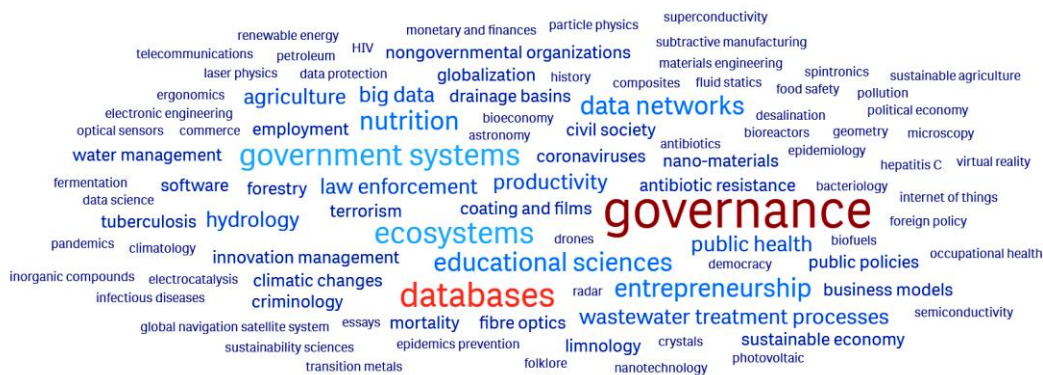


Ex-Post Evaluation of the Republic of Moldova Participation in the EU Framework Programme for Research and Innovation HORIZON 2020 (2014-2020)

Written by Dr. Lidia Romanciuc

Under the initiative of the National Agency for Research and Development



H2020 Signed Grants with participation of the Republic of Moldova by EuroSciVoc Concept
(<https://webgate.ec.europa.eu/dashboard/sense/app/98dcd94d-ca66-4ce0-865b-48ffe7f19f35/sheet/erUXRa/state/analysis>)

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LIST OF ABBREVIATIONS

AC – Associated Country to the EU Framework Programmes
ASM – Academy of Sciences of Moldova
Charter and Code - European Charter for Researchers and a Code of Conduct for the Recruitment of Researchers
CIP – Centre of International Projects, Academy of Sciences of Moldova
Code S&I – Code on Science and Innovation of the Republic of Moldova
EaP – Eastern Partnership Countries
EC – European Commission
EIC – European Innovation Council
EOSC – European Open Science Cloud
ERA – European Research Area
ERC - European Research Council
EU – European Union
FP – EU Framework Programme
FP7 – European Union Seventh Framework Program for Research, Technological Development and Demonstration Activities (2007-2013)
H2020 – EU Framework Programme for Research and Innovation HORIZON 2020 (2014-2020)
HE2027 - EU Framework Programme for Research and Innovation HORIZON EUROPE (2020-2027)
JPI – Joint Programming Initiatives
JRC – Joint Research Centre
MECR – Ministry of Education, Culture and Research of the Republic of Moldova (2017-2021)
MER – Ministry of Education and Research of the Republic of Moldova (since 2021)
MOST – Moldovan Office for Science and Technology in Brussels/IGLO
MS – EU Member States
MSCA - Marie Skłodowska-Curie Actions
MSD – Moldovan Scientific Diaspora
NARD – National Agency for Research and Development
NCP – National Contact Points
OS – Open Science
PC – H2020 Programme Committees
PSF – Policy Support Facilities under Horizon 2020 Programme
RTD – Research and Technology Development
R&I - Research and Innovation
RM – Republic of Moldova

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INTRODUCTION

Ex-post evaluation of the Republic of Moldova participation in the EU Framework Programme for Research and Innovation Horizon 2020 (2014-2020) report represents an overview of the Moldovan experience, practical steps and instruments, efforts and measures implemented by national authorities to assure the process of association and Associated Country status to the EU Framework Programmes implementation.

The Republic of Moldova was the first country from Eastern Partnership managing the successful association to the FP7 - EU 7th Framework Program for Research, Technological Development and Demonstration Activities (2007-2013) in 2011, then to the H2020 - EU Framework Program for Research and Innovation Horizon 2020 in 2014. The main scope of the Republic of Moldova was to ensure systemic approach for the implementation of the Associated Country status, to demonstrate the capability of scientific community and civil society of Moldova to participate in the EU FP and promote integration in the European Research Area.

The evaluation report includes the statistical data on the participation in the EU FP extracted from the different EU platforms: e-Corda, Horizon Dashboard, Cordis, etc. by the date of 25 November 2022. To understand the background of real conditions and environment accompanied the process of association and its implementation, the description of national research and innovation landscape, reforms and strategic developments is presented, as well as national measures, instruments and programmes established to facilitate participation in the EU FP and integration to ERA.

In spite of the difficulties provoked by the Covid pandemic situation, reform of R&I system, specific requirements to the grants administration, Moldova still remained an active participant in H2020 Programme in comparison with other EaP countries. It became possible due to the personal and institutional contribution of many people, partners, experts and organizations who facilitated the process of the new experience and knowledge accumulation, increasing the proposals writing and partner search skills, promoting the scientific results and visibility of research groups and organizations.

The participation support potential and practical recommendations to facilitate the participation in the EU Framework Programmes for Research and Innovation and better integration in the ERA are proposed to increase the effectiveness of the Associated Country status implementation.

In recognition of the outstanding contribution to the aforesaid activities, I would like to express special thanks to:

- Acad. Gheorghe Duca, President of the Academy of Sciences of Moldova (2004-2018) and Dr. Sergiu Porcescu, Chief of the Department of European Integration and International Relations of ASM and representative of MOST Office in Brussels, who assumed responsibility in preparing and signing the Association Agreements to FP7 and H2020;
- Staff of the Centre of International Projects involved in the implementation process of the Associated Country Status, their contribution in the bilateral and multilateral cooperation development, NCP Network activities management, MOST office functioning, participation in Programme and Strategic Committees, promotional and informational events organizing, etc.;
- Academy of Sciences of Moldova and Scientific Council for Science and Technology Development which supported the national measures and instruments to facilitate participation in FP7 and H2020;
- National NCP Network, official representatives and national experts delegated to the EU Programme and Strategic Committees for their efforts in preparing and attracting the Moldovan organizations to participate in the EU FP;

- Romanian Office for Science and Technology for mentoring and experience exchange, as well as other IGLO offices in Brussels, which assisted in the MOST communication with the EU experts and communities;
- International experts and colleagues who shared their knowledge in successful participation in EU FP and assisted in the ERA integration;
- Ministry of Education and Research (previously Ministry of Education, Culture and Research) for continuation the R&I policies development in respect of ERA integration and association to EU FP;
- National Agency for Research and Development for further development of international cooperation, implementation of the Associated Country Status and initiative for Ex-post evaluation of participation in the Horizon 2020 report elaboration;
- Ministry of Foreign Affairs and European Integration for supporting and promoting the association to the EU Framework Programmes;
- Institute for Development of Informational Society for promoting the Open Science Policies and activities and other institutions respecting and promoting the Open Sciences principles.
- Scientific community of Moldova, national authorities and agencies, NGO and SMEs participated in the EU FP projects, events, and activities.

Hopefully, the participation experience in the Horizon 2020 EU Framework Programme for Research and Innovations will be considered for strengthening the national efforts for involvement in the Horizon Europe Programme and further integration to the European Research Area.

Dr. Lidia Romanciuc

1. BACKGROUND AND PREREQUIZITES

1.1. From FP7 Association to Horizon 2020 and Beyond

The history of the Republic of Moldova participation in the European Union Research and Development Framework Programmes began in 1994 with the involvement in 4th FP, following the collapse of the USSR. Within the next EU Framework Programmes - FP5 and FP6 and at the beginning of FP7 EU FP Programme the active participation of Moldovan legal entities was not observed. It was noted that representatives of the scientific community lack the experience and understanding of how to participate in such programs, how to write a successful proposal, how to find partners, etc. However, the active development of the international relations between the Moldovan and European scientific community was considerably extended with adoption the Code for Science and Innovation of the Republic of Moldova in 2004¹. Based on the Code S&I, the Academy of Sciences of Moldova became the strategic partner of the Government of the Republic of Moldova in the field of science and innovation and founder of the existing research and higher education institutions. With the Code for Science and Innovation adoption the positive trend of state budget financial allocations for RTD System was observed starting with 0,22% of GDP in 2004 and growing up to 0,63% of GDP in 2008. Unfortunately, after 2008 the funding for R&I activity was reduced up to 0,23% of GDP in 2020². The cardinal reorganization of scientific landscape and lack of funding required the new approach and strategic scopes to inspire the scientific community of Moldova in addressing the new challenges, to stop exodus from science and to become more visible and competitive at the international scientific arena.

Besides, at the same period of time the INTAS - Independent International Association started the implementation the programmes and activities in supporting the collaboration of the international scientific community with the New Independent States of the former Soviet Union³. INTAS activities was mostly focused on the EU projects co-funding and lasted before the EU 7th Framework Programme⁴. Several projects with participation of Moldova and other NIS countries were funded to support the fellowships, mobility of researchers either towards or from the former Soviet Union, organization of workshops and seminars.

Thus, the created environment at the national and international level demonstrated the advantages for scientific community of Moldova to move forward and exploit the new opportunities offered by the EU Framework Programmes.

That time the persistence of the President of ASM and aspiration of the scientific community of Moldova to integrate in the European Research Area laid the ground for negotiation process initiation regarding the association to the European Framework Programmes for Research and Innovation. In 2008 within the first joint meeting between the ASM delegates, representatives of the RM Mission to the EU and the European Commission, discussed the expression of interest of the Republic of Moldova in applying for the Status of Association Country to EU FP7. Considering the lack of experience of the scientific community of Moldova participation in the previous and current EU Framework Programmes and insufficient preparedness of the national R&D system, the reaction of the EC representatives was rather skeptical.

The participation of the Republic of Moldova in the EU Framework Programmes is presented in Table 1. According to these data, within the EU FP4, FP5 and FP6 Programme no significant progress of the

¹ The Code for Science and Innovation of the Republic of Moldova, Law RM Nr. 259-XV from 15.07.2004.

² ASM Report on State of Science in the Republic of Moldova 2021- https://asm.md/sites/default/files/2022-05/ASM_Raport%20asupra%20starii%20stiintei%20din%20Republica%20Moldova%20in%202021_aprobat%20AG%2012%20mai%202022_final.docx.pdf

³ P. Asirelli. INTAS: Your Partner for Present and Future NIS Cooperation in Information Technology. PECOM'2004: 9th Conference Speech and Computer St. Petersburg, Russia September 20-22, 2004 - https://www.isca-speech.org/archive_open/specom_04/spc4_727.pdf

⁴ EC e-Platform Cordis: EU Research Results - <https://cordis.europa.eu/programme/id/IC-INTAS>

Republic of Moldova participation was observed. Starting with FP7 the great efforts have been made at the national level to obtain the status of Associated Country and integrate to the European Research Area. The data specified in Table 1 (*Horizon Dashboard, 25.11.2022*) demonstrate the apparent effect of association of Moldova to the EU FP7 and H2020.

Table 1. Participation of the Republic of Moldova in the EU Framework Programmes.

EU Framework Programme	Eligible Proposals/ Participations	Signed Grant Agreements (Projects)/ Participations	Net EU Contribution, EUR
FP1 (1984-1987)	0	0	0
FP2 (1987-1991)	0	0	0
FP3 (1990-1994)	0	0	0
FP4 (1994-1998)	n/a	15 / 15	291.410,00
FP5 (1998-2002)	n/a	25 / 25	316.832,00
FP6 (2002-2006)	n/a	17 / 17	749.649,32
FP7 (2007-2013)*	236/ 279	45 / 58	3.963.916,33
H2020 (2014-2020)**	457/ 550	68 / 86	7.385.453.54
HE2027 (2021-2027)***	97/ 114	18/ 25	2.125.293,88
Total	790/ 943	173/ 211	14.832.555,07

*The Republic of Moldova signed the Memorandum of Understanding of Participation of the Republic of Moldova in the EU Framework Programme for Research, Technological Development and Demonstrating Activities - FP7 (2007-2013) on 11 October 2011, obtaining the Association Country Status for the period 2012-2013. Within these two years 23 projects with participation of Moldovan institutions were funded by EC out of the total number - 45 (2007-2013).

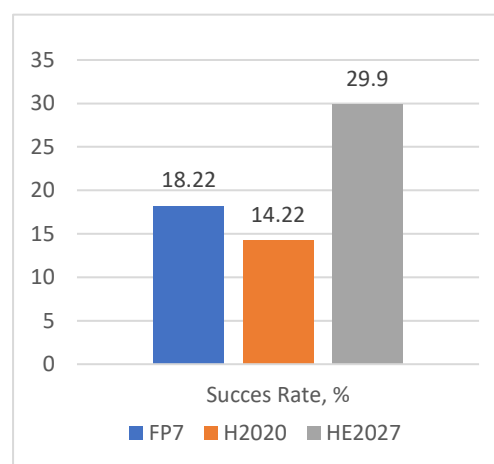
** The Republic of Moldova signed the Association Agreement for participation in the EU Framework Programme for Research and Innovation Horizon 2020 (2014-2020) on 1st July 2014.

*** The Republic of Moldova signed the Association Agreement for participation in the EU Framework Programme for Research and Innovation Horizon Europe on 27 October 2021. Results reflected in the table above cover the two-years period of 2021-2022.

On the Fig.1 (*Horizon Dashboard, 25.11.2020*) is presented the Success Rates for the EU Framework Programmes FP7, Horizon 2020 and Horizon Europe.

The average Success Rate of Moldovan organizations participation in the FP7, H2020 and HE2027 makes 20,78% (ratio of the total retained proposals to the total number of proposals received).

Fig.1. Success Rate of participation of Moldova in the EU Framework Programmes: FP7, H2020 and HE2027.



The EU financial contribution allocated for Moldovan participants within the signed Grant Agreements in the EU Framework Programmes is presented on Fig.2.

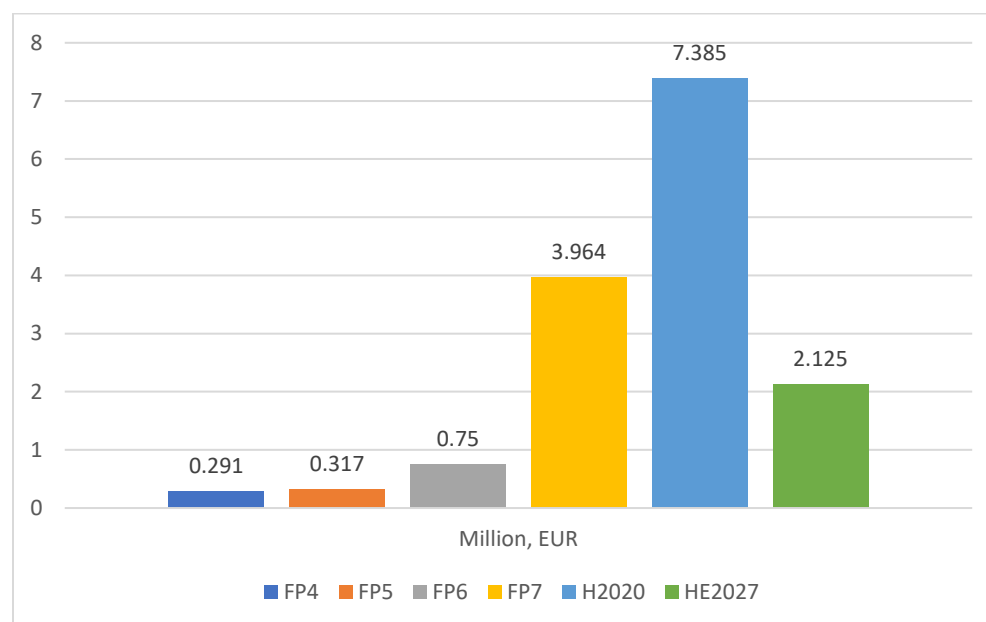


Fig.2. EU Financial Contribution for Participation of the Republic of Moldova in the EU Framework Programmes for Research and Innovation

The distribution of the EU financial contribution allocated for the participants from the Republic of Moldova within the all EU FPs signed Grants Agreements in accordance to the field of science is presented below (Fig.3).

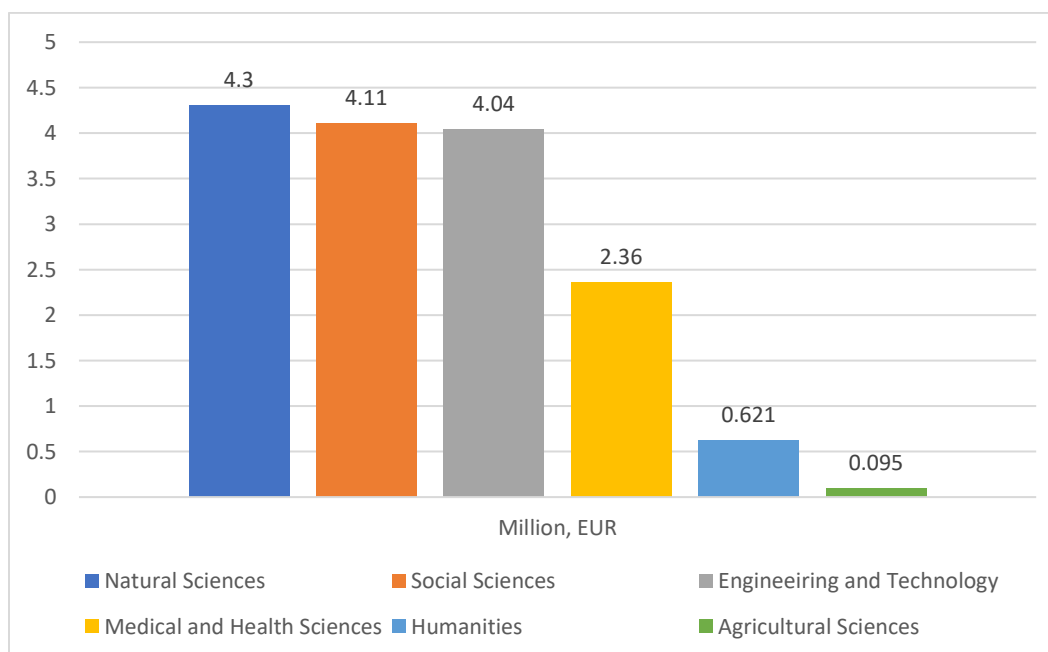


Fig.3. Distribution of the EU financial contribution within the signed EU FPs Grants Agreements for Moldovan participants by the field of science

Comparing with FP7, Horizon 2020 contributed directly to tackling the major societal challenges identified in Europe 2020 Strategy and its flagship initiatives. It supported equally the creating of industrial leadership in Europe and increasing the excellence based on scientific approach, that is essential for the sustainability, long-term prosperity and wellbeing of Europe. Achieving these aims, the proposals included a full range of support that is integrated across the research and innovation cycle. Horizon 2020 therefore brought together and strengthened activities funded under the 7th Framework Programme for research, the innovation parts of the Competitiveness and Innovation Framework Programme, and the European Institute of Innovation and Technology. In this way, the proposals were also designed to realize a substantial simplification for participants⁵.

Association to the EU Framework Programmes, provides the Moldovan researchers and innovators the full access to the work programmes and calls under the same conditions as entities from the EU Member States. Any type of organization can apply for the EU Framework Programs funding as long as they have the operational and financial capacity to carry out the tasks that they propose. For the majority of calls for proposals it is necessary to apply on behalf of consortium, based on a team of at least 3 partner organizations from 3 different EU or Associated Countries.

Starting with FP7, H2020 and beyond, the Association Country status accelerated the participation of Moldovan legal entities in the EU Framework Programmes and diversification of organizations involved (R&D, Public Authorities and Agencies, NGOs, SMEs and others). Participation of Moldovan organizations in 790 proposals (within the projects proposal consortiums) submitted to the EU FP Calls demonstrate the ability of Moldovan researchers and innovators to compete with participants from other countries.

The top organizations involved in the projects supported under all EU Framework Programmes are presented in Fig. 4 (*Horizon Dashboard, 25.11.2022*).

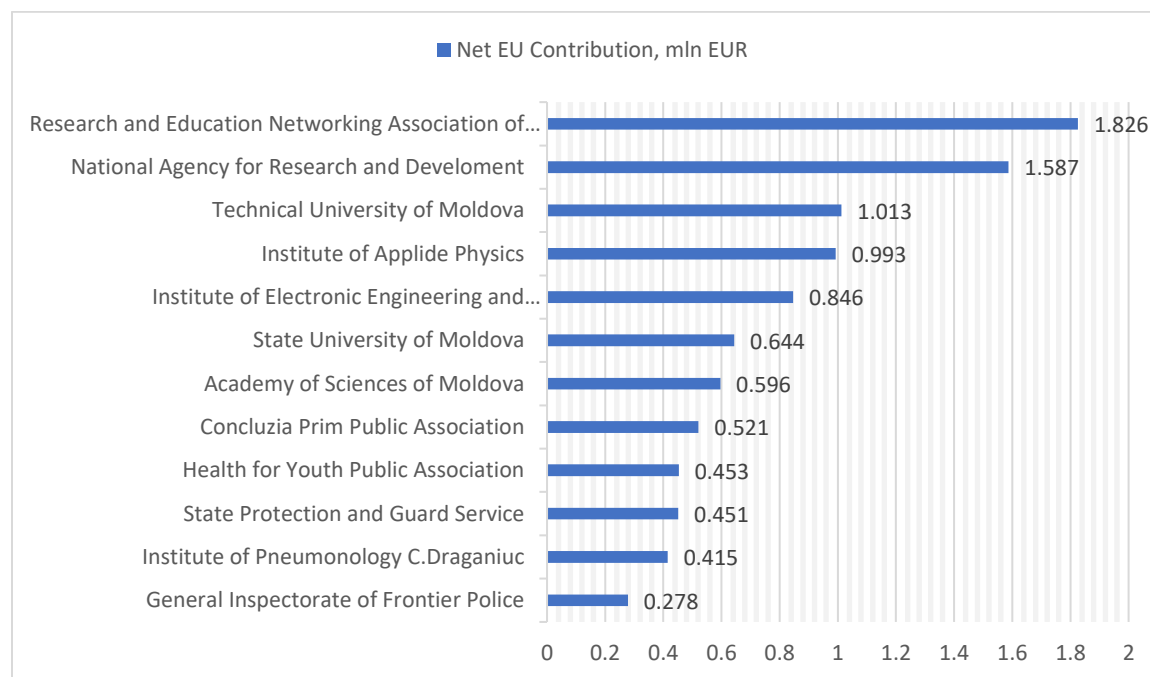


Fig.4. Top Moldovan organizations participating in the EU Framework Programmes for Research and Innovations (1994-2022).

⁵ Proposal for a Regulation of the European Parliament and of the Council establishing Horizon 2020 - The Framework Programme for Research and Innovation (2014-2020)/* COM/2011/0809 final - 2011/0401 (COD) */ EUR-Lex - <https://wayback.archive-it.org/12090/20220124084405/https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A52011PC0809>

To resume the participation of the Republic of Moldova in all EU Framework Programmes (from FP4 to HE2027) within 1994-2022, Moldova succeeded to:

- submit 790 eligible proposals with 943 participation of Moldovan entities,
- sign 173 Grant Agreements with 211 participation of 54 legal entities within the supported projects,
- receive EUR 14.83 million – the total net EU funding allocated for the selected projects.

The Key Figures of participation the Republic of Moldova within the EU Framework Programmes: FP4 - HE2027 covering the period from 1994 to 2022 are presented on Fig.5 (*Horizon Dashboard 25.11.2022*).

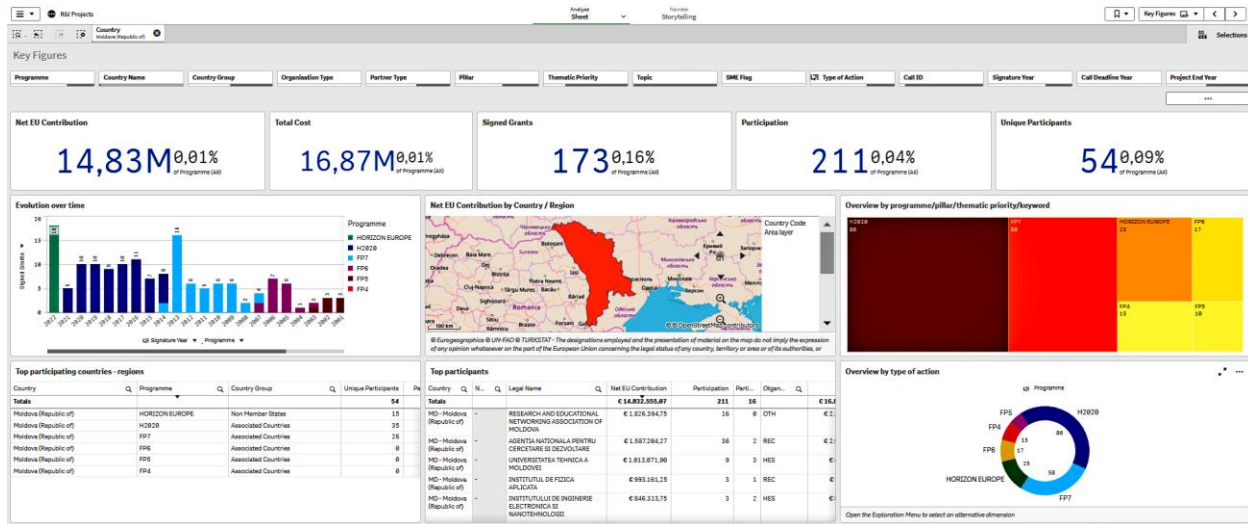


Fig.5. The Country Profile - Participation of the Republic of Moldova within the EU Framework Programmes (1994-2022): FP4 – FP HE2027⁶.

1.2. Association to the EU Framework Programme for Research, Technological Development and Demonstration Activities - FP7 (2007-2013)

The first joint meeting with the representatives of the European Commission in 2008 demonstrated the necessity of development the sustainable national platform to facilitate the participation in the European competitive calls and activities and to strengthen the efforts in preparing the scientific community for better integration in the European Research Area. To correspond the EC expectations, the first Action Plan-1 (AP): “Moldova excellence in knowledge” was elaborated to increase the national capacities of R&D institutions and improve the human resources skills. The AP-1 included several activities: increasing the visibility of R&D organizations at the international level, development of NCP Network, trainings and seminars on proposals writing and projects management, FP promotional campaign, bilateral and multilateral cooperation development, etc.

All steps of the AP-1 activities implementation was periodically reported to the EC. Taking into consideration the good progress undertaken by Moldovan side, the EC representatives welcomed the ASM in the process of Moldovan association to FP7 at the beginning of 2011. Thus, the negotiation process

⁶ Horizon Dashboard (Data extracted 25.11.2022) - <https://webgate.ec.europa.eu/dashboard/sense/app/a976d168-2023-41d8-acec-e77640154726/sheet/0c8af38b-b73c-4da2-ba41-73ea34ab7ac4/state/analysis>

between the representatives of EC and ASM, started in February, 2011. The agreement and conditions for Moldovan association to FP7 has been reached after a lengthy negotiation process.

On 11 October 2011, Máire Geoghegan-Quinn, European Commissioner for Research, Innovation and Science, and Acad. Gheorghe Duca, President of the Academy of Sciences of the Republic of Moldova, signed a Memorandum of Understanding for the association of the Republic of Moldova to the EU's Seventh Research Framework Programme for Research, Technological Development and Demonstration Activities⁷. Further the Association Status of the Republic of Moldova was ratified by Presidential Decision of the Republic of Moldova in 2011⁸.

Thus, Moldova become the first Eastern Partnership and the second European Neighborhood Policy country to be associated with FP7 for two-years period 2012-2013.

Moldova was the 14th country associated with FP7; the others were Albania, Bosnia and Herzegovina, Croatia, the Faroe Islands, FYROM, Iceland, Israel, Liechtenstein, Montenegro, Norway, Serbia, Switzerland and Turkey.

'Association' is a specific mechanism based on science and technology cooperation agreements with the European Union for stronger cooperation with third countries under the EU's Framework Research Programme. Thus, the EU's Framework R&D Programme become open for the participation of organizations) from other, non-EU countries, and some of them can even be funded by the EU. Beyond this basic provision, organizations from associated countries can enjoy the status of full participants equal to that of the organizations from the EU member states".⁹

Participation of the Republic of Moldova in FP7 within 2007-2010 before the association was limited by 4-5 projects per year. Association status to FP7 proved a very positive effect within 2012-2013 (Fig.6.).

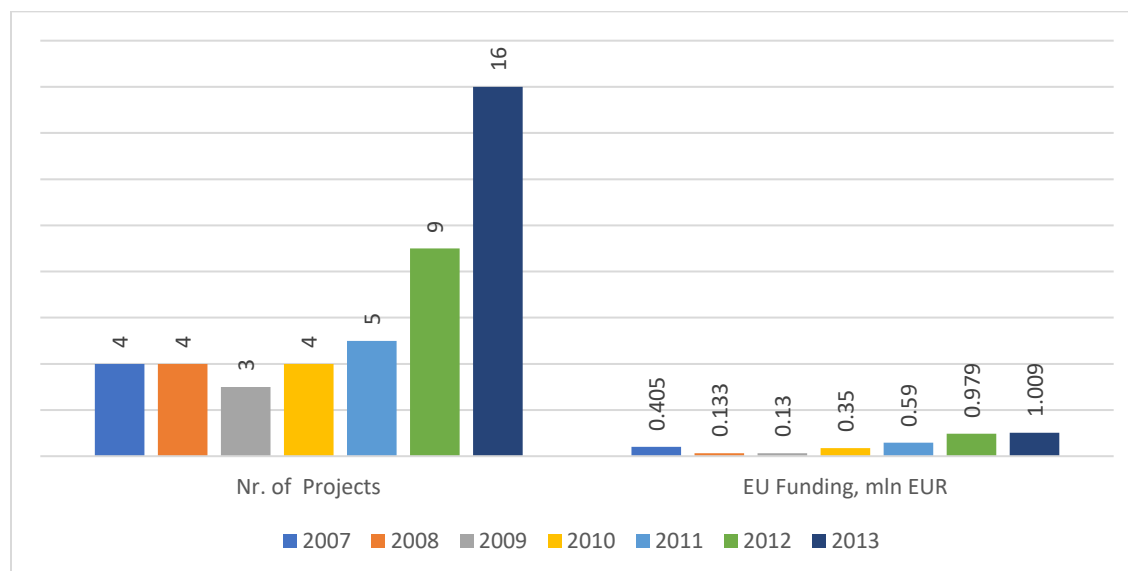


Fig.6. Participation of the Republic of Moldova in the EU 7th Framework Programme for Research, Technological Development and Demonstration Activities (2007-2013).

⁷ Memorandum of Understanding between the Republic of Moldova and the European Union on the association of the Republic of Moldova to the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007-2013) <https://ig.idsi.md/administrator/fisiere/cadru/f284.pdf>

⁸ Law RM no. 279/27.11.2011, Ratification of the Memorandum of Understanding between the European Union and the Republic of Moldova regarding the participation of the Republic of Moldova to the European Union Framework Programme 7 for Research, Technological Development and Demonstrating Activities (2007-2013 – FP7)

⁹ ACA Newsletter Edition 126-10/2011 - Moldova joins EU's Seventh Research Framework Programme - <https://aca-secretariat.be/newsletter/moldova-joins-eus-seventh-research-framework-programme/>

The statistics presented in **ANNEX#1** (*EU e-Corda*, 25.11.2022) show the distribution of EU-funded projects with Moldovan participation according to the FP7 Specific Programmes, as well as the EU financial contribution to all types of participation from Moldova.

The participation of the Republic of Moldova was observed within the FP7 Specific Programmes: “Cooperation” (18 projects) and “Capacities” (17 projects). Under the FP7 Specific Sub-Programme “Capacities”, the most demanded were the ‘Marie-Curie Actions’ and ‘Activities for International Cooperation’.

In accordance to the Horizon Dashboard, the total number of concluded calls within FP7 was 493, to which the 236 eligible proposals with Moldovan participants were submitted (Fig.7).

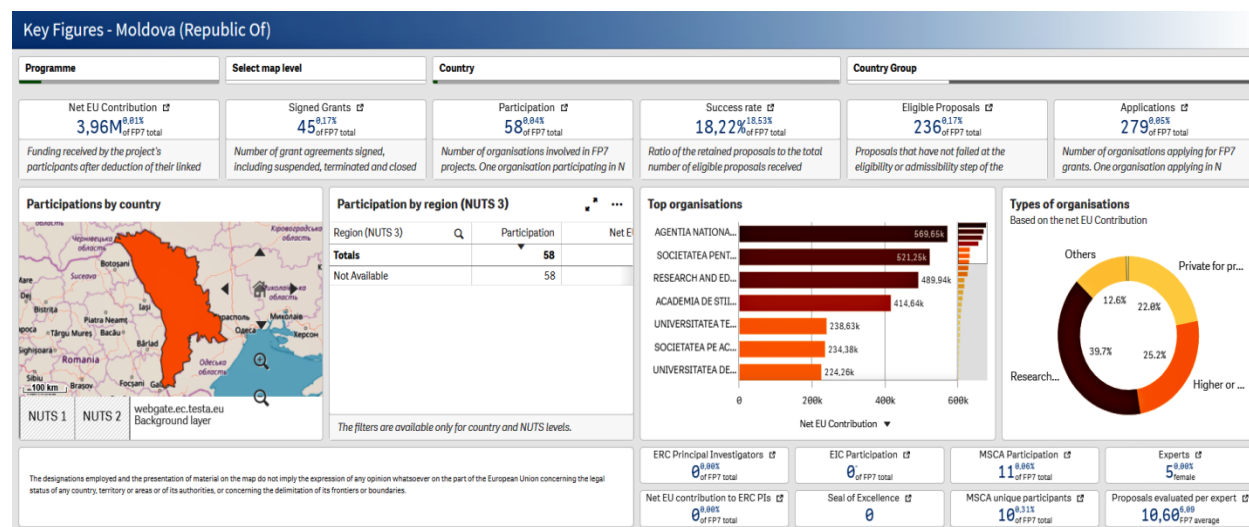


Fig.7. The Country Profile – Key Figures of the Republic of Moldova participation in the FP7.¹⁰

The financial contribution paid by the Republic of Moldova for participating in FP7 over 2012 and 2013 amounts of EUR 1.371.189,20. Out of this sum, 50% (EUR 685.594,60) was reimbursed to the RM by EC in the form of lump sum payment. Thus, the benefit of participation of Moldova in FP7 is EUR 1.907.132,60 in relation with: financial contribution paid by Moldova, its reimbursement paid by EU and Net EU contribution - EUR 3.963.916,33 allocated within the signed Grants Agreements/projects with participation of Moldova.

1.3. Association to the EU Framework Programme for Research and Innovation – Horizon 2020 (2014-2020)

Horizon 2020 was the biggest EU Research and Innovation Programme with nearly EUR 80 billion of funding available over 7 years (2014 to 2020). It promised more breakthroughs, discoveries and world-firsts by taking great ideas from the lab to market.¹¹

Association to H2020 opened for the Republic of Moldova the numerous opportunities for participation in the competitive calls and activities under the same conditions as the EU Members States, provided access to the state of the art research infrastructure and contributed for integration of Moldovan scientific community to the European Research Area.

¹⁰ Horizon Dashboard (Data Extraction – 25.11.2022) <https://webgate.ec.europa.eu/dashboard/sense/app/a976d168-2023-41d8-acec-e77640154726/sheet/0c8af38b-b73c-4da2-ba41-73ea34ab7ac4/state/analysis>

¹¹ What is Horizon 2020 - <https://wayback.archive-it.org/12090/20220124080448/https://ec.europa.eu/programmes/horizon2020/en/what-horizon-2020>

Horizon 2020 was focused its resources on three Pillars, which corresponded to those established for the Europe 2020 Strategy and the Innovation Union principles. The H2020 Structure is presented on Fig.8.

