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CONTEMPORARY APPROACH TO SPECIALIZATION IN MAZOVIA

In the discussion, which has been ongoing for several years now, on the change of regional policy paradigm, a new policy model has emerged, referred to as “Smart Development”. Its essence is the transition from the multi-level approach to regional development issues to an integrated approach, whereby the integration of ventures with growth potential should apply to all stages of policy realization, from strategic planning up to implementation of specific projects.

1. Identifying Regional Specialization

The smart specialisation concept appeared in official documents in 2010 in the Communication of the European Commission “*Europe 2020. Strategy for smart and sustainable growth fostering social inclusion*”. This document, abbreviated to *Strategy Europe 2020*, has replaced the Lisbon Strategy which has been realized since 2000 and was a response to the economic crisis. It took into account the need for reforms connected with the globalization process and an aging population. Identifying smart specializations was one of the objectives of the European Strategy 2020. The strategy for smart specialization is the fundamental component of the European policy for regions. The European Union recommendations regarding defining areas and branches, which tip the balance to give a competitive edge and development potential in European countries and regions, are part of the new approach to enhanced efficiency of financing innovativeness in the years 2014–2020. The possibility of benefiting from the EU funds in the new financial perspective depends on the identification of strengths and weaknesses of the regions within the smart specialization strategy.

Definition of specific factors which decide on the innovativeness of a given territory, namely, drivers of growth of innovativeness and selection of supporting

instruments for these drivers, is not always in line with expectations, where “everyone is satisfied”. Therefore, in realizing integrated strategies, impediments are encountered from strong interests of various sector groups. Furthermore, various dilemmas appear, e.g. how should one translate the growth in competitiveness in leading enterprises in a region into the respective increase in competitiveness of that region, because in the globalization era, companies achieving high income and productivity indices may limit their input in regional development to engaging workforce only. The Resolution of these dilemmas is to ensure:

- increased integration through the triple helix, i.e. cooperation between businesses – business environment institutions – science,
- increased integration in the business – administration relations,
- increased spatial integration reaching beyond the administrative boundaries of each level.

Table 1. Dilemmas associated with the new regional policy paradigm in the context of regional specializations

Attribute	Characteristics	Smart specialization context
Integrated strategies	<ul style="list-style-type: none"> • realizing integrated ventures encompassing various subject areas and various entities 	<ul style="list-style-type: none"> • co-operation of public administration with higher educational establishments and businesses limited by a low level of integrity of cooperation and low level of trust
Competitiveness	<ul style="list-style-type: none"> • strategic regional policy directions, • focus on chosen most important factors, • multi-sector approach focused territorially 	<ul style="list-style-type: none"> • relations between competitiveness of sectors and competitiveness of regions, • relationship between innovation and regional specialization
Cohesion	<ul style="list-style-type: none"> • flow of capital, persons, knowledge, diffusion of innovation, • compensatory actions tailored to defined potential of regions important for the whole country 	<ul style="list-style-type: none"> • mobility of specialization
Development instruments	<ul style="list-style-type: none"> • soft and hard integrated, • support of business environment, social capital, network cooperation, coordination of activities 	<ul style="list-style-type: none"> • essential conditions not satisfied, • competitiveness of instruments, • social trust resources
Territory	<ul style="list-style-type: none"> • territorial approach in all development activities, • strategic intervention areas, • functional units (non-administrative), • policy tailored to specifics of the place 	<ul style="list-style-type: none"> • territorial policy interests, • location of scientific sphere of a given smart specialization outside the region
Institutions	<ul style="list-style-type: none"> • all levels of public administration 	<ul style="list-style-type: none"> • competence of public administration, • pressure on apportionment of public funds

Compilation based on: W. Dziemianowicz, J. Szlachta, K. Peszat, *Potencjały rozwoju i specjalizacje polskich województw*, Geoprofit, Warsaw 2014, pp. 12–13.

