



European Union
European Regional
Development Fund

**Analysis of ERDF Funding Instruments in the
framework of Regional Innovation Strategies and
their application for the chemical/bioeconomy
sector**

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List of abbreviations

R+D /R+D+I	Research and development / research, development, innovations
TO	Thematic Objective
ECB	European Central Bank
EMFF	European Maritime and Fisheries Fund
ERDF	European Regional Development Fund
EAFRD	European Agricultural Fund for Rural Development
ESF	European Social Fund
EFSI	European Fund for Strategic Investments
ePUAP	Elektroniczna Platforma Usług Administracji Publicznej/ Electronic Platform of Public Administration Services
INNOCHEM	Sectoral program INNOCHEM of National Centre for Research and Development
IOC	Institution organizing the competition
SME	Small and medium enterprises
NBP	National Bank of Poland
PA	Priority Axis
RES	Renewable energy source
IP	Investment Priority
SG OP	Smart Growth Operational Programme 2014-2020
RIS	Regional Innovation Strategy
general regulation	Regulation No 1303/2013 of the European Parliament and of the Council of 17 December 2013 <i>establishing common rules on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund; laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006</i>
ROP MV	Regional Operational Programme of Mazowieckie Voivodeship (concerning the timeframe 2014-2020, unless stated otherwise)

RIS	<i>Regional Innovation Strategy for Mazovia 2020. Innovation support system and smart specialization of the region</i> , constituting an annex to Resolution No. 23/15 of the Mazowieckie Voivodship Assembly of 16 March 2015 with the amendment
DDoPA	Detailed Description of Priority Axes
S3Chem	Project „Smart Chemistry Specialisation Strategy” funded by the Interreg Europe Programme
EU	European Union
OCR	Official Confirmation of Receipt
ICT	Information and communication technologies
ITI	Integrated Territorial Investments

1. Introduction

Promotion and development of innovation in the Mazovia Voivodeship are based on supporting projects in the scope of smart specialization of the region. Such specializations in Voivodeship include:

- Safe food;
- Intelligent Management systems;
- Modern services for business;
- High quality of life¹.

The report has been prepared within the implementation of the "Smart Chemistry Specialization Strategy" (S3Chem) project funded by the Interreg Europe Programme. The report consists of a description of financing instruments from the European Regional Development Fund under the Regional Innovation Strategy for the Mazowieckie Voivodeship 2020 and the possibility of their application in the chemical sector. Three sources of financing from which one could obtain funds for the development of innovativeness in the Mazowieckie Voivodeship were subjected to the analysis, i.e.:

- 2014-2020 Regional Operational Programme of Mazowieckie Voivodeship;
- Smart Growth Operational Programme 2014-2020;
- Sectoral program INNOCHEM of National Centre for Research and Development.

The report analyses the implementation status of each of the abovementioned sources of financing and the current interest of entities operating in the chemical sector concerning individual activities and sub-measures under the aforementioned programs. Given that, it was possible to formulate conclusions regarding the perceived attractiveness of these sources by potential beneficiaries.

Furthermore, basing on the interviews conducted between 13.02.2018 and 27.02.2018, an analysis of the experience of beneficiaries implementing projects under I and III PA ROP MV 2014-2020 in the scope of applying for funds, project implementation, reporting and control of the implemented project was implemented. Interviews were also conducted with beneficiaries implementing projects in the field of innovation development from funds under the ROP MV 2007-2013. It shall be noted that all partners within the project were obliged to conduct similar researches. This enables both the identification of beneficiaries' expectations regarding the expected mechanisms for supporting inter-regional cooperation, and an indication of the manner in which current cooperation mechanisms in the scope of innovation support are perceived by entities within the chemical industry. The opinions of the beneficiaries were compared with the opinion of the representatives of the Managing Authority and the Intermediate Body of the ROP MV 2014-2020. Therefore, conclusions and recommendations that could improve the implementation of innovation financing instruments in the Mazowieckie Voivodeship and to design new support instruments in the 2020+ financial perspective were formulated.

¹ Indictaed in document: *Regionalna Strategia Innowacji dla Mazowsza do 2020 roku. System wspierania innowacyjności oraz inteligentna specjalizacja regionu (Regional Innovation Strategy for Mazovia 2020. Innovation support system and smart specialization of the region)*, constituting an annex to the resolution No. 23/15 of the Mazowieckie Voivodeship Assembly of 16 March 2015.

2. Description of financing instruments supporting the promotion and development of innovation

2014-2020 Regional Operational Programme of Mazowieckie Voivodeship

Under ROP MV 2014-2020, promotion and development of innovation will be supported under two Priority Axis: I PA - *Use of research and development activity in economy* and III PA - *enhancing of innovative and entrepreneurship potential*.

The objective of the PA I *Use of research and development activity in economy* is the increase of innovativeness of the regional economy, reflected by increasing expenditures (particularly from the enterprise sector) for research and development².

In Measure 1.1 *Research and development activity of scientific units*, projects aimed at expanding or modernizing research and development infrastructure of scientific units to conduct research works corresponding to the needs of the economy, and applicable in the areas of smart specialization of the region, are co-financed. Potential beneficiaries of the abovementioned activities constitute of scientific units and scientific consortia. Support cannot be used for the improvement of teaching infrastructure; furthermore, in the case of new ventures, their support is only possible provided the fact that they constitute an element that complements already existing resources. Moreover, projects with the possibly high degree of co-financing from private sources at the implementation or maintenance stage are preferred.

Support under **Measure 1.2 *R+D activity of enterprises*** is aimed at increasing the number of enterprises undertaking research and development activities, leading to the creation of innovations and increasing the extent and intensity of this scope of works. The support is designed for the implementation of research and development projects of enterprises, for the creation or development of infrastructure of R+D enterprises and for undertakings aimed at establishing and strengthening cooperation with scientific institutions as part of the implementation of small research projects. The support also covers activities that strengthen the cooperation processes of enterprises and the science sector, leading to intensification of cooperation and joint definition of priority research directions resulting in outcomes applicable to the economy. Support in **measure 1.2** is focused on the SME sector, however, large enterprises are expected to invest given that they provide certain effects of diffusion of the results of their R+D activity to the economy.

Projects planned for co-financing include the following types of projects:

Type 1. Research and development projects;

Type 2. Innovation vouchers;

Type 3. Establishment or development of research and development facilities;

Type 4. Process of experimenting and searching for niche development and innovation;

Type 5. Development of the regional innovation system.

The first four types of projects are planned for implementation under the competition mode. As potential beneficiaries, competitions may include: enterprises, cooperative links and the Mazowieckie Voivodeship Self-Government (including partnerships with: business environment

² Detailed Description of the Priority Axes of the Regional Operational Programme of the Mazowieckie Voivodeship ROP MV 2014-2020 (Detailing of the ROP MV/DDoPA), version 1.30, Warsaw, 18 December 2017, Annex No. 1 to Resolution No. 2017/302/17 of the Mazowieckie Voivodeship Board of 18 December 2017., p. 32.

institutions or scientific units)³. Furthermore, grant applications submitted in the scope of types 1-3 should be in compliance with the areas of smart specialisation of the region. The implementation of the project titled "Development of the regional innovation system" (type 5), resulting from the Regional Innovation Strategy for Mazovia 2020, was planned in the non-competitive mode. The maximum amount of the co-financing to be obtained constitutes 80% of the eligible costs of the projects- it shall be noted that the minimum and maximum value of eligible expenditure within the projects is always specified in the Regulations of the competition. There is no demarcation as to the maximum co-financing value that individual potential beneficiaries could apply for. The largest funds are planned for the support of projects within type 1. R+D projects. The allocation for the competitions so far announced amounted to EUR 40 million. A considerable level of support was also planned for the type 3. Establishment or development of research and development facilities (in total EUR 26 million). The value of allocations planned for the remaining competitions is less considerable and amounts to approximately EUR 5 million per competition. **Projects planned under PA III *Development of innovative potential and entrepreneurship*** shall be aimed at the increase of the level of foreign trade among SMEs and the increase in the scope of their use of innovations. The effect of the undertakings would be manifested in the increase of the competitive advantage of enterprises on domestic and international markets. With regard to the commercialization of scientific researches, the use of ideas available on the market will be supported, particularly the implementation of results of research and development projects developed in measure 1.2.

Due to the **Measure 3.1 *Improvement of the development of SMEs in Mazovia***, enterprises may obtain a potential to expand their markets for their products and services (especially in the area of highly specialized and pro-innovative services). The intervention should, as a result, attract external investors and translate into the creation of jobs and increase of the region's innovativeness.

Within the Sub-measure 3.1.1 *SME development under ITI*, projects were planned for the organization of investment areas (among others in post-industrial and post-governmental areas) and their comprehensive development, including, particularly, study and conceptual work, equipping the investment area with media, building or modernizing the internal communication system of the investment area, modernization and adaptation of buildings for economic purposes, development of the surroundings. Projects compatible with the revitalization programme in the area where the project is due to be implemented are preferred.

Under Sub-measure 3.1.2 *Development of SMEs*, support is provided either through BEI (the beneficiaries constitute of BEI, whereas the target group of SMEs), or in the form of vouchers for consultancy, enabling the purchase of an advisory service provided by BEI for SMEs. The intervention is aimed at increasing the competitiveness of the SME sector by supporting the initial phase of enterprise development, primarily through business incubators. Emphasis was placed on creating a comprehensive offer of support for the initial phase of development, in which there is the highest risk of companies bankruptcy. Support focuses on advising, among others in the scope of starting a business, developing a strategy, monitoring, technology transfer and forecasting. Under the sub-measure, it is also planned to integrate the services of existing BEIs in order to create a comprehensive offer, including product development, an access to capital and a specialist consultancy for SMEs.

Support under **Measure 3.2 *Internationalization of SMEs*** shall consequently contribute to changing the unfavourable balance of foreign exchange in the region and to strengthen and consolidate the

³Ibidem, pp.44-45

positive image and potential of Mazovia in terms of favourable conditions for locating and running a business. Moreover, the effect of the intervention would manifest itself in the development of a comprehensive and coherent investment policy of the region.

Sub-measure 3.2.1 *Economic promotion of the region within ITI* is intended for the implementation of the project concerning the construction of the rank and common brand of the Warsaw Functional Area (WFA). Assumed objectives are to strengthen the foreign links of the WFA economy in pro-export and pro-investment dimensions. Given that, promotional and information activities and direct actions are planned, an example of which are business missions or participation in fairs.

Sub-measure 3.2.2. Internationalization of enterprises plans the interventions that would be directed to entrepreneurs concerning the increase in the level of their internationalization through the participation, among others, in economic missions or study visits. The implementation of projects is planned through the implementation of a new business model; support would be provided from the conceptual stage, through the implementation of the idea for the internationalization of activities and international economic cooperation, to the expansion and improvement of this activity. The basis for the implementation of the project is a strategic document containing analysis and justification for new markets of the company's target export activities and indicating a change in the business model in terms of internationalization. Preparation of the above document may also be subject to co-financing. Furthermore, the intervention can be complemented and supported by ICT solutions in the area of e-commerce. The implementation of activities will be directed both at the activities of individual enterprises and their groups, i.e. cooperative links, aimed at expanding business operations into new, foreign markets and seeking business partners in other countries.

Measure 3.3 *Innovation in SMEs* is aimed at strengthening the potential of the SME sector in Mazovia, primarily in the area of launching new products or services and implementing innovations. Investments in the development of enterprises, and increasing the scale of their operations and the range of the offer will contribute to the increase observed in terms of the employment and sustainable development of companies. Moreover, the use of ICT shall translate into strengthening ties between cooperating enterprises and increase their competitiveness through the use of modern cooperation channels, automation of business processes and data exchange. At the same time, the use of ICT will contribute to the development of e-commerce, increasing the ability of Mazovian entrepreneurs to compete in international markets. Depending on the risk, support in a non-return or a returnable form is envisaged at the implementation stage. In the case of projects for which the risk at the implementation stage is high, non-returnable instruments will be offered, whereas other form of financing instruments would be applied in the areas where the risk is lower and in which there would be identified market inconsistencies or a sub-optimal level of investment.

The budget allocated for supporting projects under individual measures and sub-measures is presented in the table below.

Table 1 Allocation of funds for individual activities and sub-measures of I PA and III PA of ROP MV 2014-2020

Measure/sub-measure	Budget [€]
1.1	125 197 709
1.2	153 019 421
3.1.1	11 579 348
3.1.2	60 504 579
3.2.1	5 680 606
3.2.2	27 479 361
3.3	108 125 892 [including 54,07 mln € for funding instruments]

Source: own study based on the Detailed Description of the Priority Axes of the 2014-2020 Regional Operational Programme of Mazowieckie Voivodeship ROP MV (Detailing of the ROP MV/SZOOP), version 1.30, Warsaw, December 18, 2017, Annex No. 1 to Resolution No. 2017/302/17 of the Mazowieckie Voivodeship Board of Directors of December 18, 2017.

Within presented activities and sub-measures it is possible to obtain support both in a non-returnable and a returnable form. As a rule, there are no restrictions as to the maximum value of the project being implemented, unless the provisions of the Competition Regulations or the Call for Proposals state otherwise. The maximum percentage of financing of ERDF eligible expenditure at the project level is 80%, both for projects covered by the state aid mechanism and for projects not covered by said mechanism.

The procedure for applying for funds

The application for co-financing with attachments is submitted electronically, via the local IT system MEWA 2.0. Access to the system is possible from the level of the ROP MV 2014-2020 website (www.funduszedlamazowska.eu). The application for co-financing of the project submitted in the System should be confirmed by an electronic signature with an qualified certificate or by a trusted profile on the ePUAP platform. Application (after having it signed in the manner defined above) should be sent to the Institution Organizing the Competition (IOC). Confirmation of sending the application is the Official Confirmation of Receipt (OCR).

