переробляють сировину біологічного походження. Біоекономіка є одним із найбільших і найважливіших сегментів польської економіки й важливою складовою ринку ЄС.

Ключові слова: біоекономіка, біомаса, біоенергія, біоматеріали, економічна політика

БИОЭКОНОМИКА В ПОЛЬШЕ:СОСТОЯНИЕ И ПОТЕНЦИАЛ ДЛЯ РАЗВИТИЯ РЫНКА БИОМАССЫ

Я. Голебиевски

Аннотация. *Целью исследования является определение состояния биоэкономики в Польше. Особое внимание было уделено обсуждению целей и приоритетов политики биоэкономики страны и ЕС, а также экономических инструментов для поддержки реализации этой политики. Исследование также включает анализ сектора производства биомассы в Польше, с учетом региональных различий. Исследование было основано на исходной литературе по данному вопросу, программных документах Европейского Союза и руководящих принципах национальной политики в области развития биоэкономики в Польше. Статистические данные Евростата и ФАОСТАТ были использованы для оценки потенциала биоэкономики.*

Исследование подтвердило, что в Польше много традиционных отраслей промышленности, которые не только производят биомассу, но и перерабатывают сырье биологического происхождения. Биоэкономика является одним из крупнейших и важнейших сегментов польской экономики и важной составляющей рынка ЕС.

Ключевые слова: биоэкономика, биомасса, биоэнергия, биоматериалы, экономическая политика

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THE MAIN ENVIRONMENTAL EFFECTS OF OPERATIONAL PROGRAMME INFRASTRUCTURE AND ENVIRONMENT 2007–2013

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Abstract. *Environmental quality is considered to be one of essential public goods, central to human health and well-being. However, the more and more*

intensive economic growth and increasing human population pollutes it enormously and requires improvement and protection measures. EU cohesion policy is one of the instruments which through Operational Programmes supports Member States in protecting their natural environment. Operational Programme Infrastructure and Environment 2007–2013 carried out in Poland was the biggest OP implemented in EU so far. So the research aims at identifying OPIE main effects based on the SIMIK qualitative and quantitative data.

Environmental projects aimed at supporting a wide range of actions protecting and/or restoring natural environment made 57% of all contracts signed under OPIE. Their total value equalled 24% of total value of all projects under OPIE and 19% of EU funding absorbed by all beneficiaries from this source. The projects were carried out by different kinds of beneficiaries, which enabled dealing with many aspects of environmental issues. Environmental projects were carried out in different places in Poland and differed significantly in terms of their total value, values of obtained EU co-funding and the share of EU co-funding in total value, however none of these characteristics determines their importance. One can already observe the first positive effects of implementing OPIE 2007–2013, although more time is needed to verify all the assumed influence of these investments on the natural environment.

