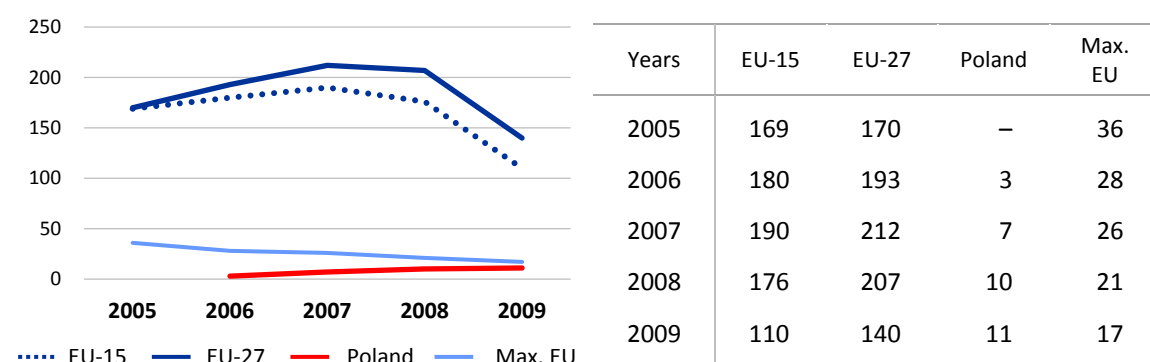
Table 4.3. **New infringement cases of EU laws**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|
| – | – | 3 | 7 | 10 | 11 |

S o u r c e: data of the Court of Justice of the European Communities.

On the basis of the Treaty of Accession of the Republic of Poland to European Union starting from 1 May 2004 the Union's law has come into force in Poland, applied directly or requiring implementation to the national legal order. The complaint concerning the failure to fulfil obligations is lodged by the European Commission against the Member State, when it fails to fulfil the treaty's obligations, e.g. in case of incorrect or late implementation of Union's laws. Moreover, other Member State can lodge such a complaint, but these are rather rare, single cases (these actions are not shown in the presented data). Complaints against a Member State cannot be lodged to the Court by other entities, such as natural or legal persons. "A Member State failure to fulfil an obligation under the Treaties" (article 258 TFEU) is widely understood as a violation of: laws of the Treaty on European Union (TEU) and the Treaty on Functioning of the European Union (TFEU), general rules of the Union's law, secondary law regulations, international agreements, other binding acts. Only the Court of Justice considers complaints concerning the failure to fulfil obligations (these complaints constitute about 40% of cases adjudged by the Court). Derogations with the transposition of directives are the most frequent cause of commencing actions concerning violation of the Union's law (COM(2010)538).

Graph 4.5. **New infringement cases of EU laws**



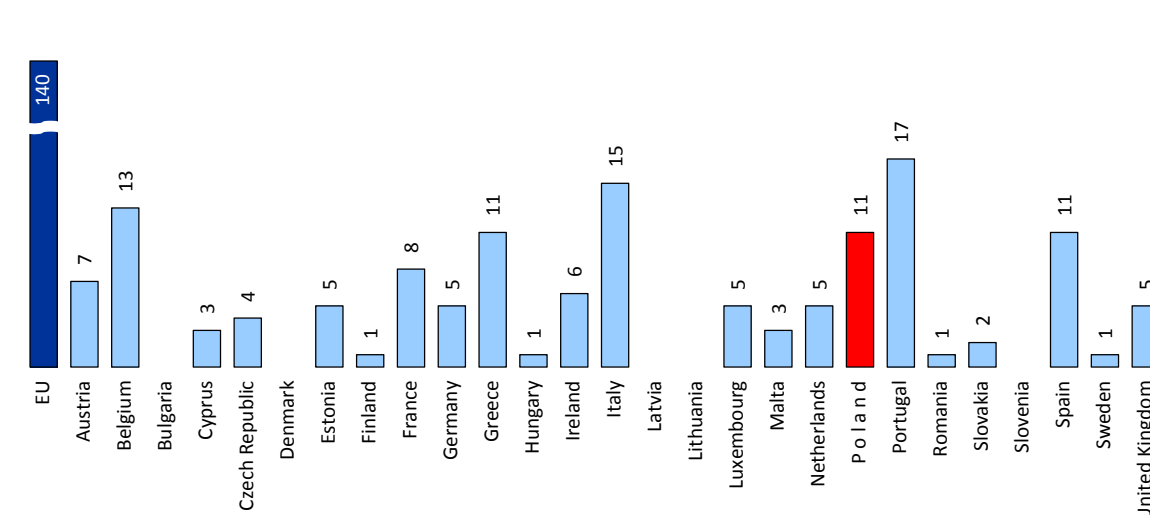
Note: The above presented figures (gross figures) represent the total number of cases, without account being taken of the joinder of cases on the ground of similarity (one case number = one case). Due to coming into force of the Lisbon Treaty, dated 1 December 2009 article 226 EC was replaced by article 258 TFEU.