The procedure for applying for funds varies depending on whether the project is implemented in competition or in non-competitive mode. The basic mode of project selection is the competition mode. Competitions may take two forms: open competitions, i.e. those that do not have a fixed end date for the call for proposals, or closed competitions. The Managing Authority annually adopts an indicative Schedule of calls for proposals for competition in the competition mode for the following calendar year by 30th of November. At least 30 days before the planned call for proposals, the Competition Announcement and the Competition Regulations are published on the ROP MV website and on the www.funduszeuropejskie.gov.pl portal. The duration of the recruitment cannot be shorter than 7 days. The project evaluation committee performs the assessment of meeting the project selection criteria by the projects participating in the competition. Project selection criteria are determined by the Managing Authority (in cooperation with Intermediate Bodies) and submitted for approval to the Monitoring Committee. Types of verified criteria, the method of assessment and the possibility of completing the assessment in the event of a negative evaluation of one of the types of criteria are specified in the description and definition of criteria and in the Rules of the competition. At each stage of the assessment, the applicant can fill in the gaps and correct obvious errors in the submitted application. In the event of any formal defects or obvious errors in the application, the IOC calls the applicant to supplement the application or to correct the error, under a condition of not considering an application. In the event of an error, the IOC may correct it ex officio without calling the applicant. However, the applicant shall be informed of this fact.

In the case of ROP MV, projects pass through formal evaluation and substantive evaluation. After completing the formal assessment, the IOC publishes a list of projects qualified for substantive evaluation. In the event of a negative assessment, the information about the result of the assessment (with justification) is sent to the applicant within 7 days from the end of the evaluation of the application along with instructions on the possibility of lodging a protest. Prior to the substantive assessment of a project co-financed by the ERDF, in case of any doubts and the need to obtain

additional information or explanations from the applicant, the IOC may ask the applicant to submit explanations regarding the evaluated application. The submitted explanations form an integral part of the application. After the competition is resolved, the IOC publishes on the ROP MV website and on the www.funduszeuropejskie.gov.pl portal a list of the abovementioned projects. Until the amendment to the so-called the implementation act from 2017 projects were published in division into projects assessed positively and negatively. After the entry into force of the above amendment, only the list of positively evaluated projects is being published. The applicant is informed about the results of the evaluation immediately, no later than within 14 days from the approval of the list of projects. The written information includes the result along with the justification of the assessment and the number of points received by the project. If the project has received a negative evaluation, the information contains an instruction on the possibility of lodging a protest. The applicant whose project has been selected for co-financing is obliged to provide the documents necessary to sign the co-financing agreement within a maximum of 14 days from the date one receives information about the possibility of accepting the application for implementation. Failure to submit the documentation within the prescribed period may state for the lack of reservation of funds for a given project and the possibility of co-financing subsequent projects from the list.

Concerning projects planned for implementation in non-competitive mode, submitting the application for co-financing is possible only upon request of the Managing Authority of the ROP MV. Said mode is designed for some projects implemented under measure 1.2, sub-measure 3.1.2 and sub-measure 3.2.1. Identified projects are included in the List of Non-Contracting Projects, constituting an annex to the DDoPA. The competent institution monitors the readiness of projects to be applied. As a rule, the procedure for assessing an application submitted in a non-competitive mode does not differ from the evaluation of an application submitted in competition mode.

Smart Growth Programme 2014-2020

Support for the development of innovative activities may also be obtained from the Smart Growth Operational Programme 2014-2020. Under this Programme, the implementation of projects consistent with smart specialization of the region is connected to the following Priority Axes: I PA *Support for R+D activity of enterprises*, II PA *Support for the environment and capacity of enterprise for R+D+I activity* and IV PA *Increasing the research potential*. The indicated axes implement thematic objective 1, associated with the development of innovation. The total allocation foreseen for the implementation of TO 1 under SG OP for the Mazowieckie Voivodeship as a more developed region is 806 378 804 EUR, i.e. 3 362 599 612.68 PLN (of which 543 128 033 EUR, i.e. 2 264 843 879.61 PLN is the EU contribution). **Under I PA Support for R+D activity of enterprises** may include enterprises - including micro, small and medium enterprises as well as business consortia- as potential beneficiaries. Similarities may be observed **in the case of II PA Support for the environment and capacity of enterprise for R+D+I activity**. However, large enterprises may also apply for this funding within said axis. **In the scope of IV PA**, consortia of scientific units and consortia of enterprises with scientific units in which a company or a scientific unit plays a leading role, may be potential beneficiaries. Attention shall be also drawn to the fact that the majority of activities and sub-measures foresee a competition selection procedure for projects. Non-competitive mode is only valid for measures and sub-measures foreseen for entities implementing financial instruments and for two measures and three sub-measures within which the Ministry of Investments and Development, the Foundation for Polish Science, the Ministry of Science and Higher Education and the National Centre for Research and Development are listed as beneficiaries. Within SG OP, the application for co-

financing with attachments is submitted in an electronic version. The electronic version of the application (on an electronic medium) should be delivered to the IOC. Moreover, a hard copy of a declaration on the compliance of the electronic version of the application for co-financing and annexes with the actual and legal status signed by persons authorized to represent the Applicant should be enclosed to the application. The template of the declaration is attached to the Competition Regulations.

Sectoral program INNOCHEM of National Centre for Research and Development

Another source of funding for projects aimed at strengthening the innovation of the Mazovia region is the INNOCHEM sectoral program, launched by the National Centre for Research and Development under Measure 1.2 *Sectoral R+D programmes* of the SG OP. The programme is financed from SG OP funds allocated for measure 1.2, therefore the funding is secured by the European Regional Development Fund. These funds are supported by private funding from beneficiaries- the programme does not allocate resources from the state budget. The maximum level of available co-financing varies between 25% and 80% of the total eligible costs of the project, in accordance with the intensity of the aid possible to be granted⁴.

Applying for funds under the INNOCHEM Program takes place, similarly as in the case of SG OP, through the IOC IT system. The program was launched in 2015 and was the result of a positively evaluated feasibility study of the INNOCHEM sectoral program submitted to the NCRD by the Polish Chamber of Chemical Industry. The INNOCHEM sectoral program aims to finance industrial research and development work on innovative solutions for the chemical industry. The program ensures support for innovative projects related to obtaining raw materials, production of basic and specialized products, new technologies and so-called horizontal areas, i.e. optimization of processes and low-emission manufacturing technologies. Entrepreneurs and consortia consisting of entrepreneurs may become beneficiaries for the funds from the program.

⁴ Detailed Description of Priority Axes of the Smart Growth Operational Programme 2014-2020, Warszawa, 16.02.2018, pp.20-21.

3. Experiences from implementation of innovation funding

3.1. Summary of previous calls for proposals in 2014-2017

In ROP MV 2014-2020, as part of I PA and III PA covering the smart specializations of the Mazowieckie Voivodeship, from the beginning of the implementation of the Programme, 23 calls for applications for co-financing of projects in competition mode were announced. Among those, 11 competitions were announced as part of I PA, and 12 competitions - as part of the III PA. The total number of calls for proposals under the competition procedure in the whole ROP MV was 132. This means that nearly 20% of calls for proposals submitted under the competition procedure in the current financial perspective concerned the support of Mazovia smart specialization.

As part of abovementioned PAs, projects with a total value of PLN 622,145,473.11, i.e. EUR 148 941 969.40, were subsidized. Three times the submitted applications, despite the positive content-related appraisal, were ruled out of the list of proposals recommended for co-financing due to the exceeding of the allocation threshold. However, the decision of the Mazowieckie Voivodeship Board to increase the value of the allocation for the competition under the abovementioned co-financing provided applications to obtain funding. As a result, all projects that have passed the substantive evaluation have been directed to co-financing.

The entities from the chemical industry benefited from the financing offered under the I PA and III PA of ROP MV 2014-2020. In total, within the current perspective, under the smart specialization of Mazovia, 31 projects implemented in the chemical industry were co-financed. The distribution of sums allocated for co-financing projects in individual measures and sub-measures is presented in the table below.

Table 2 The value of co-financing applications submitted by entities operating in the chemical industry under I PA and III PA of ROP MV 2014-2020

Measure/sub-measure	Amount of funding for projects in the chemical industry	
	[PLN]	[€]
1.2	5 125 233,92 PLN	1 228 365,91 EUR
3.1.2	274 664,79 PLN	65 828,97 EUR
3.2.2	1 196 448,08 PLN	286 752,97 EUR
3.3	1 901 363,50 PLN	455 700,20 EUR
Total	8 497 710,29 PLN	2 036 648,04 EUR

Source: own study based on data provided by the Marshal's Office of Mazowieckie Voivodeship (as of 18/02/2018). The amounts were converted according to the average NBP exchange rate as at the date of this report (19/03/2018) 1 PLN = 4.1724 EUR.

In conducted under the ROP MV 2014-2020 calls in I and III PA, entities operating in the chemical industry received co-financing in the total value of PLN 8 497 710.29, ie EUR 2 036 648,04. For comparison, entities operating in this industry, in the previous financial perspective under the ROP MV 2007-2013 for the development of innovations received as much as PLN 209,279,483.63, ie EUR 50,158,058.58, therefore the currently received amount constitutes only 4% of funding for entities operating in the chemical industry at the time. However, a significant discrepancy results from the fact that in the previous financial perspective large projects were implemented. Among 57 projects concerning the chemical industry, 5 received a subsidy in the amount exceeding PLN 10 million (about EUR 2.5 million). Given above, these projects implemented under measure 1.1. Strengthening the R+D sector within ROP MV 2007-2013 absorbed nearly 70% of the total funding for entities from

the chemical industry in that perspective. In the current financing period, the focus is in a lesser extent directed at the research and development infrastructure, and more on the activity based on infrastructure facilities developed in the previous financial perspective, translating into considerably lower allocations for the R+D sector in the chemical industry.

3.2. Description of the innovation financing process

Prior to the approval by the European Commission of ROP MV 2014-2020, the Mazowieckie Voivodeship Self-Government adopted the Action Plan to fulfil the pre-condition for the first thematic objective of the ESF in Mazowieckie Voivodeship, adopted by Resolution No. 1374/386/14 of the Mazowieckie Voivodeship Board of 7 October 2014. The plan was used to design the 2015 Implementation Program for the Regional Innovation Strategy for Mazovia 2020, which after the social consultation process was adopted in the form of Resolution No. 433/32/15 of the Mazowieckie Voivodeship Board of 7 April 2015. It was an update of the Regional Innovation Strategy for Mazovia 2007-2013, adopted by the Board of the Mazowieckie Voivodeship in 2008. On this basis, the Regional Innovation Strategy for Mazovia 2014-2020 was adopted along with Intelligent Region Specialization (Annex to Resolution No. 23/15 of the Mazowieckie Voivodship Assembly of 16 March 2015). It was updated in 2017. In the process of monitoring and updating the document, the RIS Managing Authority was supported by working groups on intelligent specialization of the Mazovia Region, whose objective, in accordance with the Working Groups Regulations on the Smart Specialization of the Mazowieckie Voivodeship, is to support the RIS Managing Authority in creating and monitoring the region's development potential and recommending activities undertaken within the framework of the regional innovation system, in particular in the area of smart specializations. Participation in the undertakings of working groups of entities involved in the implementation of innovative projects affects the effective implementation of RIS.

The implementation of the Regional Innovation Strategy for Mazovia by 2020 and the implementation of tasks contained in it are based mainly on external sources of financing. The sources of financing of RIS measures should include primarily:⁵

- Structural funds including:
 - 2014-2020 Regional Operational Programme of Mazowieckie Voivodeship,
 - Smart Growth Operational Programme 2014-2020,
 - Operational Programme Digital Poland for 2014-2020,
 - Operational Programme Knowledge Education Development 2014 – 2020,
 - Rural Development Programme for 2014-2020,
 - Framework Programme for Research and Innovation 'Horizon 2020',
 - Interreg Baltic Sea Region,
 - Interreg Central Europe;
- own funds of the Mazowieckie Voivodeship Self-government;
- funds from other local government units;
- private funds;
- other resources (including state budget funds).

⁵ *Regionalna Strategia Innowacji dla Mazowsza do 2020 roku. System wspierania innowacyjności oraz inteligentna specjalizacja regionu (Regional Innovation Strategy for Mazovia 2020. Innovation support system and smart specialization of the region)*, Annex to Resolution No. 23/15 of the Mazowieckie Voivodeship Assembly of 16 March 2015, Warsaw 2015, pp. 54-55.

As indicated in the previous chapter of present report, the Regional Operational Programme includes innovation financing. Projects that are part of innovative activities are implemented under the following Investment Priorities: 1a, 1b, 3a, 3b, 3c. These priorities are implemented through measures and sub-measures under I PA and III PA. During the creation of the Programme, public consultations were conducted in the scope of the content of the project of ROP MV 2014-2020, during which interested entities could submit comments on specific parts of the document.

The first calls for proposals within the analysed PAs took place under the open competitions procedure. Under measure 1.2, the call for proposals was announced in 2015 (31.12.2015). The results of calls for specific rounds of the competition were announced regularly on the Program's website, in accordance with the procedure described in the previous chapter of this study. The budget provided for co-financing projects amounted to EUR 5,000,000, ie PLN 21 349 500 (at the ECB rate of 29/10/2015 at 4.2699). The next calls were mainly in the form of closed competitions. As part of Measure 1.1 two recruitments have been announced so far (both in closed form), as part of Measure 1.2, 9 calls for proposals were announced (including 6 in closed form and 3 in open form). Under measure 3.1, 8 competitions were announced (7 in closed form and 1 in open form), while under measure 3.2 and measure 3.3 - two recruitments in closed form.

As part of the previous calls for proposals⁶, 574 projects were positively rated in PA I, while in PA III - 447 projects were evaluated. Attention shall be drawn to the fact that the interest of potential beneficiaries is diversified by applying for funds under individual measures and sub-measures. The number of projects selected for co-financing in I PA and III PA of ROP MV is presented in the table below.

Table 3 Number of projects with positive opinion, selected for co-financing under selected measures and sub-measures of the ROP MV 2014-2020, including the number of projects related to the chemical industry

Measure/sub-measure	Number of announced competitions	Number of projects selected for co-financing	Including the number of projects from the chemical industry
1.1	2	11	-
1.2	9	414	23
3.1.1	2	2	-
3.1.2	6	56	3
3.2.1	<i>Non-competitive mode</i>	-	-
3.2.2	2	175	2
3.3	2	106	3
total	23	764	31

Source: own study based on DDoPA ROP MV 2014-2020 and data provided by the Marshal's Office of the Mazowieckie Voivodeship (as of 18/02/2018).

Attention shall be drawn to the low interest of entities operating in the chemical industry applying for funds under measures and sub-measures included in the III PA. The difference is noticeable both in the number of applications submitted as well as in the total value of projects. According to the 2016 Annual Report on the implementation of the 2014-2020 Regional Operational Programme of Mazowieckie Voivodeship, the value of applications submitted since the launch of the Programme until the end of 2016 under PA I amounted to EUR 124.7 million, while under PA III - to only 16.1 million EUR.

