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Contribution of the Research Project to the Evidence-Based Development Policies – an Example of the “Development Trends of the Mazovian Region” Project

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ABSTRACT

Evidence-based policies require data and information on determinants, trends, and consequences of ongoing development processes. This data and information must be conveyed to policy makers. Thus a mechanism is needed to reach them and equip them with arguments for or against specific policy options. This mechanism is to be incorporated into the system of monitoring, analyzing, planning, and managing development processes. This article presents a brief outline of how the project “Development Trends of Mazovian Region” (DTMR) implemented in the years 2009-20014 related to regional policy formulation in terms of building an information base for diagnostic purposes, preparing instruments for modeling and scenario building, networking and lobbying for institutional arrangements that would foster cooperation among researchers and practitioners, both planners and policy makers. The DTRM project was co-financed by the European Union under the European Social Fund and managed by the Mazovian Office for Regional Planning.

Introduction

Regional development processes are dependent on many internal and external factors. Guiding these processes requires knowledge of the conditions and rules of development, the ability to diagnose the current situation and to predict possible development scenarios. In order to plan necessary investments reliable information as well as appropriate instruments for effective implementation of plans and development management are required. A well-developed information base will provide data and other types of arguments enabling a policy aimed at realizing clearly defined objectives to be pursued. The knowledge, skills, and attitudes of politicians, decision makers and all those responsible for operational steps are the key factors of success. The “Development Trends of Mazovian Region” (DTMR) project was devoted to the creation of such an information base, mechanisms and instruments for analysis, building and modeling scenarios, as well as preparation of procedures, mechanisms and instruments for cooperation between researchers and practitioners.

From the very beginning the idea for the DTMR was to design and develop a project that would not only serve typically cognitive purposes, but would also be instrumental in building a coalition of stakeholders who might contribute and benefit at the same time from the results of the DTMR project. It was assumed, that the project would bring together repre-

sentatives of local and regional governments, universities, research institutions, NGOs, and the private sector. The project was intended to deliver data and information in order to diagnose and evaluate ongoing development processes and in addition, to formulate recommendations on necessary amendments in development policies, measures to be used for their implementation, and on areas requiring special attention or immediate public intervention. This article is about the impact of the results of the research project on development policies at regional level and on institutional arrangements, that are aimed at supporting decision making process.

Organization and goals of the “Development Trends of the Mazovian Region” Project

In its assumptions the project referred to the contemporary trends of thinking about the development of regions, including the report by Fabrizio Barca, in which he pointed out the need for a new paradigm of regional policy based on the concept of targeted territory. The aim of this approach is to reduce permanent inefficiency, understood as the underutilization of resources, leading to a reduction of results of undertaken development efforts in the short and long term perspective. The reduction of results leads to numerous negative social and economic consequences. The report points out that the possible intervention should take the form of provision of integrated packages of organizational solutions, planning instruments, and financial mechanisms in order to initiate institutional change, improving the well-being of residents and productivity of businesses and promoting innovation. At the same time it emphasizes that decisions related to the interventions are usually taken in “conditions of lack of information.”

The DTMR project was divided into three modules. In the first module research and preparation of a diagnosis of the socio-economic conditions of the region and its spatial development were planned. Studies were conducted using an interdisciplinary approach that allowed, among others, comprehensive assessment of the development potential of the region, resulting from the current functional and spatial structures, and associated links and flow within the region and its wider environment (national, European and global dimensions).

In the second module development models and scenarios were prepared. They enabled identification of current paths of development of the region and the cause-effect relationships of the development processes. Results of this part of the analysis served as a base for the preparation of forecasts concerning future development and its possible effects. Recommendations on specific solutions, changes in strategies and amendments of plans were also drafted.

In the third module activities were undertaken to institutionalize solutions which had been worked out concerning data and information collection as well as methodologies, methods and instruments of analysis. Institutionalization took the form of creation of the Mazovian Territorial Development Observatory (MTDO), an organizational unit within the Mazovian Office for Regional Planning structure, that is to act as a regional development think tank. MTDO will continue research activities facilitating cooperation among different

institutions including the Regional Statistical Office, universities and other research institutions located in the region, departments of self-government at regional and county level that might be helpful in collecting and analyzing data and information.

Research on the development of the Mazovian Region has obviously been conducted earlier. The innovative nature of the DTMR project consisted in its complexity, interdisciplinary approach and openness in the sense of inclusion of different participants in the project (from the public and private sectors, non-governmental organizations and business-related environment). The DTMR was also aimed at introducing new standards in conducting analytical work and planning. From the very beginning of the project participants from different sectors were involved: detailed definition of the planned thematic areas of research was initially outlined in the assumptions of the Project, then presented to stakeholders during discussion workshops, changes and final formulation. A Scientific Council of the DTMR project was also established. The Council consisted of renowned experts, and academics from leading universities, thereby assuring, that the research would be focused on issues that are key to the development of the region and that the research problems are properly formulated and approaches and methods properly chosen.

Research hypotheses to be verified during the research process were formulated as follows:

1. Opportunities for sustainable development of the region depend on overcoming the "barrier of duality" – dynamic development of the metropolitan area of Warsaw and the slow pace of development of neglected rural, especially peripheral parts of the region.
2. The functional and spatial structure of the region is subject to changes leading to the emergence of a new and unique "transition zones" quality – areas of a peri-urban nature which develop spontaneously.
3. An "infrastructure gap" prevents the use of the potential of Warsaw to stimulate development processes in the region – weak technical infrastructure connections impede diffusion of development incentives.
4. Lack of participation of local communities in the social and economic life of Mazovia is the reason for unused development potential of the region.
5. The development of Mazovia as a region is impossible without the use of the development of the potential of Warsaw.
6. Lack of territorial cohesion is the reason for the polarization of economic development of the region.
7. Lack of social cohesion is a barrier to the formation of social capital.
8. Low innovative potential of the region is the main reason for its poor competitiveness.
9. Supporting development of a polycentric regional settlement system is a prerequisite for sustainable social and economic development of the region.
10. Improper use of assets and resources of the natural environment is a barrier to regional sustainable development.
11. Overcoming barriers of poor political relations between self-governments of the region of Mazovia and the City of Warsaw is a prerequisite for the region's sustainable development.

12. The chances of development of the region are to a large extent determined by the quality of the national, European and global relations of the region.

Diagnosis – the main findings

The most important conclusion, with many implications for programming and planning development in the future, is that internal diversification of the region is still on the increase. Development policies utilized in the region during the last 25 years (even in the period after Poland's accession to the European Union, when additional funds for regional development became available) have not changed traditional paths of development of the region itself and its parts. Development is concentrated in Warsaw and its metropolitan area (Warsaw Metropolitan Area – WMA). Although spatial concentration of development in large urban centers and their vicinity is a natural phenomenon, in the case of the Mazovian Region the scale of concentration may pose a risk in the future. Peripheral areas are losing their endogenous potential and “diffusion” areas with decreasing attractiveness for investors and inhabitants. These processes should be seen as a “warning bell”. Thus the greatest challenge for the region's development policy is the maintenance and strengthening of endogenous development potential in peripheral areas and stimulation of the diffusion of development incentives from Warsaw and WMA to other parts of the region.