Source: data of the Court of Justice of the European Communities.

International comparisons

Countries against which most infringement cases were filed in years 2004-2009 are Italy (143), Greece (126) and Luxembourg (101), while Bulgaria and Latvia noted no lodged complaints during these years. In 2009 the highest values of the indicator were noted in Portugal (17) and Italy (15), Belgium (13) and Greece, Spain and Poland (11). Taking into account only indicators concerning Poland, in years 2005-2009 the number of complaints has been growing.

Graph 4.6. **New infringement cases of EU laws in EU countries in 2009**



Note: In such countries as: Bulgaria, Denmark, Latvia, Lithuania and Slovenia the occurrence was equal zero.

Source: data of the Court of Justice of European Communities.

Institutional-political domain

Voter turnout in elections

| | |
|-----------------------|---|
| Name of the indicator | Voter turnout in parliamentary and local elections |
| Area | Openness and participation |
| Definition | <p>Voter turnout in elections:</p> <ul style="list-style-type: none"> to the European Parliament – number of valid ballot papers of persons, who took part in elections to the European parliament in total number of population which has the right to vote, to the national parliament – share of persons, who received ballot papers in national parliamentary elections (in other words, the number of those, who cast a vote or 'turn out' at an election, including those, who cast blank or invalid votes) in total number of population which has the right to vote, local: 2010 – share of persons, who cast valid votes in local elections in the total number of population which has the right to vote, Years: 1998, 2002, 2006 – share of persons, who received ballot papers in local elections in total number of population which has the right to vote. |
| Meaning | The indicator presents the share/percent of citizens taking advantage over the election right. It is a determinant of real participation in the life of the European Union, nation and local community. Voter turnout is a reflection of the citizens' consciousness concerning the possibility of joint deciding in important for the society matters: economic, social, political. |

Table 4.4. **Voter turnout in parliamentary and local elections (%)**

| Years | Elections to | | |
|-------|---------------------|---------------------|--------|
| | European Parliament | National parliament | |
| | | Seym | Senate |
| 2004 | 20,87 | x | x |
| 2005 | x | 40,57 | 40,56 |
| 2007 | x | 53,88 | 53,88 |
| 2009 | 24,53 | x | x |

| Years | Local elections | |
|-------|-----------------|----------|
| | I round | II round |
| 2006 | 45,91 | 39,69 |
| 2010 | 47,32 | 35,31 |

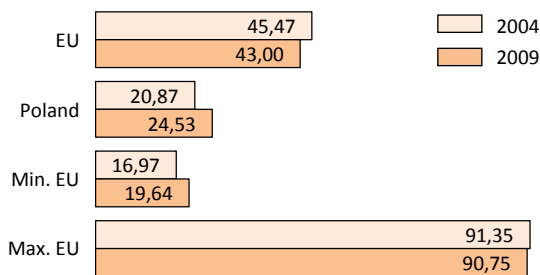
Source: data of the National Electoral Commission.

In Poland elections to the European Parliament took place twice: in 2004 and in 2009. Voter turnout in euro-elections in 2009 was 24,53 % (compared to 20,87 % in 2004) – increase by 3,66 percentage points. On the other hand, in 2009 the average voter turnout for the EU was 43% and was lower than the average voter turnout noted in 2004 by 2,47 percentage points. Both, in 2004 and in 2009 the highest voter turnout was observed in

Luxembourg (91,35% and 90,75% respectively), and the lowest in Slovakia (16,97% and 19,64% respectively). In 2009 voter turnout below the EU average was observed in 13 countries, of which in 5 countries of the old „fifteen” (EU-15), that is: in United Kingdom (34,70%), Netherlands (36,75%), Portugal (36,78%), Finland (40,30%) and in France (40,63%). Poland is in the group of ten countries, in which the average voter turnout in Euro-elections in both years was definitely lower than the EU average. In 2004 it differed from the EU average as many as by 24,60 percentage points, and in 2009 by 18,47 percentage points. Undoubtedly, the obligatory in some countries participation in elections contributes to the raise of average voter turnout in the EU. These countries are: Luxembourg, Greece, Belgium, Cyprus, Malta. In Italy voting is a civic obligation (no penalty).