Keywords: environmental, funding, programme, infrastructure

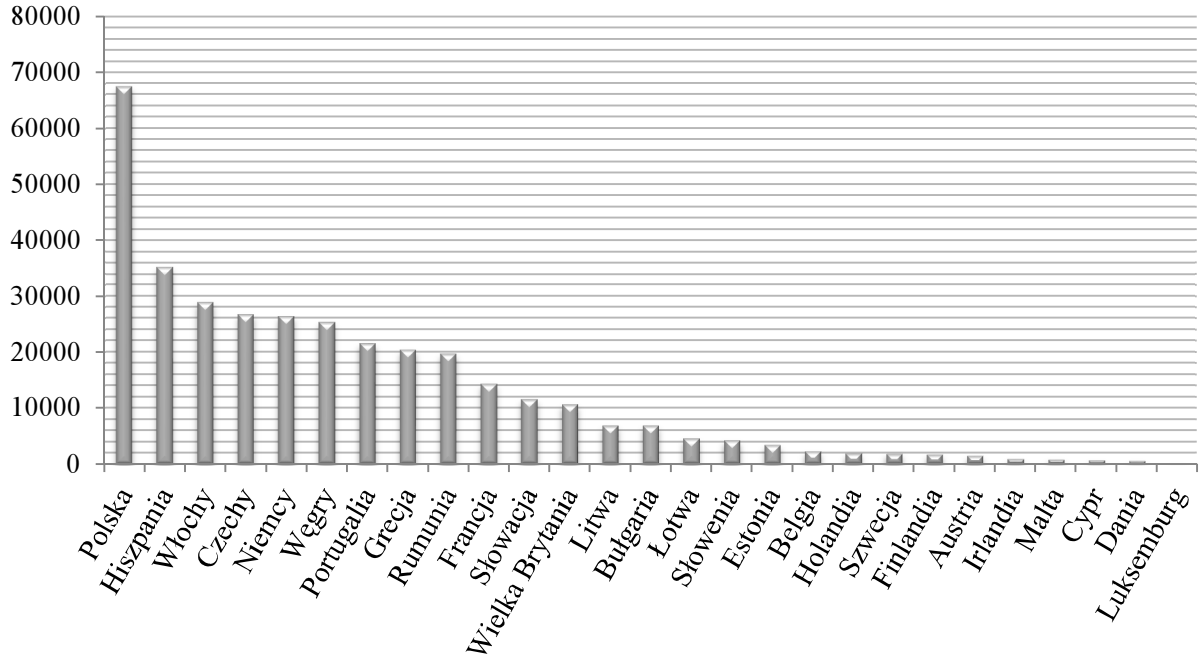
Introduction. Environmental quality is considered central to human health and well-being [18]. It is referred to as one of essential public goods that must be consumed in equal amounts by all [1]. However, natural environment strongly influenced by economic growth [2] and growing human population has been more and more endangered – globally, regionally and locally. In EU, there has been an increasing awareness of pollution that has affected aquifers, rivers, lakes, soils and forests and has placed environmental assets at risk. This made environmental sustainability a more and more important public issue requiring adequate actions and measures enabling protection and in some cases restoring the natural environment.

However, as the private property rights cannot be defined for the environment and so the market cannot allocate to the environment [17], the EU institutions and governments of Member States became the responsible ones for the environmental policy interventions. All these contributed to the implementation of EU actions and measures aimed at supporting Member States in carrying their policies and strategies promoting sustainable development at all levels – the national, regional and local, and in some cases even transregional or transnational.

The principal goal of the environmental policy is to improve environmental outcomes, driven by the pursuit of objectives of broader wellbeing and ensuring sustainable growth. It aims to achieve its objective by for example increasing the opportunity costs of pollution and environmental damage, curbing polluting behaviour, supporting investment and inducing innovation in less environmentally harmful technologies [8]. This policy can be treated as a separate set of activities on the international/national/regional/local level but there are also approaches

assuming the incorporation of environmental concerns in non-environmental policy sectors [16] such as e.g. the agricultural policy or cohesion policy.

And so supporting social and economic cohesion of Member States and their regions, with special focus on environmental issues, is one of the main priorities of the European Union. This task has been carried out within EU regional policy, often associated with structural and cohesion policies [13], which co-finance operational programmes and actions aimed at 'harmonious, balanced and sustainable development of economic activities, the development of employment and human resources, *the protection and improvement of the environment*, and the elimination of inequalities, and the promotion of equality between men and women' [5, 6].



Financial allocations for eligible EU Member States from cohesion policy funds 2007–2013 (million euro, current prices)*

*Source: authors' elaboration based on *Cohesion policy 2007-2013* [3].

The same objectives are specified in *Europe 2020 Strategy for Smart, Sustainable and Inclusive Growth* [4]. In the analysed budget perspective 2007–2013, UE expenditure on cohesion policy made 37% of the EU budget. It comprised of 347 billion euro [9] from the European Regional Development Fund, European Social Fund and Cohesion Fund [7]. At present, the cohesion policy of EU carried out on regional level is recognised as the main EU investment policy for economic growth and employment, supporting also environmental protection. For the budget perspective 2007–2013 Poland received the biggest allocation from EU cohesion policy (figure 1) – nearly 67 billion euro [11].