The EU Framework Programme for Research and Innovation Horizon 2020 Configuration

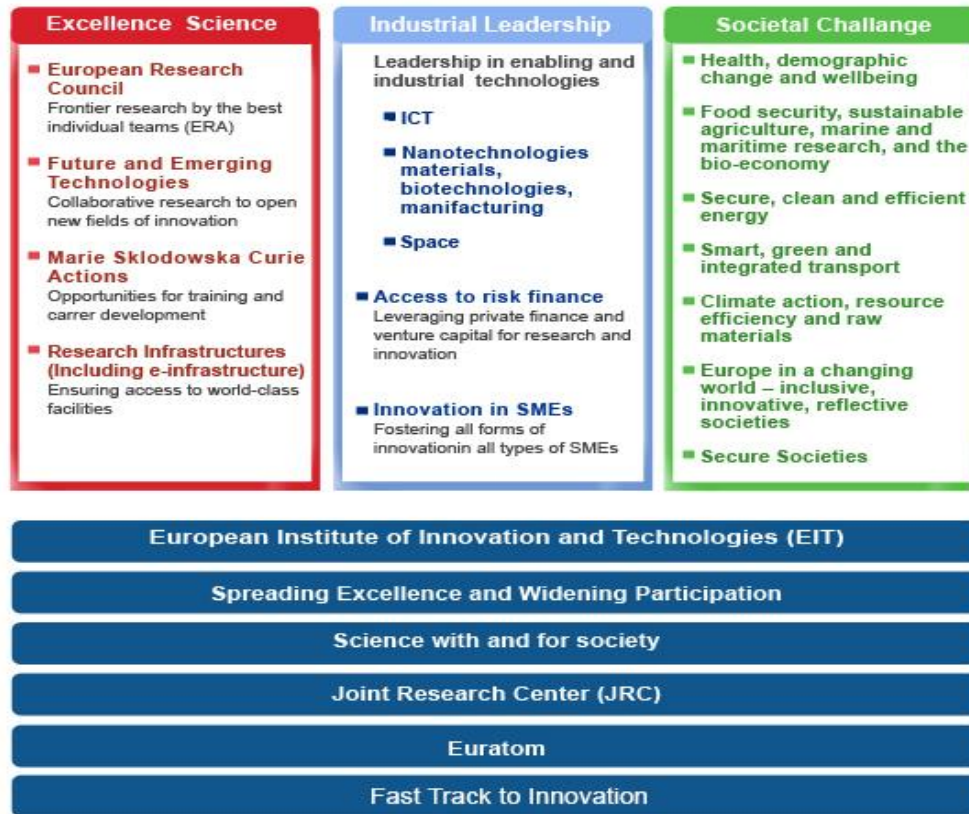


Fig.8. Configuration of the EU Framework Programme for Research and Innovation Horizon 2020

Pillar 1. Excellent Science contributed to raising the level of excellence in Europe's science base and ensured a steady stream of world-class research to secure Europe's long-term competitiveness. It supported the best ideas, developed talent within Europe, provided researchers with access to priority research infrastructure, and made Europe an attractive location for the world's best researchers, through

- supporting the most talented and creative individuals and their teams to carry out frontier research of the highest quality by building on the success of the European Research Council;
- funding collaborative research to open up new and promising fields of research and innovation through support for Future and Emerging Technologies (FET);
- providing researchers with excellent training and career development opportunities through the Marie Skłodowska-Curie actions ('Marie Curie actions');
- ensuring Europe has world-class research infrastructures (including e-infrastructures) accessible to all researchers in Europe and beyond.

Pillar 2. Industrial Leadership aimed at making Europe a more attractive location to invest in research and innovation (including eco-innovation), by promoting activities where businesses set the agenda. It provided major investment in key industrial technologies, maximized the growth potential of European

companies by providing them with adequate levels of finance and helped innovative SMEs to grow into world-leading companies. This was realized through:

- building leadership in enabling and industrial technologies, with dedicated support for ICT, nanotechnologies, advanced materials, biotechnology, advanced manufacturing and processing, and space, while also providing support for cross-cutting actions to capture the accumulated benefits from combining several Key Enabling Technologies;
- facilitating access to risk finance;
- providing Union wide support for innovation in SMEs.

Pillar 3. Societal Challenges reflected the policy priorities of the Europe 2020 Strategy and addressed major concerns shared by citizens in Europe and elsewhere. A challenge-based approach brought together resources and knowledge across different fields, technologies and disciplines, including social sciences and the humanities. This covered activities from research to market with a new focus on innovation-related activities, such as piloting, demonstration, and support for public procurement and market uptake. It included establishing links with the activities of the European Innovation Partnerships. Funding was focused on the following challenges:

- Health, demographic change and wellbeing;
- Food security, sustainable agriculture, marine and maritime research and the bio-economy;
- Secure, clean and efficient energy;
- Smart, green and integrated transport;
- Climate action, resource efficiency and raw materials;
- Inclusive, innovative and secure societies.

To address effectively many specific objectives defined in Horizon 2020, the international cooperation with third countries was needed. It was also essential for frontier and basic research in order to capture the benefits from emerging science and technology opportunities. The aim of international cooperation in Horizon 2020 was focused on strengthening the Union's excellence and attractiveness in research, to tackle global challenges jointly and to support the Union's external policies. The international cooperation in Horizon 2020 was oriented to extension of collaborative links with three major country groupings: (1) industrialized and emerging economies; (2) enlargement and neighborhood countries; and (3) developing countries.

The Horizon 2020 Specific Objectives was realized through the **Widening Participation and Spreading Excellence** actions, which contributed to building research and innovation capacity for countries lagging behind of Europe. Through this programme the widening countries, including Moldova were able to strengthen their potential for successful participation in transnational research and innovation processes, promoting networking and access to excellence. Participation in the programme provided an opportunity to upgrade the national research and innovation systems, making them stronger and allowing the EU as a whole to advance together, in line with the policy objectives of the European Research Area.

The **Policy Support Facility** is part of a set of instruments used by the EU to foster reforms in national ecosystems. The Member States and Associated Countries' responsibility was to react to the recommendations coming out of Policy Support Facility activities, the Commission also used the knowledge gained on national research and innovation systems, mainly for its country assessments, which lead to country-specific recommendations. In this context, as Associated Country, Moldova benefited from Policy Support Facilities under the H2020 expert mission review of R&I system in 2015-2016, which followed up by the Reform of 2017-2018 implementation.

Comparing with FP7, the Horizon 2020 had a number of new features¹² that made it fit for purpose to promote growth and tackle societal challenges. These include:

- Major simplification through a simpler programme architecture, a single set of rules, less red tape through an easy to use cost reimbursement model, a single point of access for participants, less paperwork in preparing proposals, fewer controls and audits, with the overall aim to reduce the average time to grant by 100 days;
- An inclusive approach opened to new participants, including those with ideas outside of the mainstream, ensuring that excellent researchers and innovators from across Europe and beyond was able to participate;
- The integration of research and innovation by providing seamless and coherent funding from idea to market;
- More support for innovation and activities close to the market, leading to a direct economic stimulus;
- A strong focus on creating business opportunities out of our response to the major concerns common to people in Europe and beyond, i.e. ‘societal challenges’;
- More possibilities for new entrants and young, promising scientists to put forward their ideas and obtain funding.

To prepare the ground for association to the EU Framework Programme for Research and Innovation – Horizon 2020 (2014-2020), the Second National Action Plan-2 “Moldova towards the Horizon 2020” was drafted in 2011. It covered the period of time 2011-2013 and was focused on the national functional platform development for implementation the FP7 Associated Country’s Status and actions needed to start negotiations for further association to the Horizon 2020 which was successfully realized.

The Horizon 2020 programme incorporated different research-related EU schemes, which did not imply similar association’ options. The associated countries re-negotiated their special status under the H2020 programme. Just after the signing of association agreement to FP7, the Third National Action Plan-3 “Moldova in Horizon 2020” was elaborated to put in work the activities and measures needed for the implementation of the Associated country status and facilitating participation within Horizon 2020 within 2014-2020.

On July 1st 2014 in Brussels the five Western Balkan countries (Albania, Bosnia and Herzegovina, the former Yugoslav Republic of Macedonia, Montenegro and Serbia), and the Republic of Moldova, by signing the Association Agreement to Horizon 2020, secured the full access to the European Union's seven year research and innovation programme Horizon 2020¹³. On behalf of the European Commission the association agreements were signed by Dr. Robert-Jan Smits, Director-General for Research and Innovation. On behalf of the Republic of Moldova, the Association Agreement to Horizon 2020 was signed by Acad. Gheorghe Duca, President of the Academy of Sciences of Moldova, based on the Mandate issued by the Government of the Republic of Moldova¹⁴. At that moment, all six countries already had the experience of cooperation on research and innovation with the EU through the Seventh Framework Programme, and were seeking to build on this under Horizon 2020.

European Commissioner for Research, Innovation and Science Máire Geoghegan-Quinn said: “The agreements signed today are good for these countries and good for the European Union. Increased cooperation in research and innovation will create new opportunities for growth, competitiveness and jobs

¹² Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Horizon 2020 - The Framework Programme for Research and Innovation. /* COM/2011/0808 final */ EUR-Lex - <https://wayback.archive-it.org/12090/20220124084336/https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A52011DC0808>

¹³ EU Monitor: European Commission Press release, Brussels, 1 July 2014, Western Balkans countries, Moldova sign up to Horizon 2020 - https://www.eumonitor.nl/9353000/1/j9vvik7m1c3gvxp/vjl3fdpxgcyb?ctx=vgaxlclrljzkn&start_tab0=20

¹⁴ CIP Newsletter Nr.1,2015 - <http://cpi.asm.md/wp-content/uploads/2015/06/final-1engleza.pdf>

in all our economies. Association to Horizon 2020 will facilitate the mobility of excellent scientists, strengthen national research systems, and help the countries integrate into the European Research Area."¹⁵

The Association Agreement for participation of Moldova in H2020, was applied retroactively as from 1 January 2014 and covered the period from 2014 to 2020 (extended to 2021 due to the Covid-19 pandemic situation) allowing to take advantage of the funding opportunities offered under Horizon 2020 to all research and innovation entities, including research, businesses and other partners. It was underlined by the European Commission that, based on FP7 experience, the strengthening of the national research and innovation capacities is an overarch priority. Diversification of actors from all economic sectors is a most progressive step towards the successful participation in Horizon 2020. Taking into consideration the limited participation of small and medium enterprises engaging in research and innovation it was suggested to make the greater focus on the entire innovation chain, from the lab to the market.

The participation of the Republic of Moldova in H2020 was more successful in comparison with FP7. The number of H2020 concluded calls were increased to 999, to which 457 eligible proposals with involvement of Moldovan entities were submitted. The total number of H2020 signed Grant Agreements increased to 68 with 86 participations of Moldovan organizations.

The key figures of Moldovan participation in H2020 is presented on Fig.9. More details on Moldova's participation in H2020 will be presented in the Part 2 of current Report.

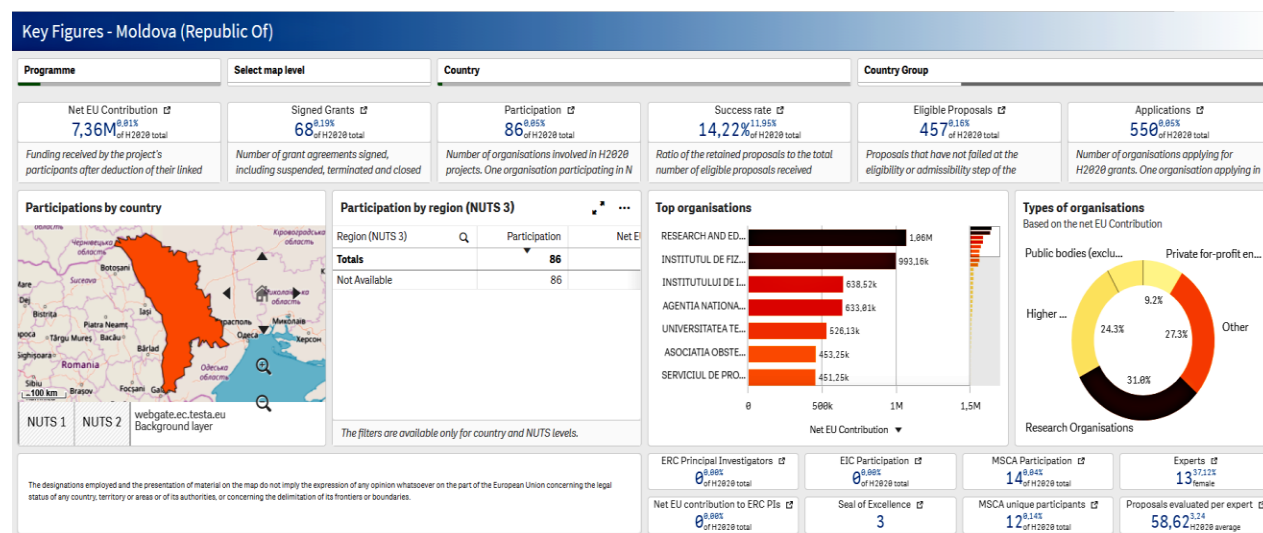


Fig.9. The Country Profile – Key Figures of the Republic of Moldova's participation in H2020¹⁶

According to the H2020 Association Agreement, Moldova had to pay the financial contribution for each year of participation in the H2020 Programme to the general budget of the European Union. The financial contribution of Moldova had to be added to the amount earmarked each year in the EU general budget to meet the financial obligations arising out of different forms of measures necessary for the implementation, management and operation of the Programme.

Twice per each fiscal year the European Commission issued a call for funds to Moldova in accordance to its contribution under the H2020 Association Agreement. For this purpose, EC provided the corresponding

¹⁵ European Commission Press release Brussels, 1 July 2014: Western Balkans countries, Moldova sign up to Horizon 2020 - https://ec.europa.eu/commission/presscorner/detail/en/IP_14_746

¹⁶ Horizon Dashboard (Data extraction – 25.11.2022) <https://webgate.ec.europa.eu/dashboard/sense/app/a976d168-2023-41d8-acce-e77640154726/sheet/0c8af38b-b73c-4da2-ba41-73ea34ab7ac4/state/analysis>

Debit Note, Note Verbale, calculations of H2020 Budget, etc. Based on these calls for funds Moldova proceeded with payments of entry fees annually according to the following schedule:

- six-twelfths of Moldova's contribution not later than 15 March; and
- six-twelfths of Moldova's contribution not later than 20 July.

The proportionality factor governing the contribution of Moldova was obtained by establishing the ratio between the gross domestic product of Moldova, at market prices, and the sum of gross domestic products, at market prices, of the Member States of the European Union. To facilitate its participation in the Programme, the contribution of Moldova was implemented for the respective financial years of H2020 according to the proportionality factor fixed within paragraph 2 of Annex II to the Association Agreement, multiplied by 0,25.¹⁷

Within the period of 2014-2017, the financial obligation to pay the entry fees to the EU budget assumed the Academy of Sciences of Moldova. Starting with 2018 this obligation was transferred under the responsibility of the Ministry of Education, Culture and Research of the Republic of Moldova.

Considering the H2020 Work Programmes the payments of the entry fees were executed annually in the following way (Table 2):

Table 2. Financial contribution paid by Moldova to the EU Budget and benefit of participation in the EU H2020 Programme.

H2020 Work Programmes	Year of participation in H2020 Calls	Amount paid by RM to the EU budget, EUR	Amount reimbursed by EU to the RM budget, EUR	EU funding within the signed Grant Agreements with participations of Moldova, EUR	Benefit of Moldova's participation in H2020 projects, EUR
1	2	3	4	5	6
H2020 Work Programme (2014-2015)	2014	888.873,85	444.436,93	402.000,00	- 42.437,00
	2015	938.454,68	469.227,34	825.342,00	+356.115,00
H2020 Work Programme (2016-2017)	2016	945.236,24	472.618,12	1.019.215,00	+546.597,00
	2017	1.025.150,55	512.575,28	2.502.026,00	+1.989.451,00
H2020 Work Programme (2018-2020)	2018	1.113.708,07	556.854,04	1.018.832,00	+461.978,00
	2019	1.211.237,38	605.618,69	456.752,00	- 148.670,00
	2020-2021	1.336.670,45	0	1.175.399,00	- 161.271,00
TOTAL		7.459.331,25	3.061.330,40	7.399.566,00	3.001.566,00

Explanation Note to the Table 2:

- The Column 3 reflects the total amount of financial contribution paid by the Republic of Moldova to the EU Budget;
- The Column 4 shows the amount reimbursed by the EU, reducing with 50% the financial contribution paid by the Republic of Moldova;

¹⁷ Association Agreement to H2020 - <http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=354325>

- The Column 5 represent the funding allocated by the EU within the signed Grants Agreements with participation of the Republic of Moldova in accordance to the H2020 Concluded Calls;
- The Column 6 demonstrate the benefit of Moldova's participation in H2020 in relation to the financial contribution paid by Moldova and its reimbursement (Column 5 - Column 3 + Column 4).

As it follows from above data – the positive trend of Moldova's benefit was observed within the period 2014-2017, reaching the maximum in 2017. Then, its decreasing was registered with the worse result in 2019. More visible these data are presented below (Fig. 10). However, the final results show that the amount of EU funds attracted within the supported projects practically compensate the financial contribution paid by the Republic of Moldova to the EU Budget for participation in H2020. Besides, taking into consideration the amount of funds reimbursed by the EC, the benefit of Moldova exceeds EUR 3 million.

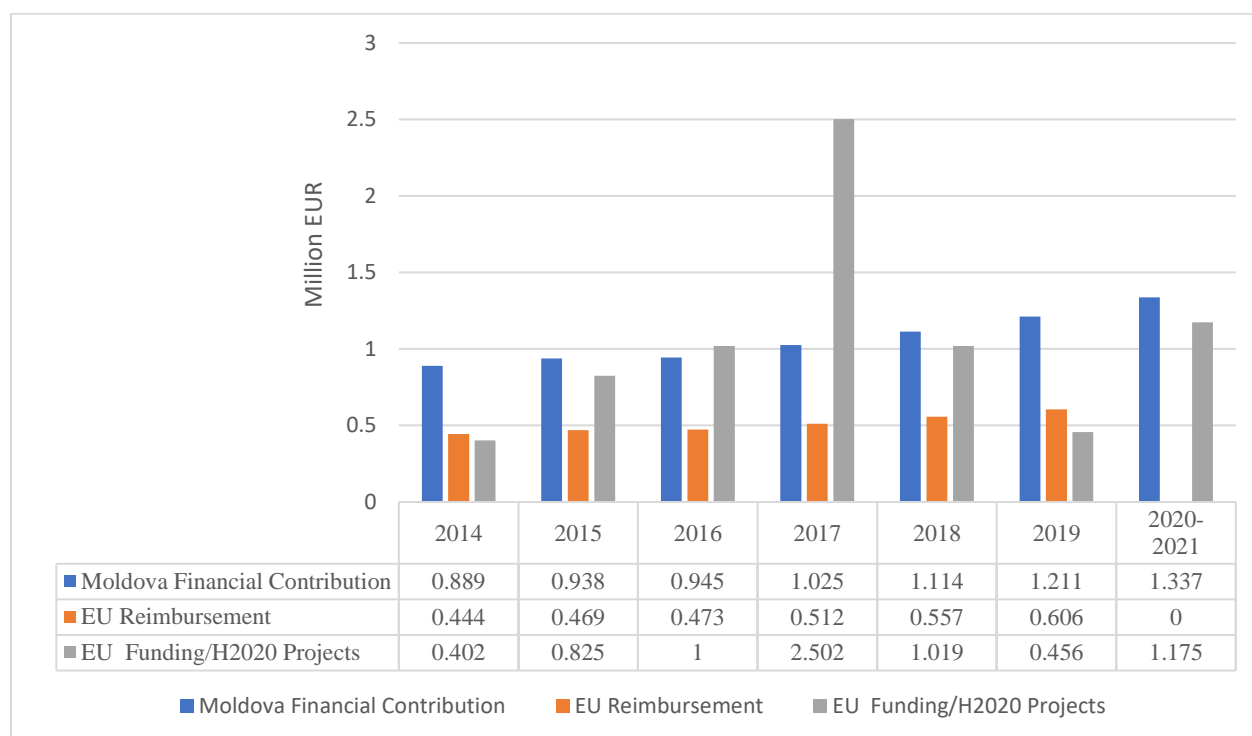


Fig.10. Financial contribution of the Republic of Moldova to the EU Budget for the participation in H2020, its reimbursement and EU allocations within the signed Grants Agreements of H2020 Projects.

Following the experience of Moldova, the other EaP countries signed the Association Agreements to the Horizon 2020: Ukraine¹⁸ - in 2015, Georgia¹⁹ and Armenia²⁰ - in 2016. Thus, four out of six EaP countries obtained the full access to the all H2020 opportunities.

Comparative analysis of EaP countries participations in H2020, based on EU e-corda statistics is presented below in Table 3.

¹⁸ Ukraine chooses Horizon 2020 as its first EU Programme. Horizon. The EU R&I Magazine. J. Roberts - <https://ec.europa.eu/research-and-innovation/en/horizon-magazine/ukraine-chooses-horizon-2020-its-first-eu-programme>

¹⁹ Historic agreement: Georgia joins EU's Research and Innovation Program. Agenda.ge. 30.04.2016 - <https://agenda.ge/en/news/2016/1030>

²⁰ Armenia joins Horizon 2020 to work with EU in research and innovation. European Cluster Collaboration Platform. 02.06.2016 - <https://clustercollaboration.eu/news/armenia-joins-horizon-2020-work-eu-research-and-innovation>

Table 3. Comparative analysis of the EaP Countries participation in H2020.

Country	Nr. of Population, per 2021/ World Bank Data ²¹ , mln	Nr. of Eligible Proposals	Nr. of signed Grants Agreements/ projects	Nr. of Proposals per 1 mln of Population	Nr. of Projects per per 1 mln of Population	How much time Moldova is more effective	
						in proposals submission	in supported projects
Armenia	2.968,13	269	36	90	12	1,98	2,2
Azerbaijan*	10.145,21	72	18	7	2	25,43	13,0
Belarus**	9.340,31	351	56	38	6	4,68	4,3
Georgia	3.708,61	424	58	114	16	1,56	1,7
Moldova	2.573,93	457	68	178	26		
Ukraine	43.814,58	2.201	230	50	5	3,56	5,2

As it follows from above data, the Republic Moldova participated in H2020 relatively effective in comparison with other EaP Countries. The net EU financial contribution allocated within the signed H2020 Grants Agreements with participation of EaP countries is presented below (Table 4).

Table 4. EU Contribution allocated within the signed H2020 Grants Agreements with participation of the EaP Countries.

Country	Nr. of Population, per 2021/ World Bank Data ²¹ , mln	Nr. of signed H2020 Grants Agreements/ projects	Net EU Contribution allocated within the signed H2020 Grants Agreements, mln EUR	EU Financial Contribution per 1 mln of population, mln EUR	How much time Moldova is more effective in attracting the EU funding
Armenia	2.968,13	36	4.026,55	1.356,59	2,12
Azerbaijan*	10.145,21	18	633,99	62,49	46,01
Belarus**	9.340,31	56	2.897,70	310,24	9,26
Georgia	3.708,61	58	8.667,48	2.337,12	1,23
Moldova	2.573,93	68	7.400,26	2.875,08	
Ukraine	43.814,58	230	45.771,61	1.044,67	2.75

Note to Tables 3 and 4: * Azerbaijan didn't sign the Associated Agreement to H2020; ** Belarus didn't have the Associated Country Status to H2020 and had suspended its participation in the Eastern Partnership based on declaration at the sixth Eastern Partnership summit in Brussels on 15 December 2021²².

Recalculation of the statistical data per one million of population demonstrate that Moldova could be considered as one of the most active participants in H2020 in comparison with the other EaP countries, in spite of many factors, which affected the participation of the Republic of Moldova in the Horizon 2020.

²¹https://data.worldbank.org/indicator/SP.POP.TOTL?end=2021&most_recent_year_desc=false&start=2021&view=bar

²² Council of the European Union: Eastern Partnership summit, 15 December 2021 - <https://www.consilium.europa.eu/en/meetings/international-summit/2021/12/15/>

1.4. Association of the Republic of Moldova to the EU Framework Programme for Research and Innovation – Horizon Europe (2021-2027)

On October 27 2021, the association agreement to Horizon Europe was signed between the European Union and the Republic of Moldova. This cooperation supports the 'Global Approach to Research and Innovation and further strengthens the alliance between the EU and Moldova to deliver on common priorities, such as the twin green and digital transition²³.

Horizon Europe is the European Union's key funding programme for research and innovation with a budget of EUR 95.5 billion available over 7 years (2021 - 2027). The status of Associated Country provides Moldovan research entities the possibility to participate in Horizon Europe on equal level with entities from EU Member States.

In accordance to the Association Agreement of participation of the Republic of Moldova in Horizon Europe²⁴ the specifics are related to the new approach for calculation of financial contribution, by introducing of automatic correction mechanism of the initial operational contribution of the Republic of Moldova. The structure of HE2027 is presented on Fig.11.

The EU Framework Programme for Research and Innovation HORIZON EUROPE (2021-2027)

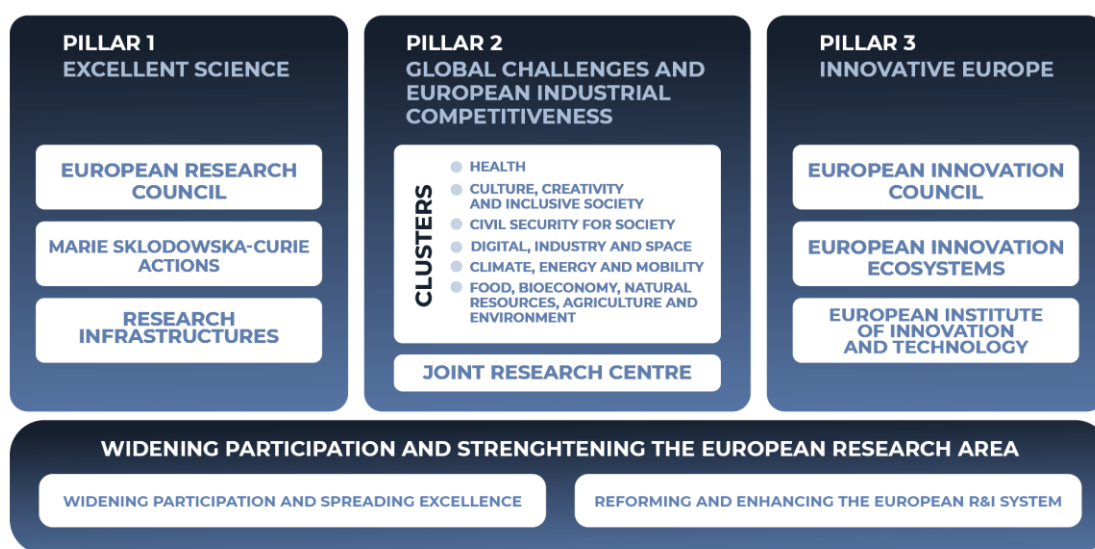


Fig.11. Configuration of the EU Framework Programme HORIZON EUROPE (2021-2027)²⁵.

Several Priority Areas and Specific Objectives of Horizon Europe are similar with Horizon 2020. However, the novel elements were introduced in HE2027, which include the mission-oriented approach, partnerships

²³ EC News Article. 28.10.2021. - The kRepublic of Moldova joins Horizon Europe research and innovation programme https://research-and-innovation.ec.europa.eu/news/all-research-and-innovation-news/republic-moldova-joins-horizon-europe-research-and-innovation-programme-2021-10-28_en.

²⁴ Agreement between the European Union, of the one part and the Republic of Moldova, of the other part, on the participation of the Republic of Moldova in the Union programme Horizon Europe – the Framework Programme for Research and Innovation C/2021/7579. EU Lex - https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2022.095.01.0018.01.ENG&toc=OJ%3AL%3A2022%3A095%3ATOC

²⁵ <https://www.horizon-eu.eu/>

with industry, innovation support by the European Innovation Council, more effective open science policy, simplification of participation procedures in H2020, etc.

The key figures of the Republic of Moldova's participation in the Horizon Europe Programme within 2021-2022 are presented on Fig.12 (data extraction from the Horizon Dashboard – 25 November, 2022).

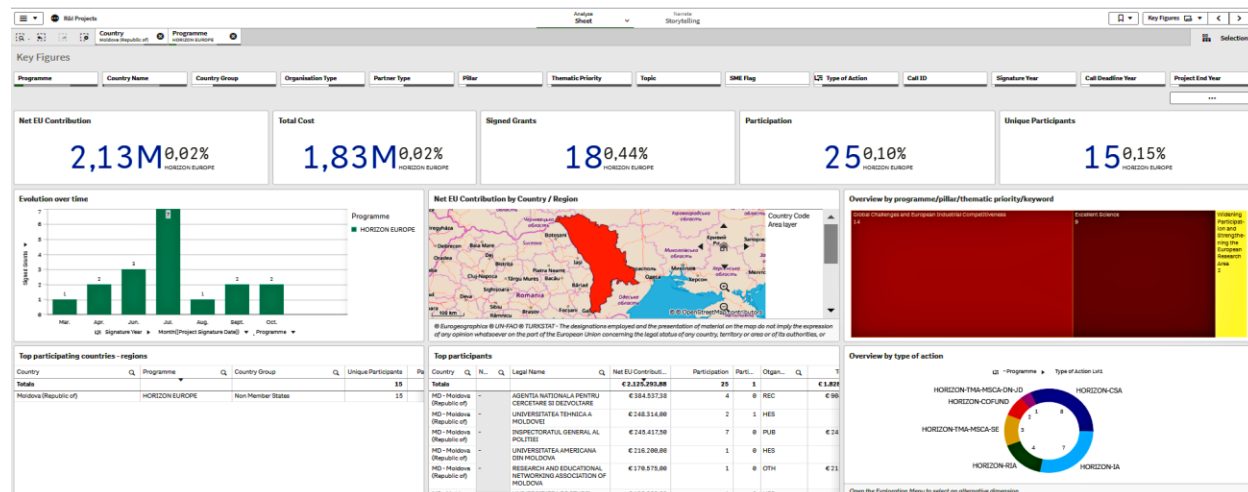


Fig.12. The Country Profile – Key Figures of the Republic of Moldova participation in the HE2027²⁶.

Official statistics from the Horizon Dashboard (25.11.2022) confirms participation of Moldova in 18 projects (signed Grants Agreements) with 25 participation of 15 legal entities, specified in Table 5.

Table 5. Moldovan Institutions involved in the HE2027 projects

Legal Name	Participation in projects	Organization Type	Net EU Contribution, EUR
NATIONAL AGENCY FOR RESEARCH AND DEVELOPMENT	4	REC	384.537,38
TEHNICAL UNIVERSITY OF MOLDOVA	2	HES	248.314,00
GENERAL INSPECTORATE OF POLICE	7	PUB	245.417,50
AMERICAN UNIVERSITY OF MOLDOVA	1	HES	216.200,00
RESEARCH AND EDUCATION NETWORKING ASSOCIATION OF MOLDOVA	1	NGO	170.575,00
UNIVERSITY OF POLITICAL AND ECONOMIC STUDIES 'C. STERE'	1	HES	138.000,00
WISE AGILE SME	1	SME	135.250,00
VERDE E MOLDOVA PUBLIC ASSOCIATION	1	NGO	132.375,00
GENERAL INSPECTORATE OF FRONTIER POLICE	1	PUB	122.500,00
INSTITUTE OF EUROPEAN POLITICS AND REFORMS PUBLIC ASSOCIATION	1	NGO	101.200,00
INFOGROUP PUBLIC ASSOCIATION	1	NGO	57.625,00

²⁶ Horizon Dashboard (Data Extraction – 25.11.2022) <https://webgate.ec.europa.eu/dashboard/sense/app/a976d168-2023-41d8-acce-e77640154726/sheet/0c8af38b-b73c-4da2-ba41-73ea34ab7ac4/state/analysis>

ACADEMY OF SCIENCES OF MOLDOVA	1	REC	54.625,00
BALTI STATE UNIVERSITY 'ALECU RUSSO'	1	HES	44.250,00
INSPECTORATE FOR ENVIRONMENT PROTECTION	1	PUB	37.937,50
VIITORUL – INSTITUTE FOR DEVELOPMENT AND SOCIAL INITIATIVES	1	NGO	36.487,50
Total	25		2.125.293,88

As it follows from above data, participation of 6 organizations from the R&I system out of 15 were registered in the HE2027 signed Grants Agreements (less than 40% of participating organization within the supported projects): National Agency for Research and Development, Technical University of Moldova, American University from Moldova, University of Political and Economic Studies "C. Stere", Balti State University "A. Russo", and Academy of Sciences of Moldova. The remaining 9 organizations involved in HE2027 projects are NGOs, inspectorates and SMEs.

The amount of the EU funding allocated to the retained projects in 2021-2022 is less than the national financial contribution paid to the EU budget by Moldova for participation in Horizon Europe 2027. The urgent measures are required to improve the situation. More effective participation of research and innovation organizations in the Horizon Europe program was expected.

The inactive participation of Moldova in HE2027 could be explain as following:

- Insufficient **informational and promotional campaigns** were organized - inactive work of NCP Network which is not effectively coordinated by NCP Host Institution;
- The **specifics and new elements of participation in HE2027** were not explained to scientific and business community;
- The HE2027 **Mission-Oriented approach** was not promoted, which sets up the measures to achieve bold, inspirational and measurable goals within a set timeframe. There are 5 main mission areas identified as part of Horizon Europe;
- **Lack of collaboration** between the main authorities within R&I sector: MER, NARD and ASM.
- The new approach to objective-driven and more ambitious **partnerships with industry** in support of EU policy objectives was not underlined;
- Lack of understanding the necessity of **Open Science policy**: Mandatory open access to publications and open science principles are applied throughout the programme;
- No promotion of the **European Innovation Council** mission, which offer the support for innovations with potential breakthrough and disruptive nature with scale-up potential that may be too risky for private investors. This is 70% of the budget earmarked for SMEs;
- No enough promotion of targeted opportunities within the **Spreading Excellence and Widening Participation** Specific Objective.
- Lack of interest to participate in the EU Framework Programme due to the absence of regulations regarding the mod of **salaries calculation within the international projects**. Taking into consideration the extremely small salaries within the R&I sector, the budget allocated within the signed Grant Contracts for participants from Moldova cannot be spent totally.
- Misunderstanding or lack of knowledge on how the EU FP specific provision stipulated in the **Annotated Model Grant Agreement**²⁷ has to be correlated with the **national bureaucratic burden** of grants financial administration.

²⁷ EU Grants. AGA - Annotated Model Grant Agreement. EU Funding Programmes 2021-2027.
https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/aga_en.pdf

2. STATISTICAL ANALYSIS

The Republic of Moldova was eligible to participate in the H2020 Programme as Associated Country the whole period of Programme duration from 2014 to 2020, as well as in the H2020 Calls announced in 2021. The total number of H2020 concluded calls is 999. The total number of proposals with participation of Moldova is 551 out of 583 applications submitted to H2020 Calls, Grant Agreements signed – 68 with 86 participation of Moldovan organizations. The EU financial contribution to all participations from the Republic of Moldova – EUR 7.4 million.

The statistics of the above-mentioned data annual distribution is presented in the Table 6.

Table 6. Statistical data of the Republic of Moldova participation in H2020 – Annual distribution.

#	Participation of the Republic of Moldova in H2020	2014	2015	2016	2017	2018	2019	2020-2021	Total
1.	Nr. of H2020 Concluded Calls	105	111	150	145	167	158	163	999
2.	Total Nr. of proposals submitted	56	116	78	95	67	44	95	551
3.	Total Nr. of participations in proposals	61	120	83	103	72	48	96	583
4.	Nr. of projects retained (Signed Grant Contracts)	10	7	8	13	11	6	13	68
5.	Nr. of participations within the projects	12	7	9	18	14	6	18	86
6.	Nr. of organizations involved in the projects	7	5	8	15	10	5	15	35*
7.	EU Funding, mln EUR	0.402	0.825	1.019	2.502	1.018	0.457	1.175	7.399

*Several organizations were participated in more than one project.

2.1. H2020 Proposals

The total number of **eligible proposals** with involvement of Moldovan organizations submitted to the H2020 concluded calls is 456 with 549 participations. Their distribution in accordance to the H2020 Pillars and Priority Areas is presented in the **ANNEX#2**. In conformity with these data, the Moldovan entities applied to almost all H2020 Pillars and Priority Area, Fig.13.

