



NMP-REG

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NMP-REG aims at improving regional policies for the delivery of innovation in nanotechnologies, new materials and new production technologies (NMP), to the manufacturing sector.

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An interregional cooperation project for improving innovation delivery policies

NMP-REG ACTION PLAN FOR BUCHAREST-ILFOV REGION

Project partner(s):
University Politehnica of Bucharest (UPB)
Executive Agency for Higher Education, Research, Development and Innovation Funding
(UEFISCDI)
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Part I – General Information

About the NMP-REG Project

Nanotechnologies, new Materials and Production technologies (NMP) represent a group of technologies with innovative impacts on a wide range of industrial sectors. They are an important part of the so called “Key Enabling Technologies” (KET), considered by the European Union (EU) of strategic importance for regions to manage a shift to a knowledge-based economy¹. The EU believes these technologies can reverse negative growth trends in manufacturing and foster growth and jobs.

The statements are clear, but the road from intent to transfer, application and exploitation of NMP in manufacturing is long. NMP is dealt with in research. However, the common challenge is ensure that innovation actors cooperate to deliver research results to the manufacturing sector, with subsequent benefits for regional growth.

This is the context of NMP-REG (Delivering Nanotechnologies, advanced Materials and Production to REGional manufacturing), a European Territorial Cooperation project co-financed by the European Regional Development Fund (ERDF), through the INTERREG EUROPE Programme.

NMP-REG groups seven partners from five regions located in five different countries², who are facing this regional development challenge together. Their overall objective is to improve regional policies for delivery of innovation in NMP to manufacturing. NMP-REG focuses on policy actions that can support innovation delivery, using coordinated action from key players.

NMP-REG achieves this through exchanging experiences and good practices in a framework of interregional activities, communication and stakeholder engagement. In this context, partners develop Action Plans that result in improved policy instruments supporting NMP-based innovation in each of the regions participating in the project.

¹ Communication "Preparing for our future: Developing a common strategy for key enabling technologies in the EU" COM(2009)512

² NMP-REG partners from Norte (Portugal): CCDR-Norte (Norte Regional Coordination and Development Commission) and INL (International Iberian Nanotechnology Laboratory); from Tuscany (Italy): ASEV (Agency for the development of the Empolese Valdelsa); from Flanders (Belgium): FIE (Flanders Innovation and Entrepreneurship); from North Rhine-Westphalia (Germany): NMWP.NRW (NanoMicroMaterialsPhotonics.NRW Cluster); from Bucharest-Ilfov (Romania): UEFISCDI (Executive Agency for Higher Education, Research, Development and Innovation Funding) and UPB (University Politehnica of Bucharest).

About the BUCHAREST-ILFOV NMP-REG Action Plan

Each region participating in NMP-REG produces one Action Plan, providing details on how the lessons learnt from the interregional cooperation will be exploited in order to improve the policy instrument tackled within that region.

This document is the NMP-REG Action Plan for the Bucharest-Ilfov region. It was drafted by University Politehnica of Bucharest (UPB) and the Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI) with the contribution of several stakeholders from the regional innovation ecosystem.

The development of this Action Plan has been based on the principles of:

- i. **interregional cooperation between NMP-REG partners:** cooperation was supported by a series of interregional learning events (ILEs), bilateral exchanges of experiences and share of good practices
- ii. **involvement of the main Bucharest-Ilfov stakeholders** dealing with NMP research, development and innovation delivery to regional industry: participation was supported mainly through setting up a Regional Stakeholder Group (RSG), which met periodically (at least twice each semester) in order to guide the project. RSG was composed by quadruple helix actors in the region: research institutes and universities, companies, regional development agency and innovation support organisations.

This document is structured in four parts.

After this introductory section, the second part provides an overview of the territorial context and the policy instrument addressed by the Action Plan. The third part provides an overview of the actions envisaged by the Action Plan. The fourth part corresponds to the main part of the Action Plan, where each action is presented, specifying its background, activities, players involved, timeframe and costs.

Project	NMP-REG: Delivering Nanotechnologies, advanced Materials and Production to REGIONal manufacturing	
Partner organisation	University Politehnica of Bucharest (UPB)	
Other partner organisations involved (if relevant)	Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI)	
Country	Romania	
NUTS2 region	BUCHAREST-ILFOV	
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Part II – Policy context

This section includes a brief overview of the territorial context and the policy instrument addressed by this action plan.

The geographical coverage of the Action Plan is the Bucharest-Ilfov NUTS 2 region (Romania).

About Bucharest-Ilfov Region

Bucharest Ilfov region encompasses Bucharest, the national capital and the surrounding Ilfov County. During the first years of the 1990s, when the Communism fell, the Bucharest-Ilfov's development stagnated and much of the beauty in architecture and urban landscape deteriorated. Though, at the mid of the 1990s, Bucharest started to change, to attract and retain talent nationally and internationally. Today, Bucharest is an emergent European smart city located just between the West and the East, a cosmopolitan town which reveal a promising developing region. For the last years, due to the gentrification process of Bucharest, the county's localities became commuter towns and followed rapid changes in their economic and social structure. Bucharest-Ilfov region, without any administrative power, stays as the most developed region having the highest GDP per capita, and is emerging as a competitive region at the European level.

In order to meet the objectives of the NMP-REG project, we aim at improving regional policies for delivering Nanotechnologies, advanced Materials and Production (NMP) to manufacturing. For accomplishing that we have conceived the NMP-REG report on requirements for delivering NMP to regional manufacturing and, starting from that report and based on the good practices exchanged at interregional level and lessons learnt within the NMP-REG project and along the regional stakeholders included in the Local Stakeholder Group, we have proceeded to design the NMP-REG Action Plan for Bucharest-Ilfov.

Policy instruments addressed by Bucharest-Ilfov Region

This Action Plan is focused on improving the running National Strategy for Research, Development and Innovation 2014-2020 as it was foreseen in the NMP-REG Application Form.

Name of the policy instrument addressed	National Strategy for Research, Development and Innovation 2014-2020 (SNCDI 2014-2020)
Investment for Growth and Jobs programme	NO
European Territorial Cooperation programme	NO
Other regional development policy instrument	YES

Part III – Overview of the Actions Envisaged

This section includes a brief overview of the actions included in the Action Plan. These actions were drafted according to a set of broad guiding principles:

- **Stakeholder inputs** - The actions aim at tackling specific regional challenges and needs identified during the Regional Stakeholder Group meetings organised by UPB and UEFISCDI during the NMP-REG Phase 1.
- **Interregional learning process** - The actions aim at drawing on the lessons learnt from the different interregional exchange activities carried out thanks to NMP-REG. Several interregional events were also attended by regional stakeholders, in particular by representatives of the managing authority
- **Policy instrument improvement** - The actions focus on achieving improvements in the specific policy instrument selected for Bucharest-Ilfov within NMP-REG.
- **Feasibility** - A limited number of actions was defined and their scope was controlled, in order to increase the likelihood of their implementation in most activities, without compromising the purpose of the Action Plan and of the NMP-REG mission.

The NMP-REG Action Plan for Bucharest-Ilfov consists of **two complementary actions** closely linked to the project's objectives:

ACTION 1

Building a nanomaterials, advanced materials and nanotechnology community – **NANO4MANU** namely by capitalising on the stakeholders' activity and dynamics and on the interregional learning process brought by the NMP-REG project to create new innovation projects focused on NMP in Action 2.

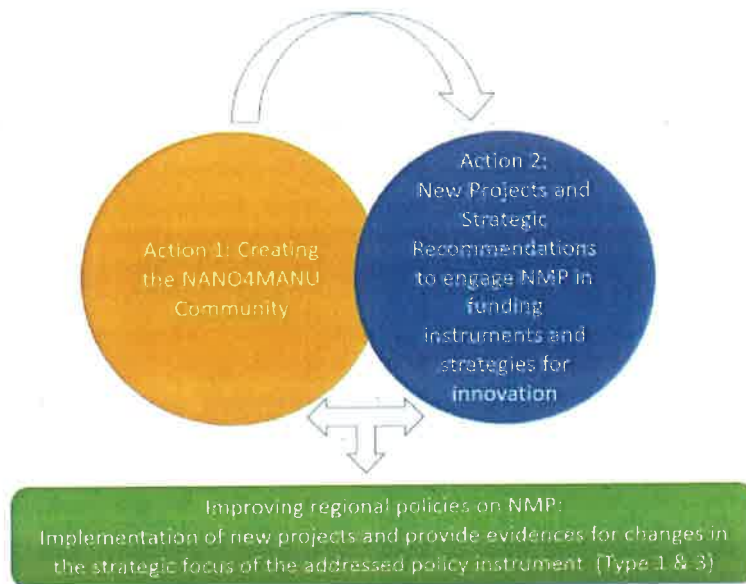
In ACTION 1 the focus is specifically on innovation delivery and we put the basis to fulfil *implementation of new projects* (Type 1) improving the National Strategy for Research, Development and Innovation 2014-2020.

ACTION 2

New Projects and Strategic Recommendations to engage NMP in funding instruments and strategies for innovation namely by involving in the consultations for designing the funding instruments and strategies for innovation and by developing new project proposals and capitalising on their results. **In ACTION 2 the focus is on NMP** policies and we aim to *provide evidences for changes in the strategic focus of the addressed policy instrument (improvement type 3)* by offering multi-institutional learning framework supporting open innovation.