This funding co-financed in Poland 5 nationwide and 16 regional operational programmes (OPs), of which Operational Programme Infrastructure and Environment (OPIE) was the largest not only in Poland, but in all the history of the

European Union. All programmes 2007–2013 addressed issues of environmental protection in some ways, however OPIE was the main tool and source of EU co-financing for actions and projects aimed at environmental protection. Different EU funding opportunities offered by each of the above mentioned OPs were addressed to a wide range of potential beneficiaries. Construction of OPIE enabled absorption of EU funding by a wide range of beneficiaries carrying out different projects in different economic and social fields. Due to legal regulations and procedural requirements the final outcomes of the allocation depend largely on beneficiaries' potential and willingness to apply for and absorb EU funding.

Thus the aim of this elaboration is to define the main effects of implementing OPIE in Poland, considering the number, the total value and the EU co-financing for environmental. Some detailed objectives include also identification of a group of environmental priorities out of 36 priorities (the National Information System by SIMIK criteria) and the differentiation of environmental projects according to projects' values.

Materials and methods. The above described main aim of the study and applied method resulted in explorative and diagnostic study, based on the qualitative and quantitative secondary data from the National Information System SIMIK, run by the Ministry of Infrastructure and Development, which was the Polish implementing agency for operational programmes 2007–2013. As at 31 December 2015, the SIMIK system registered 106210 contracts for co-financing projects from EU structural funds allocated in Poland under all OPs 2007–20014(2015[1]). The data enabled extracting all projects carried out under OPIE. It allowed the authors to define:

- the number, total value and value of EU co-financing of projects (investments) carried out under OPIE,
- the main types of beneficiaries,
- the differentiation of environmental projects, based on extraction of the lowest and highest total value projects for each priority.

Pearson's coefficient was used to look into relations between selected categories of data. Analysis of the absorption of EU financing under the Operational Programme Infrastructure and Environment 2007–2013 was also based on the recognition of its main objectives and impact areas identified in strategic documents [10, 12].

Results and discussion. The main goal of the Operational Programme Infrastructure and Environment was to raise the investment attractiveness of Poland and its regions by developing technical infrastructure while protecting and improving the natural environment and human health, preserving cultural identity and developing territorial cohesion. This was to be achieved through the implementation of major infrastructure projects in six areas including the environment, transport, energy, culture and national heritage, health and higher education, which within the programming documents were specified as:

- construction of infrastructure to ensure the economic development of Poland, while maintaining and improving the environment;

[1] According to '*n*+2' principle extending the time of carrying out projects under Operational Programmes 2007-2013 by two years.

- increasing the availability of the main economic centres in Poland by linking their network of motorways and expressways, and alternatives to Road transport;

- ensuring long-term energy security through diversification of supply within Poland, reducing the energy intensity of the economy and the development of renewable energy sources;

- exploiting the potential of culture and cultural heritage of global and European significance for increasing the attractiveness of Poland;

- supporting the maintenance of good health condition of employment resources;

- the development of modern academic centres, including educating specialists in the field of modern technology.

Under Operational Programme Infrastructure and Environment 2007–2013 (OPIE) beneficiaries completed 3329 projects of nearly 221 527 million total value, of which nearly 122 172 million PLN (55%) came from EU funding [15]. Based on *Council Regulation (EC) No 1083/2006(…)* and categories assigned in SIMIK database to all contracts, projects carried out under OPIE can be classified into 36 priorities (by SIMIK criteria), which can be divided into two main groups: a group of infrastructural priorities, i.e. those connected with constructing and modernising infrastructure[2] and a group of environmental priorities, i.e. those including all projects aimed at protecting the natural environment. The latter include the following priorities:

[1] renewable energy: wind,
[2] renewable energy: biomass,
[3] energy efficiency, co-generation, energy management,
[4] municipal and industrial waste management,
[5] drinking water management and supply,
[6] wastewater treatment,
[7] air quality,
[8] integrated prevention and control of pollution,
[9] restoration of industrial sites and contaminated land,
[10] promoting biodiversity and natural protection (including NATURA 2000),
[11] risk prevention (including the drafting and implementation of plans and measures to prevent and manage natural and technological risks),
[12] other measures to protect the environment and prevent risks.