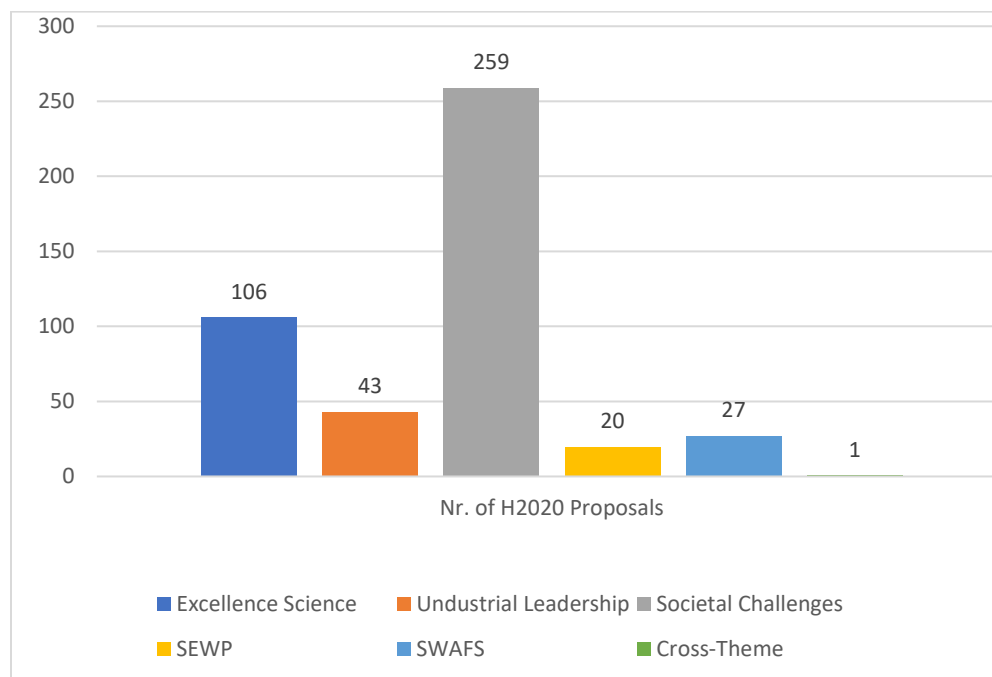


Fig.13. Proposals with participation of Moldova in accordance to the H2020 Pillars and Specific Objectives (SEWP – Spreading Excellence and Widening Participation; SWAFS – Science with and for Society).

Obviously, the bigger number of proposals were submitted to the 3rd pillar: Societal Challenges (259 applications) then to the 1st Pillar: Excellence Science (106 applications). The most active participation was registered within the following H2020 Priority Areas:

- **Pillar 1. Excellence Science:** Marie-Curie Actions (78 proposals);
- **Pillar II. Industrial Leadership:** Information and Communication Technologies (17 proposals) and Innovation in SMEs (13 proposals);
- **Pillar III. Societal Challenges:** Secure societies - Protecting freedom and security of Europe and its citizens (71 proposals), Europe in a changing world (66 proposals) and Secure, clean and efficient energy (42 proposals).

However, is very important to note the submission of 5 proposals for ERC Calls and 8 proposals for FET Calls under the Pillar 1. No proposal was supported within these Priority Areas, but it demonstrated the existing potential of the R&D community.

Besides, of high importance is participation within the Specific Objective: “Spreading Excellence and Widening Participation”, where the Moldovan applicants can serve as Coordinators of Consortiums. There were registered 3 proposals submitted to “Teaming of excellent research institutions and low performing RDI regions”, 15 proposals to Twinning of research institutions and 2 proposals to “Era-Chairs”. Within the Twinning Calls in 2015 and 2017 three proposals out of 15 were retained for funding.

The status of Associated Country to the EU Framework Programme ensure participation of all type of organizations the H2020 calls and other activities under the same conditions as legal entities from the Member States²⁸ (Table 7).

Table 7. *The type of organizations applying for the H2020 Calls for Proposals.*

	Type of the Organization Involved	Total Nr. of Proposals	Nr. of Ineligible Proposals	Nr. of Eligible Proposals	EU Funding requested per eligible proposals, mln EUR
1	Research Institutes	111	6	105	24.134
2	Higher Education University	111	8	103	19.825
3	National Authorities/ Agencies	89	1	88	6.961
4	State Enterprises, Services and others	78	5	73	87.262
5	Non-Government Organizations	85	2	83	14.931
6	Small and Medium Enterprises	106	9	98	38.224
7	Other	2		2	0.092
	TOTAL	582	31	551	191.429

Following these data, the most active in proposals submission are Research and Higher Education organizations. The big number of applications were submitted by SME as well, however the biggest number of ineligible applications were registered.

All admissible and eligible proposals passed through the evaluation process executed by the independent experts following the evaluation criteria established by the EC for H2020 Programme. Proposals were evaluated and scored against selection and award criteria - excellence, impact, quality and efficiency of implementation²⁹.

This assessment was based on the competence and experience of the applicants, including operational resources (human, technical and other) and, if applicable, exceptionally the concrete measures proposed to obtain it within the time of implementation the tasks.

The Status of evaluated proposals is distributed in the following way, Table 8. Proposals from the 'Main' list are subject to the signing the Grant Agreement and allocation of EU funds for the corresponding projects. Depending on funding availability, in several cases, proposals can be retained for funding from 'Reserve' list. Status 'No Money' demonstrate the good quality of proposal, which was evaluated with the score above a certain threshold for each criterion, and above an overall threshold, but there is no enough money to fund such project. However, proposals with the status 'No Money'/'Reserve List' could be resubmitted to the next similar call after the adjustments made on the base of the evaluator's comments (in case when no other specific conditions are specified).

²⁸ EC DG R&I Associated Countries - https://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/3cp/h2020-hi-list-ac_en.pdf

²⁹ Horizon 2020 Evaluation Rules General Annexes - https://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2018-2020/annexes/h2020-wp1820-annex-h-esacrit_en.pdf

Table 8. The status of evaluated proposals with participation of the Republic of Moldova.

#	Participation in the Proposals	Evaluation Results: Status of the Proposals					
		Main*	No Money	Reserve	Rejected/ Eligible	Ineligible	TOTAL per organization
1	Nr. of Participations of Research Institutes	15	30	2	58	6	111
2	Nr. of Participations of Higher Education/ Universities	8	37	4	54	8	111
3	Nr. of Participations of National Authorities/ Agencies	28	11	7	42	1	89
4	Nr. of Participations of State Services, Enterprises, etc	9	28	5	31	5	78
5	Nr. of Participations of NGO	13	25	3	42	2	85
6	Nr. of Participations of SME	7	17	1	72	9	106
7	Nr. of Participations of Others				2		2
	Total Nr. of Participations in the Proposals	80*	148	22	301	31	582

The 80 Moldovan participations were approved from the Main List and 6 more from the Reserve List of evaluated proposals. Thus, 86 participations of Moldovan organizations were registered within the 68 signed Grants Agreements.

For applications with involvement of Moldova from the ‘Main’ list the calculation of success rate is presented in Table 9. In addition, the participation of Moldova in H2020 projects was revealed in comparison with the participation of other countries associated to H2020 Programme.

As it follows from the Table 9, the Success Rate (ratio between the number of applications submitted to the H2020 and the number of supported projects) of applications from Moldova is 14,57% that is practically reach the average of Associated countries’ participation – 16,48%.

However, the success rate indicator in attracting the EU funding within the H2020 projects by Moldova is 6,30% (ratio between the EU funding requested and approved under the signed Grants Agreements), that is twice less than the average reached by the Associated countries’ participation – 12,97%.

Comparing the participation with the EaP countries (Armenia, Georgia and Ukraine) associated to H2020, the success rate indicator ‘Applications from a country’ is much higher in case of Moldova.

Nevertheless, the success rate of EU financial contribution within the signed Grants Agreements was being in advance in case of Armenia.

Table 9. H2020 Applications, EU Financial Contribution and Success Rate calculated for Associated Countries (EU e-corda).

H2020 Applications and Requested EU Financial Contribution by Country All Proposal Applications							
		Eligible Proposals		Retained Proposals		Success Rates	
Country		Applications in Eligible Proposals from a Country	EU Financial Contribution in Eligible Proposals to Applications from a Country (EUR)	Applications in Retained Proposals from a Country	EU Financial Contribution in Retained Proposals to Applications from a Country (EUR)	Applications from a Country %	EU Financial Contribution to Applications from a Country %
ASSOCIATE	AM - Armenia	309	68.626.584	37	4.678.230	11,97 %	6,82 %
	BA - Bosnia and Herzegovina	729	192.212.345	113	8.117.715	15,50 %	4,22 %
	CH - Switzerland	26.371	14.469.968.993	4.617	2.318.876.737	17,51 %	16,03 %
	FO - Faroe Islands	152	50.583.389	27	3.973.451	17,76 %	7,86 %
	GE - Georgia	504	148.741.131	60	7.685.391	11,90 %	5,17 %
	IL - Israel	15.177	14.013.891.286	1.889	1.280.516.629	12,45 %	9,14 %
	IS - Iceland	1.931	1.093.919.826	368	135.611.637	19,06 %	12,40 %
	MD - Moldova (Republic of)	549	112.344.257	80	7.078.273	14,57 %	6,30 %
	NO - Norway	17.518	10.690.372.962	2.790	1.602.024.250	15,93 %	14,99 %
	TN - Tunisia	704	160.430.896	94	13.670.748	13,35 %	8,52 %
	UA - Ukraine	2.839	860.652.583	266	45.163.921	9,37 %	5,25 %
Total for ASSOCIATE		66.783	41.861.744.252	10.341	5.427.396.981	15,48 %	12,97 %

2.2 H2020 Projects

Based on the EU e-corda statistics, the H2020 projects with participation of Moldova in accordance to the H2020 Pillars and Priority Area are presented in the **ANNEX#3**.

The most active participation is registered in Pillar 3: Societal Challenges (34 projects) and Pillar 1: Excellent Science (20 projects). The most required Priority Areas within the Pillar 1 are: Marie Skłodowska-Curie Actions and Research Infrastructure, to which the biggest amount of EU financial contribution was allocated – EUR 2.807.596,00.

Besides, three Twinning Projects supported under the H2020 Spreading Excellence and Widening Participation concluded calls in 2015 and 2017 were funded at a total amount of EUR 1.520.250,00, where the Moldovan participants serves as Coordinators of project consortiums.

The net EU financial contribution allocated to the signed H2020 Grants Agreements with involvement of Moldovan organizations in correspondence to the field of sciences is presented on Fig.14.

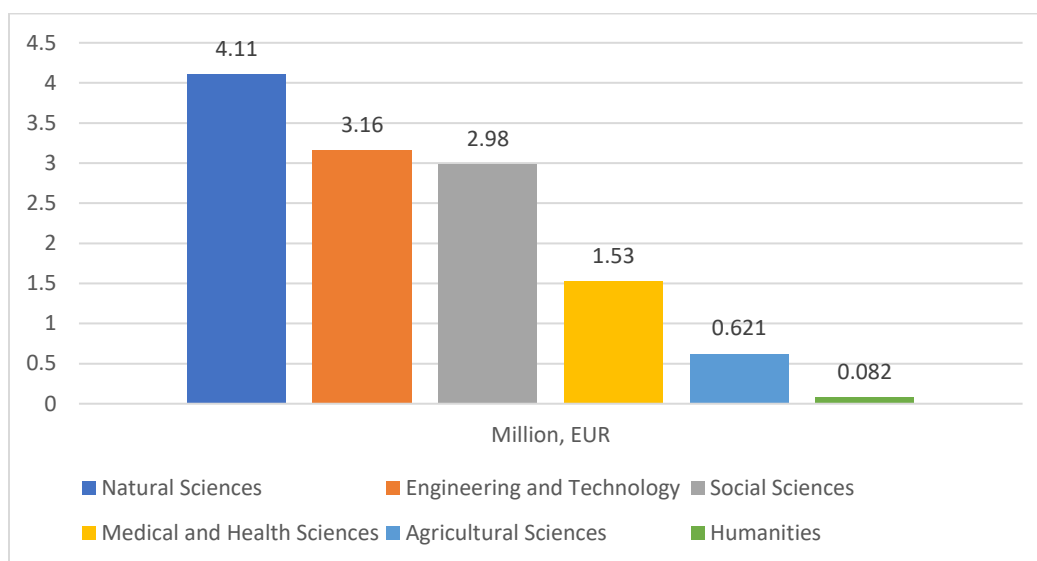


Fig.14. Net EU financial contribution (mln EUR) to the H2020 projects with participation of Moldova by the field of science.

The 7th year period of Horizon 2020 Programme was divided in three H2020 Work Programmes, covering:

- H2020 Work Programme-1: 2014-2015,
- H2020 Work Programme-2: 2016-2017 and
- H2020 Work Programme-3: 2018-2020.

Considering the Horizon 2020 Work Programmes, the participation of Moldova in the projects is presented at the Fig.15.

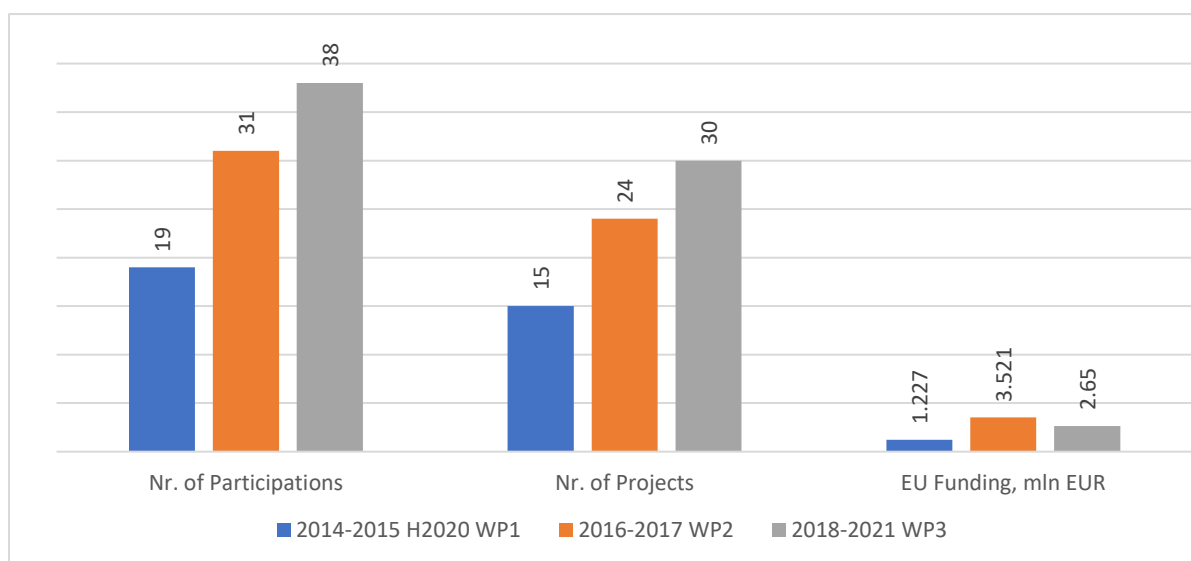


Fig.15. Distribution of H2020 projects with participation of Moldova in accordance with the H2020 Work Programmes.

Amount of funding provided by the European Union reached EUR 7.4 million, which covered activities established within 68 signed H2020 Grants Agreements/projects with 86 participations of Moldovan entities.

The annual distribution of the projects, participations and EU financial allocations are presented on Fig.16, where the positive trends are registered within the periods 2014-2017 and 2019-2020. The 2017 was the most fruitful in attraction of the EU funding within the Horizon 2020 projects – more than EUR 2.5 million.

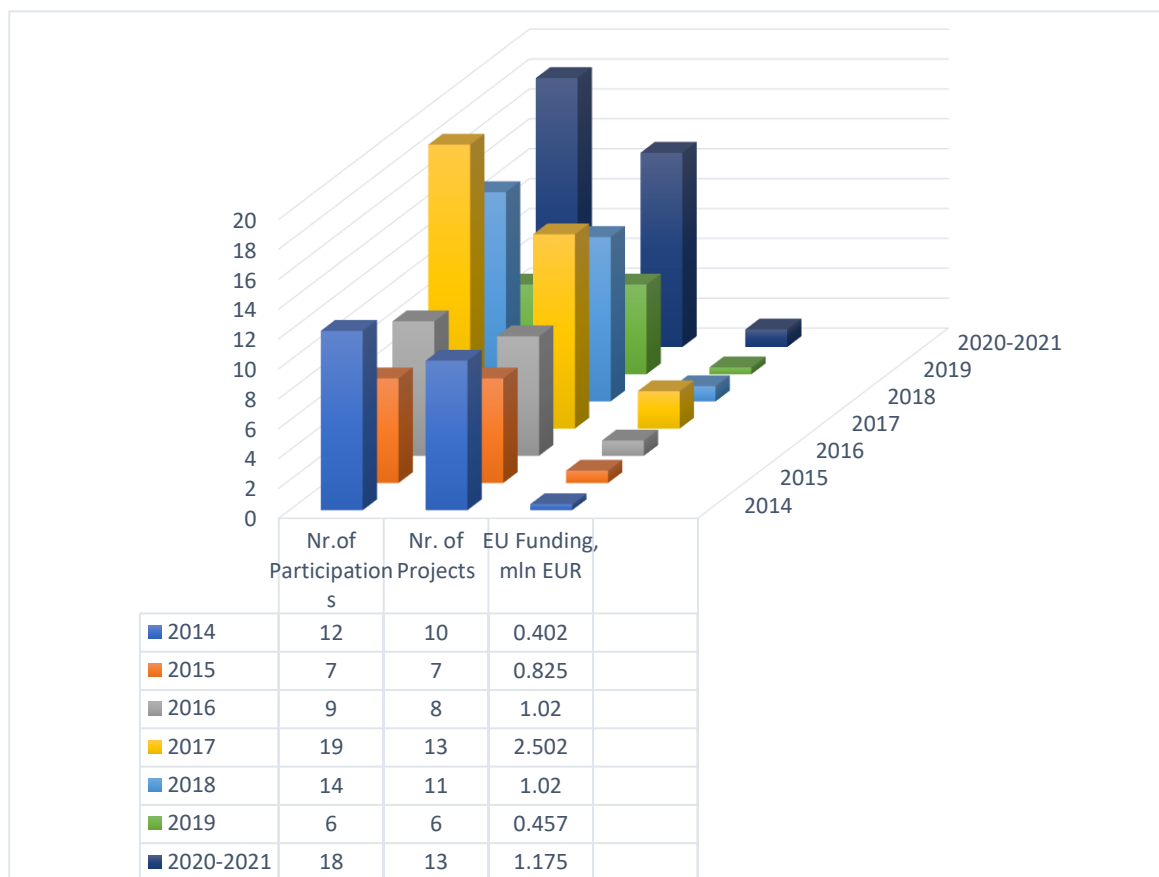


Fig 16. Results of the Republic of Moldova participation in the EU Framework Programme Horizon 2020 – annual distribution.

Decline of participation in the H2020 projects during 2015-2016 happened due to the essential changes of EU requirements (EU AMGA³⁰) towards the remuneration within the projects. At the national level the normative acts were modified that period. The GD Nr.534 from 2012 which regulated the salaries amounts within the international projects and FP7 was not possible to apply for the H2020 grants administration. It led to diminution of salaries in H2020 projects that provoked decrease of interest to participate in H2020 Calls. Besides, the amount of funds allocated by the EU for the remuneration in H2020 projects become impossible to consume that created the additional problems related to the necessity of returning the funds already planned within the project budgets.

This problem was discussed on the EaP countries level. The join appeal on this regard signed by the President of the Academy of Science of Moldova and the Minister of Education and Research of Ukraine was addressed to the European Commission in 2015. No solution was proposed by EC besides of necessity to follow the EU AMGA provisions.

³⁰ EU Grants. AGA - Annotated Model Grant Agreement. EU Funding Programmes 2021-2027.
https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/aga_en.pdf

Besides, the Reform of 2017-2018, which provoked the structural reorganization of R&D Sector, also influenced the participation of the Republic of Moldova in H2020 Calls. It divided the participation of the Moldovan R&D organizations in H2020 in two phases – ante-reform period, which covered four years of two HE2020 Work Programmes: 2014-2015 and 2016-2017 and post reform participation, which covered next four years of available H2020 Calls within 2018-2021. The comparison of statistical data for 2014-2017 and 2018-2021 periods are presented in the Table 10 and Fig.17.

Table 10. Comparison of Moldovan participation in H2020 in the ante-reform and post-reform periods.

#	Participation of the Republic of Moldova in H2020	Ante-Reform period: 2014-2017	Post-Reform period 2018-2021
1.	Nr. of H2020 Calls announced	366	216
2.	Nr. of eligible proposals submitted	291	166
3	Nr. of projects supported (Signed Grant Contracts)	38	30
4.	Nr. of participations within the projects	48	38
5.	Nr. of organizations involved	28	18
6.	EU Funding, mln EUR	4.789	2.611

The difference in H2020 participation in these two periods is obvious.

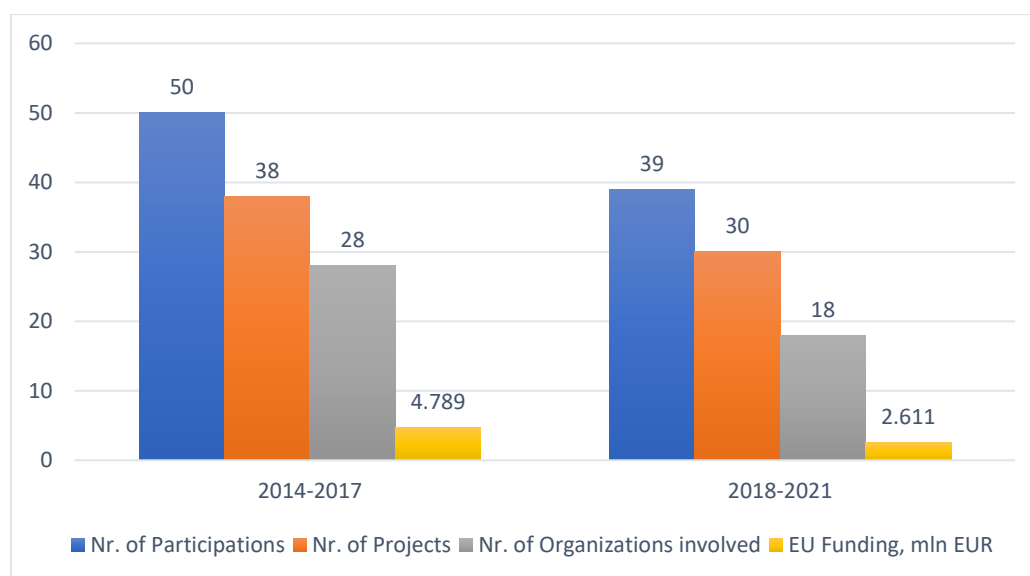


Fig.17. Participation of the Republic of Moldova prior and after the Reform of 2018.

According to the type of instruments/funding scheme the projects with participation of Moldovan organizations are distributed as follow in Table 11. Eligible costs for all types of action are in accordance with the Financial Regulation No 966/2012 and the Horizon 2020 Rules for Participation Regulation No 1290/2013. The type of instruments/funding scheme determine the rate of the EU funding allocated for the projects. For example, the projects retained under RIA or CSA are covered with 100% of EU funding rate, but IA projects had 70% of EU funding rate and 100% of funding rate in case of non-profit organization.³¹

³¹ Overview of Horizon 2020 funding schemes - <https://www.emdesk.com/horizon-2020-horizon-europe-basics-guide/horizon-2020-funding>

Table 11. Distribution of H2020 projects with participation of Moldova by funding scheme/ type of actions.

	H2020 Projects Type of Action/ Funding Scheme³²	Nr. of H2020 Projects (Signed Grant Agreements)	Nr. of Participations in the H2020 Projects
1	IA – Innovation Actions	2	2
2	RIA – Research and Innovation Actions	17	27
3	CSA – Coordination and Support Actions	25	30
4	MSCA - Marie Skłodowska-Curie Actions	8	11
5	SME – Small and Medium Enterprises Instrument	0	0
6	ERA-NET – Cofund	7	7
7	JTI – Joint Technology Initiative	0	0
8	EEN-SGA	3	12
9	OTH – Other	0	0
	TOTAL	68	86

The biggest number of the projects was funded under the Coordination and Support Action type of actions, then Research and Innovation Action. It should be noted that the projects funding under the ERA-NET-Cofund become possible due to involvement in several Joint Programming Initiative, such as: Water JPI, Climate JPI, Ocean JPI and AMR JPI. Unfortunately, a very small number of projects were supported and funded under the SME Instrument and only 2 projects within the Innovation Actions funding scheme, Fig.18.

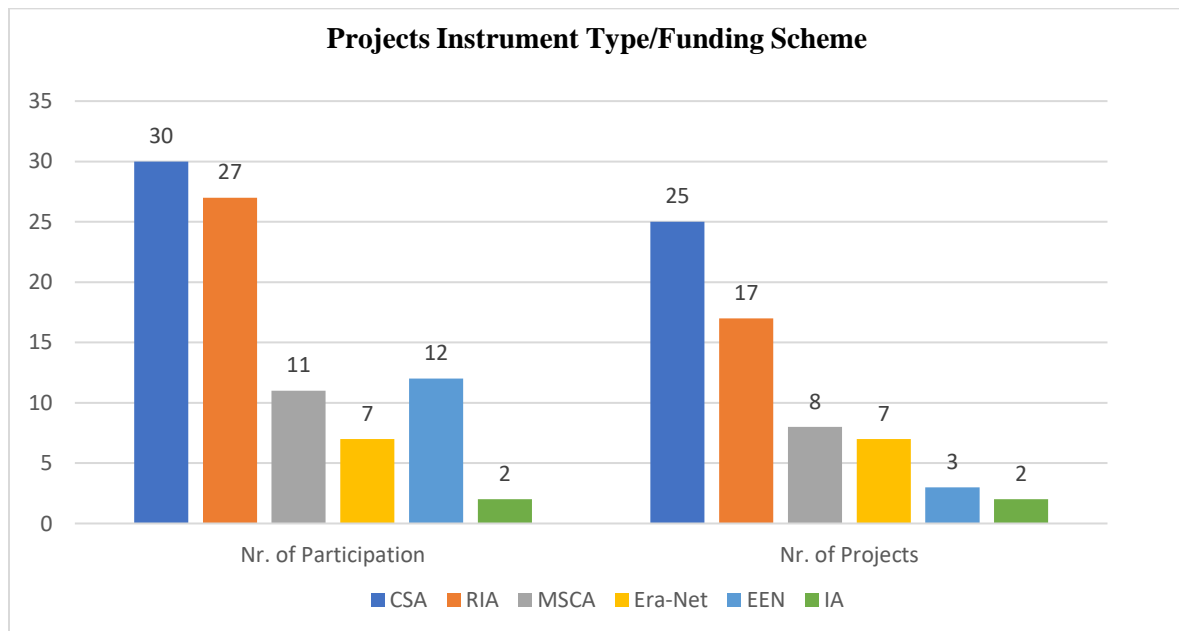


Fig.18. Distribution the H2020 projects with participation of Moldova by funding scheme.

³² EC Horizon 2020 Work Programme 2018-2020. EC Decision C(2019)4575 of 2 July 2019 - https://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2018-2020/annexes/h2020-wp1820-annex-ga_en.pdf

The top collaborative links (selected from more than 30 links) with the EU Member States within the consortiums formed in the projects proposals are presented on Fig.19.

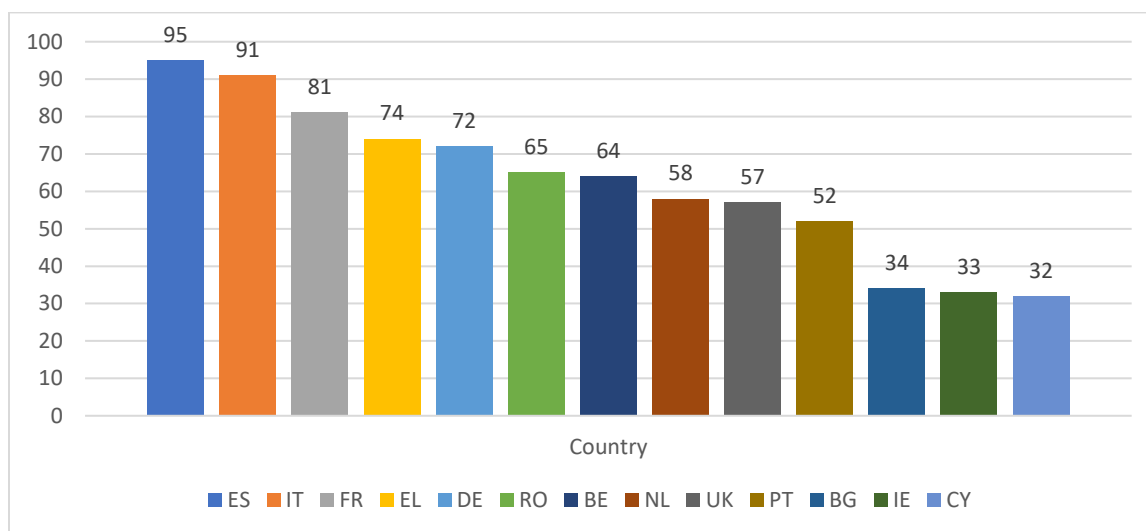


Fig.16. Top collaboration of Moldova with the EU Member States within the H2020 activities.

It has to be noted, that within 10 years (2008-2018) the Cooperation Agreements were concluded by the Academy of Science of Moldova with Italy (INRC – Italian National Research Council), France (CNRS – French National Centre for Scientific Research), Germany (Federal Ministry for Education and Science) and Romania (UEFISCDI - Executive Unit for the Financing of Higher Education, Research, Development and Innovation). Implementation of the Cooperation Agreements were ensured by CIP and continued by NARD (since 2018) through bilateral calls announcement and administration. In several cases, the bilateral cooperation facilitated the formation of consortiums for applying to the H2020 Calls.

Below are presented the collaborative links with the Associated-EU Candidate Countries (Fig.17, a) and Associated to the H2020 Countries (Fig.17, b):

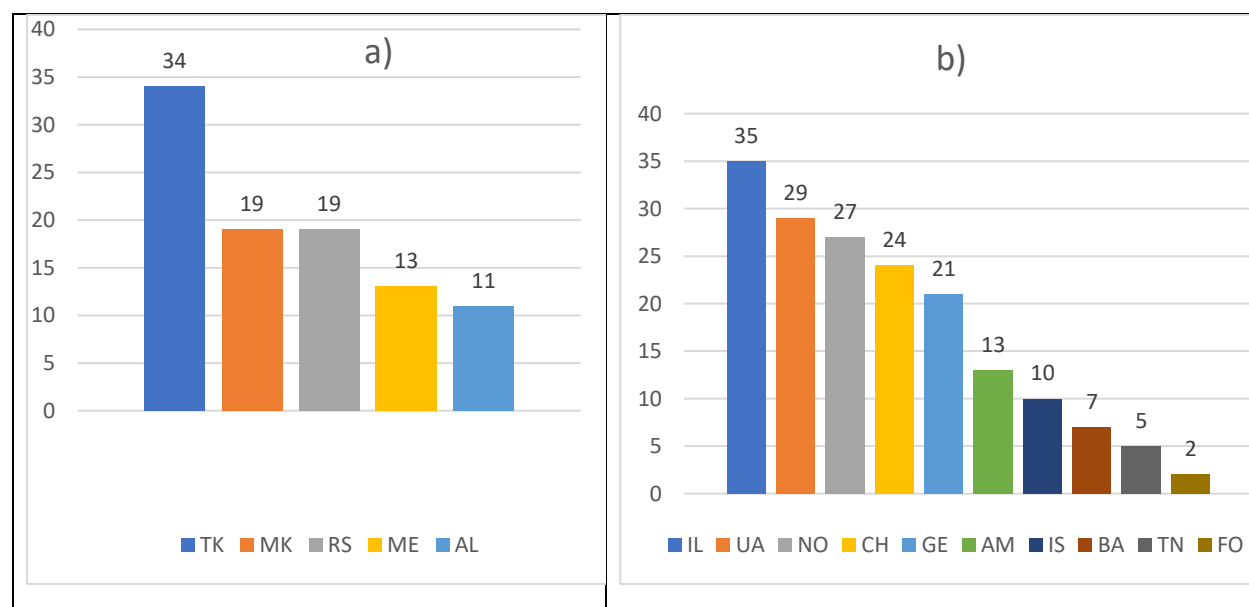


Fig.17. Collaborative links of Moldova within the H2020 with: a) Associated-EU Candidate Countries; b) Associated to H2020 Countries.

2.3 Participating Organizations Overview

The list of Moldovan organizations involved in the H2020 Projects/signed Grants Agreements is presented in the Table 12.

Table 12. Moldovan organization – participants in the H2020 Projects.

No.	Legal Name	Activity Type	Number of Participations	Net EU Financial Contribution (EUR)
1	RESEARCH AND EDUCATIONAL NETWORKING ASSOCIATION OF MOLDOVA (RENAM)	NGO	7	1.064.171,00
2	INSTITUTE OF APPLIED PHYSICS	REC	3	1.024.481,25
3	NATIONAL AGENCY FOR RESEARCH AND DEVELOPMENT	REC	21	674.016,32
4	INSTITUTE OF ELECTRONIC ENGINEERING AND NANOTEHNOLOGIES 'D GHITU'	HES	2	638.518,75
5	TEHNICAL UNIVERSITY OF MOLDOVA	HES	2	526.125,00
6	HEALTH FOR YOUTH PUBLIC ASSOCIATION	NGO	1	453.255,00
7	STATE PROTECTION AND GUARD SERVICE	PUB	5	451.250,00
8	MOLDOVA STATE UNIVERSITY MSU	HES	2	450.900,00
9	INSTITUTE OF PHYSIOPNEUMONOLOGY 'CHIRIL DRAGANIUC'	REC	3	384.626,25
10	DAS SOLUTIONS SRL	SME	2	156.254,13
11	GENERAL INSPECTORATE OF FRONTIER POLICE	PUB	2	155.475,92
12	DAS FOUNDATION FOR A MOLDOVA BASED ON KNOWLEDGE SRL	SME	2	136.550,00
13	TIRASPOL STATE TUNIVERSITY	HES	2	134.625,00
14	POLIVALENT-95 SRL	SME	1	126.000,00
15	SUNGA SRL	SME	1	126.000,00
16	VERDE E MOLDOVA PUBLIC ASSOCIATION	NGO	1	121.875,00
17	INSTITUTE OF CHIMISTRY	REC	2	112.000,00
18	PROENTRANSE PUBLIC ASSOCIATION	NGO	1	102.062,50
19	IRON WILL SRL	SME	1	101.343,75
20	IDIS VIITORUL INSTITUTE FOR DEVELOPMENT AND SOCIAL INITIATIVES	NGO	1	81.500,00
21	ECOSORBENT SRL	SME	1	58.500,00
22	ACADEMY OF SCIENCES OF MOLDOVA (ASM)	REC	3	55.162,50
23	MOLDOVAN RESEARCH AND DEVELOPMENT PUBLIC ASSOCIATION	NGO	1	48.843,50
24	STATE ENTREPRISES FOR AIR SPACE MAINTENANCE AND AIR TRAFFIC SERVICING MOLDATSA	PRC	1	42.000,00
25	NATIONAL INSTITUTE FOR ECONOMIC RESEARCH	REC	1	41.462,50

26	TOPAZ SA ETREPRISES	SME	1	31.500,00
27	INSTITUTE FOR TH INFORMATIONAL SOCIETY DEVELOPMENT	HES	1	26.687,50
28	TEHNOLOGY TRANSFER NETWORK OF MOLDOVA	NGO	3	18.908,83
29	INSTITUTE OF ECOLOGY AND GEOGRAPHY	REC	1	12.725,00
30	STATE UNIVERSITY OF MEDICINE AND PFARMACY 'N. TESTEMITANU'	HES	2	11.720,00
31	CHAMBER OF COMERCE AND INDUSTRY OF THE REPUBLIC OF MOLDOVA	OTH	3	11.671,33
32	CENTRE FOR FUNDING THE FUNDAMENTAL AND APLIED RESEARCH, ASM	REC	1	10.649,30
33	MOLDOVAN SOCIETY PSYCHIATRISTS AND NARCOLOGISTS	NGO	1	9.401,00
34	WISDOM PUBLIC ASSOCIATION	NGO	1	0.00
35	ORGANIZATION FOR SMALL AND MEDIUM ENTERPRISES SECTOR DEVELOPMENT	PUB	3	0.00
Total number of participating organizations 35			86	7.400.261,33

The total number of Moldovan organizations involved in the H2020 Projects was 35. Out of this number, 14 organizations (~ 40%) belong to the R&D sector, including ASM and NARD.