Figure 1, below, shows the connection between this two actions:

Figure 1: How the Actions interrelate



Part IV –Details of the Actions Envisaged

This section presents the identified actions.

For each action there is an identification of the needs it addresses, the policy improvement it aims for, the lessons from the project supporting it, and of its activities, players, timeframe and costs.

ACTION 1

Building a nanotechnology, nanomaterials and advanced materials community – NANO4MANU

OVERVIEW of the proposed policy improvement

The National Strategy for Research, Development and Innovation 2014-2020 (SNCDI 2014-2020) supports the role of research, development and innovation as economic growth engine and it aims to connect Romania to the new priorities of science and technology set in Europe 2020 strategy and in Horizon 2020. This establishes the national smart specialization (S3) priorities, which are applicable also to Bucharest-Ilfov in the absence of a regional strategy for smart specialisation. In this context, this Action Plan proposes actions to better advance the implementation of the strategy by capitalising on the regional assets and opportunities for science-industry cooperation.

Thus, the policy improvement refers to ways of engaging actors in academia/research and private sector around nano-technologies and new materials (NMP), one of the S3 domains in Romania and also in Bucharest-Ilfov, by creating a community of connected experts and knowledge spill over which will lead to implementation of new projects (improvement type 1) and subsequently and to evidences for changes in the strategic focus of the policy instrument in the current and/or next programming period (improvement type 3).

The community building will respond to the challenge related to the lack of cooperation between science and industry which was identified by the regional stakeholder as a main barrier in developing collaborative innovation projects. By improving the knowledge of stakeholders about nanotech - innovation ecosystem and by offering them access to a dedicated space for dialogue and cooperation, the process of developing new projects will be stimulated leading in turn to the development of new project applications (Activity 2 of Action 2) under the new calls of Sub-programme 2.1 of the National Plan for Research, Development and Innovation 2015-2020 (PNCDI III) through which the SNCDI 2014-2020 is implemented.

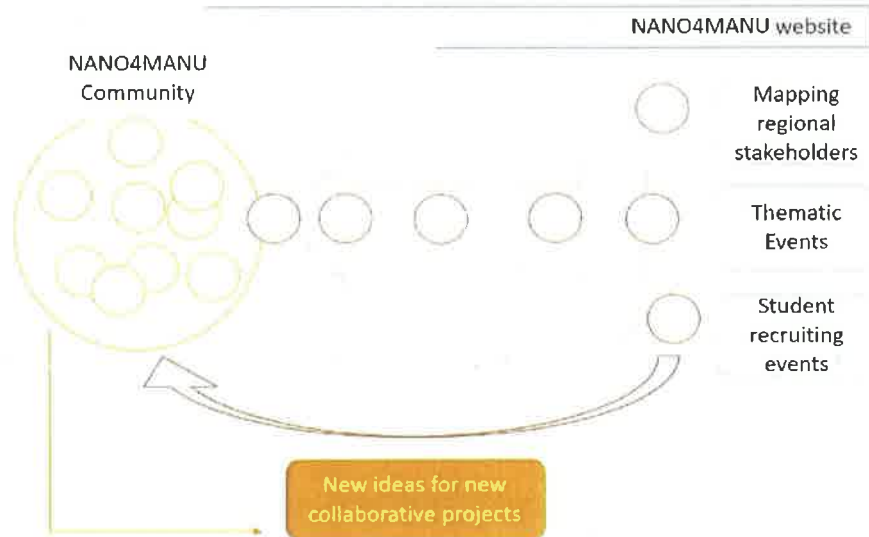


Figure 2: Rationale of Action 1

Inspiration from NMP-REG: The good practices exchanged during NMP-REG stand at the basis of the Action Plan. Starting from the needs identified together within the project partnership, we reviewed the good practice examples in the partner regions as well as the results of the exchange sessions between partners, with focus on policies and mechanisms for supporting innovation. The good practice examples considered relevant for the current action include the following:

- Industry driven research programming in Strategic Research Centres (Flanders), due to its potential to foster the collaboration between researchers and industry
- ICON project programme (Flanders), due to its role to stimulate SMEs to engage in R&D&I;
- Collective Efficiency Strategies – Clusters (Norte), having in mind its mission to encourage cooperation and networking between companies and other actors;
- Regional Innovation Poles / Technological Districts, due to its capacity to enhance SMEs' access to innovation.

All these three good practices showed that a well organised framework for cooperation and the availability of practical guidance and tools to organise cooperation helps regional actors in realising cooperation in order to stimulate innovation and growth. Thus, the development of the action is based on a market pull approach supporting measures, dedicated instruments (for monitoring too), project analysis and selection, information and on science-industry cooperation and on science-business and cross-sectorial cooperation.

Chance to see this implemented

NMP-REG regional partners started the design of concept for the platform and the community in Phase 1, more specifically in January 2019, benefiting from the support of the regional stakeholders which acknowledged the Action and engaged to support and to engage in the development of the community. In addition, University Politehnica of

Bucharest, through the Faculty of Material Science and Engineering, which is one of the NMP-REG partners, assumes the ownership of the platform and of managing the community, integrating it in its portfolio.

NEEDS addressed

A number of studies indicate the lack of cooperation between the business sector and the research environment as a major challenge to innovation in Romania. According to the latest RIO Country Report for Romania (2018), although the business sector shows signs of increasing interest in innovation, there is a low level of science-business collaboration and a weak commercialisation of public research results. Goschin et al. (2015) list fragmentation, combined with very weak links between education, research and the business sector, as the key problem of the Romanian research and development (R&D) system.

The European Commission (2018) reports that the business sector in Romania lacks interest in developing R&D activities, the number of business enterprise researchers per thousand labour force (0.48) being almost eight times lower than the EU average (3.73). In this context, the European Commission recommends “better support for academia-business partnerships and knowledge-sharing”.

Bucharest-Ilfov is Romania’s most developed region and concentrates more than 50% of the country’s R&D expenditures. Although it outperforms the rest of the regions in terms of research and innovation, science-industry collaboration remains modest. According to a report prepared by International Bank for Reconstruction and Development (IBRD) and the World Bank (2018), researchers rarely benefit from incentives to patent or commercialize. Moreover, the number and quality of services provided by the technology transfer organizations is low, and the financial schemes to support joint research projects are limited.

The need for a more effective and efficient science-industry collaboration is also present in the NMP field. In fact, during the regional NMP-REG Stakeholder Engagement workshops, regional innovation actors active in the field of NMP highlighted the lack of cooperation between SMEs and research institutions. The main reasons for this situation are: lack of a coherent communication framework for cooperation, lack of knowledge about the work of other actors in the same domain, low mutual trust between the stakeholders, legal issues for the results of cooperation projects (ex. IPR of a joint developed product). The lack of cooperation identified by the stakeholders represents a barrier that hinders the development of new projects not only under European calls, but also using national funding instruments.

The issue is the more stringent as nowadays industry–research collaborations are viewed as key factors for economic growth, business development and bringing research results on market, at the level of Bucharest-Ilfov region, there is a need to stimulate science-industry cooperation and to promote the involvement of SMEs in collaborative innovation delivery projects to prevent the challenges most frequently mentioned by the stakeholders: lack of cooperation between

research organizations and industry, need to foster partnerships and R&D joint actions in order to increase the competitiveness of the Romanian economy, need to support a match-making dimension.

Last but not least, during the NMP-REG regional workshops, stakeholders from Bucharest-Ilfov highlighted the need to create a "club" consisting of firms, universities, research institutes and business support organizations to promote mutual dialogue and knowledge in order to develop new collaborative projects.

References:

- European Commission (2018) *RIO Country Report for Romania 2017* - <https://rio.jrc.ec.europa.eu/en/library/rio-country-report-romania-2017>, accessed October 31st 2018
- European Commission (2018) *Country profile for Research and Innovation Performance*, http://ec.europa.eu/research/horizon2020/index_en.cfm?pg=country-profiles-detail&ctry=romania, accessed October 31st 2018
- Goschin, Z., Sandu, S., Goschin G.G. (2015) *How Soon Could Romania Close the R&D Gaps against EU-28?* Procedia Economics and Finance, Volume 22, Pages 160-167
- World Bank Group (2018) - *Romania Laser Valley: Development Scenarios*, <http://documents.worldbank.org/curated/en/256941536849942461/pdf/129914-WP-P162373-Romania-Developing-Scenarios.pdf>, accessed October 31st 2018

Background

Policy context and regional inputs

Regional / National input

The context in which the current policy improvement emerged comes from the following:

- the Investment Priority 1b within the Thematic Objective 1 of the Competitiveness Operational Program 2014-2020 of Romania states there is a need for promoting investments in RDI as well as in developing links and synergies between companies, RDI centers and universities
- evaluation by the EC of ex-ante conditionalities for T.01.1- Research and Innovation highlights the need to take measures for improving the efficiency of the entrepreneurial discovery process and for integrating RDI system in the national economy
- former regional studies (eDIGIREGION, 2017 - A Good Practice Guide For Performing Regional Innovation Benchmark Audits, Oak Tree press) underlined the lack of cooperation between science and industry as a main challenges for regional development and

