INSTITUTE OF AGRICULTURAL AND FOOD ECONOMICS
NATIONAL RESEARCH INSTITUTE

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no 115.1
Warsaw 2008

MULTI-ANNUAL PROGRAMME 2005-2009

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This publication was prepared as a contribution to the research on the following subject **Regional differentiation of agricultural development and its impact upon economic and social problems of rural areas** within the framework of the research task *The role of non-farming activities in shaping new structures in rural areas*

The aim of the publication was to present the prospects for rural development from the point of view of selected intervention areas under the European Union development policy.

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Cover Project
AKME Projekt Sp. z o.o.

ISBN 978-83-60798-85-0

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Contents

Introduction

Changing relations between agriculture and developing non-agricultural functions of rural areas in the European Union make it necessary to redefine the policy approach to rural development. This process is clearly reflected in the priorities of the common agricultural policy which has been evolving from Community aid for the agricultural sector towards supporting sustainable and multifunctional development of the countryside. As early as the 20th century, agriculture gradually diminished in importance as a sector of the economy, whereas it played an ever-greater role in the environmental protection. Therefore, the competitiveness of rural areas increasingly depends on changes in social and technological infrastructure, job creation and new institutional structures as well as on maintaining the high quality of natural resources of the countryside. The EU Member States have come to appreciate unique values, of importance to the Community as a whole, such as biodiversity or traditional rural landscape. As a consequence, apart from measures for improving social and technical infrastructure, the stimulation of rural development is increasingly oriented towards implementing programmes which could have positive effects on the environment and contribute to limiting climatic changes. The main priorities in this field include reducing carbon dioxide emissions. To this end, the EU has started promoting the diversification of energy generation methods, with the increasing use of renewable sources. The countryside adds value to the European economy also from this point of view.

Rural areas in Poland and in the European Union represent demographic reservoirs of human capital for the economy[1] which could serve as the basis for sustainable development in the long term. The economic growth of cities becomes increasingly important to the rural population as the development of transport infrastructure and the improvement of the living conditions in the countryside, reflected in greater accessibility of various means of transport, contribute to increased geographical access to supralocal labour markets. As a consequence, the

[1] The countryside accounts for 93% of Poland's area and the rural population is nearly 15 million, i.e. almost 40% of Poland's total population, cf. A. Sikorska, *Przeobrażenia w strukturze społeczno-ekonomicznej wsi a proces włączania się Polski do Wspólnej Polityki Rolnej*, IERiGŻ-PIB, Warsaw 2007.

dispersed settlement pattern ceases to be an important obstacle to increasing the economic activity of rural residents. This reduces rural-urban migration, particularly due to the growing cost of living in large urban agglomerations. Presumably, further improvement of transport infrastructure may slow down rural depopulation, especially in peripheral areas. Therefore, an appropriate transport policy may contribute to the urbanisation of rural areas by developing their function as the place of residence for urban workers. This process is increasingly observed in villages located close to urban agglomerations. Most of them have been losing their rural character and becoming commuter towns as well as commercial and service centres. At the same time, challenges faced by the European Union with regard to environment-friendly economic growth create the need to develop railway transport in order to reduce the unfavourable environmental impact of road transport. Since the links between transport policy and rural development, particularly due to the peripherality of many rural areas, represent an important issue, this volume contains a separate paper (by A. Przybyłowski) concerning such matters.

The new approach to rural development reflects the evolution EU policies, a result of many years of debate. Its outcomes, crucial for the future development of the European Union, include the conclusions of the European Council in Lisbon in 2000 and in Gothenburg in 2001. The main task for the European Union is to become a competitive, knowledge-based and environment-friendly economy[2]. Major priorities of this strategy include the development of human resources, the modernisation of labour markets and increasing employment. These priorities constitute a framework for the social policy in the EU, primarily aimed at ensuring equal development opportunities, improving the quality of life and job creation in the Community (see the paper by A. Ziomek in this volume).

The strategies adopted at the Lisbon and Gothenburg summits required a redefinition of priorities and support measures under Community policies so as to include a broader environmental aspect of development as well as social and economic sustainability[3]. One of the conclusions was also to change the EU energy policy, with a view to increasing the share of renewable energy sources in total energy production. This is another potential orientation of the diversification of economic activities in rural areas.

Regulations adopted by the EU impose CO2 emission limits on the Member States on the one hand, and set a target share of renewable energy sources

[2] See: Presidency Conclusions – Brussels, 22 and 23 March 2005, 7619/1/05 REV 1, Brussels, 23 March 2005 and Communication from the Commission, *A Sustainable Europe for a Better World: A European Union Strategy for Sustainable Development*, COM (2001) 264 final.

[3] Communication from the Commission to the European Parliament and the Council – *Preparing for the "Health Check" of the CAP reform*, COM 2007/722 of 20.11.2007.

in the final energy balance on the other hand, which means that investment in "green energy" in the European Union will be increasingly important. In Poland the power sector is mostly based on coal and the share of renewable energy sources in the energy balance remains relatively low. The use of enormous renewable resources (biomass, geothermal waters) as well as favourable climatic and geographical conditions (e.g. for exploiting the potential of wind turbines) may offer economic development opportunities for peripheral areas, contributing not only to meeting EU obligations, but also to improving Poland's energy security (see the paper by M. Jachymek in this volume).

Studies of the main factors of socio-economic development increasingly often concern the issue of investment in intangible assets of the economy, based on knowledge and information. Two main concepts have been formed in recent years, raising knowledge and information to become new and at the same time fundamental development factors in the modern economy. These are the theory of knowledge-based economy and the notion of information society, referring to the theory of society evolution from the agricultural era to the age of industry to the information era[4]. In the agricultural era, manpower was the main source of energy (i.e. labour) and of knowledge necessary for the development of the economy, locally based and oriented to food production. Knowledge was reserved for limited groups of people (scholars and master craftsmen) and its dissemination in the community was very restricted. The 19th century marked the beginning of the industrial era where economic growth was based on the use of raw materials and consumer goods. Productivity increased 50 times in eighty years, consumer goods, previously viewed as luxury products, became widely available, and manpower diminished in importance as the source of energy. The information era brought about the development of communication technologies which enabled free information flow, changed the lifestyles of societies and led to the globalisation of national economies. Information has become a resource and its skilful use now determines economic development and growth, also at the local level. A good example is the application of spatial information systems for the purposes of decision making by local and regional authorities. The computerisation of public services to local actors as well as the introduction of new information technologies in citizen-enterprise relations allows to increase the competitiveness and innovativeness of the economy, both at the national and regional level. The implementation of spatial information systems in the countryside may contribute to greater competitiveness of rural areas, both in the national and European context (see the paper by M. Feltynowski in this volume).

[4] *Polska w drodze do globalnego społeczeństwa informacyjnego. Raport o rozwoju społecznym*. (2002): UNDP, Warsaw, pp. 13-21.

The analysis of the debate on the common agricultural policy reform after 2013 clearly shows that the notion of multifunctional development of rural areas means the process of balancing the productive and socio-environmental functions of agriculture[5]. The development of the non-agricultural potential of rural areas is less relevant. Therefore, this potential is mostly shaped by other policies whose instruments are implemented across Poland rather than by the common agricultural policy. The future of rural areas largely depends on the possibilities for supporting their development under a wide variety of sectoral policy measures of the European Union.

This publication attempts to present the prospects for rural development from the point of view of selected intervention areas under the European Union development policy. Our team of researchers, representing different fields of research interests, focused on the analysis of priorities, implementation systems and orientations of the potential impact of Community policies on rural areas in the context of improving transport networks and connections, the use of renewable energy sources, the development of small and medium-sized enterprises, the building of information society as well as better access to education and employment growth.

Paweł Chmieliński

[5] P. Chmieliński, *Zintegrowane podejście – polityka spójności a Wspólna Polityka Rolna* [in:] *Zintegrowane podejście do rozwoju. Rola polityki spójności T. G. Grosse, A. Galek (eds.)*, Ministry of Regional Development, Warsaw 2008, pp. 99-102.

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European Union transport and cohesion policies in the context of rural development

The EU cohesion policy is the leading development policy for the implementation of the European integration and solidarity concepts. The transport policy plays an important role in increasing the accessibility of particular regions. Creating development opportunities in peripheral areas through infrastructural investments should be one of major EU goals. Access to cities may prove to be the key development factor for many rural areas, especially in the context of the diversification of agricultural activities in small farms and support for local labour markets. The peripheral areas[1] in Poland, especially those situated in voivodships with the lowest level of economic development, have the opportunity to improve their availability, assuming the proper use of EU resources allocated for 2007-2013. The activity of the central, regional and local authorities will be of great importance during the implementation of the adopted development strategies and programmes in this period.

1. Goals of the EU transport and cohesion policies in the context of the development of peripheral areas

The goals of the EU transport and cohesion policies stem from the guidelines for development strategies set out at the level of the European Community. The most significant EU strategic documents include the Lisbon Strategy and the Goeteborg Strategy. The former emphasises the necessity to increase the competitiveness of the European area[2], whereas the latter draws attention to ensuring sustainable development thereof[3]. The implementation of the sectoral transport policy (as well as of other Community policies) is

[1] On account of the fact that the majority of the areas classified as peripheral are rural areas, these terms will be used interchangeably in the context of spatial availability.
[2] See: Communication to the spring European Council of 02 February 2005, *Working together for growth and jobs. A new start for the Lisbon strategy*. Communication from President Barroso in agreement with Vice-President Verheugen. COM(2005) 24 final.
[3] See: Communication from the Commission, *A sustainable Europe for a Better World: A European Union Strategy for Sustainable Development,* Brussels 15.05.2001, COM(2001)264 final.

supported by the EU horizontal cohesion policy, especially through structural funds and the Cohesion Fund. The basic goals of the current transport and cohesion policies are shown in Table 1.

Table 1. Goals of the EU transport and cohesion policies

Goals of the EU transport policy	**Goals of the EU cohesion policy**
permanent and sustainable development according to the Lisbon and Goeteborg Strategies	sustainable development of all areas preserving the internal economic, social and territorial cohesion through a set of legal and financial instruments
promotion of rail, sea and intermodal transport	solidarity: mitigating the effects of the absence of internal balance at the Community level
integrated regional systems of public transport	cohesion: everyone benefits
development of logistics aimed at obtaining the synergy effect between particular modes of transport and their integration in logistic chains	convergence through investing in infrastructure and human capital, supporting innovation and knowledge-based society, the environmental protection and efficient administration
promotion of intelligent transport systems	regional competitiveness and employment – investing in human resources, entrepreneurship, innovativeness and the development of labour markets fostering social integration
development of trans-European networks	European territorial cooperation – strengthening the cross-border, transnational and interregional cooperation

Source: own study based on The EU regional policy – overview, http://ec.europa.eu/regional_policy, The EU common transport policy – overview http://ec.europa.eu/transport_policy, 03-04-2008.

It is necessary to support polycentric territorial development of the EU in order to make better use of the available resources in regions.[4] However, the parameters and monitoring systems to measure territorial cohesion should be defined. Those could be transport accessibility or access to public transport services. Under the transport and cohesion policies attention should be paid to both the territorial cohesion of the whole Europe and the cohesion of specific territories (for example regions), particularly of peripheral areas. It appears that two parallel action strategies might be the solution: the top-down and bottom-up approaches. The former would involve, in accordance with the solidarity principle,

[4] *Territorial Agenda of the European Union. Towards a More Competitive and Sustainable Europe of Diverse Regions*, Leipzig 2007.

the strengthening Community-wide cohesion at the EU level through legal, organisational and financial instruments. The latter strategy would require a regional approach: cohesion development would be initiated by the regions themselves to a larger degree than at present. There is a need for specific financial instruments prepared in agreement with the European Commission to be used, for instance, in the process of creating metropolitan transport systems or cross-border cooperation, as well as in the development of rural infrastructure, especially enhancing access to cities. Such a system would provide EU support and, at the same time, promote more active regions, mobilising their endogenous potential. It would ensure harmonious development of the whole EU area as well as becoming an important diversifying element. Such a scheme would be competitive, but still stimulating for all the players[5].

The cohesion policy and its instruments should contribute to the harmonisation of all sectoral policies at the European and national level in order to pursue the Community objectives more efficiently than at present[6]. But the effectiveness of the EU transport and cohesion policies may be compromised due to significant difficulties as there are some dissimilarities at the implementation level. The transport policy, to a larger degree, aims at liberalisation, free competition, whereas the cohesion policy is more oriented towards interventionism. Therefore, obtaining the synergy effect in regional development and building a coherent and balanced transportation system poses a challenge to the enlarged EU. The key issue is to what extent backward regions should be supported. In Poland there are many such regions, mainly rural areas[7].

As has already been mentioned, the goal of the current EU cohesion policy (see Table 1) is to reduce disparities in the development of particular regions, especially of peripheral areas. This policy is of great significance since it aims at mitigating the effects of the absence of internal balance at the Community level. While creating common policies at the supranational level, the Community remains too concentrated on market processes, neglecting the stimulation of long-term adjustments concerning socio-economic structures[8]. The underlying values can be defined as solidarity and cohesion/harmonisation development.

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[5] A. Przybyłowski, *Zintegrowane podejście do polityki rozwoju Unii Europejskiej – polityka spójności a polityka transportowa*, [in:] T. G. Grosse, A. Galek (eds.), *Zintegrowane podejście do rozwoju. Rola polityki spójności*, Ministry of Regional Development, Warsaw, 2008, pp. 119-158.

[6] *Growing Regions, growing Europe. Fourth report on economic and social cohesion*, Communication from the European Commission, May 2007.

[7] A. Przybyłowski, *Efektywność funkcjonowania polityki transportowej i regionalnej UE,* Logitrans – Szczyrk, CD proceedings, *Logistyka,* March 2007.

[8] K. Gawlikowska-Hueckel, *Procesy rozwoju regionalnego w Unii Europejskiej – Konwergencja czy polaryzacja?*, UG Gdańsk 2003, p. 13.

One of them is solidarity since this policy is supposed to be beneficial to citizens and regions in a worse economic and social situation as compared to the EU average. The other is cohesion because everyone would benefit from reduced disproportions in income and well-being between the poorer and wealthier countries and regions. The degree of such disparities is measured in three aspects: economic (mainly by the purchasing-power-parity-based GDP per inhabitant of the region), social (*inter alia* by the unemployment rate in the region) and spatial (usually by a measure of the number of consumers over a given period in a given region).[9] Structural indicators are also important. They are used by the European Commission in the evaluation of the EU Member States' progress in the implementation of the Lisbon Strategy goals. They include five main socio-economic domains of employment, innovation and research, economic reform, social cohesion and the environment, as well as the general economic background.

In 2007, the EU introduced a modernised and more integrated cohesion policy. It will cover the period between 2007 and 2013. The combined budget of structural funds and of the Cohesion Fund in this period will amount to ca. EUR 308 billion, accounting for 36% of the total EU expenditure in the period in question. Three funds are the instruments of the amended cohesion policy: the European Regional Development Fund (ERDF), the European Social Fund (ESF) and the Cohesion Fund.[10] The appropriations were divided into three categories. 81.5% of the total amount was assigned to reducing the disproportions between the poor and wealthy regions (the Convergence objective), while 16% – to the improvement of the competitiveness of the poor regions and job creation (the Regional competitiveness and employment objective). The remaining 2.5% is aimed at supporting cross-border cooperation between frontier regions (the European territorial cooperation objective). It should be emphasised that the compensatory nature of the cohesion policy (in response to the needs of lagging regions) in the amended Lisbon Strategy of 2005 was replaced with active creation of conditions for development. At present, the focus is on the promotion of competitiveness and creating new jobs, not only on standard

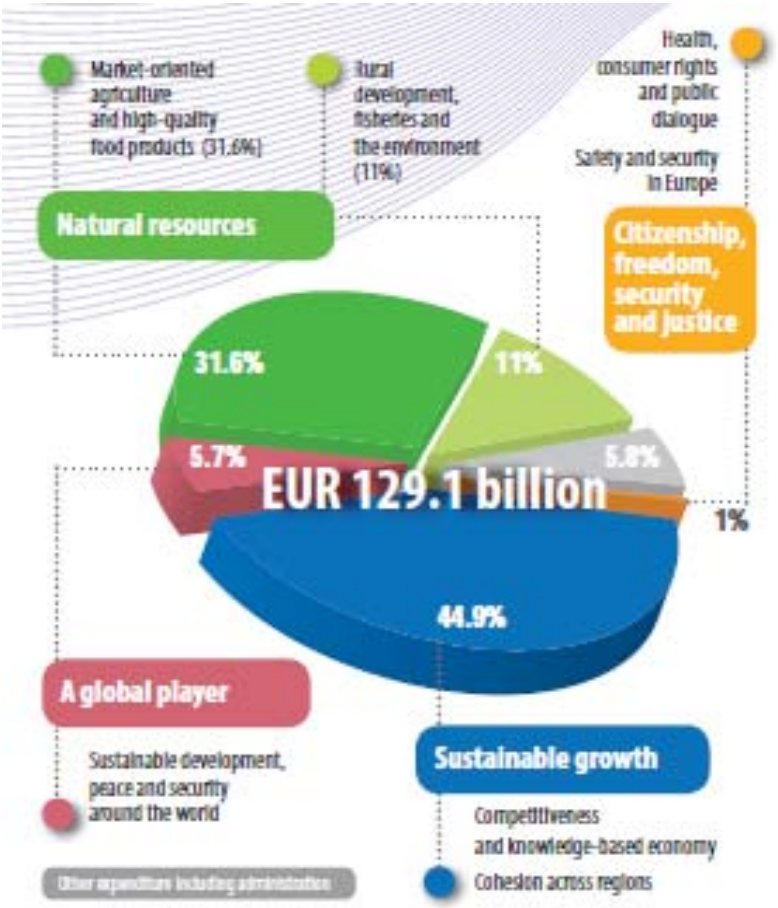
[9] *The EU regional policy – overview*, http://ec.europa.eu/regional_policy, 13-07-2007.

[10] Council Regulation (EC) No 1083/2006 of 11 July 2006 *laying down general provisions on the European Regional Development Fund, the European Social Fund and the Cohesion Fund and repealing Regulation (EC) No 1260/1999*, OJ L210, 31.7.2006, Council Regulation (EC) No 1080/2006 of the European Parliament and of the Council of 5 July 2006 *on the European Regional Development Fund and repealing Regulation (EC) No 1783/1999*, Regulation (EC) No 1081/2006 of the European Parliament and of the Council of 5 July 2006 *on the European Social Fund and repealing Regulation (EC) No 1784/1999*, Council Regulation (EC) No 1084/2006 of 11 July 2006 establishing a Cohesion Fund and repealing Regulation (EC) No 1164/94, Regulation (EC) No 1082/2006 of the European Parliament and of the Council of 5 July 2006 *on a European grouping of territorial cooperation (EGTC).*

convergence activities.[11] Thereby the gap between the EU pursuit to increase its competitiveness on the one hand, and to support regions merely to reduce differences on the other hand is narrowing.

For the first time in the history of the EU, the 2008 budget assigned more appropriations to economic growth and the Cohesion Fund (45%) than to agriculture (40%) (Fig. 1).

Fig. 1. The European Union budget 2008.



Source: EU budget 2008: biggest share to go on boosting economic growth, http://ec.europa.eu/budget/index_en.htm, 2008-02-18.

Apart from strictly financial aspects, proper coordination of cohesion policy instruments with other European policies is also very important, mainly the relation between cohesion measures and rural development policy on the one hand and the innovation policy on the other hand. Excluding rural development measures from the cohesion policy (in the period of 2007-2013) was a serious mistake[12]. As a result, the European financial aid for rural areas aims mainly

[11] *Polityka spójności po 2013 roku. Pożądane kierunki reformy*, Ministry of Regional Development, Department of Structural Policy Coordination**,** Warsaw, December 2007, pp. 3-4.
[12] T. G. Grosse, *Polska wobec debaty o przyszłość polityki spójności*,

at the modernisation of the food and agricultural sector as well as at income support and the improvement of the living standards of the rural population. Only to a very small extent it contributes to changing the profile of economic activity and ensuring sustainable development. Therefore, within the framework of further cohesion policy reform the significance of support for rural areas should be increased, while directing it in a different way from the instruments of rural development policy (currently available under the common agricultural policy). It concerns fostering innovative development strategies allowing, *inter alia*, to increase possibilities for diversifying economic activity. A new cohesion policy should also be better coordinated with measures of the EU innovation policy. It should support the goals of the development of an innovative economy in the economically weakest areas of Europe, e.g. it ought to better prepare entrepreneurs and scientists from such areas to participate in the EU innovation policy[13].

In its transport policy the EU aims at changing the demand pattern through shifting potential demand from the road transport sector towards the rail, inland waterway and sea transport – short-distance shipping as well as promoting combined transport and collective public transport (cf. Table 1). Such solutions are more environmentally friendly, thus helping pursue sustainable development. The updated transport policy goals are based on two assumptions:[14]

- mobility is the key to Europe's prosperity and the free movement of its citizens;
- the negative effects of this mobility, i.e. energy consumption and the impact on health and the environment, must be reduced.

The above-mentioned goals are also significant for other EU policies, e.g. with regard to the improvement of the functioning of transport networks in cities and agglomerations or support for the development of polycentric networks. Other types of investment may promote connections between rural and urban areas as well as reducing disproportions between them. The EU transport policy might, therefore, foster various aspects of the regional development policy pursued within the cohesion policy, and it may influence different sectoral policies implemented by cohesion policy instruments. It should be emphasised that the development and modernisation of transport infrastructure does not automatically stimulate regional development. While enhancing the economic potential of regions, a comprehensive/integrated approach should be considered

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http://www.mpp.org.pl/21/21_1.html, 2008-11-12.

[13] Ibidem.

[14] Communication from the Commission to the Council and the European Parliament, *Keep Europe moving – Sustainable mobility for our continent. Mid-term review of the European Commission's 2001 Transport White Paper,* Commission of the European Communities, COM (2006) 314 final, Brussels 2006.

so as to ensure that efforts at providing more equal opportunities for the poorest EU areas bring the anticipated results. There are examples of ineffective use of funds throughout Europe, e.g. in East Germany and Greece. Such investment should be coupled with other factors such as material and human capital, the competitive position of local companies, an investment-oriented legal framework (including fiscal regulations), local entrepreneurship. Without those, transport infrastructure cannot become an independent factor of regional development.

Moreover, there is a need to combine the processes of extending necessary transport infrastructure with the rule of balancing development by seeking selective and optimal solutions at the level of regions and at the local level. Other instruments include a much wider application of the principle of genuine rather than only facade social participation in the decision-making on roads, motorways and other infrastructural lines, in order to balance the interests of local and regional communities and their development ambitions as well as taking account of environmental protection aspects in investment processes in a much more strategic way than it was the case in the past[15]. In Poland, further decentralisation of the state and public finance, along with a more extensive scope of decisions taken at the regional level would also contribute to the harmonisation of investment activities and sustainable development challenges.

The functioning of common transport policy instruments brought about many positive EU-wide changes, for instance:

- improvement of the quality of services provided and a wider range of the forms and modes of transport,
- reduced costs of transport and lower prices of goods at the Community level, which limited inflation and stimulated exports and investment as well as stabilising the economies of EU Member States,
- improvement of the economic and spatial cohesion of certain parts of the Community,
- improvement of social mobility, resulting in greater labour market flexibility,
- ongoing standardisation of transport equipment and techniques, the development of modern methods and technologies as well as of intelligent traffic management (e.g. interoperability, telematics, the Galileo satellite navigation system).[16]

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[15] E. Gończ, Ulf Skirke, Hermanes Kleinzen, Marcus Barber, *Increasing the Rate of Sustainable Change: A Call for a Redefinition of the Concept and the Model for its Implementation*, ELSEVIER, Science Direct, Journal of Cleaner Production 15 (2007), pp. 525-537.

[16] Grzelakowski A. S., Matczak M., Przybyłowski A., *Polityka transportowa Unii Europejskiej i jej implikacje dla systemów transportowych krajów członkowskich*, Publ. AM in Gdynia, Gdynia 2008 (in press), p. 66.

However, some analyses point out that the concentration on connecting regional capitals in new Member States may contribute to increasing the differences within these countries and lead to an anti-cohesion effect. Due to the focus on the development of TEN-T networks, the EU actually marginalises expenditure on the remaining transport networks, which leads to the imbalance between European and regional projects. Cohesion reports unambiguously show that as the cohesion between Member States grows, the development gap between particular regions within these countries widens. Unfortunately, this negative trend is also observed in Poland[17].

2. The impact of the EU transport and cohesion policies on the development of transport networks and connections with rural areas in Poland

The present condition of transport infrastructure in Poland does not meet the expectations of users of national roads, railways and other transport sectors. It also fails to provide appropriate handling of international cargo flows under the rapid growth in traffic, which has been observed for more than a decade. Furthermore, transport users have been increasing their requirements regarding the quality of transport services, in particular reduced transport time, improved safety and ensuring intermodality of the transport process. Significant decapitalisation of infrastructure facilities and equipment as well as not always appropriate spatial distribution of specific network elements may maintain or generate regional disproportions within Poland. Major infrastructural gaps can be found in all the transport sectors. Due to the absence of an appropriate network of motorways, express roads and high-speed rail system, the existing transport network structure does not contribute to the effective allocation of resources and does not ensure appropriate quality of passenger and cargo transport. Sea ports, inland waterway ports and airports should also be modernised.

The transport system in Poland is neither sustainable nor efficient in economic or technical terms, which entails specific environmental and social consequences. From the point of view of Poland's transport needs, accession to the European Union in 2004 created new possibilities in the field of extension and modernisation of transport infrastructure since within the framework of the common transport policy and cohesion policy there are instruments and funds available for these purposes. At the same time, Poland's membership in the

[17] A. Przybyłowski, *Relacje polityki spójności z polityką transportową UE w kontekście rozwoju regionalnego*, (in:) *Polityka spójności – ocena i wyzwania*, Warsaw, March 2008.

European Union involves the introduction of and compliance with a number of requirements concerning transport infrastructure.

There is a need for instruments increasing the innovativeness of technical solutions in the field of transport infrastructure and therefore providing a greater choice between various modes of transport. The routine approach of increasing the number of roads and motorways, consisting in allocating most funds to these goals, contradicts the principle of sustainable development. After decades of intensive development of road infrastructure in the EU-15, for ca. 20 years a greater emphasis has been put on the improvement of the railway, inland and sea transport infrastructure. Similar observations can be made as regards the improvement of public transport systems in major European cities, used by a growing number of commuters who switch from passenger cars to public transport. Integrated regional public transport systems represent an EU requirement: Poland is obliged to implement this directive by 2013. The integrated regional public transport systems include integrated tickets covering all means of public transport, along with numerous systems of group, zone or time discounts encouraging passengers to choose public transport services. Such systems are also strengthened by the policy of imposing very high parking charges in the cities, or by locating parking lots for bicycles near train or underground stations. Such solutions are yet to be introduced in Poland. The maturity of urban communities and switching to integrated urban transport services will become a new qualitative factor affecting the structure of demand for transport.[18]

The density of district roads in Poland was 47.8 km per 100 km², while the overall length of district roads amounted to ca. 150,000 km at the end of 2004. At the same time, the density of access roads to agricultural and forest land was 90.1 km per 100 km² and their overall length reached ca. 289,000 km. Spatial distribution of roads is strongly connected with population density and economic characteristics of the area in question, therefore the highest density of the road network is found in the Małopolskie, Śląskie, Opolskie, Dolnośląskie and Wielkopolskie voivodships. The rather well-developed network of access roads to agricultural and forest land is nevertheless characterised by very low pavement quality. At the same time, the quality of district roads is directly connected with bus communication networks (both municipal and private), which enable local residents to get to urban centres and to commute to their non-

[18] J. Burnewicz, *Wizja struktury transportu oraz rozwoju sieci transportowych do roku 2033 ze szczególnym uwzględnieniem docelowej struktury modelowej transportu*, http://www.mrr.gov.pl/NR/rdonlyres/, 2008-01-15, p. 5.

agricultural jobs[19]. It is of great importance particularly in the context of the liquidation (due to low profitability and financial inefficiency of local governments) of regional rail connections in many voivodships.

