

Lucyna Przezbórska-Skobiejska✉

Uniwersytet Przyrodniczy w Poznaniu

## Tourism in the bio-economy of Poland (regional perspective)

**Summary.** The main purpose of the paper was to determine a place of tourism in the bio-economy of the Polish regions as well as spatial analysis of smart specializations of the regions regarding tourism and recreation activities. The paper is based on the review of strategic documents, expertise and scientific papers. The analysis shows that bio-economy in has been directly indicated as smart specialization only two provinces of Poland and tourism development is usually associated with the development of medicine and health services.

**Key words:** tourism, rural areas, development, smart specialization, bio-economy, regions

### Introduction

Bio-economy is a relatively new concept, which in the strategy documents of the European Commission appeared in the years 2010–2012<sup>1</sup>. However, there is no common definition of the bio-economy<sup>2,3</sup>, it is usually understood as the economy, which utilises the biological natural resources and turns them into food, energy, and other products and services. The bio-economy is often regarded as the next wave of the economy in the twenty-first century, however Adamowicz<sup>4</sup> underlined that “bio-economy is a new concept in economy, but it is not a new concept in practice”. The bio-economy can be also defined as sustainable production and processing of biomass into a wide range of

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<sup>1</sup> M. Adamowicz: Biogospodarka jako inteligentna specjalizacja w strategiach rozwoju polskich województw [Bioeconomy as a smart specialization in the development strategies of Polish voivodships]. *Annals of the Polish Association of Agricultural and Agribusiness Economists* 2016, 18(1), p. 9–16, retrieved from: <http://seria.com.pl/images/Pliki/repozytorium/18-1/18-1-Adamowicz.pdf> (accessed: 14.06.2016), p. 9.

<sup>2</sup> J. Bryden: Making the Bioeconomy Work for Rural Development: Some Nordic Experience, OECD Rural Policy Conference, Memphis 2015, p. 1.

<sup>3</sup> A. Komor: Specjalizacje regionalne w zakresie biogospodarki w Polsce w układzie wojewódzkim [Regional specializations in the field of Bioeconomy in Poland in, comparative study for provinces], *Roczniki Naukowe Stowarzyszenia Ekonomistów Rolnictwa i Agrobiznesu* 2014, vol. 16(6), p. 248.

<sup>4</sup> M. Adamowicz: European concept of bioeconomy and its bearing on practical use, *Economic and Regional Studies* 2014, 7(4), 5–21, p. 6, retrieved from: <http://www.ers.edu.pl/OJS/index.php/erspl/article/view/61/66> (accessed: 06.2016).

food, medical, industrial and energy related products and services<sup>5</sup>. According to EC background paper “a bio-based economy integrates the full range of natural and renewable biological resources – land and sea resources, biodiversity and biological materials (...), through to the processing and the consumption of these bio-resources”<sup>6</sup>. The bio-economy is also characterised by the use of clean technologies, which save the environment and by efficient recycling materials<sup>7</sup>. The bio-economy covers almost all sectors and related services that produce, process or use biological resources in any form<sup>8</sup>, i.e. “agriculture, forestry, fisheries, food and biotechnology sectors, as well as a wide range of industrial sectors, ranging from the production of energy and chemicals to building and transport”<sup>9</sup>. The bio-economy also provides strategic over-sector integrating form of action affecting economic development, and shall be entered in an interdisciplinary approach to the funding research in the area of the bio-economy, including the issues of energy generated from renewable energy sources, as well as processes, inter alia, such industries as textiles, paper, and part of chemical, cosmetic and pharmaceutical industries<sup>10</sup>, but also some kinds of tourism, especially agritourism. Bryden<sup>11</sup> says that there are good arguments for including some services in the bio-economy, especially tourism and outdoor recreation services and eco-system services (e.g. clean water and air) (Fig. 1).

The development of a bio-based economy is progressing at an increasing rate on a global scale and it occupies a central position in the EU framework program for economic development of the EU countries, in research and innovation. The bio-economy has the potential to further research and innovation excellence in Europe involving, among others, more sustainable agricultural policies linked to regional and rural development<sup>12</sup>. Rural development that is a part of bio-economy can be promoted through a bio-economy<sup>13</sup> and sometimes bio-economy is called a driver for rural devel-

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<sup>5</sup> M. Adamowicz: European concept of bioeconomy..., op.cit., 2014, p. 6.