	<p>confirmed the potential of nanotechnology to be a regional smart specialization domain</p> <p>Recent reports (e.g. RIO Country Report Romania 2017, Country profile for Research and Innovation Performance) highlight the fact that Romania is characterised by a low level of science-business collaboration and a weak commercialisation of public research results.</p>
<p>Interregional inputs</p>	<p>The NMP-REG input comes from two directions: one is related to the input collected from stakeholders from Bucharest-Ilfov, while the other is related to lessons learnt from interregional cooperation.</p> <p>1. Input from stakeholders engaged in NMP-REG project underlined the following challenges:</p> <ul style="list-style-type: none"> ● ACADEMIA/RESEARCH <ul style="list-style-type: none"> - difficulties in cooperating with industry to prove the efficiency and the effectiveness of their research products and facilities - low public awareness of the potential and importance of nanomaterials and nanotechnology - difficulties in proving the added value of the products developed in laboratory - difficulties in stimulating the interest of companies to access research services - lack of interest of companies to buy products resulting from research - materials and infrastructure are expensive - lack of trust for transferring technology from joint research-industry projects ● COMPANIES <ul style="list-style-type: none"> - lack of knowledge about university/research facilities and activities - low level of trust between companies activating in the same field of activity - doubts about the quality of the research work - brain drain - reluctance of research sector to business approach - lack of funds to invest in innovation

2. Input from lessons learnt from interregional cooperation. The good practices exchanged during NMP-REG stand at the basis of the Action Plan. Starting from the needs identified together within the project partnership, we reviewed the good practice examples in the partner regions as well as the results of the exchange sessions between partners, with focus on policies and mechanisms for supporting innovation. The good practice examples considered relevant for the current action include the following:

- Industry driven research programming in Strategic Research Centres (Flanders), due to its potential to foster the collaboration between researchers and industry. This good practice is about developing a portfolio of projects. The main success factors³ for implementing this good practice are: no single party or group of parties should be dominant in the decision processes (e.g. industry vs. academia) | not only parties that are already directly involved in the existing or future project portfolio should be involved. Also other interested parties and visionaries from both industry and academia need to be heard | stakeholders should feel comfortable to express their opinions freely. Procedures and communication channels should be put in place not to stigmatise the parties bringing negative advice. Taking into consideration the specificities of Bucharest-Ilfov region and in order to prepare the background for implementing this good practice, in the current Action Plan we made the first step, i.e. we create the community which is the base for gathering developing new projects and for developing a research roadmap and a portfolio of projects and also, through this, we assure that we fulfill the conditions for success. The community is more than a group of stakeholders, it is focused on engagements and cooperative relationship and in encouraging knowledge sharing and the development of a learning environment⁴. Thus, by developing a community we assure that (a) all group parties will be involved in the innovation and decision process; (b) the stakeholders have a dedicated place to express their opinions and to work while feeling comfortable and safe – specifically, we respond to the need of putting in place “procedures and communication channels (...) not to stigmatise the parties bringing negative advice”. Through Action 1 we work to make these a reality for the stakeholders active in NMP in Bucharest-Ilfov.

³ <https://www.interregeurope.eu/policylearning/good-practices/item/523/industry-driven-research-programming-in-strategic-research-centres/>

⁴ http://www.weknow.ch/marco/A2002/Rome02/Slides_021106.pdf

- ICON project programme (Flanders), due to its role to stimulate SMEs to engage in research, development and innovation; This good practice refers to cooperation projects between companies and research organisations, coupling the industrial R&D of the companies with the strategic basic research of the knowledge organisations within a single project. The potential for learning of transfer states that:

“the ICON project has a very multi-disciplinary approach: provide a framework where different stakeholders along the value chain, with complementary skills and knowledge, can work together and develop new knowledge to the benefit of the NMP-sector”⁵.

Through Action 1, we work to develop a community and, though the spill over around it, new collaborative projects. In this way, we adapt this good practice to local specificities and prepare the steps to implement it in Bucharest-Ilfov. The NANO4MANU community which will be developed represents the “framework where different stakeholders along the value chain, with complementary skills and knowledge, can work together and develop new knowledge to the benefit of the NMP-sector” mentioned about in the paragraph referring to the potential for transfer.

- Collective Efficiency Strategies – Clusters (Norte), having in mind its mission to encourage cooperation and networking between companies and other actors. The main goals of this good practice⁶ (to foster linkages among relevant players in the national or regional innovation system | to encourage ambitious collaborative R&D and innovation initiatives with an international scope; |to leverage behavioural change in the industries, fields or regions concerned) inspired the objectives of Action 1 of our Action Plan which are developed in the same spirit. Also, the community created in Action 1 will allow the identification of clusters of nodes in the innovation systems (e.g. medical practitioners working with NMP; textile practitioners working with NMP)
- Regional Innovation Poles / Technological Districts, due to its capacity to enhance SMEs’ access to innovation⁷. This good practice inspired Action 1 as it offers a response to a regional need identified during the semestrial stakeholder group workshops in Bucharest

⁵ <https://www.interregeurope.eu/policylearning/good-practices/item/522/icon-project-programme/>

⁶ <https://www.interregeurope.eu/policylearning/good-practices/item/445/collective-efficiency-strategies-clusters-technology-competitiveness-poles-and-other-clusters/>

⁷ <https://www.interregeurope.eu/policylearning/good-practices/item/147/regional-innovation-poles-technological-districts/>

Ilfov, which is offering support to business by the research organisations. The community will create the necessary linkages between research and industry as a first step in setting up new research collaborations between the two parties.

All these three good practices showed that a well organised framework for cooperation and the availability of practical guidance and tools to organise cooperation helps regional actors in realising cooperation in order to stimulate innovation and growth.

Moreover, the input from the interregional project activities was used for the development of Action 1. For example, during the debates during the Exchange Group 6: Science-Industry Cooperation we learnt about how to improve environment and incentives for collaboration within triple helix, especially with research organisations and less innovative companies. Among the lessons learnt we can mention “infrastructure sharing initiatives” and “collaboration involving local innovation clusters”. For Action 1, we merged these and we included them under the general framework of developing a community, the NANO4MANU platform including also information about the infrastructure and services which can be provided by the research organisations and the needs of the enterprises. Furthermore, the study visit held at CITEVE - Technological Centre for the Textile and Clothing Industries of Portugal during the NMP REG – 3rd Interregional Learning Event in Braga / Porto, between 24th – 25th January 2017, showed the importance of assuring a framework for stakeholder to engage and to commit to fostering the cooperation of research with industry and for fast nanotechnology incorporation into the industry. This lesson was also used as input for elaborating the Action 1.

Thus, the development of the Action 1 is based on a market pull approach supporting measures, dedicated instruments (for monitoring too), project analysis and selection, information and on science-industry cooperation and on science-business and cross-sectorial cooperation.

Specific ACTIVITIES

Activity Number	Activity Description
1	Creating and implementing a web platform that will bring together researchers and practitioners from business, public and non-governmental entities. This will be a facilitating platform for the integration and promotion of nanomaterials and

	<p>nanotechnology, starting at regional and further extending to national and even interregional levels.</p> <p>The platform represents the very essence of the knowledge community, providing a virtual space for science-industry collaboration in the field of nanomaterials and nanotechnology.</p> <p>The development of the web platform concept started in Phase 1, in January 2019, but the effective creation and its implementation will be in Phase 2.</p> <p>This is an initiative coordinated by the University Politehnica of Bucharest, partner in NMP-REG project, who decided to integrate it into the tools of the Faculty of Material Science and Engineering. UEFISCDI, the second regional partner, offers support in implementation. The platform is a unique initiative in the field of NMP, not only at regional, but also at national level, following the one-stop shop portal model, aiming to build a community of actors active in nanomaterial and nanotechnology at regional and also at national level. The rationale for setting up this platform is: (a) to offer a framework for cooperation between the relevant stakeholders and (b) to facilitate access to information about the dynamic of the ecosystem around NMP at regional level. The information available on the platform will be focused on: what is NMP, mapping the knowledge providers, information on academic and research opportunities and recent news in the field. A special feature refers to a tool of promoting the competences and the projects of each stakeholder and of looking for partners. The value of the platform lies in increasing the knowledge about the regional NMP capacities and the awareness about the actors active in the field at national and regional level, as well as in making easier for stakeholders to identify new partners and to promote their activities.</p>
2	<p>Mapping the regional knowledge providers for NMP – a desk research will be carried out to identify regional, but also national knowledge providers in the NMP field, public or private. The desk research will be followed by discussions with regional stakeholders in order to promote the competences existing in the field of nanomaterials and nanotechnology at regional and national level and to approach new comers in the field to have an updated overview over the available competences. The mapping will gather information including the following chapters: Region, County, City, Type, Name, Main Domain, Secondary Domains, Competences/ Infrastructure, Geographic coordinates (Latitude, Longitude), Street, Contact person, Email, Website</p> <p>The results of the mapping process will be a database and an online map, using the model of the Business Facilitators Map developed by UEFISCDI in The Romanian Entrepreneurship Ecosystem. An Exploratory study , published in 2015 and available here: http://ree.uefiscdi.ro/business-facilitators/</p> <p>This will be integrated in the web platform created in Activity 1.</p>

