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Article

Intersectoral and Intermunicipal Cooperation as a Tool of Supporting Local Economic Development: Selected Examples from the Forest and Wood-Based Sector in Poland

Leszek Wanat [1]*, Tomasz Potkański [2], Jan Chudobiecki [3], Elżbieta Mikołajczak [4] and Katarzyna Mydlarz [5]

[1] Faculty of Economics and Social Sciences, Poznan University of Life Sciences, Poznań, Poland; leszek.wanat@up.poznan.pl
[2] Institute of Public Policies, Collegium Civitas in Warsaw, Warszawa, Poland; tomasz.potkanski@civitas.edu.pl
[3] Faculty of Economics and Social Sciences, Poznan University of Life Sciences, Poznań, Poland; chudobiecki@up.poznan.pl
[4] Faculty of Economics and Social Sciences, Poznan University of Life Sciences, Poznań, Poland; emikolaj@up.poznan.pl
[5] Faculty of Economics and Social Sciences, Poznan University of Life Sciences, Poznań, Poland; kmydlarz@up.poznan.pl
* Correspondence: leszek.wanat@up.poznan.pl; Tel.: +48-601-713-431

Abstract: Intersectoral and intermunicipal cooperation are still underdeveloped spheres of public and economic development policies. Academic discussions are invariably focused on pro-competitive activities, the economic efficiency of which is not always sufficient. In this paper the authors attempt to identify factors leading to cooperation between local government authorities and economic entities, focusing on examples from the forest and wood-based sector in Poland. These processes are analysed in the framework of the New Institutional Economy, both in the theoretical and practical context.

Keywords: wood-based sector; intersectoral cooperation; intermunicipal cooperation; Poland; partnership; new institutional economy

1. Introduction

Due to changes in the shaping of local and regional development, which are taking place in Europe and around the world, institutional and economic relationships between the entities creating them are being verified. This refers to intermunicipal relationships, provided we are dealing with such a model of local community organisation, as well as to intersectoral connections to the same extent. Most importantly, phenomena linked with the penetration of individual functional areas and economic sectors are evolving. These borders, still marked mainly by territorial conditions, are not subject to typical limitations any more, irrespective of the scale of the phenomenon. The greater the influence of a selected sector of the economy or entity/institution on the development of a specific territory, the greater the force of impact of these relationships. Certainly, an impact of characteristic factors on the intensity of developmental processes is noticed, including:

- cultural changes (including needs and expectations of inhabitants);
- changes in competitive situation (social and economic);
- innovativeness and development of new technologies;

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• changes of local competitive potential (self-governments, entrepreneurs, households).

Such a set of factors referring to local development challenges seems insufficient. Obviously, competitiveness of a local economy, availability and attractiveness of services (social, technical, etc.) for inhabitants of cities and municipalities, and most of all human potential, still decide about development. Simultaneously, development barriers exist which – to a different extent – determine the functioning of municipalities, administrative districts (powiats[1]) or sub-regions in conjunction with the economic activity of enterprises and the everyday life of their inhabitants. Indicating limited amounts of resources, the need for seeking new and dynamic factors is perceived as a starting point in local development programming. Their potential source may constitute an adequate model of intermunicipal and intersectoral cooperation. A development policy based only on competition is no longer sufficient and often leads to opposite effects to those intended.

The authors of this paper made an attempt to verify a hypothesis which assumes an advantage of development factors built on the basis of cooperation models, and not only resulting from the requirements of competitiveness. Based on own research studies, case studies and a descriptive analysis, an analysis of local development was made with reference to a specific sector of the economy in Poland, i.e. the forest and wood-based sector. Selected factors of cooperation between local authorities and economic entities for the benefit of territorial development were examined in this context. The selection was made on the basis of Poland's economic development and the importance of the wood-based sector[2] for the economy.