<sup>6</sup> European Commission: Bio-based economy in Europe: state of play and future potential – Part 2. Summary of the position papers received in response of the European Commission’s Public on-line consultation, [in:] <https://ec.europa.eu/research/consultations/bioeconomy/bio-based-economy-for-europe-part2.pdf> (accessed: 06.2016), 2011, p. 9.

<sup>7</sup> <https://www.investinfinland.fi/bioeconomy> (accessed: 11.2017).

<sup>8</sup> E.K. Chyłek, M. Rzepecka: Biogospodarka – konkurencyjność i zrównoważone wykorzystanie zasobów, Polish Journal of Agronomy 2011, 7, 3–13, retrieved from: [http://www.iung.pulawy.pl/PJA/wydane/7/PJA7\\_1.pdf](http://www.iung.pulawy.pl/PJA/wydane/7/PJA7_1.pdf) (accessed: 06.2016), p. 13.

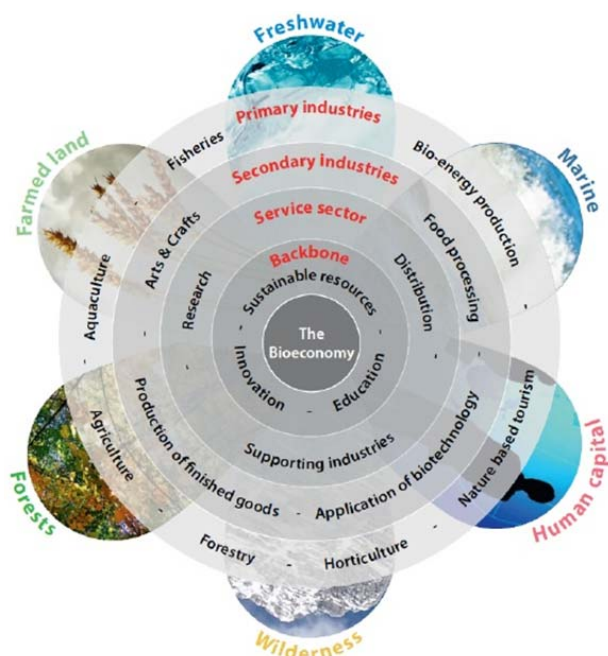
<sup>9</sup> European Commission: Bio-based economy in Europe..., op.cit., 2011, p. 9.

<sup>10</sup> E.K. Chyłek, M. Rzepecka: Biogospodarka – konkurencyjność i zrównoważone wykorzystanie zasobów..., op.cit., p. 13.

<sup>11</sup> J. Bryden: Making the Bioeconomy..., op.cit., p. 1.

<sup>12</sup> European Commission: Bio-based economy in Europe..., op.cit., p. 13.

<sup>13</sup> O. Schmid, S. Padel, L. Levidow: The Bio-economy Concept and Knowledge Base in Public Goods and Farmer Perspective, Bio-based and Applied Economics 2012, 1(1), 47–63, p. 59, doi: <http://dx.doi.org/10.13128/BAE-10770> (accessed: 11.2017).



**Figure 1.** Icelandic Definition of Bioeconomy

Source: Bryden 2015, p. 2.

opment<sup>14</sup>. This linkages were mentioned and underlined by the European Commission’s Communication on the “Bio-economy for Europe”<sup>15</sup> and the other related Staff Working Documents of the European Commission. “The bio-economy can significantly contribute to the future development of rural (...) areas because it will promote both supply and demand actions with regional dimension, such as the creation of supply chains for residues and waste as feedstock for bio-based industries (...). Support to infrastructures within the management of (...) rural areas is also compatible with the Common Fisheries Policy (CFP) and Cohesion Policy objectives of the European Union<sup>16</sup>. The bio-economy oriented to public goods offered by rural areas could create further opportunities for rural areas and their development, e.g. “enhancing the landscape value and quality of life in rural areas as a basis for other agricultural activities”<sup>17</sup> such as nature based tour-

<sup>14</sup> J. Teräs: Bioeconomy – driver for rural development. Rohevik – a green growth forum of the Estonian office of the Nordic Council of Ministers, 2014, p. 60, retrieved from: <http://rohevik2014.publicon.ee/userfiles/Rohevik2014/Ettekanded/Jukka%20Teras%20Tartu%20Presentation%20Teras%20Final.pdf> (accessed: 11.2017).

<sup>15</sup> European Commission: Bio-based economy in Europe..., op.cit., p. 13.

<sup>16</sup> Ibidem, p. 18.

<sup>17</sup> O. Schmid, S. Padel, L. Levidow: The Bio-economy Concept..., op.cit., p. 59.

ism (e.g. agritourism, ecotourism, adventure tourism or wildlife tourism) and including its economic value for rural development.