3	<p>Organizing thematic events. Following the mapping process and exploiting the experience and the knowledge of University Politehnica of Bucharest, the coordinator of the Action 1, a series of networking events will be organized with the support of the stakeholders - members of the community created in Activity 1, with the aim of fostering collaboration between the regional knowledge providers in the NMP field and business representatives. These will be arranged as side-events, organized around large conferences and workshops, in order to increase the visibility and the opportunities for dialogue and cooperation. Two events envisaged are BIOMMEDD/BIOREMED and ROMAT. BIOMMEDD/BIOREMED (in even-numbered years is named BIOMMEDD and in odd-years is named BIOREMED) already had 8th editions, being organized annually by the Romanian Society of Biomaterials (www.srb.ro), stakeholder in NMP-REG project and supporter of this Action Plan, with the aim to bring together scientists from biomaterials, medical devices, and tissue engineering research with clinicians from medical fields to promote interdisciplinary research projects. For 2019, BIOREMED is planned to be held in Craiova, between 25 and 27 of September. ROMAT, the International Conference on Materials Science and Technologies, already had 7 editions, being organized annually by the Faculty Materials Science and Engineering from University Politehnica of Bucharest with the aim to provide an opportunity for the worldwide materials science and engineering community to share their recent achievements and to provide a forum for academic scientists and industrial researchers to meet and exchange valuable experiences. The 2019 edition is planned to be held in late Autumn.</p> <p>Even if the community will be built starting from the stakeholder group in Phase 1, the content of the thematic events will be completely different. The topics approached will not be related to the good practices but to topics such as: innovation systems, projects, science-industry cooperation, issues that shape regional and national innovation agenda, macro-tendencies in the NMP field.</p> <p>The thematic side-events will exploit the benefits of the platform created in Activity 1 and will allow researchers and private actors to exchange and promote innovative ideas, to search for potential partners, to develop future projects and ultimately to generate synergies between their work, nanomaterials and nanotechnology being a vertical domain.</p> <p>Four events are envisaged to be organized in Phase 2.</p>
4	<p>Student-recruiting events in partnership with the industry. Bridging the gap between academia and the business sector also means fostering the transfer of talent from universities towards industry.</p> <p>The action is inspired by the interregional exchange process. The results of the analysis of regional situation of partners, presented in the “NMP-REG report on requirements</p>

for delivering Nanotechnologies, advanced Materials and Production (NMP) to regional manufacturing, showed that:

“Skills: NMPs are highly innovative field of applied science with a huge potential for application in production processes both in traditional sectors and innovative or science-driven sectors. Training and life-long learning of researchers and staff involved in innovation and in production processes in enterprises is essential to facilitate integration of NMP solutions into production processes. There is a latent demand in companies for additional qualification in NMP, in particular in the field of nanotechnologies. Companies often refer to a mismatch between university education and companies’ specific needs in the area of nanotechnology”

Starting from this and from the needs identified by the regional stakeholders in terms of adapting curricula to industry needs, we approached the topics of how the curricula can be adapted and how the process of matchmaking between enterprises and research institutes can start during: (a) the Participative Workshop on Innovation Delivery of NMP to Manufacturing and the Study visit to the Centre for Surface Science and Nanotechnology and to the Company SANIMED INTERNATIONAL IMPEX held during the second interregional learning event of the NMP-REG project (Bucharest, 7th-8th September 2016) and (b) the bilateral exchanges with ASEV on December 2017 and with INL, Norte and FI&E on June 2018. Among the results of debates and discussion, the proposal of adopting soft support measures emerged. For example, in Tuscany there are some specific workshops and thematic seminars offering a chance for businesses, researchers, knowledge institutes and intermediaries to meet new partners and exchange ideas in NMP. Specifically, for universities, these are mainly focused on research and innovation and aiming to support R2B and the launch of academic spin-offs.

During their studies, students learn how to develop research projects and their integration in industry from the period of their studies increase the probability of developing new research projects within the companies (for example they can implement their PhD thesis). Moreover, through this kind of events, universities collaborate with companies, contributing to fostering the dialogue among the two parties and for adapting the curricula to the industry needs. Also, students bring in the universities the practical experience and can start the development of new projects (for example for their thesis) which provide responses to the needs identified in the companies where they work. All these are different facets of developing new collaborative projects. To this aim, the partners will organise a series of events facilitating school-to-work and school-to-research transition. This will serve as basis for enlarging the critical mass of professionals activating in the NMP field and they will be part of the NANO4MANU community as this is open to all groups interest in innovation and NMP.

	Two events are envisaged to be organised in Phase 2
5	Brainstorming for new ideas for new project proposals on NMP topic. These ideas will be developed in concrete proposals which will be submitted, as part of Action 2, under the upcoming funding instruments of the National Plan for Research, Development and Innovation 2015-2020 (Programme 2: Increasing Romania's competitiveness through research, development and innovation) which implements the National Strategy for Research, Development and Innovation 2014-2020. Based on the dialogue and cooperation process developed as a result of the platform and the thematic events, the members of the community will organize themselves in working groups to identify new solutions and ideas for new project proposals. UPB and UEFISCDI will have the role of facilitators. The brainstorming process will be also supported by the section of the platform dedicated to "Find new ideas for projects".

Stakeholders involved	
Name of Organisation	Role in Action Plan Implementation
University Politehnica of Bucharest (UPB)	<p>UPB will act as coordinator. In this capacity, UPB will prepare, coordinate, monitor and evaluate the implementation of Action 1.</p> <p>Its responsibilities includes, but are not limited to:</p> <ul style="list-style-type: none"> - Co-found and develop the NANO4MED community - Design and implement the web-platform - Keep the platform updated - Act as connection point between stakeholders - Ensure the good organization of the thematic and student recruitment events - Manage the mapping process of regional knowledge providers - Undertake the administrative tasks necessary for the implementation of the Action 1 - Maintain connection with NMP-REG Lead Partner and the entire consortium and with the Joint Secretariat <p>UPB will manage to fulfil other task that will appear during the implementation of Action 1.</p>
Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI)	<p>UEFISCDI will act as co-coordinator. In this capacity, UEFISCDI will share responsibilities with UPB in order to ensure the good implementation of Action 1.</p> <p>Its responsibilities includes, but are not limited to:</p>

	<ul style="list-style-type: none"> - Co-found and develop the NANO4MED community - Support the implementation of the web-platform - Offer input for web-platform content and update - Support the organization of the thematic events and student recruitment events - Contribute to the mapping process of knowledge providers - Support in the mapping of regional knowledge providers - Maintain connection with NMP-REG Lead Partner and the entire consortium and with the Joint Secretariat <p>UEFISCDI will also manage to fulfil other tasks stemming from the implementation of Action 1.</p>
Romanian Society for Biomaterials (SRB)	<p>Romanian Society for Biomaterials will act as a facilitator and member of the platform. In this capacity, it will support the implementation of Action 1.</p> <p>Its role is related to:</p> <ul style="list-style-type: none"> - Joining the community - Offering input, feedback and suggestions for content for the web-platform - Offering support in the mapping process of regional knowledge providers - Offering support in the organization of thematic events - Offering support in the organization of student recruitment events <p>Being a non-governmental organization and professional association, SRB will help UEFISCDI and UPB to reach a broader set of stakeholders and to attract new members in the community. From this perspective, we can consider SRB as having the role of an influencer. -</p>
ORTOVIT	<p>ORTOVIT will act as facilitator and member of the platform. In this capacity, it will support the implementation of Action 1,</p> <p>Its role is related to:</p> <ul style="list-style-type: none"> - Joining the community - Offering input, feedback and suggestions for content for the web-platform - Offering support in the mapping process of regional knowledge providers - Offering support in the organization of thematic events

	<ul style="list-style-type: none"> - Offering support in the organization of student recruitment events <p>The ORTOVIT's role is also related to creating visibility and clarity around concrete applications of NMP in the industry.</p>
SANIMED	<p>SANIMED will act as a facilitator and member of the platform. In this capacity, it will support the implementation of Action 1,</p> <p>Its role is related to:</p> <ul style="list-style-type: none"> - Joining the community - Offering input, feedback and suggestions for content for the web-platform - Offering support in the mapping process of regional knowledge providers - Offering support in the organization of thematic events - Offering support in the organization of student recruitment events <p>SANIMED's role is also related to creating visibility and clarity around concrete applications of NMP in the industry.</p>
MGM CONSTRUCT	<p>MGM CONSTRUCT will act as a facilitator and member of the platform. In this capacity, it will support the implementation of Action 1,</p> <p>Its role is related to:</p> <ul style="list-style-type: none"> - Joining the community - Offering input, feedback and suggestions for content for the web-platform - Offering support in the mapping process of regional knowledge providers - Offering support in the organization of thematic events - Offering support in the organization of student recruitment events <p>The MGM CONSTRUCT's role is also related to creating visibility and clarity around concrete applications of NMP in the industry.</p>
Electronic Innovation CLUSter (ELINCLUS)	<p>ELINCLUS will act as a facilitator and member of the platform. In this capacity, it will support the implementation of Action 1,</p> <p>Its role is related to:</p> <ul style="list-style-type: none"> - Joining the community - Offering input, feedback and suggestions for content for the web-platform