⁶ As of 18.02.2018

3.3. Experience of Beneficiaries at the stage of submission of applications, implementation, reporting and control

Conducted interviews resulted in the conclusion that the beneficiaries positively assess the process of applying for support and implementation of projects co-financed from the ROP MV 2014-2020. They noted high availability of information concerning the possibilities of applying for funds. The obtained information proves that the knowledge about the Programme reaches the interested entities and is easily available if the interested parties themselves take steps to obtain it.

The respondents indicated that the preparation of the application is a time-consuming process which involves the necessity of following a number of procedures, however, it is not a task that goes beyond the staffing and organizational capabilities of the beneficiaries. At the same time, they observed that the employees of the Managing Authority are of a considerable help being characterized by extensive knowledge of the chemical industry and providing beneficiaries with an assistance at the stage of preparing applications for co-financing. Beneficiaries paid attention to the possibility of a non-complicated manner to contact the Managing Authority through various communication channels (by phone, e-mail, directly). At the same time, they pointed out that the subject of measures and sub-measures as well as the types of projects targeted by the support stream are adequate to the development needs of enterprises operating in the chemical industry; they did not notice any difficulties at the stage of adapting the project to the program requirements. At the same time, research shows that RIS is complementing the gap observed by the surveyed beneficiaries on the market. Both the beneficiaries and the representatives of the Intermediate Body were aware of this fact during the implementation of the ROP MV 2014-2020.

Respondents also positively assessed the level of obtained support. They noted that the needs of enterprises in the area of implementing innovative solutions are much higher, however, the granted co-financing allows for the implementation of projects and is an impulse for undertaking further pro-innovation activities. Discrepancies were observed in terms of time necessary for application, which some of participants of the research considered insufficient.

Beneficiaries did not point out to any problems at the stages of implementation, reporting and control of the implementation of projects co-financed from the ROP MV. They noted that the implementation of projects is associated with an increased administrative and accounting burden as well as numerous limitations, however, despite the fact that meeting requirements was considered labour-intensive, this, according to the beneficiaries, does not prevent efficient implementation of the assumed projects. Actual reporting procedures are of sufficient level of detail to dispel any doubts of beneficiaries. Similar observations regarding the large amount of time necessary for the preparation of the application for co-financing were expressed by the employees of the Managing and Intermediate Institutions, noting that for entities who had not dealt with the implementation of projects co-financed from European funds before, the documentation may seem complicated and extensive. At the same time, they pointed out that, drawing on existing experience, they strive to maximally facilitate the submission of applications to applicants. According to the representative of the Managing Authority, a well-designed project is a definition of its goals. It is on the basis of the objectives that the beneficiary will report on the implementation of the project in the future. Therefore, the lack of reporting problems, as declared by the beneficiaries, may result from the good development of projects by them. In accordance with the representative of the Managing Authority, the issues related to reporting are additionally facilitated by full computerization of the process.

3.4. Examples of good and bad practices

Some respondents expressed their opinion that time provided for the application is insufficient. At the same time, they noted that projects implemented in the chemical sector involve the necessity of obtaining many permits in the form of administrative decisions. Therefore, prolonged procedures related to applying for the appropriate authorization may complicate the application process. A good practice in this respect may be to organize open competitions or take into account the above-mentioned IOCs problems at the stage of planning of the call for proposals. This problem was noticed by both the beneficiaries and the employees of the examined institutions offering support within the Programme.

According to respondents, it would be a good practice to develop a schedule for assessing applications so that it would be known in which timeframe they could expect to receive a feedback. Currently beneficiaries are not informed, which, according to them, should be subjected to a change. The representative of the Managing Authority in the conducted interview indicated that, in relation to the previous financial perspective, the time of the call for proposals was extended which was the result of experiences gained by the institution in the previous financial perspective. Therefore, it shall be considered whether the current length of the call for proposals is appropriate in relation to the needs of the beneficiaries. Nevertheless, according to the representative of the Intermediate Body, the indication for those interested in applying for the funds of the entities may be the schedule of applications in competition mode, which allows potential applicants to optimally organize work in order to prepare the application in a timely manner. However, the organization in the initial stage of implementation of the Open Competitions Program should be considered a good practice which allowed to examine the interest of potential beneficiaries in the various measures and sub-measures.

3.5. Recommendations and suggestions for improving the process of applying for funding and its implementation

According to respondents, it would be profitable to introduce trainings in the preparation of documentation, dividing it into a basic training and an advanced (specialist) training for entities already possessing a certain basic knowledge regarding the preparation of applications. Such a solution would allow transferring knowledge tailored to the needs of recipients, therefore increasing the effectiveness of trainings.

Furthermore, according to respondents, providing information on remaining resources to be used within measures and sub-measures would significantly facilitate the beneficiaries' planning process of applying for funds. They would not only be informed about the planned calls, but also in terms of what pool of funds remains to be used in the current financial perspective within the given measure or sub-measure.

Moreover, the beneficiaries pointed out that there are no clear guidelines regarding, among others, eligibility of expenditure. Despite the commitment and extensive knowledge of employees of the Managing Authority, shared with beneficiaries and potential beneficiaries, it was observed that it did not provide them with binding information regarding the interpretation of the guidelines. In accordance with respondents this should be subjected to change as currently the burden of responsibility rests with the beneficiary characterized by considerably lesser knowledge concerning the implementation of projects co-financed from European funds in comparison to employees of the

Managing Authority. However, it shall be added that the interpretation of the guidelines does not constitute the competence of the Managing Authority of ROP MV and it is the responsibility of the issuing authority, i.e. the minister competent for regional development.

The attention shall also be drawn to the difficulty noticed by the representative of the Intermediate Body, that is the lack of professionalism of consulting companies offering the services of preparing applications for co-financing. The experience of the respondent made it possible to formulate a conclusion that employees of such companies are often not prepared in terms of the correct preparation of the application. For this reason, some applications are assessed negatively. Therefore, it would be a good practice to introduce an accreditation system for companies providing such services. This would allow potential applicants to choose a company that, having a necessary accreditation, would guarantee a high quality of an application.

A relatively not considerable number of beneficiaries' demands stems from, which was also stated by them during the research, the fact that they are satisfied with the present support, among others the contact with the project supervisor. Therefore, the activities of the Managing Authority should be defined as sufficient and satisfactory for both the beneficiaries and applicants.

4. The state of implementation of ERDF financing instruments

4.1. Budget of ROP MV 2014-2020

ROP MV 2014-2020 is a program financed from two funds: the European Regional Development Fund and the European Social Fund. The area of the Programme implementation is the territory of Mazowieckie Voivodeship. The region is classified as one of the more developed regions with a special status resulting from Regulation 1303/2013⁷, as a formerly underdeveloped region. The funds for the Programme constitute about 55% of the region's allocation, therefore amounting the ERDF allocation to EUR 1 544 686 317 and ESF to EUR 545 153 821. In total, the foreseen allocations under the ROP MV 2014-2020 are estimated at EUR 2 089 840 138. The ERDF to ESF ratio is respectively: 74% to 26%, while the level of co-financing from EU funds is up to 80% per Priority Axis.

The minimum involvement of national resources estimated on the basis of art. 120 of Regulation 1303/2013 is equal to EUR 522 460 035. Public and private national resources are involved in the implementation of the Programme. The final involvement of national resources at the Programme closure stage may increase, depending on the scope and degree of granted public aid.

The quantitative and qualitative division of funds between TO and IP was determined by the thematic concentration requirements of the Partnership Agreement, while the minimum levels of concentration of funds for the more developed region were determined by the minister competent for regional development. The Programme provides funds for supporting R+D and innovation as well as SME development and increase in the energy efficiency, including the use of renewable energy sources, amounting to 62.8% of the ERDF allocation.

The Managing Authority of ROP MV also implements financial instruments referred to in the aforementioned Regulation No. 1303/2013. For this purpose it may, inter alia, invest in the capital of existing or newly created legal entities, including entities financed from other ESI Funds concerning the implementation of financial instruments in accordance with the objectives of the relevant ESI Funds that would undertake implementation tasks; entrust the implementation task to the European Investment Bank, an international financial institution in which a Member State is a shareholder, or financial institution with its registered office in a Member State, which aim is to pursue a public interest under the control of public authorities or entities in the scope of public and private law, or undertake direct implementation tasks in the case of financial instruments consisting solely of loans or guarantees.

⁷ Regulation No 1303/2013 of the European Parliament and of the Council of 17 December 2013 establishing common rules on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund; laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006

4.2. Description of planned calls

In accordance with the Schedule of calls for proposals for co-financing under the competition for the 2014-2020 Regional Operational Programme of Mazowieckie Voivodeship, adopted by Resolution No. 128/309/18 of the Mazovian Voivodship Board of 16 January 2018, a call for proposals is planned for 2018 within the analysed Priority Axes, aimed at increasing the region's innovation.

Attention shall be drawn to the measure 1.2. *Research and development activities of enterprises*. As part of the measure, four call for proposals for co-financing projects will be held under the competition procedure: in February 2018 (Project type: Small research projects - vouchers for innovations), in June 2018 (Type of projects: Research and development projects), in September 2018 (Type of projects: Establishment or development of research and development facilities) and in November 2018 (Type of projects: Process of experimenting and searching for niche development and innovation). With the last type among abovementioned projects there is no requirement to sign the submitted project in RIS. Total allocation of funds for the above competitions will amount to EUR 22 300 000.

Under PA III, recruitment under sub-measure 3.1.2 Development of SMEs is envisaged. The recruitment will be conducted in accordance with the Schedule in October 2018 for following type of projects: *Support for the conduct and development of enterprises by providing vouchers for consultancy*. The allocation foreseen for the competition amounted to EUR 2,000,000.

As part of the remaining activities and sub-measures (1.1, 3.1.1 and 3.3), no calls for proposals are scheduled for 2018. In case of sub-measure 3.2.1 the call for proposals takes place in a non-competitive mode. The implementation of projects is, therefore, dependent on the readiness to apply by identified projects listed on the List of identified non-competitive projects co-financed from the resources of ROP MV 2014-2020 constituting Annex 4 to DDoPA.

4.3. Priority research directions

The priority research directions (including research agendas) are the result of undertakings of working groups on the smart specialization of the Mazowieckie Voivodeship. The aim of research agendas is to concentrate the support of research and development projects on the most promising scopes of which the implementation and later commercial use would considerably contribute to the economic and innovative development of the region.

Identification of individual directions was conducted in a bottom-up process. The works were implemented in a continuous manner and they included, among others, formulating proposals of research themes and research objectives, searching for the optimal level of detail in particular directions, refining directions by formulating research goals, eliminating directions that exceed the sphere of industrial research and development and directions with low innovation potential, and analysing the economic and innovation potential of individual directions⁸. At the final stage of the work, to the working groups was assigned the expertise concerning the priority research directions in order to evaluate the proposals elaborated by experts from specific fields covered by the agendas. A series of meetings during which the participants of the groups could decide whether or not to include individual recommendations of experts was held. A review and updating of priority research directions was implemented in 2017; as well as an evaluation the purpose of which was to analyse

⁸ Priority research directions within the smart specialization of the Mazowieckie Voivodeship, version 2.0, Warsaw 2017.

the utility of research agendas and to verify their effectiveness and to properly target support within competitions. Formulated conclusions and recommendations led to the elimination of inaccuracies arising during the preparation of regulations and other competition documentation. The work includes, inter alia, the voivodeship's potential in the area of space technologies and education. Each developed research direction has been further refined by formulating its research goals.

The compliance of the project with the priority research directions within the smart specialization of the Mazowieckie Voivodeship should be understood as a compliance with at least one research direction and, at the same time, with at least one research objective within this scope. This compliance is the criterion for access in competitions under Measure 1.2 R+D activities of enterprises of ROP MV 2014-2020, regarding the implementation of research and development projects by enterprises.. Due to the update of agendas in 2017 it was possible to use them in order to formulate criteria in other competitions concerning R+D+I activities, not merely as part of Measure 1.2 of ROP MV 2014-2020. This ensured more efficient targeting of support concerning the chemical industry, also within competitions within which being compliant with smart specialisations of the region is not a necessary requirement.

4.4. Other funding instruments under ERDF

In addition to the ROP MV, funds for innovative undertakings may be obtained, among others, from the Operational Programme Smart Growth. The main objective of the Programme is to increase the innovativeness of the Polish economy by increase in expenditures on research and development. In SG OP, under the four priority axes, following two thematic objectives are implemented: TO 1 Strengthening scientific research, technological development and innovation and TO 3 Strengthening the competitiveness of small and medium enterprises, the agricultural sector (in relation to EAFRD) and the fisheries and aquaculture sector (with regard to the EMFF). Projects co-financed under OT 1 should be consistent with the strategy of smart specialization of the region. OT 1 is implemented under three priority axes: I PA Support for conducting R+D works by enterprises, II PA Supporting the environment and the potential of enterprises to conduct R+D+I and IV PA Increasing the research and development potential, described in Chapter 2 of present report.

The total allocation (EU and national contribution) envisaged for the implementation of OT 1 under SG OP for the Mazowieckie Voivodeship amounts to EUR 806 378 804, i.e. PLN 3 362 599 612.68⁹. For the entire Programme, however, the level of allocation on OT 1 amounted to PLN 37 823 914 781.37. The total value of co-financed projects since the launch of the Programme until 31.01.2018 amounted to PLN 23 088 200 244.48. Therefore, it might be concluded that the interest of entities in applying for funds under SG OP is high.

Another source of financing for projects aimed at strengthening the innovation of the region is the "INNOCHEM" sectoral program, launched by the National Centre for Research and Development under measure 1.2 of the SG OP. As part of the program, so far two competitions have been announced. As a result of the first call, co-financing in the total amount of PLN 109 627 021,51 (i.e. EUR 26 274 338.68) was granted to 31 entities. As part of the second competition, subsidies were granted to 20 entities, in the total amount of PLN 83 483 236.07 (i.e. EUR 20 008 445.04). The budget allocated for co-financing projects selected under the INNOCHEM Program amounted to PLN 120 million (ie EUR 28 760 425.65) under the first competition, and PLN 180 million (i.e. EUR 43 140

⁹ According to the average EUR exchange rate as at the date of this report (27.02.2018) 1 EUR = 4.17 PLN.