Beneficiaries completed 1912 projects of environmental character, which made 57% of all projects carried out under OPIE. However, the total value of

[2] These are: R & TD infrastructure (including physical plant, instrumentation and high-speed networks linking research centers) and centers of technological competence, railways and TEN-T railways, rolling stock and TEN-T rolling stock, highways and TENT-T highways, national Road, multimodal transports and TEN-T multimodal transports, intelligent transport systems, airports, ports, inland waterways (regional and local), electric energy and TEN-E networks, natural gas and TEN-E natural gas, promoting clean urban transport, protection and renovation of natural heritage, development of cultural infrastructure, infrastructure of educational system, infrastructure of healthcare system, preparation, implementation, monitoring and communication, evaluation, research/experts opinions, information and communication.

environmental projects made less than 24% of total value of all projects under OPIE and 19% of EU funding absorbed by all beneficiaries from this source (table 1). It shows that environmental projects although more numerous had lower total value and absorbed from OPIE less EU financing than the infrastructural ones. The share of total EU finding in total value of all environmental projects equalled about 49%, although the same share calculated for individual projects can vary significantly (table 2).

1. Basic statistics of Operational Programme Infrastructure and Environment 2007–2013 effects*

Priority	N° of projects	Share in all projects under OPIE [%]	Total value [million PLN]	Share in total value of projects under OPIE [%]	Value of obtained EU funding [million PLN]	Share of EU funding in total value of projects [%]	Share in total value of EU funding absorbed under OPIE [%]
[1]	53	1.6	4918.4	2.2	1291.8	26.3	1.1
[2]	17	0.5	1092.5	0.5	285.30	26.1	0.2
[3]	784	23.6	3077.7	1.4	1518.1	49.3	1.2
[4]	129	3.9	8734.5	3.9	3816.3	43.7	3.1
[5]	2	0.1	40.8	0.0	24.5	60.1	0.0
[6]	553	16.6	24164.9	10.9	12323.1	51.0	10.1
[7]	52	1.6	4317.4	1.9	584.9	13.5	0.5
[8]	17	0.5	1284.6	0.6	147.6	11.5	0.1
[9]	4	0.1	157.7	0.1	119.9	76.1	0.1
[10]	174	5.2	467.6	0.2	382.4	81.8	0.3
[11]	34	1.0	4318.1	1.9	3119.6	72.2	2.6
[12]	93	2.8	5.2	0.0	1.8	34.0	0.0
In all	1912	57.4	52579.3	23.7	23615.5	49.5	19.3

Note: numbers of priorities refer to the list presented above.
*Source: authors' elaboration.

Individual environmental priorities differ significantly considering the number of projects assigned to them, their total value and the share in total value of EU funding absorbed (table 1). The EU funding absorbed from OPIE 2007-2013 ranged from the lowest share of 0.001% in total value of 'other measures to protect the environment and prevent risks' to as much as 10% in total value of 'wastewater treatment'.

Both the total value and the value (thus also the share) of the EU funding of each project under OPIE varied significantly, referring both to the whole programme as well as to individual priorities (table 2). Co-financing under OPIE could be obtained for a wide range of different investments by different types of beneficiaries. To reflect this variation table 2 shows examples of projects selected for each priority according to the criterion of the lowest and the highest total value. The lowest total value of environmental project under OPIE equalled 5.7 thousand PLN, including 2.3 thousand (41%) EU co-financing, while the highest value was 1,821 million PLN, including 884.3 million PLN (49%) EU co-financing (table 2).