### **Material and methods**

The purpose of the paper was to present the place of tourism in the structure of the bio-economy understood as a smart specialisation<sup>18</sup> strategy for the development of the regions of Poland. The study presents opportunities and directions of tourism development in the strategy of the smart specializations. It is based on the review of strategies documents (i.e. strategies of development, strategies of innovations and strategies of smart specializations of the provinces of Poland), expertise and scientific papers. Spatial analysis of smart specializations in bioeconomy of the regions of Poland regarding tourism and recreation activities in the context of assets and resources available to regions was the main objective of the paper. Another aim of the work was to identify the connections between smart specialisations and unique opportunities for development and growth of the regions.

### **Smart specializations in tourism of the Polish regions**

Analysing smart specialisations of the regions in Poland one can notice that only in two provinces of Poland, i.e. in Lubelskie province and in Zachodniopomorskie province, the bio-economy is recorded directly as a smart specialization of the region and in the other 14 provinces the components of the bio-economy are considered as a kind of under-specialization in the field of the bio-economy<sup>19</sup>. In no province of Poland any kind of tourism is regarded as a smart under-specialization in the bio-economy, but tourism is included in broad life sciences<sup>20</sup>. Analysis of the strategic documents of the Polish regions indicated importance of tourism in twelve regions (Table 1), including four regions with smart specialization in tourism (i.e. Kujawsko-Pomorskie, Lubuskie, Świętokrzyskie and Zachodniopomorskie), four provinces indicated tourism as a supporting specialization (Małopolskie, Podkarpackie, Podlaskie and Warmińsko-Mazurskie) and four more regions regarding tourism as potential development of the smart specialization (Lubelskie, Opolskie, Pomorskie and Wielkopolskie)<sup>21</sup>. There are four provinces, namely: Dolnośląskie, Łódzkie, Mazowieckie and Śląskie, which did not include tourism neither in basic smart specializations nor in supporting specializations and in the potential development of smart specializations (Table 1). However, e.g. in Mazowieckie province

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<sup>18</sup> "Smart specialization is a place-based approach, meaning that it builds on the assets and resources available to regions and Member States and on their specific socio-economic challenges in order to identify unique opportunities for development and growth" (European Commission 2018, p. 1). Smart specialization is also regarded as "an innovative approach that aims to boost growth and jobs in Europe, by enabling each region to identify and develop its own competitive advantages" (European Commission 2017, p. 1).

<sup>19</sup> M. Adamowicz: *Biogospodarka jako inteligentna specjalizacja...*, op.cit., p. 12.

<sup>20</sup> M. Bęczkowska: *Inteligentne specjalizacje w turystyce polskich regionów*, *Studia Periegetica, Zeszyty Naukowe, Turystyka i rekreacja w przestrzeni miast i regionów* 2014, 2(12), p. 37–50.

<sup>21</sup> M. Bęczkowska: *Inteligentne specjalizacje w turystyce polskich regionów...*, op.cit.

tourism and recreation can be a part of the water economy of the region. According to the Development Strategy of the Mazowieckie Voivodship 2030<sup>22</sup> protection of the natural environment should result in increasing the attractiveness for tourists of the region's natural assets. To achieve this effect, water sports centers and accompanying facilities, including e.g. marines and water tourism centers should be built and promoted along with recreation, health and balneological centers and geothermal baths.

Among many specializations of the regions, tourism is directly mentioned especially in the eastern regions of Poland<sup>23</sup>, i.e. in Podkarpackie province<sup>23, 24</sup> (i.e. sustainable and responsible tourism, cognitive tourism, rest tourism, ecotourism, agritourism, qualified tourism, health tourism, business tourism, religious tourism, culinary tourism and enotourism), in Podlaskie province<sup>23, 25</sup> (health tourism) and in Świętokrzyskie province<sup>23, 26</sup> (health and pro-health tourism) – Table 1. It should be underlined that in the above provinces tourism was mentioned among smart under-specialization in the field of “Tourism, medicine and health”. In Warmińsko-Mazurskie province<sup>27</sup> among the three basic smart specializations of the region that were distinguished, water economy is underlined because of the biggest in Poland inland water resources, around which tourism has developed as well as many types of activities which also have big innovative potential. Transition to the water tourism is recognized as a smart specialization, which determined development of wide range of activities. However the smart specialization is not directly described as water tourism, but accommodation and beauty clinic, spa and wellness facilities, water parks and aquasfera<sup>28</sup>. Development of this specialization