638.48) within the second competition. It shall be noted that the allocation for the competition was not used in its entirety. No calls for proposals under the "INNOCHEM" program are planned for 2018. The attention shall also be drawn to the fact that the value of projects submitted for co-financing under the INNOCHEM Program and under the SG OP is considerably higher than in the case of the ROP MV. The vast majority of projects submitted for co-financing under INNOCHEM and SG OP exceed the value of PLN 1 million (about EUR 239 thousand); in the case of the Regional Operational Programme a relatively low percentage of projects submitted for co-financing as part of calls for proposals reaches such a value. This is related to the INNOCHEM Programme which primarily supports large enterprises. In accordance with the competition documentation, projects implemented under the INNOCHM Programme should be characterized by a minimum value not lesser than PLN 1 million (approx. EUR 0,25 million), and a maximum value not higher than PLN 20 million (approx. EUR 4.5 million). In the ROP MV there are no restrictions as to the minimum and maximum value of the total eligible costs of the project, enabling obtaining funding for research and development activities conducted on a relatively insignificant scale, e.g. by small and medium enterprises. Given above, it may be concluded that presented sources of financing are not competitive but complementary to each other. n the scope of types of entities that submit applications for co-financing under the abovementioned sources of financing there are no differences- these are mainly entities that are both part of the public and private sector.

5. Conclusions and recommendations

5.1. Strengths and weaknesses of the financing instruments (including defining the expectations of regional stakeholders)

According to respondents, a strength of funding instruments constituted of finances granted to the enterprise as a result of submitted and positively evaluated application. Beneficiaries added that even if the co-financing did not satisfy all the investment needs of the company in the area of innovation development, it contributed to the creation of competitive advantage in the industry, and thus constituted some impulse for further development, including further efforts to obtain co-financing. Respondents indicated that without co-financing, it would be impossible to provide services represented by them in such a broad scope. It was also emphasized that the chemical sector conducts large financial projects in the scope of implementation of innovative products and services, the implementation of which would be impossible or significantly impeded without financial support. Therefore, co-financing for entities from the chemical sector is associated mainly with the increase of the company's competitiveness compared with other entities operating in the industry, as a result of introduced innovations. This opinion was shared by representatives of institutions offering support under the ROP MV 2014-2020. According to the representative of the Managing Authority, the main advantage of the funds from the ROP MV 2014-2020 is the constant availability of funds in the indicated time interval. Given that, even if the application is not submitted in a given call for proposals, it is possible to obtain funding under subsequent calls announced in a given measure or sub-measure. According to the representative of the Intermediate Body, the amount of the allocation determines the significant interest in the measures and sub-measures supporting innovation.

Weaknesses of the support under the ROP MV observed by the respondents included the necessity of following numerous procedures and adapting at the project implementation stage to numerous limitations related to, among others, restrictions on the possibilities of commercial use of the infrastructure developed in the project. However, respondents expressed understanding, indicating that numerous procedures and a relatively high degree of bureaucratic burden are justified from the perspective of the Managing Authority and are related to the system of control over the proper manner of spending of subsidies. Respondent also noted the problem connected to the shortage of staff with appropriate knowledge in the field of settlement of applications, nevertheless, they noticed that this is not a systemic problem, but an organizational problem on the part of the beneficiaries. Identified weaknesses included also the necessity to return the funding if an error occurs, as a result of imposing a financial correction on the beneficiary. The length of the procedure for assessing applications for co-financing was also indicated. Said problem was noticed by representatives of institutions offering support under the ROP MV. They noticed that some procedures must be in force, as they are imposed by both national and EU law. However, they drew attention to the fact that they undertake activities, primarily trainings, to help potential applicants understand the documentation and the specificity of the program.

According to the representative of the Managing Authority, the low level of funding for projects from the ROP MV can be considered a low level of co-financing for some projects covered by public aid. Nevertheless, despite the weaknesses of the support, it is necessary to draw the attention to

considerably positive attitude of the beneficiaries towards the Programme and the advantage of positive aspects of financing over the identified negative ones. This is the result of both adjustment of support to the needs of the chemical sector, as well as the activities of representatives of institutions offering support from the ROP MV in the field of support for potential beneficiaries, information and training activities.

5.2. Improvement in the scope of implementation of funding instruments (recommendations improving the process of applying for funding, recommendations limiting administrative procedures, measures aimed at preventing non-financing)

The representative of the Managing Authority noted that it would be profitable to focus the announced calls on specific sectors indicated in the RIS. The respondent stated that RIS is a fairly broad document, therefore, in order to support specific industries, a reservation should be made in the regulations of competitions related to the possibility of submitting applications for co-financing by entities whose projects are part of a specific smart specialization.

However, the Program's beneficiaries added that it would be of profits to ensure a more flexible approach concerning the issue of vouchers. According to them, in some cases it would be much simpler for them to implement the project themselves than to purchase a service from an external company, which is required by the voucher. They indicated that as the creators of the application they have the widest knowledge of the goals they intend to implement and the manner in which they intend to do so. The necessity to purchase a service is therefore a complication in the implementation of the project.

At the same time, beneficiaries indicated that they had no ideas to facilitate the procedure of the call for proposals and the implementation of projects by, for example, limiting administrative procedures or improving the process of applying for support. They expressed understanding of the bureaucratic burden of the application process. Respondents pointed out that the control in the scope of awarding grants for specific purposes and its use justified the application of existing procedures. In the opinion of the institution's representative, there are still changes occurring, aimed at better implementation of the ROP MV 2014-2020. Representatives of the abovementioned institutions learn in this regard both from mistakes made in the previous financial perspective and from the experience resulting from previous calls. Attention was also drawn to, among others, the extension of the time provided for the call for proposals against the previous financial perspective and for the first calls for proposals under the current perspective.

Representatives of institutions offering support under the ROP MV stated that the level of interest of potential beneficiaries by applying for funds is sufficient, as evidenced by the fact that the value of submitted applications has often exceeded the allocation threshold. Problems that can be observed at the program implementation stage result from the duration of the initial project implementation phase, followed by, for example, the implementation of an innovative service or innovative products on the market. However, this is not a malfunction stemming from the Programme - it is connected to the specificity of the industry.

5.3. Expectations to interregional learning

The research has shown that respondents expect financial incentives to develop interregional cooperation. In addition, it was indicated that the development of interregional cooperation is not progressing dynamically in Poland. Therefore, it was emphasized that clusters have a positive impact in stimulating the development of said cooperation. Respondents noted that it would be profitable to involve public institutions in a broader manner in the process of stimulating interregional cooperation.

It was also noted that regional cooperation could only occur when regions are sufficiently developed in terms of technology. Differences in the level of development prove cooperation difficult, which significantly affects the development of interregional cooperation in Poland.

In order to develop interregional cooperation, it would also be profitable to introduce information and promotion activities promoting such cooperation. Steps should also be taken not to compete with regions, but to complement each other due to possessed potentials.

According to the representative of the Intermediate Body in the implementation of the ROP MV 2014-2020 the most significant problem is the fact that the cooperation is established merely for the purpose of the project, as it is necessary to receive financial support. However, this cooperation does not have a solid basis, as evidenced by the fact that after the project the cooperation would cease to exist. This may be due to the lack of a tradition of cooperation. Changing this state might be a long-term process.

In accordance with the representative of the Managing Authority, separate financing for regional cooperation shall also be allocated. As stated by the respondent, the funds are allocated to specific regions, translating into the fact that interregional cooperation, being the engine of innovation development between regions, might develop only in a non-considerable manner on the basis of European funds. Despite the existence of funds for this purpose in other sources, it would be necessary to separate funds in the ROP in order to mobilize beneficiaries from the Mazowieckie Voivodeship to undertake interregional cooperation. It may constitute one of the elements of the Regional Operational Programme in the future financial perspective.

To sum up, respondents negatively assess the process of creating and functioning of clusters in Poland as such. According to them, previous financial perspective encouraged entities to establish cooperation in order to obtain co-financing and implement projects. Nevertheless, this cooperation was not long-lasting, as evidenced by the numerous cases of cluster disintegration and the inhibition of cooperation after the project implementation period. However, attention shall be drawn to a large number of clusters operating in the Mazovia region- there are 39 clusters in the voivodship, of which a large part operates in the chemical industry sector. The functioning within clusters of entities from the chemical industry is an exception to other sectors in the country. Cooperation in the chemical sector, also within the framework of the "Smart Chemistry Specialization Strategy" project financed by the INTERREG Europa Programme, is assessed positively; this is confirmed by beneficiaries participating in present study as well as is compatible with an opinion expressed by the representatives of the Managing Authority and the Intermediate Body of ROP MV 2014-2020 in the scope of experience related to clusters in said industry. Successful cooperation and its progress in the chemical sector may result from the level of industry development and awareness of the benefits of cooperation, including the exchange of knowledge, experience, implementation of joint projects, etc.

6. List of projects from the chemical/bioeconomy sector co-financed from regional financial instruments

Table 4 List of projects from the chemical/bioeconomy sector co-financed from the INNOCHEM Sectoral Program implemented in the Mazowieckie Voivodeship

Title of the project	Main beneficiary	Eligible expenses		Total co-financing		Co-financing:% of eligible expenditure
		[PLN]	[EUR]	[PLN]	[EUR]	
<i>Innovative measures for de-icing and protection against icing of railway infrastructure</i>	Chemical Advisory + Trade Sp. z o.o.	10 444 593,60	2 503 257,98	7 671 872,64	1 838 719,36	73,45%
<i>Development of new technology of exploitation of unconverted oil from the hydrocracking process using a filtration system.</i>	Grupa LOTOS S.A., "Polymemtech" Sp. z o.o.	8 846 751,60	2 120 302,85	5 887 647,02	1 411 093,62	66,55%
<i>Development of process technology for the co-hydrogenation of drive fractions with vegetable oils as a potential source of biocomponents for diesel oil</i>	PKN ORLEN S.A.	8 771 835,50	2 102 347,69	3 726 228,83	893 066,06	42,48%
<i>Specialized cables with polymer cross-linked radiation coating with advanced properties</i>	Technokabel S.A.	7 383 153,86	1 769 522,06	5 261 403,99	1 261 001,82	71,26%
<i>Ecological nanofluid for car radiators, with innovative utility parameters</i>	Boryszew S.A. O/Boryszew ERG w Sochaczewie	6 466 422,40	1 549 808,84	3 294 802,06	789 665,91	50,95%
<i>Optimisation of the flue gas desulphurisation process by developing production technology and the use of micronised sorbent for desulfurization in the wet method</i>	Egovita Sp. z o.o.	4 817 925,20	1 154 713,16	2 993 285,72	717 401,43	62,13%
<i>Improved fuel cell production aimed at extending the service life, improving the work parameters, in particular the power per volume/weight unit of the cell, and reducing investment and operating costs through the use of alternative catalytic systems in the printing technology</i>	Arkuszowa Drukarnia Offsetowa Sp. z o.o., CIM-mes Projekt Sp. z o.o.	4 473 492,96	1 072 163,01	3 450 087,37	826 883,18	77,12%
<i>The methodology of forecasting and monitoring the quality of base gasoline directed to long-term storage in salt caverns. Production technology of base gasoline and final motor gasoline production as an element of counteracting disturbances in the raw material and product economy</i>	PKN ORLEN S.A.	3 690 000,00	884 383,09	2 124 011,41	509 062,27	57,56%
<i>Monitoring of general corrosion and hydridig with the integrated system of dual corrosion sensors</i>	PKN ORLEN S.A.	3 341 037,60	800 747,20	1 893 254,64	453 756,74	56,67%
<i>New structures, materials and technologies for the production of advanced solid-oxide fuel cells</i>	Instytut Energetyki, Instytut Badawczy	3 305 367,00	792 198,02	2 113 447,05	506 530,31	63,94%
<i>Development of the technology of continuous production of perchloromethyl mercaptan (PCMM) on a semi-technical scale, an intermediate in the fungicide technology for plant protection and thiophosgene technology used in pharmaceutical production</i>	Instytut Przemysłu Organicznego	2 845 954,96	682 090,63	1 440 169,45	345 165,72	50,60%
<i>Development of a series of natural shampoos without the addition of synthetic surfactants, especially SLS and SLES</i>	Saponlabs Sp. z o.o.	1 358 152,50	325 508,70	1 012 795,50	242 736,91	74,57%

Source: own study based on the data from the website: <http://www.ncbr.gov.pl> (accessed on 19.03.2018)

Table5 List of projects from the chemical/bioeconomy sector co-financed from the ROP MV 2014-2020

Name of the project	Short Description of project topic	Beneficiary	Duration	Project Budget in €	Funds granted in €	Funding rate (%)
Measure 1.2. Research and development activities of enterprises						
<p>Innovative technology for extracting bottom sediments using them for fertilization</p>	<p>The objective of the project is to develop an innovative technology for extracting anthropogenic sediments from the bottom of canals, retention reservoirs, lakes and fish ponds with the possibility of using them as fertilizers. The main feature of developing technology is the motion of the sludge collecting device, with the maximum concentration of the solid component while ensuring minimization of the water agitation. Up to date, such type of technology has not been yet developed on the global scale. The sampling device will be equipped with four positive displacement "Mohno" type of pumps enabling the transport by pipeline to distances up to approximately 800 m. The model version of the device would be moved along the bottom of a water tank with the use of a rope winch with the speed associated with the spoil conctometer placed on the pipeline to ensure maximum concentration of the solid component. The undertaking incorporates further ventures, that is: designing the device according to the utility model, development, field testing, evaluation of the performance, and evaluation of the extracted sediment, as well as introducing possible corrections in its construction with re-examining the operation and, at the next stage, implementing its production. In the further development of described technology it is planned to develop a self-propelled device moving with the use of two screw drives, which will increase its attractiveness for potential buyers. The analysis of the correctness of the implementation of designed technology will enable the development of the use of anthropogenic bottom sediments for fertilizing fields in agriculture.</p>	<p>Łukomet – Krzysztof Łuszczuk</p>	<p>01.10.2017 - 31.12.2020</p>	<p>20 132,30</p>	<p>13 901,35</p>	<p>69,05%</p>
<p>Evaluation of the effectiveness of the new active substance for applications in dermocosmetics against the symptoms of nickel allergy</p>	<p>The objective of the project is to evaluate the efficiency of the barrier action of a new active substance dedicated to dermocosmetics against symptoms of nickel allergy. In accordance with the WebMD Health Foundation, nickel allergy is the second most common type of contact allergy, as nickel, being a component of numerous alloys, is present everywhere (in everyday objects, jewellery, watches, eyeglass frames, metal parts in clothing, coins, medical and dental tools). Due to skin contact with materials containing this metal, skin changes occur- including swelling, redness, formation of lumps and oozing blains. On the global scale, 17% of women and 3% of men suffer from nickel allergy. It is most often recorded among teenagers and certain professional groups (hairdressers, health care professionals, receptionists, cashiers). Despite the introduction of the regulation on the permissible amount of nickel in articles /Directive 94/27/EC/, a percentage of people suffering from nickel allergy is still raising. Moreover, the problem is affected by the lack of medical treatment and a deficit of protection against this allergen. THE SUBJECT OF THE PROJECT IS TO CONDUCT R+D RESEARCH TO VERIFY EFFICIENCY OF A NEW ACTIVE SUBSTANCE, DEVELOPED BY MODIFYING A BIO-CONSUMER POLYMER WITH STRONG CAPACITIES OF BINDING OF NICKEL ION, DEDICATED FOR APPLICATIONS IN DERMOCOSMETICS. Within the planned research, the implementation of following tasks is foreseen: I. Tests of the effectiveness of the new active substance against symptoms of nickel allergy through in vivo examination with volunteers with confirmed medical tests for nickel hypersensitivity.</p>	<p>KF NICCOLUM sp. z o.o.</p>	<p>01.04.2016 - 30.09.2017</p>	<p>14 859,55</p>	<p>9 643,85</p>	<p>64,90%</p>