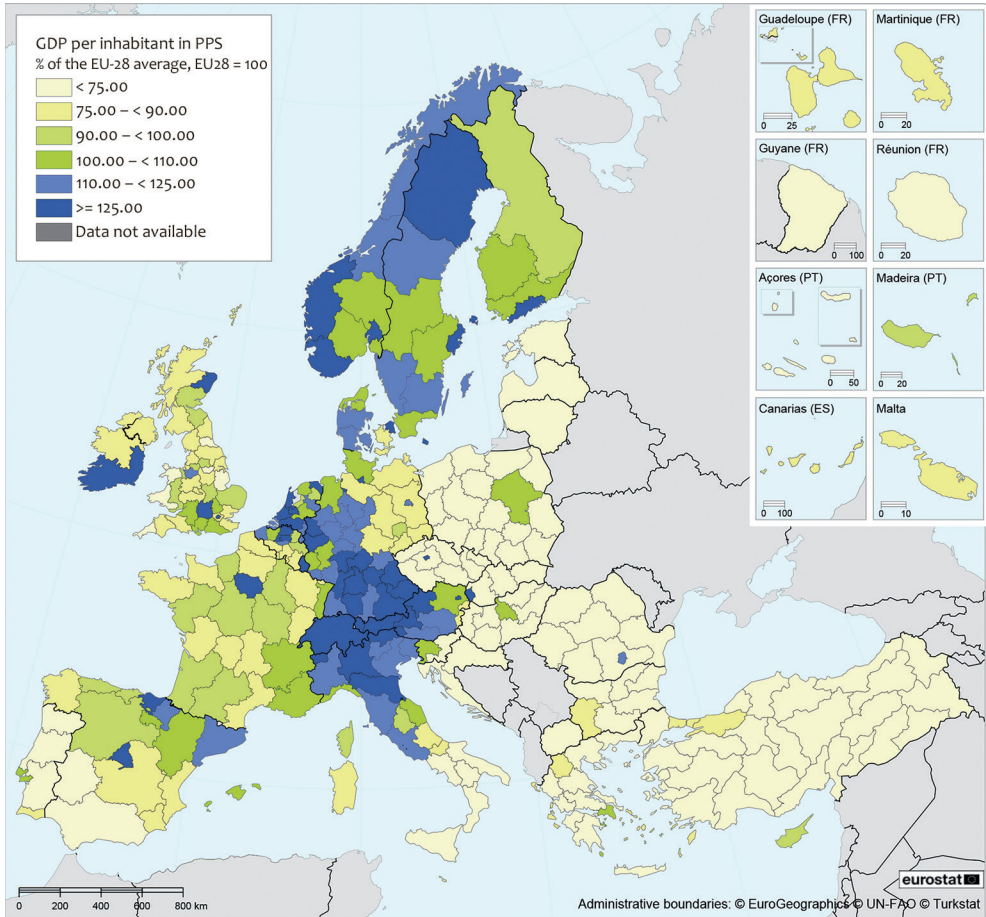
The Mazovian Region is a unique region for three reasons: high development potential concentrated in Warsaw – the capital city of Poland, enormous internal diversification of the region and specificity of development of its different parts. Warsaw and its metropolitan area (Warsaw Metropolitan Area – WMA) are characterized by highly dynamic development. Suburban areas, especially rural ones, encounter many crisis phenomena. Regardless of this, the region is still the best developed region in Poland.

The Mazovian Region is the only Polish region with a social and economic situation which is statistically similar to the regions of “the old” Member States of the European Union. As early as 2003, the region exceeded the 75% threshold of the average income of EU 27 and so far has been the only Polish region which has succeeded in achieving this. On the economic map of the region, Warsaw, the most influential metropolis in Poland, plays a dominant role. The Mazovian Region, a leader in competitiveness among Polish regions, generated 21.9% of the Polish GDP, and the level of GDP *per capita* was 159% of the national average (2012).

The region also maintains the leading position in terms of acquiring foreign investors – Mazovia is the largest beneficiary of foreign direct investments (FDI) in Poland. In spite of the relatively high employment costs, the region has the highest number of enterprises registered. An asset of the region is also its dominance in terms of registration of non-governmental organizations. This indicates to the already developed social capital, which also contributes to reinforcement of the region's competitive position.

With regard to the structure of industrial production in the Mazovian Region, the most significant role is played by the following industries: agro-food, petrochemical and petroleum refining, chemical, machinery, printing and publishing, as well as radio, manufacture of tele-

Fig. 1. Gross domestic product (GDP) *per capita*, in purchasing power standard (PPS) by NUTS 2 regions, 2011 (% of the EU-28 average, EU-28 = 100)



Source: Eurostat

visions and communication equipment. However, in the structure of the Gross Value Added and employment, it is the service sector which dominates in the region. It constitutes a diversified sector characterized by intensive dynamics of change. An increase in the share of the service sector in the economy is a symptom of growth of the level of wealth of society and modernization of the Mazovian economy.

Among Polish regions Mazovia takes a lead position in terms of the area of rural land (it covers approx. 94% of the region's area) and the number of inhabitants (1.9 million, i.e. 35% of the total population of the region). Around 25% of the Mazovian Region's in-

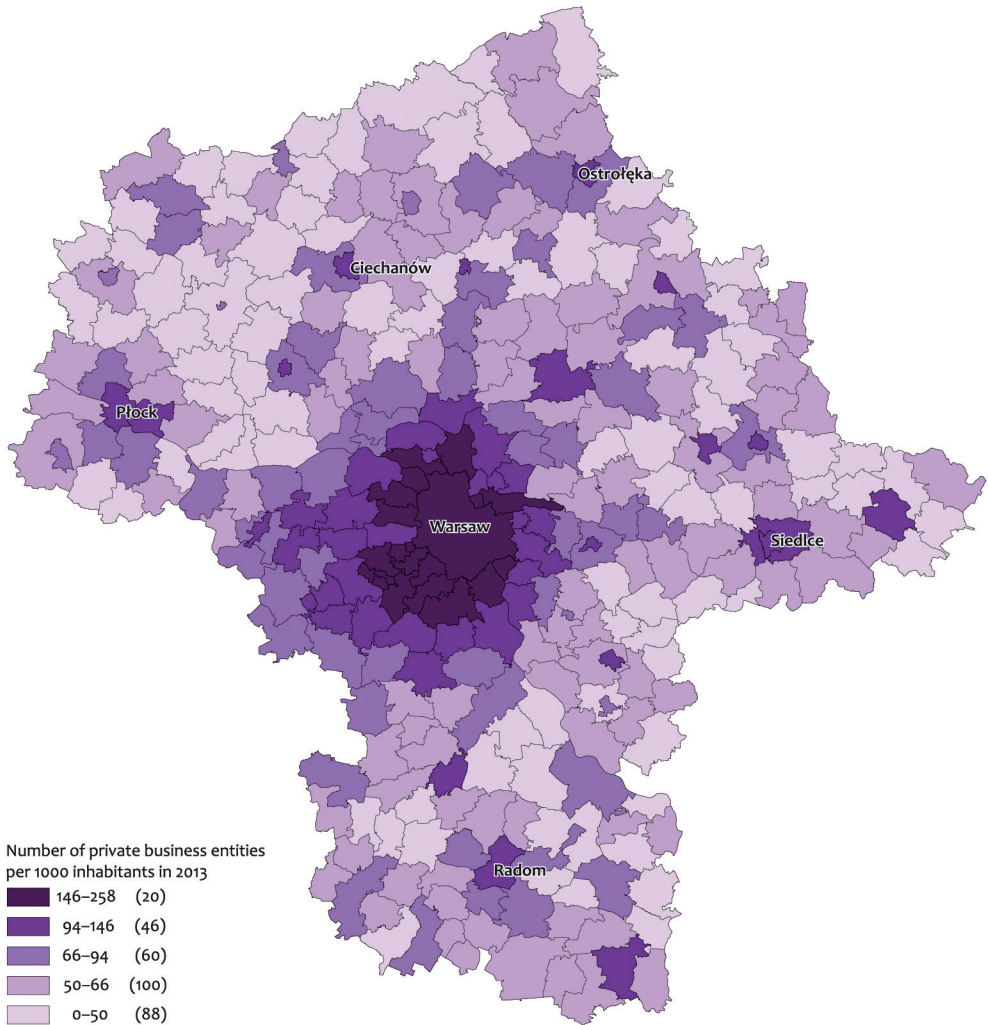
habitants are employed in agriculture. In the period of 2000–2012, the number of persons working in the agricultural sector fell by 33%, and the percentage in the overall employment in the Mazovian regional economy fell by 8.8 percentage points. In 2013, the employment rate in this sector was 11% of the total employment in the region. Almost half of all the farms (i.e. 46.7%) have less than 5 hectares of arable land. Family farmsteads are the dominant type of farms in this area. The Mazovian Region is one of the key regions specializing in the production of foodstuffs. As much as 15.4% of the domestic agricultural production value is generated in this region – the highest percentage in comparison to other Polish regions. The region achieves a particularly high performance in the domestic production of fruit and vegetables (36% and 14%, which puts the region at top position in Poland). The condition and resources of the natural environment are conducive to the development of high quality food production. Agricultural production in the region can play an important role not only as an element of economic revival of multifunctional rural areas, but also as a factor contributing the improvement of the condition of urban centers located in these areas.