The Rural Development Programme for 2007-2013 in Poland includes measures aimed at improving the situation of peripheral areas. The European Agricultural Fund[20] provides support under the measure Land consolidation, which will improve farming efficiency by reducing transport costs and providing access to technical infrastructure equipment as well as ensuring the necessary access roads to agricultural and forest land belonging to districts. One of the objectives of Scheme I is to design and develop a functional system of access roads to such areas, along with access roads to farm buildings and structures.[21] The district governor will be the beneficiary of such measures. The so-called "Main demarcation criteria" created in order to prevent any risk of double financing of projects should also be mentioned at this point. For example, roads in fishing ports, near unloading sites and harbours, or other roads if they are the only access road to a fishing port, an unloading site or harbour, or to other roads, will be financed by the European Fisheries Fund. However, voivodship, *poviat* and district roads will be financed under structural funds. The target is a density of 4km/100ha of the road network in land-consolidation areas.[22]

Thanks to EU support it will be possible to reduce this development gap (see Fig. 2). The special Operational Programme: Development of Eastern Poland comprises plans to build or modernise road sections which will contribute to improving connections between the most peripheral parts of Poland and the transport network. The most important tasks in the field of road infrastructure development from 2007 to 2013 include[23]:

- extending the network of motorways and express roads;
- programme of improving the pavement on roads where heavy truck traffic can be observed;
- eliminating the shortcomings in the current road network maintenance;

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[19] Polish National Strategic Plan for Rural Development 2007-2013, http://www.minrol.gov.pl/DesktopDefault.aspx?TabOrgId=1660&LangId=0, 2008-11-14.

[20] Council Regulation (EC) No 1698/2005 of 20 September 2005 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD), OJ EU L 277/1 of 21 October 2005 and Commission Regulation (EC) No 1974/2006 of 15 December 2006 laying down detailed rules for the application of Council Regulation (EC) No 1698/2005 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD) (OJ EU L 368/15 of 23 December 2006)

[21] *RDP (2007-2013*), http://www.minrol.gov.pl/DesktopDefault.aspx?TabOrgId=1660&LangId=0, 2008-11-14.

[22] Ibidem, from p. 212.

[23] *Koncepcja Przestrzennego Zagospodarowania Kraju* (*aktualizacja*), www.spatium.uni.lodz.pl/warszawa.doc, 2008-11-23.

- programme of building by-passes or ring roads around towns, ensuring that such roads are secured against new building developments;
- modernisation of national road sections aiming mainly at improving traffic safety, including the launch of a programme for reducing traffic on roads running through small towns and villages,
- improving the conditions for transit traffic as well as for origin-destination traffic within metropolitan areas.

Fig. 2. Transport infrastructure in Poland by 2013.

Source: Koncepcja przestrzennego zagospodarowania kraju (aktualizacja), www.spatium.uni.lodz.pl/warszawa.doc, 2008-11-23, p. 76.

As regards the development of local roads, one of the reports carried out for the Ministry of Regional Development indicates that such roads do not form a coherent network and are not sufficiently integrated into the voivodship development strategy implementation. Considering IROP projects implemented so far, the complementarity index for local roads (ranging from 0 to 3) was 1.6 on average. The Podkarpackie, Świętokrzyskie and Lubelskie voivodships used the EU support the most efficiently, whereas the worst performer was the Pomorskie voivodship.

3. The impact of transport investments on rural development at the example of the Pomorskie voivodship

Considering the social and economic situation as well as the SWOT analysis for the voivodship, the authorities of the Pomorski region prepared the Development Strategy for the Pomorskie voivodship until 2020[24]; the strategy aims at overcoming the weaknesses in order to make the best possible use of the opportunities. It is compliant with the strategic goal covered by the NSRF[25], envisaging the Pomorskie Voivodship of 2020 to be an important partner in the Baltic Sea region, offering a clean environment, high quality of life, development driven by knowledge, skills, active and open communities, a strong and diversified economy, cooperation based on partnership, an attractive and coherent area, conserving multicultural heritage as well as solidarity and maritime traditions. The implementation of this vision is based on three new priorities, strategic objectives and specific courses of action (Table 2).

Table 2. Priorities and strategic objectives for the Pomorskie voivodship until 2020

COMPETITIVENESS	COHESION	ACCESSIBILITY
1. Improved conditions for enterprise and innovation	1. Employment growth and increased labour mobility	1. Efficient and safe transport system
2. High level of education and research	2. Strong, healthy and integrated society	2. Improved operation of technical and ICT infrastructure systems
3. Development of an economy based on specific regional resources	3. Civil society development	3. Better access to social infrastructure, particularly in structurally disadvantaged areas
4. Efficient public sector	4. Shaping social and spatial processes to improve the quality of life	4. Conservation and improvement of the natural environment
5. Established position and effective links between the Tri-City Metropolitan Area (*Trójmiasto*) and other, mainly Baltic, regions	5. Strengthening sub-regional development centres	

Source: Strategia Rozwoju Województwa Pomorskiego – lipiec 2005, www.woj-pomorskie.pl/downloads/ASRWP_tekst, 2007-08-09, p. 23.

[24] *Strategia Rozwoju Województwa Pomorskiego – lipiec 2005 (Development Strategy for the Pomorskie Voivodship – July 2005)*, www.woj-pomorskie.pl/downloads/ASRWP_tekst, 2007-08-09.

[25] The goal under the NSRF is the creation of the conditions for improving the competitiveness of knowledge-based economy and entrepreneurship ensuring an increase in employment and greater social, economic and territorial cohesion.

The voivodship authorities were obliged to develop a Regional Operational Programme for the Pomorskie Voivodship for 2007-2013 as an instrument for the implementation of the NSRF within the region and, at the same time, a document enabling EU support to be obtained under the Community regional policy objective "Convergence". The programme is in line with the provisions of the following[26]:

- Development Strategy for the Pomorskie Voivodship,
- National Strategic Reference Framework,
- Community Strategic Guidelines on Cohesion.

The overall strategic objective of the Programme is therefore the improvement of economic competitiveness, social cohesion and spatial accessibility through sustainable use of specific features of the potential. ROP financial instruments using the EU structural funds are shown in Table 3.

Table 3. The structure of ERDF funds allocation by Priority Axis of ROP PV

Priority axis	ERDF funds allocation (%)
1. Development and innovation in SMEs	21.0
2. Knowledge-based society	7.0
3. Metropolitan functions	12.0
4. Regional transport system	**23.0**
5. Environment and environment-friendly power industry	7.0
6. Tourism and cultural heritage	5.0
7. Healthcare and rescue system	4.0
8. Basic local infrastructure	14.0
9. Local social infrastructure and civil initiatives	4.0
10. Technical assistance	3.0
Total	100.0

Source: Own study based on: Regionalny Program Operacyjny dla Województwa Pomorskiego na lata 2007-2013, załącznik do uchwały Zarządu Województwa Pomorskiego nr 75/18/07, 5.02.2007, p. 64.

As shown in Table 3, the voivodship authorities intend to allocate the highest share of the funds (23%) for the development of the regional transport system, which may be regarded as a good decision since the transport system in the Pomorskie voivodship is inefficient. Major shares of the appropriations will also be granted to small and medium-sized enterprises (21%), basic local infrastructure (14%) and projects concerning the development of metropolitan func-

[26] *Regionalny Program Operacyjny dla Województwa Pomorskiego na lata 2007-2013, załącznik do uchwały Zarządu Województwa Pomorskiego nr 75/18/07*, 5.02.2007, p. 52.

tions (12%). A relatively small amount has been provided for tourism and cultural heritage (only 5%); the lowest share of funds was allocated for technical assistance (3%). The regional transport system (priority axis 4) in the Pomorskie voivodship will receive a total of EUR 271,420,167 (with the Community contribution of 75%).[27] As regards other priority axes of importance to infrastructure development, the following are worth mentioning: axis 3 concerning urban and metropolitan functions (over EUR 150 million), axis 6 regarding tourism (almost EUR 60 million) and axis 8 aiming at the improvement of basic local infrastructure (more than EUR 145 million). A strong preference will be given to projects in line with the development programmes of the whole transport infrastructure system covering all sectors and following from the Transport Development Strategy of the Pomorskie voivodship.

Table 4. Investments in the Pomorskie voivodship financed with the EU and national funds under the National Development Strategy for 2007-2015

Appropriations for investment in the Pomorskie voivodship financed with the EU funds under the National Development Strategy for 2007-2015			
Operational Programme	EU funds (EUR million)	National funds (EUR million)	Total
Regional Operational Programme	885.06	342.10	1,227.16
OP Human Capital	319.18	56.32	375.50
Total ROP and OP HC	**1,204.24**	**398.42**	**1,602.66**
RDP	223.22	71.90	295.12
TOTAL	**1,427,46**	**470.32**	**1,897.78**

Source: Fundusze unijne dla województwa pomorskiego w latach 2007-2015, www.mrr.gov.pl, 2007-10-31.

ROP PV will be financed from the ERDF as well as with national funds, and the contribution from the ERDF – according to Council Regulation No. 1083/2006 – was calculated with reference to the total eligible expenditure, including public and private expenditure. The amount allocated to investment will total EUR 1,227.1 million, of which the national public and private contribution will be EUR 240.7 million and EUR 101.4 million respectively[28]. Almost half of the budget will be used for the implementation of the Lisbon goals. Other funds from other programmes under the

[27] Ibidem, p. 135.
[28] For comparison, in 2004-2006 the Pomorskie voivodship received EUR 159.58 million under the IROP.

EU cohesion policy, the common agricultural policy and national policies and strategies will also be of considerable importance (Table 4).[29]

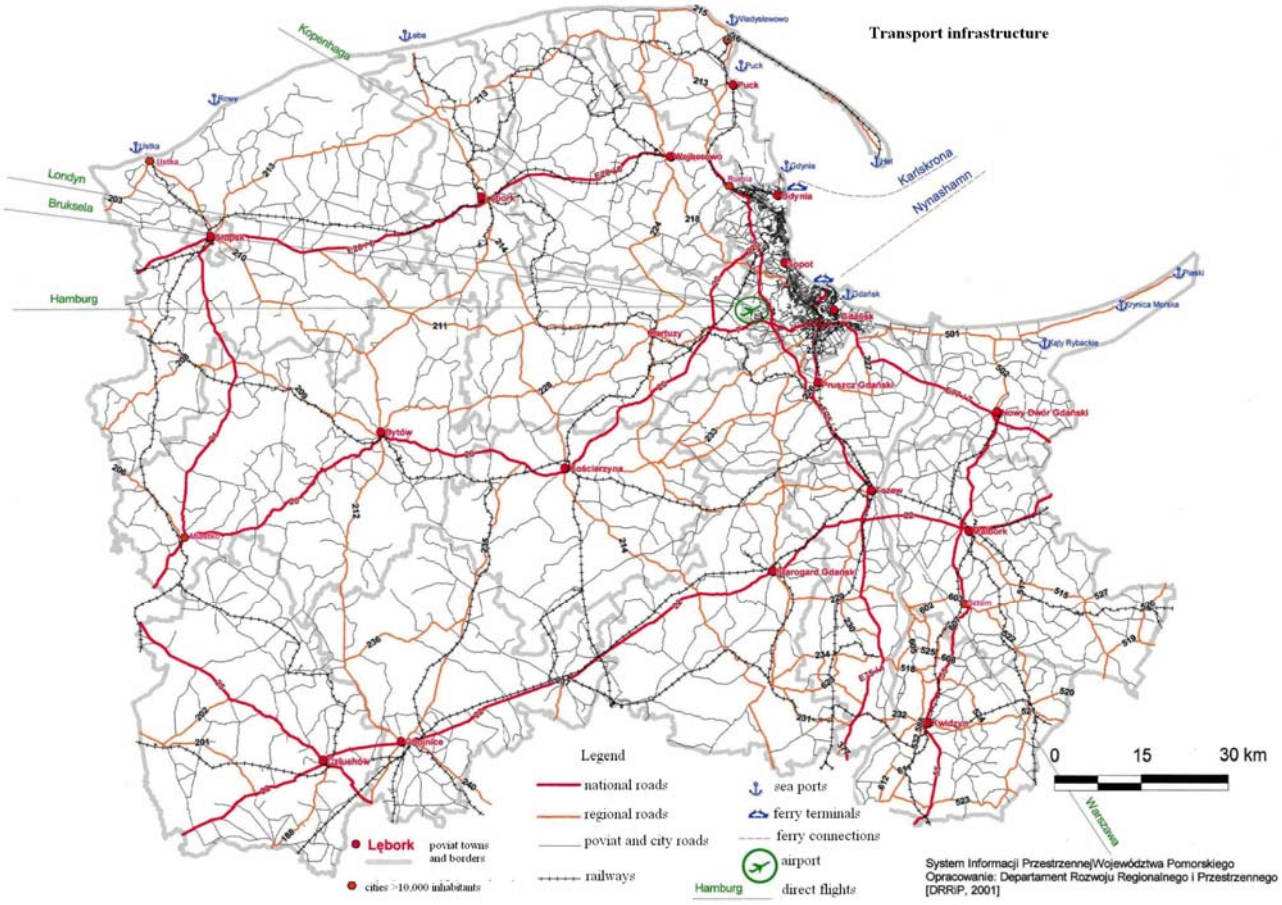
A particularly important aspect is to ensure proper coordination and complementarity of measures financed under the ROP PV with the Rural Development Programme for 2007-2013. This complementarity with support provided within the framework of the RDP is found in the following ROP PV priority axes:[30]

- Priority Axis 1. Development and Innovation in SMEs – complementarity with Axis 1. Improving the competitiveness of the agricultural and forestry sector, Axis 3. Quality of life in rural areas and diversification of the rural economy and Axis 4. Leader;
- Priority Axis 3. Metropolitan functions – complementarity with Axis 3. Quality of life in rural areas and diversification of the rural economy and Axis 4. Leader;
- Priority Axis 5. Environment and environmentally-friendly power industry – complementarity with Axis 1. Improving the competitiveness of the agricultural and forestry sector, Axis 2. Improvement of the environment and the countryside, Axis 3. Quality of life in rural areas and diversification of the rural economy and Axis 4. Leader.
- Priority Axis 6. Tourism and cultural heritage – complementarity with Axis 3. Quality of life in rural areas and diversification of the rural economy and Axis 4. Leader;
- Priority Axis 8. Local basic infrastructure – complementarity with Axis 2. Improvement of the environment and the countryside, Axis 3. Quality of life in rural areas and diversification of the rural economy and Axis 4. Leader;
- Priority Axis 9. Local social infrastructure and civil initiatives – complementarity with Axis 3. Quality of life in rural areas and diversification of the rural economy and Axis 4. Leader.

The competitiveness and cohesion of each region are largely determined by the condition and development prospects of transport infrastructure. The transport system of the Pomorskie voivodship consists of all types of land, water and air transport (Fig. 3).

[29] *Fundusze unijne dla województwa pomorskiego w latach 2007-2015*, www.mrr.gov.pl, 2007-10-31.
[30] *Regionalny Program* (…), op. cit., p. 132.

Fig. 3. Transport infrastructure of the Pomorskie Voivodship



Source: Charakterystyka Województwa Pomorskiego, www.woj-pomorskie.pl/, 2007-08-03.

The main development problem of the region is the low quality and limited coherence of the transport system. Despite the good location at the crossing of two transport corridors, transport accessibility of the voivodship is quite low against other central and southern regions of Poland and the EU. Western and eastern parts of the voivodship require the improvement of accessibility and quality of transport connections with the regional economic centres, mainly with the Tri-City agglomeration (*Trójmiasto*). The road network does not ensure good access to Gdynia and Gdansk ports.[31] Low quality of transport infrastructure prevents appropriate quality of passenger and cargo transportation services. The current condition increases business costs, lowers the efficiency and competitiveness of companies, thus reducing the attractiveness of the region for foreign investors. It also has a negative impact on the residents' quality of life.

The road network of the voivodship is over 19,500 km long and covers: 8 national roads, 69 voivodship roads as well as *poviat* (NUTS 4 level) and

[31] *Strategia Rozwoju, op. cit.*, www.woj-pomorskie.pl/downloads/ASRWP_tekst, 2007-08-09, p. 15.

district (*gmina* – NUTS 5 level) roads. There are almost no roads of the highest technical standard, and the majority of roads in the region are of low quality and require modernisation. Another weakness is the poor technical condition of bridges and overpasses, of associated infrastructure and of infrastructure related to traffic safety and organisation. Moreover, a significant development barrier is the insufficient capacity of some road sections and the absence of ring roads for transit traffic. Due to reduced cargo and passenger traffic, the overall length of the railway network is also gradually decreasing. The railway lines currently in use in the Pomorskie voivodship are limited to 1,308 km (density of 7.2 km/100 km^2). The following railway lines included in the Trans-European Transport Network (TEN-T) run through the voivodship: line E-65 (Gdynia-Warszawa-Zebrzydowice), CE-65 (Katowice-Tczew) and Gdynia-Kaliningrad line. As compared to other transport modes, rail transport fails to be competitive. Railway lines and the rolling stock suffer from quick decapitalisation, and more and more regional lines are being closed.[32]

In recent years air transport in the Pomorskie voivodship has been characterised by a rapid growth in traffic. The Lech Walesa Airport in Gdansk plays a dominant role in the handling of passengers. In 1991-2005 the volume of cargo doubled, and the number of passengers carried increased almost eight times. Forecasts of increased air traffic point to the need of extending the airport and putting other airports in the voivodship into operation, not as yet used by civil aviation, to serve as complementary facilities. The voivodship authorities decided on situating such an airport in Gdynia – Babie Doły.

Finally, it should be mentioned that mere investment in transport is not enough to stimulate economic growth in the regions. There is a need for rational strategies and regional programmes to include infrastructure investments in a wider context. Partnership based on an extended and efficient institutional cooperation network, coordinated by voivodship governments and covering local and regional authorities, socio-economic partners, universities, business organisations, non-governmental organisations, government institutions, as well as other Polish and foreign regions and institutions, might prove helpful in the implementation of such projects.[33]

[32] Ibidem, p. 20.

[33] T. Parteka, *Przemysły morskie i infrastruktura techniczna w Strategii Rozwoju Województwa Pomorskiego do 2020 roku*, (in:) A. S. Grzelakowski, K. Krośnicka (eds.), *Przemysły morskie w polityce regionalnej UE*, Gdynia Maritime University, Gdynia 2007, p. 36.

Summary

1. The question whether the main field of interest should be territorial cohesion of the whole of Europe or the cohesion of individual areas (e.g. regions, especially peripheral ones) should be settled on the basis of two strategies: **top-down** and **bottom-up** approaches, which would provide harmonious EU-wide development.
2. Two main dimensions of the EU transport policy, i.e. reduced environmental pressures and sustainable mobility of human resources are significant for other EU policies, e.g. with regard to improved transport in cities and metropolitan areas or support for the development of polycentric networks. Other types of investments may **promote relationships between rural and urban areas,** as well as reducing disparities between them. The EU transport policy can thus support various aspects of regional development policy implemented under the cohesion policy, and it may also influence different sectoral policies advanced by cohesion policy instruments.
3. The EU transport policy may sometimes hinder regional development. **Neglecting the development of regional and local transport networks** (e.g. via the extension of trans-European networks) can be an example of such an obstacle. Another barrier is **excessive concentration of expenditure on infrastructural objectives** which are not properly linked to other development measures or, for instance, at the expense of innovation measures.
4. The support for regional development via instruments of both analysed policies brings about **improved territorial cohesion** of some areas. At the same time, there are also **negative results** of allocating the European funds for the implementation of the objectives set out by these policies, especially as regards peripheral areas, which leads to neglecting certain aspects, e.g. transport connections between metropolitan areas, towns and villages. It is necessary to diversify agricultural activities of small farms and support local labour markets, which could be fostered, *inter alia*, by integrated regional public transport systems.
5. **More integrated sectoral policies** are needed at the national level, including transport policy and spatial planning in Poland. **More diversified priorities** should also be applied, as well as greater **freedom to utilise EU funds**, the possibility to **combine different EU financing sources** for a given project etc. It would be advantageous for the beneficiaries of such funds and it would offer opportunities for faster development of peripheral/rural areas in Poland.
6. The above example of the Pomorski region shows the synergy and barriers between the transport and cohesion policies. Despite the declared willingness to pursue sustainable development at the level of operational documents

drawn-up by the government administration, in Poland the most funds are allocated to road infrastructure (national roads: 33.3%, motorways: 16.6%). This is also the case in the Pomorskie voivodship, although environment-friendly projects are given more attention due to the coastal location of the region. However, the co-financing rate for infrastructure projects still represents a significant obstacle. The EU contribution of up to 75% (and in the case of some investments only 50%) may pose a major problem to many potential beneficiaries within the region.

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Investments in renewable energy sources as an opportunity for rural development

Undoubtedly, economic processes taking place in the present-day world influence the situation of rural areas. One of such factors is globalisation, which is a complex, multi-aspect and multi-level process. Given the fact that it occurs at the international, regional and national level, it makes rural areas passive recipients of changes rather than creators of globalised reality. Hence, considering positive and negative implications of globalisation, it seems that rural areas, in particular not very competitive agricultural districts (in Polish: *gminas*), are most at risk of suffering negative consequences related to globalisation, and fated to exclusion. However, it does not mean that there are no other options. Moreover, globalisation, which to some extent shows the civilisation backwardness of rural areas more brutally, can become a peculiar incentive triggering changes in the countryside. The European Union, an example of guided globalisation, that is a globalisation which establishes relationships between organisations, industries, companies and economic sectors, is also capable – through its actions – of both creating global changes and mitigating their negative effects[1]. Furthermore, rural areas constitute 91% of the EU territory, and account for over 56% of the total population, hence rural development is one of the key elements of EU policies[2]. The European Union actions also result from the characteristic features of agriculture under market economy conditions, which makes agriculture the weakest of all economic sectors as it supplies raw materials, being the most distant from the final consumer, and benefits the least. Besides, the period of return on investment in agricultural production is longer[3]. Therefore, there is a need for the state or EU intervention aimed at compensating agriculture for the shortcomings of the market economy.

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[1] M. Dolata, *Infrastruktura telekomunikacyjna obszarów wiejskich jako niezbędny warunek ich rozwoju w dobie globalizacji*, [in:] W. Łuczko-Bakuła, T. Chomczuk (eds.), *Gospodarka żywnościowa i obszary wiejskie wobec procesu globalizacji*, Agricultural University of Poznań, Poznań 2004, p. 120.

[2] *The EU Rural Development Policy. Facing The Challenges*, p. 3.
at http://ec.europa.eu/agriculture/events/cyprus2008/brochure_en.pdf

[3] A. Czyżewski, *Proces globalizacji i jego wpływ na wewnętrzną i zewnętrzną integrację rolnictwa*, [in:] W. Łuczko-Bakuła, T. Chomczuk, *Gospodarka żywnościowa,* op. cit., p. 136.

The goal of the European Union is to carry out a rural development policy which at the same time maintains the uniqueness of rural areas and activates them to facilitate their adaptation to the ongoing changes. These are also measures which aim at identifying and creating new, even innovative activities in rural areas. Moreover, some technological solutions may contribute to the protection of rural areas of high natural value. The problem of infrastructure development is an example illustrating the need for rural areas to adjust to rapid economic changes. The lack or underdevelopment of infrastructure has a number of negative effects, such as a lower rate of economic growth or reduced attractiveness of a given area. The latter aspect is especially important since infrastructural shortcomings represent a major obstacle limiting the inflow of investment to rural districts[4]. Therefore, it should be noted that the EU policy does not treat rural areas as typically agricultural regions supplying food to the EU market. The EU measures concerning, *inter alia*, renewable energy sources prove that rural areas are included in the most sensitive problems of the whole Community, such as energy security. The European Union sees the development of renewable energy sources as an opportunity to change the traditional understanding of the countryside. It points to different tasks and objectives set for rural areas which can mitigate the negative impact of globalisation processes, but first of all trigger changes within such areas. Renewable energy sources have a double role to play in the countryside. They should supplement, or even replace energy sources, and contribute to energy security at the national and EU level, aiming at the diversification of energy carriers.

The *Rural Development Programme for 2007-2013* developed by the Ministry of Agriculture and Rural Development defines rural areas as those situated outside the administrative boundaries of cities (city limits), which means that they are rural districts or rural parts of urban-rural districts.[5] The above definition is in line with the classification criteria of rural areas adopted by the OECD and EUROSTAT. It implies that, depending on the type of classification, rural areas in Poland account for 85.7% to 93.2%[6]. It is a considerable share, which, at the same time, raises the question concerning the characteristic features of such areas. The issue is very important as rural areas benefit from EU funds. Hence, in accordance with the adopted criterion, both an urban-rural district with over 20,000 inhabitants and a rural district are categorised as rural ar-

[4] M. Dolata, *Infrastruktura telekomunikacyjna.*., op. cit., p. 121.
[5] *Rural Development Programme for 2007-2013* (RDP 2007-2013), document from the Ministry of Agriculture and Rural Development, Warsaw 2007, p. 7.
[6] Ibidem, p. 8.

eas. It appears then that the criterion is quite controversial[7]. It may favour developed areas situated near cities, often with better organised human capital and experience than rural districts of typically agricultural nature. Under some measures of the Rural Development Programme support is equally available to an urban-rural district of Konstancin-Jeziorna near Warsaw and to the typically agricultural rural district of Wodzisław in the Świętokrzyskie voivodship. On the other hand, the Rural Development Programme offers a number of opportunities to undertake different initiatives and projects which may contribute to rapid development of rural districts.

1. Polish energy policy as compared to those in other EU Member States

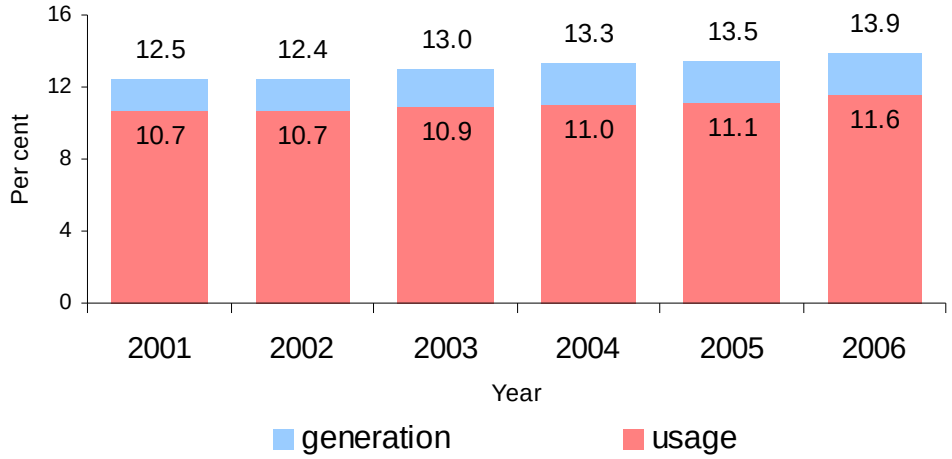
Poland's economic growth, including rural development, inherently involves greater demand for electricity. To satisfy the growing demand, it is essential to increase electricity generation from the current capacity of 35 GW to 45 GW. Moreover, two power units with a capacity of 15 GW will go into liquidation, which fully illustrates the scale of necessary investment[8]. Given the fact that those are expensive projects, it is possible that electricity companies will wish to raise electricity prices with a view to financing investment, which in turn will have a negative impact on the economic situation of consumers. Poland needs approx. EUR 35 billion until 2030 to implement the plans concerning the construction of power units (excluding investment in the environmental protection and modernisation)[9].