<p>Purchase of research and development services for the development of an innovative product with choline for pregnant women by Holbex Sp. z o.o.</p>	<p>The subject of the project concerns the purchase from the Poznań University of Medical Sciences and the Poznań University of Life Sciences of service being the development of a SIGNIFICANT IMPAIRED PRODUCT with choline for pregnant mothers. The service will be implemented in the period from 19.01.2016 to 18.09.2016 (7 months). Main objectives include: Increased R+D activity of Holbex leading to the implementation of an innovative product for special medical purposes in cooperation with scientific institutions in accordance with Detailed Description of Priority Axes of ROP MV 2014-2020, measure 1.2. Specific objective- with the use of commissioned examinations, accurate determination of deficiencies in the population, possibly increasing the amount of choline in the product, so that it is tailor-made to the real, researched shortages. The scope of the project includes the development of a significantly improved product through cooperation with scientific units-implementation after the end of the projects, on Applicant's own. The project was divided into 4 stages of commissioned examinations, assigning each of them to the appropriate unit: 1-Determining the level of choline intake in the pregnant group- performed by UM and UP in Poznań; 2- Determining the frequency of occurrence of genetic polymorphisms affecting choline levels for pregnant women- performed by UM; 3- Basing on the optimal data, the development of an amount of choline in a preparation dedicated to pregnant women, related to endogenous choline- Holbex synthesis; 4- Publication of the research results by UM and UP/Holbex. Target group: -medical staff; - population of women planning pregnancy; pregnant women. The project meets the criterion of substantive detail. 2- compliance with 2 areas of smart specialization of the voivodeship. Promotion of choline as an essential ingredient with a significant epigenetic potential (education) that can impact the present and future health of a child (quality of life and health) by providing preparations with adequately high doses of choline, which were developed on the basis of research involving Polish pregnant women (advanced, safe health-oriented food).</p>	<p>Nutropharma sp. z o.o.</p>	<p>19.02.2016 - 16.12.2016</p>	<p>3 795,55</p>	<p>2 618,93</p>	<p>69,00%</p>
<p>Research and development of the composition of granules for the production of biodegradable films with antibacterial features, and technologies for their production</p>	<p>The project concerns cooperation with a scientific unit, selected in a procedure consistent with the principle of competitiveness, in order to purchase research services. The service is to be a comprehensive scientific and research work, the effect of which is to develop the composition/recipe of an innovative biodegradable granulate with antibacterial properties for the production of films and bags for use in the food industry. The objective of the project is to create a biogredable product with antibacterial features that would be used in the bagging process. The project will also concentrate on the development of technology for the production of said products, with an indication of the entire technological base and the determination of manufacturing and logistics procedures. The results of the research work will lay the foundation for the implementation of the solution in the Applicant's own structure- the Applicant owns the appropriate property on which the hall equipped with a complete technological line for the production of the abovementioned products could be built, allowing for industrialization of designed solutions and implementation of all production and logistics processes. The project will be implemented in 2 stages, over the course of 2016. Research activities will be implemented as part of said two stages. In the first phase of the project, the basic composition of biodegradable granules for the production of biodegradable film with antibacterial features will be developed. The second phase concerns the product assessment and development of research documentation, as well as the development of granule production technology. The project in its final phase will involve end users of the product as part of consumer research</p>	<p>Kępczyński Paweł</p>	<p>01.06.2016 - 30.06.2017</p>	<p>23 967,02</p>	<p>19 173,62</p>	<p>80,00%</p>

<p>A commission for the research for the development of an innovative blocker type cosmetics</p>	<p>Results of the analysis of market needs reflect the fact that it is necessary to extend our range to cosmetic products that will support the effects of the treatments. In connection with the above, the objective of the project is to conduct a research and develop an innovative recipe for skin care preparations with problems of discoloration occurring in the process of photo aging, which is the result of, inter alia, excessive skin exposure to UV radiation. The distinguishing element of the developed technology will be the combination of unique capabilities of nanometals and vitamin C raw material AA2G, which lightens discoloration by 7.70% in 3 months, and presence of intensely whitening substances known for their effect (Phenylethyl Resorcinol, adenosine, kojic acid). The research results obtained by the company will be used directly in the company and implemented for production. Up to date, the company has not used subsidies to finance research activities. In order to ensure that the product is developed in a way that would be the most closely related to the expectations of customers, the applicant anticipates involvement and inclusion of future users of the solution in the process of defining the needs. The company does not have its own research department, being the reason as of why it decided to outsource examinations. Expenses concern only the development of an innovative solution. The project will allow the company to achieve the objectives of the ROP MV and the objective of the detailed measure related to the increase of the company's R+D activity. Commercial application of results of the project will contribute to achieving the applicant's objectives, and the implementation of results and their commercialization after the implementation of R+D activities, which in practice will allow the applicant to strengthen its market position and company development.</p>	<p>Beauty Box sp. z o.o.</p>	<p>01.07.2016 - 30.04.2017</p>	<p>31 157,13</p>	<p>23 367,85</p>	<p>75,00%</p>
<p>Development of an innovative solution for the laundry industry based on the properties of nanowires</p>	<p>The objective is to obtain the results of research and development that, after commercialization of project results, will lead to the launch of new, eco-friendly service based on industrial scale washing using innovative and PATENTED technology - NANOWATER, which will lead to a competitive advantage on the laundry services market, due to the lower price and higher quality of services. Higher quality will result from the use of a considerably smaller amount of detergents or disinfectants acting destructively on the preserved material and used lower washing temperatures, and due to the reduced amount of detergents or used disinfectants, the negative impact of the washing process on the well-being of people with allergies will be reduced. The direct recipients of the service will be: hotels, hospitals and food industry plants. The project has been divided into three stages (tasks 1 and 2 will be implemented in a parallel manner, task 3- after receiving results from tasks 1 and 2). Individual stages of the venture consist of: 1) Development of disinfection technology using a nanometer with reduced concentration of conventional disinfectants or/and reduced disinfection temperature. The initial prototype of disinfection technology will be developed during the laboratory phase. 2) Developing washing technology using a nanowater which enables the reduction of the amount of commonly used detergents in the industrial laundry, or the reduction of the energy consumption of the process by significantly reducing used temperature, while maintaining the quality of the washing service provided by the current technology using traditional chemicals. 3) Verification and optimization of developed technologies in target conditions ensured by the inclusion of the users of a basic laundry service in the final research process. Their opinion will be verified basing on quantitative market research, the results of which will be applied in the final solution.</p>	<p>Laundry Service sp. z o.o.</p>	<p>01.09.2016 - 31.12.2016</p>	<p>18 500,14</p>	<p>11 982,54</p>	<p>64,77%</p>

<p>Development of innovative technology for storage and recycling of waste from potato processing into electricity, heat energy and a measure improving soil properties</p>	<p>The project involves the preparation of biogas technology capable of processing potato pulp and juice remaining after the production of starch and maltodextrin. The main objective of the project is to prepare a technological solution that will support the management of a significant amount of liquid waste from potato processing throughout the year for a stable production of electricity, heat and a measure improving soil properties. Waste is available only during the campaign period, i.e. in the period from August to November. The scope of the project includes: 1. development of a technological solution which would enable storing substrates in the form of potato pulp and juice for the period of one year. 2. development of a technology and construction project of possible solutions for installations based on potato industry waste. Target group: enterprises producing potato starch and maltodextrins, which produce significant amounts of waste, and, at the same time, they report a high demand for energy. Stages of the project: Stage I- laboratory testing of potato pulp and juices to determine the method of inhibition of the fermentation process and methods of inducing the fermentation process at the time of demand for raw material. At described stage, a biogas laboratory with the capacity to conduct continuous fermentation will be used. The stage ends with the preparation of objectives for the design of technological solutions that ensure a stable operation of a biogas plant based on waste materials. Laboratory tests and computer simulations will be used at this stage. Research work will be supported by specialist literature. Stage II- development of the project concept with the technology and construction project. The stage ends with the preparation of a project consisting of a descriptive technology of using waste from the potato industry for energy purposes. At this stage, design and computer simulations will be used.</p>	<p>BIO ALIANS TECHNOLOGIE sp. z o.o.</p>	<p>01.06.2016 - 31.12.2016</p>	<p>23 967,02</p>	<p>19 173,62</p>	<p>80,00%</p>
<p>Development of a new technology for the production of construction Olkit</p>	<p>The project aims at the purchase of a research service for the development of a new and significantly improved production technology of the construction Olkit based on the current recipe. Bolid Sp. z o.o. [Ltd.] is a company with a long tradition, established in 1987. Bolid's main activity is the production of refrigeration equipment, and the company's existing developmental forces (financial resources) have been focused on this industry. The lesser focus was on Olkit, the company did not have financial resources allowing it to develop simultaneously two production sectors. Olkit is characterized by a great interest in the market. It is the only plastic sealing and isolating material with a wide application and a low price. The company started its production around 1990 on the basis of a technology developed by one of the company's shareholders at the time, who at the same time was a lecturer at the chemistry department of the current University of Technology and Humanities in Radom (formerly Higher School of Engineering). After the partner's death in 2001. Olkit's production was continued based on the effects of his long-standing works on this product. After many years, however, the production technology has grown drastically. Numerous base components of the original recipe are no longer available and the production line should also be technologically adapted to current raw materials. In the Bolid Company, unfortunately, there is no suitably prepared staff to conduct in-depth research- chemical analyses, and the necessary equipment for such analyses- mainly spectrometers and climatic chambers. Such research is also expensive and so far it has not been possible to conduct it in the perspective of a real implementation of the product- the possibility of using EU assistance for such a venture has initiated real possibilities for the development of Olkit.</p>	<p>PPHU "BOLID" sp. z o.o.</p>	<p>01.10.2016 - 15.03.2018</p>	<p>34 728,21</p>	<p>23 962,47</p>	<p>69,00%</p>

<p>Development of an innovative installation for recovery and recycling of plastic packaging after dangerous substances, especially after plant protection products</p>	<p>The objective is to develop an innovative installation for the recovery and recycling of plastic packaging of hazardous substances, in particular of plant protection products such as agricultural sprayers. The scope of the project includes the development of technology, i.e. developing a design for the installation of grinding, washing, drying, and granulation of rainfall contaminated with hazardous substances. The design and research service will also concern the development of biological treatment of rinsing waters, which will be later used to neutralize the obtained waste (in a closed-loop process). An element of the research service consists also of the technical review of the resulting product with the final recipient- a recycler. The research service will be conducted by a specialized scientific unit characterized by an experience and knowledge relating to environmental protection, biotechnology and agricultural sciences. The target group constitutes recyclers of secondary raw materials, that is enterprises that receive and transfer the raw material to utilization-as users. The target group also consists of producers introducing dangerous substances into the market in the form of plant protection products- as a supplier. They are burdened with the statutory obligation to implement a minimum level of recovery and recycling of packaging. Recovery of hazardous waste on plant protection products is an extremely difficult issue. The proposed solution will revolutionize the approach to it, therefore constituting a response to the current market needs..</p>	<p>EKO Harpoon-Recykling sp. z o.o.</p>	<p>01.07.2017 - 28.02.2018</p>	<p>34 272,84</p>	<p>23 819,62</p>	<p>69,50%</p>
<p>New Escinea - refinement of the dietary supplement</p>	<p>The project concerns the development of a technology for the production of Escinea in a solid form such as capsules and tablets, which will constitute product innovation in relation to the previously available form- liquid. Escinea is an unique product on the market of slimming dietary supplements, it is a preparation which combines plant compounds derived from chestnut (<i>Aesculus hippocastanum</i> L.) and chokeberry (<i>Aronia melanocarpa</i>). The liquid form of the supplement, which is currently available on the market, is a formulation created as a result of research and development conducted in the period 2013-2014. The development of production technology for the solid form of the preparation is more difficult due to the physicochemical properties of active substances. Currently, on the market there are no solid preparations based on the composition of active substances contained in Escinea. The development of a solid preparation will translate into a market advantage due to the fact that for many customers capsules and tablets will be more convenient and practical, while the product will be cheaper to produce, easier to distribute and will have a longer shelf life.</p>	<p>ESCILAB sp. z o.o.</p>	<p>01.12.2016 - 30.04.2018</p>	<p>29 886,88</p>	<p>17 929,14</p>	<p>59,99%</p>
<p>Research and development works for a cream recipe</p>	<p>The objective is to conduct R+D works to develop a new formula for a cream containing two active substances- colostrum and nanogold. Currently, no preparation containing a combination of these ingredients is available on the market. The resulting substance is designed to naturally stimulate older skin cells for faster regeneration which will cause real disappearance of wrinkles. Due to the introduction of an innovative product on the market, the Applicant foresees the opportunity to gain an advantage on the anti-wrinkle cream market. Given above, it is necessary to conduct R+D works that will allow the company to determine the optimal concentration of both substances so that the recipe has the most beneficial action. Therefore, the project activities include the purchase of a research service from the Contractor selected in accordance with the regulations of the competition. Under the contract, the Contractor: 1. develops the formula of a cream; 2. produces a test mass; 3. performs a safety assessment of the product; 4. will test the test mass on a group of women aged 40+ 5; 5. will introduce a modification from the recipe according to the test result 6. will re-test a group of women aged 40+; 7. will develop a packaging that will allow the cream to be stored properly and will prepare 20 pieces of a sample lot.</p>	<p>"GENOSCOPE" sp. z o.o. S.K.</p>	<p>01.08.2017 - 31.07.2018</p>	<p>28 760,43</p>	<p>18 691,40</p>	<p>64,99%</p>