2. Projects of the lowest and the highest total values carried out under OPIE 2007–2013, by priorities*

Priorities and the titles of the PL and PH projects	Total value [million PLN]	Value of obtained EU funding [million PLN]	Share of EU funding in total value of the project	Type of beneficiary
[1] Renewable energy: wind				
PL: Construction of wind power station of 2 MW	16.412	9.042	55%	Llc
PH: Construction of Karwice wind farm	298.683	34.874	12%	Llc
[2] Renewable energy: biomass				
PL: Construction of bio-gas power station	282.470	39.982	14%	JSC
PH: Construction of a biomass boiler in Jaworzno power station	16.593	7.930	48%	Llc
[3] Energy efficiency, co-generation, energy management				
PL: Plan of low emission management for the city Rejowiec Fabryczny	0.009	0.008	85%	the city
PH: Modernization of the heating system of Dąbrowa Górnicza, Sosnowiec, Będzin and Czeladź communes	147.886	67.253	45%	Llc
[4] Municipal and industrial waste management				
PL: Reducing energy consumption in the production process through a heat recovery on a spray tower	0.756	0.186	25%	company
PH: Waste management system for Poznań	894.370	330.188	37%	the city
[5] Drinking water management and supply				
PL: Protection of Drawa and Rega river basins - Stage II	10.378	4.462	43%	Association of Towns and Communes
PH: Sanitation system of upper Skawa river basin in Białka	30.380	20.051	66%	sanitation Llc
[6] Wastewater treatment				
PL: Development of complete project documentation for the construction of solar drying of sewage sludge at the wastewater treatment plant	0.03	0.021	69%	Urban water supply and sanitation Llc
PH: Water supply and wastewater treatment in Warsaw - Phase IV	1821.24	884.304	49%	Urban water supply and sanitation JSC
[7] Air quality				
PL: Reducing emissions through the reconstruction of boiler units	0.986	0.240	24%	Heating Llc

in PEC Legionowo				
PH: Construction of Flue Gas Desulphurization Plant in PGE Elektrownia Bełchatów S.A.	412.865	20.000	5%	Mining and Conventional Power JSC
[8] Integrated prevention and control of pollution				
PL: Expansion of IZO - ERG SA with the use of BAT for the disposal of VOC	6.012	1.200	20%	JSC
PH: Construction of Flue Gas Desulphurization Plant IOS III for block No. 10 - 500 MW in Kozienice SA power station	403.129	20.000	5%	JSC
[9] Restoration of industrial sites and contaminated land				
PL: Brownfield redevelopment in the vicinity of nature sites in the city of Bytom - preparatory work	0.729	0.620	85%	Bytom community
PH: Reclamation on degraded areas, military training and military areas managed by the State Forests	130.817	97.839	75%	The State Forests National Forest Holding
[10] Promoting biodiversity and natural protection (including NATURA 2000)				
PL: Protecting the most valuable grasslands, bogs and wintering bats in Opole Natura 2000 areas	0.380	0.323	85%	Regional Directorate for Environmental Protection
PH: Development of plans of protection tasks for Natura 2000 areas in Poland	27.639	22.079	80%	Regional Directorate for Environmental Protection
[12] Risk prevention (including the drafting and implementation of plans and measures to prevent and manage natural and technological risks)				
PL: Modernization and construction of coastal fortifications west coast	11.468	9.594	84%	Maritime Office in Szczecin
PH: Modernization of Wroclaw Floodway System	901.088	578.590	64%	Regional Water Management Board
[13] Other measures to protect the environment and prevent risks				
PL: Implementation of 14001 Environmental Management System in AURAEKO PACKAGING company	0.006	0.002	41%	JSC
PH: Implementation and registration of CEMEX Polska Llc	0.232	0.095	41%	Llc

Note: abbreviation ‘L’ – project of the lowest total value, ‘H’ – project of the highest total value, ‘Llc’ – limited liability company, ‘JSC’ – joint-stock company.

*Source: authors’ elaboration.

OPIE was addressed to different kinds of beneficiaries: government agencies, companies, commune associations, NGOs, local and governmental self-governments, etc. Analysis of the final effects of implementing OPIE shows that all this groups benefited from this programme as had been assumed at the stage of planning (table 2). The wide participation of different beneficiaries, who have different competences and play different role in economy and the sustainable development enabled dealing with various aspects of environmental protection.