The Mazovian Region has a large R&D potential. The capital city of Warsaw brings together more than 80% of R&D units from the entire region. Of the total expenditure on R&D activities in Poland, 34% is concentrated in Mazovia, and their volume in relation to GDP is twice as high as the national average. The region is a base for 20% of companies manufacturing high technology products and 28% of high-tech companies in Poland. As many as 85% are located in Warsaw. For several years now, Mazovia has been the leader among Polish regions in terms of expenditure on R&D. The challenge for the region's development policy is to increase the competitiveness of its economy internationally.

There are 725,000 business entities in the region registered with REGON (National Official Register of Business Entities). This is more than 17% of the total number of business entities in Poland. A considerable majority of the Mazovian enterprises, i.e. almost 80%, are registered in towns and cities. Nearly 96% of all the enterprises in Mazovia are so-called micro-businesses, i.e. enterprises employing no more than 9 persons. There are 255 large companies, employing more than 1000 persons, with their registered offices in the Mazovian Region. The private sector is dominant among employers. At the same time, the number of single shareholder companies has grown and companies from the creative sector have also started appearing on the market. Services constitute a dominant employment sector (64% of employees), while the share of the industry (and building industry) – 19.1%, and of agriculture and forestry – 17.1% is more or less at an equal level. The receptive labor market in Warsaw reduces the unemployment rate in the region, but at a regional level this issue is a real challenge for local and regional authorities.

In 2013, the population of the Mazovian Region was 5,316,800, which accounted for 13.8% of the entire population of Poland. The urbanization index of the region is 64.2% (whilst for Poland the index is 60.6%). In spatial terms, the changes in population of Mazovia occur in an uneven manner: there is a concentration of human potential in urban centers – mainly in Warsaw and the surrounding towns and villages, and in cities of sub-regional importance and their suburban areas. The number of people living in rural municipalities is diminishing.

Fig. 2. Private business entities per 1000 inhabitants in 2013, according to municipalities

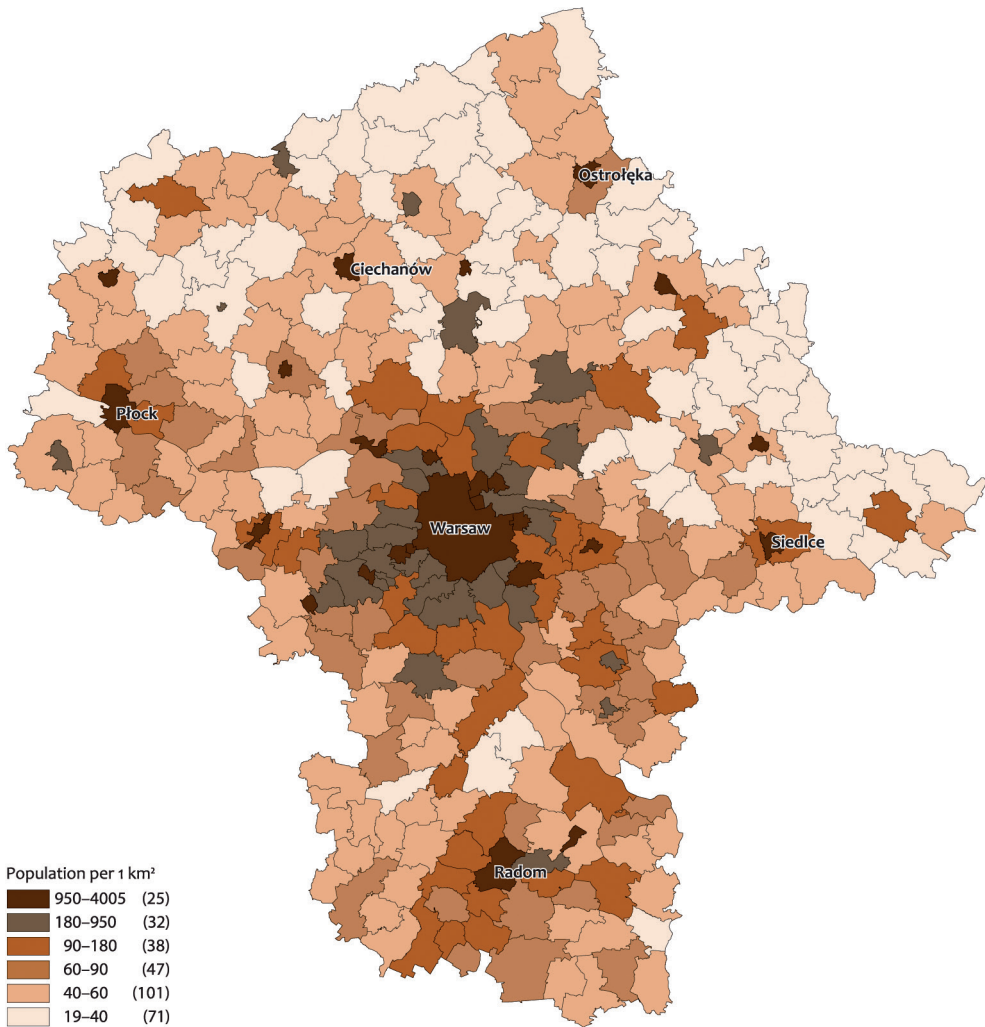


Source: authors' compilations based on data of the Central Statistical Office of Poland (GUS: <http://stat.gov.pl>)

This is accompanied by changes to the structure of the size of villages: the number of small villages (with a population of under 100) has decreased and the number of villages with a population of over 2000 inhabitants has grown.