The biggest number of the H2020 projects – 21 signed Grant Agreement, involved the National Agency for Research and Development, which since 2018, is responsible for coordination of the National Contact Point Network and other instruments needed to facilitate participation of Moldovan legal entities in H2020 calls and activities. The evident leaders in attracting the EU funds were two organizations (more than EUR 1.0 million/each): RENAM (NGO) – active participants in the Research Infrastructure thematic area and Institute of Applied Physics – participant in the Marie Skłodowska Curie Actions and Twinning projects.

The most active Moldovan organizations in proposals submission are presented in the Table 13 with reflecting the status of proposals evaluation. All projects from the 'Main List' and several projects from the 'Reserve List' were retained for funding.

Table 13. The most active Moldovan organizations-participants of H2020 Projects.

#	Organization	Nt. of Proposals	Retained Projects/ Programme	Main List	Reserve	No-Money	Eligible, Rejected	Ineligible
1	National Agency for Research and Development	38	INNOSUPSME SOCIETY ENV, FOOD HEALTH CAREER	19	3	6	10	0
2	Technical University of Moldova	37	TWINNING MSCA	2	2	10	20	3
3	General Inspectorate of Frontier Police	34	SECURITY	2	3	12	13	4
4	Moldova State University	28	MSCA	2	0	12	10	4

5	State Protection and Guard Service	21	SECURITY	5	2	8	5	1
6	Institute of Applied Physics	21	TWINNING MSCA	3	0	6	9	3
7	National Institute of Economic Study	18	SOCIETY	1	0	2	13	2
8	State University of Medicine and Pharmaceutics N.Testemitanu	13	HEALTH INFRA	2	0	6	7	0
9	Academy of Sciences of Moldova	11	MSCA CAREER	2	0	4	5	0
10	Research and Education Networking Association of Moldova	9	INFRA	6	0	0	3	0
11	Institute of Physiopneumology C.Draganiuc	8	MSCA HEALTH	3	0	4	1	0
12	Institute of Electronic Engineering and Nanotechnologies D.Ghitu	7	TWINNING FOOD	2	0	2	3	0

The selected participations presented below demonstrate the specifics of the projects and diversity of Moldovan organizations involved.

Within the **Pillar 1: Excellence Science** – 9 Marie-Sklodowska-Curie Actions were implemented by 12 Moldovan Institutions.

The project: **MODERNight-2020** - Fostering science and innovation impact through organization in Moldova the European Researchers' Night (H2020-MSCA-NIGHT-2020) was realized by the consortium **Technical University of Moldova** (Coordinator) in partnership with the **Academy of Sciences of Moldova and Institute for Information Society Development**. The Researcher's Night event was successfully organized on-line in 2020, in spite of Covid Pandemic situation, which created a lot of difficulties for communications and presentations of the research results impact.

Three MSCA projects were realized by Moldovan Research Institutions in partnership with SMEs. Within the **Institute of Applied Physics** there are two projects:

- **SMARTELECTRODES** - Multiscale Smart Metallic and Semiconductor Electrodes for Electrochemical Processing and Devices (H2020-MSCA-RISE-2017), which was implemented in partnership with the TOPAZ Enterprise (Moldova) and other institutions from Lithuania, Belarus and US. Project proposed elaboration of advanced systems covered under umbrella of “smart” electrodes which have to play significant roles in several important electrochemical/electrophysical applications as catalysis/electrocatalysis, sensing, thermoelectric, electrowinning, electrochemical machining and electrospray alloying. The development of multiscale (from nano- to macro-; from nanodot to volumized 3D-) metallic and semiconductor electrodes and integration of them into working systems/equipment was the main target of SMARTELECTRODES.
- **INFINITE-CELL** - International cooperation for the development of cost-efficient kesterite/c-Si thin film next generation tandem solar cells (H2020-MSCA-RISE-2017), which included SUNGA SME/ Moldova and 11 partners from other countries: ES, NO, FR, DE, LT, MA, BY, ZA. INFINITE-CELL

proposed extending the very high efficiency tandem device concepts to emerging thin film PV technologies with high potential for reduction of costs and avoiding the use of critical raw materials.

- **NanoMed** - Nanoporous and Nanostructured Materials for Medical Applications (H2020-MSCA-RISE-2017) involves the *Institute of Chemistry* in partnership with ECOSORBENT SME/Moldova and 11 partners from: ES, FR, UK, PT, EL, HU, SK, UA, KZ. This project stimulated intersectoral and international collaboration in the area of novel nanoporous and nanostructured adsorbents for the treatment of very serious health conditions associated with acute and chronic exposure to external radiation and uptake of heavy metals and radiation as a consequence of accidental, occupational or deliberate activities and events. Radioactive contamination is a particularly serious problem in two of the countries participating in this project, namely, Ukraine and Kazakhstan, on large territories of the Chernobyl zone and around Semipalatinsk nuclear test site, respectively.

The 6 projects were realized within the **Research Infrastructure** Priority Area/ **Pillar 1: Excellence Science** by NGO **RENAM - Research and Education Network Association of Moldova**.

- **VI-SEEM** - VRE for regional Interdisciplinary communities in Southeast Europe and the Eastern Mediterranean (2015/01/14 H2020-EINFRA-2015-1). They helped to reduce the digital divide and brain drain in Europe, by ensuring access to regional e-Infrastructures to new member states, states on path to ascension, and states in European Neighborhood Policy area. The overall objective was focused on providing the user-friendly integrated e-Infrastructure platform for regional cross-border Scientific Communities in Climatology, Life Sciences, and Cultural Heritage for the SEEM region by linking compute, data, and visualization resources, as well as services, models, software and tools.

- **NI4OS-Europe** - National Initiatives for Open Science in Europe (2018/11/21 H2020-INFRAEOSC-2018-3) was realized in consortium of 22 partners. The project supported the development and inclusion of the national Open Science Cloud initiatives in 15 Member States and Associated Countries in the overall scheme of EOSC governance; spread the EOSC and FAIR principles in the community and train it; and provide technical and policy support in on-boarding of the existing and future service providers into EOSC. The overall approach was oriented to national Open Science landscapes based on necessity of mapping, analyzing and systematizing in scope to facilitate both the creation of national OSC initiatives to support the overall EOSC governance, and to engage all stakeholders.

- The series of projects: **GN4-1** (2020/12/31 H2020-ADHOC-2014-20), **GN4-2** (2016/03/31 H2020-IBA-SGA-INFRA-GEANT-2016), **GN4-3** (2018/11/13 H2020-SGA-INFRA-GEANT-2018) and **GN4-3N** (2018/11/13 H2020-SGA-INFRA-GEANT-2018) were realized in consortium of around 40 partners. The overall objective was directed to provide the stable environment for the implementation of GÉANT as the European Communications Commons for the European Research Area, based on the best possible digital infrastructure. GÉANT offers European researchers the network, communications facilities and application access that ensure the digital continuum necessary to conduct world-class research in collaboration with their peers, regardless of geographical location.

In the **H2020 Pillar 2: Industrial Leadership** were registered participation of 7 Moldovan organization. Three projects supported within SME Instrument: Business Inn (H2020-EEN-SGA2-2017-2018), PROBIM Pro: Supporting SME innovation in Moldova (H2020-EEN-SGA3-2018) and PROBIM (H2020-EEN-SGA4-2020-2021) involved consortiums with participation of four Moldovan organizations in each of them: *Chamber of Commerce and Industry of the Republic of Moldova, Organization for the Development of Small and Medium Enterprises, National Agency for Research and Development and Moldovan Technologies Transfer Network*. The projects were targeted to research-active SMEs and institutions and informed potential beneficiaries of the advantages of participating in the coaching facility, identifying the suitable coach from a central database, and supporting the selected SMEs. They offered the needed support to Moldova's SMEs to enhance their innovation capacity. Specifically, they facilitated their participation in a complete range of innovation support initiatives available at national or regional level. The link between the Enterprise Europe Network and the funding Programme Horizon 2020 was crucial in order to boost innovation in SMEs.

Participation in **Pillar 3: Societal Challenges** was the most demanded by Moldovan organizations. Fourteen institutions of different types were involved in 34 H2020 projects: *National Agency for Research and Development, State University of Medicine and Pharmaceuticals N.Testemitanu, Tiraspol State University, Institute of Pneumology "Chiril Draganiuc, Institute of Electronic Engineering and Nanotechnologies D.Ghitu, Institute of Ecology and Geography, National Institute of Economic Studies, State Protection and Guard Service, General Inspectorate of Frontier Police, Ministry of Internal Affairs, Society of Psychiatrists Narcologists, Psychoterapeutists and Psychologists of the Republic of Moldova (NGO), Institute for Development and Social Initiatives Viitorul (Idis Viitorul NGO), AO Proentranse (NGO), Health for Youth Association (NGO), Verde e Moldova (NGO) and "Iron Will" (SME).*

Under the 1st H2020 Priority Area/Pillar 3: **Health, demographic change and wellbeing**, five projects were realized with involvement of the Moldovan Organizations, Table 14:

Table 14. Participation of Moldovan Organizations in the H2020 Pillar 3/ Priority Area: Health, Demographic Change and Wellbeing

H2020 Signed Grant Agreements MD - Moldova (Republic of) Work Programme: EU.3.1. - Health, demographic change and wellbeing					
Project Number	Acronym	Title	Number of Participants	Participating Organizations from Moldova	EU Financial Contribution for participants from Moldova (EUR)
779318	<u>RISE</u>	Prevention of child mental health problems in Southeastern Europe - Adapt, Optimize, Test, and Extend Parenting for Lifelong Health	11	Public Association Health for Youth	453.255,00
779362	<u>RECOVER-E</u>	LaRge-scale implementation of COMMunity based mental health care for people with seVere and Enduring mental ill health in EuRopE	16	Society of Psychiatrists Narcologists, Psychoterapeutists and Psychologists; State University of Medicine and Pharmaceuticals N.Testemitanu	9.401,00 9.845,00
825673	<u>CARE</u>	Common Action Against Hiv/Tb/Hcv Across the Regions of Europe	14	Institute of Physiopneumonology Ch.Draganiuc	128.125,00
847465	<u>DRTB-HDT</u>	Stratified Host-Directed Therapy for Drug-Resistant Tuberculosis: A Randomized Controlled Multi-Centre Trial	10	Institute of Physio Pneumology Ch.Draganiuc	182.910,00
963864	<u>JPIAMR-ACTION</u>	JPI AMR- Antimicrobial Transmission Interventions	26	NARD	125.813,00
Total:		5 Projects			909.349,00

The five projects were realized within the **H2020 2nd Priority Area/Pillar 3: Food security, sustainable agriculture and forestry, marine and maritime and inland water research** by the:

- **Tiraspol State University:** H2020-BG-2019-1: **Black Sea CONNECT** – “Coordination of Marine and Maritime Research and Innovation in the Black Sea”. The core contribution of the Black Sea CONNECT was focused on supporting scientifically, technically and logistically the Black Sea Blue

Growth Initiative towards the implementation of the Burgas Vision Paper, with a view on boosting the blue economy in the region. Based on coordination of the SRIA development and its implementation plan both at national and regional level, the project supported the design of synergistic activities such as developing an operational network of funders, new transnational joint activities and achieving the knowledge transfer.

- **Tiraspol State University:** H2020-BG-2020-2: **DOORS** – “*Developing Optimal and Open Research Support for the Black Sea*”. DOORS brought the four SRIA pillars into reality, turning the challenges into opportunities for a highly valued Black Sea. It harmonized research and provided the infrastructure to better understand the Black Sea, particular ecosystem characteristics, developed the framework to support Blue Growth and early development of start-ups, and provided evidence to inform policy and behavioral change.
- **Proentrance Public Association:** H2020-RUR-2017-1: **BOND** – “*Bringing Organizations and Network Development to higher levels in the farming sector in Europe*”. BOND represented the great potential for collective action and networking of individuals, groups and entities of farmers and land managers, focusing on countries with lower organization levels, with a view to creating strong, dynamic and effective organizations that have a voice and a place in policy design. BOND’s legacy offered a menu a la carte of practical processes, user-friendly, with methods and tools to guide end-users when they decide to engage and benefit from the synergies of working with others.
- **Institute of Electronic Engineers and Nanotechnologies “D. Ghitu”:** H2020-BG-2020-2: **BRIDGE-BS** – “*Advancing Black Sea Research and Innovation to Co-Develop Blue Growth within Resilient Ecosystems*”. BRIDGE-BS proposed a multidisciplinary, multisectoral program building on regional and international initiatives as a critical contribution to the science-based policy needed to preserve the Black Sea ecosystems. The project developed predictive tools and capabilities necessary to understand and predict the impacts of climate-driven and anthropogenic multi-stressors on the services stemming from Black Sea ecosystems.

No retained for funding H2020 projects with participation of Moldovan organizations were registered within the **H2020 3rd and 4th Priority Areas/Pillar 3 for Energy and Transport**.

The majority of projects in support of Joint Programming Initiatives were realized within the **H2020 5th Priority Area/Pillar 3: Climate Actions, Environment, Resource Efficiency and Raw Materials**. There have to be mentioned the several ERA-Net and ERA-Net COFUND Joint Calls announced and managed by the **Centre of International Projects** before 2018 and then continued by the **National Agency for Research and Development** within the Joint Programming Initiatives:

- *JPI Water: Water Challenges for a Changing World;*
- *JPI Climate: Connecting Climate Knowledge for Europe;*
- *JPI AMR: The microbial challenge - An emerging threat to human health and*
- *JPI Oceans: “Healthy and Productive Seas and Oceans”.*

ERA-NET COFUND under Horizon 2020 was designed to support Public-Public Partnerships, including Joint Programming Initiatives between Member States, in their preparation, establishment of networking structures, design, implementation and coordination of joint activities as well as Union topping-up of a trans-national call for proposals. It was implemented by using “programme co-fund actions”. The main and compulsory activity of the ERA-NET COFUND under Horizon 2020 was focused on the co-funded joint call for proposals implementation that led to the funding of transnational research and/or innovation projects.³³

Besides in 2021-2022 the Joint Call for Transnational Research Proposals on “Supporting the protection of biodiversity and ecosystems across land and sea” was announced by the **National Agency for Research**

³³ ERA-Learn. [Partnerships in Horizon Europe and Horizon 2020h](https://www.era-learn.eu/support-for-partnerships/cofunded-p2p/era-net-cofund)
<https://www.era-learn.eu/support-for-partnerships/cofunded-p2p/era-net-cofund>

and Development within the **European Biodiversity Partnership “Biodiversa+,,**. The participation in the 5th Priority Area for Climate Actions is reflected in Table 15.

Table 15. Participation of the Moldovan Organizations in the H2020 projects within the Priority Area: Climate Actions, Environment, Resource Efficiency and Raw Materials

H2020 Signed Grant Agreements MD - Moldova (Republic of) Work Programme: EU.3.5. - Climate action, environment, resource efficiency and raw materials					
Project Number	Acronym	Title	Number of Participants	Participating Organizations from Moldova	EU Financial Contribution for participants from Moldova (EUR)
<u>641715</u>	<u>WaterWorks 2014</u>	Water Works 2014-2019 in Support of the Water JPI	30	CIP/NARD	68.063,00
<u>642025</u>	<u>NCPs CaRE</u>	National Contact Points for Climate action, Raw materials, Environment and Resource Efficiency	28	MRDA/NARD	48.844,00
<u>689271</u>	<u>WaterWorks 2015</u>	Water Works 2016-2020 in Support of the Water JPI (WaterWorks2015) - Sustainable water use in agriculture, to increase water use efficiency and reduce soil and water pollution	36	CIP/NARD	8.250,00
<u>730264</u>	<u>IC4WATER</u>	Tackling Water Challenges in the International Context (Water JPI)	24	CIP/NARD	38.125,00
<u>776608</u>	<u>AXIS</u>	Assessment of Cross(X)-sectoral climate Impacts and pathways for Sustainable transformation (JPI Climate)	13	NARD	49.254,00
<u>776609</u>	<u>SINCERE</u>	Strengthening International Cooperation on climate change REsearch (JPI Climate)	27	Institute of Ecology and Geography	12.725,00
<u>776692</u>	<u>WaterWorks 2017</u>	Water Works 2018-2022 in Support of the Water JPI (WaterWorks2017) and of the EC Call SC5-33-2017: Closing the water cycle gap	26	CIP/NARD	35.888,00
<u>869178</u>	<u>AquaticPollutants</u>	Risks posed to human health and the environment by pollutants and pathogens present in water resources (Three JPIs: Water JPI, Oceans JPI and AMR JPI)	33	NARD	0
<u>101...03 777</u>	<u>BiodivRes tore</u>	Promoting & implementing joint programming to reinforce transnational research for the conservation and restoration of degraded ecosystems and their biodiversity, including a focus on aquatic systems (European Biodiversity Partnership “Biodiversa+,,)	35	NARD	56.774,00
Total:		9 Projects			317.923,00

Seven projects under the Coordination and Support Actions funding scheme were realized within the **H2020 6th Priority Area/Pillar 3: Europe in a Changing World – Inclusive, Innovative and Reflective Society**, presented in the Table 16.

Table 16. Participation of the Moldovan Organizations in H2020 projects within the Priority Area: Europe in a Changing World – Inclusive, Innovative and Reflective Society

H2020 Signed Grant Agreements MD - Moldova (Republic of) Work Programme: EU.3.6. - Europe in a changing world - inclusive, innovative and reflective societies					
Project Number	Acronym	Title	Number of Participants	Participating Organizations from Moldova	EU Financial Contribution for participants from Moldova (EUR)
<u>645785</u>	<u>BLACK SEA HORIZON</u>	Enhanced bi-regional STI cooperation between the EU and the Black Sea Region	20	CIP/NARD	32.544,00
<u>692471</u>	<u>EaP PLUS</u>	STI International Cooperation Network for Eastern Partnership Countries – PLUS	18	CIP/NARD	67.875,00
<u>692476</u>	<u>RL-LINKS2UA</u>	Strengthening Research and Innovation Links towards Ukraine	13	CIP/NARD	19.313,00
<u>693382</u>	<u>EU-STRAT</u>	EU-STRAT - The EU and Eastern Partnership Countries: An Inside-Out Analysis and Strategic Assessment	11	Institute for Development of Social Initiatives IDIS-Viitorul	81.500,00
<u>822730</u>	<u>AGRUMIG</u>	‘Leaving something behind’ - Migration governance and agricultural & rural change in ‘home’ communities: comparative experience from Europe, Asia and Africa	14	National Institute of Economic Research	41.463,00
<u>101...04468</u>	<u>4CH</u>	Competence Centre for the Conservation of Cultural Heritage	21	Iron Will SME	101.344,00
<u>101...04627</u>	<u>Be.CULTOUR</u>	Beyond CULTural TOURism: human-centred innovations for sustainable and circular cultural tourism	15	Public Association “Verde E Moldova”	121.875,00
Total:		7 Projects			428.614,00

Within the **7th H2020 Priority Area/Pillar 3: Secure societies - Protecting freedom and security of Europe and its citizens** two organizations: The State Protection and Guard Service and the General Inspectorate of Frontier Police of the Ministry of Internal Affairs, managed to implement 7 projects.

The State Protection and Guard Service realized the following projects:

- H2020-SEC-2016-2017-2: **CONNEXIONS** – “*InterCONnected NEXt-Generation Immersive IoT Platform of Crime and Terrorism DetectiON, PredictiON, InvestiGatiON, and PreventiON Services*”, which aimed to development and demonstration of next-generation detection, prediction, prevention, and investigation services, which were based on multidimensional integration and correlation of heterogeneous multimodal data, and delivery of pertinent information to various stakeholders in an interactive manner tailored to their needs, through augmented and virtual reality environments. CONNEXIONS meaningfully enhanced operational and (near) real-time situational awareness, through automated identification, interpretation, fusion and correlation of multiple heterogeneous big data sources, as well as their delivery via immersive solutions.
- H2020-SEC-2016-2017-1: **RED-Alert** – “*Real-time Early Detection and Alert System for Online Terrorist Content based on Natural Language Processing, Social Network Analysis, Artificial Intelligence and Complex Event Processing*”. The RED-Alert project brought data mining and predictive analytics tools to the next level, developing novel natural language processing, semantic media analysis, social network analysis, Complex Event Processing and artificial intelligence technologies. These technologies were combined for the first time and validated by 6 law enforcement agencies to collect, process, visualize and store online data related to terrorist groups, allowing them to take coordinated action in real-time while preserving the privacy of citizens. The project impact was supported by the participation of Europol and specific dissemination activities around the World Counter-Terrorism Summit.
- H2020-SU-SEC-2018: **CREST** – “*Fighting Crime and TerroRism with an IoT-enabled Autonomous Platform based on an Ecosystem of Advanced IntelligEnce, Operations, and InveStigation Technologies*”. CREST aimed to equip LEAs with the advanced prediction, prevention, operation, and investigation platform by leveraging the IoT ecosystem, autonomous systems, and targeted technologies and building upon the concept of multidimensional integration and correlation of heterogeneous multimodal data streams (ranging from online content to IoT-enabled sensors). CREST also provided chain-of-custody, and path-to-court for digital evidence.
- H2020-SU-SEC-2018: **PREVISION** – “*Prediction and Visual Intelligence for Security Information*”. The mission of PREVISION was to empower the analysts and investigators of LEAs with tools and solutions not commercially available today, to handle and capitalize on the massive heterogeneous data streams that must be processed during complex crime investigations and threat risk assessments. With criminals being ever more determined to use new and advanced technology for their cause, the aim was to establish PREVISION as an open and future-proof platform for providing cutting-edge practical support to LEAs in their fight against terrorism, organized crime and cybercrime, which represent three major cross-border security challenges that are often interlinked. A strong inter-disciplinary dimension, combining technological expertise with sociological, psychological, linguistic and data science models, led to a common strategic approach for predicting abnormal and deviant behavior, radicalization potential, threat risks for soft targets, and cybercrime trends at different timescales. PREVISION conducted demonstrations on five representative and complementary use cases, under real-life operational conditions, in full compliance with fundamental rights and applicable legislation.
- H2020-SU-SEC-2020: **LAW-GAME** - “*An Interactive, Collaborative Digital Gamification Approach to Effective Experiential Training and Prediction of Criminal Actions*”. The project aimed to train police officers on the procedure, through gamification technologies in a safe and controlled virtual environment. Essential tasks during the creation of LAW-GAME serious game were to virtualize and accurately recreate the real world. The proposed learning experience focused on the development of the key competences needed for successfully operating in diverse and distributed teams, as required by several cross-organizational and international cooperation situations. The learning methodology developed by the LAW-GAME consortium was extensively validated by European end-users, in Greece, Lithuania, Romania, Moldova and Spain.

Under the **H2020 Specific Objective “Spreading Excellence and Widening Participation** three TWINNING projects were realized by the Institute of Applied Physics, Technical University of Moldova and Institute of Electronic Engineers and Nanotechnologies “D.Ghitu”.

- **H2020-TWINN-2015 Call: HOLO** – “*Boosting the scientific excellence and innovation capacity in digital holographic microscopy of the **Institute of Applied Physics** of the Academy of Sciences of Moldova*”. The overall aim of the HOLO project was boosting the scientific excellence and innovation capacity in digital holographic microscopy of the Institute of Applied Physics of the Academy of Sciences of Moldova by creating a network with the high-quality Twinning partners: Universität Stuttgart, Tampere University of Technology and Intelligentsia Consultants (Intelligentsia). To boost their scientific excellence and innovation capacity in digital holographic microscopy, the partners implemented a science and innovation strategy focused on two sub-topics: 1. Design and optimization of diffractive optical elements (DOE) to improve digital holographic microscopy (DHM), and 2. Development of advanced image processing algorithms for DHM using DOE. To achieve the project objectives, the consortium partners implemented a comprehensive set of measures via the project’s work packages: Short term staff exchanges; Training workshops, conferences and summer schools; Dissemination and outreach.
- **H2020-WIDESPREAD-05-2017-TwinningCall: NanoMedTwin** - “*Promoting smart specialization at the Technical University of Moldova by developing the field of Novel Nanomaterials for BioMedical Applications through excellence in research and twinning*”, implemented by the **Technical University of Moldova**. The main objective of the project was to promote the Smart Specialization Strategy in Moldova through developing the field of nanomaterials for biomedical applications by enhancing the scientific excellence of the National Center for Materials Study and Testing of the Technical University of Moldova via a collaborative strategic partnership program with European leading centres. The promotion of links between the fields of nanomaterials and biomedicine were performed through an intense exchange of knowledge and experience with partners on both bilateral and multilateral levels, accomplished by expert staff and student visits. The training of a new generation of researchers was realized through establishment of a nano-biomedicine training program to integrate the principles of nanotechnology, nanomaterials and biomedicine in research and coursework. The project also targeted the development of skills for management of innovation activities from the laboratory discovery phase to the point of technology transfer to medical institutions.
- **H2020-WIDESPREAD-05-2017-Twinning Call: SPINTECH** – “*Boosting the scientific excellence and innovation capacity in spintronics of the D. Ghitu Institute of Electronic Engineering and Nanotechnologies of the Academy of Science of Moldova*”. The aim of the SPIN-TECH project was to promote the scientific excellence and innovation capacity in the field of spintronics – especially in the development of advanced technology for design and production of superconducting spin-valves of the D. Ghitu Institute of Electronic Engineering and Nanotechnologies in partnership with the Twinning partners from Stockholm University (Sweden) and University of Twente (The Netherlands). The project consortium promoted the research and innovation strategy with the following objectives: strengthen the research excellence in spintronics, enhance the research and innovation capacity and raise the research profile of D. Ghitu IE and the Twinning partners; contribute to the research and innovation priorities of Moldova; support research and innovation on the European level. To achieve these objectives, the consortium partners put into practice a comprehensive set of measures, which included the short-term staff exchanges, training workshops, conferences, summer schools and dissemination and outreach activities.

Comparative to the EaP countries associated to H2020, Armenia managed to implement 4 TWINNING projects, Moldova – 3 projects, Ukraine – 3 projects and Georgia had no registered participations in the H2020 TWINNING activities.

Special interest represents the H2020 projects in support of integration to the European Research Area: **EURAXESS Activities in Moldova**, which were started by the Centre of International Projects in 2011 and continued by the Academy of Sciences of Moldova since 2018. The EURAXESS projects were implemented within the **H2020 Specific Objective - Science with and for Society/ Priority Area: Make scientific and technological careers attractive for young people**. The following projects were realized within H2020 Programme:

- H2020-SEAC-2014-1: **EURAXESS TOP III** – “*Making European research careers more attractive by developing new services and enhancing the current services of the EURAXESS network – EURAXESS TOP III*”. The EURAXESS TOP III consortium included partners from almost all EURAXESS countries (39 countries), to ensure the widest possible coverage as well as increased impact. It devoted to the development, testing and pilot introduction of new services on career development within the EURAXESS network, focused on the integration of third country researchers and reaching out to researchers beyond the EU; researchers within and outside academia, most notably industry; the consolidation of the ongoing services portfolio, be it personal or electronic and further capacity building of the EURAXESS network members. EURAXESS national portals throughout the EURAXESS member countries offered tailor made information in line with Horizon 2020 objectives on making science careers attractive for researchers, especially young researchers.
- H2020-SwafS-2017-1: **EURAXESS TOP IV** – “*Open EURAXESS – To strengthen the effectiveness and optimize the services of all partners in an innovative and open EURAXESS network*”. The EURAXESS TOP IV consortium included partners from 40 countries, covering the whole EURAXESS network and maximizing the impact for the long-lasting benefit of the research community. The project had been focused on the Career Development, Social Integration Initiatives and Engagement with industry aimed to address strategic issues related to the widening of the services, supports intersectoral mobility of researchers by promoting entrepreneur careers through collaboration with innovation facilitators and launching industry-academia mentoring programmes for researchers. Additionally, EURAXESS activity - Open to the World aimed to attract third country researchers to Europe as well as European scientific Diasporas contributing thus, to brain circulation. Based on the project results, the future trends in the ERA, a strategy and a vision for EURAXESS towards 2030 was delivered.
- H2020-IBA-SwafS-EURAXESS-Top-IV-2020: **EURAXESS Hubs** – “*Piloting EURAXESS talent hubs to support researchers’ careers*”. EURAXESS Hubs" mobilized the critical mass of both experienced and less experienced EURAXESS Bridgehead Organizations, at tailored levels of involvement, to launch three pilot EURAXESS hubs and then share their experience with the network. EURAXESS hubs were integrated digital platforms for thematic, cross-border, competence-based collaboration of EURAXESS Centres and other stakeholders, such as multiplier and enabler organizations outside of the EURAXESS network, in engaging and providing services to researchers, research organizations and other ESCs. The produced digital toolkits were offered for use by EURAXESS Centres that was interested in implementing this novel service provision architecture, either by joining existing hubs or forming additional ones after the project's end.

The description of the H2020 projects with participation of the Republic of Moldova was presented on the base of the EU Cordis Platform information³⁴.

³⁴ <https://cordis.europa.eu/>

3. NATIONAL R&D LANDSCAPE AND MEASURES FACILITATING PARTICIPATION IN THE HORIZON 2020

3.1. National R&D Landscape, Regulations and Action Plans

The association to FP7 and H2020 was realized within the R&D community, the activity of which was based on the Code for Science and Innovation of the Republic of Moldova (Code S&I). The initial version of the Code S&I, adopted in 2004 (Law Nr.259-XV from 15.07.2004)³⁵, served as main legal document regulating science, research and innovation activities and transfer of technologies in Moldova - the component of social and economic, educational and cultural policy of the state aimed at the development, coordination and stimulation of activities in areas of researches and innovations, performed by means of generation of new knowledge and application of scientific and technical achievements.

It covered a wide variety of aspects: science and innovation policy making by the government; the role and status of the Academy of Sciences of Moldova; accreditation of research organizations; definition and protection of Intellectual Property Rights; information policy on science and innovation; funding of research institutions, research and innovation activities; legal status of organizations in science and innovation; status of researchers and international relations development.

Within 2004-2017 period, the Academy of Science of Moldova was the soul public authority working on the base of the Partnership Agreement with the Government of the Republic of Moldova, which determined the scientific directions and priority, programming activities and funding of R&D organizations.

Based on Art 79 of Code S&I several science support organizations were created: Agency for Innovation and Technology Transfer (2007), Centre of International Projects (2008), Consultative Council for Expertise (2009) and Centre for funding of Fundamental and Applied Research (2011). In 2016 the Consultative Council for Expertise and the Centre for Funding of Fundamental and Applied Research were merged into the Agency for Research and Development. Further, following the R&D Reform of 2018, the three science support institutions: Agency for Innovation and Technology Transfer, Centre of International Projects and Agency for Research and Development were merged and served as a basis for the NARD creation in 2018.

Since the Code S&I adoption, the ASM Department of European Integration and International Cooperation was involved in the process of bilateral and multilateral cooperation development and discussions of the Association to the EU Framework Programmes. In 2008-2018, the Centre of International Projects provided the necessary practical assistance to ASM and scientific community to facilitate their involvement and participation in the EU Framework Programmes and better integration in the European Research Area. In 2011 under the ASM Supreme Council for Science and Technologies Development decision, the CIP was nominated responsible structure for the implementation of the Association to FP7 Country Status and since 2014 - Association to H2020 Country Status.

The provisions of three Action Plans, elaborated in support for association process to FP7 and H2020, laid the ground for establishment of the functional platform facilitating participation of the R&I Community in the EU Framework Programmes and better integration in the European Research Area.

The National Supporting Platform established in 2011 included a number of instruments and activities developed to foster the international cooperation links, increasing the human resources skills in proposals writing, partner search services, projects administration, improved access to information and research infrastructure, promotional campaigns, etc. The most important instruments were referred to:

- Strengthening the R&I System of Moldova through implementation of Action Plans, R&D Strategies, ERA Roadmap;

³⁵ The Code for Science and Innovation of the Republic of Moldova, Law RM Nr. 259-XV from 15.07.2004.

- Development of bilateral, regional and international scientific cooperation;
- Extension of multilateral cooperation through the involvement in the Joint Programming Initiatives activities;
- Integration of Moldovan scientific community in the European Research Area;
- Upgrade the national research infrastructure and further connection to the Pan-European Research Infrastructure and increasing the possibility to conduct the research activities using the state-of-the-art scientific equipment;
- Promotion the EURAXES activities and implementation of the Charter & Code principles;
- Respecting the gender equality issues in the R&I organizations;
- Promotion and supporting of the open science approach and requirements;
- Elaboration and administration of the specific Grants Programmes to facilitate participation in H2020;
- Establishing and coordination of the National Contact Points Networks and joining the international NCP Networks;
- Ensure participation of the official representatives and national experts in the H2020 Programme and Strategic Committees;
- Functioning of the Moldovan Office for Science and Technologies in Brussels;
- Increasing the visibility of Moldovan teams and facilitating participation in H2020 through the organization of informational and promotional campaigns (trainings, seminars, infodays, etc.).

In 2017-2018 the importance to continue activities and to support the functionality of the platform (NCP, MOST, CP, etc.) was discussed at the Government level between the MECR, ASM and Ministry of Foreign Affairs and European Integration. This question was brought to the attention of the Governmental Commission for European Integration in the presence of sectorial Central Public Authorities. On February 7, 2018 the Government Commission sign a protocol, based on which it is necessary to assure continuation of all above-mentioned activities needed for strengthening participation in H2020. Following the R&I Reform 2018, these responsibilities were transferred to the MECR and NARD.

During the H2020 implementation period (2014-2020) several high importance events were happened in Moldova directly and indirectly connected to the participation in the H2020:

- **2014 - The Association Agreement** between the European Union and the European Atomic Energy Community and their Member States, of the one part, and the Republic of Moldova, of the other part was signed in 2014³⁶. The Chapter 24 “Cooperation in research, technological development and demonstration” includes several articles, which laid the ground for strategic vision of scientific collaboration Moldova-UE, such as: promotion of cooperation in all areas of civil scientific research and technological development and demonstration (RTD) on the basis of mutual benefit and subject to appropriate and effective protection of intellectual property rights. This covered: policy dialogue and the exchange of scientific and technological information; increasing research capacity and the participation of research entities of the Republic of Moldova in the research framework programmes of the EU; promotion of joint projects for research in all areas of RTD; training activities and mobility programmes for scientists, researchers and other research staff engaged in RTD activities on both sides; facilitating the free movement of research workers participating in the activities covered by this Agreement and the cross-border movement of goods for use in above activities; and other forms of cooperation in RTD.
- **Visa regime liberalization.** Since April 28, 2014, the visa regime in the Schengen area was liberalized for the citizens of the Republic of Moldova holding biometric passports. At a total, in the period 2014-2020, more than 2 million citizens of the Republic of Moldova traveled to the countries of the Schengen area, recording a total of more than 6 million trips³⁷. (*Regulation (EU) No 259/2014*³⁸

³⁶ [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:22014A0830\(01\)&from=hr](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:22014A0830(01)&from=hr)

³⁷ <https://mfa.gov.md/ro/content/conditii-de-calatorie-ue>

³⁸ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R0259&from=RO>

of the European Parliament and of the Council of 3 April 2014 amending Council Regulation (EC) No 539/2001 listing the third countries whose nationals must be in possession of visas when crossing the external borders and those whose nationals are exempt from that requirement).

- 2017-2019 - **Recommendation No 1/2017 of the EU-Republic of Moldova Association Council**³⁹ of 4 August 2017 on the EU-Republic of Moldova Association Agenda, where in the Chapter: “Research and innovation” were defined the:
 - Short-term priorities: Adopt new modification in the research legislation, based on the recent Review of the Research System of the Republic of Moldova performed through the Policy Support Facility and coherent with the new Education code; Create new structures that will undertake the role of coordination of research and innovation at government level.
 - Medium-term priorities: Facilitate the integration of the Republic of Moldova in the European Research Area; Enhance the participation of the Republic of Moldova in the Horizon 2020 programme; Move forward on implementing the Strategy for research and development until 2020, Action plan and Innovation Strategy 2013-2020, ‘Innovation for Competitiveness’, and the recommendations of the Horizon 2020 Policy Support Facility peer-review; Reinforce human, material and institutional resources in order to improve research and innovation capacities; Integrate the Open Science Policy Agenda.