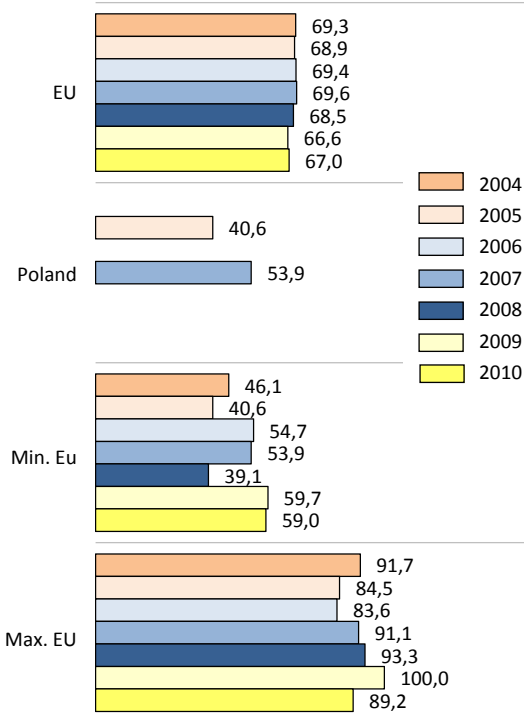
Definitely, the voter has a greater interest in national parliament elections. In 2010 elections were carried out in six countries of the EU and average voter turnout amounted to 67%, though in Belgium due to the obligatory character of voting the turnout amounted to 89,2%. The lowest voter turnout was observed in Slovakia 59%. In Poland last elections to the national parliament took place in 2007. It turned out, that the voter turnout at these elections was the highest after transformations which took place in 1989.

Graph 4.7. **Voter turnout in the European Parliament elections (%)**



Source: Election Guide (CEPPS – Consortium on Elections and Political Process Strengthening), Eurostat.

Graph 4.8. **Voter turnout in the national parliament elections (%)**



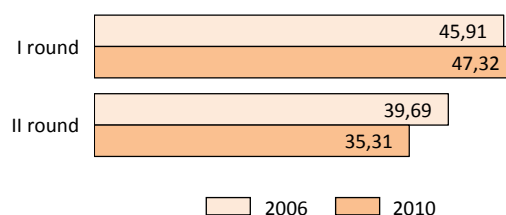
Source: Election Guide (CEPPS – Consortium on Elections and Political Process Strengthening), Eurostat.

Almost 54% of eligible voters went to ballot boxes. Comparing to previous elections in 2005 an increase in voter turnout by 13,3 percentage points was observed. Much greater difference in voter turnout was noted between elections to the European Parliament in 2009 and national elections in 2007. This difference amounted to 29,4 percentage points to Euro-elections disadvantage, which – also in Poland – are considered less important than national elections.

Last local elections were carried out in 2010 with voter turnout equal 47,32% in the I round and 35,31% in the II round. Comparing to previous elections in 2006 a minimal increase was observed in the I round of elections (by 1,41 percentage points), while in the II round of elections voter turnout was lower (by 4,38 percentage points). Percentage of persons participating in the last elections (concerns the

I round) was the highest since 1990, when the first – after the II World War – democratic elections to local self-government had been carried out. That time voter turnout was at the level 42,27%. So poorly growing voter turnout (by 5,05 percentage points) place local elections on the penultimate location (the last are Euro-elections) as far as the interest of voters is concerned. This may be the result of weak participation of citizens in their local environment as well as the citizens' conviction that an individual has no influence on the change or improvement of the reality.