The European Union’s smart specialization concept is a complex approach to the issue of specialization in the field of science, technology and economy. The objective

of the smart specialization is strictly associated with research and development, growth of human resources and regional development specifics. Smart specialization is based on identification and selection of fields of, relatively, the highest potential which will give a competitive edge to a region internationally and concentrate support on those chosen fields, particularly on research and development. The basic targets of smart specialization include:

- 1) Creating a sufficiently large area of research and development and innovation, enabling multi-area competition. Countering fragmentation and duplication of scientific research in the European Research Area (ERA), i.e. creating an integrated, supra-national area enabling, inter alia, free flow of knowledge, enhanced use of the effects of scale, extent and spillover effects and reducing structural barriers to competitiveness¹.
- 2) Achieving critical mass in key areas and sectors for competitiveness in Europe. Focusing activities and public funds on selected areas of science and innovativeness, which complement the resources of a given region and reinforce its comparative advantage. Such strategy requires creation of connections between the research and development, growth in human resources and social capital and specifics of economic conditions in regions, which in the future will result in greater scientific, technological and economic specialization in the EU regions².
- 3) Diffusion of general application technologies, particularly through utilization in products and services. General Purpose Technologies (GPTs³) were the basic tool in industrial revolutions. In the 18th century these were machines, the steam engine and iron, in the 19th century – chemicals, steel, combustion engine, electricity, in the 20th century – IT and ITC, biotechnologies and smart materials. Today, the contemporary concept of GPTs has been replaced by Key Enabling Technologies, and their role is to enhance economic development⁴. *The Communication regarding key enabling technologies*⁵ indicates such key technologies

¹ Based on D. Foray, *Understanding "Smart Specialization"*, in: *The questions of R&D Specialization: Perspectives and policy implications*, Institute for Perspective Technological Studies Joint Research Centre, Seville, 2009, pp. 20–21.

² *Ibidem*, pp. 16–17.

³ See T. Bersnahan, M. Trajtenberg, *General Purpose Technologies "Engines for Growth?"*, "Journal of Econometrics" 1995, No. 65, p. 84.

⁴ See N. Tutzemann von, V. Acha, *Innovation in "Low-Tech" Industries*, in: *The Oxford Handbook of Innovation*, eds. J. Fagerberg, D.C. Mowery, R. Nelson, Oxford University Press, Oxford, New York 2005, p. 416.

⁵ European Commission, *Preparing for the future: working out a common strategy in the field of key support technologies*, COM(2009) 512, Brussels, 30.09.2009, <http://kluczowetechnologie.iztech.pl/sites/default/files/LexUriServ.pdf>

in the future as nanotechnology, biotechnology, micro- and nano-electronics, photonics, advanced materials.

- 4) Reinforcement of regional and local resources in research and development. Smart specialization should be launched within the entrepreneurial learning process, the purpose of which is to identify scientific and technological fields and branches of industry being the deciding factor in the competitive advantage of a defined region.

The smart specialization concept (RIS3) is based on the assumption that due to the concentration of resources of knowledge, which are targeted at a limited number of priority economic activities, countries and regions will gain and maintain a competitive advantage in the world economy. In this type of specialization the regions can derive benefit from the effect of the scale, effect of expanding the market offer, and also the indirect effects associated with their creation and the use of knowledge.

Regional smart specialization is built based on identification of key economic areas with development potential, using a local-level approach, in which the market should stimulate economic and innovative development. The identified areas form the basis for creation and growth of specialization in their environment, which will have measurable benefits for regional development. Stable, future companies with considerable innovative potential should be able to function in them. An important task is the diagnosis of the needs and barriers to develop the most innovative ventures and to define their usefulness and role in the smart specialization process.

The EU documents and studies define the RIS3 strategy by indicating its objectives and required characteristics. However, they do not specify the subject limits, nor the degree of detail, with which it is to be defined in order to be classified as a smart specialization in a region or country. The objective is to apply a strategic, integrated approach in the usage of smart growth potential and knowledge-based economy and to acquire competitive advantage. The strategy for smart specialization should satisfy the following criteria:

- embedding in the regional specifics: economy, society, resources for innovation, harnessing the region's strengths, whilst also pin-pointing the key economic and social challenges;
- involvement of entrepreneurs in the formulation process of smart specializations and stakeholders from various environments, also innovation users and ensure them the possibility to co-manage the strategy (realization of the "entrepreneurial discovery" process);
- fostering technological and practical innovation and stimulating private investment in innovation;

- choice of a limited number of development priorities based on innovation and knowledge allowing a concentration of support.

The identification process and choice of smart specializations in Polish voivodeships ran in parallel with the process of updating fundamental strategic level documentation, i.e. voivodeship development strategy, regional innovation strategies and Voivodeship Spatial Management Plans.

2. Mazovia's Smart Specialization

Activities undertaken by the local independent authority of Mazowieckie Voivodeship regarding innovativeness have been set out in the Regional Innovation Strategy for Mazovia. The first version of this document was drafted in 2008 and encompassed the years 2007–2015. It focused on support for the regional innovation system. The research and analysis indicated the need to continue this type of support. In 2013 the Mazowieckie Voivodeship Management Board decided to update the existing RIS and supplement it with the new elements according to the EU requirements, including defining smart specializations. It was also established that specialization in itself should not be the region's objective, but a tool, enabling the most effective use of existing resources to increase the innovativeness in Mazovia. As a result of the undertaken steps, in March 2015 the updated Regional Innovation Strategy for Mazovia up to 2020 was approved (RIS Mazovia).