Thus, the participation of Moldova in H2020 within 2014-2020 occurred against the backdrop of major changes in social and economic sphere of the country mentioned above and passed through cardinal Reform of R&I system reorganization in 2017-2018.

The visa regime liberalization substantially facilitated the movement of researchers to their European colleagues, official representatives and national delegates to the H2020 Programme and EU Strategies Committee meetings. Besides all the burden procedure for applying for visas were eliminated that made possible to save the time and money for participation in the project preparatory and administration meetings, seminars, informational events and trainings activities organized in the EU member states.

The Association Agreement Moldova-EU and Association Agenda created the basis for the establishment of national measures in corresponding to the European requirements and standards. The progress on participation in the EU Framework Programmes Horizon 2020 and integration to the European Research Area was regularly reported to complete the R&I compartment of the Association Agenda National Action Plan implementation.

At the Riga 4th Eastern Partnership Summit – 2015⁴⁰ the efforts of Moldova and other EaP countries as a specific dimension of the European Neighborhood Policy in the process of the EU integration were appreciated by the European Commission. The joint Declaration of the European Union and Eastern Partnership countries was signed to reaffirm their shared vision of this strategic and ambitious Partnership as one based on mutual interests and commitments and supporting sustained reform processes in the Eastern European partner countries⁴¹.

The H2020 EaP PLUS project formed the basis for “STI International Cooperation Network for EaP Countries Plus (*EaP PLUS, implemented by CIP/NARD in 2016-2019 within the H2020 Call: H2020-INT-2014-2015*)” aimed to stimulate cooperation between researchers from the EaP countries and EU MS promoting therefore an active participation of the Eastern Partnership countries in Horizon 2020 while paving the way towards the forthcoming Framework Programme Horizon - Europe⁴².

³⁹ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:22017D1489&from=RO>

⁴⁰ <https://www.consilium.europa.eu/en/meetings/international-summit/2015/05/21-22/>

⁴¹ https://www.eeas.europa.eu/sites/default/files/riga-declaration-220515-final_en.pdf

⁴² <https://www.eap-plus.eu/project/structure.html>

3.2. EC Policy Support Facilities under the Horizon 2020 Expert Mission

At the request of Moldovan authorities in 2015, the Policy Support Facility under H2020 Programme⁴³, (PSF) performed a peer review of the Moldovan research and innovation system, which is meant to offer support in improving the design, implementation and evaluation of research and innovation policies. It triggered a wave of reforms in the country.

In 2015-2016, the research and innovation system in the Republic of Moldova was assessed by the group of international experts under the EU H2020 Policy Support Facility. This resulted in seven political messages, supported by twenty-four detailed recommendations.

The Peer Review provided external advice to the Moldovan authorities on possible reform to undertake in the following focus areas: increasing the efficiency of public R&I funding and the quality of the R&I performing bodies and instruments, improving the policies for human resources and mobility of researchers, boosting business innovativeness and science-business links and increasing R&I impact by properly defining the policy instruments.

Following to the EU PSF experts mission recommendations, the cardinal reorganization of the Research and Innovation system in Moldova was developed focusing on improvement of its governance by strengthening the political responsibility for R&I with a dedicated Ministerial responsibility.

For this purpose, the necessary adjustments of Code S&I, accompanying normative acts and strategic documents in the fields of research and innovation were performed in 2017 that laid the ground for structural optimization of Moldovan R&I System in 2018. The reform foreseen the strengthen the capacities of main actors responsible for the R&I fields management, distribution of research funding in competitive way; enlargement of entities participation in R&I competitions, development of instruments for R&I infrastructures and promotion of support actions for increasing the participation in R&I programs.

Based on **Modifications of the Code for Science and Innovation**⁴⁴ the distribution of concrete roles between the main actors responsible for governance and further development of the R&I sector of Moldova was performed as following:

- *the **Ministry of Education Culture and Research** became the main Public Authority for the governance of R&I system, responsible for design, development and establishment of the State Policies in the field of Research and Innovation, coordination and funding of the Research and Higher Education Institutions;*
- *the **National Agency for Research and Development** – execute the State Policies, serves as implementation unit for the allocation of national funding on the competitive base;*
- *the **Academy of Sciences of Moldova** - provide scientific support and opinion for the strategic planning of science domain.*

The each of the above-mentioned institutions has to contribute jointly to the development and realization the national measures to facilitate the participation of Moldovan entities in the H2020 Programme and better integration in the European Research and Innovation Area.

The Ministry of Education, Culture and Research was established based on the Government Decision no.691 from July 30, 2017. Starting with October 20, 2017 (*adoption of the Law no. 190 on the amendment of the Code on Science and Innovation*), the four months were available for ASM to finalize its activities within the previously established terms and conditions. On January 19, 2018, through the Government Decision no. 50, MECR became the founder of 19 Research Institutes, which previously activated within

⁴³ PSF Peer Review of the Moldovan R&I System - <https://ec.europa.eu/research-and-innovation/en/statistics/policy-support-facility/psf-country-review-moldova-background-report-support-moldova-reforms-public-rd-sector>

⁴⁴ The Code of the Republic of Moldova about Science and Innovations of July 15, 2004 No. 259-XV (as amended on 23-11-2018) - <https://cis-legislation.com/document.fwx?rgn=7758>

the Academy of Sciences of Moldova. Immediately after this, the transfer of institutions has been started, as well as the process of changing their subordination, adjustments of statutory normative acts and related documents. In 2020 the MECR was reorganized in the Ministry for Education and Research. According to the Code R&I modification the new approach of R&I System management was adopted.

The National Agency for Research and Development⁴⁵ was created based on Gov Decision No 196 from 28 February 2018 by fusion of three ASM science support organizations: Agency for Innovation and Technology Transfer, Centre of International Projects and the Agency for Research and Development. The NARD was officially registered and started its activity on April 2, 2018. NARD took under its responsibility implementation of state policy in the field of research and innovation, activities related to conducting the project competitions, management the funds allocated by state budget for RTD and implementation of H2020. The Agency for Innovation and Technology Transfer, which supported the public-private partnerships within the technology transfer calls and projects was transferred its activities within 2018 to NARD⁴⁶. The procedure of transferring the responsibility for the implementation of national measures to support participation in H2020 from CIP to NARD was finalized in June 2018.

The main attributions of the Academy of Sciences of Moldova since 2018⁴⁷ are focused on:

- Acting as the Government's strategic consultant in setting priorities in the field of basic and applied research, consulting, draft normative acts in the fields of research, innovation, and culture and developing forecasts on the development of research and innovation;
- Elaborating and submitting to the Government the report on the state of science, which should reflect the policies developed and how to implement them at the national level;
- Consulting the Government on the creation and development of public infrastructure for research and innovation;
- Consulting the central specialized body of the state, responsible for the elaboration of the national policy in the fields of research and innovation, when determining the name of the fields, branches, profiles, and scientific specialties;
- Organizing of public hearings on issues of national interest and national and international scientific events with purpose to sustains and publicizes the results of research and development;
- Determining the partners and the optimal forms of cooperation, establishing collaboration relations with institutions and organizations from the country and from abroad;
- Developing and carries out national and international scientific research projects, independently or in partnership with national and foreign institutions;
- Contributing to the internationalization of research and promotes integration into the European research area.

Besides, on March 26, 2018, under the Government Decision no. 201, the **National Agency for Quality Assurance in Education and Research**⁴⁸ (ANACEC) was established, joining the three national entities linked to the R&I System, which are the following: National Agency for Quality Assurance in Professional Education, National School Inspectorate and the National Council for Accreditation and Attestation. ANACEC provides all kind of assistance and measures for expertise and evaluation of projects funded or cofounded from the State Budget.

To provide a comprehensive vision and set objectives for developing the national science and innovation system, the Government adopted the **National Research and Innovation Programme**⁴⁹ 2020-2023, which entered into force on 16 August 2019. It was immediately launched by NARD with deadline – 23

⁴⁵ <https://anecd.gov.md/en>

⁴⁶ Rep. of Moldova. UNECE Sub -Regional Innovation Policy outlook. 2020: Eastern Europe and South Caucasus - https://unece.org/fileadmin/DAM/ceci/icp/Capacity_building/IPO_launch/IPO_2020_7_MOLDOVA.pdf

⁴⁷ <https://asm.md/en/about>

⁴⁸ <https://www.anacec.md/en/node/155>

⁴⁹ https://mecc.gov.md/sites/default/files/pnci_engleza.pdf

October 2019⁵⁰. However, the process of the national projects development that had to assure existence of leading research groups within 2021-2023 overlapped with period of elaboration the projects for Twinning Call within the H2020-WIDESPREAD-05-2020: Twinning⁵¹ (deadline on 14 November 2019), and several already drafted projects on behalf of Moldovan researchers were not submitted to this H2020 Call.

The influence of the 2018 Reform to the R&I System of Moldova was reflected in the very comprehensive background report: **"Support to Moldova on Reforms in the Public R&D Sector"**⁵², published by EC, which included the most important aspects of current socio-economic situation of the Republic of Moldova, R&I landscape, in terms of human resources, funding, main research outputs addressing the focus areas under review: research infrastructure, funding system, research and business linkages.

On 9 March 2020, the second targeted request was initiated by the Moldovan Authorities for a Policy Support Facility under Horizon 2020 focused on the R&I infrastructures, funding system for public research and links between research and business. This peer review is expected to feed into the design of future R&I policies of the Republic of Moldova.

In 2022 the Moldovan higher education, research and innovation system is undergoing cardinal structural changes through reforming, merger and modernization. The Reform of 2022 foreseen the absorption of small universities and research institutions by several large higher educational institutions⁵³.

The next R&I National Programme is planned to cover the 2024-2027 period⁵⁴, which will coincide with the following activities of high importance:

- 3rd Work Programme of Horizon Europe implementation within 2025-2027;
- Interim evaluation of the Horizon Europe Programme, which is planned to be realized starting with 2024;
- ERA Policies Agenda (2021-2024) finalization, evaluation and drafting the next one;
- Finalization of the Horizon Europe Programme and launching discussions for establishment of the next EU Framework Programme beyond of 2027.

In this context the urgent measures have to be put in work for improving participation in the EU Horizon Europe Programme.

3.3. Integration in the European Research Area

In addition to participating in Horizon 2020, the H2020 Association aims to integrate into the European Research Area by implementing ERA priorities. Based on the Note of the ERAC Opinion on the European Research Area Roadmap 2015-2020 an appeal was addressed to the National R&I Authorities to elaborate the National Roadmaps and develop the activities for contributing in realization the ERA priorities. At the National level, Member States and Associated Countries were invited to promote better alignment of national and European policies, with the goal of making optimal use of public investments in research and innovation⁵⁵. The public bodies responsible for allocating research funds should apply the core principles of international peer review in all appropriate cases. Member States and Associated Countries had to enhance competitive funding through calls for proposals and institutional assessments, respecting the need for a satisfactory balance between competitive and institutional funding. They should also invest in wider education, research and innovation systems. Smart specialization policies and mutual learning activities were considered relevant for some Member States.

⁵⁰ <https://www.ancd.gov.md/ro/content/concurs-deschis-%E2%80%9EProgram-de-stat%E2%80%9D-2020-2023>

⁵¹ <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/widespread-05-2020>

⁵² <https://op.europa.eu/en/publication-detail/-/publication/d493e387-7e5e-11ec-8c40-01aa75ed71a1/language-en/format-PDF/source-250629061>

⁵³ <https://gov.md/en/content/moldovan-cabinet-approves-structural-reforms-education-research-innovation>

⁵⁴ https://research-and-innovation.ec.europa.eu/strategy/strategy-2020-2024/europe-world/international-cooperation/moldova_en

⁵⁵ <https://data.consilium.europa.eu/doc/document/ST-1208-2015-INIT/en/pdf>

Completion of the European Research Area was urgently needed to avoid costly overlaps and unnecessary duplication of activities. It entails building a genuine single market for knowledge, research and innovation, enabling researchers, research institutions and businesses to circulate, compete and co-operate across borders.

The activities related to the integration to ERA and participation in H2020 were included in the Association Agenda Republic of Moldova – European Union adopted on November 29, 2013 as very important points. Thereby, in 2015 the Centre of International Projects in coordination with the Academy of Sciences of Moldova drafted the National Roadmap of the Republic of Moldova's integration in the European Research Area and its implementation plan. It was consulted with the scientific community, national and international experts. In December 2017 it was approved by the Supreme Council for Science and Technology of ASM and in 2018 transferred to the MECR for adjustments in context of the Reform 2018. Finally, in November 2018 it was approved by the Government.

Implementation of the National ERA Roadmap become an overarch priority for the three key public authorities MECR, NARD and ASM. The main expectations were - development the field of research and innovation by promoting research based on performance, competitiveness and excellence of results. This had to contribute to the implementation of the ERA priorities and promotion of the positive image of the R&I system at national and European level.

The first ERA priority - strengthening of R&I sector correlated with the overall objectives of PSF Experts Mission, which took place in 2015-2016. The modification of Code R&I and adoption of secondary legislations lead to the reorganization of R&I sector in Moldova within 2018 Reform, with considerable loss of human potential. Comparing the 2017 with 2020, the total number of employees within R&I sector was reduced from 4.697 to 4.052, researchers – from 3.180 to 2.907 (2020 State of Science ASM Report⁵⁶). The young researchers up to 25 years old were reduced with 1,3% comparing 2017 with 2021.

The second ERA priority contributes to capacity building on research and innovation priorities mapping and the discovery process entrepreneurship for smart specializations. During 18-28 June 2019, the MER with support of the EU Joint Research Center (JRC) of the European Commission, has organized the first 4 entrepreneurial discovery workshops, in the process of identifying smart specialization areas for the Republic of Moldova⁵⁷. The discussions have been initiated on characterization of preliminary priority areas for smart specialization in Moldova. Mapping the priorities and the entrepreneurial discovery process for intelligent specialization will allow to identify the most effective sectors and areas to strengthen the research and innovation potential. Besides, within the R&I sector the urgent steps have to be undertaken to upgrade and modernize the research infrastructure.

The involvement of Moldova in the Joint Programming Initiatives is in the process of implementation since 2012. Participation of researchers in the multilateral calls such as ERA.Net CSA and ERA.Net COFUND is considered as of high importance to address the major societal challenges⁵⁸. Till present Moldova is involved in five JPIs:

- *JPI Cultural Heritage - Cultural Heritage and Global Change: a new challenge for Europe*
- *JPI Water - Water Challenges for a Changing World*
- *JPI Climate - Connecting Climate Knowledge for Europe*
- *JPI AMR - The microbial challenge - An emerging threat to human health*
- *JPI Oceans - Healthy and Productive Seas and Oceans*

⁵⁶ https://asm.md/sites/default/files/2022-05/ASM_Raport%20asupra%20starii%20stiintei%20din%20Republica%20Moldova%20in%202021_aprobat%20AG%2012%20mai%202022_final.docx.pdf

⁵⁷ <https://idsi.md/content/identifying-smart-specialisation-areas-for-moldova-4-EDP-workshops>

⁵⁸ <https://www.era-learn.eu/partnerships-in-a-nutshell/type-of-networks/partnerships-under-horizon-2020/joint-programming-initiatives>

The 3rd ERA priority related to the attractive research careers, talents circulation and mobility is promoted within the EURAXESS Programme. Based on the ASM Supreme Council for Science and Technology Development approval, the Moldovan scientific community signed the Declaration of Commitment to the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers in December 2011. Following this, several activities were successfully established at the national level, such as development of EURAXESS National Portal (<https://www.euraxess-eu.md/>), establishment of 25 Local Contact Points⁵⁹ within the R&I Institutions, creation of three EURAXESS Service Centres (North, Centre and South part of Moldova). 12 R&I Organizations have endorsed the Chartered and Code principles⁶⁰ and signed the declaration of commitment to the EURAXESS Network services. Within 2014-2022 the seven Moldovan R&I institutions were awarded by the EU Logo “Excellence in Research”⁶¹ (University ASM (2014), National Institute of Economic Studies (2015), State University of Moldova (2015), State University of Medicine and Pharmaceutics N.Testemitanu (2016), Academy of Economic Studies of Moldova (2017), Institute for the Informational Society Development (2017) and Technical University of Moldova (2022).

The 4th ERA priority related to the Gender issues promotion and foster inclusiveness is widely disseminated within the informational events and within the scientific community.

Within the 5th ERA priority related to the Open Sciences issues, Moldovan representatives have participated in the European Research and Innovation Area Committee Standing Working Group on Open Science and Innovation since 2016. The contribution they made was filling in questionnaires related to the feasibility of the actions stated in Amsterdam Call for Action on Open Science. In 2017 the specific point “Integrate the Open Science Policy Agenda” was introduced in the EU-Republic of Moldova Association Agenda (Published in the Official Journal of the EU on 19.08.2017).

The main national normative act - Code on Science and Innovation of the Republic of Moldova (Law No. 259 of 15.07.2004 with amendments of 2018) ensures the free and non-discriminatory access to scientific and technological information resources (Articles 54, 57, 79 and 85). The National Strategy for the Development of the Digital Moldova Information Society - 2020 included the Programme on the creation, development and capitalization of digital content: digital data centers /repositories for local content), development of open data portal, digitization of cultural and scientific heritage and providing access to it.

The R&D strategy of the Republic of Moldova (until 2024) includes the development of human, institutional and infrastructure capacities – national R&D infrastructure and its connecting to the European networks. It also promotes transparent engagement of citizens and civil society in the development of research topics by facilitating access to scientific knowledge (General Objective 4 – Continuous Dialogue between science and society, the dissemination of knowledge and the implementation in practice of research results). All specific programmes of the national funding framework should include a dissemination component, including free access to research results of end-users, citizens, business, civil society organizations and policy makers.

Starting with Jan 2017, representatives of the scientific community of Moldova participated in the Mutual Learning Exercise on Open Science - Altimetric and Rewards, funded under the H2020 Policy Support Facility.

On November 22, 2018 the 1st edition of the National Scientific Conference “Open Science” took place in Chisinau⁶². The event was organized by the Institute of Information Society Development (IDSi) in partnership with REM Consortium (Electronic Resources for Moldova). The conference focused on exploring the emerging challenges and opportunities faced by the Moldovan scientific community as a response the Open Science paradigm. The most important issues and the progress in approaching the Open

⁵⁹ https://www.euraxess-eu.md/information/centres/search/country/moldova-1061/field_category/4

⁶⁰ https://euraxess.ec.europa.eu/jobs/charter/declaration-endorsement#show_Moldova

⁶¹ <https://www.euraxess-eu.md/jobs/hrs4r/awarded>

⁶² <https://idsi.md/content/open-science-in-moldova-national-conference>

Science principles at the national level were presented in the monograph „Open Science in the Republic of Moldova”⁶³, written by a group of IDSI researchers. The monograph represents an assessment to what extent the science in the Republic of Moldova is open.

The conference work was resulted with signing the Declaration on Open Science in the Republic of Moldova, which encourages researchers, teachers, culture people, R&I decision-makers, students, librarians, citizens to support and contribute to the elimination of barriers to the implementation of Open Science, Open Access publishing, enhancement of competence and trust in Open Data, ensuring the research integrity, development of open e-Infrastructures, citizen science.

The intermediary report on the National ERA Roadmap Implementation was elaborated by MER in 2021. However, its final assessment was not realized, which is important to identify the gaps in the process of integration to ERA and be prepared for realization of the New ERA Priorities⁶⁴ within Horizon Europe Programme.

Besides, the annual Reports on State of the Science in the Republic of Moldova⁶⁵, issued by the Academy of Science of Moldova does not include the concrete recommendation what is necessary to do for better integration in ERA and acceleration of participation in the EU Framework Programmes.

3.4. Bilateral and Multilateral International Cooperation

Bilateral cooperation. The Academy of Sciences of Moldova signed more than 50 bilateral agreements for scientific cooperation within the 2004-2018 with the RTD public authorities from Armenia, Azerbaijan, Austria, Belarus, Bulgaria, China, Georgia, France, Germany, Hungary, Italy, Montenegro, Poland, Portugal, Romania, Russia, Slovenia, Turkey, Ukraine, etc. Several of them were implemented through the bilateral calls, funded from the corresponding national state budgets, organized by CIP till 2018 and continued by NARD in 2018-2022, Table 17. Additionally, the NARD signed the cooperation agreements and announced the bilateral competitions with the Scientific and Technological Research Council of Turkey, Tubitak and the Republican Foundation for Basic Research from Belarus, RFBRB.

Table 17. Joint calls realized within the bilateral international agreements of cooperation in science and technology

Bilateral Agreements	Nr. of Calls	Period of Realization	Nr. of Projects	National Funding, Lei MD
NARD-RFBRB (Republican Foundation for Basic Research from Belarus)	2	2019-2020 2022-2023	10	3.000.000,00 Announced
NARD-TUBITAK (Scientific and Technological Research Council of Turkey)	3	2020-2022 2022-2023 2023-2024	3 3	2.400.000,00 2.400.000,00 Announced
ASM/CIP-UEFISCDI (Executive Unit for the Financing of Higher Education, Research, Development and Innovation, Romania)	3	2009-2019	70	16.209.000,00
ASM/CIP-STCU (Science and Technology Centre of Ukraine)	9	2009-2019	54	13.500.000,00

⁶³ <https://zenodo.org/record/1468418#.YxcuJ3ZBw2w>

⁶⁴ https://research-and-innovation.ec.europa.eu/strategy/strategy-2020-2024/our-digital-future/european-research-area_en

⁶⁵ <https://asm.md/index.php/rapoarte-de-activitate>

ASM/CIP-RFBRB (Republican Foundation for Basic Research from Belarus)	4	2007-2017	63	7.650.000,00
ASM/CIP-BMBF (Federal Ministry of Education and Research, Germany)	4	2008-2018	32	6.700.000,00
ASM/CIP-MESU (Ministry of Education and Science and State Agency for Science, Innovation and Informatization of Ukraine)	3	2009-2018	37	3.700.000,00
ASM/CIP-CNRI (National Research Council of Italy)	4	2010-2018	23	2.860.000,00
ASM/CIP-CNRF (National Research Council of France)	1	2013-2015	1	100.000,00
ASM/CIP-RFHR (Russian Foundation for Humanitarian Research, Russia)	1	2009-2011	8	437.000,00
ASM-RFBR (Russian Foundation for Basic Research, Russia)	2	2006-2008	88	12.000.000,00
ASM/MRDA-CRDF (U.S. Civilian Research and Development Foundation)	4	2006-2008	4	4.000.000,00
TOTAL	39		393	74.956.000,00

The bilateral projects were considered as an important initial step to form the partnerships with the partner countries, which could be further extended and transformed into sustainable consortiums. The specific requirements were introduced in the bilateral (and national) call announcements: to demonstrate experience of participation in the EU Framework Programmes and consolidation of efforts for H2020 proposals elaboration and submission. These, requirements were considered as overarching priorities in the project's evaluation process.

The multilateral cooperation was promoted within the Horizon 2020, through the involvement in the Joint Programming Initiatives (JPI), using the simplified ERA-NET scheme, aimed at pooling and leveraging of other sources of funding and providing support from coordination of national programmes up to the co-funding of joint calls for proposals. A clear set of criteria for joint programmes under Article 185 and joint undertakings under Article 187 enable a stronger set of initiatives to go forward, taking account of the experience and evaluations under FP7 as well as the revisions to the Financial Regulations.

The European Commission fosters synergies between the programmes of the EU member states and associated countries and its own programme, with the objective to contribute to the ERA priorities implementation, when a JPI has demonstrated its capacity for significant collaboration and the scale and scope needed to support full integration of national programmes. The experience of participation within the FP7 ERA-NET schemes was realized by implementing the SEERA-EU, ERA-Net.RUS PLUS, Black Sea ERA-NET, etc. Within the Horizon 2020 ERA-NET and ERA-NET Cofund activities Moldova was involved through the participation in the Joint Programming Initiatives joint calls.

Under the Horizon Europe appeared the new approach to the multilateral cooperation - European Partnerships⁶⁶: objective-driven and more ambitious partnerships with industry in support of EU policy

⁶⁶ https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/european-partnerships-horizon-europe_en#:~:text=Latest,.What%20are%20European%20Partnerships%3F,concerted%20research%20and%20innovation%20initiatives.

objectives⁶⁷. The similar ERA-NET and Cofund schemes of funding are applicable for the European Partnerships within the joint calls funded from the national budgets of consortium participants.

To date, Moldova actively participated in the **Water JPI** Joint Calls, which have been launched since 2013. Numerous calls were supported by the European Commission within the Horizon 2020 ERA-NETs Cofund schemes, such as: **WaterWorks2014**, **WaterWorks2015**, **WaterWorks2017**, **AquaticPollutants**, etc. and within the Coordination and Support Actions - **IC4WATER**.

- **2015 Joint Call: WaterWorks 2014**⁶⁸ with focus for developing technological solutions for services for water distribution and measurement, wastewater treatment and reuse, desalination, floods and droughts (budget: EUR 15.2 million; 16 projects funded, including one project with participation of Moldova);
- **2016 Joint Call** with the FACCE-JPI: **WaterWorks 2015**⁶⁹ for improving water use efficiency and reducing soil and water pollution for a sustainable agriculture (budget EUR 18 million; 21 projects funded, including one project with participation of Moldova);
- **2017 Joint Call: IC4Water**⁷⁰ (CSA) - Water resource management in support of the United Nations Sustainable Development Goals (UN SDGs) (budget: EUR 6.8 million; 8 projects funded, including one project with participation of Moldova);
- **2018 Joint Call: WaterWorks 2017**⁷¹ - Closing the water cycle gap - improving sustainable water resources management (budget: EUR 15.2 million; 18 projects funded, including one project with participation of Moldova);
- **2020 Joint Call** with JPI Water, JPI Oceans and JPIAMR: **AquaticPollutants**⁷² - Risks posed to human health and the environment by pollutants and pathogens present in the water resources (budget: EUR 20 million; 18 projects funded). The 7 research teams from Moldova participated in the competition in different frameworks partnerships, but none of the respective projects was selected for funding.

Within the **Climate JPI** the ERA-NET Consortium **AXIS** (Assessment of Cross(X) - sectoral climate Impacts and pathways for Sustainable transformation) aims to promote cross-boundary, cross-community research with the overall goal to improve coherence, integration and robustness of climate impact research and connect it to societal needs. To this effect, **AXIS** aims to overcome boundaries between science communities through inter- or transdisciplinary research projects⁷³. The Research Institute of Field Crops “Selectia” from Balti, represented Moldova in **AXIS** consortium by participation in **CROSSDRO** Project, funded by **NARD** within 2019-2021.

Starting with 2019, **NARD** succeeded to join the JPI Antimicrobial Resistance and EU Partnership **BiodivERsA** that diversified the participation in the JPIs Joint and Transnational Calls. The following activities were launched recently:

- 2020-2021 – **JPIAMR Joint Call** with **BiodivERsA** EU Partnership: **BiodivRestore**⁷⁴ - Conservation and restoration of Disrupting drug resistance using innovative design degraded ecosystems and their biodiversity, including a focus on aquatic systems (budget: EUR 21.4 million; 22 projects funded). Moldova (State University of Medicine and Pharmaceuticals N.Testemitanu) participated in one of the project within consortium formed by 7 partners from Poland, Belgium, UK and the Netherlands.

⁶⁷ https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe_en

⁶⁸ <http://www.waterjpi.eu/joint-calls/joint-call-2015-waterworks-2014>

⁶⁹ <http://www.waterjpi.eu/joint-calls/joint-call-2016-waterworks-2015>

⁷⁰ <http://www.waterjpi.eu/joint-calls/joint-call-2017-ic4water>

⁷¹ <http://www.waterjpi.eu/joint-calls/joint-call-2018-waterworks-2017>

⁷² <http://www.waterjpi.eu/joint-calls/joint-call-2020-aquaticpollutants>

⁷³ <https://jpi-climate.eu/programme/axis/>

⁷⁴ <http://www.waterjpi.eu/joint-calls/joint-call-2020-biodivrestore>

- 2021 – 13th JPIAMR International Call: “**One Health interventions** to prevent or reduce the development and transmission of AMR”⁷⁵ one project will be funded through the NARD in 2022-2024⁷⁶.
- 2022 – 14th JPIAMR Joint Call ERA-NET JPIAMR-ACTION: DRUID “Disrupting Drug Resistance using Innovative Design” involves 27 funding organizations from 18 countries⁷⁷ – launched in 2022.
- 2022 – 15th JPIAMR Transnational **Network Call** within ERA-NET JPIAMR-ACTION: JPIAMR Network Call 2022: Diagnostics and Surveillance Networks - launched in 2022.
- 2022 – 2023 Joint Transnational Call Water JPI with Water4All EU Partnership: **Water4All-2022**⁷⁸ - “Management of water resources: resilience, adaptation and mitigation to hydroclimatic extreme events and management tools”. Announcement launched on September 2022.
- 2023 – EU Partnership **Biodiversa+ BiodivMon** – Call⁷⁹ for Research Proposals on “Improved transnational monitoring of biodiversity and ecosystem change for science and society” – will be launched in 2023.

Participation of the research teams in the multilateral calls is one of the best options to join the already created consortium. Even the multilateral proposal is not recommended for funding within the JPI or EU Partnerships calls, there is a good chance to apply for an appropriate HE2027 thematic call.

3.5. National Supporting Programmes to Foster Participation in the Horizon 2020 Programme

The financial contribution paid by the Republic of Moldova to the EU Budget for participation in the FP7 (2012-2013 – (a)) and H2020 (2014-2015 (b), 2016-2017 (c) and 2018-2019 (d)) was reimbursed by the European Commission in amount of 50% (Table 2).

To increase the efficiency of participation the scientific community in the H2020 Calls and rational use of funds allocated by EU as reimbursement the ASM/CIP till 2018 (reimbursement part - a, b) and MER/NARD in 2018-2022 (reimbursement part - c, d) succeeded to manage the following activities:

- a) The EU reimbursement of financial contribution for participation of the Republic of Moldova in the 2012-2013 FP7 Work Programme and*
- b) The EU reimbursement of financial contribution for participation of the Republic of Moldova in the 2014-2015 H2020 Work Programme*

The EU reimbursement funds within the a) and b) parts were distributed for the development and launching of the new specific National Calls, support of NCP activities, organization of Researcher’s Night event and a series of training and promotional activities.

The specific National Calls were developed by CIP with purpose to facilitate participation of Moldovan scientific community in H2020 Programme. In addition to the traditional evaluating criteria they included the overarch priorities focused on the ability of applicants to contribute for strengthening the research teams from the various R&I Moldovan institutions for joint participation in the Horizon 2020 Program calls; demonstration the experience of participating in the PC7 and H2020 Programmes; and possibility of project proposals development for H2020 Programme Calls during the projects’ implementation period.

⁷⁵ <https://www.jpiamr.eu/calls/interventions-and-transmission-call-2021/>

⁷⁶ <https://ancd.gov.md/ro/content/rezultatele-concursului-proiectelor-multilaterale-ini%C8%9Biativei-comune-de-program-jpi>

⁷⁷ <https://www.jpiamr.eu/calls/therapeutics-call-2022/>

⁷⁸ <http://www.waterjpi.eu/joint-calls/joint-call-2022-water4all>

⁷⁹ <https://www.biodiversa.org/2017>

The specific National Calls announced by ASM/CIP within 2015-2017 (reimbursement part - a, b) and by MER/NARD (reimbursement part - c, d) in 2019-2022 at the total amount of MDL 33.567 million (~ EUR 1.678 million) were the following (Table 18):

Table 18. *Specific National Calls in support of participation in H2020 launched and implemented under the EU FP reimbursement funds.*

Responsible Authority (Reimbursement part of FP)	Specific Call Title	Nr. of Calls	Period of Realization	Nr. of Projects	National Funding Lei MD
MER/NARD (d)	The resilience of the Republic of Moldova to crisis situations	1	2022 - announced		Proposals evaluation
MER/NARD (c)	Offer of research-innovation solutions regarding combating and mitigating the impact of the COVID-19 pandemic	1	2020-2021	22	14.718.900,00
MER/NARD (c)	Connection of the Moldovan Centres of Excellence to the EU Research Infrastructure	1	2019-2020	12	Cancelled
MER/NARD (c)	Travel Grants	1	2019-2020	1	23.000,00
MER/NARD (c)	European BONUS Programme	1	2019-2020	6	25.000,00
ASM/CIP (a)	Connection of the Moldovan Centres of Excellence to the EU Research Infrastructure	1	2014-2017	12	6.000.000,00
ASM/CIP (b)	Modernizing the Research and Innovation Infrastructure to facilitate participation in the H2020 Programme	1	2014-2018	10	10.000.000,00
ASM/CIP (a, b)	Supporting the mobility of researchers for increasing the participation in H2020 Programme	2	2014-2017	135	2.300.000,00
ASM/CIP (a, b)	European BONUS Programme	2	2014-2017	66	500.000,00
TOTAL		9			33.566.900,00

Specific National Call: *Connection of the Moldovan Centres of Excellence to the EU Research Infrastructure*⁸⁰ was announced in October 2014 with the scope to strengthen the capacities of the Centers of Excellence in the research-innovation sector from the Republic of Moldova through their connection and accession to the European research infrastructures for promoting and supporting international scientific cooperation for participation in research and infrastructure projects within the HORIZON 2020 Programme. Out of 19 project proposals submitted on behalf of 14 R&I organizations⁸¹, 12 projects⁸² were supported

⁸⁰ <http://cpi.asm.md/wp-content/uploads/2014/11/GC-Apel-CE-Lansarea.pdf>

⁸¹ <http://cpi.asm.md/wp-content/uploads/2014/11/GC-List-of-the-Projects-REVIEW-RESULTS-CE-1.pdf>

⁸² <http://cpi.asm.md/wp-content/uploads/2014/11/GC-List-of-the-Projects-CE.pdf>

and successfully realized. In 2019 within this program the second Call was announced by NARD⁸³ to which 18 proposals⁸⁴ were submitted and evaluated⁸⁵. Unfortunately, this competition was cancelled.

Specific National Call: ***Modernizing the Research and Innovation Infrastructure to facilitate participation in the H2020 Programme***⁸⁶ was announced in 2017 by ASM/CIP with the scope to upgrade the existing research infrastructure or to develop the new one with further connection to the EU research centres and networks. Ten proposals were supported within this call.

Specific National Call: ***Supporting the mobility of researchers for increasing the participation in H2020 Programme***⁸⁷ announced on the rolling base offered the travel mini-grants which supported participation of researchers at the H2020 related networking and brokerage events, H2020 projects preparatory meetings, and MOST/IGLO office. The 135 travel grants were awarded by ASM/CIP for participation in the above meetings in order to promote the project ideas, join the international consortiums within the H2020 calls and proposals writing and submission. The second Call was announced in 2019 by NARD⁸⁸ to which one proposal was submitted and funded.

Specific National Call: ***European BONUS Programme***⁸⁹ (proposals submission on a rolling base). This Programme was elaborated with the scope to encourage and appreciate participation in H2020. The 66 European Bonuses for 28 R&D Institutions, 10 NGO and 7 SME were awarded within this call. In 2019 the second European Bonus Programme Call was announced by NARD⁹⁰ to which 6 proposals were submitted and 5 funded⁹¹.