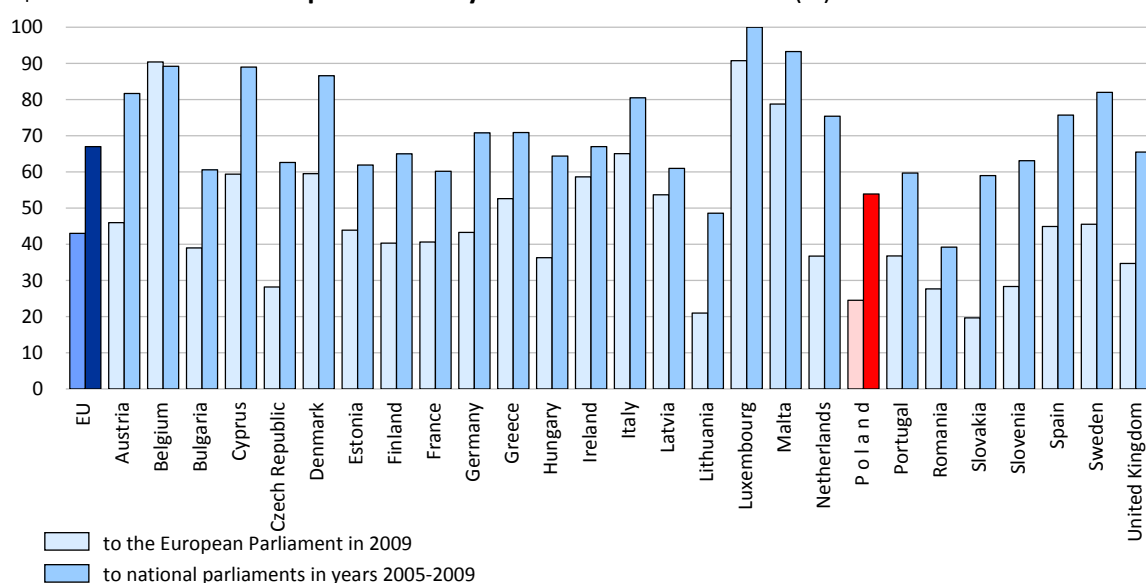
Graph 4.9. **Voter turnout in local elections (%)**



Source: data of the National Electoral Commission.

International comparisons

Graph 4.10. **Voter turnout in parliamentary elections in EU countries (%)**



Source: Election Guide (CEPPS – Consortium on Elections and Political Process Strengthening), Eurostat.

Institutional-political domain

E-government – on-line availability

| | |
|-----------------------|---|
| Name of the indicator | E-administration – on-line availability |
| Area | Openness and participation |
| Definition | The indicator is calculated as the percentage of the 20 (12 for citizens and 8 for the business) basic public administration services regarded in Europe as standard, fully available on-line, i.e. for which it is possible to introduce full electronic service. |
| Meaning | The indicator presents the availability – by electronic means – of 20 basic services offered by public administration. The European Commission recommended 20 most needed services – 12 for citizens and 8 for the business. The indicator takes account of the degree of sophistication of services in a 5-level scale (level 1, the so-called information: widely available information on public service; level 2, the so-called unidirectional interaction: possibility of downloading forms and applications; level 3, the so-called bidirectional interaction: processing of forms, that is downloading and referral; level 4 transaction: in other words full handling of the process, possibility of performing all activities essential for fixing a given official case by electronic means – to obtain information, through downloading adequate forms, their referral after completing and putting an electronic signature, and finally to pay the required fees and obtain an official permission, certificate or other document; level 5, the so-called personalization: organization of services according to the needs of the users). |

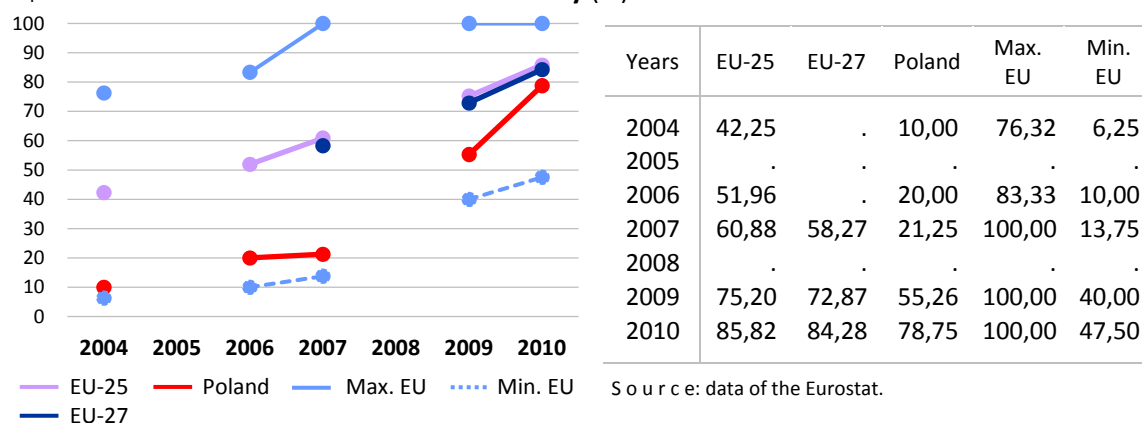
Table 4.5. **E-administration – on-line availability (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|-------|------|-------|-------|------|-------|-------|
| 10,00 | . | 20,00 | 21,25 | . | 55,26 | 78,75 |

S o u r c e: data of the Eurostat and the Ministry of Internal Affairs and Administration.