The need for the revision was due to the approval of new strategic documents on the European level, such as the “Europe 2020” strategy, lead projects “Union of Innovation” and “European Digital Agenda”. The conclusions of the strategic documents review on a regional level, which took place due to Mazovia's preparation to introduce European funds in the new financial perspective for 2014–2020, were additional prerequisite. The most important changes in the Regional Innovation Strategy for Mazovia up to 2020 related to:

- definition and induction of smart specialization;
- taking into account social innovation;
- formulating cluster policy assumptions in the region;
- development of the strategy to include on information society issues as continuation of the e-development Strategy of the Mazowieckie Voivodeship, which previously had been a separate regional strategy.

The main objective of the revised Regional Innovation Strategy for Mazovia up to 2020 (RIS Mazovia) is “*Growth of innovativeness in Mazovia, leading to a speed*”

up growth and increase of competitiveness on an EU scale". The main objective will be achieved by realizing five strategic targets:

- increase and reinforcement of cooperation in the development processes of innovation and innovativeness;
- increased internationalization directed at development of innovativeness in the Mazowieckie Voivodeship;
- enhanced effectiveness of support and funding for pro-innovative activity in the region;
- forming and promoting pro-innovative and pro-entrepreneurial attitudes, fostering creativity and cooperation;
- growth of the information society.

The Regional Innovation Strategy for Mazovia up to 2020 makes reference to the "Development Strategy for the Mazowieckie Voivodeship up to 2030. Innovative Mazovia", in which the priority strategic goal has been assumed as *growth of production focused on export in the industry of advanced and moderately-advanced technologies and in industry and agricultural and food products processing, and the competitiveness of the region by increased economic activity and transfer and use of new technologies*, was defined as one of the three strategic goals⁶. The main RIS goal for Mazovia was reflected in the assumed Regional Operational Program for Mazowieckie Voivodeship for the years 2014–2020, in particular within two priority axes: priority axis I: Usage of research and development in the economy and priority axis III: Development of innovative and entrepreneurial potential. Using research and development in the economy and the priority axis. On an operational/project level, applicants, who join the smart specialization area, will be able to apply for support within axis I⁷. In certain types of operations within Activities 1.2, this compliance will be verified on two levels, as compliance with one or several smart specialization areas and compliance with prioritized research directions. The concept of prioritized research directions (research agendas) should be understood as detailed precise areas of R+D work, which will have the greatest impact on the innovative development of enterprises. Research agendas are being compiled at present by smart specialization working groups. The first agendas are scheduled for approval for the last quarter of 2015. This will enable the public procurement to be announced at the beginning of 2016, which will require compliance with priority directions of research. At the same time it must be

⁶ *Mazowieckie Voivodeship development strategy up to 2030, Innovative Mazovia*, Local Authority of Mazowieckie Voivodeship, Mazovia Regional Planning Office in Warsaw 2013, p. 51.

⁷ With the exclusion of 10% allocations Activities 1.2, designated to realize public procurement orders, aiming to select new smart specializations as part of the experiment process and search for developments niches.

stressed that in the case of other Priority Axes, preference will be given to ventures realized in the areas in accordance with a specialization, as complementary to the set development direction.

The process of selecting a smart specialization in the Mazovia region was based on the assessment of endogenous resources in the voivodeship and social consultations. It has been established, that the pillars of smart specialization in Mazovia are the economic areas with the greatest development potential, key technologies and services processes which stimulate and are a prerequisite for a region's innovativeness and competitiveness.

It was also assumed that only if global development trends are taken into consideration, there is a realistic possibility of enhancing competitiveness in the Mazovia region on a European and world scale. Therefore, a specialization in regional policy of innovativeness provides the basis for reinforcement of the effect of civic intervention by releasing synergy between the activities being undertaken. Chains of associations and feedback between specific economic areas and leading technologies will decide on the specialization specifics in Mazovia. Implementing the smart specialization principles will allow for a concentration of ventures reinforcing innovativeness in Mazovia to be achieved. Moreover, a hierarchical arrangement and integration of pro-innovative activities will foster cohesion and effectiveness of the regional innovation system taking shape.