The share of EU funding in the total value of projects also differed significantly. Beneficiaries obtained from 5% to 100% of EU co-financing for their projects. Although generally in 2007–2013 the maximum level of co-financing was 85%, in some case the rule of cross-financing applied allowing up to 100% financing from EU funding for projects. The environmental priorities enabled beneficiaries to get support both for soft and hard project. There is an identifiable trend showing that projects of the lowest value (e.g. several thousand PLN) resulted in developing documents, strategies and plans. As such they were soft projects, however, according to currently binding rules and procedures, necessary to carry out hard projects.

Analysis of relation based on Pearson's coefficient proves that there is no correlation between the total value of projects and the share of obtained EU funding. This is in line with OPIE principles which first define different kinds of costs as either qualifying for co-financing or not, second allow the beneficiary apply for different amounts of co-financing making different share of total value of the investment, and the third they allow the implementing agency decide, according to strictly described rules, what share of the total value of the project can be co-financed under the given programme.

The projects influence different areas. Some of them will work locally, some will have a regional influence and some even nationwide. However the range of influence does not determine their importance for natural environment protection – even those working 'only' locally may solve very important problems causing chain of negative effects going beyond local range.

Conclusions. Environmental values are important aspects of discussions both among economy theoreticians as well as practitioners. They are present strictly and directly within the environmental policy but also in other public interventions, as for example cohesion policy of the European Union. Its instruments in Poland, as for instance Operational Programme Infrastructure and Environment 2007–2013, constitute a significant opportunity for financing environmental investments. This programme enabled co-financing of 3329 projects, whose total value equalled nearly 221 527 million PLN and included nearly 122 172 million PLN (55%) EU funding. Environmental projects aimed at supporting a wide range of actions protecting and/or restoring natural environment made 57% of all contracts signed under OPIE. Their total value equalled 24% of total value of all projects under OPIE and 19% of EU funding absorbed by all beneficiaries from this source.

The projects were carried out by different kinds of beneficiaries, including self-governments of all levels, national agencies, government units, all sorts of companies, etc. It shows how many actors have been and should be involved in the process of protecting natural environment and solving

different problems in this field, because of their different role in sustainable development, their different roles in the market economy or their different competences.

Environmental projects differed significantly in terms of their total value, values of obtained EU co-funding and the share of EU co-funding in total value. There is no relation between the total value of projects and the share of obtained EU funding. There is, however, a relation between the total value of projects and their type – projects of a lower total value are soft ones, while those of high total value are hard ones.

The projects were carried out in different places in Poland. It is quite easy to delimit the range of territorial impact of most of them, but we can also find examples of environmental investments located in one region, while influencing some specific issue appearing all over country. Local projects can be in many cases as crucial for protecting the natural environment as those nationwide. But at this local level EU funds are often the deciding factor in whether an investment or event will occur [16].

We can already observe the first positive effects of implementing Operational Programme Infrastructure and Environment 2007–2013, although more time is needed to verify the assumed influence of these investments on the natural environment.

References

1. Chandra, P., Chakraborty, S. K. (2016). A Theoretical Framework for Understanding Transnational Public Goods (TPGs) to Upgrade Environmental Quality, Journal of Quantitative Economics, 1–14.
2. Drews, S., van den Bergh, J.C.J.M. (2016). Public views on economic growth, the environment and prosperity: Results of a questionnaire survey, Global Environmental Change 39, 2.
3. European Commission (2007). Cohesion policy 2007–2013. Brussels.
4. European Commission (2010). Europe 2020. Strategy for Smart, Sustainable and Inclusive Growth. Brussels.
5. European Council (1999). Council Regulation (EC) No 1260/1999 of June 21, 1999 laying down general provisions on the Structural Funds. Official Journal of the European Communities, L 161/1 of June 26, 1999.
6. European Council (2006). Council Regulation (EC) No 1083/2006 of 11 July 2006 laying down general provisions on the European Regional Development Fund, the European Social Fund and the Cohesion Fund and repealing Regulation (EC) No 1260/1999. Official Journal of the European Communities, L 210 of July 31, 2006.
7. European Union (2013). EU Cohesion Policy Contributing to Employment and Growth In Europe, Joint paper from the Directorates-General for Regional & Urban Policy and Employment, Social Affairs & Inclusion, Brussels.
8. Koźluk, T., Zipperer, V. (2014). Environmental policies and productivity growth - a critical review of empirical findings. [in:] OECD Journal: Economic Studies. 156.
9. Manzella, G. P., Mendez, C. (2009). The turning points of EU Cohesion Policy, European Investment Bank, Luxembourg, European Policies Research Centre University of Strathclyde, United Kingdom.