To survey the development of e-administration, 20 basic public services have been distinguished, of which 12 services for the citizens, available in the Internet: income taxes, labour intermediation, social insurance benefits, identification documents, vehicle registration, application for construction permission, report to the police, public libraries, certificates of birth and marriage, tertiary education enrolment, residents registration, service connected with health and 8 internet public services for entities: employees social security contributions, corporate income tax, value added tax, registration of economic activity, transfer of data to the statistical office, tax declaration, decisions concerning the environmental determinants, competitive tendering.

Graph 4.11. **E-administration – on-line availability (%)**

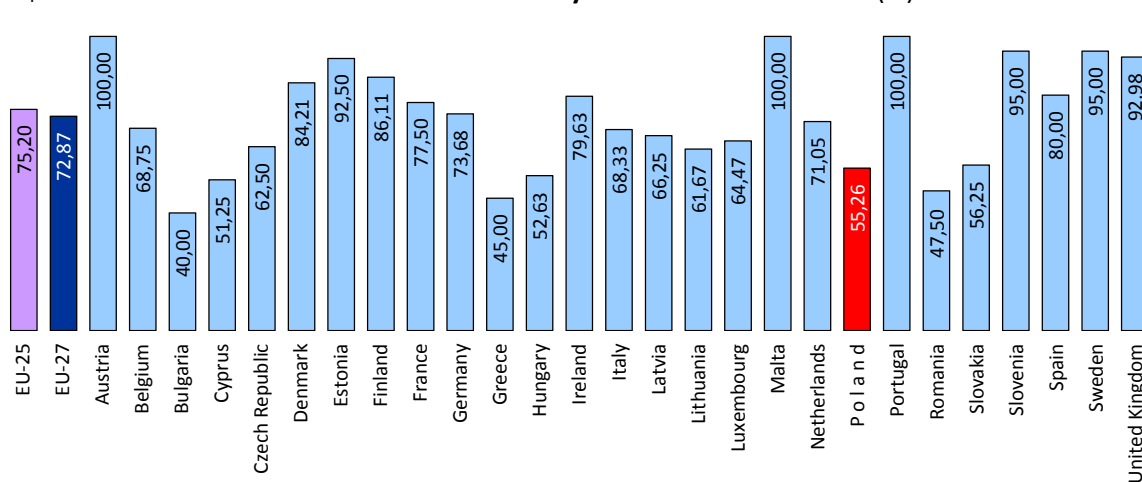


Percent of basic public services, which provide full electronic service of the process in Poland, increased from 10% in 2004 to 78,75% in 2010. In 2010, comparing to 2009 an increase was noted in the on-line availability of electronic services by 23,5 percentage points. Poland, with its on-line availability indicator equal 78,75%, is slightly below the EU average which is more than 84%. In the ranking of European Union countries Poland is on the 17 position together with Belgium (in 2009 – 22 position). According to National Strategic Reference Framework 2007-2013 the determined value of the indicator is 80% in 2013.

International comparisons

In 2009, only in three countries – Austria, Malta and in Portugal, all of the twenty basic services of the e-administration are available on-line, and the EU average is on the level 72,87%. The lowest level of development of e-administration in 2009 (40%) was observed in Bulgaria. The biggest progress and improvement of indicators in the period 2007-2009 were observed in Latvia (from 27,50% to 66,25%), Poland (21,25% and 55,26% respectively) and Ireland (51,85% and 79,63% respectively).

Graph 4.12. **E-administration – on-line availability in EU countries in 2009 (%)**