Besides of National Specific Programme in supporting the mobility of researchers, the **Travel Support** was offered for participation at the:

- **H2020 Programme Committees (PC)** meetings which happened 3-4 times per year for each thematic Programme Committee. Official Representatives and National Experts had the possibility to be involved actively in the activities and discussions within H2020 PC meetings.
- **ERA Strategic Committees and Working Groups**, which laid the ground for adjusting the national policies and strategic documents to the EU standards and requirements, as well as opportunity to be informed about continuous progress of ERA activities development. The representatives of Moldova were supported financially for participation in the ERAC, SFIC, GPC, ESFRI, Water JPIs, JRC, Joint Undertaking activities, Danube Strategy Forum, HR4R - Human Resources for Researcher's Strategy, etc.
- The new **Training Modules** were developed by ASM/CIP to increase the human potential skills on:
 - H2020 proposals writing, projects management and project financial administration trainings;
 - Academic English courses were introduced to improve the language knowledge with focus on H2020 terminology for the scientific community, SME and NGO representatives;

⁸³ <https://www.ancd.gov.md/ro/content/apel-de-concurs-conectarea-centrelor-de-excelen%C8%9B%C4%83-din-republica-moldova-la-infrastructura-de>

⁸⁴ <https://www.ancd.gov.md/ro/content/concursul-privind-conectarea-centrelor-de-excelen%C8%9B%C4%83-din-republica-moldova-la-infrastructura>

⁸⁵ <https://www.ancd.gov.md/ro/content/rezultatele-evalu%C4%83rii-propunerilor-de-proiecte-din-cadrul-concursului-privind-conectarea>

⁸⁶ <http://cpi.asm.md/wp-content/uploads/2017/03/ANUNT-Apel-de-Concurs-RESINFRA-final-citit.pdf>

⁸⁷ <http://cpi.asm.md/wp-content/uploads/2014/11/GC-mobilitate-apel11.pdf>

⁸⁸ <https://www.ancd.gov.md/ro/content/apel-de-concurs-granturi-de-mobilitate-cercet%C4%83torilor-pentru-participarea-%C3%AEn-programul>

⁸⁹ <http://cpi.asm.md/wp-content/uploads/2014/11/GC-Apel-Bonus2.pdf>

⁹⁰ <https://www.ancd.gov.md/ro/content/apel-de-concurs-bonus-european-pentru-participarea-%C3%AEn-cadrul-programului-orizont-2020>

⁹¹ <https://www.ancd.gov.md/ro/content/rezultatele-concursului-bonus-european-pentru-participarea-%C3%AEn-cadrul-programului-orizont>

- Based on the proposal of the Reimbursement Grant Contract Administrative Council the **training for SMEs** was elaborated with involvement of the experts from the Academy of Economic Studies of Moldova (ASEM) and NCP Network. They developed the specific modules for SMEs to attract and prepare them for participation in H2020.
- A series of **20 training courses** (one-week duration/each) were organized in Romania for the representatives of administrative staff from the R&I Organizations, Ministry of Finance, Ministry of Education, Fiscal bodies, Financial Inspections, Court of Accounting, etc. The training courses were offered by the Agency for the Regional Development ADR Nord-East/Piatra-Neamt⁹² and Training Centre APSAP⁹³ regarding the following H2020-related topics:
 - Financial Administration of the European Projects;
 - Legal & Financial Aspects within the European Projects;
 - Procurement Rules within the European Projects;
 - Personnel Costs within the European Projects;
 - Reporting and Auditing within the European Projects.

Other activities were supported within 2015-2017 were referred to:

- **Reorganization of NCP Network.** As experimental model - the National NCP Coordinator and 10 thematic NCPs were full-time appointed and served like curators to other NCP and groups of different local contact points, nominated on a competitive base. This approach permitted NCPs to provide non-stop consultations and to extend their services to different stakeholders, covering the wider range of representatives of R&I Community, SMEs and NGOs with the scope to diversify the participants in H2020.

ASM provided the adequate space for NCPs work conditions and supported their activities. The NCP rooms were adequate arranged with the computer equipment connected to internet that permits them to do their day-to-day work with people interested in participation in H2020.

All NCPs were introduced and included in the NCP International Networks and the EU NCP Academy Network that permitted them to benefit fully from the training activities needed for development of their skills on thematic fields and practical issues. Each NCP contributed to the maintenance of the National H2020 webpage: <http://www.h2020.md/> completing it with updated information on upcoming H2020 related Calls and Events. NCPs developed the database of potential H2020 beneficiaries and participants in the corresponding fields⁹⁴: The database was continuously updated and contained the list of R&D Institutions, Ministries, Agencies, SMEs and NGOs.

To develop the NCP skills within the new H2020 Work Programme the 15 members of the NCP Network participated in the Networking Annual Event “Horizon 2020 NCPs training for EaP countries” organized on 15-18 March 2016 in Kiev, Ukraine by the European Commission, Ministry of Education and Science on Ukraine, Taras Shevchenko National University of Kyiv. Besides they participated in the around of 50 trainings and brokerage events abroad and several events organized by the external experts in Moldova.

Such approach of involving at least several NCPs on the full-base activity influenced considerably on participation in H2020. The positive trend of supported H2020 projects was registered within 2015-2017.

⁹² Agency for the Regional Development ADR Nord-East/Piatra-Neamt -<https://www.adrnordest.ro/en/what-we-offer/academic-environment/>

⁹³ Training Centre APSAP - <https://cursuri-functionari.ro/despre-apsap/>

⁹⁴ https://docs.google.com/spreadsheets/d/1g9PFtu5SwS_-M0jvO97e3yGu9n6O4vD49wFDOoHujWA/edit?usp=sharing_eid&pli=1

- **H2020 Communication and Visibility** was supported within the FP7 and H2020 reimbursement budget. For this purpose, the Communication and Visibility Plan was issued with further approval by the EU Delegation to the Republic of Moldova were organized a number of events to:
 - Acknowledge the European Union Support for the participation in H2020;
 - Raise awareness inside the research community and civil society of Moldova in the process of integration in the European Research Area;
 - Promote the opportunities within the Horizon 2020 Programme;
 - Increase the image of Moldovan science in society in country and abroad to attract more actors in research and innovation activities.

The corresponding informational and promotional press-releases, brochures, booklets, banners, etc. were elaborated in accordance with the approved technical requirements of the Communication and Visibility Plan. To promote the research results and H2020 opportunities within the civil society, under this activity were organized the Researcher's Night events (2013, 2015, 2016), several editions of Science Slam (2015-2017), Proposal Writing seminars and trainings, as well as ensured participation at the Europe's Days in Moldova and the National and International Day of Science.

c) *The EU reimbursement of financial contribution for participation of the Republic of Moldova in the 2016-2017 H2020 Work Programme* was managed by the MECR and NARD starting with 2019.

The reimbursement funds for the 2016-2017 H2020 WP were allocated to the new call announced in 2020⁹⁵ aimed to overcome the COVID-19 pandemic situation, as well as to harmonize the National actions with European actions, provided in the ERAvsCorona Action Plan approved by EC on 04/07/2020⁹⁶. The Call topics were referred to:

- Solutions to mitigate the state of emergency in the educational system, strengthen capacities and ensure uninterrupted education, including innovative online teaching methods and increased accessibility;
- Development of effective technologies and databases in support of public health management in the context of the COVID-19 pandemic, including the digitalization of the surveillance process through the implementation of the epidemiological information system for COVID-19;
- Development of innovative solutions for the protection of the population and professionally exposed personnel against infection with the SARS-CoV-2 virus and to optimize control and response measures.
- Mitigating the impact of the COVID-19 pandemic on the agricultural sector.
- The evolution of society and the socio-political events before and after the outbreak of the COVID-19 pandemic.
- Elaboration of the mechanism regarding the acceleration of the connection of organizations from the fields of research and innovation to the European research infrastructures created in the context of the COVID-19 pandemic.

The competition resulted with 22 projects, supported financially⁹⁷.

Previously, in 2019, within this budget (part c) of the EU reimbursement funds) the NARD announced the similar editions of the following Calls: European BONUS, Mobility grants for researchers for participation in H2020 Projects Preparatory Meetings, Connection the Moldovan Centres of Excellence to the EU Research Infrastructure (Table 18, c).

⁹⁵ <https://www.ancd.gov.md/ro/content/ofert%C4%83-de-solu%C8%9Bii-de-cercetare-inovare-privind-combaterea-%C8%99i-atenuarea-impactului-0>

⁹⁶ https://ec.europa.eu/info/sites/info/files/research_and_innovation/research_by_area/documents/ec_rtd_era-vs-corona.pdf

⁹⁷ <https://ancd.gov.md/sites/default/files/document/attachments/Ordin%2014-CI%20din%2016.06.2020.pdf>

d) *The EU reimbursement of financial contribution for participation of the Republic of Moldova in the 2018-2019 H2020 Work Programme* was managed by the MECR and NARD starting with 2020.

The reimbursement funds for the 2018-2019 H2020 WP were allocated to the new call: "The resilience of the Republic of Moldova to crisis situations" announced in 2022. The purpose of the competition is the dedicated funding of scientific research that supports the efforts of the Government of the Republic of Moldova to identify solutions to solve the pressing problems of the country, resulting from the perpetuation of crisis situations at the global and regional level. The following objectives were required:

- Consolidation of resources and channeling efforts in identifying evidence-based solutions to solve pressing problems of the Republic of Moldova;
- Generating the records necessary to substantiate the decisions of the Government of the Republic of Moldova and other entities of the public administration and the socio-economic sector in ensuring resilience to crisis situations in the country, at the local and institutional level, as well as for the adjustment of decisions/activities at the national level with regional and global ones;
- Achieving some impact indicators that will reduce the burden on the socio-economic space of the country, caused by the current challenges as components of acute systemic crises (connecting the expected scientific and technological solutions to the maturity level TRL 5 or higher);
- Increasing the capacity to participate in international projects dedicated to crisis resilience, including from the Horizon Europe Framework Program.

The deadline of proposals submission was 23 October, 2022, to which 31 proposals were submitted. The evaluation and decision-making process on selection the proposals for funding will be finalized in the beginning of 2023 (Table 18, d).

3.6. National Support Components Facilitating Participation in H2020

National Contact Point Network

The network of NCPs is a key instrument facilitating the access, and subsequent integration, of Moldovan institutions and individuals to the European Research Area and participation in the EU Framework Programmes. The NCP Network in Moldova was created in 2008 within the FP7 programme (2007-2013), when the first 8 young people were nominated and supported by ASM. Just after signing the Memorandum of Understanding between the European Union and the Republic of Moldova of association to FP7 the 16 NCPs were appointed by ASM on a competitive basis according to the FP7 NCP Network Structure approved by EC.

In 2014 the National NCP Network was extended to 22 positions, in accordance to the NCP configuration approved by EC for H2020. Additionally, were nominated 4 Informational Contact Points (ICP) in the regions of Moldova: Balti, Cahul, Comrat and Taraclia, 1 Informational Contact Point for the COST Actions, 2 Local Contact Points (LoCP) for the EURAXESS Programme and 2 Local Contact Point for Intellectual Properties Rights Issues (from CIP and State Agency for Intellectual Protection - AGEPI).

In total 30 NCPs, ICPs and LoCPs activated in Moldova till 2018, which were permanently involved in the activities to provide the informational support to the scientific community and other representatives of civil society, covering the H2020 related topics as it was specified in the Minimum Standards and Guiding Principles for Setting up the NCP System under Horizon 2020⁹⁸. The Center of International Projects was nominated by ASM SCSDT as NCP Network Host Institution since 2011, which coordinated the NCPs activities in Moldova based on annual action plans. The NCPs were selected on a competitive base and hired by CIP on a contractual base with a part-time involvement. The same practice was continued by

⁹⁸ https://ec.europa.eu/research/participants/data/support/ncp/h2020-standards-principles_en.pdf

NARD from 2018. The part-time involvement creates some difficulties for NCPs to provide the full range services foreseen for NCPs activities. Recruiting at least a part of them on a full-time basis will lead to increasing the quality of their services.

During the H2020 Programme implementation the NCPs Network was involved in the considerable number of promotional activities, such as: H2020 Informational Days, individual consultations, seminars, trainings, high-level events, meetings and conferences. The most demanded topics presented on these events were the following: EU regulations on establishment of H2020 Programme, H2020 structure, open calls and funding opportunities, how to get funding, partner search facilities, legal & financial aspects, proposals writing, procedure of submission, projects administration, reporting and auditing etc. The trainings were delivered in Chisinau, Balti, Cahul, Comrat, Taraclia and Tiraspol.

Between the most important events could be mentioned:

- EU Days in Moldova (May, annually), organized by the EU Delegation to Moldova.
- Academy's day (June, annually), organized by the Academy of Sciences of Moldova.
- Researcher's Night – (last Friday of September) organized in parallel with the EU Member States by CIP and ASM in 2013, 2015-2016; InfoGroup, Technical University of Moldova and ASM in 2020-2021).
- H2020 funding opportunities under the National and International Science Day – (November, annually), organized by the Academy of Sciences of Moldova, Centre of International Projects, NCP Network before 2018. Within this event usually were presented all H2020 Calls, which were planned to be launched each next year.

The webpage www.h2020.md was developed in 2014 as a web platform for publishing and promoting all H2020 Programme-related news, calls and activities. Some H2020 promotional materials such as: printing leaflets and brochure posters and banners, guides and instructions demanded by R&I Community were widely distributed during the above-mentioned events.

Starting with the 1st Quarter 2018 CIP transferred the NCP activities under the MECR responsibility. The MECR Action Plan included all necessary points for coordination of NCP Network in Moldova. Immediately after establishment of NARD, in April 2018, the coordination of the NCP Network was taken under its responsibility. At the same time, a part of well-experienced NCPs left the NCP Network. The NARD completed the NCPs positions with the newcomers, which required the time to accumulate the necessary knowledge regarding the H2020 thematic calls, instruments and activities and be prepared for delivering the corresponding infodays and consultations to the scientific communities and other stakeholders. Moldovan NCPs are always needed to increase their skills and experience exchange to be able to work with the scientific community and civil society to cover H2020 open calls and rules of participation, proposals writing related issues, financial/resources management, innovation aspects and interdisciplinary approach of H2020 Programme. Each H2020 Work Programme is in continuous development and adjustment in accordance to MS/AC opinions and suggestions.

H2020 Programme and EC Strategic Committees

Important point is related to the participation of the Official Representatives and National Experts at the H2020 Programme Committees meetings. For the H2020 Programme the EC established 14 Programme Committees to which ASM nominated 45 candidatures on a competitive base, who participated at the corresponding PC meetings 3-4 times per year in accordance with the EC approved "Rules of Procedure for the Programme Committee for the specific programme implementing the Framework Programme for

Research and Innovation Horizon 2020 (2014-2020)^{99, 100}. Participation in PC meetings is a highly important activity focused on the discussions related to the experience of participation in the previous calls, priorities and conditions within the next H2020 calls and promotion of national interests within the future activities. As representatives of the Associated Country to H2020 they cannot vote, but have the right to express the national opinions for each issue discussed within the meetings. The most important points for discussions within PC were addressed to strategic planning and insurance of links to nationally funded activities, as well as providing opinions on the Work Programmes.

Additionally, to participation at the PC meetings, ASM nominated the R&D Representatives for participation at the JRC, ERAC, GPC, SFIC, JPI, ESFRI, COST, BSEC, Danube Strategy Forum and other structures, instruments and meetings in order to be familiar with the strategic policies, implementation tools, opportunities for partner search, networking, proposals writing stimulation within R&I sector offered by EC. Participation in these meetings were fully covered by the national authority delegated its representatives.

The report on R&D system of the Republic of Moldova was presented during the ERAC Meeting in October 2015. Following this the Moldovan authorities submitted to the ERAC the formal request to review the R&D System of Moldova within the Policy Support Facilities under Horizon 2020 Programme.

Moldovan Office for Science and Technology in Brussels/IGLO (MOST)

The practice of the EU member states, and those associated with FP7 (Switzerland, Israel, Turkey) have demonstrated the need to create a liaison office in the field of science and technology, based in Brussels, in order to promote adequate participation in European research-innovation programmes, but also to increase the dialogue on this dimension with the R&D Directorates of the European Commission. More than 20 offices, which represent the EU Members States and Associated to H2020 Countries were activated in Brussels, were united in the informal network IGLO RTD within 2014-2020.

Thus, the Government of the Republic of Moldova through its Decision no. 790 of October 22, 2012 approved the creation of the Moldovan Office for Science and Technology in Brussels (MOST). On April 15, 2013, the MOST Office was accepted as a member of the S&T liaison offices network based in Brussels – International Group of the Liaison Offices (IGLO)¹⁰¹. Within the IGLO International Network, the MOST representative had up to date information regarding to any H2020-related news, developments and opportunities to accumulate the experience in participating in the EU Framework Programmes offered by the more advanced countries. The MOST served as an intermediary between the European Commission Directorates and scientific community of. It provided operative informational and organizational assistance, consultancy and promotion activities Moldova to institutions in the sphere of research-innovation (public and private).

The MOST activities are focused on:

- *Dissemination of targeted, timely advised news and information on research funding opportunities to different stakeholders (R&D, SMEs, NGOs, etc.),*
- *interaction proactively with the European Commission, other IGLO Offices and contacts in Brussels,*
- *acting as a user-friendly interface between the Moldovan scientific community and the European institutions, to their mutual benefit to facilitate contacts,*
- *advising on how to access European R&D programmes and activities,*
- *monitoring of policies developments,*

⁹⁹ Rules of Procedure for the Programme Committee for the specific programme implementing the Framework Programme for Research and Innovation Horizon 2020 (2014-2020), Regulation (EU) No 1291/2013 of the European Parliament and of the Council of 11 December 2013 establishing Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020) and repealing Decision No 1982/2006/EC. Official Journal of the European Union, 20.12.2013, L 347/104.

¹⁰⁰ https://eap-plus.eu/object/news/293/attach/EaP_PLUS_web9_PC_members_final.pdf

¹⁰¹ <https://iglortd.org/#members>

- providing fast and effective dissemination channels to the scientific community,
- providing the European Commission and other Brussels contacts with information about the research and innovation community in each country

Several issues of MOST Informational Bulletin were launched through the, CIP and <http://www.h2020.md/> webpages.

Besides MOST staff represent Moldova at the different EU meetings and acts like a liaison office between the EC and Moldovan R&D institutions, Government RM, NGOs, SMEs etc. There are several types of activities, such as “IGLO Core” meetings, “IGLO Open” meetings, “IGLO Open Special” meetings, “IGLO Working Groups” and IGLO internal training sessions.

- Monthly on a consensus basis, *IGLO Core* assumes the following responsibilities: approval of the “rules of procedure”, appointment of the Secretary & the Secretariat, approval of any new membership to IGLO; approval of the plan of IGLO activities as proposed by the Secretary; approval of Working Groups; approval of written documents.
- Every month, after the *IGLO Core meeting*, an information session on the issues related to the EU RDT – *IGLO Open* is organized by the member hosting the IGLO Core meeting, on a rotating schedule which involves relevant speakers, especially from the European Commission and other institutions.

The representative of scientific community in MOST, Brussels was nominated by ASM on a competitive base. By decision no. 240 of December 20, 2012, SCSDT of the ASM was delegated the coordination duties regarding the activity of MOST to the Center International Projects. The working space for the MOST office activities in Brussels was kindly offered by the Romanian Office for Science and Technology (ROST). The ROST colleagues provided mentoring and guiding assistance to the MOST representatives. Starting with 2018, the MOST activities was transferred under the responsibility of MECR and NARD. The MOST office address was changed and its activity become less visible.

However, the limit of funds does not permit to organize appropriate functioning of the office and exploit fully its potential in Brussels.

3.7. Attracting the Scientific Diaspora Members

Moldova has suffered a significant brain drain process since 1991 due to the very long and difficult political transition. The estimative number of qualified people in the science and innovation system decreased 10 times reaching 3097 researchers in 2020¹⁰². Big number of researchers have found the appropriate jobs positions in R&I organizations around the world, but still keep the good communication with the Moldovan scientific community.

Following the association to the EU Framework Programmes several specific initiatives were realized under the auspices of the Academy of Sciences of Moldova - to reanimate existing or to develop the new cooperation between the scientific community of Moldova and Moldovan researchers established abroad. Mutual cooperation with the members of Moldovan Scientific Diaspora can be useful in partnerships development and formation of project consortiums for further participation in H2020 Calls. Recognizing that, the mobilization of scientific diasporas was supported by encouraging their involvement in research activities, technological development, innovation and education. The following projects and activities were realized:

- The **SCOPES Project ASM-EPFL**¹⁰³. In 2010, the Academy of Sciences of Moldova and the Swiss Federal Institute of Technology in Lausanne (EPFL) have officially launched a joint research project

¹⁰² ASM State of Science in the Republic of Moldova Report, 2020, p.27 - https://asm.md/sites/default/files/2021-05/ASM_raport%20starea%20stiintei_2020_14%20mai%202021_site%20%281%29.pdf

¹⁰³ <https://www.tandfonline.com/doi/full/10.1080/14683857.2013.789674>

aiming to “Connect the scientific diaspora of the Republic of Moldova to the scientific and economic development of the home country”. The overall objective of this research project was focused on advancing the knowledge-based evidence on the Moldovan Scientific Diaspora in main destination countries and to offer a number of recommendations for the Moldovan Government, the scientific community, as well as the MSD, that can be useful to leverage the potentialities of the scientific diaspora. Besides, it contributed to the identification of ways for establishing the permanent mechanism of cooperation between all interested actors, in order to get involved in the development process of the home country. The analysis of the MSD distribution in accordance to the age, country, research fields were performed, based on which the MSD database and intercommunication e-platform “Scientific Diaspora Network” was created, which gathered more than 200 MSD

- The program: **Temporary return of representatives of the Moldovan Scientific Diaspora** part of the project *“Supporting the implementation of the migration and development component of the EU-Moldova Mobility Partnership”* was implemented jointly by the International Organization for Migration, Mission to the Republic of Moldova (IOM) and the CIP/ASM. The call for participation was announced in the framework of the initiative entitled: „Addressing brain-drain through temporary return of expatriated Moldovan scientists and overseas young researchers to strengthen Moldova as a research & development hub and to promote temporary and permanent return and skill transfer” funded by the European Union. Its goal was to expand Moldova’s capacity in increasing the impact of circular migration on the development of R&I sector through temporary return of representatives of the Moldovan Scientific Diaspora. During 2010-2012 were supported 31 representatives of MSD from USA, Canada, Russia, Belarus, Japan, Israel, Romania, Germany, France, UK, Sweden, Belgium and Austria who had the opportunity to visit more than 30 R&D Moldovan Institutions for establishing the cooperation activities.

- The activity: **Temporary return of representatives of the Moldovan Scientific Diaspora** was continued in the 2014-2015 period as part of the project "Promotion of local civic state partnership for sustainable economic development in the Republic of Moldova", financed by the Ministry of Foreign Affairs of Norway and implemented by IOM Moldova in partnership with the Government of the Republic of Moldova¹⁰⁴. Through the partnership with CIP/ASM the IOM supported additionally 30 researchers – members of Moldovan Scientific Diaspora from: Austria, UK, Canada, Chile, Germany, Japan, France, Israel, Romania, Russia, Slovenia, Spain, USA, Turkey and Ukraine. The MSD were selected on a competitive basis to conduct the short-term visit to Moldova with the scope to perform research activities at one or several R&I organizations of Moldova.

The objective of these initiatives was: Improve Moldova’s capacity to enhance the development impact of circular migration through temporary return of highly qualified MSD members in the field of R&D. Through these programs, MSD members realized the opportunity to:

- Contribute by knowledge share to the development of R&I sector in Moldova;
- Establish new and renew previous collaborations with their Moldovan counterparts;
- Promote the integration of Moldovan researchers with the international scientific community;
- Strengthen partnership relations with the Moldovan researchers, which might lead to cooperation within international programs such as EU/FP “Horizon 2020”, SCOPES, NATO SPS, etc;
- Get involved in the educational process (undergraduate, postgraduate, PhD, etc);
- Share experience with their Moldovan counterparts on how to improve project proposal writing skills;
- Serve as independent experts in the evaluation of national projects, programs, strategies of development, laws, etc;
- Contribute to the joint research publications development to be published in Moldova and abroad;

¹⁰⁴ <http://cpi.asm.md/?p=5365&lang=en>

- Participate in informational campaigns to raise society's awareness on brain drain and mechanisms for stemming this process.
- **DiaMed.MD Platform**¹⁰⁵. In 2021 the State University of Medicine and Pharmacy "Nicolae Testemițanu" launched the initiative to create the network of the medical scientific diaspora of the Republic of Moldova - DiaMed.MD, with the aim of forming a virtual space for dialogue and collaboration of researchers in the field of medical sciences - graduates of Alma Mater, regardless of the country where they work and live. The objective of the platform is to create a permanent cooperation mechanism between the medical scientific community in the Republic of Moldova and our compatriots who work outside the country, starting from the idea that science knows no borders. The platform will facilitate the implementation of joint activities in the field of research and innovation – publications, projects, exchange of opinions, etc. The network is to be developed and institutionalized with the support of the Diaspora Relations Office within the State Chancellery, Government of the Republic of Moldova.

The above activities demonstrated the willingness of the Moldovan Scientific Diaspora members to develop the cooperation in different areas with the representatives of Moldovan scientific community. The joint participation in the national and international projects were registered in several cases (FP7, H2020 and bilateral projects).

3.8. Opportunities COSME, COST, EUREKA and CEI

Several accompanying programmes, activities and initiatives, such as COSME, COST, EUREKA, CEI, etc., were explored by Moldova to extend the international cooperation, develop the sustainable partnerships, laid the ground for further integration to ERA and participation in EU FP. Promotion of the opportunities within these programmes were included in the agendas of the infodays, trainings and seminars to raise the attention of scientific community of Moldova in developing of networking possibilities and innovation activities.

COSME¹⁰⁶, is the programme for the **Competitiveness of Enterprises and Small and Medium-sized Enterprises**, which funds many initiatives that help small businesses access new markets. The promotion of entrepreneurship and an entrepreneurial culture is therefore one of the main objectives of COSME. COSME is the EU programme for the Competitiveness of Enterprises and SMEs, running from 2014 to 2020, with a budget of EUR 2.3 billion. COSME developed its activity in support to SMEs in the following areas:

- I. Facilitating access to finance
- II. Supporting internationalization and access to markets
- III. Creating an environment favorable to competitiveness
- IV. Encouraging an entrepreneurial culture

The association Agreement between the Republic of Moldova and the European Union on the participation of the Republic of Moldova in the EU Programme "Competitiveness of Enterprises and Small and Medium-sized Enterprises (COSME) (2014-2020) was signed and ratified by the Parliament of RM in 2015 (Law Nr.21 from 27.02.2015)¹⁰⁷. The Republic of Moldova become eligible for COSME instruments under Components II, III and IV. Existing financial instruments under Component I, such as the loan guarantee mechanism, were not accessible to SMEs in the Republic of Moldova.

The Enterprise Europe Network (EEN) is COSME's main tool for supporting SMEs through the services provided by the 600-member organizations of the network. Starting with 2015, Enterprise Europe Network become available in Moldova through four National Contact Points:

¹⁰⁵ <http://emoldovata.gov.md/en/news/reprezentanti-ai-diasporei-stiintifice-medicale-originari-din-republica-moldova-s-au-intrunit-la-o-masa-rotunda-cu-tema-reteaua-medicala-diamed-md-instruire-prin-cercetare-in-era-internationalizarii>

¹⁰⁶ https://single-market-economy.ec.europa.eu/index_en

¹⁰⁷ https://www.legis.md/cautare/getResults?doc_id=64042&lang=ro

- Chamber of Commerce and Industry, (CCI);
- Organization for Small and Medium Enterprises Sector Development, (ODIMM);
- Agency for Innovation and Technology Transfer (2015-2018)/ National Agency for Research and Development (2018-present), (AITT/ANCD);
- Technology Transfer Network of Moldova, (RTTM).

These National Contact Points activated within the three H2020 projects (BusinessInn, PROBIM and PROBIM-PRO), offering the local business environment the opportunity to be acquainted with new markets for products and services, access to these markets, practical advice for business internationalization, technology transfer and innovation development¹⁰⁸.

COSME also provided business support institutions, associations, clusters or SMEs with access to regular thematic calls for proposals under the Programme. These calls required international partnerships, complex documentation and were focused on socialization activities, partnership building and the „know-how” exchange between the countries participating in the program.

The European Cooperation in Science and Technology (COST)¹⁰⁹ is an EU-funded, intergovernmental framework, which has proven to be a very effective tool for forming networks of researchers in order to facilitate innovative scientific advances and products and to coordinate nationally funded research activities by bringing together researchers and other stakeholders in the purpose of exchanging information in different fields. Thus, COST contributes to scientific cooperation and the strengthening of research and innovation capacities in Europe by achieving its mission through joint efforts aimed at:

- building capacity by connecting high-quality scientific communities in Europe and around the world;
- providing networking opportunities for Early Stage Researchers (ESR);
- increasing the impact of research on decision-makers, regulatory bodies and decision-makers at national level, as well as in the private sector.

Through its inclusion policy, COST supports the integration of research communities, leverages national research investments and addresses issues of global relevance. COST is thus a fundamental element of the European Research Area (ERA), essential for successful innovation strategies and global cooperation.

The negotiations to join the COST were discussed in 2016-2017 by the ASM/CIP and MOST representatives. The information session on the COST Programme opportunities, organized jointly by MECR and COST, was held on 4 May, 2018 for the research institutes and universities. At the event were discussed the conditions and facilities for joining the COST Association. As a result, the Republic of Moldova became full member of COST Association starting with 7th November, 2018¹¹⁰. The MER serves as the COST National Contact Point. Thus, Moldova participated in more than 80 COST Actions¹¹¹.

Eureka foster competitiveness and market integration and encourage R&D cooperation. 47 countries – members of Eureka share a common goal of increasing the productivity and excellence of industries and supporting lasting employment and national economic growth by encouraging international collaboration between companies, research organizations and universities. This is achieved through Eureka programmes, where national ministries and agencies fund international R&D and innovation projects. Eureka is open to startups, SMEs, large companies, research organizations and universities and supports the projects with the following characteristics:

- A civilian purpose;
- International collaboration between organizations based in two or more Eureka countries;

¹⁰⁸ <https://een.md/en/>

¹⁰⁹ <https://www.cost.eu/about/about-cost/>

¹¹⁰ <https://www.cost.eu/about/members/moldova/>

¹¹¹ <https://www.cost.eu/uploads/2021/06/Moldova.pdf>

- R&D of a new product, process or service;
- Market-oriented, where participating organizations decide the focus of their research.

Currently, Moldova is not a country – member of Eureka. MECR organized several information sessions for EUREKA (reputable network of pan-European innovation co-operation) in 2018-2020 focused to the entrepreneurial environment in addition to the research community and academia.

CEI – Central European Initiatives is a regional intergovernmental forum of 17 Member States in Central, Eastern and South-Eastern Europe, which foster the European integration and sustainable development through regional cooperation. Moldova is the CEI member from 1996 (year of accession)¹¹². The CEI achieve its goal set in Action Plans¹¹³ through its funds and activities offered in support of: cooperation activities, know-how exchange programme and technical cooperation with EBRD. Moldova has benefited from nine technical assistance projects in such innovating sectors as: transport, connectivity, green energy, infrastructure, support of small- and medium-sized enterprises (SMEs), institutional capacity, etc., worth over EUR 1.2 million¹¹⁴.

In advancing its mission as a regional intergovernmental forum working towards European integration and sustainable development, the CEI provides a platform for upholding political dialogue and project cooperation, thus helping maintain cooperative relations and building confidence among the Member States, and cooperates with the European Union (EU), the United Nations (UN), other international and regional organizations and international financial institutions, public or private institutions, non-governmental organizations (NGOs), as well as with other partners.

3.9. H2020 Information and Promotion Campaign

Within the Horizon 2020 period of implementation 2014-2020 the numerous promotional and informational events were organized. For this purpose, the Communication and Visibility Plan was elaborated in coordination with the EU Delegation to the Republic of Moldova. The events differed by type of organization - from the infodays, roundtable meetings, workshops, seminars and trainings to high-level regional and international forums and conferences.

The selected high-level events organized during the implementation of FP7 and H2020 to strengthen the acknowledgement of EU funds are the following:

- September 21, 2012, Brussels, Belgium, – Promotional event **“Moldova towards the European Research Area”**, organized by the ASM, CIP, MOST, ROST, Representatives of the Mission of the RM to the EU, Deputies of the Parliament RM, European Commission, DG R&D, IGLO Network. The main scope of event was promotion of the national science and innovation system, research results and potential, institutions profiles, etc. The basic report on “Contribution of Science and Innovation of the Republic of Moldova to the European Future” was delivered by the President of ASM.
- March 17, 2014, Chisinau - The **Regional launch event of the new Framework Programme for Research and Innovation - Horizon 2020**, with the participation of Eastern Partnership countries representatives. The topics addressed during the event focused on practical aspects of transition from the Seventh Framework Programme (2007-2013) to Horizon 2020 (2014-2020). The event was organized by the Academy of Sciences of Moldova (ASM), Center of International Projects, under the aegis of the Eastern Partnership Platform IV “Contacts between People” and in partnership with

¹¹² <https://www.cei.int/member-states>

¹¹³ <https://www.cei.int/sites/default/files/publications/downloads/CEI%20Plan%20of%20Action%20DIGITAL%20ESEC%20FINAL.pdf>

¹¹⁴ <https://www.moldpres.md/en/news/2021/11/08/21008458>

European Commission Directorate General for Research and Innovation. Mr. Robert-Jan SMITS, General Director of DG Research and Innovation, European Commission participated in the event.

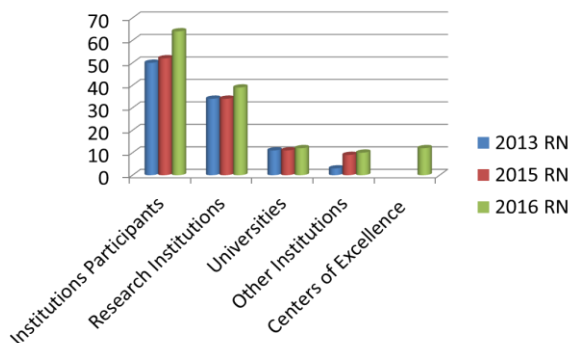
- **Researcher's Night** (RN, www.rn.asm.md): 2 editions (27 September 2015/2nd Edition¹¹⁵ and 23 September 2016/3rd Edition¹¹⁶). Researchers' Night is an annual event which is held in over 300 cities from Europe. The First Edition of the Researcher's Night event was organized in 2013 within FP7 Programme and first time in the post-Soviet area¹¹⁷.



In 2015, Researchers' Night celebrated its 10th year anniversary around the Europe. In 2016 the Researcher's Night as well as several other events was

dedicated to 5 years of

Moldova's association to the EU Framework Programmes (FP7&H2020). All events took place in front of the Academy of Sciences, Stefan cel Mare 1, Chisinau.



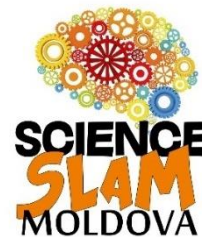
The number of events' visitors increased each time: more than 4000 visitors in 2013, > 4500 in 2015 and > 5000 in 2016. The number of mass-media references to the events increased from 78 to 92 within 2013-2016. The number of participant institutions is reflected at the diagram.

The events aimed to be a scientific journey together with researchers, explorers, inventors, scientists and writers, crazy experiments, fascinating conferences and competitions, interaction with the latest technical innovations and to test the inspiration and creativity in the scientific world. The Researcher's Night promotional events were organized by the Academy of Sciences of Moldova, Centre for International Projects, H2020 National Contact Points Network and EURAXESS Moldova team.

On 27.11.2020 The Researcher's Night in Moldova was held on-line due to the Covid pandemic situation¹¹⁸. It was funded under the H2020 Marie Skłodowska-Curie Actions (H2020 ModerNight project), aimed to bring researchers closer to the general public, demonstrate the diversity and impact of science, and motivate young people to choose a research career. The ModerNight event was organized by the Technical University of Moldova, Academy of Sciences of Moldova, Institute for Development of the Informational Society and InfoGroup Public Association. The videospots of the R&I Organizations scientific results were presented on-line.¹¹⁹

- **SCIENCE SLAM**: 9 editions (2014-2017) of promotional event which brings together science, innovation and creativity, organized by the Academy of Sciences in collaboration with the Centre for International Projects, National Contact Points Network and DAS Foundation.

Science Slam offer for innovators and researchers a platform to promote their research and a unique opportunity to receive the feedback from colleague's which are specialized in the same sphere, but also appreciation from general public. Science Slam mission is to raise public interest for research and



¹¹⁵ <https://www.privesc.eu/arhiva/63599/Evenimentul-organizat-sub-egida-Academiei-de-Stiinte-a-Moldovei--Noaptea-Cercetatorilor-Europeni-2015->

¹¹⁶ <https://www.privesc.eu/arhiva/68990/Noaptea-Cercetatorilor-Europeni-2016--editia-a-III-a>

¹¹⁷ <https://locals.md/2013/noaptea-cercetatorilor-2013/>

¹¹⁸ <https://2020.noapteacercetatorilor.md/en/program>

¹¹⁹ <https://2020.noapteacercetatorilor.md/en/science4society>

innovation, thus can ensuring the sustainable development of information society. Each event the four Moldovan researchers have spoken to the public about their scientific results through an original and entertaining way and increase the number of visitors and their admiration.