<sup>22</sup> Regional Government of the Mazowieckie Voivodship 2014, Development Strategy of the Mazowieckie Voivodship 2030, Mazovia as an Innovative Region, retrieved from: [http://www.mbpr.pl/user\\_uploads/image/PRAWO\\_MENU/STRATEGIA%20ROZWOJU%20WOJEWODZTWA%20MAZOWIECKIEGO%20DO%20ROKU%202030/SRWM%20SKR%20ANG.pdf](http://www.mbpr.pl/user_uploads/image/PRAWO_MENU/STRATEGIA%20ROZWOJU%20WOJEWODZTWA%20MAZOWIECKIEGO%20DO%20ROKU%202030/SRWM%20SKR%20ANG.pdf) (accessed: 11.2017), p. 23.

<sup>23</sup> Ministerstwo Infrastruktury i Rozwoju, Departament Programów Ponadregionalnych: Wspólne obszary inteligentnych specjalizacji województw Polski Wschodniej, 2015, retrieved from: <https://popw.parp.gov.pl/attachments/article/37023/Za%C5%82%C4%85cznik%20nr%208%20Wsp%C3%B3lne%20obszary%20inteligentnych%20specjalizacji%20wojew%C3%B3dztw%20Polski%20Wschodniej.pdf> (accessed: 06.2016), p. 1, 5.

<sup>24</sup> Sejmik Województwa Podkarpackiego 2015, „Regionalna Strategia Innowacji Województwa Podkarpackiego na lata 2014–2020 na rzecz inteligentnej specjalizacji (RIS3) (aktualizacja 2016 r.)”, Uchwała Nr XXIX/531/16, retrieved from: [http://www.rpo.podkarpackie.pl/images/dok/15/RSI\\_WP\\_2014-2020\\_przyj%C4%99ty.pdf](http://www.rpo.podkarpackie.pl/images/dok/15/RSI_WP_2014-2020_przyj%C4%99ty.pdf) (accessed: 11.2017).

<sup>25</sup> Zarząd Województwa Podlaskiego 2015, Plan rozwoju przedsiębiorczości w oparciu o inteligentne specjalizacje województwa podlaskiego na lata 2015–2020+ (RIS3), retrieved from: <http://regionalneprogramyoperacyjne.pl/inteligentne-specjalizacje-wojewodztwa-podlaskiego/> (accessed: 11.2017), p. 9, 25.

<sup>26</sup> Sejmik Województwa Świętokrzyskiego 2014, Strategia Badań i Innowacyjności (RIS3). Od absorpcji do rezultatów – jak pobudzić potencjał województwa świętokrzyskiego 2014–2020+, retrieved from: <http://www.spinno.pl/rsi/aktualnosci/31-swietokrzyska-strategia-badan-i-innowacyjnosci-ris3-przyjeta-uchwala-sejmiku> (accessed: 11.2017), p. 6, 32, 35.

<sup>27</sup> Invest In Warmia And Mazury 2016, retrieved from: <http://investinwarmiaandmazury.pl.ourssite.com/> (accessed: 11.2017).

<sup>28</sup> Ministerstwo Infrastruktury..., op.cit., p. 5.

meets the needs of environmental protection, the area in which the region wants to achieve international importance.

Similar situation to the eastern regions of Poland is observed in Kujawsko-Pomorskie province<sup>29</sup>, where agritourism and ecotourism development were indicated as the base for health and health tourism smart specialization. Reviewing strategies for smart specialization of Polish regions it is visible the importance of the development of medical and health tourism services (in nine of the sixteen provinces of Poland). One can also notice some similarities in Lubuskie province, where health tourism, along with the other activities accompanying it, such as: sport, recreation and rest, is an important part of the smart specialization of health and quality of life<sup>30</sup>.

**Table 1.** Smart specialisation in tourism of the Polish regions

Provinces	Basic specialization	Supporting specialization	Potential development of smart specializations	Directions of smart specialization in tourism
Dolnośląskie				–
Kujawsko-Pomorskie	+			Health and quality of life – medicine, medical services and health tourism
Lubelskie			+	Medicine and health – business tourism, spa tourism, medical tourism and specialised tourism development
Lubuskie		+		Health and quality of life – medical tourism
Łódzkie				–
Małopolskie		+		Free time industry – spa tourism, cultural tourism and business tourism
Mazowieckie				–
Opolskie			+	Space integrated regional tourism product

<sup>29</sup> Urząd Marszałkowski Województwa Kujawsko-Pomorskiego, Departament Rozwoju Gospodarczego i Współpracy Międzynarodowej 2016, Inteligentne specjalizacje województwa kujawsko-pomorskiego. Załącznik do stanowiska Zarządu Województwa Kujawsko-Pomorskiego z dnia 8.06.2016 r., retrieved from: <http://www.innowacje.kujawsko-pomorskie.pl/wp-content/uploads/2016/06/charakterystyka-obszarow-inteligentnych-specjalizacji-dla-projektow-w-ramach-rpo-wk-p.pdf> (accessed: 06.2016), p. 4, 6, 8, 11–14, 20, 22.