Institutional-political domain

Households with broadband Internet access

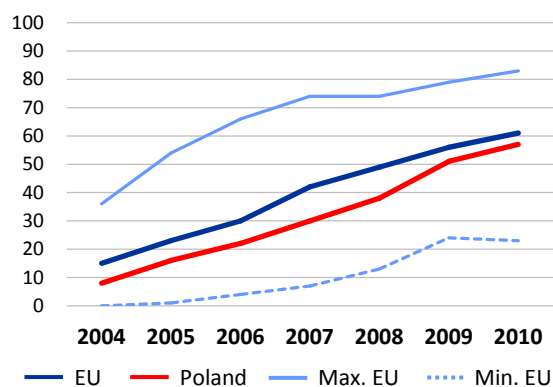
| | |
|-----------------------|---|
| Name of the indicator | Households with broadband Internet access |
| Area | Openness and participation |
| Definition | The indicator is presented as a share of households with at least one person aged 16-74, that are connectable to the Internet via stationary phone in DSL technology or other broadband connections: stationary wired (cable TV, LAN network, fibre optic cable links), stationary wireless (radio or satellite) and mobile (UMTS, HSDPA). |
| Meaning | The indicator measures the level of accessibility (popularization) of broadband Internet. Differences in participation in important aspects of social life can be a consequence of unequal access to the Internet. The use of efficient Internet in everyday life – learning, labour, access to information and knowledge, causes that those, who do not use it, are in a greater degree socially excluded (digital exclusion). |

Table 4.6. **Households with broadband Internet access (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------|------|------|------|------|------|------|
| 8 | 16 | 22 | 30 | 38 | 51 | 57 |

Both, in the country and in EU countries (excluding Romania) among households with at least one person aged 16-74 the popularization of broadband access to the Internet increases. During last seven years the percent of households with broadband access increased in the country by seven times, and in the EU by more than four times. While in 2004 the number of such households in Poland was by two times lower (8%) than the average for 27 EU countries (15%); in 2010 this difference considerably decreased by 4 percentage points. The highest pace of growth in Poland was observed between 2008 (from 38%), and 2009 (to 51%), what gives an increase by almost 13 percentage points. Compared to previous years and with 2010 the increase was smaller, not exceeding 8 percentage points.

Graph 4.13. **Households with broadband Internet access (%)**



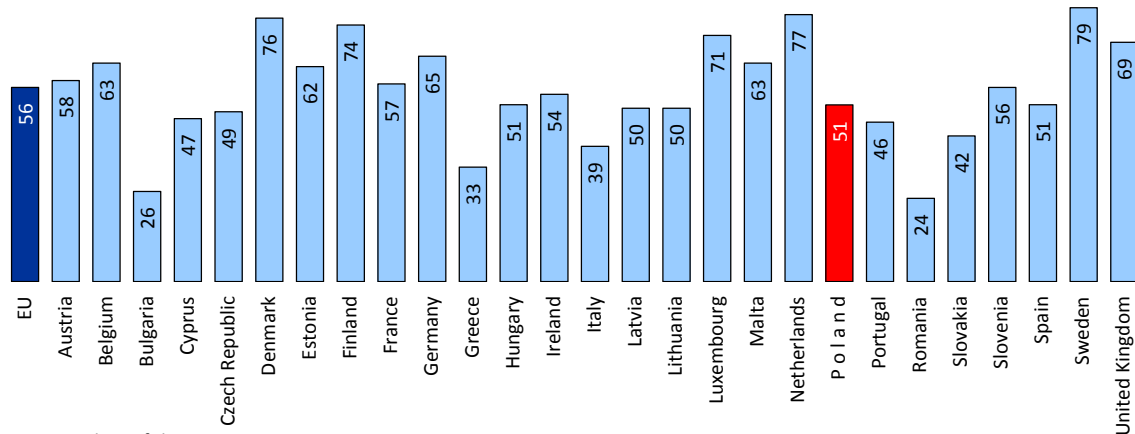
| Years | EU | Poland | Max. EU | Min. EU |
|-------|----|--------|---------|---------|
| 2004 | 15 | 8 | 36 | 0 |
| 2005 | 23 | 16 | 54 | 1 |
| 2006 | 30 | 22 | 66 | 4 |
| 2007 | 42 | 30 | 74 | 7 |
| 2008 | 49 | 38 | 74 | 13 |
| 2009 | 56 | 51 | 79 | 24 |
| 2010 | 61 | 57 | 83 | 23 |

Source: data of the Eurostat.

International comparisons

In 2009, 12 member countries of the European Union exceed the EU average of 56% of households with broadband Internet access. Traditionally, Scandinavian countries such as: Sweden (79%), the Netherlands (77%), Denmark (76%) and Finland (74%) are leaders in this group. Romania and Bulgaria are characterized by the lowest percentage of households with broadband connection (respectively 24%; 26%).

Graph 4.14. **Households with broadband Internet access in EU countries in 2009 (%)**



Source: data of the Eurostat.