10. Ministry of Development and Infrastructure (2013). Operational Programme Infrastructure and Environment. National Strategic Reference Framework 2007–2013. A detailed description of the priorities. Version 3.15, Warsaw.
11. Ministry of Regional Development (2009). National Development Plan 2004–2006, Warsaw.
12. Ministry of Regional Development (2011). The Operational Programme Infrastructure and Environment, version 3.0 Warsaw.
13. Paczoski, A. (2010). Kreowanie regionalnej i lokalnej polityki gospodarczej na podstawie teorii i koncepcji rozwoju terytorialnego. Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk.
14. Pomianek, I., Drejerska, N. (2016). The effects of using structural funds at the local level - the results of qualitative research among project beneficiaries. [in:] Bórawski P., Żuchowski I., Szymańska E. J., (eds.): Management of sustainable development in rural areas: at local and regional scales. High Economic Social School Publishing House, Ostrołęka.
15. Rakowska, J. (2016). Samorządy gmin jako beneficjenci polityki spójności UE w latach 2007–2013 (in print), Warsaw.
16. Runhaar, H., Driessen, P., Uittenbroek, C. (2014). Towards a Systematic Framework for the Analysis of Environmental Policy Integration. Environmental Policy & Governance. Jul/Aug, Vol. 24, Issue 4.
17. Siebert, H. (2008). Economic of the Environment. Theory and Policy, Springer.
18. Wysokińska, Z. (2016). The 'New' Environmental Policy of the European Union: A Path to Development of a Circular Economy and Mitigation of the Negative Effects of Climate Change, Comparative Economic Research. June, Vol. 19, Issue 2.

ОСНОВНІ ЕКОЛОГІЧНІ НАСЛІДКИ ОПЕРАТИВНОЇ ПРОГРАМИ ІНФРАСТРУКТУРИ ТА НАВКОЛИШНЬОГО СЕРЕДОВИЩА НА 2007–2013 РОКИ

Й. Раковська,
Н. Дреєрська

Анотація. *Якість навколишнього середовища вважається одним із найважливіших суспільних благ, найголовнішим для здоров'я людини та її добробуту. Проте, дедалі більше інтенсивне економічне зростання й збільшення кількості населення надзвичайно забруднює довкілля і потребує вдосконалення заходів захисту. Політика зближення ЄС є одним із інструментів, який через оперативні програми підтримує держави-члени у захисті їх природного середовища. Оперативна програма розвитку інфраструктури та навколишнього середовища на 2007–2013 роки, проведена в Польщі, була найбільшою оперативною программою, реалізованою в ЄС. Таким чином, дослідження спрямоване на виявлення основних ефектів ОПІН, заснованих на якісних і кількісних показниках SIMIK.*

Екологічні проекти, спрямовані на підтримку широкого спектру заходів захисту і/або відновлення природного середовища, становили 57% від усіх контрактів, підписаних у межах ОПІН. Їх загальна вартість становила 24% від загальної вартості всіх проектів у межах ОПІН і 19%

фінансування ЄС, що поглинається всіма одержувачами з цього джерела. Проекти проводилися різними видами одержувачів, що дозволило мати справу з багатьма аспектами екологічних проблем. Екологічні проекти проводилися в різних місцях у Польщі й значно відрізняються в плані їх загальної величини, величини спільного фінансування ЄС і частки співфінансування ЄС у загальній вартості, однак жодна з цих характеристик не визначає їх важливість. Уже можна спостерігати перші позитивні ефекти реалізації ОПІН 2007–2013, хоча потрібно більше часу, щоб перевірити увесь передбачуваний вплив цих інвестицій на природне середовище.