It is not only necessary to build new power units, but there is also a need to modernise the existing ones. The majority of the old units, with a capacity of 21 GW, were built between 1960 and 1980. At the moment, 40% of power units in Poland are more than 30 years old, 34% are 20 to 30 years old, 11% – 10 to 19 years old, 7% – 5 to 9 years old, while 8% are up to 5 years old[10]. Since the beginning of 1990, power units with a total capacity of 7 GW have been put into operation. According to many experts, without large-scale investment in the power industry in the next 20 years, Poland may suffer the shortage of electricity. The existing power connections with neighbouring countries have a total capacity of 9.2 MW and are not capable, in an

[7] Cf. *Charakterystyka Obszarów Wiejskich w 2005 r.,* GUS, Olsztyn 2006, p. 40.
[8] W. Kwinta, *Inwestycje tkwią w blokach*, in: Energia & Przemysł, October 2007, pp. 10-13.
[9] Ibidem.
[10] *Statystyka elektroenergetyki polskiej*, under the direction of A. Pierzak, Energy Market Agency, pp. 61-62.

emergency, of significantly improving the situation. This picture may be partially changed by the implementation of the plan concerning setting up a power bridge with Lithuania, but the project has not been launched yet.

Fig. 1. Usage and generation of electricity in Poland in 2001-2006 (in Mtoe)



Source: Gospodarka paliwowo-energetyczna 2005-2006, CSO, Warsaw 2007, p. 38.

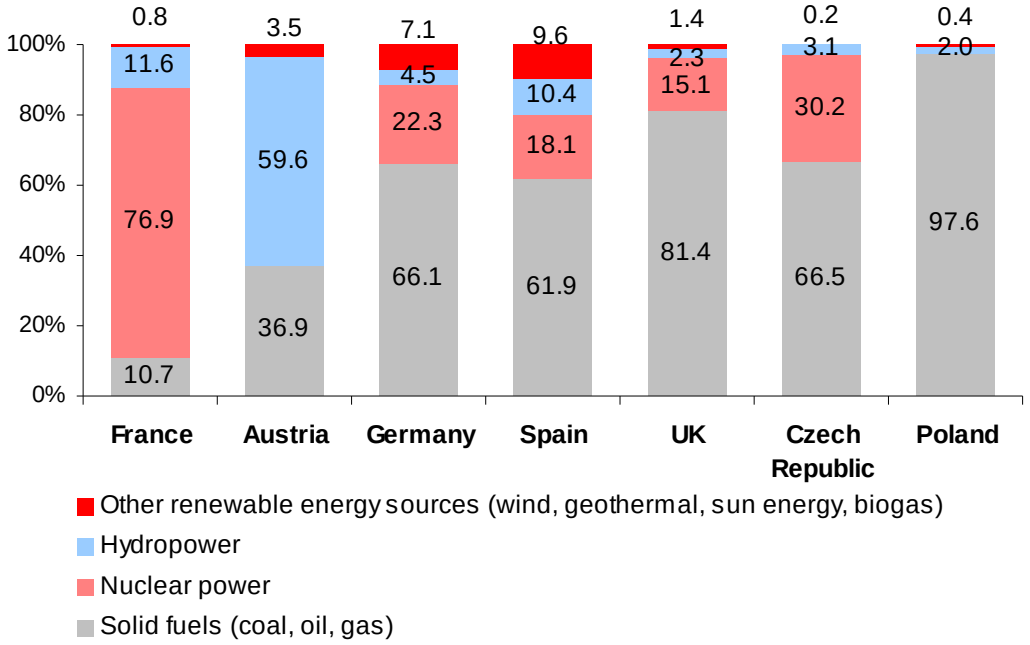
Considering the structure of power installations by type of energy carrier, as compared to other EU Member States Poland is characterised by a large, almost 90% share of coal. Moreover, Poland recognises the problem of increasing electricity demand and the need to modernise power units, and therefore invests in new power units using coal combustion. Although coal resources in Poland are estimated to suffice for almost 200 years, with the power industry based on traditional coal technologies Poland is bound to be unsuccessful in its efforts to attain the objective of reducing carbon dioxide emissions. It is hardly possible to reasonably argue that the Polish economy will rapidly change the structure of its energy balance. Besides, there is no nuclear power plant in Poland, and despite the ongoing debate on the need to build one such plans remain in a distant future. At the same time, Europe is more and more interested in setting up nuclear reactors. It mostly results from increasing prices of fossil fuels. However, high investment costs (ranging from USD 2 to 3.5 billion per reactor) and concerns of the population regarding the safety of such investment and the disposal of radioactive waste, continue to be barriers to the development of the nuclear power industry[11].

European countries, even those with a more differentiated structure of energy balance, still actively invest in new generation capacities. They wish to maintain the competitiveness of their economies and adjust them

[11] *World Energy Outlook – Executive Summary*, at www.iea.org, p. 9.

to changing economic conditions. Due to the depletion of energy resources, competition for raw materials between countries and regions will intensify. According to estimates of the European Commission, in 2030 Europe will import 70% of energy products (now 50%), while oil and natural gas reserves in Europe (excluding Russia) will suffice for a maximum of 25 years[12]. Therefore, all investments aimed at the diversification of energy sources and thereby at increasing the security of supply gain in importance.

Fig. 2. Structure of energy generation in selected EU countries (2005)



Source: Energy Market Agency.

Energy security is one of the most important aspects of the functioning of the European Union, and its significance has been growing in the last years. It is very hard to solve problems related to the security of energy supply at the EU level, also due to different national interests of individual countries[13]. Energy security is understood as the availability of energy at reasonable prices for all consumers[14]. However, the abovementioned definition does not fully explain the concept of energy security. It should be understood not only as

[12] P. Świeboda, *Strategiczne wyzwanie dla Unii Europejskiej. Kształtowanie zewnętrznego wymiaru polityki energetycznej,* report of demosEUROPA – Centre for European Strategy, Warsaw 2006, p. 4.

[13] P. Marzec, Wybrane problemy bezpieczeństwa ekonomicznego w Unii Europejskiej, [in:] Kazimierz Kłosiński (ed.) *Unia Europejska – integracja, konkurencyjność, rozwój*., KUL, Lublin 2007, pp. 93-95.

[14] P. Czerpak, *Bezpieczeństwo energetyczne*, in: *Bezpieczeństwo międzynarodowe. Teoria i praktyka*, Warsaw School of Economics, Warsaw 2006, pp. 124-125.

providing different energy supplies, but also as maximising the diversification of energy sources through measures such as the promotion of alternative energy sources, all investments aimed at reducing the waste of energy, increasing energy efficiency as well as education to promote reasonable energy consumption. Furthermore, a broader definition of energy security points to a number of common areas of interest to Member States with regard to energy. This also seems to be the approach of the European Commission as it provides financial support to investments in alternative energy sources.

2. The EU energy package and its impact on investments in alternative energy sources

Sustainable development aimed at building one of the most competitive economies in the world, on the one hand, and concern for the environmental protection and the future of its citizens, on the other, represents one of the EU priorities. This position was expressed, *inter alia*, in the Green Paper on "A European Strategy for Sustainable, Competitive and Secure Energy" of March 2006. The document covers many important issues related to the power sector, such as energy costs and the diversification of energy supplies, global warming, growth in energy demand, the development of alternative energy sources, the construction of transmission and distribution infrastructure, the dialogue between suppliers and buyers of energy products, the environmental protection and the creation of the internal energy market[15].

In March 2007, at the European Council dedicated to climate protection, the European Commission proposed a commitment "3x20", aimed at meeting the obligations set out in the Kyoto Protocol (reduction of greenhouse gas emissions by 8%) and limiting the risk of increased prices for energy products resulting from their limited availability. The objective "3x20" provides for, *inter alia*, a reduction of greenhouse gas emissions by 20% compared to 1990 levels and increasing the share of renewable energy sources in overall energy consumption to 20% by 2020. Moreover, it involves more efficient use of energy, including the improvement of the EU's energy efficiency by 20%. The target of at least 10% share of biofuels in total sales of transport fuels by 2020 is directly related to the "3x20" commitment[16]. Moreover, in January 2008 the

[15] Green Paper on *A European Strategy for Sustainable, Competitive and Secure Energy*, pp. 2-19, at http://ec.europa.eu/energy/green-paper-energy/doc/2006_03_08_gp_document_pl.pdf
[16] Presentation delivered by Government Representative for Alternative Sources of Energy at http://www.mos.gov.pl/oze/materialy_informacyjne/Nowe_cele.ppt.

European Commission presented, and the EU Council approved of the so-called Climate and Energy Package, which covered actions aiming at the reduction of carbon dioxide emissions and changed the rules for CO2 emission trading.

Many countries will find it extremely hard to fulfil the tasks provided for in objective "3x20" and it will require significant investment. The European Commission stated that specific objectives as regards achieving the 20% share of alternative energy sources will differ between countries. The targets for Poland and Germany are 15% and 18% respectively. Emission trading raises even more controversy, being the subject matter of heated debates in the EU. The Emission Trading Scheme entered into force on 1 January 2005. It provided for an initial period (2005-2007) for enterprises to adjust to the reporting and monitoring of emissions. Starting from 2008, the European Commission specifies emission limits for individual Member States based on submitted allocation plans concerning CO2 emission allowances (i.e. National allocation plans). Emission allowances are then allocated to specific sectors and companies. The emission needs of individual industries are established on the basis of their development plans. Detailed information on allocation is published in the form of an ordinance[17]. If an enterprise exceeds its allowance, it needs to buy a relevant amount from another enterprise, pay a fine or implement necessary investment in more environment-friendly technology. The revenues from emission trading are earmarked for investments in alternative energy sources and innovative research on reducing harmful gas emissions.

With a power sector based on coal, Poland will have difficulty meeting the targets of the energy package. Objections raised by the Ministry of Environment concern the methods of achieving the aims set out in the package rather than the need for such a document to exist. First of all, according to the government's proposal the directive on the geological storage of carbon dioxide should be binding only from 2020, not from 2013. Secondly, the most serious objections regard emission trading as energy experts view the scheme as a possible obstacle to Poland's economic growth. The European Commission suggests that the whole power sector should be subject to the auctioning of emission allowances. However, Poland opts for the phasing-in of full auctioning of allowances until 2020, and proposes that the most advanced power plants should be excluded from emission trading, whereas weaker units

[17] Rozporządzenie Rady Ministrów w sprawie przyjęcia Krajowego Planu Rozdziału Uprawnień do Emisji dwutlenku węgla na lata 2008-2012 we wspólnotowym systemie handlu uprawnień do emisji, www. kprm.gov.pl, 1.07.2008.

should only buy emission credits[18]. Given the different interests of EU Member States, it will be really difficult to arrive at a compromise regarding the climate package. However, it is worth noting that even if Poland succeeds in postponing the fulfilment of the obligations specified in the package, it will nevertheless have to fulfil them eventually, which will require significant investment and well-considered implementation programmes.

One of the methods to reduce carbon dioxide emissions is the application of the so-called clean coal technologies. It is a great opportunity, especially for economies with a coal-based power sector and considerable coal resources, such as Greece, Germany, the Czech Republic, the United Kingdom and Poland. Therefore, the future of emission-free (zero-emission) power plants and geological carbon capture and storage (CCS) technologies is of particular relevance. The leading Western electricity companies are interested in setting up emission-free power plants but the implementation of such plans is usually made dependent on obtaining EU support. A pilot project is currently being implemented in the German town of Schwarze Pumpe near an operating brown coal-fired power plant. The new power plant, to be put into operation in mid-2009, will have a capacity of 30 MW and it will be equipped with a carbon dioxide capture system[19].

In Poland, there are also a few potential locations for the first emission-free installation. Twelve such power plants are expected to be built in the EU. Many countries wish to have more than one power plant in their territory. Hence, whether such a project is implemented and whether it is granted EU support may depend on the progress of preparatory work and investment climate in respect of setting up such an advanced facility. This type of power plant could, for example, be situated in a rural-urban district. However, the question remains whether districts are prepared to implement such investments. It is not only the matter of land, permits or the pace of issuing decisions, but it also concerns public awareness of the reasons and aims of such an investment project.

Furthermore, according to geologists' estimates as much as 80% of the Polish territory can be used for carbon dioxide storage, especially western and central Poland. Moreover, Poland has some experience in pumping carbon dioxide underground as in 1995 it already used the technique in a gas field in Borzęcin. The method of pumping carbon dioxide underground into gas fields makes it possible to obtain additional volumes of gas, which in the case

[18] Z. Kamieński (Ministry of Economy), *Nie za wszelką cenę* [in:] Czysta Energia, October 2008, at www.cire.pl and *Nowicki: Polska za 20-proc. ograniczeniem emisji, ale inaczej*, www.pb.pl, of 16.10.2008

[19] D. Malinowski, *Skazani na czyste technologie węglowe* at www.wnp.pl of 07.05.2008

of Poland implies increased use of own resources. Unfortunately, on account of high technology intensity of such projects, they remain in an early stage and still require significant funds. However, it is worth noting that under the Seventh European Framework Programme funds earmarked for the development of clean coal technologies (research and demonstration activities) are about EUR 400 million, half from the framework programme and the other half from other sources[20].

It seems that investments in clean coal technologies are the future of coal use. However, the economic profitability of such projects may pose a problem. Therefore, the phase of research programmes, identification of possibilities and benefits of geological storage of carbon dioxide requires involvement not only of the state, but also of regions and districts. Such technologies would then contribute to fulfilling the climate change obligations and economic growth of Poland as a country rich in coal and generating large quantities of carbon dioxide.

3. Renewable energy sources

Investment in renewable energy sources offers an opportunity for both rural development and ensuring Poland's energy security based on diversified energy supplies. Renewable energy sources (RES) represent an alternative to the traditional primary non-renewable energy sources (fossil fuels), although in practice they significantly supplement the energy balance. "Renewable energy is energy generated in natural and repeatable processes. The existing forms of renewable energy directly or indirectly derive from solar radiation or heat generated deep in the Earth's interior[21]." The main advantage of RES is that they are environment-friendly, mainly as a result of reducing greenhouse gas emissions, and basically inexhaustible[22]. Renewable energy can be generated from the following sources: biomass, solar radiation, wind, water and geothermal waters. Owing to the growing ecological awareness and European Union financial support, "green energy" gains in importance. Since 2003 the European Union has witnessed a steady growth in the quantity of energy from alternative sources.

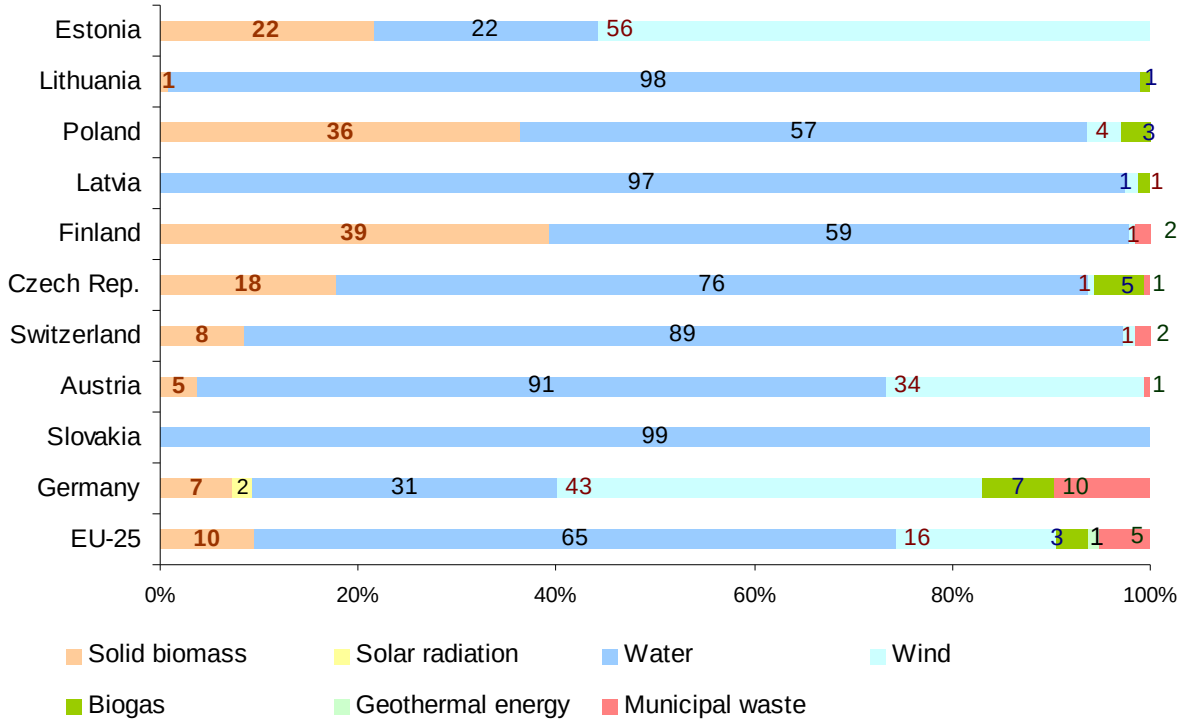
[20] Ibidem.

[21] G. Berent-Kowalska, J. Kasprowska, G. Kasperczyk and a team of workers from the Department of Fuel, Material and Product Balances of the GUS Industry Division under the direction of R. Gilecki, *Energia ze źródeł odnawialnych w 2006 r.*, published by the Central Statistical Office (GUS), Industry Division, and the Ministry of Economy, Energy Department, Warsaw 2007, p. 5.

[22] *Energia ze źródeł odnawialnych w 2006 r.*, Central Statistical Office, Department of Industry, Ministry of Economy, Department of Energy, Warsaw 2007, p. 8.

In 2005 there was an increase in the "green energy" production by 4.1% compared to the previous year, whereas in 2004 and 2003 it rose by 6.5% and 6.7% respectively[23]. The growth in energy generated from renewable sources has been accompanied by a decrease in energy produced from conventional sources. At the same time, in Poland the share of renewable energy in total energy consumption increased to 5.9% in 2005 as compared to 5.5% in 2004. Considering the structure of power installations by type of energy carrier, in 2006 Poland had a 7% share of installations using renewable energy sources. In Austria the respective share was 73%, in Spain 36%, in France 22%, in Germany 27%, in the United Kingdom 9%, and in the Czech Republic 20%[24]. A relatively low share of installations generating energy from renewable sources can be observed in countries with abundance and great importance of fossil fuels, especially coal.

Fig. 3. Structure of generating electricity from renewable energy products in selected EU countries (2005, per cent)



Source: Energia ze źródeł odnawialnych w 2006, op. cit., p. 19.

According to the Energy Regulatory Office, in 2006 in Poland there were 886 licensed installations based on renewable energy sources, with a total in-

[23] Ibidem, p. 14.
[24] CERA, European Power Watch. Poland: ARE, 2006 at www.are.waw.pl

stalled capacity of 1,509.5 MW, and they generated 4,221 GWh of energy[25]. Broken down by type of RES in energy generation, hydropower plants accounted for the highest share (48%, 2,030 GWh), followed by the co-firing of biomass (31%, 1,314 GWh)[26]. Even though the share of renewable energy in total energy production is not very high, it will certainly rise as a result of the EU policy and the possibility for financing such investments. Furthermore, the attractiveness of this type of investment is increased by the fact that in rural areas there are relatively large renewable energy resources, such as biomass, wind, solar and geothermal energy. The development of renewable energy sources was also included in the draft energy policy of Poland until 2030. The draft emphasises that increasing the use of RES is an opportunity for Poland to reduce dependence on imported energy products[27]. The main objectives regarding RES are: (1) increasing the use of renewable energy sources in the final energy balance to 15% in 2020 and 20% in 2030; (2) achieving a 10% share of biofuels in the transport fuel market in 2020 and maintaining the share in the following years, and (3) the protection of forests against excessive exploitation for biomass production and sustainable use of agricultural areas for RES purposes, to avoid competition between renewable energy generation and agriculture[28].

Renewable energy sources represent an opportunity for rural development. They can become a new development orientation and part of rural activities. As a result of using and promoting RES, rural areas could create appropriate infrastructure conditions for investment. Moreover, in the context of energy security, RES make rural areas important stakeholders of the energy policy, which gives a chance to escape marginalisation, especially for typically rural areas, and represents a possible source of financing their development. Positive aspects of renewable energy sources in rural areas also include increased employment and faster economic growth, as well as establishing a climate for the development of more innovative farming activities. Moreover, the development of RES in rural areas also has a social aspect as their innovative character contributes to increased public awareness in local communities. The reluctance of the rural population is the main factor hindering RES development. The society

[25] *Możliwości wykorzystania odnawialnych źródeł enegii w Polsce do roku 2020*, expert analysis by the Institute for Renawable Energy in cooperation with the Institute for Ecodevelopment, Warsaw 2007, www.ieo.pl, p. 17.
[26] Ibidem.
[27] Energy Policy of Poland until 2030, draft by the Ministry of Economy, p. 4, www.mg.gov.pl
[28] Ibidem, pp. 14-15.

continues to have insufficient knowledge on RES and perceives them as marginal and hardly convincing energy sources[29].

While discussing the impact of RES on rural development one must not exclude the issue of possible and actual negative effects. For example, recently there have been many comments on the impact of biofuels on the decreasing area under food crops and the growth in world food prices[30]. The United Nations Special Rapporteur on the Right to Food, Jean Ziegler, described biofuel production nowadays as "a crime against humanity". Moreover, the European Environment Agency itself undertook to prepare expert analyses on the environmental impact of biofuels. Furthermore, the European Commission announced that it would request Member States to eliminate aid for energy crops, an annual cost of approx. EUR 90 million for the EU budget[31]. A rapid growth in world food prices cannot be assessed unambiguously. After a surge in prices of basic foodstuffs observed in the first six moths of 2008, the prices decreased. This proves that the increase in prices was primarily caused by speculations concerning forward contracts for food products rather than by energy farming.

Critics of attaching too much importance to energy from renewable sources rightly point out that it is more expensive than energy generated from fossil fuels. According to estimates, the price for such energy is usually two and a half times higher than the price of traditional energy[32]. Alternative energy sources require major investment, hence there still is a need to finance such projects, *inter alia*, from the EU funds. Nonetheless, two arguments are worth considering. Firstly, electricity prices will continue to grow as a result of limits of CO2 emissions imposed by the EU. Secondly, in response to the environmental protection standards, including the global warming issues, the share of alternative energy sources must increase. It is one of the priorities and a significant value in the European Union activities. In other words, the European Union aims at skilful balancing between the need to encourage economic growth and the environmental protection. Such a policy can be extremely costly, but it is nonetheless necessary, considering the responsibility

[29] Collective work ed. by K. Czaplicka-Kolarz, *Scenariusze rozwoju technologicznego kompleksu paliwowo-energetycznego dla zapewnienia bezpieczeństwa energetycznego kraju*, volume/ part II, Central Mining Institute), Katowice 2007, p. 86.
[30] M. Kot, *KE podtrzymuje propozycję 10 proc. udziału biopaliw w transporcie*, at www.pb.pl of 21.04.2008, and K. Niklewicz, R. Zasuń, *Greenpeace: Nie chwytać CO2*, in: Gazeta Wyborcza of 5.05.2008 no 104.5714.
[31] M. Kot, *KE podtrzymuje propozycję 10 proc. udziału biopaliw w transporcie* at www.pb.pl of 21.04.2008.
[32] W. Kwinta, *Inwestycje tkwią w blokach*, in: Energia & Przemysł, October 2007, pp. 10-13.

of today's EU citizens before the future generations. As regards rural areas, the question arises what needs to be done to make the economic boom for alternative energy sources benefit them as well.

3.1. Wind energy

In Poland there are significant opportunities for wind energy development. It is an inexhaustible and ever renewable energy source. As a matter of fact, the wind conditions in Poland are characterised by considerable changeability, but given the possibility to monitor them before starting the actual investment project, it is not an obstacle to the development of wind farms in Poland. According to the European Commission, Polish wind energy resources are estimated at approx. 10% of the current demand for electricity[33]. Research conducted by the Institute of Meteorology and Water Management has shown that the wind conditions in Poland are not worse than those in Germany, where several thousand wind power plants are in operation[34]. The Polish coast is the windiest area, and most of Poland's wind power plants are situated there. Perfect places to set up a wind farm are also rural areas characterised by the necessary wind conditions as well as by low density of residential and farm buildings. Energy produced at wind farms can be both an additional energy supply and energy source for agricultural holdings. They are often located in areas requiring the modernisation of the electricity network, with significant energy losses.

Wind power plants can also use the wind for irrigation and drainage purposes in agriculture. Wind pumps make it possible to use much cheaper water from open water basins, which is of particular significance in areas with limited drinking water resources[35]. Moreover, wind energy can be used in agricultural holdings to protect orchards and against frost, for oxygenating ponds and lakes with a view of their biological regeneration, for the purposes of ventilation and even to break the ice on rivers.

Investment in wind power plants requires a long preparatory period. First, measurements of the wind stream should be performed, an environmental impact study should be developed and appropriate permits need to be obtained.

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[33] Z. Kołodziejczyk, Analiza wykorzystania energii wiatru do bezpośredniego napędu urządzeń w rolnictwie, [in:] J. Bowszys, *Możliwości wykorzystania niekonwencjonalnych źródeł energii*, Wyższa Szkoła Agrobiznesu, Łomża 2001, p. 45.

[34] A Cichor, *Ocena możliwości wykorzystania wiatru jako źródła energii w Polsce*, [in:] J. Bowszys, *Możliwości wykorzystania niekonwencjonalnych źródeł energii*, op. cit., p. 37.

[35] Z. Kołodziejczyk, Analiza wykorzystania energii wiatru do bezpośredniego napędu urządzeń w rolnictwie, [in:] J. Bowszys, *Możliwości wykorzystania niekonwencjonalnych źródeł energii*, op. cit., p. 52.

These are costly activities and potential investors may be discouraged at the very beginning. Moreover, the preparations are not the only factor extending the time horizon of wind power investments, the waiting time for wind turbines is also long. Nonetheless, benefits of this type of investment for rural areas are considerable. Firstly, energy generated from renewable sources is environment-friendly, and considering the need to fulfil the obligations stemming from the "3x20" objective and the CO2 emission trading scheme, it will gain in importance and have priority over energy generated from fossil fuels. Secondly, the lease of land for the windmills can be an additional source of income for landowners. Investments in wind power plants can also be called social projects since they require the citizens' cooperation (windmills are constructed on large areas, often belonging to more than one owner).

3.2. Biomass energy

Solid biomass is "an organic, non-fossil material of plant origin, used as fuel to generate heat or electricity"[36]. Biomass energy is converted into other types of energy as a result of: combustion, gasification in special reactors and then combustion or use for the propulsion of gas turbines, aerobic and anaerobic digestion or esterification. To generate energy from biomass, the following are used: straw, wood, oil seeds, plants intended for alcoholic fermentation, organic waste of plant origin[37]. Biomass combustion is less harmful than the combustion of other fuels. There are smaller quantities of harmful elements released during the combustion process.

According to data gathered by the Central Statistical Office, in 2006 the share of solid biomass in renewable energy sources in Poland was 91.4%[38]. Due to the fact that biomass is widely available, it has a huge potential and it can play a vital role in the European power sector. Also in Poland, a country abundant in forests, with a high share of agricultural crops, biomass is and will remain the fundamental source for the generation of "green energy". Moreover, experts point out that there are favourable conditions for growing different crops in Poland, also energy crops[39]. At present, biomass is one of the main sources

[36] *Energia ze źródeł odnawialnych w 2006 r.*, op. cit., p. 9.
[37] A. Paszkowska, D. Paszkowski, Perspektywy, możliwości przetwarzania biomasy roślinnej na nośniki energii, [in:] J. Bowszys, *Możliwości wykorzystania niekonwencjonalnych źródeł energii*, op. cit., p. 125.
[38] *Energia ze źródeł odnawialnych w 2006 r.,* op. cit., p. 16.
[39] Collective work ed. by. K. Czaplicka-Kolarz, *Scenariusze rozwoju technologicznego kompleksu paliwowo-energetycznego dla zapewnienia bezpieczeństwa energetycznego kraju*, vol. II, op. cit., p. 85.

of renewable energy in Poland. It is particularly worth mentioning that besides being used to generate heat in households (mostly straw), biomass is also used in districts as fuel for heating schools, offices or health care institutions[40].