2. The importance of the forest and wood-based sector for regional development in Poland

When analysing the importance of the forest and wood-based sector, it is appropriate to firstly consider the role of forest resources. Forests cover more than 4 billion hectares of the total surface area of the world, which means approximately 0.6 ha of forests per capita. The surface area of forests in Poland totals 9.3 million hectares – 0.23% of the global surface area of forests (55th place) and 6% of the surface area of forests in Europe (10th place). The forest ratio in Poland (in relation to its land surface area) is 29.3%. This value is close to the average forest ratio in the world (29.6%) and to the forest ratio in Europe, which is 30.3% (excluding Russia). Moreover, standing timber resources in Poland constitute 9.5% (2.3 billion cubic metres) of all forest resources in the European Union (4th place in EU) [GUS Leśnictwo 2015].

The Polish wood industry plays an important role for the development of the economy. The most important sectors based on wood include: sawmill industry, furniture industry, cellulose and paper industry, market of wood-based panels. This industry is highly fragmented and focuses on small and medium-size businesses (there are only a few large enterprises). A significant number of micro-enterprises (covering approx. 30% of the entire sector) are not included in any official statistics. The share of the wood-based industry in the production of the entire Polish processing industry is more than 9%. The wood industry processes more than 37 million cubic metres of round timber on average per year, purchased mainly from National Forest Holding "State Forests"

[1] The term “powiat" (in Polish) is most often translated as "county" (into English).

[2] The forest- and wood-based industry belongs to special sectors of the economy. Problems of the economic, environmental and industrial nature coexist within its boundaries. It may seem obvious, because the concept of "sustainable development" comes directly from forestry. The author of this concept (Hans Carl von Carlowitz), defined as such the concept of forest economy which consists in obtaining only the amount of industrial wood that can be recreated based on natural renewal (thus creating a new chapter in economic sciences [Mantel 1973, Wanat 2009]). Additionally, the traditional model of the economy is questioned increasingly more often. A need has been identified to seek new paths of economic growth based on the concept of the so-called green road to development [Chudobiecki and Wanat 2015].

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(Państwowe Gospodarstwo Leśne Lasy Państwowe) and worth more than PLN 7 billion[3] . The potential of the wood industry is additionally confirmed by the level of employment – more than 260 000 employees (including 124 000 in the furniture industry and 49 000 in the paper industry). The production value in the wood-based sectors exceeds PLN 90 billion (including PLN 32 billion in the paper industry and PLN 28.3 billion in the furniture industry); the upwards trend is maintained. The value of export of wood industry products in Poland totals more than EUR[4] 15 billion with an upwards trend. Export of furniture dominates and reaches the value of PLN 6.7 billion. Poland is the fourth largest exporter of furniture in the world (following China, Italy and Germany), while other EU countries are the main recipient of Polish furniture (more than 80% of export value) [GUS Leśnictwo 2015].

The competitive position of the Polish wood-based sectors is relatively strong. It is an effect of forest resources, the quantity and quality of round timber acquired from the national resource base, as well as continually growing significance of wood-based products in global production and trade. Despite the imbalance in the Polish wood market and the deficit of the wood raw material (a permanent phenomenon being an effect of the application of the principles of sustainable forest management), there is no threat for the development of wood-based industries in Poland. The following factors have a decisive impact on that: dynamic increase of demand for wood, fashion for wood and popularity of wood as an environmentally and human friendly raw material [Kaputa, Paluš and Vlosky 2016]. A study of intersectoral and intermunicipal relationships – as potential factors of development – seems justified with reference to the wood-based sector, especially owing to its territorial dispersion.