- **EURAXESS Road Show**, November 5, 2015. The first time the promotional EURAXESS Bus Tour Blue Line reached the Academy of Sciences of Moldova. A lot of visitors from the Moldovan universities, lyceums, institutions came to the event to make familiar with the EURAXESS services and opportunities.



In 2015 the European Commission organized two buses and EURAXESS promoters (Blue Line and Yellow Line) which have travelled in 16 different countries and 34 cities all over Europe. From East to West EURAXESS team had the chance to meet so many incredibly motivated students and researchers, who came over to learn more about the opportunities of the EURAXESS platform. More info on EURAXESS - on tour is placed on: <https://www.facebook.com/EURAXESS> and in Moldova on:

<https://www.facebook.com/EURAXESS.OnTour/photos/a.780785358615703.1073741828.764250040269235/1160033450690890/?type=3&theater>.

- On 18-19 February, 2016 was carried out **“S3 Design Learning Workshop”** workshop on smart specialization (S3) strategy design for non-EU countries organized by S3 Platform based in Joint Research Centre of European Commission in cooperation with the Academy of Sciences of Moldova in Chisinau.



The S3 approach for research and innovation strategies has been mostly applied at the EU countries and regions where it has been a requirement for regions implementing operational programmes with the European Structural & Investment Funds. Following this innovative approach towards regional development EU countries and regions have identified a limited number of S3 priority areas for knowledge-based investments, focusing on their strengths and comparative advantages. In order to enable Danube countries outside the EU benefitting from S3 methodology, the S3 Platform is organizing the “S3 Design Learning Workshop” where the number of experts from the countries, which have already developed their S3 strategies, have shared their experience on different steps of the S3 process. The foreseen knowledge transfers through the teaming of the EU regions and those outside the EU in trans-national policy learning process enables exchanging ideas, and increasing cohesion of the regions through the knowledge transfer. Improved research and innovation strategies containing S3 approach could become the drivers of technology upgrading and provide unique competitive advantages for the countries and regions outside the EU¹²⁰. Following the S3 Design Learning Workshop the Republic of Moldova became a NON-EU country registered with the S3 Platform and visible on a corresponding map¹²¹.

Third ERA and Innovation Union Workshop: **“The role of Performance based funding in increasing the effectiveness of the national research system”** was organized first time in Moldova on June 23, 2016. At the workshop was presented examples of 8 MS/AC countries: Austria, Germany, Bulgaria, Croatia, Czech Republic, Slovenia, Romania on how to assess the quality of research-performing organizations, the current challenges of introducing evidence/merit-based funding decisions within the R&I systems of the non-EU countries and PBF in case of competitive versus institutional funding. The plans of the non-EU countries for introducing PBF in Bosnia and



¹²⁰ <http://s3platform.jrc.ec.europa.eu/-/s3-design-learning-workshop?inheritRedirect=true&redirect=%2Fevents>

¹²¹ <https://s3platform.jrc.ec.europa.eu/where-we-are>

Herzegovina, Moldova, Serbia and Ukraine. The Policy Recommendations on more effective R&I systems in the Danube Region – PBF were provided as Concluding remarks and the way forward.

- **Supporting Innovations in Moldova**, July 13, 2016 – event organized by ASM, InnoFin EU, CIP, NCP Network with participation of the European Investment Bank Group, which hosted an interactive seminar to present the extensive range of support available to innovative and growing businesses in Moldova. Under Innovation Finance (InnovFin) range were specially designed and presented products for: banks and financial intermediaries, mid-sized and large innovative business and large research and innovation projects emanating from universities and public research organizations, in the field of renewable energy and hydrogen and fuel cells and vaccines, drugs, medical and diagnostic devices and services. The seminar consisted of concise product presentations and case studies. Both the EU and the EIB Group intend to more than double their combined support for research and innovation in Europe until 2020, making more than EUR 24 billion available. The H2020 instruments for SMEs and Risk Finance was presented to auditorium on more than 150 participants.
- Each November in 2014-2017 within the International & National Science Days the Academy of Sciences of Moldova, Centre of International Projects jointly with the NCPs Network organized the **H2020 Programme Launch Events** to promote the forthcoming and open H2020 calls within the all priority areas and specific objectives. The corresponding presentations and leaflets were widely distributed within the scientific community of Moldova. The H2020 Open Call were presented to the audience by NCPs and invited foreign experts, who provided the corresponding information on European Research Council Grants, Legal and Financial Issues, Industrial Leadership: Innovation in SMEs, Risk Finance and COSME, Health, Demographic Change and Wellbeing, Climate Action, Environment, Resource Efficiency and Raw Materials, Secure Clean and Efficient Energy and gender Issues within Horizon 2020.
- On 9-10 November 2018, the Ministry of Education, Culture and Research organized the **National Science Day**. It was an important event which included workshops, presentations and master classes organized within the National History Museum. All R&I Institutions participated in the event and informed the wide audience about the research results and experience of participation in H2020 projects. The civil society had an open access and actively participated in these events (more than 1500 visitors were attended).
- **EUROPE DAYS** Annual Event in Moldova –May, Chisinau and other cities of Moldova. Each year NCPs participated with promotional and informational materials, disseminated flyers with the opportunities offered within the HORIZON 2020 Programme and offered group and individual consultations.
- **Academy's Day** – took place on June 12, 2016 at the Ethno-Cultural Complex VATRA, which was visited by high-level Public Authorities, Diplomatic Missions, international and national institutions and companies. This event served as a good opportunity to disseminate H2020 related information within the very diversified audience. Due to the occasion of several anniversaries: 70 years of establishing of R&D Institutions, 55 years of creation of the Academy of Sciences of Moldova and 5 years from association to the EU 7th Framework Programmes.
- **Infodays**, consultancies, seminars, trainings and other events – continuously are organized by NCPs, according to thematic and instruments announced within H2020 Programme. The infodays were organized in all R&D Institutions, Agencies, Ministries, ODIMM, AITT, Regional Universities in Balti, Comrat, Cahul, Taraclia, Ungheni.



These activities were organized to acknowledge the EU funding support, increase visibility of EU at the national level, promote the image of science in society and announce the opportunities offered by EU within the HORIZON 2020 Programme.

4. PARTICIPATION SUPPORT POTENTIAL: FP7→H2020→HE2027 AND FURTHER RECOMMENDATIONS

Evaluation of the Republic of Moldova participation in FP7 and H2020 demonstrated incapability to use all the opportunities offered by EU within the Framework Programmes for Research and Innovation.

In spite of association to **FP7** (ANNEX#1) – No participation was registered in Priority Areas: **Ideas** – ‘ERC’; **Cooperation** – ‘Joint Technology Initiatives’ and **Capacities** – ‘Region of Knowledge’ and ‘Research Potential’.

For the **H2020** concluded calls **no proposals** (ANNEX#2) were submitted to **Industrial Leadership** – ‘Leadership in enabling and industrial technologies’ (LEIT) and ‘Advanced manufacturing and processing’ and to 5 Priority Areas within the ‘**Spreading Excellence and Widening Participation**’.

According to the ANNEX#3 – **no H2020 projects** were retained for funding within:

- **Pillar 1** – ‘ERC’ and ‘FET’.
- **Pillar 2** - seven Priority Areas with no one project supported. There are 3 Priority Areas only covered with the projects: ‘ICT’ – 2 projects for NCP networks, ‘Space’ – 1 project and ‘Innovation in SME’ – 3 projects in support of EEN.
- **Pillar 3** – ‘Energy’ and ‘Transport’ Priority Areas without any projects retained for funding.

With regard to the Specific Objective: ‘**Spreading Excellence and Widening Participation**’ (ANNEX#3) – besides of 3 funded H2020 projects within the ‘Twinning’ Calls (2015 and 2017), no projects were registered for the other 6 Priority Areas.

Within Specific Objective: ‘**Science with and for Society**’ (ANNEX#3) – only 3 out of 9 Priority Areas, include 5 H2020 projects selected for funding.

The Table 19 summarizes the distribution of H2020 Projects (Signed Grants Agreements) in accordance to the Priority Areas laid within Pillars and Specific Objectives.

Table 19. *Involvement of the Republic of Moldova in the Priority Areas, designed for the Horizon 2020 Pillars and Specific Objectives.*

H2020 Pillar/ Specific Objective (SO)	Total Nr. of Priority Areas	Nr. of Priority Areas with retained projects	Nr. of proposals submitted	Nr. of projects/ Signed Grant Agreements
Pillar 1: Excellence Science	5	2	106	20
Pillar 2: Industrial Leadership	10	3	43	6
Pillar 3: Societal Challenges	8	6	259	34
SO: Spreading Excellence and Widening Participation	7	1	20	3
SO: Science with and for Society	9	3	27	5
Total	39	15	455	68

This table demonstrates that the Republic of Moldova participated in less than 40% of the total number of Priority Areas established for Horizon 2020.

Participation of Moldova in **Horizon Europe 2021-2022 Work Programme** is similar. In accordance to the information presented at the 4th EaP Informal Working Group Meeting on Research & Innovation Policy

Debate on Research and Innovation (20.10.2022)¹²², the Republic of Moldova is involved in more than 20 projects retained for funding out of 97 applications. The signed Grants Agreements covered 9 Thematic Priorities only as follows:

- **Pillar 1:** ‘MSCA Actions’ (3 projects) and ‘Research Infrastructure’ (1 Project)
- **Pillar 2:** ‘Health’ (1 project); ‘Culture, Creativity and inclusive Society’ (1 project); ‘Civil Security and Society’ (8 projects); ‘Digital Industry and Space’ (1 project – NCP Network); ‘Food, Bioeconomy, Natural Resources, Agriculture and Environment’ (3 projects);
- **Pillar 3:** no one project;
- **SO:** ‘Widening Participation and Spreading Excellence’ (1 project – NCP Network);
- **SO:** ‘Reforming& Enhancing the European R&I System’ (1 project).

At the same time, the national annual financial contribution is calculated in accordance with the EU budget allocated to all pillars, specific objectives and thematic priority areas of the corresponding FP.

OUTCOMES AND RECOMMENDATIONS

Association to the EU Framework Programme foreseen the very high responsibility at the Government level in relation to the policies’ development, reform and management of national R&I sector, as well as strengthening efforts to build the national capacities and capabilities in the process of realizing the status of Association Country. Aligning national R&I policies with the strategic concepts, principles and priorities of the EU is an important step in maximizing the benefit of both participation in the EU Framework Programmes and integration into the European Research Area.

Based on the experience accumulated by the Republic of Moldova during the ten years of implementing the Associated Country status: FP7→H2020→HE2027, **urgent measures are needed to improve the capability of Moldova to participate in the EU Framework Programmes** with the purpose to benefit fully from the opportunities offered under such programmes.

To resume consequences of Moldova’s participation in the FP7→H2020→HE2027, and contribute to the increasing of participation in the EU Framework Programme for Research and Innovation Horizon Europe, the main attention has to be paid to the: **national capacity building, systemic approach to the R&I management, human potential skills development and innovation aspect strengthening.**

National Capacity Building

Until 2018, the activities on implementing the Association Country status were coordinated by the Academy of Sciences of Moldova authorized by the Government RM for this activity. The negotiation and association process, as well as national measures and instrument to assure participation in FPs was organized initially by the Department of European Integration and International Cooperation and continued by the Centre of International Projects, which activities were approved and monitored by the ASM Supreme Council for Science and Technology Development. The concentration of national activities designed for assurance of participation in FPs under the auspices of ASM facilitated the day-to-day work of promoting FPs opportunities and developing the human skills in applying to open calls.

Based on the S&I Code modifications in 2017 these activities were divided among three key R&I authorities: MER (policies establishment), NARD (policies implementation) and ASM (consultations and

¹²² Lessons Learned from the EaP Partner Countries Participation in Calls under the Horizon Europe Work Programme 2021-2022, Silvia Bojinova, Team leader, Unit Horizon Europe Association/ DG Research and Innovation, European Commission. 4th EaP Informal Working Group Meeting on Research & Innovation Policy Debate on Research and Innovation (20.10.2022, Georgia).

recommendations). Fruitful cooperation and joining the efforts between these Public Authorities will lead to a more effective implementation of the Associated Country's status.

RECOMMENDATION 1.

To develop and implement the **national R&I policies in line with the EU objectives and visions** concerning the participation in HE2027 and integration to the ERA, **the key R&I actors: MER, NARD and ASM should act as unique mechanism to ensure mutual cooperation** and linkage between them to avoid the activities overlapping, fragmentation or misunderstanding. Communication with the MOST, FP Programme and EU Strategic Committees official representatives and national experts is important there to react on-time to the EU R&I policies aspects, news and issues.

Academy of Sciences of Moldova is responsible for the report of high importance on the state of science in the Republic of Moldova, issued annually, which include the overview of the scientific results presented by the R&I organizations for the public auditions. The scientific reports, are generated based on the results of national calls implementation, elaborated and announced by NARD. No profound evaluation of the research results by thematic experts was done for identifying the potential research groups, capable to apply for the corresponding FP priority areas. The recommendations for adjusting the national normative acts to the EU R&I policies and aspects, correlation of the national and international scientific priorities, approaches and activities are needed to be presented to Government RM.

RECOMMENDATION 2.

The research results presented at the annual public auditions has to be evaluated by independent thematic experts (selected from science, civil society and business sectors) for identifying the potential research groups, capable to apply for the corresponding FP thematic areas. **The evaluation results have to be included in the annual report on the state of science in the Republic of Moldova, as well as concrete recommendations related to increasing the participation in HE2027.** The overarch priority – demonstration of participation experience in the EU FP has to be considered. The input of NCP Network is needed to provide the informational support and explain the procedures of applying to the FP Calls for the strong research teams.

Ministry of Education and Research, as responsible for establishment the R&I policies, respecting the association legal & financial obligations and provisions, needs to be regularly informed about the progress of national R&I system in line with the EU policies recommendations. Communication with the MOST and FP Programme and EU Strategic Committees official representatives and national experts is important there to react on-time to the EU R&I policies aspects, news and issues. The R&I policies implementation practical problems has to be reported to MER by NARD to reach consensus in further participation in the EU FP calls and activities.

RECOMMENDATION 3.

MER as responsible public authority for the R&I policies development has to be directly connected with the national official representatives and experts delegated to the MOST, EU FP Programme and Strategic Committees (ERAC, EOSC, ESFRI, JRC, etc.) and to be on-time informed about actual/urgent EU visions and intentions. The staff of the MER's Department for the R&I policies has to participate at the strategic meetings, trainings, committees and working groups.

National Agency for Research and Development. The national measures and instruments, which ensure participation in FP (NCP, MOST, CP, informational and promotional activities) are concentrated within the NARD's Department of International Cooperation and Sustainable Development, where 2-3 people engaged for the NARD day-to-day administrative work, bilateral and multilateral international cooperation development. Additionally, they are responsible for coordination of the national supporting instruments

functioning, including NCPs Network, EU FP Programme and EU Strategic Committees and MOST activities. Evident that this is not enough staff to manage effectively the activities for international cooperation development, coordination of measures needed for the Association Country status implementation and to offer the operative informational support to the potential stakeholders at the qualitative level.

RECOMMENDATION 4.

The *NARD has to strengthen its Department of International Cooperation and Sustainable Development* by completing the staff positions with competent and experienced people to intensify the activities for implementation of the Associated Country' status, as well as further development of bilateral and multilateral cooperation. Upon necessity the new appointed staff has to upgrade their skills whenever is possible.

National R&I FP supporting platform – practical approach

The experience of participation in FP7 and H2020 demonstrates the necessity of establishing the sustainable structure/platform concentrated specifically on providing the appropriate support, services and advices to all stakeholders (scientific and business communities, public authorities, NGO, SMEs, civil society, etc.) regarding the policies, rules, procedures of accessing, participation and management of the FPs calls, facilities and other activities.

For this purpose, the National Office (Platform/ Hub) could be created and completed with competent and well-trained staff with full-time engagement in this activity. The functionality of the National Office is necessary from the strategic point of view – in 2024 the interim evaluation of the Horizon Europe will be performed and started the discussion of the next 10th EU Framework Programme. Within 2025-2027 the 3rd Work Programme of Horizon Europe will be implemented, where the transitional activities to the 10th FP will be realized. In addition, the financial contribution paid by the Republic of Moldova to the EU Budget will be revised in accordance to the participation in HE2027 and will include 'an automatic correction of any significant imbalance' between the levels of contribution and receipts.

To assure the National Office functionality the most appropriate approach is - to have an independent structure, intersected with the main R&I key authorities: MER, NARD and ASM. It could be kept the name – Moldovan Office for Science and Technology in Chisinau, to which the MOST Office in Brussels would be connected, or serve as a branch. Creating of such office will laid ground for the operative support to the all R&I key actors, react on-time to any novelties and implement the needed adjustments in correlating the national R&I policies with the EU policy objectives.

The other variants, when the National Office will be incorporated in organigram of NARD, MER or ASM will not be effective, because the different administrative issues will burden its activity and will not permit to be concentrated on participation in the EU FPs and integration to ERA.

Georgia is the first from the EaP countries associated to HE2027 already opened the Horizon Europe Grant Office¹²³, which will facilitate the successful participation of Georgian scientists in EU grant competitions and will serve the needs of the region.

RECOMMENDATION 5.

The *National Office in supporting R&I Framework Programmes platform has to be established as independent entity with autonomous administration* intersected with the main key actors: MER, NARD and ASM. It has to be concentrated specifically on coordination of the national supporting instruments developed to facilitate participation in the EU FPs and integration to ERA. Main activities have to be focused on providing the appropriate support, services and advices to all stakeholders

¹²³ <https://mes.gov.ge/content.php?lang=eng&id=12557>

(scientific and business communities, public authorities, NGO, SMEs, civil society, etc.) regarding the policies, rules, procedures of accessing, participation and management of the FP calls, facilities and other activities.

Integration to the ERA requires the urgent evaluation of the ERA Roadmap realized within the 2019-2021, as well as execution of the corresponding implementation plan. Considering the new ERA Priorities, the next National Roadmap or Strategy for integration to the ERA and its implementation plan need to be drafted urgently. It should be focused on prioritizing the investments and reforms in research and innovation, boosting market uptake, strengthening the mobility of researchers, free flow of knowledge and technology and improved access to excellence in correspondence to the ERA Policy Agenda (2022-2024)¹²⁴.

To set-up the National New ERA Roadmap, the EARTO recommendations¹²⁵ has to be considered which foreseen the steps **towards achieving the 3% EU GDP investment in R&I** - target with a clear impact-driven approach [ERA Actions 1 & 2]. This can be achieved by:

a. Committing to the 1,25% EU GDP R&D public investment target to be achieved by Member States by 2030, and establishing a concrete roadmap to deliver on this new target: this would give the right signal to society, and boost the much-needed private RD&I investments in Europe,

b. Fostering the development of policy support tools to maximize the socio-economic impact of R&I investments at all levels, aiming for instance at encouraging the R&I organizations to leverage their capabilities with impact-driven mission and service models by strengthening their innovation capacity. This could be fostered by the development of evidenced-based policy-making tools and reports on the role of R&I organizations in European Innovation Ecosystems and their impact, strengthening cross-border cross-sectorial collaborative R&I links as well as knowledge and technology co-creation as the solutions to jointly face societal and industrial challenges delivering on the UN Sustainable and Development Goals.

RECOMMENDATION 6.

Considering the Moldova's association to the HE2027 and necessity to maximize the implementation impact of Association Country's status in line with the ERA Policy Agenda (2022-2024), to convince the RM Government to **set up the R&I as national priority and increase the funding of R&I sector by achievement the national investments commitment to the 1,25% EU GDP by 2030**, and fostering the development of policy support tools to increase the socio-economic impact of R&I investments at all levels.

Gender issues. The gender equality represents a fundamental value of EU, identified as one of the ERA priorities and is one of the United Union's Sustainable Development Goal. Considering that Horizon Europe calls serves in support of ERA priorities achievement, the conditions related to the gender issues have to be respected at the stage of proposals drafting and submission.

To be eligible for funding, the legal entities from Member States and Associated Countries that are public bodies, research organizations or higher education establishments (including private research organizations and higher education establishments) must have a **gender equality plan**, covering the following minimum process-related requirements: *publication*: a formal document published on the institution's website and signed by the top management; *dedicated resources*: commitment of resources and expertise in gender equality to implement the plan; *data collection and monitoring*: sex/gender disaggregated data on personnel

¹²⁴ European Research Area Policy Agenda (2022-2024) - https://research-and-innovation.ec.europa.eu/system/files/2021-11/ec_rtd_era-policy-agenda-2021.pdf

¹²⁵ EARTO Recommendations: Making the New ERA for R&I a Reality - <https://www.earto.eu/wp-content/uploads/EARTO-Recommendations-Making-the-New-ERA-for-RI-a-Reality-Final.pdf>

(and students, for the establishments concerned) and annual reporting based on indicators; *training*: awareness raising/training on gender equality and unconscious gender biases for staff and decision-makers.

A self-declaration will be requested at proposal stage. If all the above-mentioned mandatory requirements are met through another strategic document, such as a development plan or an inclusion or diversity strategy, it can be considered as an equivalent. This eligibility criterion does not apply to other categories of legal entities, such as private for-profit organizations, including SMEs, non-governmental or civil society organizations.¹²⁶

RECOMMENDATION 7.

To increase the preparedness for participation in the EU FP and integration to the ERA, it is necessary **to include the gender issues aspects in the national strategic documents and encourage the R&I organizations to issue the Gender Equality Plans** that will facilitate their participation in HE2027.

Open Science - Starting with the European Commission Communication from 2015¹²⁷, a Digital Single Market Strategy for Europe started its implementation. Following the Horizon 2020, the Open Science, is an approach penetrated in all modern innovative economic systems through internet and digital technologies, in business, and communities as they become more integrated across all sectors of our economy and society.

The EC also launched an interim EOSC Governance evaluation to prepare the strategic orientations for the post-2020 EOSC realization. The current phase of implementation (2021-2030), is taking place in the context of the EOSC European co-programmed partnership according to the Strategic Research and Innovation Agenda (SRIA)¹²⁸, which is co-developed with the entire EOSC community. EOSC is transitioning to a more stakeholder-driven approach with a shared vision, common objectives and complementary contributions at European, national and institutional levels. A concrete co-investment (in kind and in cash) by the European Union and non-EU partners of at least EUR 1 billion is planned for 2021-2027¹²⁹.

As one of the ERA priorities, under the Horizon Europe Programme, the Open Science foreseen the more open and transparent communication and intersection of research and innovation. The evaluation of proposals submitted to the almost all Horizon-Europe Actions (RIA, IA, CSA, etc.) includes the award criteria: “the quality of Open Science practices”¹³⁰.

At the national level the number of Moldovan organizations and specialized events promoting a common understanding of Open Science, associated benefits and challenges increase annually. There could be mentioned two important events, which took place in Moldova in 2018¹³¹ and 2022¹³² and gathered the local experts and specialists to discuss the progress in the field.

However, the implementation of Open Science must be supported by national policies. Many European countries have already adopted the National Open Science policies to improve the quality and efficiency of science, as well as to enhance economic and societal growth.

¹²⁶ https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2021-2022/wp-13-general-annexes_horizon-2021-2022_en.pdf

¹²⁷ EC Communication to the EU Parliament (2015) 192 -

<https://eurlex.europa.eu/legalcontent/EN/TXT/?uri=COM%3A2015%3A192%3AFIN>

¹²⁸ EU Strategic Research and Innovation Agenda <https://op.europa.eu/en/publication-detail/-/publication/f9b12d1d-74ea-11ec-9136-01aa75ed71a1>

¹²⁹ https://ec.europa.eu/info/sites/default/files/research_and_innovation/strategy_on_research_and_innovation/dokuments/ec_rtd_era-policy-agenda-2021.pdf

¹³⁰ Horizon Europe General Annexes (2021-2022) https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2021-2022/wp-13-general-annexes_horizon-2021-2022_en.pdf

¹³¹ Open Science in the Republic of Moldova – 2018, <https://idsi.md/content/open-science-in-moldova-national-conference>

¹³² Open Science in the Republic of Moldova – 2022, https://ibn.idsi.md/collection_view/1888

RECOMMENDATION 8.

To enable the Open Science, inclusion through the European Open Science Cloud (EOSC), the – **elaboration of the National Strategy on Open Science Policy and its Implementation Plan are needed with further adoption at the Government level.** The focus has to be paid to investing in human resources, training, education, digital literacy and capacity building, fostering a culture of open science and promoting innovative approaches for open science at different stages of the scientific process, international and multi-stakeholder cooperation, with view to reducing digital, technological and knowledge gaps. Prerequisites for sustainable and consistent implementation of Open Science principles at the national level, such as **Open Science infrastructure and services, incentives for researchers, research assessment and Open Science policies' compliance with the EU countries experiences need to be implemented in the Republic of Moldova**¹³³.

National supporting activities

Participation in the EU FP is based on the national supporting activities and instruments developed with the purpose to facilitate involvement of the R&I community, business, nongovernment organizations, public agencies and authorities, etc. The **NCPs Network** is the principal support instrument, which have to provide different kind of informational and promotional services to the all stakeholders. For this purpose, the NCPs have to be trained, have to have time and working conditions to offer the qualitative consulting. The part time involvement in this activity creates a lot of inconveniences both for NCPs and for their employment organizations where they have the basic job positions. That why, the full-time employment of several NCPs for EU FPs promotional activity is really needed. This could be done within the National Office, described above, or to be supported within the FP reimbursement activities, as it was organized within 2015-2016 (reimbursement part – b).

Besides, not individuals only can be appointed for NCP positions within the National NCPs Network. Several position of the thematic NCPs could be delegated to the Institutional level. The corresponding institute can prepare several NCPs in the respective fields to extend their services, to be able to replace them with each other or to work in parallel in case of necessity.

The same approach – to institutionalize the consulting services, is referred to the local contact points responsible for the ERA priorities. For instance, from the very beginning, the EURAXESS activities in Moldova were coordinated by ASM – is good example of such approach. The NARD is already involved in the Joint Programming Initiatives and EU Partnerships activities and has to continue this practice. The Open Science contact point could be delegated to the Institute of the Informational Society Development, which within the long-term period already contributed to the development of basic instruments in correspondence to the EOSC requirements. The IPR issues within the EU FP could be delegated to AGEPI and so on.

The distribution of the thematic NCPs role between the profile organizations will contribute to the wider dissemination of the NCPs services and push the research& innovation teams to apply for the corresponding FP opportunities. As many people become familiar with the procedures for applications to the FP calls and activities, as many participations in HE2027 will be registered.

RECOMMENDATION 9.

Intensification of the NCPs Network services and activities is urgently needed towards the R&I organizations, SMEs, NGOs, etc.¹³⁴ To increase the effectiveness of the National Contact Points services the reorganization of the National NCP Network by raising them to the institutional level is desirable. The thematic NCPs role and activities has to be delegated to the corresponding R&I and other

¹³³ Open Science agenda in the Republic of Moldova: national policies and actions. https://ibn.idsi.md/vizualizare_articol/165969
¹³⁴ https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ncp-guiding-principles_he_en.pdf

organizations, especially in the cases when they operate within the national R&I priorities. **The full-time employment of several NCPs within the R&I organizations or National Office EU FP to assure continuous informational and promotional activity will maximize the impact of their services.**

As regard to the **EU Programme and Strategic Committees**, there also - the institutional approach is more effective solution. The activity of the national official representatives and experts participating within the thematic EU FP Programme Committees with the scope to discuss the strategic planning, to ensure links to nationally funded activities and policies in the corresponding fields and to provide the national opinions on the Work Programmes, has to be raised on the Ministerial level, which is the main policy-making authority. The same is referred to the EU Strategic Committees, where the absolutely all EU MS are presented by the national public authorities involved in the policies development.

RECOMMENDATION 10.

Participation of the sectorial national public authorities' representatives involved in the R&I policies development in the EU FP Programme and Strategic Committees is strictly recommended.

The importance of their participation is necessary to discuss the strategic planning at the EU level and ensure links to nationally funded R&I activities and policies in the corresponding fields.

The **Moldovan Office for Science and Technology** in Brussels/IGLO has to demonstrate the most active involvement in the interaction between the European Commission and Moldovan Public Authorities. All R&I Key Actors: MER, NARD and ASM have to be on-time informed about the any progress in FP-related developments and activities. The appropriate solution – to transform the MOST into the National Office, located in Chisinau with the representation in Brussels.

RECOMMENDATION 11.

The **MOST representative has to intensify the communication with the decision-making national sectorial authorities** with regards to facilitate and enhance the interaction, information exchange and co-operation between the European institution and national R&I system and key Public Authorities on issues related to the EU Framework Programmes, integration to ERA, EU strategical R&I policies and visions.

Systemic Approach to the R&I Management

Implementation of the Associated to the EU FP Country status cannot be realized separately from the overall R&I system governing. These two processes are closely intertwined between them. To avoid their fragmentation, the systemic approach has to be applied from the R&I policies establishing to their implementation, as well as very close cooperation relationships between all R&I key actors.

National R&I Policies has to be correlated with the European and Regional objectives and priorities. The involvement of MOST, EU FP Programme and Strategic Committees representatives in the process of National R&I Policies, Strategies or Roadmaps drafting is important. They are directly connected to the EC R&I Structures and have access to information from the first hands. Even the National ERA Roadmap (approved in 2018) covers the period 2019-2021, the new ERA Roadmap for the period 2021-2024 with reflection of the new ERA priorities had to be drafted in 2020, and the next one for the period 2025-2027 - in 2024. The evaluation of the ERA Roadmaps implementation is under the responsibility of the key R&I actors involved.

RECOMMENDATION 12.

The **evaluation of the 2019-2021 National ERA Roadmap has to be performed** by independent experts and corresponding national key R&I authorities. Considering the evaluation results, the **new ERA Roadmap for the period 2021-2024 with reflection of the new ERA priorities had to be drafted** urgently, and the next one for the period 2025-2027 - in 2024. All national roadmaps/strategies have to have proactive character.

The *National Programmes* (funded from the state budget) besides of scientific priorities have to include the overarching priorities:

- demonstration of experience of participation in the EU Framework Programmes;
- consolidation of efforts for participation in the EU Framework Programmes;
- involvement in the implementation of ERA Priorities (JPIs, EURAXESS, Open Science, etc.).

To appreciate the projects, which correspond to above overarching priorities, the additional points could be added to the existing basic selection criteria. Appreciation of participation in the EU FP during the projects' evaluation process is the good way to increase the interest for involving the research teams in the proposals writing activities.

RECOMMENDATION 13.

The **national R&I programmes** funded from the state budget have to include the **evaluation criteria, confirming experience of participation and intentions to apply to the EU FPs**, as well as **contribution to ERA integration**. The national programmes in support of **technology transfer, innovations and research infrastructure modernization has to be prioritized** over other programmes.

National Supporting Programmes – The experience of the specific supporting programmes development and implementation was successful and considerably contributed to increasing the participation in H2020. The supporting programmes directly connected to the EU FPs, such as 'European Bonus', 'Mobility of Researchers', 'Connection of the Moldovan Centres of Excellence to the EU Research Infrastructure' and 'Modernization of Research Infrastructure' have to be continued.

Besides, the new programmes in support of participation in HE2027 have to be developed. The new programmes could contribute to stimulation or increasing the number of proposals submission to those HE2027 priority areas, where the participation is not registered or is very low. The above-mentioned overarching priorities have to serve as a main evaluation criterium for the projects' selection and funding.

Another programme – "NCP Bonus" could be added to appreciate the NCPs contribution in proposals writing and submission to HE 2027, with the conditions similar to European Bonus programme.

RECOMMENDATION 14.

The **national specialized programmes to support the participation in EU FPs and integration to ERA has to be further developed**, such as Mobility of Researchers, Connection of the Moldovan Centres of Excellence to the EU Research Infrastructure and Modernization of research infrastructure, European Bonus for applicants to HE2027, NCP Bonus, etc. The list of supporting programmes could be extended and diversified.

Bilateral Cooperation Framework extension. The main problem of participation in EU FP – is to find/create the right and sustainable consortium, which in majority cases should consists from minimum three legal entities: – at least one independent legal entity established in a Member State; and – at least two

other independent legal entities established in different Member States or Associated Countries¹³⁵, as it is stipulated in the specific call conditions.

With this regard the bilateral projects activities represent the first step for partner search to create the sustainable partnerships, which can serve as a basis for sustainable consortium extension in correspondence to the EU FP calls requirements. Development of bilateral cooperation with the EU Member State or Associated Countries is one of the important activities to facilitate participation in EU FP. The Bilateral Agreements of Scientific cooperation, which were signed by ASM in the past with the respective public authorities from Romania, Germany, Italy, France, Ukraine has to be actualized and extended within the bilateral cooperation framework in support to participation in the EU FP. The multilateral calls and activities within the JPIs, EU Partnerships and Missions - represent the good opportunity to find the appropriate consortium.

RECOMMENDATION 15.

Bilateral and multilateral international R&I cooperation development and its realization through the joint calls and projects has to be extended and diversified with involvement of EU Member States or Associated to the HE2027 Countries. This will facilitate the partner search activities towards creating the basic consortiums eligible for applying to the HE2027 calls and activities.

Cooperation with the *Scientific Diaspora Members (SDM)* could also contribute to development of sustainable partnerships to participate jointly in the bilateral or multilateral projects and to create consortiums for applying to HE2027 Calls. For this purpose, the past experience in supporting their short-term returning to Moldova could be actualized and launched periodically. Within SDM short-term visits the preparatory meetings of proposals discussion, drafting and submission can be organized.

Development of specialized programs for SDM temporary return to Moldova could be discussed with the migration-related organizations, BRD – Bureau for Relations with Diaspora, IOM – International Organization for Migration and others interested institutions, etc. Besides, in supporting SDM, several options could be found within the HE2027 Widening Participation and Spreading Excellence Calls, presented below.

RECOMMENDATION 16.

The supporting programmes for the short-term visits of the Scientific Diaspora Members to Moldova (SDM) has to be developed in cooperation with the national and international authorities and organizations specialized on migration issues. Involvement of SDM in the national R&I activities and policies development will influence positively to the sustainable partnerships creation and further participation in the EU FPs.

The best option to increase the national capacity in R&I is possible through applying to the **HE2027 Widening Participation and Strengthening the European Research Area¹³⁶** Calls, which are directed to the implementation of concrete measures in support of Pillar II impact in widening countries (including Moldova) within two components: 1. Widening Participation and Spreading Excellence (WRSE); 2. Strengthening the European Research Area. Actually, this part of the HE2027 Program at the national level, is practically not exploited!

The activities supported under this part specifically address to ERA policy priorities and aim at encouraging more investments, improving the access to excellence, translating R&I results into the economy and

¹³⁵ https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2021-2022/wp-13-general-annexes_horizon-2021-2022_en.pdf

¹³⁶ https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2021-2022/wp-11-widening-participation-and-strengthening-the-european-research-area_horizon-2021-2022_en.pdf

improving research management capabilities within widening countries. Activities also foster brain circulation across the ERA through mobility of researchers and innovators, and support the development of networks of scholars, scientists, researchers and innovators, policy makers and research managers.

Besides, the projects awarded within this part of programme, have the possibility to receive additional funding through the EU Synergies calls in case of synergy with other R&I relevant EU, national or regional programmes (such as ERDF, ESF+, JTF, EMFF, EAFRD, ERASMUS+ and InvestEU), where appropriate, as well as private funds or financial instruments. Amongst others, the European Regional Development Fund (ERDF) focuses on development and strengthening the regional and local research and innovation ecosystems and smart economic transformation, in line with regional/national smart specialization strategies. It can support building research and innovation capacities, uptake of advanced technologies and roll-out of innovative solutions from the Framework Programmes for research and innovation through the ERDF¹³⁷.

Within *Widening participation and Spreading Excellence* the widening countries will be supported to increase the performance of their R&I systems towards excellence through building on dedicated Horizon Europe measures and complementarities with smart specialization strategies under Cohesion Policy. The calls under the WPSE include the following opportunities:

Teaming: support/create centres of excellences as role models to stimulate excellence, new investments and reforms of national research and innovation systems.