Energy crops in Poland, now eligible for EU support, provide an opportunity for rural development. Biomass can be used as a heating fuel which is not as harmful to the environment as producing heat by coal combustion. Moreover, growing energy crops offers new job opportunities not only in farming, but also in supplying the products to power plants. Energy crops can be grown in industrial and post-industrial areas unfit for food crops. Nonetheless, despite the unquestionable advantages of energy crops, this type of farming not always attracts farmers' interest. Therefore, there are cases where power plants, wishing to meet the obligation to generate certain quantities of energy from renewable energy sources, set up their own plantations of energy crops. Perhaps it stems from an opinion that such crops are not very profitable, which is, in fact, not true as the price of biomass rises as a result of increasing demand[41]. Furthermore, the rural population is not sufficiently aware of the advantages of energy crops.

3.3. Biogas

Biogas is a gas comprised primarily of carbon dioxide and methane, obtained in the process of biomass digestion (or fermentation)[42]. Biogas is also produced by anaerobic digestion of manure originating from bovine animals and pigs, remnants of feedingstuffs, agri-food industry plants as well as waste from breweries or distilleries. Biogas is an environment-friendly fuel as during the combustion process limited quantities of harmful compounds are released (mostly nitrogen oxides). An agricultural installation producing biogas consists of a storage tank for the input material, digester with feeding, heating and mechanical stirring systems, biogas tank, heating system or a system to generate heat or electricity, tank for the digested product (slurry) and a steering-control system of the gas installation[43].

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[40] A. Paszkowska, D. Paszkowski, Perspektywy, możliwości przetwarzania biomasy roślinnej na nośniki energii, [in:] J. Bowszys, *Możliwości wykorzystania niekonwencjonalnych źródeł energii*, op. cit., p. 138.

[41] Collective work ed. by K. Czaplicka-Kolarz, *Scenariusze rozwoju technologicznego kompleksu paliwowo-energetycznego dla zapewnienia bezpieczeństwa energetycznego kraju*, vol. II, op. cit., p. 87.

[42] *Energia ze źródeł odnawialnych w 2006 r.*, op. cit., pp. 10-11.

[43] Możliwości wykorzystania odnawialnych źródeł energii w Polsce do roku 2020, expert analysis by the Institute for Renewable Energy in cooperation with the Institute for Ecodevelopment, Warsaw 2007, at www.ieo.pl, p. 45.

According to the Central Statistical Office data, in 2006 biogas accounted for 1.2% of renewable energy sources in Poland[44]. The significance of biogas as a renewable energy source is forecasted to increase since its potential, as in the case of energy crops, is not sufficiently used[45]. It is partly related to the cost of investment in power plants based on biogas plants (estimated at approx. EUR 3.5 million per 1 MW capacity). Investment costs of a medium-sized biogas plant range from approx. PLN 4.0 million to PLN 15.0 million. The simple pay-back time of such investment is about 15 years, and if the biogas plant uses for digestion input materials such as waste from food industry, municipal waste or sewage sludge, this period can be shortened to 10 years. However, it is worth considering that the EU contribution of 50 to 70% shortens the investment pay-back time even two times[46]. Therefore, the EU funds play a significant role in supporting such projects.

3.4. Hydropower

Hydropower, or actually the power of falling water, means the energy generated by water flowing from a higher to a lower level, for example resulting from the damming of water. This type of energy is used in hydropower plants (or hydro-electric power stations). However, as it interferes with the environment, only electricity production at small hydropower plants set up on natural water tributaries is viewed as a renewable energy source[47].

According to the Central Statistical Office, in 2006 hydropower accounted for 3.5% of renewable energy sources in Poland. Moreover, in that period hydropower had the biggest share in electricity generation (almost 53%)[48]. Owing to the protection of areas of high natural value, including plant and bird species protection, hydropower plants cannot be build at any randomly selected place on a river. Furthermore, such investments require the cooperation of local authorities and institutions which issue relevant permits and assess the environmental impact of projects. Nevertheless, the share of hydropower as a source of "green energy" will be growing. The prospects for the setting up of small low-capacity hydropower plants for local needs are particularly promising.

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[44] *Energia ze źródeł odnawialnych w 2006 r.*, op. cit., p. 19.
[45] Cf. *Możliwości wykorzystania odnawialnych źródeł energii w Polsce do roku 2020*, op. cit., p. 44 and p. 53.
[46] See *Energia odnawialna w rolnictwie. Przygotowanie i istotne aspekty projektów inwestycyjnych ze szczególnym uwzględnieniem biogazowni rolniczych*, www.savonaproject.eu
[47] Cf. *Energia ze źródeł odnawialnych w 2006 r.*, op. cit., p. 10.
[48] Ibidem, p. 16 and p. 19

3.5. Geothermal energy

Geothermal energy is available as heat derived from the Earth's interior in the form of hot water or steam[49]. The heat is exploited through installing a special system of pipes or via cold water circulation. Due to its form, geothermal energy is used directly for heating or for electricity production. However, in order to be used directly, geothermal water needs to have sufficiently high temperature. Geothermal waters used for heating are especially popular in Iceland, where they are widely available.

According to the Central Statistical Office, in 2006 the share of geothermal energy in renewable energy sources in Poland was 0.2%[50]. Some experts claim that geothermal energy resources in Poland are enormous (up to 387,000 EJ, i.e. three times more than the current global consumption of energy), which points to the underused potential of this type of energy[51]. Some districts and municipalities in Poland come to recognise the benefits of geothermal energy. For example, Poland's first and the world's second power plant using geothermal waters, additionally heated by the combustion of energy crops, will be built in Uniejów near Łódź by 2010. Although its capacity is only estimated to be approx. 600 KW, it will be enough for heating a major part of the town[52]. This project, unique in the world, is being implemented in cooperation with local authorities and scientists from the Technical University of Łódź.

3.6. Solar energy

Solar energy is energy generated from solar radiation. Its main advantages are the following: quantity, inexhaustibility and no environmental pollution. Due to the climatic and geographical conditions, the significance of solar energy in Poland is limited. It seems that also in the future it will be hard to implement investments in energy generated from solar radiation on a large scale in Poland. However, this type of renewable energy gains in importance at local level, i.e. the use of solar energy for heating water in detached houses or in blocks of flats. Furthermore, solar panels can be also used for drying plants and herbs in agricultural holdings.

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[49] *Energia ze źródeł odnawialnych w 2006 r.*, op. cit., p. 11.
[50] Ibidem, p. 16 and p. 19.
[51] *Możliwości wykorzystania odnawialnych źródeł energii w Polsce do roku 2020*, op. cit., p. 44 and pp. 35-36
[52] *Pierwsza w Polsce i druga na świecie elektrownia*, at www.energia.biz.pl

4. EU programmes supporting renewable energy sources for rural areas

Investment in renewable energy sources is one of the fields of the power sector whose significance in the EU will grow. Nonetheless, such innovative projects require a number of support measures which will make it possible for the share of RES in the EU and Polish energy balances to meet the targets set in the EU documents (in the EU 20%, in Poland 15% by 2020). Apart from that, there is a widespread opinion that "green energy" is an extravagance with no tangible commercial results rather than an alternative to even replace energy generated from fossil fuels. Certainly, much remains to be done in the field of education and the dissemination of knowledge on RES. However, a wide range of possibilities to obtain EU funds allocated to financing investments in alternative energy sources are an incentive to do so.

4.1. Rural Development Programme

The development of renewable energy sources in the countryside offers an opportunity for rural development. RES can contribute to building new environment-friendly infrastructure, encourage entrepreneurship as well as creating new non-agricultural jobs in rural areas. It should be noted that Poland has great possibilities of the development of renewable energy sources due to enormous resources of energy carriers, favourable environmental conditions as well as the need to make the Polish power sector more environment-friendly. Therefore, rural areas face a unique opportunity to exploit the growing interest in RES. Furthermore, rural and urban-rural districts can additionally benefit from RES investments as such projects are eligible for financial assistance, e.g. under the Rural Development Programme. Such support can be granted to projects implemented in towns and villages in rural or urban-rural districts, excluding towns with more than 5,000 inhabitants or towns in urban districts with less than 5,000 inhabitants. The maximum value of a project concerning renewable energy sources eligible for support is PLN 3 million.

The Rural Development Programme provides for the financing of investments aimed at setting up installations using RES and support for holdings wishing to undertake such activities. Financial assistance concerning RES was covered by the following measures the Programme: under Axis 1 "Improving the competitiveness of the agricultural and forestry sector" these include: "Modernisation of agricultural holdings" and "Adding value to agricultural and forestry products"; under Axis 3 "Quality of life in rural areas and diversifica-

tion of the rural economy" the measures are: "Diversification into non-agricultural activities", "Creation and development of micro-enterprises" and "Basic services for the economy and rural population".

Table 1. EU instruments for financing investments in renewable energy

Programme	**Axis**	**Measure**
Rural Development Programme	Axis 1 Improving the competitiveness of the agricultural and forestry sector	Modernisation of agricultural holdings
		Adding value to agricultural and forestry products
	Axis 3 Quality of life in rural areas and diversification of the rural economy	Diversification into non-agricultural activities
		Creation and development of micro-enterprises
		Basic services for the economy and rural population
Operational Programme "Infrastructure and Environment"	Environment-friendly energy infrastructure	Generating energy from renewable sources
		Development of the renewable energy industry
		Fuel production from renewable sources
	Energy security	Networks increasing the accessibility of energy from renewable sources
		Development of electricity transmission systems
		Modernisation of existing distribution networks
Regional Operational Programmes	Environment, risk prevention and the power sector (Operational Programme of the Mazowieckie voivodship)	Air protection, power sector
	Environmental protection infrastructure (Operational Programme of the Małopolskie voivodship)	Improving air quality and increasing the use of renewable energy sources
Direct payments for energy crops	Rural producers growing energy crops can apply for payments of EUR 45 per hectare. The maximum area of agricultural land within the EU for which the aid may be granted is 2 million ha. If this limit is exceeded, reductions are applied EU-wide. In 2007 the reduction rate for crops was 0.70337, which means that the Agency for Restructuring and Modernisation of Agriculture multiplies the declared area under crops by 0.70337, and then calculates the payment for this area.	

Source: Own study.

The measure "Modernisation of agricultural holdings" gives them the opportunity for modernisation, improvement of production quality and adjusting farming activities to the current market needs. The measure aims at co-financing the modernisation of agricultural holdings so as to improve their competitiveness through increased efficiency of using the existing and modernised production factors[53]. The concept of modernisation is very broad and hence the measure covers all investments aiming at the improvement of the holding's situation in respect to farming conditions, infrastructure, health and safety at work, the environmental protection. Therefore, this type of support can be granted to investments such as construction or repair related to the modernisation of buildings, the purchase or modernisation of machinery, the establishment and modernisation of orchards, the acquisition of patent rights, licenses and fees for services connected with the preparation of necessary documents[54]. The measure in question is targeted at natural or legal persons and partnerships engaged in agricultural activities. The maximum amount of support per beneficiary and per agricultural holding cannot exceed PLN 300,000. The public contribution ranges from 40 to 75% depending on the type of investment[55]. The measure "Modernisation of agricultural holdings" is significant in terms of adjusting agricultural holdings to market conditions and improving their competitiveness. However, it seems that in Poland the measure will primarily support agricultural holdings planning to purchase agricultural machinery or modernise storage buildings rather than investments related to RES. The measure does not exclude RES investments, but it determines such a broad scope of eligible modernisations that it gives no incentive to invest in RES to beneficiaries with insufficient knowledge in this respect.

Under the measure "Adding value to agricultural and forestry products" support is granted for projects concerning the processing of "solely agricultural products into food or non-food products, including agricultural products used for energy purposes."[56] Moreover, the scope of the measure also covers investments aiming at generating energy from renewable sources. The measure is oriented to increasing the competitiveness of processing enterprises, as well as to the improvement of the production conditions and compliance with Community standards. The Rural Development Programme specifies that support can be granted to natural persons, legal persons or organisational units without legal personality with registered processing activities and operating as small or medium-sized en-

[53] *Rural Development Programme for 2007-2013* (RDP 2007-2013), op. cit., p. 191.
[54] Ibidem, p. 193.
[55] Ibidem, p. 196.
[56] Ibidem, p. 92.

terprises[57]. Aid under the measure concerns companies engaged in the processing of all kinds of products: milk, vegetables, fruit, cereals, potatoes, hemp, as well as in the processing of agricultural products for the purposes of the power sector, which is important in terms of renewable energy sources. As in the measure "Modernisation of agricultural holdings", investments eligible for support include: the construction, modernisation and reconstruction of buildings used for processing activities, the purchase of machinery and equipment used in processing, the purchase of special modes of transport, the purchase of environment-friendly installations and equipment, the acquisition of software, patents, the preparation of the project's documentation[58]. Depending on the type of investment, aid intensity ranges from 25% to 50%. The measure "Adding value to agricultural and forestry products" represents a mechanism encouraging investments in renewable energy sources since it directly provides for support for growers of energy crops. It is of particular importance from the perspective of rising demand for this type of crops on the part of power plants wishing to limit CO2 emissions.

Axis 3: "Quality of life in rural areas and diversification of the rural economy" is the answer to ever-growing challenges to rural areas, connected with the dynamic market changes. Rural areas and agricultural holdings are in particular danger of marginalisation in the situation where the success of undertakings is determined by their commercial character, innovativeness or the proximity to the final user. Nevertheless, owing to support obtained under the axis in question, rural areas also have a chance to switch to more efficient economic activities. One of the measures specifically addressing the ongoing changes is the "Diversification into non-agricultural activities", the aim of which is to promote taking up activities not related to agriculture. It may contribute to the improvement of the income situation of farmers and to the increase in rural employment. As a matter of fact, it is not possible to undertake all types of economic activity in rural areas. Nevertheless, the Rural Development Programme clearly specifies what is considered to be non-agricultural activities: services for agricultural holdings or for forestry; wholesale or retail trade; craftsmanship, construction and installation works, transport services, tourist services, the processing of agricultural products, warehousing and storage of goods, advisory and IT services and, which is especially important with regard to RES support, the production of energy products from biomass[59]. The beneficiaries of the measure "Diversifi-

[57] *Rural Development Programme for 2007-2013* (RDP 2007-2013), op. cit., p. 201.
[58] Ibidem, pp. 202, 203.
[59] Ibidem, pp. 275, 276.

cation into non-agricultural activities" can only be persons covered by agricultural social insurance.

The measure "Creation and development of micro-enterprises" is oriented towards stimulating rural entrepreneurship. It is aimed at supporting the establishment of micro-enterprises as such companies contribute to the diversification of economic activity, job creation and the economic development of rural areas. The measure in question promotes the setting-up of micro-enterprises engaged in non-agricultural activities, the scope of which is the same as those eligible for support under the measure described previously. Beneficiaries of the measure "Creation and development of micro-enterprises" include natural persons, legal persons and organisational units without legal personality operating as micro-enterprises, i.e. those which employ fewer than 10 persons and whose turnover is less than the PLN equivalent of EUR 2 million[60]. Depending on the number of new jobs as specified in the business plan, the amount of support granted under the measure in question ranges from PLN 100,000 to PLN 300,000 and accounts for a maximum of 50% of eligible costs of the project[61]. The measure is particularly important as it contributes to the activation of rural areas; nevertheless, as regards RES, one might ask why the support is limited to investments related to biomass.

The measure "Basic services for the economy and rural population" explicitly refers to investments oriented towards the production, use and distribution of energy from renewable sources. The aim of the measure is to improve infrastructure in rural areas, necessary to create better conditions for economic activity and to attract new investments. Apart from projects connected with the generation and distribution of energy from renewable sources, assistance is also granted to undertakings in the field of water supply and waste water treatment in districts[62]. This measure is targeted at rural districts, rural-urban districts, excluding towns with more than 5,000 inhabitants, as well as at urban districts, excluding localities with more than 5,000 inhabitants[63]. The maximum contribution rate is 75% of eligible costs of investment, and the amount of support ranges from PLN 200,000 to PLN 4,000,000, depending on the type of project. The measure "Basic services for the economy and rural population" offers an opportunity to obtain financial assistance for projects related to renewable energy sources (RES). Nevertheless, under the measure in question it is also possible to be granted support for projects concerning waste water treatment and the

[60] *Rural Development Programme for 2007-2013* (PROW 2007-2013), op. cit., p. 282.
[61] Ibidem, p. 282.
[62] Ibidem, p. 286.
[63] Ibidem, p. 287.

construction of sewage systems. As such facilities are frequently absent, especially in rural areas, it seems that those projects have priority and are more likely to be implemented as compared to RES investments. It is difficult to imagine that local authorities, with the support of inhabitants, would first set up wind turbines in districts without sewage systems. It is within the discretion of local authorities. Nevertheless, the measure does not encourage RES investment, even with the percentage level of support.

4.2. Other assistance programmes

For the purposes of energy security, Poland received support in the amount of more than EUR 1.7 billion under the Infrastructure and Environment Programme for the years 2007-2013 (including Axis X: Environment-friendly energy infrastructure and Axis XI: Energy security). Within the framework of the Programme, projects with a minimum value of PLN 20 million are eligible for financial support. The maximum contribution is 53%[64]. Exceptionally, the required minimum value of PLN 10 million concerns projects aimed at producing energy from biomass or biogas as well as at the construction or development of small hydro-electric power stations. Axis X comprises measures such as high-performance energy production, efficient energy distribution, the thermomodernisation of public buildings, the generation of energy from renewable sources, the production of fuels from renewable sources, the development of the renewable energy industry, networks increasing the accessibility of energy from renewable sources. Axis XI includes measures such as the development of transmission systems for electricity, natural gas and crude oil, the construction and expansion of underground storage areas of natural gas, providing access to the gas network in areas not supplied with gas as well as the modernisation of the existing distribution networks[65]. The two axes are targeted at local authorities, entrepreneurs, entities providing public services on the basis of an agreement with a local authority, entities selected in accordance with the regulations on public procurement and providing public services on the basis of an agreement with a local authority, churches, ecclesiastical legal persons and their associations as well as at other religious associations. In order to be granted support, it is indispensable to obtain the necessary permits and decisions, also those concerning the environmental impact.

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[64] Renewable energy in agriculture. Preparation and relevant aspects of investment projects with particular consideration of agricultural biogas plants), see www.savonaproject.eu.

[65] *Operational Programme Infrastructure and Environment 2007-2013*, Energy Sector in the OP I&E at www.mg.gov.pl.

Due to the minimum required value of projects, one may say that the "Infrastructure and Environment" Programme is intended for major investments and large entities, i.e. entrepreneurs or municipalities. At the same time, regional operational programmes also offer support for investing in renewable energy sources, but on a smaller scale. Therefore, investments which do not meet the required thresholds (i.e. PLN 20 million and PLN 10 million for projects concerning biomass, biogas and small hydro-electric power stations) may be eligible for support under regional operational programmes. Besides, the minimum value of investment projects in areas covered by the PROW (Rural Development Programme) is PLN 3 million)[66]. As in the case of the "Infrastructure and Environment" Programme, beneficiaries of the EU support include local authorities and their associations, organisational units with legal personality, government administration, national and landscape parks, health care institutions operating in the public health care system, research units, higher education establishments, non-governmental organisations, churches and religious associations as well as legal persons of churches and religious associations, water companies and entrepreneurs[67].

Depending on the operational programme, the measures concerning renewable energy sources in a given region are aimed at increasing the share of "green energy", improving the quality of air and of the environment in particular areas of the region as well as ensuring the security of energy supply to the region and, indirectly, to Poland. Within the framework of operational programmes, financial aid may be granted to projects such as the construction and extension of RES installations, undertakings applying modern technologies and know-how related to using renewable energy sources as well as the construction and modernisation of networks transmitting and distributing energy from RES installations.

Summary

Investments in renewable energy sources offer an opportunity for the development of rural areas, including big districts and small villages of a typically agricultural character. Due to the regulations adopted by the European Union aimed at increasing the share of renewable energy in total energy production in order to limit CO_2 emissions, investments in "green energy" will gain in impor-

[66] J. Mikuła (Ministry of Regional Development), *Renewable energy, EU support*, www.mrr.gov.pl.
[67] *Dotacje UE w Polsce 2007-2013*, see: www.dotacje.org.pl.

tance. The renewable energy boom is followed by real measures undertaken by the European Commission to guarantee financial support for such projects. Furthermore, considering that one of the main tasks of the EU is to ensure the security of energy supply, also through the promotion of generating energy from RES, it is difficult to imagine a better climate for such investments.

The situation of Poland in this aspect is specific. On the one hand, the country's power sector is based on coal combustion producing high quantities of CO_2, and the share of RES in the energy balance is minor. Furthermore, it will be difficult for Poland to meet the limits for CO_2 emissions and the required 15% share of the use of renewable energy sources in the final energy balance by 2020. On the other hand, the gap between the Polish power sector and those of Western countries with more differentiated energy carriers (cf. Spain, Austria, France) offers an opportunity for Poland to catch up with the Western countries, provided that appropriately coordinated measures are undertaken. It is not only the question of satisfying the EU obligations but also the problem of ensuring the energy security of Poland. Moreover, Poland has enormous resources of renewable energy carriers (biomass, geothermal waters) as well as favourable climatic and geographical conditions (e.g. for the location of wind turbines on the Polish Baltic Sea coast).

The development of the renewable energy sector will contribute to the development of many sectors of the economy and of regions, especially of rural areas. RES investments in rural areas may stimulate the diversification into non-agricultural activities and help create new jobs, promote the establishment of new micro-enterprises, encourage entrepreneurship, and foster the creation of a new environment-friendly infrastructure, also attracting new investors to a given area. It is not a mere question of electricity supply to inhabitants and enterprises, such undertakings also have a social and marketing aspect. Already now, the press, not only professional, announces that a given locality or district has invested in renewable energy sources. The implications of such information are similar: local authorities are perceived as efficient and innovative and the district as modern and progressive. It is much easier to invest in districts which show initiative and are open to undertakings related to renewable energy sources which for some people still remain peculiar ecological extravagancy. At the same time, in Western countries, also in rural areas, "green energy" becomes a standard solution which emphasises the values of such areas, also in terms of the environmental protection[68].

[68] Cf. *Activity of the Samso Energy Academy in Denmark, promoting environment-friendliness and RES and successfully involving rural areas in renewable energy problems*, www.energiakademiet.dk

It is worth considering the possibilities for investing in renewable energy in rural areas as it may contribute to the diversification of economic activities of agricultural holdings. For the renewable energy sector to develop in rural areas, it is necessary to adopt a comprehensive approach aimed at the elimination of social, legal and administrative barriers. Furthermore, it will be difficult to achieve RES development in rural areas without the necessary financial support. This objective is also included in the Rural Development Programme (PROW), which creates the possibility to obtain the co-financing of investments in renewable energy. It is especially important that the implementation of the Programme should contribute to increasing the share of renewable energy in rural areas, thus promoting their economic development. The measures: "Modernisation of agricultural holdings", "Adding value to agricultural and forestry products" (Axis 1) and "Diversification into non-agricultural activities", "Creation and development of micro-enterprises", "Basic services for the economy and rural population" (Axis 3) include elements related to financial support for investments in "green energy". Some objections may be raised that even though investment in RES is one of the available investment options contained in the above-mentioned measures, it will often be treated as less important due to the backwardness of rural districts (e.g. the measure "Basic services for the rural population", supporting investments in RES as well as investments in water supply and sewage systems). Perhaps it would be a better solution to dedicate one of the measures, only and exclusively, to support for investments in renewable energy. Nevertheless, the advantage of the Programme is that it offers an opportunity for the beneficiaries to obtain subsidies for RES projects, which should not be missed. There is a role for social organisations to promote RES and inform about the available sources of financial assistance. Comprehensive activities and cooperation between the organisations and authorities which are decision-making centres may create favourable conditions for the development of renewable energy. Together with the EU support, also under the Rural Development Programme, the prospects of transforming the Polish power industry into a modern and more environment-friendly sector will then become more real.

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Support measures for rural entrepreneurship development in sectoral policies

The search for methods for improving the economic situation of the rural population, alleviating the consequences of registered and hidden rural unemployment, and finally for improving agricultural structures attracts significant interest to issues related to rural entrepreneurship. On joining the European Union structures, Poland gained new instruments to promote rural entrepreneurship, co-financed from the Community budget.

In the period of 2007–2013, Polish companies will be able to obtain almost EUR 12 billion for the implementation of their projects. As support instruments are targeted not only at entrepreneurs, but also at business environment institutions, the utilisation of the available funds will depend on the activity of entrepreneurs. The actual amount of appropriations used for the promotion of rural businesses and the extent to which such funds will contribute to the organisation of the institutional environment of enterprises will depend on the level of information among rural entrepreneurs and on policies pursued by regional and local governments.

Support programmes targeted at the rural population are based on public participation. On the one hand, the scope of a policy instrument is defined by specifying the target group eligible for support, but on the other hand, the funds only go to those who actively seek financial assistance offered. It represents a type of entrepreneurship described as the ability to exploit available opportunities as well as flexibility and adaptability to changing conditions[1]. Its intensity depends not only on individual character traits, but also on local communities, mentality and social models. Such an approach requires the recognition of information (in this case information on the possibility to obtain aid) as a source and a factor influencing entrepreneurship development.

Whether the opportunity to use external financing sources to establish and develop a company is exploited will depend on the level of knowledge in the rural population as regards the prospects for business development. Local and regional authorities as well as information and advisory institutions catering for

[1] Cf. P.F.Drucker, *Innowacje i przedsiębiorczość. Praktyka i zasady*, PWE, Warsaw 1992, p. 34.

the needs of rural communities play a vital role in this respect. Apart from direct measures for the development of rural enterprises, local governments additionally influence the process via investments improving technical infrastructure, a growth factor for the local economy reflected in the number of companies operating in a given area[2]. In addition to structural policy, the state influences entrepreneurship development through its fiscal policy as well as through administrative and legal regulations for business start-ups.

1. Selected elements of the policy for small and medium-sized enterprises in Poland and in the European Union

Small and medium-sized enterprises (SMEs), i.e. those which employ fewer than 250 persons, represent the majority of the European economy: there are approx. 23 million of SMEs in the European Union, accounting for ca. 75 million jobs and 99% of all companies[3]. SMEs are a key element of the European industry, and in certain sectors, e.g. construction, the textile and furniture industries, they ensure as much as 80% of employment. Furthermore, SMEs are a rich source of entrepreneurial and innovative initiatives as well as contributing to the improvement of economic and social cohesion.

Community support for SMEs is provided by EU programmes for enterprise, i.e. the Multiannual Programme for Enterprise and Entrepreneurship and the Competitiveness and Innovation framework Programme[4]. However, as SME policy is often translated by initiatives conceived and delivered at local and regional levels, other important sources of funding should be used, such as funds for cohesion policy.

Structural funds play a key role in promoting entrepreneurship and skills as well as increasing SMEs growth potential, e.g. by fostering the technological development of SMEs, providing business support services and strengthening SME cooperation. Structural funds have provided approx. EUR 21 billion to SMEs in the EU in the period of 2000-2006 and the orientations suggested in the Strategic Guidelines for cohesion further reinforce this

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[2] See D. Kołodziejczyk, A. Wasilewski, *Identyfikacja instytucji działających na obszarach wiejskich*, IERiGŻ-PIB, Warsaw 2005.

3 See Communication from the Commission, *Implementing the Community Lisbon Programme: A policy framework to strengthen EU manufacturing – towards a more integrated approach for industrial policy,* COM(2005) 474.

[4] See European Commission, *Implementing the Community Lisbon Programme – Modern SME Policy for Growth and Employment*, COM(2005) 551, final version of 10 November 2005.

commitment[5]. The Strategic Guidelines for rural development highlight the role that support for the creation of micro-enterprises can play in the diversification of the rural economy[6].

In 2008 the European Commission published the *Small Business Act for Europe* (SBA), based on a set of ten principles to guide measures within the scope of SMEs policy to be undertaken by both the Commission and the Member States.

The Commission proposes a political partnership between the EU and Member States reflecting the political will to recognise the leading role of SMEs in the EU economy as well as introducing, for the first time, a comprehensive policy framework for the EU and its Member States.

The document is based on the conviction that achieving the best possible framework conditions for enterprises depends, primarily, on society's recognition of entrepreneurs, including crafts, micro-enterprises, family businesses and social economy enterprises, as well as on increasing the attractiveness of starting a business. The above implies that the rather unfavourable perception of entrepreneurs and risk-taking in the EU should change.