3. Dilemmas of intersectoral and intermunicipal cooperation for the benefit of development

Successive exhausting of resources which were the basis of local and regional development in Poland after 1989 is observed [Szewczuk 2016]. These resources include: income generated by traditional sectors of economic activity, free land and facilities, unused human resources. Revenues from sale of property in the conditions of relative short-term economic prospects, European Union funding and credits (i.e. one-time or short-term income) have been used to finance local development so far. At the same time, the scope of tasks of regional and local authorities has increased; changes resulting from globalisation processes are taking place in the economy; local communities are getting older and population numbers are actually going down. Demographic changes result from a drop in the birth rate and unfavourable migration tendencies. At the same time, they are the cause and effect of cultural, systemic and structural changes in the economy. It seems that in the face of challenges associated with globalisation and glocalisation[5] , a human being (human capital) who does not want to be dependent on competition law only becomes the key factor of development[6] [Słodowa-Hełpa 2015].

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[3] For comparison, the current average exchange rate is 1 USD = 3.9164 PLN [source: http://www.nbp.pl/homen.aspx?f=/kursy/ratesa.html – accessed 2.03.2018].

[4] For comparison, the current average exchange rate is 1 EUR = 4,3796 PLN (source: http://www.nbp.pl/homen.aspx?f=/kursy/ratesa.html - accessed 2.03.2018].

[5] Glocalisation "expresses the way globalisation dynamics - are always reinterpreted locally, leading to an interpenetration of the local and global scales that created context- dependent outcomes". Some authors [Robertson 1992, Swyngedouw 1997, Backhaus 2003; Słodowa-Hełpa 2015] go so far "as to consider that glocalisation in the way that globalisation really operates". Like the other "dynamics of globalisation, glocalisation also takes place in different fields" (first of all, in the field of culture and economics) [source: http://www.glopp.ch/A4/en/multimedia/glocalisation.pdf - accessed 2.04.2018].

[6] See the research work in the field "The Interdisciplinary Nature of the New Paradigm of Development - Considerations and Proposals for Improving the Dialogue…" [Swyngedouw 2004, Słodowa-Hełpa 2015].

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Functioning in changing conditions requires integration and improvement of the system of territorial development management by local authorities. Based on analyses conducted so far, monitoring and evaluation of changes taking places inside local communities and in functional areas are considered the starting point [Wanat and Potkański 2011]. This mainly includes:

• assessment of municipality's potential within the scope of its own functional area;

• redefinition of the role of a municipality within its own functional area;

• permanent adjustment of infrastructure, economy and services in a given functional area to dynamically changing needs.

At least some local development barriers have been identified in this context:

• a change of a traditional economy model to a knowledge-based economy;

• outflow (internal migration) of the most talented inhabitants to other cities and regions;

• urban sprawl and escape of inhabitants of city centres to suburban areas[7] ;

• a necessity for permanent education and constant adjustment of employees' potential to structural changes and expectations of the labour market;

• a growing level of social inequalities, being a result of technological, economic and cultural exclusion in local communities;

• a limited offer of local services (based on infrastructure rather than social resources) with a dropping impact on the quality of life of inhabitants;

• a relatively low level of collaboration between local authorities, social partners and entrepreneurs in the local and regional dimension.

It is worth comparing the indicated barriers with a thesis formulated by Richard Florida, the author of "Who is your city?", who tries to convince that the possibilities of local development are influenced to a large extent by an ability to attract young inhabitants. Cities and regions that attract young people win the competition with other cities for a better future. The winning places are the ones that become appealing for the youth [Florida 2010]. Actually, research studies confirm that sudden and rapid development is observed in places where young people migrate and settle. This view, in conjunction with the results of studies in local self-governments, leads to an interesting conclusion, i.e. local development will probably be determined by creative economy, in particular the force of combining the quality of an offer for young people with the level of intersectoral cooperation in functional areas. With reference to sectors of the economy, including the wood-based sector, challenges in terms of building intersectoral cooperation have been identified in three main areas [Wanat and Lis 2009]:

• establishing and developing small and medium-size businesses;

• research and creative economy (innovations);

• efficient energy and use of renewable energy sources.

[7] The case of big cities.