The smart specializations' selection process lasted several months and included not only universal analyses of the socio-economic situation and regional potential, but also workshop discussions of working groups, which also included representatives of enterprises. In the first stage of the identification process of smart specializations in Mazovia the available research results, reports and documents relating to contemporary conditions and socio-economic development factors in Poland and the region were analyzed to formulate a preliminary definition of Mazovia's development potential and barriers limiting innovativeness on this basis. The diagnosis of the areas of greatest endogenous potential was based, amongst others, on the research assigned by the Chairman's Office of Mazowieckie Voivodeship:

- "Review and update of the report on the opening entitled Innovative Mazovia – state of innovativeness after adoption of the RIS Mazovia 2007–2015",
- "Analysis of innovative sectors in the Mazovia region",
- "Analysis of R+D activity in the Mazovia region",
- "Research on the impact of cluster initiatives from the Mazowieckie Voivodeship on the shaping of smart specializations of the region",
- "Analysis of the knowledge sectors in the Mazovia region in the context of smart specialization",

- “Analysis of innovative potential of the Small and Medium Enterprises in the Mazowieckie Voivodeship”,
- “Analysis of new technologies market in the Mazovia region”,
- “Research on the innovative potential in the rural areas of Mazovia”,
- “Analysis of the sector of firms of high and moderately-high techniques active in the Mazovia region”,
- “Research on cooperation of the Small and Medium Enterprises sector with scientific- research centres in the Mazovia region”,
- “Assessment of the impact of business environment institutions' activity on the development of the micro, small and medium enterprises' sector in the Mazowieckie Voivodeship”⁸.

The results of the research “Development Trends in Mazovia”, obtained in the project carried out by the Mazovia Regional Planning Office in Warsaw, were also taken into consideration, as were the documents containing the directions of future activities for development of entrepreneurship and science in Poland, i.e.:

- National Research Program,
- Program for Development of Enterprises up to 2020,
- Polish “Road Map” of Research Infrastructure,
- Technological Foresight of Industry – InSight2030: update of results and national smart specialization strategy.

The fundamental conclusions from the diagnosis confirmed that “[...] the socio-economic characteristics of the voivodeship are made up of contrasts to a considerable degree:

- diversification of activity reduces the impact of fluctuations of the economic situation on the entire regional economy, but impedes identification of a limited number of key branches;
- despite the substantial concentration of economic entities and scientific institutions the low level of social capital impedes the emergence of network structures and restricts the number of initiatives take up as cooperation;
- despite the considerable accumulation of R+D+I units and higher education establishments it is not possible to indicate the scientific specialization fields;
- one of the largest production plants in the country is situated in the voivodeship, however, it does not have a dominant, significant products brand, and on

⁸ *Regional Innovation Strategy for Mazovia. Innovativeness Support System up to 2020 and smart specialization in regions*, Annex to Resolution No. 23/15 of the Assembly of Mazowieckie Voivodeship of 16 March 2015, Warsaw 2015, p. 69.

a regional economy scale it is the services activity which is dominant, concentrated primarily in Warsaw;

- despite its status as the most developed region in the country, Mazovia also has terrain with unemployment rates and poverty similar to the highest in Poland⁹.

The Mazowieckie Voivodship local authority, wanting to actively participate in realizing the “Europe 2020” objectives and enable Mazovian entrepreneurs to benefit from European funds allocated for research and development, has worked out together with entrepreneurs, representatives of scientific units and institutions in business environment institutions, smart specialization areas of the region. Their identification process runs in the following stages:

- diagnosis of areas of the greatest endogenous potential;
- working meetings with entrepreneurs, representatives of scientific units and business environment institutions, regarding the development directions of regional innovativeness;
- opinion poll research regarding smart specialization in the region;
- prioritization of undertaken activities areas.

Within the specific stages a series of activities were undertaken, including research and analysis, to diagnose the state of innovativeness in Mazovia. It must be stressed that Mazovia assumed identification of specialization areas from the local-level and therefore working meetings and workshops were held regarding identification of the voivodeship’s development potential and deficiencies, including, inter alia, open meetings in sub-regional centres, working unit consultations and social consultations. Various stakeholder groups were included in the selection process of smart specialization areas, including representatives of entrepreneurs, clusters, scientific institutions and business environment institutions. A wide group of experts was also engaged in this process, including representatives of the Mazovia Innovativeness Council. The consultation meetings were interactive, working workshops devoted both to general issues of regional economy and science, and also profiled according to subject. The consultation meetings were organized in Warsaw and other regional towns.