The *Small Business Act* includes 10 principles which should be adopted at the highest political level as well as measures to facilitate SMEs' operations. The *Small Business Act* principles mostly concern issues such as improved access to financial support, in particular to research and development aid, reduced VAT rates for local services (e.g. handicrafts involving high unit costs). The SBA also emphasises easier access to public procurement markets, making public administrations more efficient and more responsive to SME needs as well as the elimination of late payments.

After consultations with entrepreneurs and their representatives, in 2008 the European Commission also decided to present new legislative proposals in areas of particular interest to SMEs:

- the General Block Exemption Regulation on State Aids to simplify procedures and cut costs. It will also increase aid intensities for SMEs and facilitate SMEs' access to aid for categories such as training, research and development and the environmental protection.

[5] Communication from the Commission – *Cohesion Policy in Support of Growth and Jobs – Community Strategic Guidelines, 2007-2013*, COM(2005) 299 final.

[6] Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, *Implementing the community Lisbon programme – Modern SME policy for growth and employment*, COM(2005) 551 final.

- a new Statute for a European Private Company to enable setting up "European private companies" (SPE) operating in line with the same uniform rules in all Member States. The SPE was developed to address the current burdensome obligations imposed on SMEs doing business in an international environment. At present, SMEs have to establish various forms of subsidiaries in each Member State in which they wish to operate. In practical terms, the SPE will enable SMEs to register their economic activity in the same form, whether in their own Member State or in another. Operating in the form of a European private company will save entrepreneurs time and money on legal advice, management and administrative work.
- Directive on reduced VAT rates to enable Member States to apply lower VAT rates for locally rendered services, also labour-intensive services, primarily supplied by small and medium-sized enterprises.

The SBA will guide the conception and implementation of policies both at EU and Member State level, including measures such as a second chance for companies having faced bankruptcy, easier access to finance and enabling SMEs to turn environmental challenges into opportunities.

Apart from the existing commitment to reduce administrative burdens by 25% by 2012, enterprises can also count on solutions which will enable setting up a business in less than a week, obtaining all the necessary business licences and permits in less than a month, whereas one-stop shops will provide assistance to facilitate procedures for company registration and the recruitment of employees.

The Commission intends to specify, wherever practical, common commencement dates for regulations/decisions affecting economic activity. The Member States will be requested to consider similar solutions.

The Small Business Act includes an ambitious set of measures enabling small entrepreneurs to make full use of the single market and enter international markets. It would be possible if more resources were allocated to facilitating access for small enterprises to finance, research and development as well as to innovation. Such funds would also promote the participation of enterprises in the process of establishing standards, obtaining public procurement contracts and turning environmental challenges into business opportunities.

The SBA also aims at introducing new methods of attracting interest to entrepreneurship and fostering entrepreneurial mindsets, especially among young people. Young people willing to start their own businesses could gain experience by working in a host SME in another country under the new programme "Erasmus for Young Entrepreneurs". It would help them to improve

their qualifications and contribute to SME networking in Europe. Similar mobility schemes for apprentices are already in place.

The SBA accurately specifies measures to release the full growth potential of SMEs, but the implementation method and formula are the key to success. The solutions presented in the SBA may be seen as possibilities to facilitate access to finance and business operations for small and medium-sized enterprises in the European Union.

Access to relevant funding sources determines the functioning of a company, especially its further development. The degree of availability of financial resources and the conditions for using them by entrepreneurs have a rather significant influence on costs and risks involved in business activities, particularly investment. On the other hand, the conditions for raising such funds (e.g. bank loans) largely depend on the current and anticipated economic situation as well as on the government enterprise policy. In Poland, own resources continue to be the most popular source of financing economic activity, including investment, but external capital has been gaining in importance. Apart from bank loans, capital-market instruments (such as leasing and factoring) are increasingly popular.

Structural funds play an ever-greater role as a source of financing economic activity, especially for small and medium-sized enterprises. Apart from start-up capital granted to newly established enterprises, support for companies is also offered for the development and modernisation of production and service facilities, obtaining access to specialised advisory services, the introduction of innovative solutions, the improvement of staff qualifications or ensuring the compliance with the EU environmental protection standards.

After Poland's accession to the European Union, instruments available under operational programmes increased the possibilities to promote rural entrepreneurship. The most popular support measure for rural entrepreneurs was the "Diversification of agricultural activities and activities close to agriculture to provide multiple activities or alternative incomes", implemented under the Sectoral Operational Programme for the "Restructuring and Modernisation of the Food Sector and Rural Development" for the period 2004–2006. It offered financial aid for projects related to investment involved in undertaking additional economic activities by farmers and their family members. As at 29 February 2008[7], 7,170 applications for the overall amount of PLN 524.8 million were submitted under this measure, whereas payments totalled PLN 251.6

[7] On account of the "n+2" rule applied in the European Union, payments under this measure for the programming period 2000–2006 were effected until the end of 2008.

million[8]. The majority of completed investment projects (over 70%) were implemented in farms not exceeding 4 ESU in economic size, i.e. those where agricultural income is low and should be supplemented from other sources. The most investments concerned services for the rural population (46% of projects), followed by services for agriculture and forestry (29%). Nearly every seventh implemented project regarded the development of rural tourism and tourism services. Direct job creation under this measure is estimated to have been approx. 4,600[9].

Within the financial perspective for 2007-2013, the Rural Development Programme (*Program Rozwoju Obszarów Wiejskich* – PROW) also includes measures aiming at rural entrepreneurship development under Axis III of the PROW (mostly via the "Diversification into non-agricultural activities" and the "Creation and development of micro-enterprises"). The possibilities to finance rural businesses are not limited to funds available under the common agricultural policy. Much greater support opportunities are offered by instruments of sectoral operational programmes. The main scheme targeted at entrepreneurs under the financial perspective for 2004-2006 was the Sectoral Operational Programme for the "Improvement of the Competitiveness of Enterprises" (SOP ICE). It was addressed to business-environment institutions as well as directly to entrepreneurs, with special emphasis on the SME sector. The objective of the Programme was to improve the competitive position of enterprises operating in Poland within the European Single Market by the creation of a strong institutional environment supporting businesses and a shift towards an economy based on innovative enterprises. In order to achieve this goal, the SOP ICE had two priorities: entrepreneurship development and increased innovation by strengthening business-environment institutions and direct support for enterprises.

In 2004-2006, support for the corporate sector was also available under the following:

- Integrated Regional Operational Programme, supporting the corporate sector at regional level via granting aid to micro-entrepreneurs and promoting entrepreneurship in local communities;
- Sectoral Operational Programme "Human Resources", targeted at the unemployed and those wishing to start their own businesses, oriented towards promoting entrepreneurship (especially among women, young people and disabled persons) and improving the adaptability of enterprises;

[8] Ministry of Agriculture and Rural Development, *Program Rozwoju Obszarów Wiejskich na lata 2007-2013,* Warsaw 2007, pp. 37-48.
[9] Ibid., p. 53.

- Sectoral Operational Programme "Fisheries and Fish Processing", covering measures aimed at sea fisheries, inland fishing and fish processing.

The experience from the implementation of structural funds suggests that measures targeted at entrepreneurs attract great interest. As regards the SOP ICE, the most applications were submitted under the measure offering the co-financing of new investment. In the programming period 2007-2013 the EU funds covering categories intended for entrepreneurs primarily include appropriations of the following programmes:

- Operational Programme Innovative Economy – OP IE;
- Regional Operational Programmes – ROPs;
- Operational Programme Infrastructure and Environment – OP I&E;
- Operational Programme Human Capital – OP HC;
- Operational Programme Development of Eastern Poland.

As regards the development of small enterprises in rural areas, the Operational Programme Innovative Economy and Regional Operational Programmes are of greatest significance.

2. Barriers to entrepreneurship development in the light of IAFE-NRI research

Poland's joining the EU structures opened new possibilities for the economic activation of rural areas, playing a very important role in the European policy. New instruments for supporting rural entrepreneurship, which have been available since Poland's accession to the EU, represent a great opportunity to improve the economic situation in rural areas. They also pose a major challenge to the rural population. The effectiveness of programmes aimed at fostering economic growth in rural areas largely depends on positive attitudes of rural residents towards Poland's membership in the EU and on their awareness of the possibilities to obtain external financing for the implementation of projects related to own economic activities. From the point of view of social perception, it is important to ensure that the policy towards rural areas is really adjusted to their needs. On the other hand, increasing the economic activity of the rural population depends on the awareness of the instruments offered by this policy. Information and advisory institutions promote and disseminate knowledge about the EU and funds available to local communities under its structural policy, e.g. through training courses carried out on their own initiative. The effectiveness of activities of local organisations in this field can be assessed on the basis

of rural residents' opinions on the current and future opportunities provided by policies implemented at central, regional and local level.

The data used in this section come from the survey conducted by the Institute of Agricultural and Food Economics – National Research Institute (IAFE-NRI) in the 2nd quarter of 2006. The survey covered 76 villages across Poland, representing a fixed sample in panel field surveys carried out periodically at the Social and Regional Policy Department of the IAFE-NRI. The surveyed villages were deliberately selected to reflect the features of agriculture and the countryside in Poland. Basically, the sample excludes urban-rural areas, workers' villages or particularly attractive tourist destinations.

2.1. Level of knowledge on support programmes for rural entrepreneurship

The awareness of structural aid instruments and practical knowledge about the procedures for allocating funds represent an entirely new factor influencing the development of entrepreneurship in rural areas. According to the survey conducted by the IAFE-NRI in 2006, rural residents' knowledge about the EU is unsatisfactory. Only less than one-fourth of the surveyed villages showed positive effects of the information campaign on the possibilities of starting and developing own businesses. Respondents in such villages indicated that the main source of information on new structural policy instruments were agricultural advisory centres, the ARiMR (Agency for Restructuring and Modernisation of Agriculture) and local information centres.

In the majority of the surveyed villages the level of knowledge about the opportunities offered by EU membership was insufficient. According to the survey, the main reason for this situation was considered to be the absence of a single institutional source of information at district level and the lack of information and training meetings organised in villages.

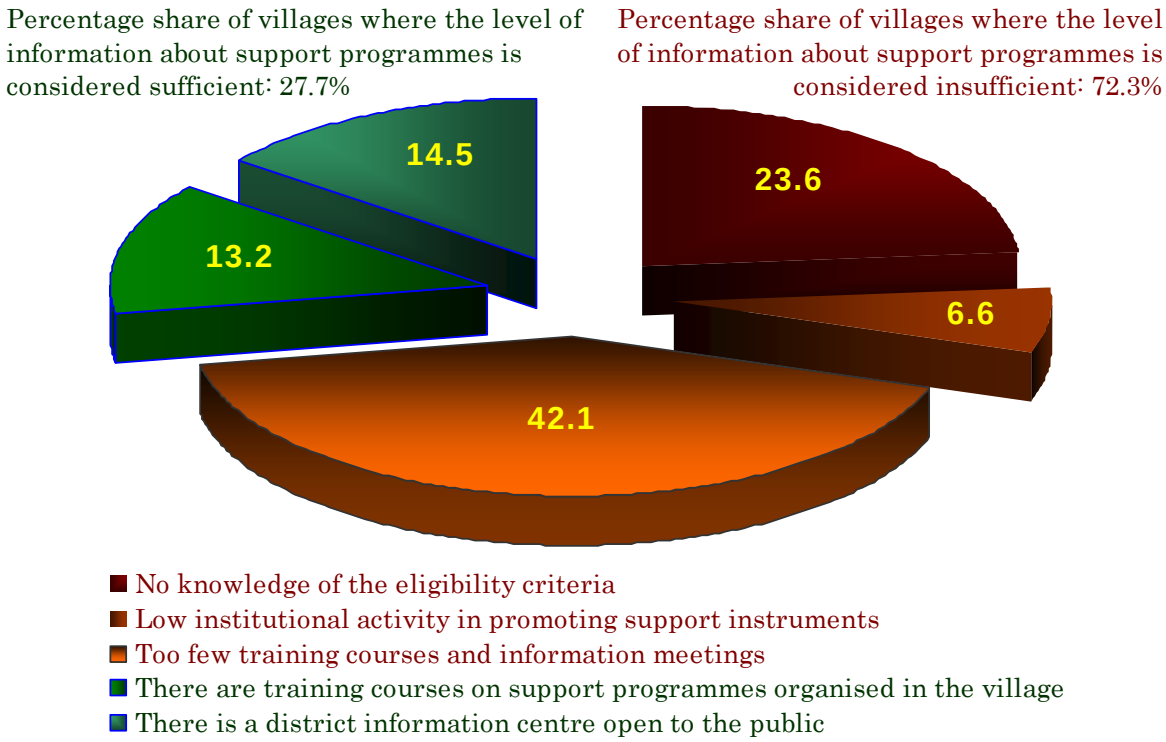
The insufficient level of information results in negative effects such as the still low activity in applying for assistance funds to set up and develop a business. In almost one-fourth of all the surveyed villages there were cases of using EU financial aid for pursuing non-agricultural activities. In this group, nearly 75% benefited from EU funds to start two or more businesses in the village. On the other hand, only in 47% of the villages the residents were interested in obtaining funds for taking up and developing non-agricultural activities. This means that in most cases the respondents wishing to start their own businesses chose other sources of financing rather than structural funds.

In the light of the insufficient level of information and complicated application procedures to obtain support for taking up non-agricultural activities,

it may be presumed that the start-up capital for new business undertakings came from own resources, and only to a very limited extent from external institutional sources (bank loans or EU financial assistance). It is to be expected that in the new programming period of structural policy (2007-2013) this situation will improve since in addition to the appropriations from the EU and national budgets earmarked for promoting non-agricultural activities in rural areas, also support funds for developing infrastructure will stimulate local economies, creating favourable conditions for the development of entrepreneurship.

Due to the low level of information about the EU and new structural policy instruments fostering entrepreneurship, rural residents continue to be sceptical about the current and future possibilities of obtaining funds for starting and pursuing non-agricultural activities in rural areas. Despite the fact that 45% of the respondents considered the development potential of rural entrepreneurship in Poland to have increased after EU accession, positive opinions on the possibilities to spread non-agricultural activities in rural areas in the coming years was only noted in 33% of the surveyed villages.

Fig. 1. Level of knowledge about entrepreneurship support programmes among the residents of the villages surveyed in 2006



Source: Survey of the Social and Regional Policy Department, IAFE-NRI, 2006.

Surveys have demonstrated that rural residents are aware of the entrepreneurship support programmes in place, but treat them as inaccessible to an aver-

age person due to complex procedures and red tape involved in applying for co-financing. It is also widely believed that in the future only young and educated people will be able to effectively use the possibility of obtaining funds for starting and developing small enterprises.

The 2006 survey also revealed increasingly frequent cases of investing money previously earned abroad in business start-ups in home villages. Such an situation was found in slightly more than 10% of the surveyed villages, but on account of the ongoing liberalisation of labour market legislation in the EU-15 countries towards employees from new Member States and increased job migration, the scale of the phenomenon may be expected to rise in the future. Investing funds earned abroad in starting a business results in creating new jobs for the rural population and contributes to activating the local economy.

2.2. Barriers to the development of rural entrepreneurship

Research has shown that in many cases the development of rural entrepreneurship depends on regional and local development policies. The main role in the activation of rural areas should be attributed to local administration from which rural residents expect support through training courses and advisory services with regard to procedural requirements for starting and running a business as well as the possibilities and methods of obtaining funds for such purposes. This is connected with relatively high trust placed in local authorities by the rural population and results from the fact that the rural community views the District Office as the central entity influencing local development.

The information campaign on the possibilities of obtaining financial assistance under support funds is quite dispersed and implemented within the framework of promoting individual operational programmes. There is no single source of information to provide knowledge on funding opportunities from many available sources.

The social perception of measures under structural programmes co-financed by the European Union is positive, but the assistance within the framework of such programmes is regarded as inaccessible to an average person due to red tape. Therefore, start-up capital comes mainly from own resources (savings) and support from families, private loans, and to a much lesser extent from bank loans and aid funds. The absence of own resources is indicated as the most important barrier to entrepreneurship development in rural areas.

The greatest threats to rural entrepreneurship include complicated procedures for starting economic activity, excessive fiscal burdens on companies and difficulties in obtaining external sources of financing for setting up and running

small and medium-sized enterprises. Among the factors indirectly influencing the activation of rural areas, the most significant are information and training activities of district offices and other local institutions aimed at improving the knowledge and raising the awareness of the population. The scale of investment in social and technical infrastructure, particularly in basic infrastructure such as rural roads, is of importance as well.

3. Support for entrepreneurship in sectoral operational programmes

During the programming period 2007–2013, it is possible to apply for funds from two types of operational programmes: centrally or regionally managed. Since national programmes will be aimed at co-financing high-cost projects, small entrepreneurs can count on funds available within the framework of regional operational programmes.

National operational programmes, such as the Operational Programme Innovative Economy (OP IE), the Operational Programme Human Capital (OP HC) and the Operational Programme Infrastructure and Environment (OP I&E), allow the co-financing of high-cost projects. Naturally, micro-entrepreneurs may also apply, but it should be remembered that the financial assistance granted for investment only represents reimbursement of the costs incurred. Therefore, regional operational programmes will be more suitable for such small businesses. They are managed at voivodship level and developed separately for each voivodship, i.e. taking into account relevant regional strategies.

Considering the wide range of issues, this chapter presents examples of measures implemented at the central and regional level with respect to the possibility of using support funds by entrepreneurs.

3.1. Regional operational programmes

Regional operational programmes (ROPs) are mainly aimed at supporting enterprises at the regional level. However, most measures targeted at entrepreneurs within the framework of the SOP Improvement of the Competitiveness of Enterprises in 2004–2006 will be implemented regionally in the programming period 2007–2013. Decentralisation offers rural companies an opportunity for easier access to funds from programmes other than the PROW. A positive result of delegating the responsibility and powers to programme economic development from the central to regional level is the possibility to allocate funds from the ROP budget of each voivodship according to actual

needs as well as stimulating the key economic sectors in the region. The figures included in the 16 draft regional operational programmes show that appropriations assigned for their implementation from the European Regional Development Fund (ERDF) will amount to EUR 18 billion in the years 2007–2013. On average, support for entrepreneurship will account for approx. 30% of ROP funds (Table A1 – see Annex).

All the draft ROPs define similar groups of beneficiaries. Those will comprise both entrepreneurs (including micro, small and medium-sized enterprises) and business environment institutions. The selection of measures (listed in Table A1 – see Annex) targeted at entrepreneurs and business-environment institutions within the framework of regional operational programmes suggests that the ROPs are aimed at the possibility of obtaining comprehensive investment and research assistance as well as contributing to closer cooperation of research and development institutions with entrepreneurs. Furthermore, they are adjusted to the needs and problems specific to each region/voivodship. The presented examples of measures for promoting entrepreneurship indicate that support for entrepreneurs plays a similar role in regional operational programmes.

The regional authorities of the Dolnośląskie voivodship assigned the most funds (EUR 309 million) from the total ROP appropriations to the priority "Enterprises and innovativeness". Preference will be given to companies investing in areas characterised by high unemployment, in rural areas and small towns. The allocation of funds will favour small and medium-sized enterprises whose activities could contribute to the development of tourism in the region. Apart from entrepreneurs, eligible companies include those working on innovative products and processes to be implemented in enterprises, e.g. industrial and technology parks, business incubators, technology transfer centres and research units.

The strategic objective of the ROP for the Kujawsko-Pomorskie voivodship for the years 2007–2013 is "improving the competitiveness of the voivodship and the socio-economic and territorial cohesion of the region". Appropriations allocated for the priority aimed at strengthening the competitiveness of enterprises are over EUR 250 million. These funds will support business environment institutions and investment projects of enterprises introducing modern technologies. New jobs will be created and companies will be able to adjust to environmental protection requirements and other obligations under European Union law.

The ROP budget of the Lubelskie voivodship for the years 2007–2013 exceeds EUR 1 billion, divided into nine priorities. Under the priority "Enterprises and innovativeness" the amount of EUR 243 million was assigned for the devel-

opment of the corporate sector through direct subsidies to micro, small and medium-sized companies, advisory services as well as by research and development in the field of modern technologies[10].

The Regional Operational Programme of the Lubuskie voivodship has a budget of EUR 440 million. Nearly EUR 100 million was assigned to increasing investment in enterprises and strengthening their innovative potential. Any project related to innovative technological solutions and creating links between science and industry is eligible for support. The budget of the Regional Operational Programme for the Łódzkie voivodship amounts to EUR 1.28 billion, over 30% of which was earmarked for experimental research and the purchase of necessary equipment by small enterprises and business environment institutions. Co-financing will be granted to business environment institutions and non-governmental organisations whose projects facilitate the transfer of knowledge from universities to enterprises.

The above-mentioned examples and fund allocations in voivodships suggest that in the years 2007–2013 the Community focuses on small and medium-sized enterprises as they generate a significant share of European Union GDP and provide employment to the majority of working Europeans. Therefore, SMEs will be the main beneficiaries of funds targeted at the private sector, but large companies are not to be overlooked, especially in national programmes. The analysis of the operational programmes shows that small and medium-sized enterprises from rural areas may count primarily on funds available in regions. Moreover, the following pattern can be observed: the bigger the company, the lower the aid intensity. The same applies to the location of the investment. Should it be implemented in a more developed region, the financial assistance will be smaller. This is regulated by the so-called regional aid map. In the first place, support is granted to projects implemented in areas where Polish enterprises are the most backward or to those which contribute the most to increasing competitiveness (innovative IT technologies, products).

3.2. Financial aid for enterprises as exemplified by the Operational Programme Innovative Economy

On 2 October 2007, the European Commission approved the Operational Programme Innovative Economy (OP IE). The main medium-term strategy paper which the OP IE refers to is the revised Lisbon strategy, adopted in 2005,

[10] *Regionalny Program Operacyjny Województwa Lubelskiego na lata 2007–2013*, www.lawp.lubelskie.pl

with two fundamental objectives: economic growth and employment, fully consistent with the goals of sustainable development and the Community strategic guidelines. At the national level such documents include the National Development Strategy 2007–2015, the National Strategic Reference Framework 2007–2013 and the National Reform Programme for the Lisbon Strategy 2005–2008.

The OP IE, managed by the Minister of Regional Development, is aimed to enhance the coherence of interventions within the scope of responsibilities of the ministers competent for the economy, science and computerisation. As a result, it will be possible to adjust products and services of the R&D sector to the needs of enterprises, which should contribute to increasing the transfer of modern commercial solutions to economic operators. The synergy achieved will produce an additional incentive allowing to accelerate economic growth and to create solid foundations for long-term competitiveness of the Polish economy. Based on the analysis of the needs of Poland's economy presented in the diagnosis and of the strategic objectives set in the above-mentioned documents, the main goal of the programme was defined as the development of the Polish economy driven by innovative enterprises.

All the priorities of the OP IE aim at fostering innovativeness in a broad sense, including scientific, technical, organisational as well as financial and commercial activities. Interventions under the OP IE will comprise direct support for enterprises, business environment institutions and R&D units providing high-quality services for enterprises as well as system support for the development of the institutional environment of innovative companies.

One the main priorities of the OP IE concerns investments in innovative enterprises with the aim of increasing the innovativeness of businesses by using modern technological solutions.

It should be stressed that the OP IE is not a continuation of the Sectoral Operational Programme for the Improvement of the Competitiveness of Enterprises 2004–2006. Entrepreneurs wishing to implement investment projects similar to those completed under the popular SOP ICE (subsidies for investments by SMEs) will be able to receive support under one of the 16 regional operational programmes in place in their voivodship. In addition to measures directly targeted at entrepreneurs, there will be system support for networks of business environment institutions and innovative business-related institutions (i.e. technology parks, technology incubators, advanced technology centres).

Under the OP IE projects will be implemented by enterprises, including small and medium-sized ones, business-related institutions and their networks, highly specialised innovation centres, R&D units and central government entities.

Measure 1.4 "Support for goal-oriented projects" is included in Priority Axis 1 of the OP IE, focused on increasing the importance of science in the economy by the implementation of research programmes for the benefit of enterprises. The objective is to improve the innovativeness of enterprises by the application of results of R&D works tailored to their needs. Projects eligible under this measure include technical, technological and organisational undertakings (industrial research, development and preparatory works) conducted by entrepreneurs, individually or in cooperation with research units, as well as those commissioned by entrepreneurs and performed by research units. Eligible costs cover expenditure until the creation of a prototype[11].

Measure 4.1 "Support for the implementation of results of R&D works" represents a continuation of research and development referred to in Measure 1.4. Since it is included in Priority Axis 4, the focus is on the practical application of results of research works in the entrepreneur's business operations. In order to continue such activities under Measure 4.1, the entrepreneur needs to submit a report confirming the completion of industrial research and development works concerned as well as economic analyses and market research carried out to prove the usefulness of introducing R&D results by the entrepreneur. Therefore, the proper completion of the research part of the project determines proceeding to the second stage – the implementation of the results of the conducted research in the enterprise.

Measure 3.3 of the Operational Programme Innovative Economy is defined as the Creation of a system facilitating investment in SMEs. The objective of the measure is to activate the private investment market by creating favourable conditions for starting cooperation between investors and entrepreneurs seeking funds for the implementation of innovative projects[12].

The measure is targeted at business-environment institutions (including existing and newly established investor networks, entities providing advisory services for entrepreneurs) and at small and medium-sized enterprises.

The measure covers project support activities such as:

- stimulating investment readiness by preparing potential and existing entrepreneurs to seek investors and to appropriately present their business ideas, including training courses on forms and methods of external financing of economic activity;

[11] Ministry of Economy, *Program Operacyjny Innowacyjna Gospodarka*, Warsaw 2007, p. 89.
[12] Ibidem, p. 57.

- raising awareness of the services and benefits offered by private investor networks, e.g. business angels networks, by information and promotion measures (targeted at potential or existing investors and entrepreneurs);
- advisory services for SMEs aimed at preparing the entrepreneur to obtain external financing in return for an equity stake (including the examination of the economic and financial standing of the company, market research, the identification of the appropriate form of funding, drawing up necessary documents to attract equity investment, mainly from a private investor, a venture capital fund or the stock market).

In the case of legal persons, the aid intensity may reach 100% of the eligible expenditure. Micro, small and medium-sized enterprises may apply for support not exceeding 50% of the costs actually incurred for this purpose.

It is expected that the implementation of this measure will increase the number of innovative investment projects with significant growth potential by private investors (including business angels). The appropriations for the measure amount to nearly EUR 50 million (with the state budget contribution of EUR 7.5 million, i.e. 15 %).

The objective of the **Innovation Vouchers**[13] programme is to initiate contacts of micro or small enterprises with research units. Financial support under the Innovation Vouchers scheme can be used for the purchase of research and development services provided by a research unit with the aim of designing new or improving existing technologies or products of a given enterprise (the R&D service must comply with item 73 of the Polish Classification of Products and Services – PKWiU).

The programme is targeted at micro and small enterprises which in the application year and during the preceding three calendar years have not used R&D services of any research entities. One entrepreneur may be granted maximum financial support of PLN 15,000, and the aid intensity may be up to 100% of the eligible expenditure. The Innovation Vouchers scheme implemented in 2008–2010 is financed from the state budget, with the total programme appropriations of PLN 30 million.

Loans for the implementation of innovative investment projects are granted by the Polish Agency for Enterprise Development to small and medium-sized enterprises. Eligible expenditure encompasses the following costs:

- implementation of the results of research and development works,

[13] PARP (Polish Agency for Enterprise Development), *Bon na innowacje – wsparcie dla najmniejszych firm,* http://www.parp.gov.pl/index/more/5244

- purchase of national or foreign licences (i.e. the acquisition of rights to use research and technical solutions as well as production know-how and practices),
- purchase and installation of machinery and equipment,
- construction, extension or modernisation of buildings or installations necessary for introducing innovations.

The amount of the loan must not exceed 75% of the eligible costs incurred after the day of concluding the loan contract or the PLN equivalent of EUR 500,000. The loan is granted for a period not longer than 6 years.