	<ul style="list-style-type: none"> - Offering support in the mapping process of regional knowledge providers - Offering support in the organization of thematic events - Offering support in the organization of student recruitment events <p>Being a cluster, ELINCLUS will help UEFISCDI and UPB to reach a broader set of stakeholders and to attract new members in the community. From this perspective, we can consider ELINCLUS as also having the role of an influencer.</p>
<p>National Institute for Research and Development in Microtechnologies (IMT-Bucharest)</p>	<p>IMT-Bucharest will act as a facilitator and member of the platform. In this capacity, it will support the implementation of Action 1, Its role is related to:</p> <ul style="list-style-type: none"> - Joining the community - Offering input, feedback and suggestions for content for the web-platform - Offering support in the mapping process of regional knowledge providers - Offering support in the organization of thematic events - Offering support in the organization of student recruitment events <p>Being a research institute, IMT-Bucharest will also have the role of knowledge provider.</p>

Risk and Contingency Plans		
Description of Risk	Level of probability (High, Medium, Low)	Description of Contingency Plan
<p>Lack of data necessary for completing the mapping of knowledge providers as NMP is a vertical domain</p>	<p>Low</p>	<p>Apart from the desk research, the mapping process also involves interviews with the regional stakeholders, part of the community, who will be asked to indicate and provide basic data on other NMP knowledge providers.</p>
<p>Reduced participation of both knowledge providers and</p>	<p>Low</p>	<p>The results of the mapping process will also be used as inputs for the thematic events. Thus, providers identified through mapping will also be</p>

industry representatives at the thematic events		invited to the networking events. Moreover, in order to ensure optimal participation, the events will be disseminated through each partner's network of contacts. Last but not least, the events will benefit from the support of the UPB's community which is active in knowledge and networking events. In this context, the events will be organized as side-events of already acknowledged conferences to increase the visibility and the opportunities for attending the events.
Students' low level of interest for taking part in the recruitment events	Low	The opportunities deriving from taking part in the event will be disseminated directly through the University Politehnica of Bucharest. Moreover, the organizers will make use of social media channels attractive for the young generations.
Funding resources	Medium	The activities included in Action 1 are envisaged to benefit from the experiences of the stakeholders in the community and from the leadership of UPB. As the Platform will be part of the tools of the Faculty of Material Science and Engineering of the University Politehnica of Bucharest, it will benefit from academic resources to be developed and implemented. Moreover, the events envisaged, will enjoy the support of local stakeholders, as they committed during the development of this Action Plan.

Timeframe	
Activity Number	Time period
A1. Creating and implementing the NANO4MANU web-platform and keeping it updated	<p>The web platform will be launched in the first three months of Phase 2 – 1/04/2019- 30/06/2019.</p> <p>The platform will be regularly updated during the whole Phase 2, till 31/03/2019.</p> <p>The integration of the platform among the tools of the Faculty of Material Science and Engineering of</p>

	the University Politehnica of Bucharest will assure the sustainability of the platform after project lifetime.
A2. Mapping the regional knowledge providers	01/04/2019 – 31/08/2019
A3. Organizing thematic events	01/09/2019 – 31/03/2021
A4. Organizing student recruitment events in partnership with the industry	01/04/2019 – 31/03/2021
A5. Brainstorming new ideas for new project proposals	01/07/2019 - 31/03/2021

Costs and funding sources

The main categories of expenses incurred with the implementation of the action are:

Action	Categories of costs	Estimated amount
A1. Create the web platform	Defining the set of specifications	EUR 2.500 EUR 2.500
	Web design	EUR 15.000
	Developing and maintenance of the platform	EUR 30.000
	Data collection and updating the platform	
A2. Mapping the regional knowledge providers	Personnel costs (min. 2 persons)	EUR 5.000
A3. Organizing thematic events	Costs with specific services for event planning and implementation (e.g. conference room and facilities, catering)	EUR 5.000/ event * 4 events = EUR 20.000
	Personnel costs (min. 2 persons)	EUR 5.000
A4. Organizing student recruitment events	Costs with specific services for event planning and	EUR 5.000/ event * 4 events = EUR 20.000

	implementation, promotion materials	
	Personnel costs (min. 2 persons)	EUR 5.000/ event * 2 events = EUR 10.000
A5. Brainstorming for new ideas for new project proposals	Costs related to catering for meetings	Depending on the number of participants

The funding sources for implementing Action 1 include:

- In-kind contribution of NMP-REG partners
- Stakeholder support (e.g. providing content for the website, partnership for events etc.)
- Integration of Activity 1 in the UPB's strategy: the NANO4MANU community will become part of the Faculty of Material Science and Engineering of UPB features.

Even if the Action is dedicated to influence the National Strategy for Research, Development and Innovation 2014-2020, there are no funds available under the instrument implementing the strategy, i.e. the National Plan for Research, Development and Innovation 2015-2020, for supporting this action. The implementation of this Action will not benefit from a dedicated budget, but the costs for its proper implementation will be assured, as was mentioned above, by in-kind contribution of NMP-REG regional partners, UPB & UEFISCDI, and with the stakeholders support (e.g. provision of relevant goods and services, non-monetary support).

The Activity 1 has additional impact on new calls. Our target is to have 5 collaborative innovation project applications submitted under national calls as results on both Actions 1 and 2. As the amounts offered through the funding instruments vary between EUR 10.000 (e.g. Innovation Vouchers) and EUR 350.000 (Project for transfer to economic operator), we estimated to influence, through the framework created and new ideas proposed, around EUR 150.000-200.000.

Monitoring

Monitoring tools (description of the tools and how they will be applied)

The information and data for monitoring can be obtain using:

- Survey: this will used for qualitative measurements and this will be applied both online and offline
- Attendance lists: this will be used to measure the number of attendees (quantitative measurement)
- Statistics indicators: this will be used to measure the effectiveness of actors (quantitative measurement)
- Records: this will be used to measure the effectiveness of actions (quantitative measurement)

<p>Indicators / target amounts and Means of Verification (add as many lines as necessary)</p>	<p>The implementation of the action will be monitored throughout the proposed time-frame (2019-2021). A progress report will be elaborated on a yearly basis, measuring performance in relation to the following indicators:</p> <p>Output indicators</p> <ul style="list-style-type: none"> ● Number of maps of regional NMP knowledge providers drafted and reviewed: 1 ● Number of thematic events organized: 4 ● Number of student recruitment events organized: 2 ● Number of web platforms created and updated on a semestrial basis: 1 ● Number of new ideas for projects: 10 ● Number of participants from academia/ research: half of the total amount of participants ● Number of participants from business: half of the total amount of participants <p>Outcome indicators</p> <ul style="list-style-type: none"> ● Increased transparency of knowledge offer (qualitative): positive ● Contribution to new collaborations (qualitative): positive
	<p>Self-defined indicator (common for Action 1 and Action 2)</p> <p>Number of collaborative innovation project applications submitted under national calls: 5</p>

ACTION 2

New Collaborative Projects and Strategic Recommendations to engage NMP in funding instruments and strategies for innovation

OVERVIEW of the proposed policy improvement

This action is aimed to provide evidences for changes in the strategic focus of the addressed policy instrument (improvement type 3) by offering feedback and recommendations based on NMP-REG interregional learning process. These will be drawn from the process of developing new projects and this regional experience will be reflected in concrete policy recommendations for developing and improving the funding instruments for innovation. These recommendations will be used as following: firstly, they will be sent to the committees responsible for the design of the funding instruments for innovation under the National Plan for RDI 2014-2020; secondly, they will be concluded in a dedicated Catalogue -“Engage NMP Policy Brief Catalogue” which will serve as guide, but also as evidence for trying out new approaches, new partnerships and new ideas for the development of improved funding instruments and policies. Specifically, the members of the NMP-REG community developed in Action 1 will work to submit project proposals. Then, UEFISCDI and UPB will conduct an activity to monitor these proposals: if they are approved, we will monitor how the projects go and we will use the results as part of the Policy Brief catalogue. If the projects are not approved, we will evaluate why they were rejected and we will use the results for advice in the Catalogue.

Bucharest-Ilfov region, as the whole Romania, is characterised by a centrally planned innovation system. To respond to this top-down approach, this Action 2 is meant to contribute directly to the design of policies for innovation taking into consideration the need of “close communication with the intended recipients of innovation support” (ERBD, 2014).

In this sense, the regional NMP-REG partners (UPB & UEFISCDI), starting from the lessons learnt during the interregional learning experiences within NMP-REG and with the support of the members of NANO4MANU community plan to contribute in the process of designing funding instruments and strategies for innovation through: (a) policy recommendation documents and (b) active engagement in public consultations for the design of public instruments funding innovation. This action is different from the debates and engagement of stakeholders during Phase 1, as the focus now is on making concrete steps for influencing the regional policies. The recommendations and the policy briefs developed within this Action 2 will be submitted in the official public consultations for the funding instruments for RDI and the strategies for innovation which will be developed at national level during the period of NMP-REG Phase 2. This includes input to the funding instruments for RDI under the Programme of the National Plan for RDI 2015-2020 which implements the National Strategy for RDI 2014-2020 (in the current programming

period) and to the National Strategy for RDI post 2020 (the next programming period –longer term focus).