In formulating the smart specialization areas, the specifics of Mazovia were taken into consideration, therefore the following assumptions were adopted for the purposes of the region:

- smart specialization assumes a focus of knowledge resources in the region on a limited number of economic goals, allowing effective usage of funds from

⁹ Ibidem, p. 70.

various sources by designating a common direction for action undertaken at various levels;

- smart specialization is understood as a process which applies not only to the voivodeship's economic potential, but requires a system supporting innovativeness to be created, including intervention in the area of business, its environment, science, public administration and society;
- smart specialization should combine the development priorities of local authorities with the actual needs of local entities, and in particular entrepreneurs, therefore the stakeholders' active participation must be assured in the process of identification, implementation, monitoring and change of smart specialization.

The diagnosis confirmed highly diversified economic activity in the voivodeship, which impedes the channelling of the direction of intervention, yet at the same time guarantees a certain amount of economic stability in Mazovia. The SWOT analysis, however, indicated the need to reinforce the present regional potential. Mindful of the aforesaid, it was assumed that the smart specialization in Mazowieckie Voivodeship should be a combination of two models of economic transformation, indicated in *the Guide to Research Strategies and Innovation for Smart Specialization (RIS 3)*:

- **modernization**, understood as technological modernization of the current branches by including modern technologies in the existing sectors;
- **diversification**, making use of the impact between the existing and new activity which enables diffusion of benefits from the implementation of innovation within the associated branches¹⁰.

The Mazowieckie Voivodeship is characterized by a diversified economic structure, the region does not have a single, distinctive industrial specialization. It is characterized by a strong, multi-plane polarization, resulting in the division of the region into two areas of differing socio-economic characteristics. The voivodeship's economic potential is spread very unevenly and there are similarly wide differences as regards the competitiveness of local economies of the region. It is the potential of Warsaw which is the deciding factor together with the surrounding metropolitan area. In this area there is a concentration of highly qualified human resources, large, receptive market, intensive communication connections and strong innovative potential. Warsaw's specific status as the capital city and the largest residential settlement centre in the country means there is a preponderance of services, in particular in central sub-regions. Consequently, in the process of selecting a specialization

¹⁰ Ibidem, p. 11; *Guide to Research and Innovation Strategies for Smart Specialisation (RIS 3)*, May 2012, http://ec.europa.eu/regional_policy/en/information/publications/guides/2012/guide-to-research-and-innovation-strategies-for-smart-specialisation

in Mazovia it was acknowledged that the B2B services may be a horizontal area, which can be used in many economic areas. A particularly valuable resource of the region, and especially in Warsaw and the surrounding provinces, is the large number of scientific units and higher educational establishments, involved in a wide spectrum of research.

Harnessing this potential through a network of specialized B+D services provided to entrepreneurs may be an important element of competitive advantage for the voivodeship. R+D services offered by Mazovia's scientific units may become valuable "export goods". Entities providing creative activity services which can be utilized, act as catalysts of innovativeness, particularly in areas requiring work planning. This sub-sector encompasses a wide range of economic activity, which includes the advertising sector, computer hardware sector, publishing, architecture, design and fashion design, radio and television productions.

The aforementioned areas are connected with industrial and service processes sectors, listed as key for the region. The part they play in shaping regional smart specialization will depend on the participation in the value chains within these sectors. Mazowieckie Voivodeship has considerable productive potential in electro-machinery industry which contributes to the participation of this sector in regional export. The conducted diagnosis, however, does not enable indication of areas of activity within the sector which unequivocally would point to a defined specialization. The working meetings established that a particular emphasis in this aspect should be placed on the development of production of scientific research and testing apparatus (precision industry), surface engineering, mechatronics, optomechatronic technologies, automatics and robotics"¹¹.

As a result of undertaken activities, a collection of the most promising sectors of the economy was identified, as well as services and technology processes in the region. On the basis of this diagnosis and consultations, three categories of issues were formulated, encompassing: economic areas of industrial nature of importance to the voivodeship (1), leading technologies on which intensive and advanced R+D works are conducted in the region (2) and a category regarding modern services (3). The key categories include:

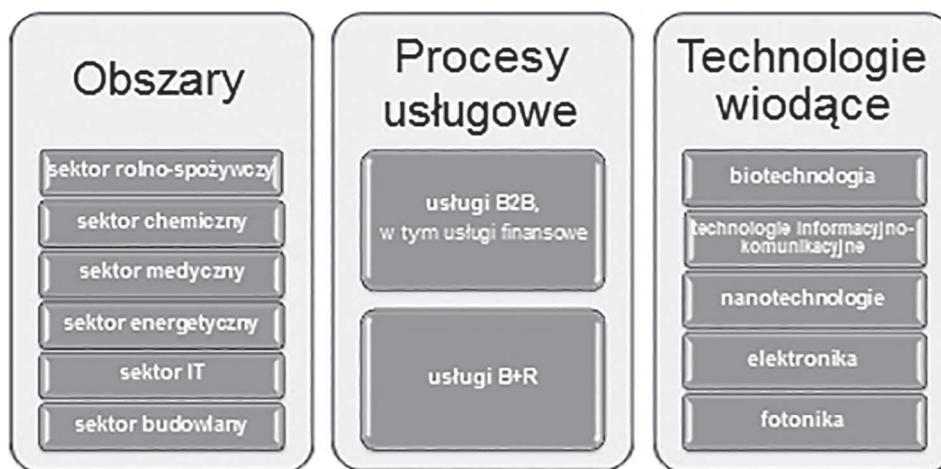
- 5) **economic areas of an industrial nature** – chemical, medical, agricultural and food products, energy sector, information technology sector (IT), construction sector;
- 6) **leading technologies** – biotechnology, ICT technologies, nano-technology, electronics, photonics;

¹¹ Ibidem, pp. 75–76.

7) **modern services processes** – business to business type services (B2B), encompassing financial services, research and development services.

Additionally, the creative industry and electrical machinery industries were indicated as horizontal areas of activity with substantial potential in the region.

Figure 1. Economic areas essential for the voivodeship



Source: Department of Regional Development and European Funds, UMWM.

Next, as a result of the analysis of connections and feedback between specific economic areas and services processes and between economic areas and leading technologies, areas of smart specialization were selected. As a result of undertaken activities, four specializations were marked out in Mazovia: **high standard of living, safe food, smart management systems, modern services for business.**

Definition of specific smart specialization areas in Mazovia involved **indicating the main associations between sectors, technologies, services and defining the objective, and the purpose which their combined use within this area is to serve.** The objective is the quality criterion determining whether the factual or potential association with a given type of activity may be acknowledged as part of the smart specialization area. A supplementary element is also the indication as to what regional challenge can be resolved if this specialization is developed.

Table 2. Smart specialization in mazowieckie voivodeship

High standard of living	Food safety	Smart management systems	Modern services for business
<ul style="list-style-type: none"> • activity reducing development polarization of the voivodeship, • initiative increasing functionality and safety of life, • activities using remote channels of communication (tele- and e- services), • mechanisms building social capital, • instruments stimulating social innovation, • activity increasing the access and adequacy of specific group of social services 	<ul style="list-style-type: none"> • high quality food products, • manufactured in accordance with the notion of sustainable development, safe for the end user, • safe for the environment in the whole production and distribution cycle 	<ul style="list-style-type: none"> • advanced infrastructure solutions, • activities increasing effectiveness of raw materials and energy, • activities improving the standard of life, • tools assisting the decision process 	<ul style="list-style-type: none"> • activities shaping the environment fostering entrepreneurship, • stimulating R + D services, • mechanisms that increase access to financial services, • initiative reinforcing the status of Warsaw as a services centre

Source: Department of Regional Development and European Funds, UMWM.

3. High Standard of Living

Mazovia, as the largest region in the country, needs good solutions in the fields of **education, health protection, leisure activity opportunities**. Technological and organizational solutions, which are used in the provision of social services in these areas, will be supported. Activities also need to be focused on stimulating social innovation, development of social capital and countering the negative consequences of the polarization of a developing region.

The “**high standard of living**” smart specialization area includes:

- **education** – programs of education and development of skills stimulating creativity and entrepreneurship, open access to knowledge;
- **health** – telemedicine and tele-diagnostics, advanced pharmacy, including biological medication, advanced nutrition, health economics, creation and widespread use of materials and substances with neutral effect on living organisms and the environment, e.g. hypo-allergic paints, special substances;
- **safety** – monitoring and safeguard systems, digital safety;
- **work** – tele-work, organizational solutions reducing encumbrances on employees outside their work duties;
- **leisure** – advanced leisure systems, development and increase of availability of services offered through electronic data transmission channels.

Potential	Capital, infrastructural and smart resources in Warsaw.
Regional challenges	Regional polarization, stratification between the central area and peripheral terrains regarding availability of the infrastructure and services for residents.
Objective	Increase in the attraction of the voivodeship as a place for residents to live in and for the development. Limiting negative consequences of development polarisation of negative consequences. Increase of social capital.