Summary

The backwardness and investment needs of small and medium-sized enterprises, especially those operating in rural areas, are enormous and call for the continuation of the policy to facilitate access for enterprises to investment subsidy schemes for investments aimed at the modernisation of machinery or the construction of necessary production and storage buildings. Moreover, since they have knowledge of business opportunities and barriers to entrepreneurship development in their area, local governments should support the creation of a favourable infrastructural environment for enterprises. Therefore, it seems that in the future measures implemented under regional operational programmes will be the most effective in this respect.

Innovativeness in business activities arises from complex interactions between individuals, organisations and their operating environment[14]. Apart from investment support, there should be also subsidy programmes for companies and institutions which need more sophisticated instruments of promoting the development of innovative systems. This is the orientation of all the measures under the Operational Programme Innovative Economy.

Subsidies for the acquisition of advisory services rendered by external consultants should be continued. Entrepreneurs increasingly recognise the benefits of improving staff qualifications, which will probably result in increased understanding of the purposefulness of hiring external consultants to solve business problems.

[14] Cf. Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, *Innovation policy: updating the Union's approach in the context of the Lisbon strategy*, COM(2003) 112 final, Brussels, 11 March 2003.

The pace of change in the modern world requires the potential of decentralisation to be released. For more than a decade, public investment in Europe has been growing at local and regional level and decreasing at central level. The development of entrepreneurship increasingly depends on policies implemented by local authorities aiming at developing business environment infrastructure. Decentralisation allows to exploit territorial capital, which could become the growth engine for Poland's economy.

The analysis of the possibilities for obtaining business development support suggests that small and medium-sized enterprises operating in rural areas may count primarily on assistance under regional programmes. The decentralisation of the flow of funds for enterprises is also justified by the role played by local authorities in the economic growth of rural areas. Research has confirmed that the lower the level of administration the greater rural residents' knowledge of and trust in authorities. This is also connected with higher expectations for economic policy implemented at this level. It also clearly confirms the need to carry out coordinated information campaign on the availability of funds to persons planning to start their own businesses.

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Annex

Table A1. Allocation of funds for supporting enterprises under Regional Operational Programmes and estimated number of beneficiaries in 2007-2013.

NAME	BUDGET (EUR million)	SHARE IN THE PROGRAMME BUDGET (%)	ESTIMATED NUMBER OF BENEFICIARIES	
REGIONAL OPERATIONAL PROGRAMME FOR THE DOLNOŚLĄSKIE VOIVODSHIP FOR 2007-2013	1,213,144,879	100.0		
Priority 1: Increasing the competitiveness of Dolnośląskie enterprises ("Enterprises and Innovation")	461,092,032	38.0	Number of projects within R&D in SMEs	64
			Number of projects concerning direct investment support for SME	1,000
			Number of counselling projects provided for companies in rural areas	90
OPERATIONAL PROGRAMME FOR THE KUJAWSKO-POMORSKIE VOIVODSHIP	1,118,828,024			
Priority 5: Increasing the competitiveness of companies	296,489,426	26.5	Number of enterprises granted loan funds	1,760
			Number of enterprises granted guarantee funds	4,311
			Number of enterprises granted support	560
OPERATIONAL PROGRAMME FOR THE LUBELSKIE VOIVODSHIP	1,359,828,881	100.0		
Priority 1: Entrepreneurship and innovation	285,564,065	21.0	Number of enterprises granted direct support	2,302
LUBUSKIE REGIONAL OPERATIONAL PROGRAMME FOR 2007-2013	516,674,234	100.0		
Priority 2: Stimulating investment growth in enterprises and strengthening innovation potential	117,538,175	22.7	Number of projects within direct investment support for the SME sector	400
			Number of projects within information society	30
			Number of projects within R&D	10
			Number of cooperation projects between enterprises and research units	10
OPERATIONAL PROGRAMME FOR THE ŁÓDZKIE VOIVODSHIP	1,282,338,752	100.0		
Priority 3: Economy, innovativeness, entrepreneurship	418,035,148	32.6	Number of projects within direct investment support of SME sector	2,800
			Number of projects within R&D	20
			Number of cooperation projects between production units and research units	30
			Number of projects within tourism	30
MAŁOPOLSKIE REGIONAL OPERATIONAL PROGRAMME FOR THE PERIOD 2007-2013 ERDF	1,517,969,885	100.0		
Priority 2: Regional opportunity economy	189,069,056	12.5	Number of projects within direct investment support for the SME sector	1,210
			Number of projects within R&D	150
			Number of cooperation projects between enterprises and research units	80

OPERATIONAL PROGRAMME FOR THE MAZOWIECKIE VOIVODSHIP	2,154,701,998	100.0		
Priority 1: Creating conditions for the development of innovation potential and entrepreneurship in Mazovia	506,354,978	23.5	Number of projects within R&D, including in SMEs	320
			Number of projects within direct investment support for enterprises	1,200
			Number of cooperation projects between enterprises and research units	200
			Number of enterprises included in support in the field of innovation	200
REGIONAL OPERATIONAL PROGRAMME FOR THE OPOLSKIE VOIVODSHIP FOR THE YEARS 2007-2013	502,523,310	100.0		
Priority 1: Strengthening economic attractiveness of the region	185,933,625	37.0	Number of projects within R&D	24
			Number of cooperation projects between enterprises and research units	16
			Number of projects within direct investment support for enterprises, including enterprises	1,047
			Number of companies established as a result of support	29
OPERATIONAL PROGRAMME FOR THE PODKARPACKIE VOIVODSHIP	1,344,580,517	100.0		
Priority 1: Competitive and Innovative Economy	352,810,629	26.2	Number of projects within direct investment support of SME sector	875
			Number of projects within R&D	100
			Number of cooperation projects between enterprises and research units	70
OPERATIONAL PROGRAMME FOR THE PODLASKIE VOIVODSHIP	750,248,102	100.0		
Priority 1: Boosting innovation, supporting entrepreneurship	151,080,660	20.1	Number of projects within R&D	32
			Number of cooperation projects between enterprises and research units	12
			Number of projects within direct investment support of SME sector	480
			Number of loans/guarantees granted within the programme	1,400
			Number of investments in enterprises within the implementation of the best available techniques	50
OPERATIONAL PROGRAMME FOR THE POMORSKIE VOIVODSHIP	1,227,167,232	100.0		
Priority 1: Small and Medium-sized Enterprises (SME) development and innovation	309,773,016	25.2	Number of projects within direct investment support for the SME sector	1,200
			Number of enterprises granted support	1,000
			Number of SMEs granted financial support for innovation undertakings	100
OPERATIONAL PROGRAMME FOR THE ŚLĄSKIE VOIVODSHIP 2007-2013	2,016,692,802	100.0		
Priority 1: Technical research and development (R&D), innovation and entrepreneurship	348,515,945	17.3	Number of projects within direct investment support for the SME sector	448
			Number of enterprises granted support	1,738
			Number of enterprises included in support in the field of innovation	600
			Number of projects within R&D	200
			Number of cooperation projects between enterprises and research units	30

REGIONAL OPERATIONAL PROGRAMME FOR THE ŚWIĘTOKRZYSKIE REGION IN POLAND FOR THE PERIOD 2007-13	853,890,902	100.0		
Priority 1: Business Development	153,700,364	18.0	Additional investments in SMEs due to the support	43
			Number of projects within direct investment support for the SME sector	700
WARMIŃSKO-MAZURSKIE REGIONAL OPERATIONAL PROGRAMME	1,228,460,041	100.0		
Priority 1: Entrepreneurship	238,598,129	19.4	Number of cooperation projects between enterprises and research units	110
			Number of projects within direct investment support for enterprises	765
			Number of projects within direct investment support for enterprises in the first two years after starting activity	107
REGIONAL OPERATIONAL PROGRAMME FOR THE WIELKOPOLSKIE VOIVODSHIP FOR 2007-2013	1,272,792,644	100.0		
Priority 1: Competitiveness of enterprises	328,887,000	25.8	Number of projects within R&D in SMEs	30
			Number of cooperation projects between enterprises and research units	20
			Number of projects within direct investment support for the SME sector	1,900
REGIONAL OPERATIONAL PROGRAMME FOR THE ZACHODNIOPOMORSKIE VOIVODSHIP	982,867,417	100.0		
Priority 1: Economy – Innovation – Technology	273,828,116	27.9	Number of projects within R&D, including in SMEs	5
			Number of cooperation projects between production units and research units	3
			Number of projects within direct investment support for enterprises of the SME sector during the first two years after starting activity	264
			Number of projects within direct investment support for the SME sector	120

Source: Based on Regional Operational Programmes.

Table A2. Allocation of funds for supporting enterprises under Sectoral Operational Programmes and estimated number of beneficiaries in 2007-2013.

NAME	BUDGET (EUR million)	SHARE IN THE PROGRAMME BUDGET (%)	ESTIMATED NUMBER OF BENEFICIARIES	
INFRASTRUCTURE AND ENVIRONMENT	**37,565,295,193**	**100.0**	x	
Priority 4: Initiatives aimed at adjusting enterprises to the requirements of the environmental protection	**667,000,000**	**1.8**	Number of new or modernised systems in the field of the environmental protection	50
			Number of projects aiming at improvement of air quality	45
HUMAN CAPITAL	**11,420,207,059**	**100.0**		
Priority 2: Development of human resources and adaptation potential of enterprises and improving the health condition of working persons	**778,011,906**	**6.8**	Including enterprises and persons planning to start business activity within services provided for entrepreneurship development in accredited institutions	350,000
			Including in support enterprises investing in training projects for their employees (projects of supraregional characteristics)	60,000
Measure 2.1 Development of human resources for modern economy	504,224,045	4.4	x.	
Sub-measure 2.1.1 Development of human capital in enterprises	373,970,602	3.3	x	
Sub-measure 2.1.2: Partnership to improve adaptability	30,253,443	0.3	x.	
Priority 8 Regional human resources for the economy	**1,588,479,612**	**13.9**	Including enterprises in support within employees' training	140,000
Measure 8.1 Development of staff and enterprises in regions	1,270,783,690	11.1	x	

Sub-measure 8.1.1 Support for development of professional skills and consultancy services for enterprises	902,256,420	7.9	x	
Sub-measure 8.1.2 Support for adaptation and modernisation processes in regions	317,695,922	2.8	x	
Measure 8.2 Knowledge transfer	317,695,922	2.8	x	
Sub-measure 8.2.1 Support for cooperation of science and enterprises	127,078,369	1.1	x	
INNOVATIVE ECONOMY	**9,711,629,742**	**100.0**		
Priority 1: Research and development of new technologies	**1,299,270,589**	**13.4**		
Measure 1.4 Support for goal-oriented projects	390,352,176	4.0	Number of enterprises cooperating with research entities in the implementation of goal-oriented projects co-financed under this measure	800
			Increase in employment within R&D activity in enterprises implementing co-financed goal-oriented projects	500
Priority 3 Capital for innovation	**340,000,000**	**3.5**	Number of SMEs which managed to obtain an outside investor	400
			Number of new enterprises granted support (during two years after their establishing)	
			Number of trained entrepreneurs	1,400
Measure 3.3 Creating a system facilitating investment in SMEs	50,000,000	0.5	x	
Priority 4 Investments in innovative undertakings	**3,429,710,588**	**35.3**		
Measure 4.1 Support for the implementation of the outcome of R&D	390,000,000	4.0	Number of enterprises granted support	1,050
			Number of SMEs granted support	800

Measure 4.1 Stimulating R&D activities of enterprises and support in the area of industrial design	186,000,000	1.9	1100 – Number of enterprises granted support	1,100
			200 – Number of SMEs granted support	200
			300/100 – Number of enterprises granted support (including SMEs) which implemented innovations independently	300/100
			30/15 – Number of enterprises (including SMEs) which started activity within R&D due to the support	30/15
Measure 4.4 New investment of a high innovation potential	1,420,000,000	14.6	Number of enterprises granted support	180
			Number of SMEs granted support	150
			Number of SMEs which implemented organisational or marketing innovations due to the support	115
			Number of enterprises granted support for the implementation of environmental technologies or development of eco-products	20
			Number of SMEs granted support for the implementation of environmental technologies or development of eco-products	15
Measure 4.5 Support for investment of considerable importance to the economy	1,023,860,000	10.5	Number of companies from the SME sector cooperating with beneficiaries	2,000
			Number of enterprises which started activity within R&D due to the support	
Priority 5 Diffusion of innovation	**398,997,647**	**4.1**		
Measure 5.4 Management of intellectual property	39,000,000	0.4	Number of patent applications of enterprises due to granted support, including applications to EPO and USPTO	200
Priority 6 Polish economy on the international market	**410,633,035**	**4.2**		
			Number of entrepreneurs who obtained necessary documents authorising the introduction of products or services to a selected foreign market	520

Measure 6.1 Passport to export	121,840,000	1.3	Number of supported SMEs obtaining their first order outside Poland during two years from granting support	885
			Number of supported SMEs which increased exports or sales in the Single European Market due to the support	2,000
Priority 8 Information society – increasing the innovativeness of the economy	**1,415,864,941**	**14.6**		
Measure 8.1 Support for business activity in the field of electronic commerce	390,635,294	4,0	Number of SMEs which were granted support for the implementation of projects within providing electronic services and producing digital products necessary to provide these services	9,000
Measure 8.2 Support for the implementation of electronic business of the B2B type	460,817,882	4.8	Number of supported SMEs which implemented and/or integrated information systems of the B2B type	4,000
			Number of entrepreneurs included in implemented and/or integrated information systems of the B2B type	12,000
Measure 8.4 Providing access to the Internet at the "last mile" stage	200,000,000	2.1	Number of SMEs which started providing access to the Internet at the "last mile" stage	2,500
DEVELOPMENT OF EASTERN POLAND	**2,675,051,473**	**100.0**		
Priority axis I Modern Economy	**929,361,511**	**34.7**	Number of projects within R&D	20
			Number of cooperation projects between research units and enterprises	20
			Number of granted loans of the *seed capital* type	340
Measure I.2 Supporting the establishment and co-financing of financial engineering instruments	5,882,353	0.2	x	
Measure I.3 Supporting innovativeness	479,525,120	17.9	x	
Measure I.4 Promotion and cooperation – Promotion component	20,000,000	0.8	x	
Measure I.4 Promotion and cooperation – Cooperation component	17,657,410	0.7	x	
Priority axis II Infrastructure of the information society	300,140,776	11.2	x	
Measure II.1 Broadband network of Eastern Poland	300,140,776	11.2	x	

Source: Based on Sectoral Operational Programmes.

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Possibilities for the development of geographical information systems in rural areas based on EU funds

When considering the issues of rural development, it should be stressed that according to the administrative criterion applied in Poland rural areas constitute 93.2% of Poland's area[1] and account for 38.7% of the total population. Therefore, rural areas represent one of the key elements in socio-economic development of regions. This development is characterised by quantitative and qualitative changes in farming methods and efficiency, and socio-economic activity is determined by functions performed by rural areas. J. Dietl and B. Gregor suggested the following functions of such areas:

- production – within the primary sector of the economy (agriculture, forestry, fisheries)
- endogenous industrial production – connected with industry based on exogenous capital and linked to local agricultural production;
- exogenous industrial production – connected with the employment of the local population;
- recreation – as a source of income and development of social infrastructure;
- service provision – meeting the production and consumption needs of the local actors[2].

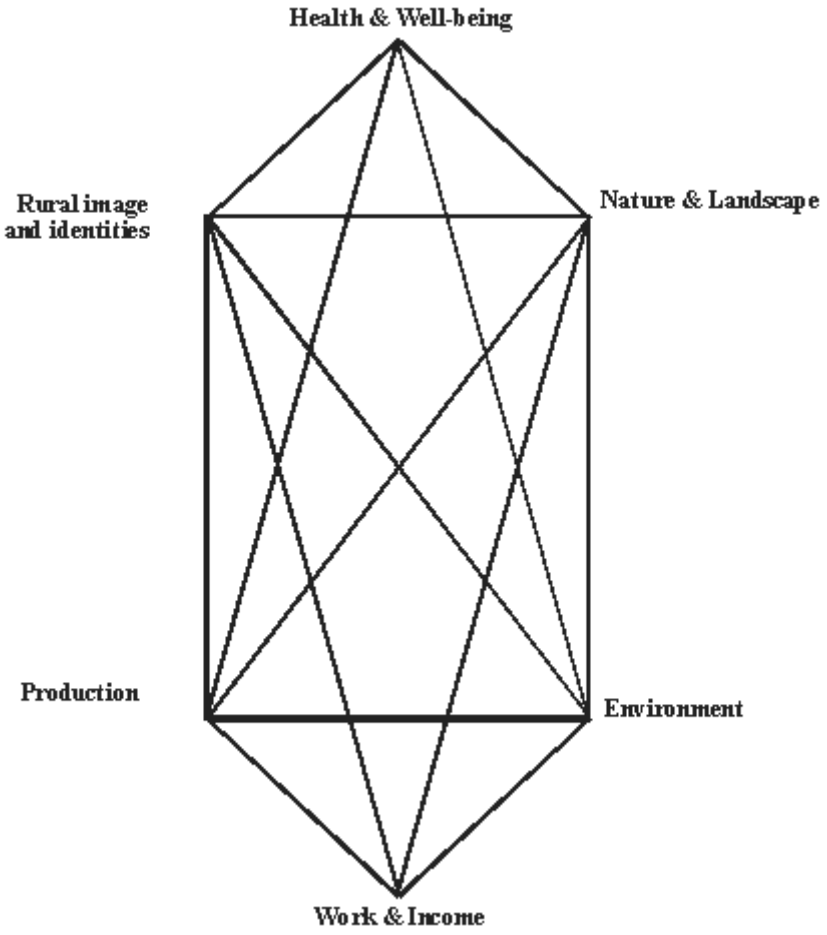
All the functions attributed to rural areas are inextricably linked with a specific territory and local authorities should aim at multifunctional development through decision making and relevant instruments. It should ensure the improvement of living conditions of the local population as well as maintaining the principles of sustainable development and continuous efforts of local authorities at local development. The stimulation of economic activity in rural areas becomes, therefore, the condition for multifunctional development of the countryside in order to provide jobs for the rural population giving up typical agricultural activities. Such measures should be supported by relevant policies of local

[1] As at the end of 2006 – BDR (Regional Data Bank).
[2] Dietl J., Gregor B. *Funkcje obszarów wiejskich oraz ich wpływ na obsługę handlową* [in:] *Organizacja przestrzenna obszarów wiejskich*, KPZK PAN Bulletin no 101, Warsaw 1979, pp. 79–95.

governments to help reach the intended aim of multifunctional development of rural areas.

Funds for the activation of rural areas should allow to reduce disparities in regional development, and thus to ensure geographical balance. The possibility to utilise structural funds of the EU is dependent on national policies for rural areas. Such policies constantly evolve, which results from the changing overall economic situation of Member States as well as from new factors affecting the competitiveness of rural areas, e.g. the development of information and communication technologies (ICT).

Fig. 1. Concept of relations in multifunctional development



Source: Vereijken P. H. et al., *Programme study on multifunctional agriculture. Dienst Landbouwkundig Onderzoek*, Wageningen 1999 [after:] Oostindie H., Roep D., Renting H., *Definitions, references and interpretations of the concept of multifunctionality in The Netherlands* [in:] *European Series on Multifunctionality*, No. 10, 2006, pp. 41–81.

Changes in rural areas require significant outlays as ensuring better access to education for the local population and extending technical and social infrastructure represent prerequisites for rural development to advance. Experts' opinions on the future image of rural areas unambiguously lead to the following conclusions concerning the future trends in the countryside:

- disappearance of cultural, intellectual, educational and prestige differences between the city and the countryside, which will affect the building of mutual respect and recognition of various social groups, irrespective of the place of origin;
- multifunctional development of the countryside, allowing the deglomeration of large cities as well as representing the basis for and the engine of creating non-agricultural jobs and improving the living standards of the inhabitants, thus leading to further development of rural areas and reducing development differences between the city and the countryside;
- development of the information society in rural areas;
- progress in the development of small entrepreneurship connected with the agri-food processing industry and the development of non-productive, service units allowing "distance employment" (teleworking);
- improving the natural and environmental value of rural areas which will become the basis for tourism and rural tourism as well as attracting new inhabitants to rural areas "escaping" from the "global village";
- technological progress in the field of biotechnology, allowing to reduce the area of agricultural land and to increase production intensity[3].

Irrespective of the method of pursuing the policy for rural areas, it should be mentioned that such areas, especially in Poland, are not economically strong. They require, therefore, financial support which should come from the EU, the state and non-governmental organisations. Thanks to financial engineering, such means may become the basis for financing many undertakings allowing to reach the theoretical goals of multifunctional development of rural areas.

1. Information society – geographical information systems

In modern theories of socio-economic development, information is treated as a fundamental value which allows regional and local market actors to develop. It also plays a significant role in the development of territorial units

[3] Klepacki B., *Warunki i szanse rozwoju polskiej wsi* [in:] *Przyszłość wsi polskiej. Wizje, strategie, koncepcje*, (eds.) Kolarska-Bobińska Lena, Rosner Andrzej, Wilkin Jerzy, Institute of Public Affairs, Warsaw 2001, pp. 86–94.

of different levels. Access to information has become the basis for competitiveness in the global market.

In the days of the global economy, society produces and utilises information by means of the Internet and computers which have become widespread and frequently indispensable in households and businesses. Modern society is dependent on the generation, processing and dissemination of information which is the basis for new knowledge[4]. In the information society, knowledge generation is based on the following pattern: data – information – knowledge. It should be mentioned that in order to obtain and process information, computers and relevant software are necessary tools. The rate of transfer and the speed of access to information play an ever-growing role, with a time-flattening effect.

It should be remembered that the usage of ICT (*Information and Communication Technologies*) is also becoming the main solution in facilitating the communication between the population and local authorities and allowing the inhabitants to take part in local governance. It is of great importance to spatial planning whose procedures are based on the participation of the local community in taking decisions related to the study of conditions and directions of spatial development (land use plan) of a given territorial unit and to the preparation of local plans of spatial management.

Information society represents a new type of society which has developed in countries where the advancement of modern ICT reached a very fast pace. The basic criteria of the information society include an extensive and modern telecommunications network covering all citizens as well as vast and publicly available information resources. Another important aspect is social education promoting further development so all could fully utilise the possibilities offered by mass communication and information media[5]. The foundations for the development of the information society are considered to be the following:

- necessary access to internet – the basic tool of social communication and public information;
- widespread access to information – including public information;
- education in the field of modern information and communication technologies.

According to the guidelines of the National Cohesion Strategy for the years 2007–2013 (NCS), the issue of the information society must be addressed comprehensively. Such an approach should include the possibility of increasing

[4] Zborovskii G.E., Shuklina E.A., *Education as a Resource of the Information Society*, Russian Education &Society, Vol. 49 issue 2, 2007, pp. 40-53.

[5] http://www.gov.pl/WWW/serce.nsf/0/6A1F328341480FEAC1256F6A0038762F?Open; 20.10.2008

access to information, also to public information, for enterprises, the public administration, scientific institutions and individual citizens. Moreover, great importance should be attached to necessary information management, including the application of digital technologies in order to improve the quality of human capital, access to and the quality of public services, the efficiency and competitiveness of enterprises operating in local, national and international markets[6].

In the case of Poland, it is especially stressed that there is a need to computerise public services to local actors well as introducing modern information technologies in citizen-enterprise (enterprise-citizen) relations. Such an approach would allow to increase the competitiveness and innovativeness of the economy at the national as well as regional level. The implementation of projects related to the information society will be linked to the introduction of the Development Strategy of the Information Society in Poland until 2013[7], based on the necessity to build a society where the citizens and businesses knowingly utilise the potential of information as an economic, social and cultural value, with efficient support of modern and friendly public administration.

Actions in the field of ICT are expected to result in the possibility of interactive information exchange between the public administration and local actors. It would allow to speed up and improve the circulation of information, which would lead to increased efficiency of administration. The development of internet access networks would also facilitate the improvement of human resources in both urban and rural areas, the latter at particular risk of digital exclusion. Higher qualifications of local communities would also allow to increase the mobility and to improve the quality of human resources.

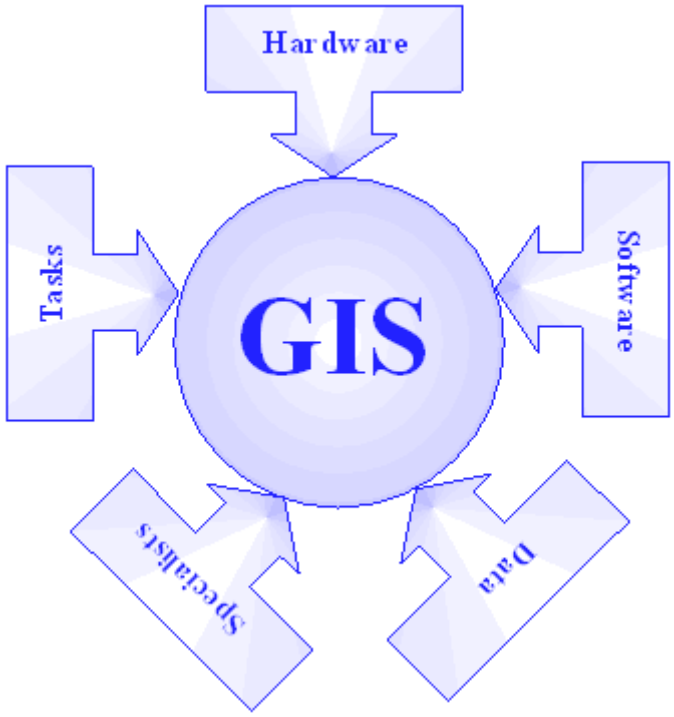
One issue emphasised in the NCS is the necessity to modernise public services to entrepreneurs and citizens. To this end, there will be projects implemented by the government as well as by local authorities aimed at the computerisation of administrative structures. It will be possible, at the regional level, to develop electronic public services rendered by regional authorities, projects ensuring improved services in health protection (e-health), education (e-learning) and integrated management support systems for regional and local administration[8].

Systems of spatial information implemented at the local and regional level may be recognised as one of the types of integrated systems of management support for regional and local administration. GIS (*Geographical Information*

[6] NCS 2007–2013, Ministry of Regional Development, Warsaw 2007, p. 65.
[7] *Strategia Rozwoju Społeczeństwa Informacyjnego w Polsce do roku 2013*, a draft document being prepared by the Ministry of Interior and Administration, Warsaw 2008, version 3.0
[8] *NCS 2007-2013*, Ministry of Regional Development, Warsaw 2007, p. 67.

System)[9], as a functioning system, is based on collecting, arranging and analysing information on real world objects by means of computer techniques[10]. Geographical information systems are also often defined as organised systems consisting of hardware (computers), software, spatially referenced data and their service, designed with the aim of efficient storing, updating, processing, analysing and displaying all forms of spatially referenced information[11]. Geographical information systems are based on the cooperation of hardware, software, data, human resources and methods (tasks). The lack of any single one of the mentioned sub-systems precludes efficient functioning of GIS as a whole.