<p>An original prototype of the monitoring system for local water courses</p>	<p>The investment concerns commissioning research works to the entity holding the status of a Scientific and Research Unit, aimed at preparing an advanced virtual platform dedicated to the Local Government Units, due to which it would be possible to monitor and manage water retention at the local level. Abovementioned solution is available only at the national level, therefore developing a prototype system dedicated to local water resources will be the first solution of this type in the country. The developed algorithms will allow for the examination of the condition of drainage ditches and watercourses with the provision of current information on water levels in individual branches of the melioration infrastructure, including excesses and shortages. Water retention endeavours are comprehensive and require cooperation of specialists, including hydromechanics, ichthyologists, foresters, botanists and zoologists. Only their joint actions can provide an opportunity for proper management of the catchment areas and increase of the biodiversity. This opportunity for the first time would be provided by a prototype of the application that will aggregate individual data on the basis of which it will enable the collection and analysis of data from the region and the assessment of threats related to deficiency or excess of water in watercourses. The undertaking is part of the Intelligent Specialization for the Mazovian Voivodeship and supports the areas identified as crucial for the development of the region. The company has its branch in rural areas (based on substantive criteria- DUCHNICE).</p>	<p>Artur Rutyna Art-San-Eko Przedsiębiorstwo Produkcyjno-Projektowe</p>	<p>01.01.2017 - 30.06.2017</p>	<p>31 955,71</p>	<p>23 966,78</p>	<p>75,00%</p>
<p>An innovative series of dermocosmetics with natural bio-chromophores (colour photoactivators) activated by a low-energy laser, designed to reduce the disproportion of skin tone- for phototypes I-VI</p>	<p>The aim of the project is to develop a series of 61 internationally innovative professional dermocosmetics dedicated to adults affected by pigmented skin eruptions of various etiologies. The preparations will contain bio-chromophores (active chromo-sensitive ingredients for specific lengths of laser light) and are intended for treatments in cosmetic and aesthetic medicine as well as for home use to reduce discoloration and other pigmentation disorders of the skin. For the development of a series of dermocosmetics, following groups of problems were identified: vitiligo (acquired vitiligo), photodamage for phototypes I-IV and V-VI, age discolorations, acne discolorations and post-inflammatory hyperpigmentation caused by stretch marks. Groups of these problems were analysed in terms of the low effectiveness of the currently available dermocures. The project will be implemented based on purchased documentation of research results remaining at the V technological readiness level, while the final technology corresponding to the IX technological readiness level will be developed and tested under simulated operating conditions. We are aiming at two tasks in industrial research and two tasks in development works, the project will end at the first production stage. The project will be implemented with the participation of its end users. The implementation of the project will ensure a further development of the company, increase in sales (within the country and in terms of exports), further development of the R+D department, increase of competitiveness and absorption of innovative technologies.</p>	<p>PROF.COSMETICA sp. z o.o.</p>	<p>01.01.2017 - 31.05.2018</p>	<p>838 050,04</p>	<p>616 501,03</p>	<p>73,56%</p>

<p>Development of methods for comprehensive analysis of the content of biological and chemical contaminants in herbal products, posing a threat to the health of consumers</p>	<p>The popularity of herbal products is growing rapidly as a result of an aging population, increased interest in a healthy lifestyle and demand for products of natural origin. The quality of herbal products from domestic production and import does not guarantee the safety of consumers. Scientific research of herbal and medicinal herbs has shown pathogenic contamination with microorganisms and eggs of dangerous parasites, and the accumulation of heavy metals. Checking the purity of herbal mixes, fruit teas, herbal and functional teas, spice herbs and dietary supplements before placing them on the market is not obligatory. The aim of the project is to develop own methods of comprehensive analysis of the purity of herbal products in terms of the presence of parasites (tapeworms, nematodes, trematodes), pathogenic microorganisms (bacteria and fungi), mycotoxins, pesticides, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), dioxins and heavy metals that pose a serious threat to the health and lives of consumers. The research will allow for the extension of the current BIOMIBO activity to provide services for the target group composed of business clients (producers, sellers, importers of herbal products) as well as persons (so-called conscious consumers). Project stages and methods of implementation include: 1. development of methods of species identification and isolation of bacteria, fungi and parasites from herbal products, 2. examination of the impact of all commercially available mycotoxins on human cells in vitro, 3. development of own and adaptation of existing methods of extraction and identification of mycotoxin, pesticides, PAHs, PCBs, dioxins for herbal products, 4. development of methods for the mineralisation of samples and determination of heavy metals present in herbal products, 5. creation of a diagnostic test for detection of parasitic DNA in food (innovative work on a global scale).</p>	<p>BIOMIBO Boguś Mieczysława</p>	<p>01.10.2016 - 30.09.2018</p>	<p>1 055 148,12</p>	<p>834 680,28</p>	<p>79,11%</p>
<p>Innovative development of a grapefruit extract</p>	<p>The objective is to develop innovative, new on the global scale products in the form of a dietary supplement, a denture adhesive and a throat spray. These products will be characterised by an increased content of bioflavonoids, microbiological properties, and greater antioxidant strength than the competitors' products that have been on the market up to date. Additional aims of the project include increasing the research staff in the Company, promoting energy savings, resulting in low-emission and efficient use of natural resources through the use of production technology characterized by low energy and water consumption. The implemented project will also result in the patent application of the invention. The project consists of 3 research tasks, including the development of a new grapefruit extract rich in bioflavonoids, development of three product formulas and testing prototypes of these products, also based on the user-oriented design methods of production through their participation in testing, reviewing, and identification of needs in the field of the new prototype of the product. In order to implement the project, the Company intends to lease 9 fixed assets that are necessary to conduct research works and resources for the research. Part of the work will be outsourced. 4 people will be involved in the research (including one that will be employed specifically for the project and will perform as a project manager). The Steering Committee will be supervised over the course of the work, consisting of people with extensive experience in project management and having extensive experience in the industry. An additional result of the project will be reflected in the creation of graduate traineeships for two persons. The final effect of the project will be ensured by the development of three new, innovative products that will be introduced only to the Applicant's own business by starting production based on the obtained results.</p>	<p>Cintamani Poland Majewscy i Koć S. J.</p>	<p>07.06.2016 - 30.09.2018</p>	<p>333 125,43</p>	<p>222 171,07</p>	<p>66,69%</p>

<p>Development in the course of extensive research and development works of advanced technology of production of intelligent multi-constituent mineral fertilizers based on waste calcium sulphate from IOS installations - Flue Gas Desulphurisation</p>	<p>The Applicant will conduct development works (R+D research in the scope of development of an innovative granular fertilizer produced on the basis of gypsum from the flue gas desulfurization system), which will be completed on the so-called first production. The Applicant will perform all works independently and the undertakings will result in a VI level of technological readiness (Technology demonstrated in a near-real environment). The developed technology will be implemented into business activities run by the Applicant. The project will contribute to the development of the chemical and agro-food sectors as well as biotechnology. The project is compatible with more than 3 areas of smart specialization in the Mazowieckie Voivodeship. As part of the implementation, the Applicant will cooperate with the R+D sphere - the Lodz University of Technology and the Metal Forming Institute. The Applicant is a member of the regional key cluster - Mazovian Chemical Cluster. The Applicant assessed the risks and developed ways to minimize them during the implementation of the project. The project will be implemented in accordance with the principle of user-oriented design. The Applicant will organise internships or graduate internships within the project. The technology adopted for implementation constitutes a response to market demand for project results. The Applicant will employ employees responsible for performing R+D works and project administration personnel in accordance with the principle of equal opportunities and non-discrimination. The developed technology will be consistent with the principle of sustainable development by promoting low-emission, energy saving and efficient use of natural resources. The Applicant has its registered office in Płock, i.e. in the Mazowieckie Voivodeship, which guarantees effective use of funds for the development of R+D works in Mazovia. A design office where documentation will be kept will be located in Mazovia.</p>	NOVA-GIPS S.A.	01.10.2016 - 30.06.2018	1 175 582,40	592 033,36	50,36%
<p>Development of a technology for the preparation of chelating substances for chromium and cobalt ions, based on the synthesis of active biopolymers</p>	<p>The objective is to acquire comprehensive knowledge about the most active chitosan derivatives and their properties, with the intention of using selected substances in the cosmetics industry as an active agent in preventive anti-allergic dermocosmetics for chromium or cobalt. Allergy to metals including chromium and cobalt is the most common type of contact allergy in developed countries. According to the Eurostat and Eurogip reports, the losses due to occupational skin diseases are about 3 million working days, and costs amount to 600 million € annually (http://ec.europa.eu/environment/chemicals/reach/pdf/reach.pdf). In the European Union skin diseases are in second place among all occupational diseases. Chromium and cobalt allergy is so common that their concentration in many products is controlled by the EU regulations. Cobalt allergy is coexisting for people who are allergic to chromium. According to the WebMD Health Foundation, allergies to these metals are the most common contact allergies because they constitute components of numerous alloys- including numerous tools and objects (jewellery, watches, glasses frames, metal clothing items, coins, cutlery, door handles, etc.), cement, leather tanned. It is estimated that approximately 15 million people in the EU are allergic to chromium and cobalt (more than 3% of the EU population suffers from allergies to chromium - (Garg et al., Br J Dermatol, 2013, 169, 854), and cobalt allergy is co-existing. No active ingredient chelating chromium and cobalt ions for the dermocosmetic industry has been developed so far. For the disease itself, no method has been developed for the comprehensive treatment of allergy to these metals, and preventive measures don't include barrier means with active substances. As part of the R+D work, the accuracy and effectiveness of the selection of active substances against the symptoms of allergy to chromium and cobalt will be verified and their effectiveness confirmed.</p>	KF NiccolomSp. z o.o.	01.10.2016 - 30.06.2018	477 000,19	289 178,30	60,62%

<p>Development of recipes and technologies for the production of innovative cosmetics and special food products SENIOR-KOMFORT based on R+D works</p>	<p>The project aims at conducting R+D works, the result of which will be the development of measures conducive to the creation of two innovative product groups, specially profiled for the elderly. Scheduled tasks concern preparation of recipes (formulas) and production technology: cosmetics for the care of elderly people increasing the comfort of living in the physical sphere, and special purpose foodstuffs for the improvement of memory, concentration, well-being (that is comfort of life in the mental sphere). The innovation resulting from the project will stem from the application of new prescription formulas profiling the effects of cosmetics and special food for ailments which are the most significant nuisances related to age and in the scope of which the market currently does not offer products that meet the expectations of seniors. The first scope of R+D works will focus on the selection of active ingredients, preservatives, the active substance delivery system, and thus the development of cosmetics recipes, completed with the creation of the physical-chemical and microbiological specification of the new product. Performed physicochemical tests will include organoleptic assessment, stability, PH assessment. Additionally, the necessary microbiological and dermatological tests will also be conducted. The second scope of research will focus on the formulation of the prescription composition that considers the needs of the target group, the study of the correct form of the medicine, the study of stability and its effectiveness. The effects of the project will be a complementary solution to the vital needs of seniors. The research process will include close cooperation with scientific units and end users. All activities will be implemented in accordance with applicable pharmaceutical law, the Food Safety and Nutrition Act, and other relevant provisions constituting a legal framework for planned activities.</p>	<p>GEMI Przedsiębiorstwo Produkcji Farmaceutycznej Nowakowski Grzegorz</p>	<p>10.06.2016 - 30.09.2018</p>	<p>414 310,18</p>	<p>309 498,32</p>	<p>74,70%</p>
<p>Development of innovative stabilization methods and new formulations of natural dyes and colouring food for the food industry</p>	<p>The Applicant intends to conduct comprehensive R+D works on improving own offered stability on the domestic and foreign market, in order to expand the offer with products to be used in new applications. The effect of the project will be the development of new formulations and ultimately implementation on the target market by BART Company by launching production of significantly improved innovative natural food dye and colouring food with higher quality parameters, based on natural colouring materials from the group of carotenoids, curcuminoids, anthocyanins and coal of a plant origin. The project is planned to be completed from September 1, 2016 to August 31, 2018 at the headquarters of the BART company in Słupno near Warsaw. Objectives of the project are consistent with the priority research directions set for the areas of smart specialization of the voivodeship, primarily in the area of "safe food" and "high quality of life" specialization. The implementation of the project will contribute to the development of economic sectors, such as the chemical and agri-food sectors, leading technologies - nanotechnology and service processes in the field of R+D services, identified as crucial for the development of Mazovia. The method of the project implementation and its results provide a possibility to use solutions that have a positive impact on the sustainable development policy. The Applicant aims at the cooperation with research units on the basis of subcontracting: the Faculty of Chemistry at the Nicolaus Copernicus University in Toruń and the Faculty of Food Sciences at the Warsaw University of Life Sciences.</p>	<p>BART sp. z o.o. S.K.</p>	<p>01.09.2016 - 30.09.2018</p>	<p>320 672,01</p>	<p>220 854,72</p>	<p>68,87%</p>