Institutional-political domain

Overall indicator of involvement in social work

| | |
|-----------------------|---|
| Name of the indicator | Overall indicator of involvement in social work |
| Area | Citizens activeness |
| Definition | The indicator constitutes the share of persons, who devoted their voluntary and unpaid work and time to their local society or the needy as well as to activities in non-governmental organizations in the total representative random sample of adult inhabitants of the country. |
| Meaning | The indicator enables to estimate the percent of Polish citizens who demonstrate an interest in matters going beyond their private life, trying to, among others, have an influence on the functioning of local societies or on the activities of definite social or professional groups, and can also contribute to solving social problems and helping the needy. |

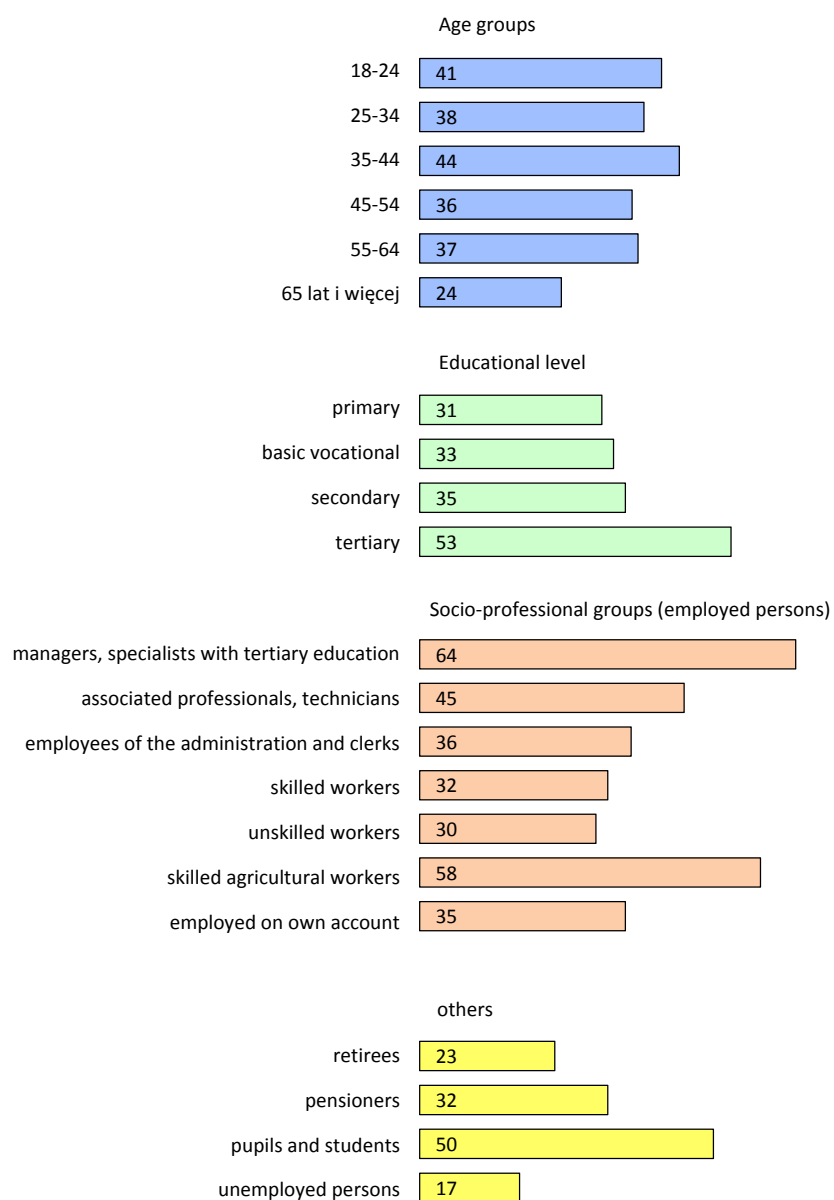
Table 4.7. **Overall indicator of involvement in social work (%)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|
| 37 | 36 | 36 | 31 | . | 36 |

S o u r c e: data of the Public Opinion Research Center.

Since many years, engagement in social work – understood as voluntary and unpaid work on behalf of their local society or the needy as well as activities in non-governmental organizations – is declared by over third part of adult Poles. Men are characterized by a higher social activeness. Persons aged 65 and more were the least active group. According to declarations of the surveyed groups, the groups which were mainly participating in social work were managers, specialists with tertiary education. Skilled agricultural workers were on the second place. Analyzing social activeness taking into account educational level it should be noted, that this activeness is growing directly proportional to the level of education. Among persons professionally inactive, pupils and students devoted most of their time to social work, while unemployed persons were in the group rarely engaged in social work (excluding 2004). In years 2005-2009, the surveyed persons of the age group 35 to 44 declared their participation in social work more frequently than the others. Overall indicator of involvement in social work in years 2001-2009 reached or exceeded the target value (33%) for 2015 accepted by the „Strategy for the Support of the Development of Civil Society for 2009-2015”, only in 2007 a decrease of this indicator by 2 percentage points was observed.