The main content to be transmitted through the policy recommendations would reflect the importance of keeping nanomaterials as a priority domain at national level and of introducing it as a smart specialisation also at regional level and will be the result of a concrete process of developing project proposals. In this way, this action will have double output: new projects approaching NMP will be developed and submitted and evidences for improving regional policies will be elaborated. Therefore, the impact of this Action is generating sustainable cooperation among the actors active in innovation which will extend nationally, resulting in a number of projects and policies developments and will mobilise regional stakeholder to play an active role in policy formulation and implementation.

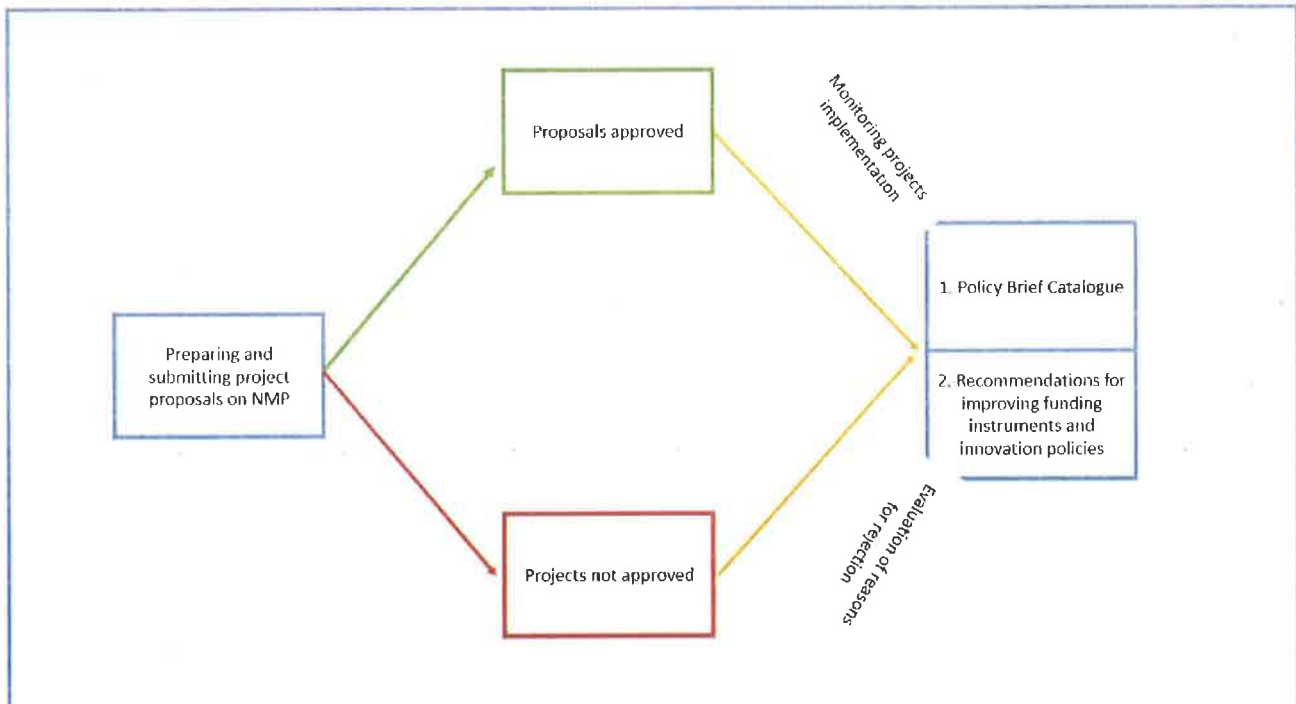
In long term, the evolution of this Action will put the basis of a multi-institutional learning environment which will turn into an open innovation process as the members of the NANO4MANU community and the policy makers will build a shared vision to implement common concrete measures for advancing NMP in projects and initiatives conducting to socio-economic development.

At the moment of updating this version of the Action Plan (May 2019), the Budget Law for 2019 is approved and new competitions under Sub-programme 2.1 of the PNCDI III are to be developed in accordance with the Government Decision no. 583/ 2015 regarding the Approval of the National Plan for RDI 2015-2020. This describes the composition of the programmes, the sub-programmes, the funding instruments and the types of projects associated to these. Currently (beginning of May 2019), the calls for “Bridge Grant” and “Experimental Demonstrative Project” funding instruments⁸ are in the phase of preparation. Once they will be in public consultation, the first policy recommendations can be developed as part of the Action 2 of the NMP-REG Action Plan. As the Government Decision no. 583/ 2015 is in force, this allows us to expect the development of additional new funding instruments and new calls for projects for 2019-2020. Moreover, the project addressing the development of the National Strategy for RDI post 2020 and the National Smart Specialization Strategy was approved few days ago and this is coordinating by the Ministry of Research and Innovation in Romania and UEFISCDI (NMP-REG PP7). This sets the ground for incorporating the results of the policy recommendations related to NMP in the next strategic documents.

Inspiration from NMP-REG: As with Action 1, The good practices exchanged during NMP-REG stand at the basis of the Action Plan. The good practice examples regarded as relevant for the current action include the following:

- Collective Efficiency Strategies – Clusters (including PRODUTECH – The Production Technology Cluster and HCP – Health Cluster Portugal) (Norte) – as these instruments could be used as a case study for developing strategies to encourage cooperation and networking among

⁸ <https://uefiscdi.gov.ro/p2-cresterea-competitivitatii-economiei-romanesti-prin-cdi>



companies and between companies and other relevant actors – educational and R&D institutions, training, technical assistance, business associations, etc.

- Mobilising R&TD Programmes - Support System for Scientific & Technological Research (Norte) - as it addresses the topic of funding co-promotion projects: cross-cutting, strategic R&D projects aimed at creating new products, processes or services with a strong technology and innovation component, which can have significant impacts at a multisectoral level, particularly by enabling the endogenization and exploitation of the developed technologies.
- Catalogue of qualified and advanced services for SMEs – as it represents a source of information for actors wishing to set up a process of innovation and it facilitates funding for innovation delivery (R2B actions, know-how exchange)

These three regional policies include features which can be adapted to Bucharest-Ilfov regional context. Thus, they will be used as starting points in designing the recommendations to shape the focus on NMP within the funding instruments for RDI under the Programme of the National Plan for RDI 2015-2020 which implements the National Strategy for RDI 2014-2020 (in the current programming period) and to anchor the NMP topic in a better way.

Figure 2: Rationale of Action 2

Chance to see this implemented

The chance to see Action 2 successfully implemented is high as the national budget for 2019 is approved and there are already in preparation two news calls for two national funding instruments (“Bridge Grant” and “Experimental Demonstrative Project”). According to the legislation, before their approval, a 30 days public

consultation should be launched. For this, policy recommendations will be developed and submitted within Action 2.

In terms of risks, UEFISCDI, partner in NMP-REG, even if is responsible with the managing part of the programmes of the National Plan for Research, Development and Innovation III which implements the National Strategy for Research, Development and Innovation 2014-2020 (the policy instrument addressed within NMP-REG), has no decision rights in relation to the strategic vision for the Romanian RDI sector (which is defined by the Ministry of Research and Innovation). Therefore, the success of this Action and the approval of the policy recommendations submitted depend on and the administrative decisions of the committee approving the instruments. To mitigate this risk, the Ministry of Research and Innovation which coordinates the approval of the instruments is engaged with NMP-REG and is part of the stakeholders involved. Also a letter of support for this Action Plan was provided (in Annex 1).

Generally, the implementation of Action 2 will benefit from the support of the community created within Action 1 and both NMP-REG regional partners, as well as the regional stakeholders will provide input when the calls and the strategic documents will be open for public consultation in order to anchor the NMP topic in a better way in the upcoming calls.

NEEDS addressed

The stakeholder engagement workshops held within NMP-REG project underlined there is a need for continuity in strategic planning process at both regional and national levels. The central idea pursued during the debates is that keeping strategic focus is essential for the emergence of clear competitive strengths and for having a realistic national and regional growth. Therefore, research and innovation investments should be made following the priorities set together with the researchers and practitioners, taking into account their interests, the local specificities and the European trends.

This proposal is in line with the international practices in designing policies supporting innovation as it is stated by European Bank for Reconstruction and Development (EBRD) (2014): “Continuity of innovation policies increases the private sector’s willingness to undertake risky investments with a long payback period. In addition, the results of innovation policies that depend on such investments may take a long time to materialise. At the same time, continuity needs to be

weighed against the need to evaluate policies, learn from past mistakes and redesign policies as the economy evolves”.

In this sense, the stakeholders underlined that nanomaterials, acknowledged as a key enabling technology at European level and identified as a national smart specialization domain in the National Strategy for Research, Development and Innovation 2014-2020, have the potential to contribute to economic development, being also a cross-domain, with multiple applications (i.e. medicine, transport, environment, automotive, clothes, etc.). Some key pillars for advancing this domain and for taking stock of its benefits includes: (a) setting it as a priority in public policies; (b) providing incentives and funds for conducting research and for integrating nanomaterials in the business processes; (c) monitoring and evaluating research results; (d) capitalizing on the research results; (e) understanding the complexity of nanomaterials; (f) ensuring continuity in legal framework once the priority was set; (g) ensuring proper investment (i.e. dedicated funding programme).