<p>An original range of products dedicated to the renewable energy sector</p>	<p>The aim of the project is to increase the research potential of the company by conducting industrial and development works in cooperation with the Scientific Unit, the result of which will be the development of an original range of products dedicated to the renewable energy sector. As a result of conducted works, fixed sets of hydro-assemblies will be developed, which can be used as part of the so-called small retention (small hydro). Currently, the Applicant has signed a cooperation agreement with the Warsaw University of Technology under which the unit will support the course of each stage in the substantive scope. The project is a response to the current state of use of our country's water resources, which due to the lack of appropriate natural conditions is not conducive to the development of hydropower. This is due to the lowland nature of the country, relatively small drops of rivers, moderate rainfall and geological structure. The market diagnosis reflected the fact that existing solutions related to water turbines are dedicated mainly to large drops (minimum 3 m), therefore their application in numerous places in the country is poses difficulties. Due to performed works which will result in the patenting of the solution and its commercialization through production of the product, optimum conditions will be created as well as opportunities to use natural reserves for the development of hydropower, therefore contributing to the development of a new market niche that will be identified strictly with Mazowieckie Voivodeship. The implemented results will set new priority research directions aligned with Intelligent Specializations for the Mazowieckie Voivodeship (construction solutions optimizing the possibilities of obtaining energy- the development of low-pressure hydroelectric power plants both in Poland and in Europe in places that today are inaccessible to original turbines).</p>	<p>Artur Rutyna ART-SAN-EKO Przedsiębiorstwo Produkcyjno- Projektowe</p>	<p>01.06.2017 - 31.01.2019</p>	<p>300 546,45</p>	<p>214 172,56</p>	<p>71,26%</p>
<p>Sub-measure 3.1.2. SME development</p>						
<p>Innovation Support Fund Sekwencja as an opportunity to support the initial phase of enterprise development</p>	<p>The project aims at the increase of the competitiveness of the SME sector by providing specialist advice. Sekwencja Sp. z o.o. [Ltd.] as an accredited BEI, has experience and knowledge necessary for number of consultancy services offered to entities in the sector of micro, small and medium-sized enterprises. The target group that will take part in the project will consist of entities in the early stage of development, i.e. operating up to 24 months in the Mazowieckie Voivodeship. Moreover, these companies will have technological potential that will translate into the implementation of technological innovation in operations. The initial phase of each activity is crucial in the development of the company. At this stage decisions are made regarding the fundamental objectives of the company's operation and the concept of business is defined. The initial phase is of strategic importance for the further stages of the company's development and growth. At this stage it is crucial to decide on appropriate steps for further development and implementation of innovations in the organization. A company will be able to benefit from the specialist advice of the BEI- Sekwencja, in the scope of services from the following thematic groups: information, general advice, financial and accounting consultancy, legal advice, technical and administrative consulting. The project includes a specialist support for a minimum of 35 entities at an early stage of development. The project is divided into 5 stages. In Task 1, a business strategy was developed, in which the market, competitive services and detailed concept of the project were thoroughly analysed. In Task 2, the project methodology will be elaborated, the IT system will be modified to support both participants' acquisition and project management, and the project's website will be developed. Task 3 is the initiation phase of performing works. Tasks 4 and 5 will focus on in-depth provision of services to selected entities and a project evaluation.</p>	<p>SEKWENCJA sp. z o.o.</p>	<p>01.02.2017 - 30.09.2018</p>	<p>688 664,88</p>	<p>550 931,90</p>	<p>80,00%</p>

<p>BioTechMed Accelerator: support for the initial phase of development of technology enterprises in the Cluster BioTechMed Mazovia</p>	<p>The aim of the project is to support 35 technological companies from the bio-tech-med sector from the Mazowieckie Voivodship, which are at an early stage of development (i.e. up to 24 months from the moment of registration), as part of the acceleration and incubation process. The company BTM Innovations (the Applicant) as the Business Environment Institution accredited in Mazovia will provide project participants with high quality, specialized and tailor-made consultancy services provided by experienced business experts. As part of the project, intensive acceleration and training programs will also be implemented. BTM Innovations will conduct the project according to the original concept of Bridge To Market (B2M) based on the 4S model - scale, structure, specialists, synergy. A detailed description of the B2M methodology is provided further in the application form in the section C2 and attached to the Business Plan application. This project will be implemented in partnership with the Innovation Management and Technology Transfer Center of the Warsaw University of Technology (hereinafter referred to as IM&TTC WUT) and the Polish Clusters Association (hereinafter the PCA), which will enable the possibility to reach a wide range of SMEs, both of those associated in several dozen Polish clusters, as well as those engaged in the academic community. Project partners will have a significant role in disseminating information about the project, as well as in the recruitment and initial technology and business evaluation of the submitted SMEs. The project will also include infrastructure support in the form of access for 15 selected SMEs to the IM&TTC WUT infrastructure - office and coworking rooms, conference and training rooms, prototype, focus laboratories, etc. Entrepreneurs who decide to use the IM&TTC WUT infrastructure in the process of solving occurring problems and challenges will benefit from the support of dedicated specialists and business experts from the Innovation Incubator of the Warsaw University of Technology.</p>	<p>BTM INNOVATIONS sp. z o.o.</p>	<p>01.01.2017 - 30.09.2018</p>	<p>748 825,62</p>	<p>599 060,49</p>	<p>80,00%</p>
<p>NANOPERFUMES - implementation of an innovative product on the markets of Iran and the UAE</p>	<p>The aim of the project is consultancy support for FINEA Sp. z o.o. [Ltd.] in the scope of launching a new product on the market and increasing the scale of the company's export activity. As a result of the implementation of the project, the Applicant will be able to introduce the innovative global product, NANOPERFUMES, to the markets of Iran and the United Arab Emirates. Advisory services will be provided by the accredited Business Environment Institution- Association for the Development of Social Activity "TRIADA". FINEA does not have the competences to independently conduct the work within the project, resulting in the need to commission them entirely to a specialized entity. The scope of services provided under the project include: 1. Research and analysis of the cosmetics market in Iran and the UAE- specialist consulting related to the planned introduction of a new product or service and expansion of the business into new markets. 2. Working on the development strategies in the markets covered by the study- consultancy regarding the company's development strategy, particularly based on new technologies. The project will be implemented within 6 months, from 1 September 2017 to 28 February 2018. The effect of the project will consist of the increase in the competitiveness of the microenterprise, increasing its innovation and the scale of its export operations by entering the markets of Iran and the UAE.</p>	<p>FINEA sp. z o.o.</p>	<p>01.09.2017 - 28.02.2018</p>	<p>33 074,49</p>	<p>25 731,95</p>	<p>77,80%</p>
<p>Sub-measure 3.2.2. Internationalization of enterprises</p>						
<p>Development of export for Jar Aromaty Spółka z o.o. [Ltd.] limited partnership as a chance for the increase of the</p>	<p>The objective of the project is the implementation of tasks contributing to the development of export activities of the Applicant. In order to achieve this, it is necessary to participate in economic missions. The Applicant intends to take part in 3 economic missions in Iran. Another element of the project constitutes a three-time participation in foreign trade and exhibition events organized in the United Arab Emirates. Additionally, the Applicant will participate in international fairs taking place in</p>	<p>JAR AROMATY sp. z o.o. S.K.</p>	<p>01.03.2016 - 31.12.2018</p>	<p>59 678,00</p>	<p>29 839,00</p>	<p>50,00%</p>

competitiveness of the company and the economy of the Mazovia region	Germany, where the presence of the company is necessary due to the presence of Arab producers. An important element of the project is Halal certification which confirms compliance with the requirements for the production, packaging and storage of products. The activities indicated above will contribute to the recognition of markets by the Applicant, increase the internationalization of its activities and increase revenues from export activities. The company is a significant production and trade enterprise in the field of aromas, dyes and food additives. It is characterised by a wide offer and independently develops recipes of its products. Own analysis of target markets reflects the fact that the Applicant is the producer of products that can compete on foreign markets, but it is necessary to acquire partners. The company decided to develop its export business because it wants to develop and build an international brand, contributing to the recognition of Poland abroad. The company's mission anticipates its development through export. The prepared business strategy in the field of internationalization of operations confirms that the UAE and Iran markets will offer considerable development opportunities. The completed tasks (economic missions, fairs and certification) will contribute to the acquisition of foreign partners. The development of the concept of the image will allow the company to increase its recognition on foreign markets, translating into an increase of export revenues.					
The growth of export potential of Cosmetic Laboratory AVA Larysa Dysput-Goławska through participation in the international trade fairs	The project is based on the growth of export potential on the markets of Europe, Asia and the Arabian Peninsula. The fundamental objective is to increase the company's competitiveness on the foreign market. The Applicant is particularly in need of increasing the "expansion" of its products to foreign markets, specifically to countries such as the United Arab Emirates, China and European Union countries. This aim will be achieved by participating in international exhibitions as an exhibitor. Previous foreign sales occurred through establishing cooperation with contractors acquired after the participation in international fairs, where AVA can fully present its wide range of products. AVA Cosmetics Laboratory is the first Polish company that has obtained a license for the production of ecological cosmetics and ECOCERT quality certificates confirming their natural and organic features.	"Larysa Dysput-Goławska Laboratorium Kosmetyczne "AVA""	01.07.2016 - 31.05.2018	192 694,85	95 628,42	49,63%
Measure 3.3 Innovations in SMEs						
Development of the Uniplast company's potential by introducing to the market new and significantly improved industrial films developed as a result of research and development works conducted by the enterprise	The subject of the project concerns the launch of five new and three significantly improved products through the implementation of R+D work results, conducted independently by Uniplast operating in the Mazowieckie Voivodeship for over 20 years. Uniplast is a producer of highly technologically advanced films on the basis of metallocene polyethylenes produced by co-extrusion in the form of a heat-shrinkable tape, plastic bags and colored flexographic imprints. The main customers constitute the broadly defined industry, due to the fact that the films will be used for industrial packaging, among others building materials, food, furniture, etc. As part of the investment, also a fundamental change will occur in the production process as a result of the implementation of R+D works. The project will lead to an increase in the level of innovation, competitiveness and activity, including employment growth (6 new jobs). The result of the project is consistent with the priority directions set for the areas of smart specialization of the Mazowieckie Voivodeship, and the investment will be implemented with financial support from the EU (with own contribution exceeding the required minimum) by supporting 2 project tasks fully orientated at the end users. The purchase of fixed assets which will also be used to support practical training of young people and adults is planned as part of the tasks, including: 1. Three-layer (1) line for the production of innovative 3-layer films 2. Construction (including its assembly) dedicated to the purchased line (1 item). Scheduled and described in detail in the business plan, undertaken as part of this investment, translate directly into	ZTS UNIPLAST sp. z o.o. S.K.	06.02.2017 - 30.09.2018	1 737 609,05	483 055,32	27,80%

	the limitations of negative environmental effects. A significant added value for the project will be the substantive support, provided during the introduction of improved products for production and market by the Institute of Materials Engineering.					
Increased competitiveness of Laundry Service Sp. z o.o. [Ltd.] through the commercialization of the results of research and development works conducted within the enterprise	The aim of the project will be the launch of a new laundry service on the market by implementing the results of R+D works obtained in a complementary project conducted under Measure 1.2 of the ROP MV. The implementation will be conducted through the purchase, installation of fixed assets including: device for the production of nanowater, elements of the washing line: a loading belt, washing tunnel and centrifuge, and infrastructure supporting tanks and installations, ozone chamber, infrastructure for media management and hardware and software infrastructure. Based on the target installation, the technological process developed in the R+D project will be optimized. The abovementioned devices and the human resources of the Applicant will enable the company to initiate an ecological washing service on an industrial scale. This service will be characterized by a lower price and higher quality in relation to the laundry services already available on the market due to the unique properties of nanowater, with significantly better economic efficiency negatively impacting the environment to a lesser extent than traditional methods due to the use of fewer detergents that damage the material being washed, applying lower washing temperatures and more significant water savings. The recipients of the new service will constitute enterprises and institutions using laundry services on an industrial scale: food and heavy industry plants, and others. The new service will also be used by other companies operating on the market, subcontracting the performance of laundry services. The project identified 4 tasks corresponding to detailed objectives and implementation stages: 1. Purchase including delivery of ready to use washing line elements; 2. Installation and initiation; 3. Optimization of the washing line, including optimization of the mechanical part of the process and optimization of washing process technology; 4. Promotion.	Laundry Service sp. z o.o.	01.11.2017 - 31.07.2018	1 092 144,09	551 423,55	50,49%
Change of the production process at POS-PLASTIC by introducing plastic recycling	The project aims at the introduction of new and significantly improved products to the market with the means of implementing the results of R+D works commissioned by POS-PLASTIC. The products being the result of the project, i.e. E2 box, box for mushroom and soft fruit, plastic grinding, were developed due to the use of product and process innovation which is the original process of recycling plastics, based on the newest market technologies. In this process, metal elements from the processed material will be eliminated as many as three times, an antibacterial mix will be added and the regranulation of the material constituting the next milling stage will be omitted. This would eliminate the extrusion process being an unnecessary degradation of the material. Those measures will result in products characterized by high quality and antibacterial properties. The new offer will be directed to companies from the poultry and meat industry, food industry, agri-fruit industry and to producers of plastic packaging. The material scope will be implemented in two stages, from 02.2017 to 06.2018, and will include the purchase of injection moulding machines, injection moulds, recycling lines, optical sorter and screw compressor. All production will be additionally supported by the purchased system of communication with the client (application of ICT). Co-financing of the project from EU funds will be promoted through planned information and promotion campaigns. Moreover, the project includes the continuation of cooperation with the contractor of R+D works, an increase in the scope of employment, a positive impact on the environment, involvement of a larger than required own contribution, or practical training of people covered by support under the 10iv. The project is compatible with RIS. The fundamental objective of the company is to improve competitiveness and innovation, including measures aimed at diversifying the offer, acquiring new	„POS-PLASTIC” S. C.	01.02.2017 - 30.06.2018	1 569 665,90	784 832,95	50,00%

	customers, commercializing research results, increasing employment, obtaining independency from raw material suppliers.					
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Source: own study based on data provided by the Marshal's Office of the Mazowieckie Voivodeship (as of 18.02.2018)

Table 6 Selected projects from the chemical and bioeconomy sectors implemented in the Mazowieckie Voivodeship under the Smart Growth Operational Programme