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In the light of various observations it is required to improve the effectiveness of providing public services in collaboration with partners (process innovations) and using modern technologies (product innovations). It is extremely difficult to work out and implement an effective development policy without being oriented on cooperation, coopetition and constant exchange of experiences between partners from various sectors.

4. Assessment of the conditions of intermunicipal and intersectoral cooperation in Poland

Each settlement unit (e.g. a municipality) is a part of a specific functional area. Therefore, the addressee of the development policy should not be only an administrative unit, but a functional area which may create many administrative units, and entities operating within a given territory. It is hard to imagine development of functional areas without the support of partnership tools. There are no comprehensive regulations in Polish law which would organise the matter of cooperation between local government units, both in the intermunicipal and intersectoral aspects.

Naturally, several so-called institutional forms of cooperation with the participation of local government units have been identified. They include: unions of local government units, metropolitan unions, agreements of local government units, associations with the participation of local government units (including local action groups) and commercial companies with the participation of local government units. Cooperation may also be established under public-private partnerships in case of single projects. Other forms of cooperation are regulated by contractual freedom under civil law; they are the basis for the following: consortia, clusters, agreements on mutual cooperation and exchange of experiences. Their application, however, is characterised by limited coverage, mainly due to institutional barriers. The Polish legal system does specify a universal formula of institutional cooperation. The differences in functioning structures are linked among others with:

- partnership composition and mode of partner selection;
- objectives of partnership operations;
- scope of obligations and responsibilities;
- methods of financing;
- flexibility in the shaping of cooperation rules.

Legal provisions determine to a large extent the Polish model of intermunicipal and intersectoral institutional cooperation [Potkański 2016].

4.1. The "model of cooperation" – paradigm of partnership

A new proposal of a cooperation model is a result of research studies regarding various factors of intermunicipal and intersectoral cooperation. The model describes a desired target set of mechanisms of cooperation in key aspects of a partnership's functioning. These aspects, in the form of scenarios enabling evaluation of partnership quality, have been presented as 10 standards of institutional cooperation. Seven standards refer to strategic management of territorial development, while the remaining three are associated with operational management of relationships within a partnership. An integral partnership requires a combination of aspects of the strategic, operational and uniform development of the 10 areas, determined by the "canons" of cooperation model standards (see: Table1).

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Table 1. The 10 areas determined by the "canons" of intersectoral cooperation model standards

THE "CANONS" OF COOPERATION MODEL STANDARDS		
Strategic dimension (strategic management in a partnership)		
I.	Partnership composition (a team adjusted to cooperation objectives)	Objective-oriented cooperation of entities from 3 sectors (public, social and economic)
II.	Partnership's potential (a diagnosis of resources and developmental needs of a functional area)	A constant diagnosis of a functional area and identification of development factors are the foundation of cooperation
III.	A network of functional connections	The potential of functional connections in the scope of public services and market activity on the territory of a partnership
IV.	Development programming (sectoral strategies and programmes)	Implementation of strategies and programmes of functional area development
V.	Integration of services and infrastructure (coordination of resources and public services)	The level of infrastructure and service integration within a functional area is considered the measure of development
VI.	Integration and operationalisation of development strategies (for a partnership and for partners)	The compliance of strategic and operational documents of all partners with development priorities
VII.	Monitoring and evaluation	Permanent assessment of partnership's performance and effectiveness
Operational dimension (management of relationships in a partnership)		
VIII.	External relationships	Partnership's communication with inhabitants and other stakeholders is a tool enabling to build social trust
IX.	Space for debate and internal communication	Professionalism and transparency of debate as well as quality of dialogue in a partnership are considered criteria of cooperation development
X.	Mutual trust	Relationships in a partnership are based on: mutual trust, equal treatment and just distribution of responsibilities between all "actors"
THE AGGREGATE DEVELOPMENT INDEX (ADI$_{LGU}$)[8]		

Source: own elaboration based on [Potkański 2016, pp. 127-163, http://zpp.pl/sites/default/files/aktualnosci/publikacja_wspolpraca_jst_ok.pdf#page=127, accessed: 3.04.2018].