This is, in essence, the need for continuity of priorities to be funded for ensuring the stability of national development.

References:

European Bank for Reconstruction and Development (2014), Policies supporting innovation, TRANSITION REPORT 2014, <https://www.ebrd.com/downloads/research/transition/tr14e.pdf>

<u>Background</u>	
Policy context and regional inputs	<p>Input from stakeholders engaged in NMP-REG project underlined the following:</p> <ul style="list-style-type: none"> - there is a challenge related to low public awareness of the potential and importance of nanomaterials - RIS3 approach constitutes an appropriate incentive for concentrating funds for RDI in domains with high potential. In this sense, nanomaterials and nanotech could be transversal domains for some national priorities such as health, security etc. - due to low connection between science and industry, there is a need for a top-down approach related to the RDI priorities to be funded.
Interregional inputs	<p>Input from lessons learnt from interregional cooperation:</p> <p>The good practices exchanged during NMP-REG stand at the basis of the Action Plan. Starting from the needs identified together, we reviewed the good practice examples in the partner regions as well as the results</p>

	<p>of the exchange sessions between partners, with focus on policies and mechanisms for supporting innovation.</p> <p>The good practice examples regarded as relevant for the current action include the following:</p> <ul style="list-style-type: none"> • Collective Efficiency Strategies - Clusters (including PRODUTECH - The Production Technology Cluster and HCP - Health Cluster Portugal) (Norte) - as these instruments could be used as a case study for developing strategies to encourage cooperation and networking among companies and between companies and other relevant actors - educational and R&D institutions, training, technical assistance, business associations, etc. • Mobilising R&TD Programmes - Support System for Scientific & Technological Research (Norte) - as it addresses the topic of funding co-promotion projects: cross-cutting, strategic R&D projects aimed at creating new products, processes or services with a strong technology and innovation component, which can have significant impacts at a multisectoral level, particularly by enabling the endogenization and exploitation of the developed technologies. • Catalogue of qualified and advanced services for SMEs – as it represents a source of information for actors wishing to set up a process of innovation and it facilitates funding for innovation delivery (R2B actions, know-how exchange) <p>These three regional policies include features which can be adapted to Bucharest-Ilfov regional context. Thus, they will be used as starting points in designing the recommendations to shape the focus on NMP within the funding instruments for RDI under the Programme of the National Plan for RDI 2015-2020 which implements the National Strategy for RDI 2014-2020 (in the current programming period) and to anchor the NMP topic in a better way.</p>
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Specific ACTIVITIES	
Activity Number	Activity Description
1	<p>Monitoring the calendar of RDI policy design and engaging in public consultations on innovation funding instruments.</p> <p>Firstly, this activity is dedicated to monitor the research, development and innovation policy formulation process in order to find out the dates for public consultations and</p>

	<p>to actively engage in (1) developing project proposals and (2) debates on the funding instruments and provide input. This step of Activity 1 will be input for Activity 2. The task will be led by UEFISCDI in its quality of funding agency. The information will be transmitted to the members of the community through the platform developed in Action 1.</p> <p>Secondly, within this activity, the members of the NANO4MANU community created in Action 1, practitioners in the field of innovation, will formulate realistic and tailored made policy recommendations and position statements related to public policies instruments under public debate. The work will be focused on three dimensions:</p> <p>a) scanning current praxis of funding instruments for NMP at international level</p> <p>b) debating on how to integrate the good practices from NMP-REG projects into regional and national funding instruments and strategies</p> <p>c) based on a) and b), the consultations will offer feedback on the content of the upcoming calls under Programme 2 of the National Plan for RDI 2015-2020 which implements the National Strategy for RDI 2014-2020 (in the current programming period) and input for the National Strategy for RDI post 2020 (the next programming period).</p> <p>The work will be organised a) face to face - in the premises of UPB, UEFISCDI or in the offices of some of the community members, or b) online – via free video conference applications as for example Skype or GoToMeeting. According to the topic and the period, the members of the community will decide the best option to organise the working groups meetings.</p> <p>Each consultation will end with a report.</p> <p>Once the public consultation will be launched, both PP6 and PP7, UPB and UEFISCDI, will invite the NANO4MANU members to engage and will conduct the process of elaborating public recommendations which will be integrated and submitted by PP6, UPB.</p>
2	<p>Preparation of new project proposals on NMP – this activity refers to the development and submission of new project proposals on NMP which will be submitted under the national calls organised under National Plan for RDI 2014-2020. This activity will take stock of the results of Activity 5 of Action 1, developing the new ideas identified in concrete project applications. The proposals will be elaborated by the members of the NANO4MANU community which will meet in working groups to develop and submit new NMP initiatives. It is expected that working group activities will culminate in at least five submitted proposal. UPB and UEFISCDI will provide administrative and technical support to the proposal preparation and submission process.</p>

	<p>The aim of this activity is double folded: to elaborate concrete project proposals on NMP topic and to feed the Policy Brief Catalogue through the lessons learnt in the process of designing and submitting new proposals.</p>
3	<p>Monitoring the results of project proposals - this activity consists in monitoring the project proposals submitted as part of Activity 2: if they are approved, UEFISCDI and UPB will monitor the progress in their implementation and we will use the results as part of the Policy Brief catalogue. If these are not approved, we will evaluate why and we will use the results for providing advice and recommendation in the Catalogue.</p>
4	<p>The development of the “Engage NMP” Policy Brief Catalogue. The results of the activities 1, 2 and 3 held as part of Action 2 will be integrated in the “Engage NMP” Policy Brief Catalogue. This will include: the policy briefs submitted under public consultations, the lessons learnt from the process of developing and submitting new project proposals and the results of the monitoring progress implementation for the projects accepted or of the evaluation of rejection reasons.</p> <p>The Catalogue will facilitate the access of policy makers to tailored information on how to support NMP in different phases of policy design and implementation and will allow the actors active in innovation not only in Bucharest-Ilfov, but also at national level, to build a shared vision related to NMP development for the region and the country and to play an active role in developing policies fostering innovation.</p> <p>The “Engage NMP” Policy Brief Catalogue will be developed and disseminated with the support of the members of the community created in Action 1. The dissemination will be focused on two main categories of actors: public authorities responsible for innovation policies and general public interested in innovation. The dissemination to the entities responsible for innovation policies will be addressed at national level with the aim to explain the recommendations developed by the experts in the NANO4MANU community and the benefits that these recommendations can bring to innovation and competitiveness. Communication with these entities will be done through thematic working meetings between members of the NANO4MANU community and the representatives of public authorities responsible for innovation (ex. Ministry of Research and Innovation) organised at the initiatives of the members of the NANO4MANU community, through attendance of some members of the NANO4MANU community to public events and consultations organised by the public authorities and by official letter of information related to the development of the Catalogue (using email and post). The public authorities will be informed in relation with the Catalogue by early stage of its development as the Ministry of Research and Innovation provided a letter of support for this Action Plan and UPB & UEFISCDI will send regularly updates on its implementation and will engage some of its representatives in this work.</p> <p>To reach the general audience, the Catalogue will be published on the NANO4MANU website and also on the members of the community websites. Also, press release will</p>

be used as communication channel along with social medial pages of the NANO4MANU and e-newsletters sent by the community.

Stakeholders involved	
Name of Organisation	Role in Action Plan Implementation
University Politehnica of Bucharest	<p>UPB will act as coordinator. In this capacity, UPB will prepare, coordinate, monitor and evaluate the implementation of Action 2.</p> <p>Its responsibilities includes, but are not limited to:</p> <ul style="list-style-type: none"> - monitor the launch of funding instruments - inform the members of NANO4MANU community about the news related to the launch of funding instruments - initiate discussion related to the new funding instruments launched for public debate - create and coordinate the process of projects development with the members of NANO4MANU community - drafting the recommendations and position statements - sending the final version of recommendations and position statements to the managing authorities <p>UPB will manage to fulfil other task that will appear during the implementation of Action 2.</p>
UEFISCDI	<p>UEFISCDI will act as co-coordinator. In this capacity, UEFISCDI will share responsibilities with UPB in order to ensure the good implementation of Action 2.</p> <p>Its responsibilities includes, but are not limited to:</p> <ul style="list-style-type: none"> - monitor the launch of funding instruments - offer support in gathering the input for projects development - review documents consisting in recommendations and position statements - integrating all the input collected into the Catalogue <p>Moreover, UEFISCDI is responsible with the implementation of funding instruments under the Programme 2 “Increasing Romania’s competitiveness through research, development and innovation” of The National Plan for RDI 2015-2020 which implements the National Strategy for RDI 2014-2020.</p> <p>UEFISCDI will manage to fulfil other tasks that will appear during the implementation of Action 2.-</p>