Fig. 2. Concept of GIS



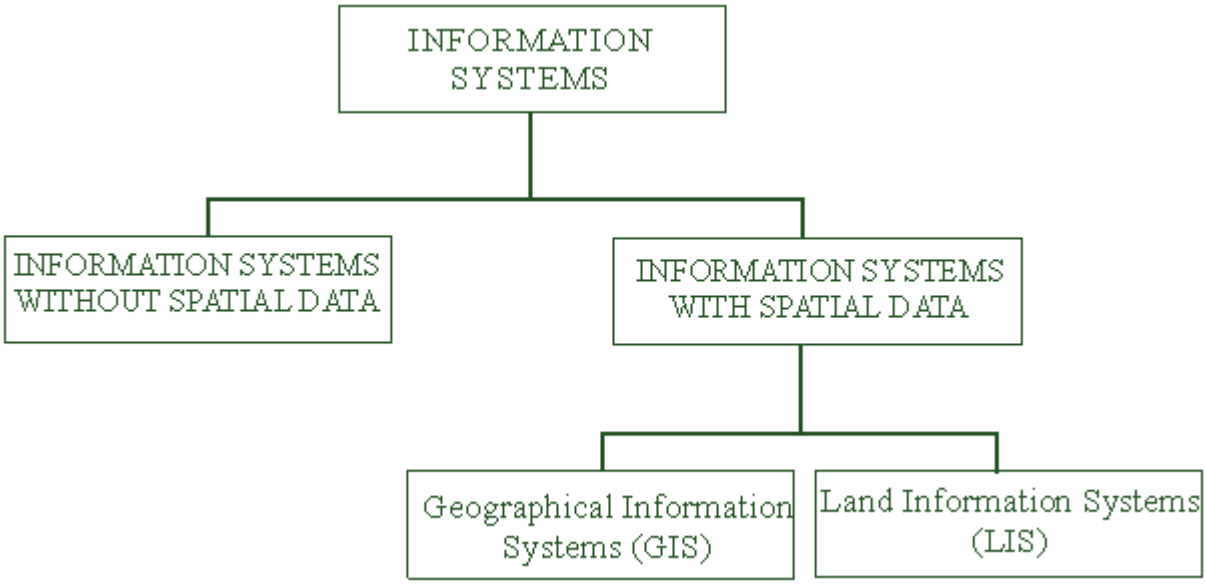
Source: Own study.

Broken down by type of the analysed data and accuracy of maps, geographical information systems may be divided into land information systems (LIS) and geographical information systems (GIS). Land information systems are applied in local centres and developed in the scale of 1:5000 to 1:500. Geo-

[9] In the US referred to as geographic information system. The most frequent terms in Polish are: *System Informacji Przestrzennej* (Spatial Information System – SIS) or *System Informacji Geograficznej* (Geographical Information System – GIS).
[10] Ney B., *Społeczeństwo informacyjne – założenia i strategia; aspekty przestrzenne* [in:] "Człowiek i środowisko" 25 (4) 2001, p. 53.
[11] Urbański J. *Zrozumieć GIS. Analiza informacji przestrzennej*, PWN, Warsaw, 1997, pp. 15–24.

graphical information systems, less accurate, are used in the case of preparing databases for the area of *poviats*, regions or the whole country.

Fig. 3. Place of geographical information systems among information systems



Source: Own study.

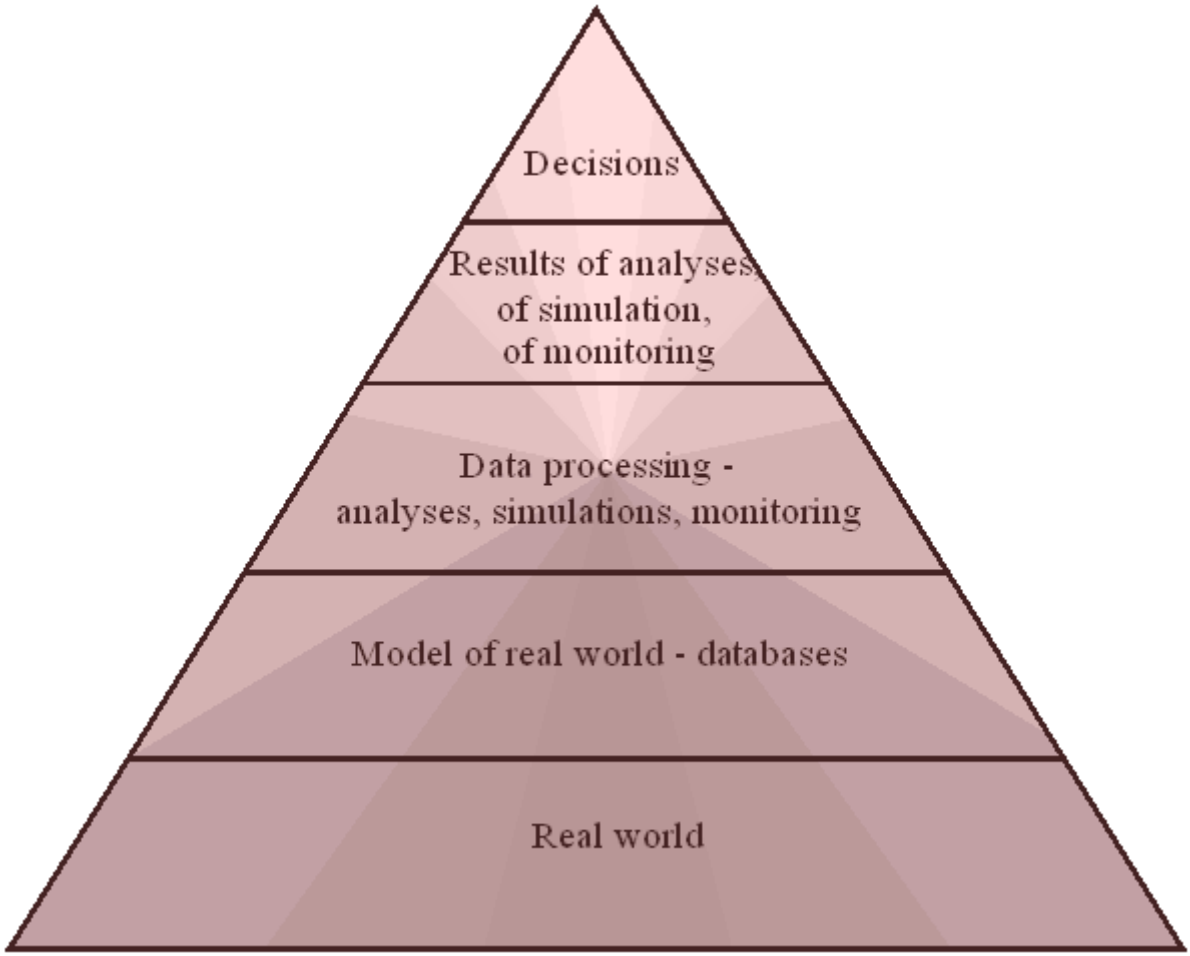
Irrespective of the scale of application, geographical information systems become a useful tool of decision-making. Databases prepared for the purposes of building the system form a specific model of the real world. Such models, based on GIS technology, may serve as research material for analyses, simulation and monitoring of a number of developments in a given area. The results of such activities may become the basis for decisions taken by local and regional authorities. This is a cyclical process as decisions taken affect, to a lesser or greater degree, the relevant area (the real world), which involves the necessity to repeat the cycle (taking account of the resulting changes in the model) and make new decisions.

Regulations in the field of spatial information have undoubtedly been affected by the adoption by the European Parliament and the Council of the Directive establishing an infrastructure for spatial information in the European Community[12]. Polish Infrastructure for Spatial Information should cover all the levels of public administration and will serve all users of geo-information in Poland and within the Community. It will require the establishment of regional and lo-

[12] Directive 2007/2/EC/ of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE), Official Journal of the European Communities L 108 of 25.4. 2007

cal infrastructures capable of interacting (interoperability)[13]. Interoperability should be ensured by the application of standards (performance criteria) and common protocols for data exchange.

Fig. 4. GIS-based modelling of the real world



Source: Own study.

Wide access to databases will be provided by the utilisation of model solutions applied in European countries. The system of making data available will consist of the following:

- users' applications;
- services of data processing and making data available;
- catalogues – data sets available on servers;
- data repositories – copies of databases stored on servers, the source of information for users[14]

[13] Gaździnki J., *Problematyka transpozycji dyrektywy INSPIRE do prawa polskiego*, http://www.gugik.gov.pl/gugik/dw_files/742_transpozycja_dyrektywy.pdf, p. 4.

It is estimated that more than 80% of information concerning the real world is spatially referenced – therefore, it constitutes a certain type of spatial information[15]. As regards statistics for rural areas accounting for over 93% of Poland's area, there are about 83% of plots located in the countryside[16]; thus, they become the reference system for spatial data collected, processed and made available. The introduction of spatial information systems will make it possible to identify, analyse, disseminate and exchange information and knowledge in the field of rural development among all the stakeholders at the local, regional, national and Community level.

2. Possibilities of the financing of GIS projects implementation

Since the beginning of 2000, various initiatives have been implemented in Poland with the aim of developing agriculture and rural areas. They include both European and national programmes supporting development. The sources of funds for rural areas have been, *inter alia*, the SAPARD programme, the Rural Development Project (*Program Aktywizacji Obszarów Wiejskich*) and the Rural Development Programme (*Program Rozwoju Obszarów Wiejskich*). Other programmes promoting rural development include those related to the agricultural sector, such as the Sectoral Operational Programme for the "Restructuring and modernisation of the food sector and rural development" and the Sectoral Operational Programme "Fisheries and Fish Processing". Another important element was the pre-accession PHARE Programme, contributing to the reduction of development disparities, particularly with regard to technical infrastructure.

In recent years, especially after Poland's accession to the European Union, a number of programmes have been implemented with the aim of supporting rural development. The implementation of such programmes has been possible thanks to the cooperation of many institutions promoting socio-economic development, which results in the development of entrepreneurship and infrastructure in rural areas. Apart from financial instruments, i.e. support programmes, there are also policies pursued by local authorities, aimed at multifunctional and sustainable development of rural districts. Such activities include, for instance, spatial policy, the correct definition of which makes it possible to utilise its tools in obtaining funds for the activation of rural areas.

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[14] Bielecka E., *Systemy informacji geograficznej. Teoria i zastosowania*, PJWSTK, Warsaw 2006, pp. 207–209.

[15] Albaredes G., *A new approach: user oriented GIS* [in:] *Proceedings of EGIS'92*, EGIS Foundation, Munich 10992, pp. 830–837.

[16] Iwanicki J., *Systemy informacji o terenach rolnych i leśnych - stan obecny i perspektywy rozwoju* [in:] "Geodezja i Kartografia", XLIV No 2-3, pp. 171–176.

Within the framework of programmes for the years 2007–2013, the European Union offers new opportunities to obtain funds for investments and rural development. A model of multifunctional development of the countryside and agriculture has been adopted for the period in question, aimed at the improvement of living and working conditions for the rural population. The EU solutions have been adopted in Poland in the form of the National Development Plan for 2007–2013. The implementation of the Plan will be possible due to financial support from the structural funds: the European Regional Development, the European Social Fund and the European Agricultural Fund for Rural Development. Strategic goals will be realised under the PROW (*Program Rozwoju Obszarów Wiejskich* – Rural Development Programme) 2007–2013[17].

The objectives and main measures of the PROW 2007–2013 take account of the experience gained in connection with the implementation of EU programmes in rural areas in 2004–2006. Although it is impossible to indicate the financing sources directly targeted at projects in the field of ICT in the PROW 2007–2013, such opportunities are offered under Axis 3 of the Programme. The improvement of rural infrastructure also comprises the need to develop the Internet access network. Such an approach would allow wider use of this source of information and could become the basis for broader e-services in rural areas. Promoting the development of information technologies is also possible within the framework of the so-called small projects implemented in areas where Local Action Groups operate.

Support for beneficiaries, including regional and local authorities, will be granted under operational programmes as instruments of the implementation of the National Cohesion Strategy 2007–2013. Within the framework of such assistance, there will be six programmes and additionally 16 regional operational programmes prepared by each voivodship. One of the operational programmes is the OP Innovative Economy (OP IE, *PO Innowacyjna Gospodarka*), mostly oriented towards the improvement of the competitiveness of the Polish economy through increasing its innovativeness. The programme in question is also aimed at a greater use of information and communication technologies (ICT) in the economy, including the public sector.

From the point of view of building an information society in rural areas, the priority axis of the Programme aimed at developing electronic administration in Poland is of particular significance. The axis in question is targeted at public administration units and eligible projects will contribute to the development of public information systems, including geographical information systems.

[17] *Strategia rozwoju obszarów wiejskich i rolnictwa na lata 2007–2013 (z elementami prognozy do roku 2020)* Ministry of Agriculture and Rural Development, Warsaw 2005, pp. 5–7.

Fig. 5. Implementation of the NCS 2007–2013

Source: Own study based on the NCS 2007–2013.

Axis 8 of the Programme concerning the improvement of innovativeness of the economy is of a similar character. It is aimed at the promotion of the e-economy by supporting the development of new innovative solutions for electronic business and reducing technological, economic and mental barriers to the usage of information technologies in the population. This part of the programme will be addressed to entrepreneurs as well as to regional and local authorities. Measures under the axis in question should foster the development of small and medium-sized enterprises (SME) engaged in spreading Internet services. The utilisation of EU funds via projects implemented under the OP Innovative Economy should also contribute to the development of e-services between entrepreneurs and customers, between customers and public administration as well as between entrepreneurs and public administration. The implementation of such projects will also allow the integration of the exchange of information and e-services within groups of local actors.

The coordination of the possibilities for financing projects from EU funds would allow building relations between public administration and recipients (clients). It results from the prerequisites for developing e-services, including geographical information systems, at both ends – administration as the basic supplier of services in the field of geographical information systems and clients (recipients) equipped with appropriate tools (computers with access to the Internet) in order to use the services offered.

3. The financing needs in the field of modern information technologies

The financing needs in the field of modern information and telecommunication technologies are illustrated in a survey conducted in the Łódzkie voivodship. The survey was carried out in districts with rural areas[18]. This paper presents the results of the survey concerning the possibilities of applying digital techniques by local authorities, with particular emphasis on their use in spatial planning. The analysis of the utilisation and knowledge of GIS technology in departments of district offices reveals that out of the 159 rural and urban-rural districts which participated in the survey, answers were given by 93 districts, accounting for more than 58% of the surveyed local authorities.

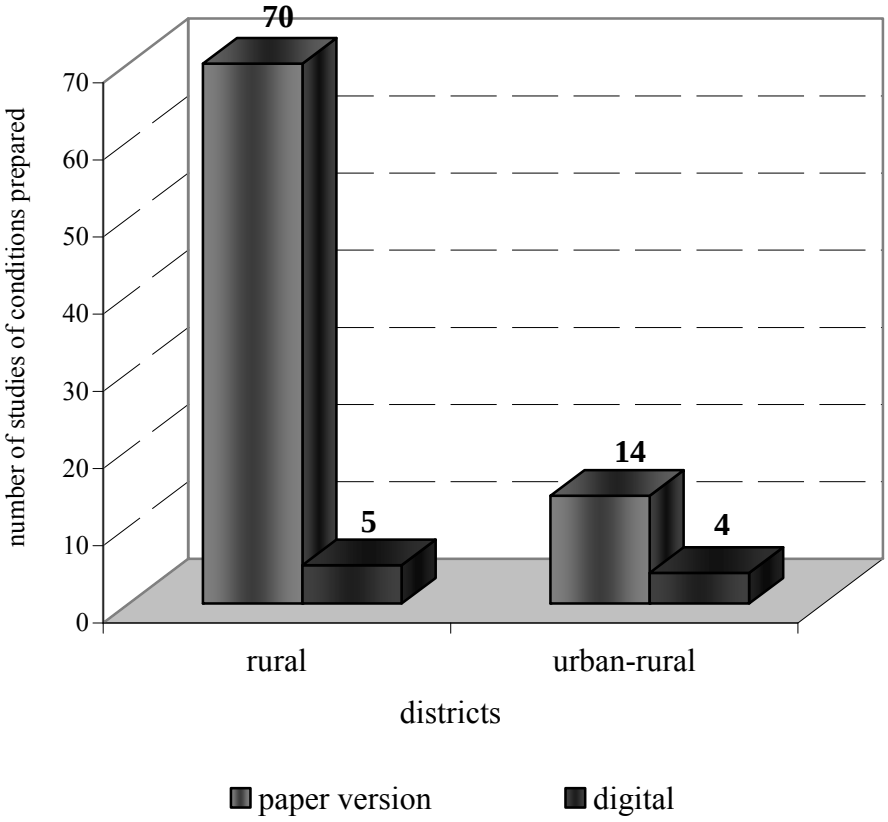
From the point of view of the features of the study of conditions and directions of spatial development (land use plan) and of the functions performed by such a document in the local development policy, it is important that it should be available to the local community and to investors who are the potential executors of the spatial policy in the district. The study, as the only document prepared obligatorily for the area within the administrative borders of the district, often plays a significant role in the implementation of the socio-economic development of the district. The information function would be facilitated by a digitised study, allowing wider access to the document specifying the spatial policy of the district.

According to the presented results of the survey of rural areas, 9.7% of districts in the region had digitised studies of conditions and directions of spatial development (land use plans). It should be mentioned, however, that having a digital version of the study did not involve the use of advanced technologies such as GIS. The remaining 90.3% of the surveyed local authorities only pre-

[18] The survey was conducted under the research project *Komplementarność instrumentów planistycznych w zarządzaniu gminą* ("Complementarity of planning instruments in local governance") as own research of the Department of Regional Economy and Environment at the Institute of Spatial Planning at the University of Łódź; the survey and analyses were carried out by the author of this paper under the guidance of Nina Joachimiak, Ph.D., in the years 2005–2006.

pared studies in the traditional form, which undoubtedly limited access to such information on a given territorial unit.

Fig. 6. Studies of conditions and directions of spatial development (land use plans) in rural areas by technique employed



Source: Own study based on the survey results.

As regards urban-rural districts, 22.2% of the surveyed local governments declared the availability of digitised studies. The remaining 77.8% of local authorities from the group in question only had paper versions of such documents. In the case of rural districts, digitised versions of the studies were found in a mere 6.7% of the surveyed units and the remaining 93.3% of rural districts only had paper versions of the documents in question.

Due to the more and more widespread computerisation and informatisation of all areas of human life, which is connected with technical and technological progress, it becomes indispensable to facilitate access to up-to-date information on the district and to electronic documentation resources for the population. It is possible when local authorities have documents (studies of conditions, or land use plans) which meet technical requirements for being made available in local area networks or in the Internet. A more widespread use of modern digital techniques in documentation specifying spatial policies

of districts will lead to greater accessibility of such resources to local communities via personal computers and the Internet. The application of GIS technology in the preparation of the study will allow developing a comprehensive database on a given rural district which could be utilised in other fields of activity of local authorities, thus becoming the starting point for more advanced simulations and analyses.

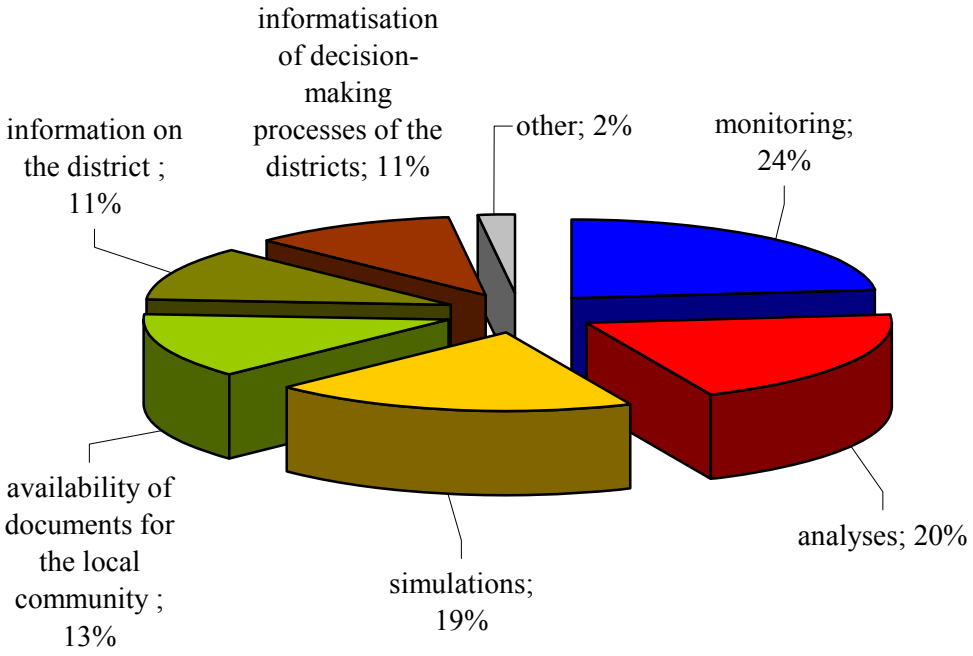
The issues concerning geographical information systems represented important information obtained in the survey. Questions related to GIS were answered only by 44 districts (accounting for slightly more than 47% of the respondents). Among the local governments which gave answers to the above-mentioned questions, there were 36 rural districts and 8 urban-rural districts. GIS systems were not used in practice in any of the surveyed districts. The questionnaire included questions about the possibility of practical applications of GIS in spatial planning. The respondents could choose between answers specifying the possibility of utilising GIS in spatial planning in districts. According to the survey, the units responsible for spatial planning in districts considered information functions of GIS to be the most important in the use of GIS technology. This advantage of applying GIS in districts was indicated in 24% of the obtained answers.

The respondents also attached great importance to such functions of GIS technology as the possibility of monitoring and conducting analyses in the field of spatial planning. Such answers represented, respectively, 20% and 19% of the respondents' indications. The availability of documents to the local community, understood as the possibility of easier access to decision-making processes in the district, i.e. social participation in the procedures of drawing up local plans of spatial management and studies of conditions and directions of spatial development (land use plans), also played a significant role. In professional terminology, it is defined as PPGIS[19]. This issue was found in 13% of the obtained answers.

The last group of answers concerned the possibilities of computerising and improving decision-making processes in districts and the possibility of running simulations. The surveyed units indicated such activities in 11% of answers. In the remaining 2% of cases, local authorities pointed to other possible applications of GIS techniques in spatial planning of districts, not suggested in the questionnaire.

[19] PPGIS – Public Participation GIS – based on taking decisions concerning policy, the local area and other issues via active participation of the local community, which is possible owing to the use of GIS technology.

Fig. 7. GIS technology and possible practical applications in districts



Source: Own study based on the survey results.

Importantly, the survey has revealed that only 47% of the respondents had knowledge on GIS technology and the possibilities created by this system for spatial planning in districts. In spite of having information on GIS technology, none of the surveyed districts used a system of spatial information in practice. It may be concluded that it is not a widespread tool, regardless of the possibilities offered in spatial planning and in other fields of activity of district. This situation results from a common belief shared by local authorities that the introduction of the geographical information system would generate unnecessary costs for the district budgets. It should be remembered, however, that information technology should become more and more popular in local governments due to the quality of the collected data and the possibility of their quick processing. Gradually, digitised studies will become necessary due to the rising standards for spatial planning and regional (local) development applied by the European Union. Already today, units which prepare plans of spatial management in GIS technology find that the costs involved are comparable to or lower than those of traditional documents, as are further operating costs[20].

[20] The conclusion was drawn on the basis of free interviews conducted among the existing voivodship spatial planning offices offering planning services to local authorities.

The presentation of merits of geographical information systems in a narrow area of local government activities points to the need of creating awareness of the possibility to utilise GIS tools in rural areas. Those should not be limited to spatial planning as GIS can be applied in other fields of activity such as the environmental protection, culture, the economy and the social sphere. Geographical information systems should, therefore, serve to facilitate the exchange of information between local actors in rural areas.

The development of infrastructure and computer equipment represents an important factor of the functioning of geographical information systems in districts. The above-mentioned programmes to be implemented during the period of 2007–2013 facilitate investing in the development of broader infrastructure related to the Internet and local networks. The goal of improving the innovativeness of the economy, including rural areas, involves projects of making available broadband access to the Internet which could become the basis for increasing the role of e-administration in services rendered to the local community. The possibility of extending and upgrading hardware, the basis for the introduction of geographical information systems, will become an important aspect in the case of rural districts. In the context of geographical information systems, the development of the information society will also allow introducing software which will enable the implementation of the next element of the system. Furthermore, another necessary component of creating geographical information systems will be the building of computerised databases, indispensable for visualising phenomena with GIS. Data used in geographical information systems should also have a standard form, thanks to which they will become a multipurpose element for all users.

The development of databases and the application of spatial systems in Poland is also dependent on the transposition of the provisions of the INSPIRE Directive[21] into Polish legislation. Spatial information infrastructure will require appropriate legal acts. It should facilitate the building of spatial infrastructure at all levels of public administration so as to serve all users of geoinformation in Poland and in the European Community. Such an approach necessitates the development of interoperable regional and local infrastructures as well as ensuring the application of uniform standards and common protocols for data exchange between databases. The building of such infrastructure seems to be of special importance to rural areas, accounting for a considerable area of Poland, which generates the possibility of obtaining multi-thematic spatial data.

[21] Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE), Official Journal of the European Communities L 108 of 25.4. 2007.

Such data will make it possible to run analyses, simulations and monitoring of socio-economic changes in rural areas, thus becoming the basis for obtaining EU funds and easier evaluation thereof.

Summary

The knowledge-based economy makes its actors recognise factors which have been not so significant in the economy before, namely the role of information and knowledge. The availability of the two elements to the actors participating in the processes of socio-economic development, including local governments in rural areas representing local communities of a given territory, involves the generation and ordering of significant information streams. Information sorting should prevent information chaos which often occurs in the case of excessive information flowing from different sources.

In the days of the global economy, society produces and uses information by means of the tool which has become popular in each household and office, i.e. the computer. In the case of rural areas, the development of the related infrastructure is necessary. It results from the fact that in 2004 only 24% of rural households had access to the Internet. This rate improves every year, in 2005 and 2006 to 19% and 25% respectively[22]. However, there is a wide gap between Poland and the EU-15 countries where the 2006 figure was 62%.

Improving the rate of utilisation of geographical information systems will therefore be possible thanks to education and training of appropriate staff and the development of infrastructure allowing the functioning of such systems in practice on both sides: the supplier of services, i.e. administration, and the users, i.e. rural communities. Easier communication in relations between clients and civil servants will also have a positive effect on the perception of public administration itself, which will be increasingly open to citizens.

An important aspect of the development of the information society through the implementation of geographical information systems in rural areas will be improved competitiveness of the countryside , at both national and European level. Furthermore, the awareness of the rural population will be enhanced as local communities will receive a tool in the form of databases visualised through geographical information systems.

[22] Data from the Regional Data Bank of the Central Statistical Office (GUS).

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Rules and orientation of social policy intervention in rural areas in Poland

Rural areas and the rural population have largely become the key beneficiaries of Poland's accession to the European Union. This significant field of support for Poland's development, where an important role is played by the process of comprehensive modernisation of capital resources, is justified by the fact that the rural population accounts for over two-fifths of Poland's total population[1], and the quality of life in the countryside not only differs from that in the EU-15 countries, but also varies greatly between regions. It should be noted that in Poland persons living in rural areas, especially in peripheral ones with the level of infrastructure development below the national average, still have limited access to new information and communication technologies as well as a lower educational level as compared to the urban population. Moreover, the determinants of the living standard in rural areas include general access to fixed telephony and to the water supply system, access to health care and commercial establishments, the quality of services provided by district and *poviat* administrative offices, the level of school education, transport conditions as well as the sense of security at the place of residence[2]. The problems of the countryside are mainly social exclusion and unequal educational opportunities as compared to the cities.

The need to improve the living conditions and reduce the differences in this regard across the European Union represents an important element of the Community policy, which is reflected in the renewed Lisbon strategy. One of the key priorities of the strategy, targeted at both urban and rural residents, aims at human resources development, the modernisation of the labour market and an increase in employment[3]. It constitutes an instrument of implementing the Euro-

[1] www.eurostat.eu of 20.10.08.
[2] *Polska wieś i rolnictwo 2007*, Research report, Warsaw, October 2007, www.minrol.gov.pl. of 25.10.08.
[3] The remaining priorities refer to the problems of business competitiveness, the implementation of innovation, the energy market and, to a lesser extent, to the improvement of the status of the rural population. See: *Zintegrowane podejście do rozwoju. Rola polityki spójności*., ed: T. Grosse, Ministry of Regional Development, Warsaw 2008, p. 16.

pean social model within the framework of the welfare state model[4]. Such development priorities create a framework for the social policy implemented in the EU. The fulfilment of social policy objectives is also facilitated by the tasks of the regional and cohesion policies. Interventions under these policies are not only aimed at the improvement of the living standards, but also at reducing regional differences in the level of social and economic development through mechanisms strengthening the convergence process in the Community.