Graph 4.15. **Overall indicator of involvement in social work by chosen categories in 2009 (%)**



S o u r c e: data of the Public Opinion Research Center.

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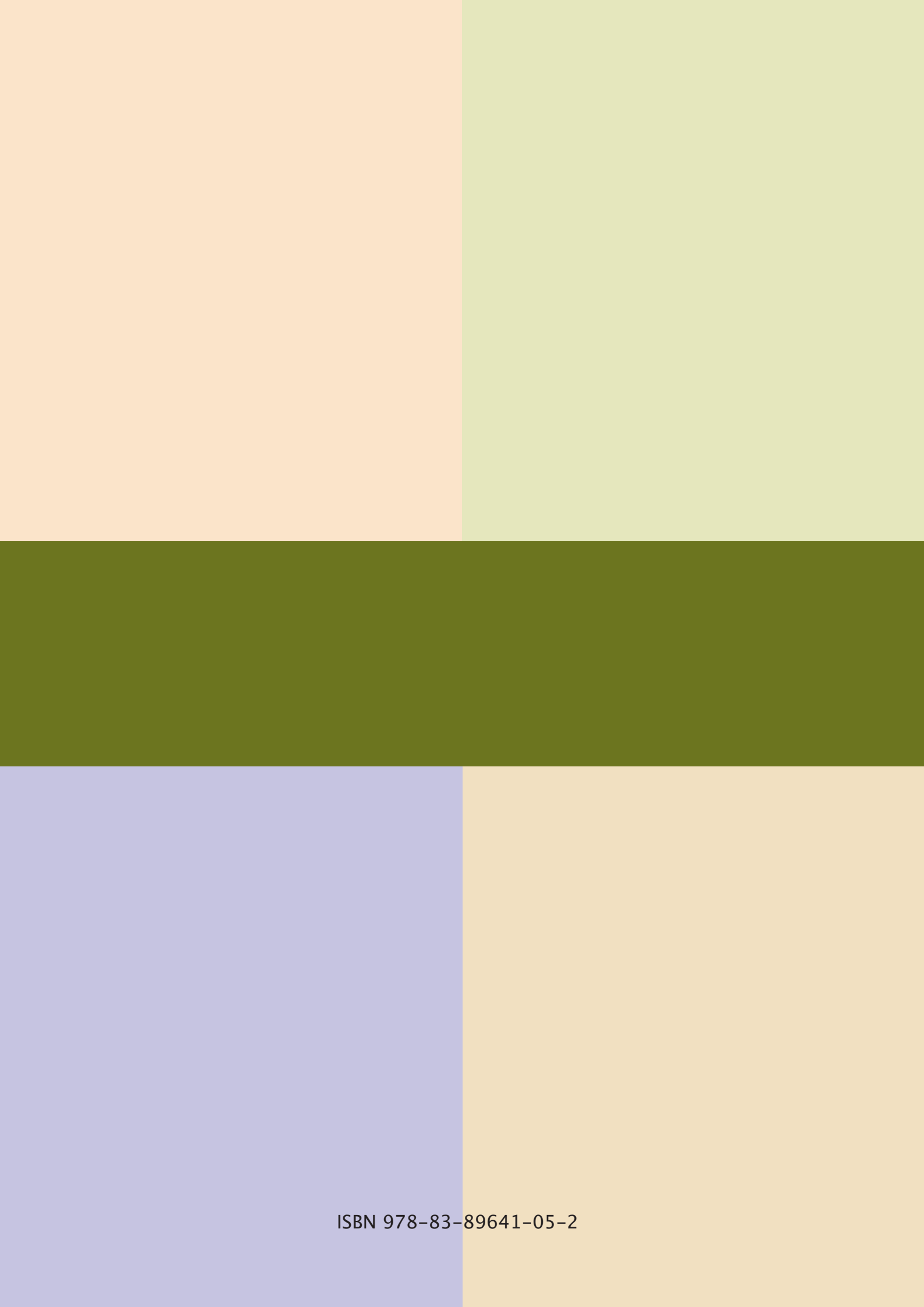
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