The Mazovian Region, and in particular Warsaw and the ring of adjacent municipalities, has the highest influx of people. Almost the entire period since 1990 is marked by an increase

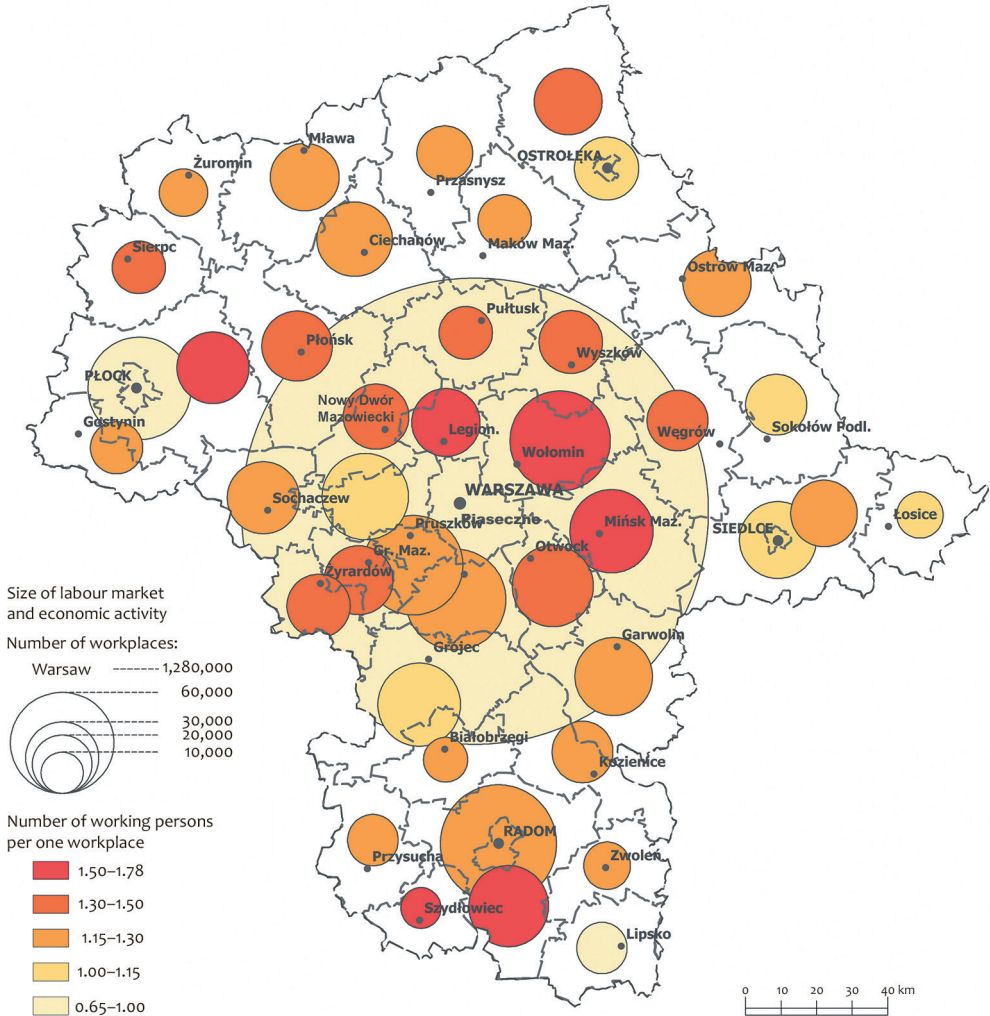
Fig. 3. Density of population in the Mazovian Region municipalities in 2013



Source: authors' compilations based on data of the Central Statistical Office of Poland (GUS: <http://stat.gov.pl>)

of the balance of domestic migrations. The influx of people into Mazovia is accompanied by the diffusion related to foreign migrations. It was estimated, that the number of persons staying abroad, originally from the Mazovian Region, may be as high as 250,000. Migration patterns influence the process of diversification of the demographic and social situation of particular areas, and consequently their opportunities for development. The main characteristic of migration movements in the Mazovian Region is that their destination is Warsaw.

Fig. 4. Size of counties' labour markets and the number of professionally active inhabitants per single workplace



Source: T. Komornicki et alli, *Rynek pracy*, p. 59, report B1 R3 prepared for "Development Trends of Mazovian Region" project (2011)

The capital city is the main domestic migration destination. This migration does not depend on the current economic situation. The attraction of Warsaw as a migration destination on a national scale is unquestionable. On a European and global level, the attraction of Warsaw is considerably less. In spite of its functions and significance in the region, Warsaw is not an international city in terms of nationality and ethnical diversification.

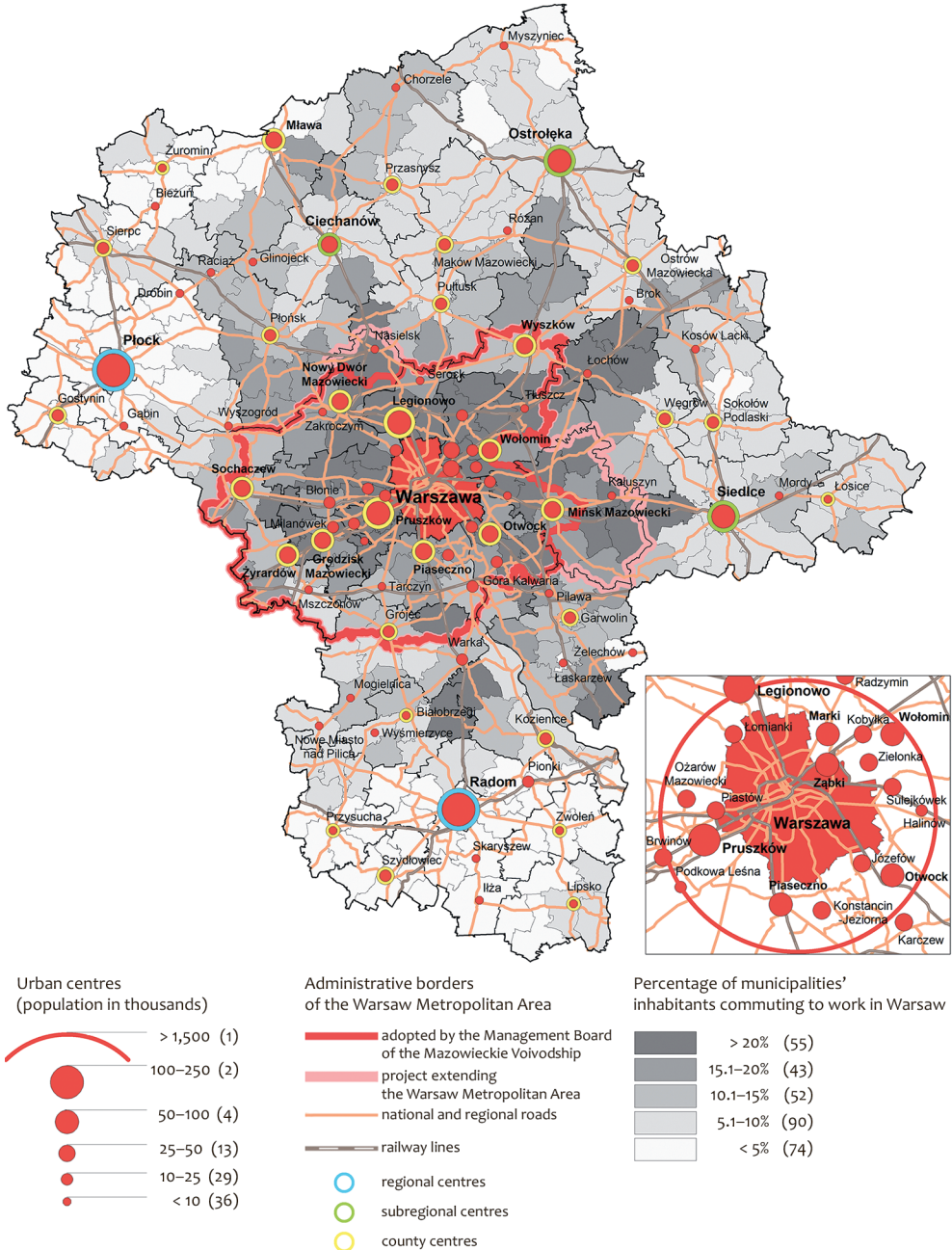
A positive change observed in the region is the increase in the number of persons with higher education. The population of Warsaw and adjacent large urban centers is characterized by the highest level of education. Mazovia is a major academic center dominating in terms of quantity (the largest number of universities and students) and quality (in terms of types of education facilities, fields of study, degree courses, and quality of education). In 2013, there were 107 university level educational institutions constituting almost a quarter of all schools of this type in the country. There were 294,000 students in public and private institutions of this type (19% of all students in Poland). In the region, students have access to all types of universities. The majority of them are located in Warsaw (79 university level institutions, 87% of students in the region).