<sup>30</sup> Urząd Marszałkowski Województwa Lubuskiego, Lubuskie Regionalne Obserwatorium Terytorialne 2015, Inteligentne specjalizacje województwa lubuskiego, retrieved from: <http://obserwuj.lubuskie.pl/uploads/documentsearch/id156/um%20lubuskie%20inteligentne%20specjalizacje.pdf> (accessed: 11.2017), p. 48.

Table 1 – cont.

Podkarpackie		+		Sustainable and responsible tourism, cognitive tourism, leisure tourism, ecotourism, agritourism, qualified tourism, health tourism, business tourism, religious tourism, culinary tourism and enotourism*
Podlaskie		+		“Silver economy” – medical tourism, ecotourism, agritourism
Pomorskie			+	Medical technologies in scope of civilization diseases and ageing
Śląskie				–
Świętokrzyskie	+			Health and pro-health tourism
Warmińsko-Mazurskie		+		Water tourism, accommodation, wellness
Wielkopolskie			+	Novel medical technologies
Zachodniopomorskie	+	+		Tourism and health

\* I.e. Wine Tourism; \*\* Strategic documents included strategies of development, strategies of innovations and strategies of smart specializations of the provinces of Poland.

Source: Based on: strategic documents\*\* of the regions of Poland and Bęczkowska 2014.

The Board of the Wielkopolska<sup>31</sup> recognized the region as competitive in Europe, what creates opportunities for tourism and recreation, as well as for healthy agricultural production and attractive place to live. In the Spatial development plan of the Wielkopolskie province adopted by the Parliament of the Wielkopolskie Province in 2010, the share of tourism and recreation in the regional economy is increasing and it is still one of the objectives of the plan within the field of increasing efficiency of using development potentials of the region<sup>32</sup>. Although, Wielkopolska is a region of great natural potential, especially in the context of rural nature based tourism, it is regarded only in the context of a potential smart specialization development within medical tourism. Very similar situation can be observed in the other regions.

## Conclusions

The broad and policy-oriented concepts of smart growth, smart development and the concept of smart specialization is applied all over the European Union and during the last years they are attracting interest of scientific research. The mentioned concepts are part of the strategy introduced in the EU as a response to the observed low growth

<sup>31</sup> The Board of the Wielkopolskie Voivodship 2012, “Wielkopolska 2020. Updated Development Strategy of the Wielkopolskie Voivodship by 2020”, retrieved from: [https://umww.pl/attachments/article/11584/2.SRWW\\_wersja\\_ang.pdf](https://umww.pl/attachments/article/11584/2.SRWW_wersja_ang.pdf) (accessed 06.2016).

<sup>32</sup> The Board of the Wielkopolskie Voivodship..., op.cit.

rates of innovation and productivity across the European regions. The tourism sector becoming an important part of the smart development of some regions, it tends to agglomerate regionally.

As the analyses presented in the paper enabled to formulate the following conclusions:

1. Bio-economy was recognised as a smart specialization of two regions of Poland only (Lubelskie and Zachodniopomorskie) and in the other 14 provinces the components of the bio-economy are considered as a kind of under-specialization in the field of the bio-economy.
2. The review of the strategic documents in the context of smart specializations of the Polish regions indicated that the development of tourism is often associated with the development of medicine and the services of health, spa and wellness, emphasizing the quality of life, and especially the aging population.
3. The spatial analysis of provinces of Poland also shows that tourism is recognized as an important smart specialization in the regions of landscape and natural values, e.g. water resources (e.g. Warmińsko-Mazurskie, Podkarpackie, Małopolskie or Podlaskie provinces).
4. The interrelations of smart specialization in tourism with the bio-economy seems to be less important or underestimated in the regions of Poland what seems to be inexplicable regarding the state of nature based tourism development in Poland, especially rural tourism, agritourism or ecotourism.

At the end it is worth to underline that tourism is an increasingly important sector of the economy of the regions, including rural economy of Poland and the potential for further growth in the regions is still high.

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