Apart from increasing competitiveness and implementing innovative solutions, this area will focus on raising the standard of life and level of social activity of residents of the voivodeship. It is a part of the voivodeship's challenge regarding the characteristic regional polarization and stratification between the central area and peripheral terrains.

4. Safe Food

Mazovia is one of the leading manufacturers of food products – from vegetables and fruit, through dairy products, to meat products. This part of the Mazovian economy was identified as one of prime potentials. The specialization includes ventures which are increasing access and making possible development of high standard of foods, in accordance with the sustainable development concept, safe both for the customer and for the environment in the entire production and distribution cycle.

Potential	Developed production base of fundamental agricultural products, and in particular, fruit, vegetables, meat and milk. Considerable number of agricultural-food processing plants. Scientific back-up (including <i>Szkoła Główna Gospodarstwa Wiejskiego, Centrum Nowych Technologii "Ochota"</i>).
Regional challenges	Strong competition factor from foreign agri-food processing plants, predominance of basic agricultural production, weak position as far as processing is concerned.
Goal	Reinforced competitive position of the region and regional brands of the agri-food sector on the domestic and foreign markets, in particular by implementing innovative solutions.

Within the smart specialization of "food safety", the main associations were identified regarding:

- **production process of food in the aspect of:** monitoring systems for cultivation and rearing, production automation, use of precision agriculture, use of living organisms in the food production processes;
- **distribution of food in the aspect of:** production and use of packaging, warehousing, logistics and management of delivery cycle;

- **monitoring and ensuring food of a high standard in the aspect of:** classification systems of quality, production, development and use of equipment, quality testing;
- **safety of recipient-consumer in the aspect of:** use of biologically active substances, functional food, nutraceuticals;
- **minimizing the effect of food production on the environment in the aspect of:** measures and techniques used for the protection of cultivation, bio-pesticides, veterinary measures, management of by-products in production and processing of agricultural foods, solutions in closed circulation system.

5. Smart Management Systems

Mazowieckie Voivodeship, and in particular Warsaw with its metropolitan area, have a large concentration of Polish and foreign firms. Infrastructural and procedure solutions are necessary to make their correct functioning possible, which would enable increased automation. Enhanced monitoring of processes connected with economic activity is anticipated, enabling, inter alia, increase of the efficiency of raw materials and energy and improvement of the standard of living also in the context of personal safety.

Potential	Registered offices and representations of companies with domestic and international scope of operations.
Regional challenges	Warsaw Metropolitan Area as a location with a high concentration of demand for products and energy. Low development level and technical state of the infrastructure (in particular transport) in areas at a distance from the centre of the voivodeship.
Goal	Widespread use of management of resources, including infrastructure, directed at building far-reaching innovative potential and adaptability, increase of cost-effectiveness and effectiveness of materials.

The main associations are:

- **infrastructural solutions in the scope of** smart networks, management and control systems of the infrastructure, smart buildings, traffic control systems, Internet in buildings, modern processing systems;
- **safety and monitoring solutions in the scope of** control and measurement apparatus, diagnostic equipment, systems for detection and prevention of danger, digital safety solutions;
- **solutions increasing efficiency of raw material and energy in the scope of** systems for re-using or recycling of industrial waste, production of energy from waste, energy storage.

6. Modern Services for Business

Mazovia is a significant services market – financial, consulting, logistics etc. In order that they can develop, mechanisms are needed in order to create “made to measure” services tailored to individual needs, ensuring the necessary capital, infrastructure and resources of knowledge, so that innovative activity of the enterprises can develop and grow.

Potential	High concentration of specialized entities in supporting economic activity and outsourcing including inter alia: financial institutions, services centres, logistics centres, scientific units, including research institutes. The large, constantly increasing office space resources. Warsaw’s stable position as a significant business centre in the Central Eastern Europe.
Regional challenges	The increasing competition from other centres in the country (and in particular Cracow, Katowice and Wrocław). The concentration of services in the central part of the voivodeship – low level of availability in peripheral areas. Shortage of technical staff.
Goal	Shaping the surrounds conducive to entrepreneurship by development of the market for modern business services. Reinforcement and permanency of Mazovia’s status as an important outsourcing centre in Central Eastern Europe.