Warsaw and the Warsaw Metropolitan Area are the key elements of the functional and spatial structure of the region. Warsaw is a top-level center for the Mazovian Region, and in addition, it is a city performing supra-regional functions on a national and European scale. Warsaw does not stimulate economic and social development processes very intensively, especially outside the Warsaw Metropolitan Area. This is due to the fact that the links with sub-regional poles and flows which may stimulate development are most frequently directed towards Warsaw.

A specific element of the spatial organization of the economy and social life of Mazovia, arising from the function, character and economic potential of Warsaw, is its metropolitan area spreading over 40–50 km from the center of the capital. The strongest functional and spatial links can be observed along the transportation routes converging in the Warsaw node, especially those running from south-western Poland. These are areas which have primarily residential functions, resulting in a considerably high rate of commuting.

A factor inhibiting the formation of an integrated, polycentric settlement system of the region, combining Mazovian towns and villages into a system of interconnections and hierarchical dependencies, is the Warsaw agglomeration. Towns, cities and urbanized areas located within this area show scarce mutual relationships, being directly connected with Warsaw, particularly in terms of functional links. A factor which fosters the creation of an integrated settlement pattern of the Mazovian Region are the county cities and urban centers of a lower level. They form a more or less regular settlement pattern, and therefore, the support of the expansion of their impact zones should lead to a reduction of the adverse effects of polarization. It has been observed that the “sprawl” of residential development areas in the region is becoming increasingly intense. It is particularly noticeable in the case of Warsaw and its metropolitan area. The urbanization pressure is a phenomenon which has an ever increasing impact on the natural environment, landscape and costs of operation of infrastructure and households. The environmental changes are brought about mostly by the urbanization pressure occurring in the areas with easy access to the labor market and in the areas which are attractive because of their location and surrounding landscape. The spread and dispersion of development of the peripheral areas with high natural values, as well as in areas of high-value agricultural production, result in the degradation of rural space in economic and landscape terms. The urbanization pressure is connected with the policy and practice of the region’s spatial organization and

Fig. 5. Municipal settlement pattern of the Mazowieckie Voivodship



Source: *Strategia rozwoju województwa mazowieckiego do 2030 roku. Innowacyjne Mazowsze [en: Development Strategy of the Mazowieckie Voivodship 2030. Mazovia as an Innovative Region]*, 2013, Municipal Government of the Mazowieckie Voivodship, Warsaw, p. 38

has a direct impact on the shaping and protection of the natural environment. The reduction of the urbanization pressure and prevention of urban sprawl are of particular importance to the Mazovian Region, as the most important natural resources relevant to the developmental potential of the region are the physical space and soil. Other natural resources occur in small quantities and do not have any major impact on the economy.

Development potential and threats to development

The results of the diagnosis are used as the basis for identification of the primary strengths of the region, with a positive impact on its development, and the major weaknesses slowing down and preventing this development. The identified strengths and weaknesses will in the future, determine the paths and directions of the Mazovian Region's development. Depending on the implementation of a development scenario, the strengths of the region may become future opportunities, while the weaknesses may pose a risk if no adequate measures are taken. Identification of strengths and weaknesses, as well as opportunities and risks of the Mazovian Region is very difficult. As mentioned several times above, this is an extremely internally diverse region and the same development factor may be an opportunity for one area and a risk for the remaining ones. Further development of the metropolitan functions of Warsaw is an opportunity to strengthen its position and enhance its attractiveness on a national, European and global scale. However, if the development factors are not diffused from the metropolis to other parts of the region, this metropolisation may result in a greater dominance of Warsaw, formation of a monocentric settlement pattern and deepening marginalization of peripheral areas.

The most important strengths of Mazovia which have been identified include:

- attractiveness of the Warsaw Metropolitan Area for settlement and investment,
- social and demographic potential,
- availability of open land.

Each of the strengths mentioned above is an effect of the interpretation of the identified conditions and trends forecast in the region's development. Changes to the developmental conditions (including changes to the developmental policy) may lead to a situation where an identified strength reaches a threshold value which accordingly will transform it into an opportunity for development.

Some of the diagnosed conditions also have an adverse impact on the social and economic development of the Mazovian Region. Bearing this in mind, the authors defined the major weaknesses of the region, which include:

- polarization of development and lack of regional cohesion,
- lack of regional identity,
- delay in infrastructure development and lack of spatial order.

Depending on the actions taken by politicians at national, regional, and local levels, and global changes in the economy, innovation, society and natural environment, the development of the Mazovian Region may become dynamic in the future or the region might face

stagnation or crisis. Development of a definite type will occur in the future according to a scenario determined by the existence or use of developmental opportunities.

Recommendations concerning areas of public intervention

A set of recommendations was prepared based on results of the studies conducted. This set consists of fourteen detailed recommendations elaborated on 32 pages¹. All recommendations have an identical structure: first, a description of the problem is presented, then the direction of action to be undertaken and next specific activities are described. In this article, due to the lack of space, only the recommended main “three pillars” of future policy are described. The “three pillars” refer to the identified strengths of the region. Their aim is to exploit opportunities and enhance the potential of strengths to achieve their critical value, leading naturally to the formation of the Mazovian Region as an effective social, economic and environmental ecosystem. The “three pillars” also pertain to the measures taken to limit the potential of weaknesses – actions eliminating the probability of risks and transforming them into developmental opportunities. The “three pillars” are as follows:

1. Enhancing the external functions of the Warsaw Metropolitan Area

The Warsaw Metropolitan Area clearly stands out in the region due to its level and pace of development, availability of services and quality of life. The whole region benefits from it, since because of its global relationships, Warsaw creates jobs and revenue, not only for its own inhabitants, but also for the surrounding areas, both close and outlying. The capital city is “a driving force” for the regional economy. However, the area located in the immediate vicinity of Warsaw, the so-called Warsaw Metropolitan Area, derives the most benefits from the capital city’s potential. Therefore, to foster equal opportunities for the development of all the areas of Mazovia, reinforcement of the external functions of the Warsaw Metropolitan Area is recommended, understood as highly specialized exogenous functions.

The WMA would play the role of a “growth pole” of Mazovia. Channels for innovation transfer would be created and areas outside the WMA would increase their capacity to absorb innovations. This will result in a situation where, with the strengthening of the global position of Warsaw, smaller urban centers and peripheral areas of the Mazovian Region will also be strengthened.