Title of the project	Main beneficiary	Total value		Eligible expenses		Total co-financing		Total EU contribution		Co-financing:% of eligible expenditure
		[PLN]	[EUR]	[PLN]	[EUR]	[PLN]	[EUR]	[PLN]	[EUR]	
Measure 1.2. Research and development activities of enterprises										
<i>Innovative technology for extracting bottom sediments using themfor fertilization</i>	Łukomet – Krzysztof Łuszczuk	103 320,00	24 762,73	84 000,00	20 132,30	58 002,00	13 901,35	58 002,00	13901,35	69,05%
<i>Evaluation of the effectiveness of the new active substance for applications in dermocosmetics against the symptoms of nickel allergy</i>	KF NICCOLUM sp. z o.o.	76 260,00	18 277,25	62 000,00	14 859,55	40 238,00	9 643,85	40 238,00	9643,85	64,90%
<i>Purchase of research and development services for the development of an innovative product with choline for pregnant women by Holbex Sp. z o.o.</i>	Nutropharma sp. z o.o.	168 595,85	40 407,40	15 836,54	3 795,55	10 927,21	2 618,93	10 927,21	2618,927	69,00%
<i>Research and development of the composition of granules for the production of biodegradable films with antibacterial features, and technologies for their production</i>	Kępczyński Paweł	123 000,00	29 479,44	100 000,00	23 967,02	80 000,00	19 173,62	80 000,00	19173,62	80,00%
<i>A commission for the research for the development of an innovative blocker type cosmetics</i>	Beauty Box sp. z o.o.	159 900,00	38 323,27	130 000,00	31 157,13	97 500,00	23 367,85	97 500,00	23367,85	75,00%
<i>Development of an innovative solution for the laundry industry based on the properties of nanowires</i>	Laundry Service sp. z o.o.	94 943,70	22 755,18	77 190,00	18 500,14	49 995,96	11 982,54	49 995,96	11982,54	64,77%
<i>Development of innovative technology for storage and recycling of waste from potato processing into electricity, heat energy and a measure improving soil properties</i>	BIO ALIANS TECHNOLOGIE sp. z o.o.	123 000,00	29 479,44	100 000,00	23 967,02	80 000,00	19 173,62	80 000,00	19173,62	80,00%
<i>Development of a new technology for the production of construction Olkit</i>	PPHU "BOLID" sp. z o.o.	178 227,00	42 715,70	144 900,00	34 728,21	99 981,00	23 962,47	99 981,00	23962,47	69,00%
<i>Development of an innovative installation for recovery and recycling of plastic packaging after dangerous substances, especially after plant protection products</i>	EKO Harpoon-Recykling sp. z o.o.	175 890,00	42 155,59	143 000,00	34 272,84	99 385,00	23 819,62	99 385,00	23819,62	69,50%
<i>A new cream formulation for care and regeneration properties with the use of natural components</i>	MO. CONCEPT Monika Staniszevska-Zielińska	174 660,00	41 860,80	142 000,00	34 033,17	99 258,00	23 789,19 0,00	99 258,00	23789,19	69,90%
<i>New Escinea - refinement of the dietary supplement</i>	ESCILAB sp. z o.o.	153 381,00	36 760,86	124 700,00	29 886,88	74 807,53	17 929,14	74 807,53	17929,14	59,99%

<i>Research and development works for a cream recipe</i>	"GENOSCOPE" sp. z o.o. S.K.	147 600,00	35 375,32	120 000,00	28 760,43	77 988,00	18 691,40	77 988,00	18691,4	64,99%
<i>An original prototype of the monitoring system for local water courses</i>	Artur Rutyna Art-San-Eko Przedsiębiorstwo Produkcyjno-Projektowe	163 998,36	39 305,52	133 332,00	31 955,71	99 999,00	23 966,78	99 999,00	23966,78	75,00%
<i>An innovative series of dermocosmetics with natural bio-chromophores (color photoactivators) activated by a low-energy laser, designed to reduce the disproportion of skin tone- for phototypes I-VI</i>	PROF.COSMETICA sp. z o.o.	4 292 636,40	1 028 817,08	3 496 680,00	838 050,04	2 572 288,88	616 501,03	2 572 288,88	616501,0	73,56%
<i>Development of methods for comprehensive analysis of the content of biological and chemical contaminants in herbal products, posing a threat to the health of consumers</i>	BIOMIBO Boguś Mieczysława	4 952 315,00	1 186 922,39	4 402 500,00	1 055 148,12	3 482 620,00	834 680,28	3 482 620,00	834680,3	79,11%
<i>Innovative development of a grapefruit extract</i>	Cintamani Poland Majewscy i Koć S. J.	1 513 873,93	362 830,49	1 389 932,54	333 125,43	926 986,56	222 171,07	926 986,56	222171,1	66,69%
<i>Development in the course of extensive research and development works of advanced technology of production of intelligent multi-constituent mineral fertilizers based on waste calcium sulphate from IOS installations - Flue Gas Desulphurisation</i>	NOVA-GIPS S.A.	5 874 000,00	1 407 822,84	4 905 000,00	1 175 582,40	2 470 200,00	592 033,36	2 470 200,00	592033,4	50,36%
<i>Development and research works for innovative preparations for poultry</i>	Bees-Vet sp. z o.o.	1 212 882,29	290 691,76	1 212 882,29	290 691,76	816 171,37	195 611,97	816 171,37	195612	67,29%
<i>Development of a technology for the preparation of chelating substances for chromium and cobalt ions, based on the synthesis of active biopolymers</i>	KF Niccolum Sp. z o.o.	2 235 632,73	535 814,57	1 990 235,61	477 000,19	1 206 567,54	289 178,30	1 206 567,54	289178,3	60,62%
<i>Development of recipes and technologies for the production of innovative cosmetics and special food products SENIOR-KOMFORT based on R+D works</i>	GEMI Przedsiębiorstwo Produkcji Farmaceutycznej Nowakowski Grzegorz	1 771 757,80	424 637,57	1 728 667,80	414 310,18	1 291 350,79	309 498,32	1 291 350,79	309498,3	74,70%
<i>Development of innovative stabilization methods and new formulations of natural dyes and coloring food for the food industry</i>	BART sp. z o.o. S.K.	1 467 375,75	351 686,26	1 337 971,91	320 672,01	921 494,23	220 854,72	921 494,23	220854,7	68,87%
<i>An original range of products dedicated to the renewable energy sector</i>	Artur Rutyna ART-SAN-EKO Przedsiębiorstwo Produkcyjno-	1 573 462,00	377 111,97	1 254 000,00	300 546,45	893 613,60	214 172,56	893 613,60	214172,6	71,26%

	Projektowe									
Sub-measure 3.1.2. SME development										
<i>Innovation Support Fund Sekwencja as an opportunity to support the initial phase of enterprise development</i>	SEKWENCJA sp. z o.o.	3 665 632,05	878 542,82	2 873 385,33	688 664,88	2 298 708,26	550 931,90	2 298 708,26	550931,9	80,00%
<i>BioTechMed Accelerator: support for the initial phase of development of technology enterprises in the Cluster BioTechMed Mazovia</i>	BTM INNOVATIONS sp. z o.o.	3 552 200,00	851 356,53	3 124 400,00	748 825,62	2 499 520,00	599 060,49	2 499 520,00	599060,5	80,00%
<i>NANOPERFUMES - implementation of an innovative product on the markets of Iran and the UAE</i>	FINEA sp. z o.o.	169 986,00	40 740,58	138 000,00	33 074,49	107 364,00	25 731,95	107 364,00	25731,95	77,80%
Sub-measure 3.2.2. Internationalization of enterprises										
<i>Development of export for Jar Aromaty Spółka z o.o. [Ltd.] limited partnership as a chance for the increase of the competitiveness of the company and the economy of the Mazovia region</i>	JAR AROMATY sp. z o.o. S.K.	261 161,37	62 592,60	249 000,50	59 678,00	124 500,25	29 839,00	124 500,25	29839	50,00%
<i>The growth of export potential of Cosmetic Laboratory AVA Larysa Dysput-Goławska through participation in the international trade fairs</i>	"Larysa Dysput-Goławska Laboratorium Kosmetyczne "AVA""	988 920,00	237 014,67	804 000,00	192 694,85	399 000,00	95 628,42	399 000,00	95628,42	49,63%
Measure 3.3 Innovations in SMEs										
<i>Development of the Uniplast company's potential by introducing to the market new and significantly improved industrial films developed as a result of research and development works conducted by the enterprise</i>	ZTS UNIPLAST sp. z o.o. S.K.	8 923 035,00	2 138 585,71	7 250 000,00	1 737 609,05	2 015 500,00	483 055,32	2 015 500,00	483055,3	27,80%
<i>Increased competitiveness of Laundry Service Sp. z o.o. [Ltd.] through the commercialization of the results of research and development works conducted within the enterprise</i>	Laundry Service sp. z o.o.	5 665 210,26	1 357 782,15	4 556 862,00	1 092 144,09	2 300 759,62	551 423,55	2 300 759,62	551423,5	50,49%
<i>Change of the production process at POS-PLASTIC by introducing plastic recycling</i>	„POS-PLASTIC” S. C.	8 055 607,02	1 930 689,06	6 549 274,00	1 569 665,90	3 274 637,00	784 832,95	3 274 637,00	784832,9	50,00%

Source: own study based on data provided by the Marshal's Office of the Mazowieckie Voivodeship (as of 18.02.2018). Finished projects are marked grey.

Table 7 Selected projects from the chemical and bioeconomy sector implemented in the Mazowieckie Voivodeship under the Smart Growth Operational Programme

Title of the project	Main beneficiary	Total value		Total co-financing		Co-financing:% of eligible expenditure
		[PLN]	[EUR]	[PLN]	[EUR]	
Sub-measure 1.1.1. Industrial research and development works implemented by enterprises						
<i>Efficient femtosecond lasers for industrial microbiospheres, science and medicine</i>	Fluence sp. z o.o.	9 424 709,19	2 258 822,07	7 151 867,66	1 714 089,65	75,88%
<i>Development of the innovative technology of the Pythian 5D Hybrid Hazard Detection System</i>	"Zeszuta" sp. z o.o.	6 093 672,00	1 460 471,67	3 755 735,50	900 137,93	61,63%
<i>Development of innovative technology for the production of cold-formed profiles from multilayer tapes, with increased chemical and thermal resistance</i>	NOVA-STAL sp. z o.o.	8 856 795,00	2 122 709,95	6 166 991,25	1 478 044,11	69,63%
Measure 2.1 Support for investment in infrastructure of R+D enterprises						
<i>Metrum Cryoflex Research and Development Center - advanced technologies in medicine</i>	Metrum Cryoflex Sp. z o.o. Sp.k.	16 728 000,00	4 009 203,34	5 480 000,00	1 313 392,77	32,76%
<i>Expansion of the research activity of CBR Zakłady Chemiczne BOCHEM Sp. z o.o. [Ltd.] in the scope of a new generation of self-adhesive and thermoplastic hot melt adhesives</i>	Zakłady Chemiczne "BOCHEM" sp. z o.o.	3 078 155,47	737 742,18	835 897,89	200 339,83	27,16%
Sub-measure 2.3.2. Vouchers for innovation for SMEs						
<i>Central heating lower combustion boiler, gasifying wood chips or piece wood, cooperating with water buffer</i>	INVENTOR JOŃSKI JAN	149 814,00	35 905,95	97 440,00	23 353,47	65,04%
<i>Development of significantly improved small-sized concrete elements through cooperation between TERM-OIL and the scientific-research unit</i>	TERM-OIL sp. z o.o.	239 112,00	57 308,02	155 520,00	37 273,51	65,04%
<i>Development of significantly improved quartz sinters, allowing to meet basic requirements in the scope of the application to facades, and optimization of production technology</i>	FOCUS DARIUSZ DUDA	492 000,00	117 917,70	320 000,00	76 694,47	65,04%
Sub-measure 4.1.4 Application projects						
<i>Development of mixing and conversion systems for urea water solution in SCR systems to start production of the exhaust systems for self-ignition engines, meeting the Euro 7 emissions standard</i>	ATCON POLSKA sp. z o.o., Politechnika Warszawska	14 117 322,20	3 383 501,63	9 550 357,61	2 288 936,25	67,65%
Measure 4.2. Development of modern research infrastructure of the science sector						
<i>CERAD - Centrum Projektowania i Syntezy Radiofarmaceutyków Ukierunkowanych Molekularnie (Centre for Designing and Synthesis of Molecularly Targeted Radiopharmaceuticals)</i>	Narodowe Centrum Badań Jądrowych	97 525 114,39	23 373 865,02	75 473 135,88	18 088 662,61	77,39%

Source: own study based on the website <https://www.poir.gov.pl> (accessed on 22.03.2018)

7. ANNEX

Table 7 Number of projects selected for co-financing under Measure 1.2 of ROP MV 2014-2020 in individual calls

The call for	1									2	3	4	5				6	7	8	9
Typ of the project	Innovation vouchers									Research and development projects	Process of experimenting and searching for niche development and innovation	Establishment or development of research and development facilities	Innovation vouchers				Research and development projects, for Beneficiaries experienced in R+D	Establishment or development of research and development facilities	Process of experimenting and searching for niche development and innovation (non-profiled)	Innovation vouchers
Planned budget [in EUR]	5 000 000,00									30 000 000,00	5 000 000,00	20 000 000,00	3 000 000,00				10 000 000,00	6 000 000,00	5 000 000,00	5 000 000,00
Date of the recruitment announcement	27.11.2015									29.02.2016	30.09.2016	30.09.2016	30 września 2016				28.04.2017	30.08.2017	31.08.2017	20.02.2018
Date of submitting applications	from 31.12.2015 to 30.09.2016									from 31.03.2016 to 06.06.2016	from 31.10.2016 to 04.01.2017	from 31.10.2016 to 04.01.2017	from 31.10.2016 to 28.02.2017				from 29.05.2017 to 31.08.2017	from 29.09.2017 to 4.12.2017	from 30.10.2017 to 10.01.2018	from 28.02.2018 to 30.06.2018
Date of the competition results announcement	I round	II round	III round	IV round	V round	VI round	VII round	VIII round	IX round				I round	II round	III round	IV round				
	08.07.2016	25.07.2016	29.09.2016	29.09.2016	29.09.2016	01.12.2016	14.06.2017	22.03.2017	14.06.2017	27.09.2017	27.09.2017	17.08.2017	27.06.2017	30.05.2017	27.09.2017	29.08.2017	11.04.2018	planned: April 2018	planned: May 2018	planned
The total number of projects selected for co-financing	29	28	16	15	11	13	18	10	19	114	30	17	26	18	36	18	23			
The number of projects in the scope of chemical industry selected for co-financing	1	5	1	0	0	1	3	0	3	44	12	5	7	4	8	9	12			
Total value of co-financing [in EUR]	578 944,79	547 281,74	325 980,99	283 630,72	242 936,92	253 294,32	384 420,21	219 933,08	277 577,84	53 462 153,59	7 385 704,09	6 683 835,87	1 125 681,65	771 330,54	1 415 720,35	707 097,79	10 025 387,60			
Total value of co-financing for projects in the scope of chemical industry [in EUR]	9 643,85	80 579,65	19 173,62	0,00	0,00	23 886,25	71 571,28	0,00	60 587,32	53 462 153,59	2 252 109,55	775 425,15	254 602,01	136 178,22	1 151 374,89	303 374,70	3 948 868,71			

Source: own research based on the call for proposals lists (as of 23.04.2018). The amounts were converted according to the average NBP exchange rate as of the date of this report (19.03.2018) 1 PLN = 4.1724 EUR.

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