[8] A model was created Aggregate Development Index (for local government units {LGU}) [Potkański 2016].

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The "model of cooperation" determined by the ten standards is complemented by two evolutionary postulates. They include a competitiveness diagnosis and an analysis of functional connections in a partnership. One of the measures supporting the process of evaluation is the so-called Aggregate Development Index [Potkański 2016, pp. 36-42].

4.2. The Aggregate Development Index

A model was created Aggregate Development Index (for local government units {LGU}), which can be presented in the following manner:

$$\mathbf{ADI}_{LGU} = f(Q)\ \{Q_1; Q_2; Q_3; Q_4; Q_5; Q_6; Q_7; \ldots Q_n\}$$

Individual symbols mean:
ADI$_{LGU}$ – Aggregate Development Index (based on the model);
Q_1 – Wealth of inhabitants;
Q_2 – Level of economic activity;
Q_3 – Infrastructural space productivity;
Q_4 – Local real estate market potential;
Q_5 – Demographic potential;
Q_6 – Level of social development (the most - destimulant);
Q_7 – Demographic burden (the most – destimulant);
Q_n – Additional measures (the most – specific determinants).

The value of the Index is composed of at least 7 main elements, which reflect individual components of a municipality's potential (functional area). These include: (1) wealth of inhabitants (PIT per capita), (2) level of economic activity (CIT per capita), (3) infrastructural space productivity, (4) local real estate market potential, (5) demographic potential (the so-called Creativity Index by Richard Florida) – as stimulants, and (6) level of social development (unemployment) and (7) demographic burden – as destimulants. The catalogue of components is an open set, permanently infinite, dependant on the individual features of a functional area.

The value of the Aggregate Development Index was calculated as a sum of standard deviations for particular components. The components were not given any measures to make the process simpler. The "Z-scores" method was applied, which enabled to determine the aggregate value of the index as a sum of standardised values of partial components [Potkański 2016, pp. 40-42]. Selected results were illustrated in a table and graphically (see: Table 2 and Figure 1).

Table 2. Changes to the Aggregate Development Index **ADI**$_{LGU}$ value in the years 2008-2014

ADI$_{LGU}$ changes in the years 2008-2014 in Poland					
LGU (municipalities)	Drop ADI	Growth ADI	**TRENDS**	Change ADI	Number municipalities
Big cities (powiat)	60 (91%)	6 (9%)		More than 5 points ↓ <-13;-5>	47
Municipalities (other)	188 (79%)	50 (21%)		Less than 5 points ↓ <-5; 0>	1105

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Urban-rural municipalities	307 (50%)	304 (50%)		Less than 5 points ↑ <0; +5>	1315
Rural municipalities	597 (38%)	967 (62%)		More than 5 points ↑ <+5; +28>	12
Selected intersectoral partnerships in the forest- and wood-based sector[9]		↑ **58%**		2479 (100% LGU/municipalities in Poland [2014])	

Source: own elaboration based on [Potkański 2016, pp. 40-42, http://zpp.pl/sites/default/files/aktualnosci/publikacja_wspolpraca_jst_ok.pdf#page=41, accessed: 4.02.2018].

4.3. The growth potential map of intersectoral partnerships in Poland

In the examined period from 2008 to 2014, a drop in the Aggregate Development Index was observed in general for 1152 municipalities (the drop was significant in case of 47), while an increase of the Index value was identified for 1327 municipalities (including a significant increase in case of 12). This increase refers mainly to rural municipalities. No significant change was observed for urban-rural municipalities. Meanwhile, a substantial drop of the Index value was observed for towns and cities (including mainly 60 towns and cities with powiat rights). Moreover, a relatively constant level of the PIT per capita component was observed, with a simultaneous significant rise of the total dependency ratio (demographic burden) [Potkański 2016, pp. 40-42].