The reinforcement of Warsaw and the WMA’s potential together with its diffusion to the entire region is a key issue for Mazovia. It is all the more crucial, since Mazovia is not a region specializing in production or service activities which warrant a long-term and future-oriented development. A certain specialization is noticeable in the service sector, however, this mostly applies to Warsaw itself. Nonetheless, this discussion should not be limited to selected sectors of the economy, because the strength of Warsaw lies in its economic and social diversity. It is the point where various functions, concepts and ideas intertwine, and which attracts the most creative persons.

¹ Rekomendowane działania na rzecz równoważenia rozwoju województwa mazowieckiego, MBPR, Warszawa 2015

2. *Increased adaptability of the Mazovian Region's inhabitants*

The second pillar of development of Mazovia would be an increase of adaptability of the region's inhabitants. Adaptability is broadly understood as adaptation to changes occurring in the region. Ability to adapt efficiently to changing social and economic conditions will have a direct influence on the future paths of the region's development. The concept of adaptability should be understood in its broadest sense, that is :

- professional (competence) adaptability – in times of very rapid advance in developments in the service and manufacturing market, and rapidly developing technologies, also continual change in the demands and requirements of the labor market. Consequently the inhabitants of the region must continuously develop their skills and attain greater professional flexibility. This leads to the dissemination of life-long education processes, increased use of flexible forms of employment, more widespread phenomenon of retraining for employees, as well as the development of entrepreneurship. The processes run smoothly in Warsaw and its metropolitan area, however, obstacles are encountered in the peripheral sections of the region;
- spatial mobility – improvement of transport accessibility and, consequently, the mobility of the Mazovian Region's inhabitants, i.e. improving the efficiency of the transportation routes from remote areas to the center of the region will enable basic services in these areas to be maintained. Moving to Warsaw will no longer be the only alternative for those looking for good living conditions and professional development opportunities. The growth of transportation accessibility in all parts of the region will also mean that enterprises will choose to locate here, improving access to raw materials and markets. A well-developed infrastructure, which constitutes an essential element of export-oriented activities, will enable widespread establishment of businesses in areas located far from the core region;
- economic adaptability – understood here primarily as flexibility and innovation in business and entrepreneurship, ability to work and function in the network of relations. The public sector, business entities and research units must keep up with the pace of changing conditions of the surrounding environment and apply modern methods, technologies and management tools. All these elements are necessary to maintain the competitiveness of the economy in the dynamically changing international environment. In this context, economic adaptability in the Mazovian Region should also be developed by strengthening regional and nationwide entrepreneurship;
- social mobility and involvement – acquisition of knowledge and new skills together with increased spatial mobility will open up new chances and opportunities for citizens; diversified social environment is an important component of a modern society. In this environment local communities continue to play an important role creating self-support networks. Increasing social mobility will gradually form active, pro-social attitudes among the inhabitants of Mazovia, who, because of their creativity, tolerance, flexibility, mutual cooperation and openness will feel a sense of responsibility for the development of the region.

3. *Creation of a regional identity*

One of the basic challenges in the context of building cohesion in the Mazovian Region is the creation of a regional identity. The challenge here appears to be even greater because this identity should be created from scratch. For this reason, the creation of the region's identity should be based not on common traditions and culture, but on a vision of the future, values, ideas, goals and ways of achieving them, around which it will be possible to gather and integrate local communities. The following factors should contribute to create the identity :

- regional community created as a result of integration and a combination of local communities, having regard to their diversity,
- development of social capital,
- trust placed in institutions and other citizens,
- neighbors' and institutional cooperation,
- development of co-responsibility for space,
- development of local/regional business entities and mechanisms for their cooperation, common and cohesive promotion of the region and regional products.

The "three pillar" recommendations are elaborated in the document mentioned earlier. This set of recommendations was the subject of social consultations, delivered in its final form to the regional authorities. One of the tasks of the MTDO will be to monitor the implementation of the recommendations.

The DTMR project results and formulation of the Mazovian Region development policy

The results of research carried out as part of the project have been used to update the following regional strategic documents: *Development Strategy of the Mazowieckie Voivodship 2030* and *Spatial Development Plan of the Mazowieckie Voivodship* prepared by the Mazovian Office of Regional Planning in 2013 and 2014, as well as update of the Regional Innovation Strategy (RIS) prepared by the self-government of the region. The update of the provisions of these key documents was associated with the new financial perspective of the European Union launched in 2014, which defined a new basis and aims of the cohesion policy for the European Community.

In the case of the *Development Strategy of the Mazowieckie Voivodship 2030*, the DTMR project verified its assumption providing the latest data and information on development paths. Evidence collected proved the limited efficiency of efforts undertaken to balance development processes in terms of providing incentives strong enough for development in rural areas. So called "dual development" still continues because of lack of any concept on how to support the polycentric model of settlement system and what the new role of small urban centers that lost their main function i.e. providing services to surrounding rural areas, is to be. An important conclusion which was drawn from the studies was also that the problem of "infrastructure gap" should be seen from the perspective of specific smaller areas of the region. The "infrastructure gap" is of a different nature depending on the specific

area and should be addressed separately. This approach will help to rationalize investment planning. The same applies to “transition zones” – a territorial approach is needed to solve their unique problems. Studies markedly confirmed, that more “soft projects”, focused on building social capital are needed in order to foster development processes. Social legitimization of development policies and social involvement are required to mobilize endogenous resources. Specific directions of action and specified activities were proposed in the set of recommendations. The studies justified why multi-level governance is a must in the case of the Mazovia Region. Warsaw as a metropolitan city will succeed without the region. The region needs Warsaw’s potential to utilize resources located in the region. New initiatives such as Integrated Territorial Investments (ITI) might be of use in bringing together different parties from the urban functional area. In the course of research it became clear that sources of information on the natural the environment conditions are very limited. There is no monitoring system of the state and changes of natural environment. It was concluded, that the regional government must invest in the creation of a well-organized and well-equipped monitoring system, that should be built based on the network of the existing institutions and cooperation among them.

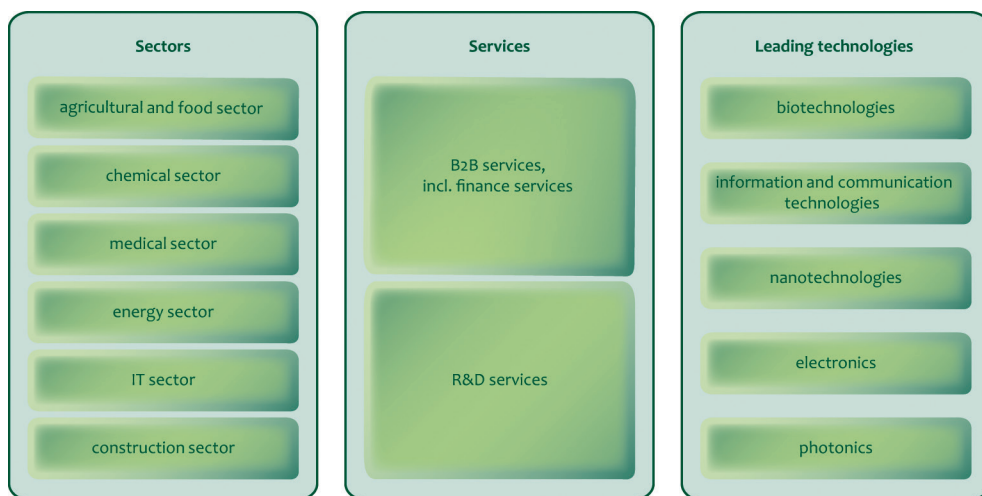
The findings of the DTMR project were also an important contribution to the debate on update of the *Regional Innovation Strategy* and the process to develop smart specializations for this region. They confirmed the need for continuous support of the regional innovation system, stressing that smart specializations should be a tool allowing efficient use of the available resources to increase innovativeness of the region.