The smart specialization “**modern services for business**” area, for which the axis are Warsaw’s specialization services, assumes a concentration of support in the areas of activity ensuring capital, infrastructure and knowledge resources to enhance processes realized by economic entities functioning in the voivodeship. The main associations within this specialization in the **scope of capital and infrastructural support** are:

- development and increase of the adequacy of services of business environment institutions,
 - development of instruments and financial services supporting innovativeness.
- In the area of knowledge resources:**
- professionalization of research services, planning, prototyping,
 - creative sector services, including creative activity for utilization,
 - analysis and data processing services,
 - ensuring access to economic information.
- In the scope of enhancement of processes:**
- consolidation and development of network structures,
 - goods logistics, inter-modal transport, management of transport processes,
 - IT systems in the management process, e.g. ERP, CRM¹².

¹² Based on *the Regional Innovation Strategy for Mazovia. Support System for Innovativeness up to 2020 and smart specialization region*, pp. 75–79.

Figure 2. Areas of Smart Specialization in the Mazowieckie Voivodeship



Source: RIS Mazovia.

In addition to raising the competitiveness level and implementing innovative solutions, this area will be actively focused on improvement of the standard of living and degree of social activeness of residents in the voivodeship. It is associated with the voivodeship's challenge regarding the characteristic polarization of the region and stratification between the central area and peripheral terrain.

The smart specialization areas of Mazovia, formulated as above, are inseparable. All of them are to mutually support each other and create an additional effect of synergy. Involvement is also assumed within the framework of a smart specialization area, of entities from the entire voivodeship, taking into consideration in particular the creation of relations between the centre – peripheries in order to benefit from Warsaw's scientific potential.

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The contemporary approach to specialization in Mazovia

Supporting smart specialization, taking into account regional potential, makes sense in the case of probable, significant increase of a competitive advantage in the region. This should result in economic growth. In turn, countering dispersion of the EU support by indicating smart specialization of a given region, constituting one of the policy objectives for regions, does not guarantee development of these specializations, and therefore, economic growth. One must remember that development of given specializations is a result of the local-level processes, which determine the market and at the same time being the main stimulant for their formulation. The strategic objective should be the introduction of such a system which will generate innovations, taking into account the advanced technologies and their diffusion into less developed areas. Flexibility should be an important aspect, understood as the capacity of specific areas to modify the use of their own potential. It is important to shape and promote pro-innovative and pro-entrepreneurial stances. Designating smart specialization and supporting it with the EU funds cannot be a goal in itself, but a carefully considered and prudent financial policy.

Keywords: smart specialisations, regional development, innovations, strategy

L'approche contemporaine de la spécialisation en Mazovie

Déterminer la spécialisation intelligente, en tenant compte du potentiel régional, a pour l'objectif de promouvoir l'avantage concurrentiel de la région, et notamment de contribuer au développement économique. Il convient de rappeler que les innovations sont liées aux conditions locales du développement, y compris la diversité socio-économique et spatiale de la région. L'objectif stratégique de la politique régionale de l'innovation devrait être de mettre en place un système qui va générer des innovations, compte tenu des technologies avancées et des possibilités de diffusion dans les zones plus faibles (en termes de développement). Le système doit faire preuve de flexibilité, comprise comme la capacité de modifier dans certaines zones l'utilisation de leur propre potentiel. Il est aussi capital de développer et promouvoir les attitudes pro-innovation et pro-entrepreneuriales.

La spécialisation intelligente au niveau de chaque région est également un des outils pour lutter contre la dispersion des aides de l'UE destinées à soutenir l'innovation. Il faut cependant noter que déterminer la spécialisation intelligente ne peut pas être une fin en soi, mais doit faire partie d'une politique bien conçue du développement régional.

Mots-clés: spécialisation intelligente, développement régional, innovation, stratégie

Современный подход к специализации в Мазовии

Поддержка разумной специализации, с учетом регионального потенциала, имеет смысл в случае вероятного, значительного увеличения конкурентного преимущества в этом регионе. В результате это должно привести к экономическому росту. В свою очередь противодействие дисперсии поддержки ЕС через указание разумной специализации данному региону, что является одной из целей политики для регионов, не гарантирует развития этих специальностей, и, следовательно, экономического роста. Надо помнить, что развитие специализаций зависит от процессов на местном уровне, которые определяют рынок, в то же время являясь основным стимулятором для их формулировки. Стратегической целью должно стать внедрение системы, которая будет генерировать инновации, учитывая передовые технологии и их распространение в слаборазвитые места. Гибкость, понимаемая как способность данных мест к изменению использования их собственного

потенциала, должна быть важным аспектом. Важно формировать и продвигать про-инновационный и про-предпринимательский подход. Определение смарт-специализации и ее поддержка фондами ЕС не должно быть целью самой по себе, но тщательно продуманной и взвешенной финансовой политикой.

Ключевые слова: разумная специализация, региональное развитие, инновации, стратегия