[9] The Index value estimated statistically - representative sample - of partnerships in the forest and wood-based sector, working in 5 regions: Opole, Szczecin, Zielona Gora, Koszalin and Olsztyn [Wanat 2016]. The formulated sub-model - for the forest and wood-based sector - explains 58% of the variability of predictor $\hat{Y}$ (endogenous variable), which is the value of the *Aggregate Development Index* $\boldsymbol{ADI_{LGU}}$ (confidence level 90%, fraction size 0.5, and maximum error of estimate 10%). There was a trend similar to that for all municipalities (rural) [Graczyk 2005, Pokusa 2011, Lis 2012, Wanat 2016].

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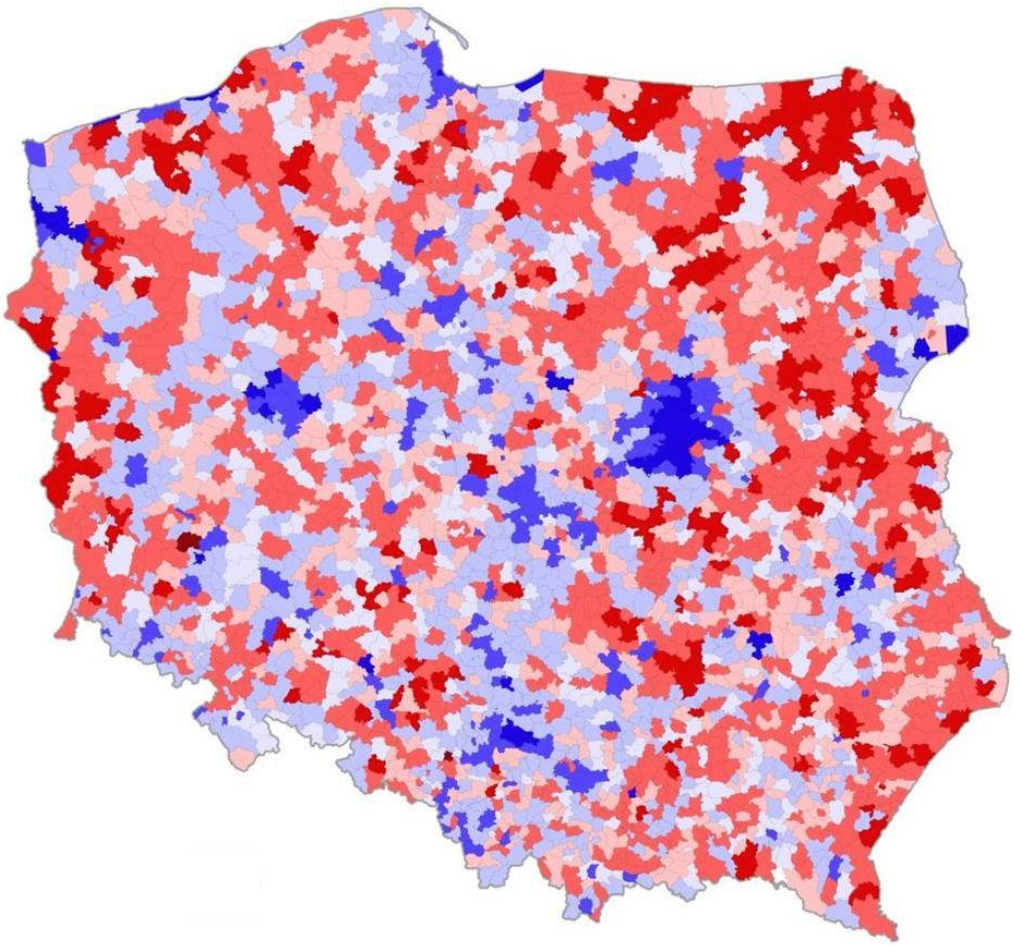

Legend of the Index **ADI**LGU values:

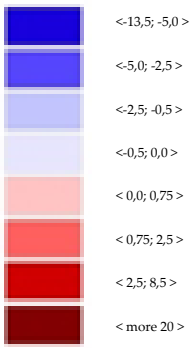

Figure 1. The variation of the value of the Aggregate Development Index municipalities in Poland (difference 2008-2014)

Source: [Potkański 2016, p. 41, based on: Porawski A., Potkański T., Czajkowski J.M., Szewczuk J., Ogólna charakterystyka stanu i uwarunkowań współpracy jednostek samorządu, http://zpp.pl/sites/default/files/aktualnosci/publikacja_wspolpraca_jst_ok.pdf#page=41, accessed: 21.08.2016]

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Selected examples of intersectoral partnerships, co-established by entities from the forest and wood-based sector, were selected from a multiple case study and included in a comparative analysis. In places where an intersectoral partnership was functioning effectively, a significant increase of the Aggregate Development Index for a given functional area was observed in the analysed period. Moreover, shifting tax "productivity" from cities to neighbouring areas, including suburbs (local migration and urban sprawl), constitutes an argument in favour of intersectoral cooperation development.

5. Conclusions

The following conclusions were formulated:

1) Investigating the potential and development capabilities of functional areas is of essential importance for the economic development of regions, especially for industries characterised by high territorial fragmentation, e.g. the forest and wood-based sector in Poland.

2) An analysis of changes in the Aggregate Development Index values makes it possible to identify the functional areas and municipalities which have a capacity to establish intersectoral partnerships. Comparing the map of spatial diversity of the Aggregate Development Index with the map of forest resources potential and the location of entities from the forest and wood-based sector makes it possible to indicate additional criteria for the development of intersectoral partnerships with the participation of forest management.

3) Institutional conditions of intermunicipal and intersectoral cooperation in Poland are concurrently an opportunity and a barrier for the establishment of partnerships with the participation of the forest and wood-based sector. The model based on the "canons" of cooperation quality assessment standards may be a tool enabling to evaluate opportunities for the development of intersectoral partnerships of an institutional character.

4) Structural similarities of partnerships established by local government units and the forest and wood-based sector in Poland result from the conditions of the economic policy and public policies. They are determined by the natural monopoly of State Forests (Państwowe Gospodarstwo Leśne Lasy Państwowe) as well as the high degree of institutionalisation of the wood market in Poland (primary market). The functioning of a secondary market in the forest and wood-based sector, dispersed and territorially diversified, is subject to market mechanisms. However, due to the dependence on wood resources, local wood markets are determined by the impact of the primary market of an institutional character.

A research approach, applied in this paper, to the examination of the development of intermunicipal institutional partnerships may constitute a starting point for a study regarding intersectoral cooperation. The analysis of selected examples from the forest and wood-based sector in Poland shows that the dynamics of integrated development of functional areas are determined by collaboration between and combination of the potential of different, both institutional (public) and market, entities.

6. Patents

Author Contributions: Conceptualization, Leszek Wanat; Data curation, Tomasz Potkański, Elżbieta Mikołajczak and Katarzyna Mydlarz; Formal analysis, Leszek Wanat and Jan Chudobiecki; Funding acquisition, Elżbieta Mikołajczak; Investigation, Tomasz Potkański and Jan Chudobiecki; Methodology, Leszek Wanat, Tomasz Potkański and Jan Chudobiecki; Project administration, Tomasz Potkański; Resources, Leszek Wanat and Tomasz Potkański; Software, Elżbieta Mikołajczak; Supervision, Leszek Wanat; Validation, Jan Chudobiecki, Elżbieta Mikołajczak and Katarzyna Mydlarz; Visualization, Elżbieta Mikołajczak and Katarzyna Mydlarz; Writing – original draft, Leszek Wanat; Writing – review & editing, Leszek Wanat, Elżbieta Mikołajczak and Katarzyna Mydlarz.

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