The specificity of the Mazovian Region makes it impossible to formulate clear answers to the question as to which economic, scientific and technological field might be the basis for the development of smart specializations. In addition, Mazovia is not noted for a distinctive economic profile. It is a place of business activities performed in sectors ranging from agricultural production to advanced technologies. Research and development works are taking place in almost all those fields. Therefore, it is also impossible to clearly define the scientific specializations of the region. An issue to be resolved is also whether the basis for the development of smart specialization should be an area which is already clearly advanced in terms of technology and innovation, or one where raising the level of innovation will bring the broadest benefits possible to the whole region.

The results of studies and conclusions from public consultations with numerous stakeholders have led to the identification of areas of linkages between the sectors of the regional economy and areas of complementary use of technologies. The areas with the best developed and strongest linkages have been identified as smart specializations. These areas are: safe food, smart management systems, modern business services and high quality of life.

In the process of defining smart specializations major linking nodes between sectors, technologies and services are indicated, and the purpose of their combined use in this region is defined. These steps are needed to determine whether the actual or potential linkages related to a particular type of business activity may be recognized as a part of the smart

Fig. 6. Smart specialisations of the Mazowieckie Voivodship



Source: prepared by the Department for Regional Development and European Funds, The Office of the Marshal of the Mazowieckie Voivodship

specialization. Additionally, the issue of which developmental problem will be resolved with the use of a given specialization must be defined.

Within the field of smart “safe food” specialization, the diagnosis identified relationships with the following:

- food manufacturing process in the scope of: cultivation and breeding monitoring systems, automation of production, use of living organisms in the process of food production;
- distribution of food in relation to: manufacturing and usage of packaging, storage, logistics and supply chain management;
- monitoring and ensuring high-quality of food in terms of: quality qualification systems, production, development and use of quality control devices;
- safety of a consumer-recipient within the scope of: use of biologically active substances, functional foodstuffs, nutraceuticals; minimizing the impact of food production on the environment in terms of: means and techniques of crop protection, biopesticides, veterinary measures, management of production and food processing by-products, closed cycle solutions.

Safe food is therefore understood as high-quality food products produced in accordance with the sustainable development concept, which are safe for the end consumer and the environment throughout production and distribution.

The scope of smart specialization “smart management systems” includes advanced infrastructure solutions, particularly those allowing an increase in the efficiency of raw materials

and energy, characterized by a high degree of adaptability, leading to increased automation and enabling effective monitoring of processes. The major relationships include:

- infrastructure solutions in the scope of: smart networks, management and control systems, smart buildings, traffic control systems, internet facilities, modern manufacturing systems;
- solutions related to security and monitoring in the scope of: control and measurement equipment, diagnostic equipment, hazard detection and prevention systems, digital security solutions;
- solutions increasing the performance of raw materials and power engineering in the scope of: industrial waste disposal and recycling systems, energy generation from waste, energy storage.

The area of smart specialization “modern business services”, for which the axis is service specialization of Warsaw, leads to a concentration of support in the areas of activities providing capital, infrastructure and knowledge resources to improve processes carried out by entities operating in the region. The major relationships within this specialization are:

- with regard to capital and infrastructure support: development and increase of suitability of services provided by business environment entities and development of financial instruments and services supporting innovativeness;
- in the scope of knowledge resources: professionalization of research services, design, prototyping, creative sector services, including creative activities of utilitarian nature, services related to the analysis and processing of data, providing access to business information;
- in terms of process improvement: consolidation and development of network structures, freight logistics, intermodal transport, transport process management, ICT systems in the management process, such as ERP (enterprise resource planning) or CRM (customer relationship management).

The area of the smart “high quality of life” specialization covers:

- in terms of education – educational and development programs stimulating creativity and entrepreneurial skills, open access to knowledge;
- in terms of health – telemedicine and tele-diagnostics, advanced pharmacology, including biologics, advanced dietetics, health economics, development and dissemination of materials and inert substances for living organisms and the environment, e.g. hypoallergenic paint, special materials;
- in terms of safety – monitoring and security systems, digital security;
- in terms of work – tele-working, organizational solutions reducing obligations of employees outside the workplace;
- in terms of free time – advanced systems of entertainment, development and increase of accessibility to services rendered via electronic data transmission channels.

Aside from enhancement of competitiveness and implementation of innovative solutions, this area will also be related to measures focused on the enhancement of standards of living and social activeness of the region’s inhabitants. It is accompanied by a challenge concerning

the issue of development polarization which is typical for the region (differences between the center and peripheral areas).

The areas of smart specializations of the Mazovian Region defined above do not operate as separate fields. All of them should support each other to create a synergy effect. They also apply to involvement within the framework of smart specialization of entities across the region, with particular emphasis on the creation of center – periphery relationships as regards utilization of the scientific potential of Warsaw.

The updated development strategy of the region and identified smart specialization provide a framework for programming development of the region and its specific parts in order to use their strengths and minimize risks. This framework will facilitate activities that would integrate rural and urban areas and will improve the structure and sustainability of development in peri-urban areas. It will contribute to the development of local economic systems based on local resources but functioning within supra local and supra regional networks. The Development Strategy of the region and Regional Innovation Strategy are coherent documents that address issues of future development and current, problematic issues. Provisions included in both documents have been transposed into the spatial development policy formulated in the spatial development plan of the region.

Conclusions

The DTMR project resulted in establishment of solid information foundations for effective, long-term implementation of the regional development policy, providing knowledge about changes in the conditions and course of the development processes, identification of development opportunities and risks, and the identification of measures to overcome barriers and to encourage positive phenomena and processes. The diagnosis of the Mazovian Region's development trends presents a diverse image of this part of Poland. Studies confirmed the persistence of intraregional differences regarding, among others, the distribution of economic and social potential, investment and settlement attractiveness, access to technical and social infrastructure, availability of services, socio-demographic structures and occupational structure of the population. Differentiation of the level of development may be partially treated as a natural phenomenon, resulting from a logic of contemporary mechanisms of social and economic development. However, some of the differences identified are still an evident effect of the partition of Poland in the 18th century by Russia, Prussia and Austria. Some of the differences are the still the perceived effects of a centrally controlled economy from the period prior to 1990. Other differences are due to the absence of or insufficient effectiveness of planning and management interventions at virtually all public management levels.

The diagnosis indicates the need to modify the approach to the planning and management of the region's development. This applies mainly to the role of Warsaw, its metropolitan area, cities and towns – sub-regional centers and smaller towns – in the region's development. The relationships between urbanized and rural areas determine not only the

developmental paths of peri-urban areas, but also of cities, towns, rural areas and local economies, whose functioning is crucial to sub-regional systems' potential and development of the entire region. The results of analyses show that the developmental potential is not used efficiently to stimulate the developmental processes.