<p>Ministry of Research and Innovation</p>	<p>The Ministry of Research and Innovation will act as receiver of policy recommendations and position statements.</p> <p>Due to its legal prerogatives, the Ministry will be in charge with the coordination and approval of funding instruments for innovation and of the National Strategy for Research, Development and Innovation post 2020.</p>
<p>Members of the NANO4MANU community created in Action 1</p>	<p>The members of NANO4MANU community will give a common vision on nanomaterials integration in national funding instruments.</p> <p>The members of the community will be involved in developing and submitting new proposals (applicants to the calls) to and they will elaborate policy recommendations and position statements for assuring not only the continuity of nanomaterials and nanotechnology as a priority domain at national level, but also for fostering its development. This is part of the official process of providing input to policy development and outside the public consultation period there are no possibilities for leveraging the full potential of stakeholders' opinions in the process of formulating public policies. Thus, the members of the community created in Action 1 will have a framework through Action 2 to make their voice heard on the NMP matters in the innovation debate at Romania's level.</p>

<p>Risk and Contingency Plans</p>		
<p>Description of Risk</p>	<p>Level of probability (High, Medium, Low)</p>	<p>Description of Contingency Plan</p>
<p>Project proposals in Activity 2 will not be funded</p>	<p>high</p>	<p>There are two points preventing this:</p> <p>1) the work done within the NANO4MANU community should raise the quality of proposals;</p> <p>2) if the proposals are not funded, the evaluation of these proposals will feed into the policy recommendations</p>

<p>Policy recommendations and position statements would not be integrated in the final version of funding instruments and/or strategies:</p> <p>UEFISCDI, partner in NMP-REG, even if responsible with managing part of the programmes of the National Plan for Research, Development and Innovation III which implements the National Strategy for Research, Development and Innovation 2014-2020 (the policy instrument addressed within NMP-REG), has no decision rights in relation to the strategic vision for the Romanian RDI sector (which is defined by the Ministry of Research and Innovation).</p> <p>Therefore, the success of this Action depends on the political and administrative decisions which are unknown at the moment of the Action Plan development.</p>	<p>medium</p>	<p>The implementation of Action 2 will benefit from the support of the community created within Action 1 and both NMP-REG regional partners, as well as the regional stakeholders will provide input when the calls and the strategic documents will be open for public consultation in order to anchor the NMP topic in a better way in the upcoming calls.</p>
<p>Funding resources</p>	<p>Low</p>	<p>The action benefited from the support of the stakeholders even from the design stage of this Action Plan and they indicated their interest in the development of sound funding instruments and policies for NMP.</p>

Timeframe	
Activity Number	Time period
1 Monitoring the calendar of RDI policy design and engaging in public consultations on innovation funding instruments.	The monitoring process will start in the beginning of Phase 2 and will continue till its end (01/04/2019 – 31/03/2021). Based on its results responses to public consultations calls will be provided. For preparing the input for the public consultations periods, this part of activity 1 will start with the process of the current praxis of funding instruments for NMP at international level and will continue with debates on how to integrate the good practices on NMP topic into regional and national funding instruments and strategies. Based on the results of the monitoring conducted in Activity 1, there will be working group sessions for offering feedback on the content of the upcoming funding instruments in the public consultations periods.
2 Preparation of new project proposals on NMP	The period for implementing Activity 2 is between 01/06/2019 and 31/03/2021. This will take into consideration of the timeframe of the calls which will be identified as part of Activity 1.
3 Monitoring the results of project proposals	The period for implementing Activity 3 is between 01/01/2020 and 31/03/2021. This will take into consideration of the timeframe of the evaluation of the proposals submitted within Activity 2.
4 The development of the “Engage NMP” Policy Brief Catalogue	The effective development of the Catalogue will be realized between 01/04/2020 – 31/03/2021. It will integrate the results of the work in Activities 1, 2 and 3.

Costs and funding sources		
For activities of Action 2, costs are related to personnel and administrative work.		
They include:		
Action	Categories of costs	Estimated amount
1 Monitoring the calendar of RDI policy design and engaging in public	Personnel costs (min. 3 person)	EUR 7.200

consultations on innovation funding instruments.	Costs for meetings (catering)	Around EUR 500/meeting
2 Developing project proposals	Personnel costs – for coordination (min 2 person)	EUR 5.000
	Costs for meetings (catering)	Around EUR 500/meeting
3 Monitoring of the results of the projects submitted	Personnel costs (min 3 person)	EUR 7.200
4 The development of the “Engage NMP” Policy Brief Catalogue	Personnel costs - min 3 person to edit the materials - experts costs	EUR 45.000
	Design costs	EUR 3.000

The funding sources for implementing Action 2 include:

- In-kind contribution of NMP-REG partners and of NANO4MANU’s members
- Stakeholder support (e.g. offering rooms for meetings of the working groups)

As in the case of Action 1, even if the Action 2 is dedicated to influence the National Strategy for Research, Development and Innovation 2014-2020, there are no funds available under the instrument implementing the strategy, i.e. the National Plan for Research, Development and Innovation 2015-2020, for supporting this action. The implementation of this Action will not benefit from a dedicated budget, but the costs for its proper implementation will be assured, as was mentioned above, by in-kind contribution of NMP-REG regional partners, UPB & UEFISCDI, and with the stakeholders support (e.g. provision of relevant goods and services, non-monetary support).

Monitoring



Monitoring tools (description of the tools and how they will be applied)



The information and data for monitoring can be obtain using:

- Survey: this will used for qualitative measurements and this will be applied both online and offline
- Attendance lists: this will be used to measure the number of attendees (quantitative measurement)
- Statistics indicators: this will be used to measure the effectiveness of actors (quantitative measurement)

	<ul style="list-style-type: none"> • Records: this will be used to measure the effectiveness of actions (quantitative measurement)
<p>Indicators / target amounts and Means of Verification (add as many lines as necessary)</p>	<p>The implementation of the action will be monitored throughout the proposed time-frame (2019-2021). A progress report will be elaborated at least once in the monitoring period, according to the launching time of the public consultation on innovation funding instruments and/or strategies , measuring the performance in relation to the following indicators:</p> <p>Output indicators</p> <ul style="list-style-type: none"> - Number of experts attending the working groups for consultations and project development: 50 - Number of Policy Briefs included in the Catalogue: 3 - Number of monitoring reports for projects submitted: 1 -Number of Catalogues: 1 -Involvement of women in science: share of women attending consultations and participating in policy briefs development (10%) <p>Outcome indicators</p> <ul style="list-style-type: none"> - Degree of involvement of specialists in policy briefs development: qualitative measurement through survey - Level of awareness related to the funding instruments for innovation: qualitative measurement through survey - Access of women in science: qualitative measurement through survey - Number of policy recommendations approved and integrated in the policy instruments: quantitative measurement <p>Self-defined indicator:</p> <p>Self-defined indicator (common for Action 1 and Action 2)</p> <p>Number of collaborative innovation project applications submitted under national calls: 5</p>

Official Signatures

Date:	18/07/2019
Organization (Romanian)	Unitatea Executiva pentru Finantarea Invatamantului Superior, a Cercetarii, Dezvoltarii si Inovarii (UEFISCDI)
Organization (English)	Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI)
Name	Adrian CURAJ, General Director
Stamp and signature	 

Date:	18/07.2019
Organization (Romanian)	Universitatea Politehnica din Bucuresti - Facultatea de Știința și Ingineria Materialelor
Organization (English)	University Politehnica of Bucharest (UPB) – Faculty of Material Science and Engineering
Name	Prof.dr.ing. Mircea Ionuț PETRESCU, Dean
Stamp and signature	 



Letter of endorsement from the Ministry of Research and Innovation, Romania

Project acronym	NMP-REG
Project title	Delivering Nanotechnologies, advanced Materials and Production to REGIONal manufacturing
Name of the organisation (original) including department (if relevant)	Unitatea Executiva pentru Finantarea Invatamantului Superior, a Cercetarii, Dezvoltarii si Inovarii (UEFISCDI) Universitatea Politehnica din Bucuresti - Facultatea de Ştiinţa şi Ingineria Materialelor
Name of the organisation (English) including department (if relevant)	Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI) University Politehnica of Bucharest (UPB) – Faculty of Material Science and Engineering
Name of the policy instrument addressed (original)	Strategia Nationala pentru Cercetare, Dezvoltare si Inovare 2014-2020 (SNCDI 2014-2020)
Name of the policy instrument addressed (English)	National Strategy for Research, Development and Innovation 2014-2020 (SNCDI 2014-2020)
Name of partner(s) concerned in the application form (English)	Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI) University Politehnica of Bucharest (UPB) – Faculty of Material Science and Engineering

We hereby confirm:

- that we support the Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI) and the University Politehnica of Bucharest (UPB) – Faculty of Material Science and Engineering as NMP-REG Partners in Bucharest-Ifov
- that the topic tackled by this project is in line with our organization's policy and National Strategy for Research, Development and Innovation 2014-2020 (SNCDI 2014-2020)
- that the Action Plan results and brings together the contributions of all the stakeholders involved and represents a useful working tool to be implemented for fostering the implementation of the SNCDI 2014-2020
- that for these reasons we endorse the Action Plan submitted by UEFISCDI and UPB in the context of the INTERREG EUROPE project NMP-REG.

Sincerely yours,

Name of signatory	VIOREL VULTURESCU
Position of signatory	Director, Department of European and International Relations, Ministry of Research and Innovation
Date	19.07.2019
Signature and institution stamp	 