Ключові слова: довкілля, фінансування, програми, інфраструктура

ОСНОВНЫЕ ЭКОЛОГИЧЕСКИЕ ПОСЛЕДСТВИЯ ОПЕРАТИВНОЙ ПРОГРАММЫ ИНФРАСТРУКТУРЫ И ОКРУЖАЮЩЕЙ СРЕДЫ НА 2007–2013 ГОДЫ

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Аннотация. *Качество окружающей среды считается одним из важнейших общественных благ, центральное для здоровья человека и его благосостояния. Однако, все больше и больше интенсивный экономический рост и увеличение населения чрезвычайно загрязняют окружающую среду и она нуждается в совершенствовании мер защиты. Политика сближения ЕС является одним из инструментов, которые через оперативные программы поддерживают государства-члены в защите их окружающей среды. Оперативная программа развития инфраструктуры и окружающей среды на 2007–2013 годы, проведенная в Польше, была крупнейшей оперативной программой реализованной в ЕС. Таким образом, исследование направлено на выявление основных эффектов ОПИО, основанных на качественных и количественных показателях SIMIK.*

Экологические проекты, направленные на поддержку широкого спектра мер защиты и/или восстановления природной среды, составили 57% от всех контрактов, подписанных в рамках ОПИО. Их общая стоимость составила 24% от общей стоимости всех проектов в рамках ОПИО и 19% финансирования ЕС, поглощаемого всеми получателями из этого источника. Проекты проводились различными видами получателей, что позволило иметь дело со многими аспектами экологических проблем. Экологические проекты проводились в разных местах в Польше и значительно отличаются в плане их общей величины, величины совместного финансирования ЕС и доли софинансирования ЕС в общей стоимости, однако ни одна из этих характеристик не определяет их важность. Уже можно наблюдать первые положительные эффекты реализации ОПИО 2007–2013, хотя

нужно больше времени, чтобы проверить все предполагаемое воздействие этих инвестиций на природную среду.

Ключевые слова: окружающая среда, финансирование, программы, инфраструктура.

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ОБ ОПРЕДЕЛЕНИИ МЕСТА СЕЛЬСКОХОЗЯЙСТВЕННОЙ ДОКТРИНЫ БИБЛИИ В СОВРЕМЕННОЙ ЭКОНОМИКЕ

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Аннотация. Актуальность. *Библия является теоретической основой хозяйственной деятельности человека, по которой постепенно развивалось теологическое экономическое мышление и практическая хозяйственная деятельность.*

Хозяйственно-управленческая и сельскохозяйственная доктрина Библии установлена Господом Богом, чтобы теоретико-методологически и практически обеспечить боговдохновенное, синергическое социально-экономическое развитие человечества. Поэтому весьма актуальным является всестороннее изучение библейских текстов.

Цель. *На основе изучения и анализа соответствующих частей Библии, выявить основные теолого-экономические принципы ведения сельского хозяйства и начертать основное направление для разработки Национальной концепции развития аграрного сектора Грузии.*

Методы. *Изучение и анализ частей Библии по теме статьи.*

Выводы. *В современных условиях необходима радикальная гуманизация хозяйственно-управленческой деятельности на основе религиозно-библейских принципов и нравственности. Это особенно актуально для развивающихся стран, а именно, для Грузии и Украины.*

Для духовно-материальной синергии и гармоничного социально-экономического развития общества, необходимо вернуться к теологическим основам и принципам организации экономики и сельского хозяйства, одновременно разрабатывая и внедряя современные высокоэффективные технологии производства.

Национальная концепция развития сельского хозяйства Грузии должна основываться на богословской хозяйственно-управленческой доктрине Библии, которая должна быть обязательно рассмотрена и учтена всеми компетентными и заинтересованными сторонами в