The diagnosed problems are not new. This is because functional and spatial structures are characterized by considerable inertia. The two areas that do not follow this pattern are Warsaw and its metropolitan area. The smart specializations and an innovative approach towards the planning and management of the region provide an opportunity for efficient use of the region's assets and resources. In order to do this, organizational solutions increasing the effectiveness of management should be implemented. One of them is the Mazovian Territorial Development Observatory created within the structure of the Mazovian Office of Regional Planning. The role of the Observatory is monitoring the development processes as well as mobilization and incorporation of different participants in ongoing and planned pro-developmental activities. Undertakings within the framework of smart specializations will be implemented in cooperation with established working groups, consisting of representatives of different professional groups and geographic locations. Integration of the activities of various institutions and entities, the shaping of a network of links and implementation of a multi-level governance concept will be crucial to the future of the region. Integration, coordination and cooperation are to be regarded as the driving forces leading to the effective use of the diversified region's potential in order to strengthen the position of the entire region, Warsaw and its metropolitan area.

During the course of the DTMR project implementation of different forms of cooperation among stakeholders is worked out and partnerships established. They would be used in the future as a basic platform of cooperation: information exchange, programming, planning and coordination of implementation activities.

Results of the studies conducted under the "Development Trends of Mazovian Region" project in the form of interim, draft final and final reports were available for employees of regional government and other stakeholders involved in analyzing, programming and planning activities connected with development of the region. Selected final reports were published in a book series presented below. All books are in Polish and they are available in PDF format on the website: www.trendyrozwojowemazowska.pl. For the purpose of this article their titles are also given in English.

Diagnosis titled *Trendy Rozwojowe Mazowsza. Diagnoza* (en: *Development Trends of the Mazovian Region. Diagnosis*) of the socio-economic situation and spatial development of the region was published in Polish in 2013. Its synthesis in English was published in 2015. Recommendations concerning policy options and specific measures to be used to guide efficiently sustainable development of the region were published in 2015 in Polish (*Rekomendowane działania na rzecz równoważenia rozwoju województwa mazowieckiego* / *Recommended activities to*

support sustainable development of mazowieckie voivodship). This publication as well as the English version of diagnosis are available in PDF format on the website of the DTMR project.

Book series "TRENDY ROZWOJOWE MAZOWSZA" (PL ISSN 2084-5669) with the DTMR project results:

No 1/2012 *Zadania do realizacji przez samorządy na Mazowszu* [en: *Tasks to be implemented by local governments in Mazovia*], Warszawa 2012, pp. 72.

No 2/2012 *Trendy zmian w poziomie i strukturze zatrudnienia w województwie mazowieckim w latach 1999-2008* [en: *Trends in the level and structure of employment in Mazovia in 1999-2008 in the context of Poland and European Union situation*], Warszawa 2012, pp. 92.

No 3/2012 *Spoleczno-demograficzne uwarunkowania rozwoju Mazowsza* [en: *Socio-demographic determinants of development of Mazovia*], Warszawa 2012, pp. 52.

No 4/2012 *Zagospodarowanie infrastrukturalne i kapitał fizyczny oraz policentryczność rozwoju Mazowsza* [en: *Development of infrastructure and physical capital, and the polycentricity of Mazovia development*], Warszawa 2012, pp. 56.

No 5/2013 *Konkurencyjność Mazowsza i jej uwarunkowania*, Warszawa 2012 [en: *The competitiveness of Mazovia and its determinants*], pp. 44.

No 6/2012 *Spoleczne, polityczne i ekonomiczne stymulanty i destymulanty rozwoju Mazowsza*, Warszawa 2012 [en: *Social, political and economic stimulants and obstacles for development of Mazovia*], pp. 48.

No 7/2012 *Obserwatoria terytorialne i inne najlepsze praktyki dla Mazowsza* [en: *Territorial Observatories and other best practices for Mazovia*], Warszawa 2012, pp. 56.

No 8/2012 *Warszawa i Obszar Metropolitalny Warszawy a rozwój Mazowsza*, [en: *Warsaw and the Warsaw metropolitan area and the development of Mazovia*] Warszawa 2012, pp. 160.

No 9/2013 *Wzorzec rozwoju Mazowsza. Raport końcowy* [en: *Development model of Mazovia – phase I*], Warszawa 2013, pp. 68.



No 10/2013 *Barometr Mazowsza. Przyszłość kapitału ludzkiego Mazowsza w kontekście potrzeb, preferencji i planów życiowych młodzieży* [en: *Mazovian Barometer. The future of the human capital of Mazovia in the context of the needs, preferences and plans of young people*], Warszawa 2013, pp. 72.

No 11/2013 *Edukacja jako czynnik rozwoju Mazowsza* [en: *Education as a factor of development of Mazovia*], Warszawa 2013, pp. 132.

No 12/2013 *Rynek pracy województwa mazowieckiego* [en: *Labour market of mazowieckie voivodship*], Warszawa 2013, pp. 124.

No 13/2014 *Wzorzec rozwoju Mazowsza – etap II* [en: *Development model of Mazovia – phase II*], Warszawa 2014, pp. 68.

No. 14/2014 *Potencjały rozwojowe i zarządzanie strategiczne w gminach Mazowsza* [en: *Development potentials and strategic management in municipalities of Mazovia*], Warszawa 2014, pp. 152.

No. 15/2014 *Przemiany społeczno-demograficzne województwa mazowieckiego w latach 1990-2030* [en: *Socio-demographic changes in mazowieckie voivodship in the years 1990-2030*], Warszawa 2014, pp. 128.

No. 16/2014 *Rola Mazowieckiego Obserwatorium Terytorialnego w zarządzaniu rozwojem województwa w opinii interesariuszy* [en: *The role of Mazovian Observatory of Territorial Development in managing the development of the region in the opinion of stakeholders*], Warszawa 2014, pp. 56.

No. 17/2015 *Barometr Mazowsza.. Charakterystyka i potencjał osób starszych na Mazowszu* [en: *Mazovian Barometer. Characteristics and potential of the elderly in Mazovia*], Warszawa 2015, pp. 52.

No. 18/2015 *Analiza rekomendacji rozwoju społeczno-gospodarczego dla Mazowsza i Warszawy zawartych w bazie badań współfinansowanych przez Samorząd Województwa Mazowieckiego oraz Miasto Stołeczne Warszawa w latach 2007-2013* [en: *Analysis of recommendations concerning socio-economic development of Mazovia and Warsaw in the database of research projects co-financed by the regional government and the City of Warsaw in 2007-2013*], Warszawa 2015, pp. 264.

No. 19/2015 *Makroregion Polski Centralnej. Powiązania funkcjonalne bipolarnego obszaru metropolitalnego Łodzi i Warszawy* [en: *Macro-region of Central Poland. Functional relationship of the bipolar metropolitan area of Lodz and Warsaw*], Warszawa 2015, pp. 124.

Wpływ wyników badań naukowych na formułowanie polityki rozwojowej w oparciu o fakty – przykład projektu Trendy rozwojowe Mazowsza**STRESZCZENIE**

W artykule przedstawiono doświadczenia związane z projektem badawczym „Trendy rozwojowe Mazowsza”, realizowanym przez Mazowieckie Biuro Planowania Regionalnego w Warszawie w latach 2009-2014 oraz omówiono założenia projektu, hipotezy badawcze i organizację badań. Przedstawiono także w skrócie rezultaty diagnozy uwarunkowań i poziomu rozwoju regionu oraz stanu jego zagospodarowania przestrzennego przygotowanej na podstawie wyników badań. W artykule przedstawiono również wyniki weryfikacji hipotez badawczych oraz główne rekomendacje dotyczące działań mających na celu stymulowanie zrównoważonego rozwoju regionu oraz omówiono wykorzystanie wyników badań w przygotowaniu strategicznych dokumentów dotyczących rozwoju regionu: strategii rozwoju województwa, planu zagospodarowania przestrzennego i regionalnej strategii innowacji.

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