The issues relating to the improvement of the quality of life and employment in rural areas have been emphasised at the level of national social and economic policy, particularly since Poland's accession to the European Union. The policy guidelines have been included in strategic documents such as the National Development Plan for 2004-2006, the National Development Strategy for 2007-2015 and the National Cohesion Strategy for 2007-2013. These documents explicitly stress the fact that in Poland there are significant disparities both between regions and within individual regions, especially between urban and rural areas. These differences are addressed by a number of programme measures, e.g. aiming at the improvement of social and economic development of rural areas.

The focus of this paper is on presenting the rules of the EU social policy and identifying the main priorities in the allocation of EU funds for resolving the social problems of the rural population, especially with regard to access to education and employment growth. The paper refers to operational programmes financed under the European Social Fund, i.e. two programmes implemented in the period of 2004-2006: the Sectoral Operational Programme *Human Resources Development* and the Integrated Operational Programme *Human Resources Development*, as well as to two programmes included in the 2007-2013 financial perspective: the Operational Programme *Human Capital* and the Wielkopolska Regional Operational Programme.

The main goal of the paper is to analyse support for the rural population provided through the implementation of projects realising the objectives of the abovementioned programmes. Therefore, the paper describes the structure of programmes and identifies the aims referring to support for rural development. It also contains a selection of examples of implemented projects in order to illustrate the practical side of measures addressing social problems in rural areas.

It needs to be stressed here that precise identification of the scope of measures for rural areas implemented within the framework of EU projects

[4] *Demokracja, samorządność, prawo*, ed. T. Buksiński et al., Wydawnictwo Naukowe Instytutu Filozofii, Poznań, 2007, p. 82.

is problematic, due to the fact that the demarcation line between the scope of support for rural and urban areas has not been drawn. Another difficulty is that a number of measures under the regional and cohesion policies are only indirectly oriented to rural support. The last remark concerns terminology. The paper only refers to the rural population, without separating the category of farmers and farming families. Similarly, the terms the countryside and rural areas are used interchangeably.

1. Social policy framework in the European Union

Measures of the social policy in the countryside concentrate on activating the population and influencing the labour market through training and retraining courses as well as on improving the education level. These are the factors which determine job opportunities, the stability of income sources and the level of earnings. In this way, the social policy contributes to the improvement of living conditions.

Provisions referring to the EU social policy and the European Social Fund were already included in the Treaty of Rome. Article 173 of the Treaty of Rome established the European Social Fund (ESF). It was aimed mainly at facilitating the employment of workers and raising the standard of living. The objectives of the EU social policy are connected with a number of tasks. They refer to increasing occupational and geographical mobility, extending knowledge and improving skills. The instruments most often used for the implementation of these tasks include: training courses, studies, apprenticeships, scholarships, advisory services etc. Social policy is addressed to young people under 25 years of age and to selected groups of adults, such as: job seekers, disabled persons, immigrants, older workers and employees of institutions included in employment promotion infrastructure.

In 2000, as the Lisbon Strategy was adopted, certain targets were also set with regard to the EU social policy: increasing the overall employment rate and the female employment rate in the EU to 70% and 60% respectively by 2010. The beneficiaries of European Social Fund measures are the countries with the lowest GDP *per capita*[5]. Such regions are of absolute priority. They require support due to the absence or insufficient level of public funds to cover the expenditure related to the EU social policy. It is worth stressing that the implementation

[5] Leonard D. *Przewodnik po Unii Europejskiej*, Ekonomista, 2003, pp. 207-212.

of social policy objectives, despite major difficulties in achieving the targets referred to above, contributes to raising the EU competitiveness[6].

Since the adoption of the Lisbon Strategy, one of the main objectives, and at the same time a fundamental priority of the social policy, has been the creation of "more and better jobs"[7]. By increasing both the number and quality of jobs, the European Union should become an attractive place to live and work, a welfare state, and most of all a competitive economy. However, the abovementioned "employment-oriented" objective of the European policy still represents the promotion of the European Community concept. In the area of investment in human capital and the modernisation of labour markets significant progress has been made, although the employment target could not be reached.

After Poland's accession to the EU, the national social policy has become a part of the policy conducted in this field at the Community level. The necessary consistence of objectives of the EU and national social policies involves the inclusion of the EU priorities: facilitating employment, increasing the flexibility of the labour market, greater mobility, stimulating labour supply[8].

As has already been mentioned, the scope of instruments of the EU social policy is mainly based on ESF measures. But the European Regional Development Fund (ERDF) and the Cohesion Fund are also important instruments of the

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[6] As regards the structural funds, the amount available to Poland is EUR 67.3 billion. The appropriations for the implementation of the Operational programme *Human Capital* total ca. EUR 11.4 billion, of which 85% are funds from the European Social Fund – EUR 9.7 billion, while the remaining 15% are national funds – EUR 1.7 billion. These amounts are much higher than in 2004-2006 when the ESF contribution was only EUR 2 billion. See Draft general budget of the European Communities for the financial year 2009 – Budget *online* – 17/07/2008**,** ec.europa.eu/budget, of 1.11.08.

[7] The objective of the social policy "more and better jobs", is self-contradictory. It needs to be stressed that the European Union actions are aimed at boosting GDP growth and, at the same time, significantly improving the quality of life in some Member States. This justifies the need to create a greater number of better jobs from the point of view of economic growth. The question arises though how to create jobs and simultaneously improve their quality. During the implementation of the employment policy under the Lisbon Strategy in recent years, it has been postulated to make the EU labour market more flexible. In practice it meant a larger number of temporary jobs and part-time employment. It seems, however, that the abovementioned employment patterns are much less attractive for employees since they are often not entitled to social security benefits. Therefore, the results expected from the implementation of the Lisbon Strategy have not been attained. Employment growth was lower than assumed, *inter alia* because the new jobs were not attractive and failed to motivate people to take up employment. It is not possible, therefore, to boost employment and productivity only by increasing the number of contracts signed for a fixed period. See: *Zintegrowane podejście do rozwoju. Polityka spójności a polityka społeczna Unii Europejskiej*, [in:] *Zintegrowane podejście do rozwoju. Rola polityki spójności*, ed. T. Grosse, Ministry of Regional Development, Warsaw 2008, pp. 79-81.

[8] Ibidem, p. 21.

implementation of social policy. These funds jointly regulate the social sphere in EU regions and contribute – as intended – to increasing labour market participation in the EU and improving work efficiency.

Support for rural development in the Community is mainly implemented through the common agricultural policy instruments, in 2007-2013 financed from the European Agricultural Fund for Rural Development (EAFRD). For the purposes of the Fund, a classification of rural support measures is applied to differentiate between those promoting changes in agriculture, covered almost exclusively by the EAFRD, and those activating the potential of the countryside for economic growth and job creation, with the contribution of social policy measures. The differentiation between support for rural areas and for agriculture is mainly justified by the scope of problems faced by the countryside: high unemployment, social exclusion, low occupational mobility and limited diversification of employment. These special characteristics, mainly due to their intensity, call for the development of separate measures addressing specific social problems of rural areas, which is reflected in the implementation of national support programmes such as the Sectoral Operational Programme Restructuring and Modernisation of the Food Sector and Rural Development 2004-2006 and the Rural Development Programme.

Apart from the abovementioned programmes, specifically targeted at the countryside and rural communities, similar measures are also found in other programmes. It should be remembered, however, that they not always identify rural residents as the final beneficiaries. Thus, the determination of tasks addressing specific social problems of the region is done at the level of individual projects whose beneficiaries include urban and rural residents. For instance, programmes aiming at the activation of urban residents, e.g. through the organisation of local information centres, are also beneficial to rural residents since they are set up in smaller administrative units precisely to overcome the distance barrier[9].

Therefore, it is useful to analyse the structure of support programmes in Poland from the point of view of operational programmes financed from the European Social Fund.

[9] www.wup.poznan.pl, of 25.10.08.

2. Elements of social policy in rural areas in the National Development Programme

Support for the rural population through measures covered by the NDP in 2004-2006 was strictly related to the objective of increasing employment resulting from the provisions of the renewed Lisbon Strategy. The three objectives of the Strategy include a priority concerning the development of mechanisms allowing enterprises to create more and better jobs[10].

After Poland's accession to the EU, measures for human resources development were co-financed from Community funds. The allocation of those funds was based on the following programmes and measures:

1. SOP *Human Resources Development*

Priority 1 Active labour market and inclusion policy:

- Development and modernisation of labour market instruments and institutions,
- Perspectives for youth,
- Counteracting and combating long-term unemployment,
- Vocational and social integration of the disabled,
- Promotion of active social policy in support of high-risk groups,
- Vocational integration and re-integration of women,

Priority 2 Development of a knowledge-based society:

- Increasing access to education – promoting lifelong learning,
- Improving education quality and relevance to the labour market needs,
- Development of personnel of modern economy
- Strengthening administrative capacity.

2. Integrated Regional Operational Programme,

Priority 2: Strengthening of regional human resources development:

- Development of competencies linked to the regional labour market needs and lifelong learning opportunities,
- Equalising opportunities through scholarships,

[10] In 2004-2007 the number and value of projects under this priority was the lowest among all the three priorities of the Strategy. According to the report, it accounted for 31% of the total value of the so-called pro-Lisbon projects. These projects were implemented in the following fields: education and training systems (11% of the value of all pro-Lisbon projects), labour market institutions and instruments (9%) and improving qualifications of employees (3%). How strong was the impact of the implemented projects on employment? In 2004-2007 it was 8.5%, while the effect of the so-called non-Lisbon projects proved similar, at 8.2%; 83.3% of employment growth in that period resulted from social and economic changes in the economy. *Oddziaływanie funduszy strukturalnych i Funduszu Spójności na gospodarkę Polski w okresie 2004 – I połowa 2007*, Ministry of Regional Development, Warsaw 2008, p. 27.

– Vocational reorientation of persons leaving agriculture,
– Vocational reorientation of the workforce affected by the restructuring process,
– Promotion of entrepreneurship, Regional Innovation Strategies and transfer of knowledge.

The area of social policy covered by the priority *Human Resources* mainly included projects aiming at the development of the labour market, combating social exclusion, the development of education and vocational training not related to a specific sector (persons, companies), measures to improve the situation of women in the labour market, increasing the adaptability of workers, entrepreneurship, innovativeness, information and communication technologies[11]. The largest group of projects implemented by 2007 covered those relating to the development of vocational training (see Table 1). They accounted for as many as 47% of completed projects in the field of *Human Resources*.

Table 1: Number of projects in the field of *Human resources*. As at April 2007

Field of intervention	Number of completed projects
Human resources, of which:	2,752
Labour market policy	739
Combating social exclusion	177
Development of education and vocational training not related to a specific sector (persons, companies)	1,289
Adaptability of workers, entrepreneurship, innovativeness, information and communication technologies	404
Measures improving the situation of women in the labour market	139

Source: On the basis of: Oddziaływanie funduszy strukturalnych i Funduszu Spójności na gospodarkę Polski w okresie 2004 – I połowa 2007, Ministry of Regional Development, Warsaw 2008, p. 30.

The Sectoral Operational Programme *Human Resources Development*, implemented in 2004-2006, was aimed at the creation of an open, knowledge-based society by providing appropriate conditions for the development of human resources through education, training and work. The contribution of the European Social Fund accounted for 70% of its appropriations. Projects implemented within the framework of this programme concerned both urban and rural areas, although

[11] *Oddziaływanie funduszy strukturalnych i Funduszu Spójności na gospodarkę Polski w okresie 2004 – I połowa 2007*, Ministry of Regional Development, Warsaw 2008, p. 29.

it was not explicitly defined in the programme. However, the programme structure provided for measures largely targeted at rural communities.

Projects implemented in rural areas were included in measures of the SOP HRD such as: Perspectives for youth, Counteracting and combating long-term unemployment, Promotion of active social policy in support of high-risk groups, Increasing access to education – promoting lifelong learning, Improving education quality and relevance to the labour market needs.

Another source of the implementation of social policy tasks in Poland was the Integrated Regional Operational Programme, particularly its Priority 2: *Strengthening of regional human resources development*, aimed at reinforcing the endogenous potential of the region, including the development of infrastructure contributing to human capital development. Measures under this priority were concentrated on areas at risk of exclusion, especially rural areas. Among measures implemented in such areas, under Priority 2 support was mostly granted to vocational reorientation of workers at risk of unemployment and to vocational re-orientation of people leaving agriculture. Projects in this field mainly concerned training and retraining courses.

In terms of allocation of funds, the structure of support granted to final beneficiaries was as follows: the two most important measures in the budget were training courses (42% of SOP HRD appropriations) and job placement assistance (33% of SOP HRD funds). The next category were apprenticeships (12% of SOP HRD funds), followed by on-the-job training (5% of SOP HRD appropriations), employment subsidies and one-off aid for business start-ups (3% of SOP HRD funds each)[12].

It is worth mentioning several examples of good practices in implementing the SOP HRD and IROP in Poland. The selection was based on the criterion of support offered to rural residents with regard to social problems. The selected projects represent practices implemented and awarded prizes by the Minister of Regional Development Grażyna Gęsicka in the competition "ESF good practices" in 2007.

The SOP HRD programme, Measure 1.3 Counteracting and combating long-term unemployment, was aimed at combating social exclusion and helplessness of the long-term unemployed. The project under this measure was implemented from 16 January 2006 to 31 December 2006, in a group of 176 persons from the *poviat* of Giżycko. It was developed and implemented by the *Poviat* Labour Office (PLO) in Giżycko. The goal was to limit long-term unemployment and its causes. The project was targeted at persons aged over 25, registered at the PLO for a period

[12] *Oddziaływanie funduszy strukturalnych i Funduszu Spójności na gospodarkę Polski w okresie 2004 – I połowa 2007*, Ministry of Regional Development, Warsaw 2008, p. 33.

ranging from 0 to 24 months. The implementation measures included: vocational guidance and job matching, subsidised employment, one-off aid for business start-ups and legal counselling, training courses to obtain, improve or change job qualifications bearing in mind the labour market needs[13].

"Women's Colours in the Rural Landscape" (*Pejzaż wiejski kobietą malowany*) is an example of a project implemented under the SOP HRD measure 1.6 Vocational integration and re-integration of women. The final beneficiary, the Support Centre for NGOs in Białystok, implemented three editions of the project "Women's Colours in the Rural Landscape", the last of which was financed, *inter alia*, from the European Social Fund. The project covered four cycles of training courses and study visits aiming at increasing knowledge and skills in the field of local community management. The training courses concerned the following issues: "I – an animator of the local community, "Drawing up a map of social needs and problems, "Planning and working on projects", "Self-help groups", "The concept of voluntary work, working with volunteers", "Activating local people", "Active search for funding – completing subsidy application forms", "Procedures of setting up and operating non-governmental organisations", "Establishing local partnerships", "Managing a *sołectwo* – the legal basis for the functioning of *sołectwo*" (the smallest administrative unit in Poland). There were 28 participants of the project, and indirect beneficiaries included all the inhabitants of all the *sołectwa* in the *poviat* of Bielsko in the Podlaskie voivodship. The three editions of the project covered a total of 78 women acting as *sołtys* and local leaders[14].

Another example concerns one of the practices of implementing the SOP HRD, i.e. Measure 2.1 Increasing access to education. The Dream School Project lasted from June 2005 until January 2007 and was developed by the Centre for Citizenship Education (CCE). The Project consisted in implementing individual development syllabuses in schools. The final beneficiaries of the project were 443 schools across Poland, including elementary schools, lower secondary schools and secondary schools in rural districts as well as secondary schools in which at least 35% of pupils were from rural areas. The main objectives were as follows: preparing long-term development syllabuses in schools, implementing annual action plans aimed at increasing educational and life opportunities for pupils from rural districts. The project also included establishing regional consultation centres. Their task was to provide assistance to schools in their plans to offer training courses for local communities. As a result, the schools conducted a number of extra-curricular activities which taught foreign languages, IT and

[13] www.gizycko.pup.gov.pl, of 1 November 2008.
[14] www.podlaskie.ngo.pl, of 1 November 2008

methods of recognising labour market mechanisms. Furthermore, training courses for parents were conducted, Internet cafes and District Information Centres (*Gminne Centra Informacji*) were established. The project prepared pupils to enter the labour market via visits to higher education institutions, traineeships, gathering information on occupational groups.

It is also worth presenting the project "Labour Market Entry", implemented by the *Poviat* Labour Office in Sokółka under the SOP HRD and Measure 2.1 Perspectives for youth. The overall aim was to provide the fullest possible assistance facilitating the start of working life to young people under 25 years of age, registered in the PLO for a period shorter than 24 months, as well as to unemployed graduates and school-leavers from all types of schools within the *poviat*, to prevent them from becoming unemployed. The graduates and school-leavers were from both rural and urban areas. According to the implementation report, the aims of the project were fully attained. Within the framework of the project, 295 young people under 25 years of age and unemployed graduates and school-leavers from various types of schools were granted support facilitating the start of their working life, and they obtained skills in the field of active job search and self-promotion[15].

The importance of the Sectoral Operational Programme *Human Resources Development* to rural development is reflected in the number of rural beneficiaries. By mid-2007, the overall number of participants of all the projects under measure 2.3 Vocational re-orientation of people leaving agriculture reached 9,871[16].

Another programme to have an impact on rural development and to advance the social policy priorities in Poland was the IROP. To illustrate its effect, it is worth presenting one of the projects recognised as a good practice in 2006. The project "Reactivation of vanishing jobs in the *poviat* of Nysa" was granted assistance under IROP measure 2.3. It was targeted at a group of 50 farmers, their family members and agricultural workers. Its implementation covered training courses on metal craftwork, glass painting, wickerwork craft, basket making, lace making, embroidery, furriery, woodcarving and armourer's craft. Men were mostly interested in metal craftwork, while women were mainly attracted to basket making and wickerwork craft. Moreover, each of the participants attended a course on running a business. The project was designed by the *Poviat* Labour Office in Nysa, and the aid was directed to farmers, their family members and agricultural workers.

[15] www.apraca.pl/biwu, of 1 November 2008.

[16] *Oddziaływanie funduszy strukturalnych i Funduszu Spójności na gospodarkę Polski w okresie 2004 – I połowa 2007*, Ministry of Regional Development, Warsaw 2008, p. 36.

All projects targeted at youth, the unemployed as well as at the long-term unemployed only represented part of activities undertaken under the SOP HRD. Although it is difficult to determine the amount of funds allocated to rural areas within the framework of EU programmes, it is certain that such projects were rather frequent. Therefore, in 2004-2006 rural areas received substantial support from the ESF to help solve social problems.

Moreover, the majority of projects focused on the improvement of knowledge and skills as well as on raising the beneficiaries' awareness of economic realities, which contributed to changing their position in the labour market and adopting an active approach rather than a passive one. This type of activity concerns not only the fact of taking up employment, but it also consists in inner-directed identification of one's own position. As reflected in the above-mentioned examples, the implementation of the projects was not subject to a re-distributive approach to EU support. The nature of the programmes was closer to proverbial teaching the beneficiaries to fish rather than giving them a fish. Moreover, the award-winning projects presented above clearly show that they aimed at long-term benefits for rural communities in the future.

3. Elements of social policy in rural areas in the National Cohesion Strategy for 2007-2013

The Polish social policy guidelines after 2007 were set out in the National Cohesion Strategy (NCS) for 2007-2013. The social policy issues are addressed directly in Objective 2 of the NCS, i.e. Improving the human capital quality and enhancing social cohesion. One of the five operational programmes, the Operational Programme *Human Capital* focused on increasing employment and social cohesion, is co-financed from the ESF. The Programme sets the guidelines for the job creation policy in Poland until 2013, and should fulfil the objectives of the renewed Lisbon strategy. At the same time, it also shows efforts at developing human capital[17].

The Operational Programme *Human Capital* covers the best known ESF areas, such as employment, social exclusion and workforce qualifications, and it addresses challenges in the field of education and training. Apart from human

[17] Due to the problems of structural unemployment and long-term unemployment, rather widespread in Poland as compared to the EU, the ESF appropriations allocated to Poland exceed any previous contributions. The funds earmarked for human capital development under the OP HC are the highest amount for one country in the EU history, i.e. until 2013 Poland has at its disposal the amount of EUR 11.4 billion, with EUR 9.7 billion from the ESF, Operational Programme Human Capital, Biuletyn Informacyjny 1/2008, p. 2.

capital, the Programme also supports good governance, health care and rural development. It includes ten priorities. Priorities 1 to 5 concern the strengthening of labour market institutions, social policy, public education and administration, while priorities 6 to 10 focus on support for natural persons and enterprises.

Table 2. European Social Fund in Poland for 2007-2013[18]

Priority axis	Community contribution	National partner	Total funding
1. Employment and social integration	430,260,954	75,928,404	506,189,358
2. Development of human resources and adaptation potential of enterprises and improving the health condition of working persons	661,310,120	116,701,786	778,011,906
3. High quality of the educational system	855,300,828	150,935,440	1,006,236,268
4. Tertiary education and science	816,311,813	144,055,026	960,366,839
5. Good governance	519,225,980	91,628,114	610,854,094
6. The labour market open for all	1,918,389,821	338,539,380	2,256,929,201
7. Promotion of social integration	1,319,970,145	232,935,908	1,552,906,053
8. Regional human resources for the economy	1,350,207,670	238,271,942	1,588,479,612
9. Development of education and competences in the regions	1,447,911,629	255,513,817	1,703,425,446
10. Technical assistance	388,287,040	68,521,242	456,808,282
TOTAL	9,707,176,000	1,713,031,059	11,420,207,059

Source: www.funduszestrukturalne.gov.pl, of 25 October 2008.

Broken down by priority of the Operational Programme *Human Capital*, the majority of funds are allocated to programmes based on training. Training courses are seen as the solution to the problem of limited labour market participation since the employment rate in Poland is only 54.5%, much lower than the target of 70% set in the Lisbon strategy. It is worth noting that in the EU the employment rate of the working-age population increased to 64% as compared to 63% in the previous year. At the same time, the majority of persons living in rural areas, regardless of age, claim not to be interested in training courses or improving qualifications, and half of them never engaged in self-education. Only a limited share of the rural population attended driving schools, participated in computer or language training courses[19]. Hence, improving the educational and training systems, labour market reforms and strengthening the social economy could ensure long-term employment growth in Poland.

[18] http://ec.europa.eu/employment_social/esf, of 20 October 2008.
[19] *Polska wieś i rolnictwo, Raport z badań*, Pentor, Warsaw 2007, p. 83.

The ten above-mentioned priorities of the Operational Programme *Human Capital* have different effects on rural development. Some are directly targeted at the rural population, whereas other axes only indirectly contribute to the improvement of human resources in the countryside. The priority which directly allocates funds for solving problems in rural areas is Priority 9: *Development of education and competences in the regions*. According to the Priority description, the goal is to reduce differences in access to education between rural and urban areas. Measures under this priority are aimed at increasing access to vocational and secondary education, promoting pre-school education and lifelong learning of adults, particularly in the countryside. At the same time, OP HC measures targeted at schools should help reduce disparities in the quality of education, between regions as well as between urban and rural areas. Other priorities are also oriented towards solving problems in rural areas, priorities 9 and 6 being the most significant on account of the highest appropriations (see Table 2)[20].

Under all the priority areas of the OP HC there are measures contributing to rural development. Priority 1: Employment and social integration, is aimed at the introduction of relevant service standards in all public employment services and in 90% of social assistance institutions. Training will help to improve staff qualifications for wider implementation of active labour market policies and social integration measures. This Priority is reflected in projects targeted at rural areas insofar as the rural population benefits from such services.

Priority 2: Development of human resources and adaptation potential of enterprises and improving the health condition of working persons is oriented towards enterprises, also those located in rural areas, wishing to provide training to their employees. Separate measures are aimed at increasing the quality of health care services and preventive programmes, which should contribute to improving the health of workers. Support is also granted to employees with diagnosed occupational diseases returning to work.

Priority 3: High quality of the educational system covers measures for strengthening the educational system. It will consist in developing better policies and governance system taking account of the needs of employers. A National Qualification Framework and a lifelong learning support system will be created.

Priority 6: The labour market open for all. A large number of projects targeted at rural areas can be expected under such measures. The Priority is oriented towards increasing labour market participation of certain groups such as the unemployed, youth, women, disabled and older persons. It can be illus-

[20] On the basis of the National Cohesion Strategy, www.mrr.gov.pl, of 20 October 2008.

trated by a competition announced in the Wielkopolskie voivodship in the second quarter of 2008 under measure 6.3, i.e. Local initiatives for increasing labour market participation in rural areas, with appropriations of PLN 1,595,513[21].

Priority 7: Promotion of social integration covers measures aimed at improving access to the labour market for groups at risk of social exclusion. It points to social exclusion[22], especially in rural areas, which together with unemployment poses a poverty-related problem. Therefore, it is particularly important to support social assistance organisations acting for but not necessarily operating in rural areas.

Priority 8: Regional human resources for the economy is aimed at supporting business management training, thus better planning and coping with changes in the business environment.

Although it is frequently not explicit, the final beneficiaries of funds allocated to the above-mentioned priorities include the rural population. This was also the case in the previous financial perspective, where the demarcation line between the allocation of funds for urban and rural areas was not clear.

Another instrument to support solving social problems, including those in rural areas, are 16 regional operational programmes whose priorities also cover human capital issues. To a certain extent, regional programmes represent the continuation of the IROP, but they are much better adjusted to specific needs of a given region. The Wielkopolska Regional Operational Programme may serve as an example. Its priorities include *Infrastructure for human capital*. Since December 2007 the Marshal's Office has allocated funds for specific objectives, such as adapting the educational system to the needs of the labour market and reducing disparities in access to social infrastructure within the region, through calls for proposals. Thus, support is granted to all educational institutions at any level, targeted at youth and adults[23]. As far as the ROP for the Wielkopolskie voivodship is concerned, it is worth noting that some of its priorities mainly focus on metropolitan areas and major regional cities as growth centres rather than on the whole regions

[21] Operational Programme *Human Capital*, Biuletyn Informacyjny 1/2008, pp. 3, 6-8.

[22] Social exclusion combined with unemployment is a serious problem. The risk-of-poverty rate, at 21% in 2004, is significantly above the EU average. It is particularly high in the case of children (29%), youth, the long-term unemployed and the rural population. http://ec.europa.eu/employment_social/esfof 1 October 2008.

[23] Operational Programme *Human Capital*, Biuletyn Informacyjny 1/2008, p. 3, Wielkopolska Regional Operational Programme for 2007-2013, Marshal's Office of the Wielkopolskie voivodship, Poznań 2007, pp. 123-131.

and cities with their surroundings. This excludes rural areas as beneficiaries of support measures under such priority areas.

Summary

With regard to the programmes implemented in Poland, co-financed by the ESF and national funds, it should be concluded that rural residents receive substantial support, particularly under projects which enhance human capital. There are both projects specifically designed to meet the needs of the rural population and undertakings aimed at strengthening human capital in the whole region. Finally, it should be noted that some projects are targeted directly at rural residents, whereas others indirectly contribute to the improvement of their status. The latter group mainly includes projects strengthening institutional infrastructure in the region, including training and educational facilities.

As regards the significance of training projects, predominant in terms of value and number in the years 2004-2006, it should be emphasised that it is the right approach to rural development. The argument is important as the implementation of training projects provoked greater economic activity in rural areas, thus stimulating locally-generated social development. Social development, seen as the process of organisational strengthening of communities, has an enormous impact on the development of local labour markets since it largely determines labour demand, better recognition of educational needs and efficient information exchange systems. Therefore, if training projects in rural areas have a positive effect, despite indifferent or even negative attitudes of the rural population, one can expect progress in labour market development and improved quality of life in rural areas. This is the desired outcome of the ESF contribution to the implementation of social policy in rural areas in Poland[24].

[24] It is also positive that this is in line with the EU budget structure for 2009. The highest amount, i.e. 44.7% of appropriations, is to be allocated to cohesion and competitiveness of the EU for growth and employment, whereas rural development will only be supported by 10.9% of the CAP funds, Draft general budget of the European Communities for the financial year 2009 – Budget *online* - 17/07/2008**,** ec.europa.eu/budget, of 1 November 2008.

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Print run: 250 copies
Printing and binding: QUICK-DRUK s.c.