Twinning: develop excellence in chosen research and innovation domain, increase visibility of the research institutions and universities, and upskill its staff.

ERA Chairs: support universities or research organizations from eligible countries to attract and maintain high quality human resources and help excellent scientists and their teams to become game changers in their field.

ERA Fellowships and ERA Talents: support the MSCA doctoral and postdoctoral fellowships to the host-institutions established in widening countries.

Excellence Hub: strengthen regional innovation excellence in placed based innovation ecosystems by cross-border collaboration on a common strategy and/or alongside value adding chains. Place based innovation ecosystems are interconnected companies, research institutions, governmental bodies and societal actors that are mutually reinforcing each other in a territorial context and together raise the level of innovation excellence in their regional fabric.

European Excellence Initiative: support aims at the transformation of higher education sector and their surrounding ecosystems, including non-university research centres. The Excellence Initiative would thereby mobilize local and regional government's investments in higher education sector (in its broadest sense). It will also include research activities in strategically relevant domains with a centre of gravity in widening countries.

Hop-on Facilities: offers the possibility for legal entities from low R&I performing countries to join already selected collaborative R&I actions, subject to the agreement of the respective consortium and provided that legal entities from such countries are not yet participating in it. The scheme further aims at achieving the Inclusiveness ambition of the future ERA policy by involving research institutions from widening countries under Horizon Europe Pillar 2 actions.

European Cooperation in Science and Technology (COST), cross-border scientific network helping excellent researchers and innovators get access to the European and international networks.

Applicants should clearly show that projects are linked with national and/or regional R&I strategies to be eligible to apply for funding under the component of the 'Widening Participation and Strengthening the ERA' part of the Programme.

¹³⁷ https://ec.europa.eu/regional_policy/en/information/publications/communications/2022/synergies-between-erdf-programmes-and-horizon-europe

The second part: **Strengthening the European Research Area** represent the new level of ambition that contribute to better linkage of R&I with the economy, as well as with education and training activities. The new ERA communication calls for deepening existing priorities and initiatives through new and stronger approaches, which require the setting of new priorities, launching ambitious joint initiatives and developing common approaches between policies. Investments and reforms will be prioritized, access to excellence will be improved and R&I results will be translated into the economy. These actions will result in deepening the ERA. The principle of excellence, meaning that the best researchers with the best ideas obtain funding, remains the cornerstone for all investments under the ERA. The ERA Calls cover wide and diversified activities on supporting policy-makers to find the solutions to prioritize the investments and reforms, improving access to excellence, translation of research results into economy, modelling of impact of Open Science policy, developing the roadmaps and strategies, etc.

RECOMMENDATION 17.

The R&I organizations, Public Authorities, SMEs, NGOs, etc. have to be encouraged **to exploit more intensively the opportunities offered within the HE2027 Specific Objective: Widening participation and strengthening the European Research Area**. Training activities have to be extended regarding the different widening instruments related to the ‘Widening Participation and Spreading Excellence’ (e.g. TEAMING, TWINNING, ERA-CHAIRS, COST, widening fellowships, etc.) and ‘Strengthening the European Research Area’ part of HE2027.

EU FP Opportunities Visibility: Considering the association of the Republic of Moldova to the HE2027 and financial obligations (financial contribution payments to the EU budget for participation in HE2027), the key R&I actors, R&I Organizations and other R&I connected structures have to contribute to the EU FP opportunities dissemination at the national level to attracting and keeping informed the potential applicants.

Currently the information regarding the EU Framework Programme for Research and Innovation Horizon Europe (2021-2027) is visible on the webpages of the following organizations:

- **Horizon Europe website** (available since October 2022) - <https://horizoneurope.md/en>, fully focused on HE2027, which is permanently updated and completed by NARD and Moldovan NCPs Network.
- **MER** - <https://mec.gov.md/>, Rubric “Research” includes the information regarding the H2020: Association Agreement to H2020¹³⁸, ERA Roadmap (2019-2021). For HE2027 is visible the Presidential Decree of initiation the negotiation about the Association Agreement to HE2027 (dated 01.10.2020)¹³⁹. The Rubric “International” doesn’t include the research component and there is no any reference to H2020 or HE2027.
- **NARD** – <https://www.ancd.gov.md/>. This webpage includes the references to HE2027, is interconnected with the main EU Horizon Europe portal¹⁴⁰ and National Horizon Europe webpage: - <https://horizoneurope.md/en>.
- **ASM** - <https://asm.md/> - the HE2027 information (linked to the EU Horizon Europe portal) is included in the Rubric “International Collaboration” and HE2027 Logo is reflected on the ASM webpage.

¹³⁸ <https://mecc.gov.md/ro/content/legislatia>

¹³⁹ https://www.legis.md/cautare/getResults?doc_id=123567&lang=ro

¹⁴⁰ https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe_en

- **R&I Organizations** - From 51 R&I Organizations listed on ASM webpage¹⁴¹, only I.Creanga State Pedagogical Institute¹⁴² posted the HE2027 description on its webpage. The limited number of other organizations placed the information about the H2020 projects: Institute of Chemistry¹⁴³, V.Andrunachievici Institute of Mathematics and Informatics¹⁴⁴, Institute of the Informational Society Development¹⁴⁵ and Institute of Applied Physics¹⁴⁶.
- **Other – Ministry of Foreign Affairs and European Integration** - <https://mfa.gov.md/en/content/participation-eu-programs-and-agencies>. The Rubric “Participation in the EU Programmes and Agencies” contains the H2020 description. There is no any information about the HE 2027¹⁴⁷. The **Ministries**, which are **founders of the sectorial R&I Institutions** did not post any HE2027-related information on their webpages.

The absence of the HE2027 Logos, descriptions and links to the National Horizon Europe webpage and EU HE2027 portal on the R&I organizations’ official webpages does not contribute to the wide dissemination of HE2027 information and visibility of the opportunities offered within this programme, as well as the success stories of the implemented projects.

RECOMMENDATION 18.

The **visibility of HE2027 Programme, funding opportunities, new ERA priorities and corresponding specific parts (EU Partnerships, Missions, Open Science, Charter& Code principles, etc.) have to be increased and widely disseminated** by R&I - related public authorities, organizations and other stakeholders.

EU FP Project management: For the new generation of funding programmes under the Multiannual Financial Framework 2021-2027, the new general model grant agreement has been introduced in order to ensure coherence and simplification for all EU Programmes¹⁴⁸. The new EU Annotated Model Grant Agreement (AMGA) reflects this new structure. Moreover, since a wide range of Programmes is now using the e-Grants IT tools (Funding & Tenders Portal), the annotations and guidance are focused on grants managed both through these IT tools and also applies to grant agreements not managed through the IT tools.¹⁴⁹

Personnel Costs. The most acute problem in projects management is considered the personnel costs within the H2020 and in continuation in the HE2027 Grants Agreements. This problem arised in 2014-2015 within H2020, when the AMGA was adopted by EU¹⁵⁰ for the grants awarded to the beneficiaries for the implementing the ‘research and innovation actions (RIA)’, ‘innovation actions (IA)’ and ‘coordination and support actions (CSA)’ with the respective obligations, terms and conditions.

As regards to the non-profit organization the salaries remunerations had to be paid in accordance with the beneficiary's usual cost accounting practices. Due to the very low salaries within the Moldovan R&I Sector, the calculated amount of unit costs within the Grants Agreements was rather small that considerably influenced to the participation in H2020. The most problematic issues provoked due to the low level of personnel costs were referred to the following:

¹⁴¹ <https://asm.md/index.php/organizatii-din-sfera-cercetarii-inovarii>

¹⁴² <https://upsc.md/en/international-2/collaboration-programs-and-international-agreements/>

¹⁴³ <https://ichem.md/proiecte-internationale-0>

¹⁴⁴ <http://www.math.md/en/projects/>

¹⁴⁵ https://idsi.md/en/international_projects

¹⁴⁶ <https://ifa.md/en/projects>

¹⁴⁷ <https://mfa.gov.md/en/content/participation-eu-programs-and-agencies>

¹⁴⁸ <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/home>

¹⁴⁹ https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/aga_en.pdf

¹⁵⁰ https://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/amga/h2020-amga_en.pdf

- The interest to participate in the H2020 project for Moldovan beneficiaries from the R&I and other budgetary institutions was decreased that considerably affected the participation in H2020;
- The budgets approved within the grant's agreements of the H2020 projects were not be realized fully due to the reduced amount of the personnel costs. This provoke the additional work in the overall project management and re-distribution of the unspent money with the follow-on necessity of issuing and approval the amendments to the grant's agreements;
- The international partners within the project's consortiums remained skeptic and prefer do not involve the Moldovan participants in the project teams, because they do not believe that the projects participants from Moldova can perform the same tasks qualitatively with the salary remuneration 5-10 times less in comparison with the participants from the EU MS or AC.
- During the evaluation process of the projects with participation of Moldova, the independent experts expressed the same point of view - they do not believe that the projects participants from Moldova can perform the same tasks qualitatively with the salary remuneration less than 5-10 times in comparison with the participants from the EU MS or AC. That why, due to participation of Moldova, the projects were estimated with the reduced score.

After the join appeal in 2015 on behalf of Academy of Sciences of Moldova and Ministry of Education and Science of Ukrainian to the European Commission concerning this problem, the response was rather general without any concrete proposal to find a solution or an exception for the EaP countries. Besides of that, the H2020 AMGA was continuously adjusted that created inconveniences for the potential applicants and beneficiaries.

The EC guidance to the salary's remuneration confirms the necessity to apply the calculation mode foreseen in AMGA, where the personnel costs are considered as the eligible direct costs, if they are related to personnel working for the beneficiary under an employment contract (or equivalent appointing act) and assigned to the action ('costs for employees (or equivalent)'). They must be limited to salaries, social security contributions, taxes and other costs included in the remuneration, if they arise from national law or the employment contract (or equivalent appointing act).

The problems with the personnel costs within the EU FP projects was aggravated due to the national restrictions and limitations appeared after 2018. The following regulations were considered for the personnel cost's calculation within H2020 Projects:

- **Hot.Gov. Nr.382/2019**¹⁵¹, Annex Nr.1 "Methodology for funding projects in the fields of research and innovation" to which regulated the salaries within the national projects within the normative acts specified below:
- **Law RM Nr.270 from 23.11.2018**¹⁵² of "unified system of salary within the budgetary sector":

In accordance to the Art.20, the staff from the budgetary units benefit from a supplement, in the manner established by the Government, for participation in development projects in the field of competence, within the budgetary unit in which they are employed, based on a distinct individual employment contract, outside of working hours. The provisions of Art.20 were in force till 2020.

- **Law RM Nr.175 from 19.12.2019**¹⁵³ approved the modification of the Law RM Nr.270 from 23.11.2018¹⁵⁴ of "unified system of salary within the budgetary sector", where the Art.20 was modified in **October 2021** as following:

¹⁵¹ https://www.legis.md/cautare/getResults?doc_id=115748&lang=ro

¹⁵² https://www.legis.md/cautare/getResults?doc_id=119781&lang=ro

¹⁵³ https://www.legis.md/cautare/getResults?doc_id=119658&lang=ro

¹⁵⁴ https://www.legis.md/cautare/getResults?doc_id=119781&lang=ro

(1) For participation in development projects financed from external sources within the budgetary unit in which they are employed, the staff of the budgetary units can benefit from an increase of **up to 75% of the basic salary**, established by the head of the budgetary unit.

(2) The increase for participation in development projects financed from external sources is granted from the account and within the limits of the means provided for the remuneration of the work in the financing agreements/contracts.

- **Law RM Nr.270 from 23.11.2018**¹⁵⁵ of “unified system of salary within the budgetary sector” **Modified 30.09.2022**¹⁵⁶: In 2022, the Art. 20 (modified in 2021) was supplemented with the Art. 20¹, which foreseen the salary supplement for the achievement of priority tasks in the context of the implementation of the requirements for accession to the European Union.

(1) For direct involvement in the achievement of priority tasks in the context of the implementation of the requirements for accession to the European Union, the staff from the public authorities can benefit from an increase of up to 75% of the basic salary.

(2) The method of establishing the increase for the achievement of priority tasks in the context of the implementation of the requirements for accession to the European Union is approved by the Government.

The **Law Nr.272 from 30.09.2022** for modifications approval of the above Law Nr.270, was completed with the adjusted version of Annex 3, which foreseen the increasing the salaries classification for the selected positions of work.

- **Labor Code**¹⁵⁷ - **Chapter V, cumulative work, Art. 268. Peculiarities of cumulative work for certain categories of employees** - The particularities of the cumulative work for some categories of employees (workers, teaching staff, medical-sanitary and pharmaceutical staff, **research-development staff**, employees in culture, art, sports, etc.) are established by the Government, after consultation with employers and unions.

Considering the EC HE2027 Annotated Model Grant Agreement (AMGA), modifications of the Art.20 (Law RM Nr.270) and the Art. 268 (Labor Code RM), to increase the salaries remuneration within the Horizon Europe projects is possible by increasing the salaries’ classification for the budgetary units’ staff within the R&I and other sectors involved in the EU Framework Programmes, including Horizon Europe.

The personnel costs category makes the highest budget share in the majority of EU funded projects, where they can constitute even more than 50-60% of the overall budget, especially in those IT projects where the major development is about software elements – platforms, artificial intelligence, machine learning, data analytics, mobile applications – and thus, numerous expert professionals are required.

Main changes in Horizon Europe personnel costs calculation to Horizon 2020 are the following¹⁵⁸: in an effort to simplify and harmonize the overall approach of how beneficiaries calculate Horizon Europe personnel costs, the European Commission has conducted two major changes compared to H2020:

- a) The first one is that calculations will be implemented for the calendar year, thus the “last closed financial year” rule does not apply any more.
- b) The second one is that hourly rates will no longer operate, replaced by a “single corporate daily rate” approach. This means that if a company has people working on both H2020 and Horizon Europe projects, the personnel costs calculation needs to take place differently.

As mentioned above, in the Horizon Europe, personnel costs are calculated on the daily rate scenario. The total amount of personnel costs declared (for reimbursement as actual costs) in EU grants for a person for

¹⁵⁵ https://www.legis.md/cautare/getResults?doc_id=119781&lang=ro

¹⁵⁶ https://www.legis.md/cautare/getResults?doc_id=133551&lang=ro#

¹⁵⁷ https://www.legis.md/cautare/getResults?doc_id=113032&lang=ro

¹⁵⁸ <https://www.emdesk.com/horizon-2020-horizon-europe-basics-guide/how-to-calculate-horizon-europe-personnel-costs>

a year cannot be higher than the total personnel costs recorded in the beneficiary's accounts (for that person for that year).

Other option for the personnel cost's calculation is based on the additional remuneration. Beneficiaries that are non-profit legal entities may declare as personnel costs additional remuneration for personnel assigned to the action (including payments on the basis of supplementary contracts regardless of their nature), if:

- a) it is part of the beneficiary's usual remuneration practices and is paid in a consistent manner whenever the same kind of work or expertise is required;
- b) the criteria used to calculate the supplementary payments are objective and generally applied by the beneficiary, regardless of the source of funding used. 'Additional remuneration' means any part of the remuneration which exceeds what the person would be paid for time worked in projects funded by national schemes.

Additional remuneration for personnel assigned to the action is eligible up to the following amount:

- a) if the person works full time and exclusively on the action during the full year: up to EUR 8.000;
- b) if the person works exclusively on the action but not full-time or not for the full year: up to the corresponding pro-rata amount of EUR 8.000, or
- c) if the person does not work exclusively on the action: up to a pro-rata amount calculated as follows: $\{ \text{EUR 8.000 divided by the number of annual productive hours} \}$, multiplied by the number of hours that the person has worked on the action during the year¹⁵⁹.

It is also very common that companies/organizations increase the salaries of their employees just for the specific EU funded project. However, if this takes place only for EU grants, these additional costs are not eligible, unless the company is under the Project-based remuneration¹⁵⁰.

RECOMMENDATION 19.

The specialized commission (jurists, economists, R&I responsible authorities, etc.) **have to be created to raise the personnel costs problems within the HE2027 projects at the Government level.** The unified approach has to be approved at the national level for the personnel cost's calculation within the international projects. Increasing the salaries classifications within the R&I budgetary sector could be the most appropriate solution.

Human Potential Skills Development

Participation in the EU FPs requires the special knowledge and activities, to exploit the existing opportunities, understand the procedure of application, contribute to the partnerships' development, project management, etc. The role of the NCPs Network there is primordial, they have to offer on-time qualitative services to promote available and forthcoming calls, explain the rules of participation, partner search options, proposals submission steps, etc. Any form of knowledge transfer is acceptable: individual consulting, trainings, practical seminars and promotional events. The most important issues to be delivered to the different groups of stakeholders are: funding opportunities within EU FP, rules of participation, how to write a successful proposal, legal and financial aspects, project management, reporting and auditing. Besides, specifics and new elements of each EU FP have to be considered as well. In case of Horizon Europe these elements are – new ERA priorities, simplification of project management, EU partnerships and missions, new requirements to open science, etc. The proposed topics for the training activities are presented in the **ANNEX#4**.

Important is to identify the potential stakeholders, to divide them into separate groups and to consult them in accordance to the training modules and thematic issues and priorities. Wherever where possible, participation of EC, DG R&D or EU MS experts and representative will maximize the trainings' impact

¹⁵⁹ https://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/amga/h2020-amga_en.pdf

and will increase the effectiveness of the training activities. The list of proposed training topics could be extended upon necessity.

RECOMMENDATION 20.

The human skills development regarding the rules and procedures of participation in HE2027 and integration to ERA have to be organized continuously with **involvement of the national NCPs Network and international experts from EC, DG R&D or EU MS/AC**. The **intensification of NCPs services is needed** in providing the individual consulting, trainings, practical seminars and promotional events. Besides **the specific training modules could be organized outside the country by foreign experts** to explain the EU approach to the legal and financial issues, project management, reporting, auditing and new elements within the HE2027: ERA priorities, simplification of project management, EU partnerships and missions, new requirements to open science, etc.

Making the research carrier attractive - EURAXESS Activity in Moldova is successfully developed since association to FP7 in 2011. The National EURAXESS Portal¹⁶⁰ and three EURAXESS Service Centres (Nord, Central and South parts of Moldova) were developed in line with EU requirements. Till present the EU Logo “HR Excellence in Research” was awarded to seven R&I organizations from Moldova¹⁶¹, which made progress in aligning their human resources policies to the 40 principles of the Charter & Code, based on a customized action plan/Human Resources Strategy. Declarations of Endorsement to Charter and Code have signed by 12 R&I Moldovan organizations¹⁶². Other 10 organizations are in the process of EU approval of the Declarations of Endorsement to Charter and Code. The majority of R&I organizations posted the EURAXESS Logos on their webpages.

However, this instrument is not fully exploited by Moldovan R&I Organizations. There are no job positions offers posted on EURAXESS Portal by R&I organizations in Moldova. There is no practice to publish the vacant places by the national or international projects beneficiaries.

At the same time this requirement is included in many HE2027 Calls (ERC, MSCA, etc). For example, the MSCA Cofund Call and Doctoral Networks opened in 2022¹⁶³ underlines the following: “...*The selection procedure for doctoral candidates must be open, transparent and merit-based, in line with the Code of Conduct for the Recruitment of Researchers. The vacancy notice (to be widely advertised internationally, including on the EURAXESS website)...*”.

The EU requirements for R&I organizations to obtain the Logo “HR Excellence in Research” and signed Declarations of Endorsement to Charter and Code are introduced in majority of HE2027 Calls. Besides, the national programmes for supporting participation in HE2027 in the EU MS also include these conditions. For example, the Romania’s National Recovery and Resilience Plan¹⁶⁴ foreseen the condition within the national programmes: “...*The host institution must have adhered or must be going to adhere to the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers within a maximum of 12 months from the date of signing the funding contract; it must also initiate or continue the procedure of implementing the researchers' Charter and Code until obtaining the "HR Excellence in Research" logo granted by the European Commission, until the project is completed...*”.

The above examples demonstrate importance to follow the EU requirements in respecting the Charter and Code principles. In this context the Call for proposals on problems of urgent interest with the generic

¹⁶⁰ <https://www.euraxess-eu.md/>

¹⁶¹ <https://euraxess.ec.europa.eu/jobs/hrs4r/awarded>

¹⁶² https://euraxess.ec.europa.eu/jobs/charter/declaration-endorsement#show_Moldova

¹⁶³ <https://euraxess.ec.europa.eu/worldwide/asean/msca-cofund-call-2022-now-open>

¹⁶⁴ <https://www.research.gov.ro/ro/articol/5628/programe-europene-planul-na-tional-de-redresare-i-rezilien-a-pnrr-componenta-9-suport-pentru-sectorul-privat-cercetare-dezvoltare-i-inovare>

"Resilience of the Republic of Moldova to Crisis Situations"¹⁶⁵ recently announced by NARD within the H2020 reimbursement funds does not include such conditions.

RECOMMENDATION 21.

The national programmes, strategic documents, activities and reports have to include the requirements to respect the main EU provisions related to the Open Science, Charter and Code, Gender Issues, Ethic aspects, IPR, etc. with the purpose – to create the environment at the national level, where these principles will be transformed in usual practice within the research and innovation system. The R&I organizations have to be encouraged to respect the principles laid down in the Commission Recommendation C(2005)576 on the European Charter for Researchers and the Code of Conduct for their Recruitment, as well as to apply for the “Human Resources Excellence in Research” EU Logo.

Strengthening of Innovation Aspect

The technology transfer and innovation activities in Moldova is in process of continuous development since adoption of the Code S&I in 2004. The ASM auxiliary organization - Agency for Innovation and Technology Transfer¹⁶⁶ started implementation of the National Technology Transfer Programme since 2005¹⁶⁷, which was continued by NARD after 2018¹⁶⁸. Currently NARD is operating with three types of the national competitions in support of the following projects:

Technological transfer projects (TTP) – which includes activities of implementation the scientific innovative results, which will contribute to the new products and services obtaining, performance increasing and their efficiency improving. AITT

Innovation project (IP) – project that includes activities aimed at applying the results obtained from research and/or practical experience, which are oriented towards their implementation and/or the commercialization on the market of materials, products or devices, processes, systems and new or substantially improved services.

Development of the Innovation Infrastructure (DII) oriented to: a) development of the innovation infrastructure of scientific-technological parks and innovation incubators in the Republic of Moldova; b) increasing the competitiveness of the support services provided to residents, which carry out innovation projects and technological transfer, contributing to the development of the economy and improving the quality of life through innovation.

Till present no one beneficiary of the above types of the projects applied to the H2020 or HE2027 funding opportunities. Presumably this happened due to the lack of understanding what kind of supporting calls and activities are offered within the EU FPs and how to apply to these opportunities. To change this situation the following information and activities have to be promoted within the above project's beneficiaries and other science and business partnerships to arise their interest on how to benefit from existing opportunities within the HE2027¹⁶⁹.

The core objective of the HE2027 Programme is to foster all forms of innovation, including breakthrough innovation, foster market deployment of innovative solutions, and optimize the delivery of such investment

¹⁶⁵ <https://www.ancd.gov.md/ro/content/concursul-de-proiecte-pe-probleme-de-interes-stringent-cu-genericul-%E2%80%9Erezilien%C8%9Ba-republicii>

¹⁶⁶ <https://www.aitt.md/en/aitt.html>

¹⁶⁷ <https://www.aitt.md/ro/aitt.html>

¹⁶⁸ <https://www.ancd.gov.md/ro/apeluri-infrastructura>

¹⁶⁹ https://sciencebusiness.net/sites/default/files/inline-files/EIC_WP_2023_second%20Draft.pdf

for increased impact within a strengthened ERA. The focus on innovations extends across all HE2027 Pillars and Specific Objectives.

The innovation component was promoted using different forms within all EU FP components. The European Innovation Council (EIC) has been established under the HE2027 EU programme to support game changing innovations throughout the lifecycle from early stage research, to proof of concept, technology transfer, and the financing and scale up of start-ups and SMEs.

Financial support is provided through three main funding schemes: the 'EIC Pathfinder' for advanced research on breakthrough / game-changing technologies; 'EIC Transition' for transforming research results into innovation opportunities; and the 'EIC Accelerator' for individual companies to develop and scale up breakthrough innovations with high risk and high impact. All EIC awardees, as well as selected applicants, have access to a range of EIC Business Acceleration Services providing access to leading expertise, corporates, investors and ecosystem actors.

To understand which funding scheme is the most appropriate to apply, the **Technology Readiness Level (TRL)**¹⁷⁰ Scale is considered to assess at what stage of development is the proposed technology.

The TRL concept is used mainly in HE 2027 Pillar 2 and Pillar 3. In Pillar 2, the maturity of a concept is used, amongst others, to distinguish between Research & Innovation Actions (RIA), at lower maturity, and Innovation Actions (IA), at higher maturity and closer to implementation.

In Pillar 3, particularly in the EIC component, TRL is integrated into the programme architecture. The funding schemes Pathfinder, Transition and Accelerator are explicitly meant to move technological ideas upwards on the TRL ladder towards commercialization:

- *Pathfinder*: science-to-technology, proof-of-principle; from TRL 1 to TRL 4;
- *Transition*: maturation, validation, business activities; from 3/4 to TRL 5/6;
- *Accelerator*: rolling out the market introduction strategy, final technical tweaks, business development work; from TRL 5/6 to TRL 8.

Several Countries already use this approach to identify the innovation effectiveness of the national projects' implementation¹⁷¹.

RECOMMENDATION 22.

The **Technology Readiness Level scaled approach could be applied within the national projects to assess the stage of technology proposed at the beginning and finalizing the national projects.** It could be done on the self-declared base or by establishing the projects' evaluation scheme. Further support to the implemented projects could be offered by NARD/NCPs to assist the projects beneficiaries in applying to the appropriate funding schemes and calls within the Pillars 2 and 3.

HE2027 Opportunities Focused on Innovations

To strengthen the focus on innovations, the Widening Participation and Spreading Excellence part of HE2027 has to be promoted as well. There is a unique possibility to use the "**Hop on Facility**", when the legal entities established in Widening countries, including Moldova may join already selected actions within the respective consortium. The proposal must be submitted by the co-ordinator of a consortium funded under the Pillar 2 or the EIC Pathfinder call¹⁷².

¹⁷⁰ https://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/annexes/h2020-wp1415-annex-g-trl_en.pdf

¹⁷¹ <https://www.regjeringen.no/contentassets/ca3b0e666dbc456492b83b2b05cee92a/impact-evaluation-fp-soa-technopolis-2020.pdf>

¹⁷² <https://europamediatrainings.com/blog/post/521/the-hop-on-facility-in-horizon-europe>

Another point of interest represents the “**Excellence hubs**”, which are an initiative to strengthen regional innovation excellence in place based innovation ecosystems by cross-border collaboration on a common strategy and/or alongside value adding chains. Place based innovation ecosystems include the interconnected companies, research institutions, governmental bodies and societal actors that are mutually reinforcing each other in a territorial context and together raise the level of innovation excellence in their regional fabric¹⁷³.

The **European Institute of Technology (EIT)** within the Pillar 3 is the largest integrated innovation ecosystem which brings together partners from business, research, education and beyond, which supports its Knowledge and Innovation Communities (KIC)s, which are large-scale European Partnerships addressing specific global challenges, and strengthen the innovation ecosystems around them. They foster the integration of education, R&I of the highest standards, thereby creating environments conducive to innovation, and by promoting and supporting a new generation of entrepreneurs and stimulating the creation of innovative companies in close synergy and complementarity with the EIC. Since 2010, the EIT has launched eight of such KICs, each of them focusing on a different societal challenge to unite the key stakeholders of the Knowledge Triangle (business, education and research). Through the HE 2027 Programmes they offer the funding opportunities to joint action brings together strong national players from science, industry and society.

The **Smart Specialization Strategy/Roadmap** is needed to set up the priorities for building the competitive advantage by developing and matching the R&I own strengths to business needs addressing the emerging opportunities and market developments in a coherent manner. This will lead to avoiding duplication and fragmentation of efforts, including those that are specified in national or regional R&I strategic policy framework.

European Partnerships – the novelty within the HE2027, which bring the European Commission and private and/or public partners together to address some of Europe’s most pressing challenges through concerted research and innovation initiatives, which has to be extended at the national level (currently NARD joined two EU partnerships). They are a key implementation tool of Horizon Europe, and contribute significantly to achieving the EU’s political priorities¹⁷⁴. They involve the private and/or public partners (such as industry, universities, research organizations, bodies with a public service mission at local, regional, national or international level or civil society organizations including foundations and NGOs) to commit jointly supporting the development and implementation of R&I activities, including those related to market, regulatory or policy uptake.

No one of the above opportunity was exploited at the national level. The promotional activities and practical trainings on the procedures are urgently needed.

RECOMMENDATION 23.

The **focus on innovations have to be considered wherever is possible** at the national level and within R&I system, projects and activities. The cooperation between the scientific and business communities have to be encouraged and trained for **participation in the Horizon Europe funding opportunities offered through the pillars of the programme and the specific parts such as Clusters, Missions, Partnerships, Widening, EIT KICs and newly established activities of the European Innovation Council in Horizon Europe.**

¹⁷³ <https://www.horizon-europe.gouv.fr/excellence-hubs-24956>

¹⁷⁴ https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/european-partnerships-horizon-europe_en#:~:text=in%20our%20infographic,-.Types%20of%20partnership.principles%20for%20establishing%20European%20Partnerships.

AFTERWORDS

The “Ex-post Evaluation of the Republic of Moldova Participation in H2020” covers more than ten years’ experience developed for the Associated Country’ status implementation. It started with negotiation process, association to the FP7 and H2020, national measures and activities development to promote the EU FP funding opportunities and stimulate participation in the EU FPs, as well as identification of the most acute weaknesses which negatively affect the image of Moldovan science community both at the national and international level.

The national strategies and roadmaps elaborated were drafted in line with the EU strategic visions and priorities, but their implementation meet the difficulties appeared in the process of continuous reformation of the R&I system and necessity for adaptation to the new conditions and changes of the related public authorities and scientific communities. The lack of funding of the national R&I system lead to the limitation of numerous supporting activities that can be helpful in ensuring of the essential progress in integration to ERA, involving the scientific community in the EU FPs and exploiting fully the opportunities offered within European programmes.

The recommendations made are based on the experience of participation in H2020 and mostly focused on practical activities and measures that can contribute to improving the participation in the Horizon Europe Programme. The National Office creation, which will be concentrated on moving forward the activities and measures to stimulate the participation in HE2027 will maximize the impact of the Associated Country status implementation. The selected opportunities within the HE2027 were brought to attention, which will be opened in the short-term period within the 2nd HE2027 Work Programme for 2023-2024 and beyond and could contribute to increasing the competitiveness and further progress of Moldovan R&I system.

ANNEXES

ANNEX#1

Participation of Moldova in the EU FP7 Projects

MD - Moldova (Republic of) (ASSOCIATE-INCO-EECA) FP7 Signed Grant Agreements: Participation and Contribution by Priority Area All Funding Schemes							
Specific Programme	Priority Area	Signed grant agreements with participants from Moldova	Participations from Moldova	All participations in grant agreements	Project cost in grant agreements (EUR)	Project cost for all participations in selection/ Moldova (EUR)	EU financial contribution to all participations/ Moldova (EUR)
COOPERATION	Health	5	6	74	19.671.862	869.525	714.843
	Food, Agriculture and Fisheries, and Biotechnology	1	1	17	2.596.301	61.440	47.880
	Information and Communication Technologies	6	6	81	9.213.342	299.001	269.411
	Nanosciences, Nanotechnologies, Materials and new Production Technologies – NMP						
	Energy	1	1	6	1.674.053	117.704	88.981
	Environment (including Climate Change)	1	1	16	1.060.985	34.860	31.083
	Transport (including Aeronautics)	3	3	29	3.940.367	153.731	107.452
	Socio-economic sciences and Humanities	1	1	12	3.244.574	377.600	287.250
	Space						
	Security						
	General Activities						
Subtotal: COOPERATION Excluding JTI		18	19	235	41.401.484	1.913.861	1.546.900
COOPERATION	JTI-IMI (Innovative Medicines Initiative)						

	JTI-ARTEMIS (Embedded Computing Systems)						
	JTI-CLEAN SKY (Aeronautics and Air Transport)						
	JTI-ENIAC (Nanoelectronics Technologies 2020)						
	JTI-FCH European Hydrogen and Fuel Cell Technology Platform)						
Total: COOPERATION		18	19	235	41.401.484	1.913.861	1.546.900
IDEAS	European Research Council						
PEOPLE	Marie-Curie Actions	<u>10</u>	<u>15</u>	46	3.139.390	818.790	787.020
CAPACITIES	Research Infrastructures	<u>5</u>	<u>6</u>	178	157.975.839	839.617	528.916
	Research for the benefit of SMEs	<u>1</u>	<u>2</u>	7	1.437.000	20.000	20.000
	Regions of Knowledge						
	Research Potential						
	Science in Society						
	Support for the coherent development of research policies						
	Activities of International Cooperation	<u>11</u>	<u>16</u>	194	49.806.148	1.399.302	1.081.081
Total: CAPACITIES		17	24	379	209.218.987	2.258.919	1.629.996
EURATOM	Fusion Energy						
	Nuclear Fission and Radiation Protection						
Total: EURATOM							
	Total	45	58	660	253.759.862	4.991.571	3.963.916

ANNEX#2

The eligible proposals with Participation of Moldova submitted to the H2020 Concluded Calls

MD Moldova (Republic of) Associate-INCO-EAST H2020 Eligible Proposals and Applications and Requested Contribution by Priority Area and Action Type All Action Types						
Pillar	Priority Area	Eligible proposals with at least one applicant from Moldova	Applications in the selection/ Moldova	All applications in proposals	Requested EU financial contribution to proposals (EUR)	Requested EU financial contribution by the applicants from Moldova (EUR)
Excellent Science	European Research Council	5	5	11	9.387.070	6.041.048
	Future and Emerging Technologies	8	8	74	27.065.801	1.894.343
	Marie Skłodowska-Curie actions	78	131	861	117.049.192	12.586.952
	Research infrastructures	15	15	373	245.064.965	1.670.680
	Excellent Science - Cross-theme					
Total: Excellent Science		106	159	1,319	398.567.028	22.193.022
Industrial Leadership	Leadership in enabling and industrial technologies (LEIT)					
	Information and Communication Technologies	17	22	228	43.336.260	5.680.308
	Nanotechnologies, Advanced Materials and Production	5	5	5	250.000	250.000
	Advanced materials					
	Biotechnology	4	4	18	8.047.237	4.678.137
	Advanced manufacturing and processing					
	Space	2	2	29	3.217.590	725.000
	Access to risk finance	1	1	17	630.825	13.938
	Innovation in SMEs	13	25	55	4.205.872	2.032.428
	Industrial Leadership - Cross-theme	1	1	6	2.498.688	1.090.750
Total: Industrial Leadership		43	60	358	62.186.472	14.470.561
Societal Challenges	Health, demographic change and wellbeing	16	17	212	86.816.359	3.506.536
	Food security, sustainable agriculture and forestry, marine and maritime and inland water research	31	37	461	122.773.664	18.369.445
	Secure, clean and efficient energy	42	45	469	168.810.885	11.508.951

	Smart, green and integrated transport	2	2	19	4.529.122	208.531
	Climate action, environment, resource efficiency and raw materials	30	31	466	137.526.119	8.839.612
	Europe in a changing world - inclusive, innovative and reflective Societies	66	69	757	153.985.993	9.701.646
	Secure societies - Protecting freedom and security of Europe and its citizens	71	75	1,306	423.785.592	8.244.711
	Societal Challenges - Cross-theme	1	1	22	1.999.701	41.554
Total: Societal Challenges		259	277	3,712	1.100.227.435	60.420.986
Spreading excellence and widening participation	Teaming of excellent research institutions and low performing RDI regions	3	4	8	1.097.888	625.191
	Twinning of research institutions	15	16	68	12.905.831	5.678.969
	ERA chairs	2	2	2	4.178.813	4.178.813
	Policy Support Facility (PSF)					
	Supporting access to international networks					
	Transnational networks of National Contact Points					
	Spreading excellence and widening participation - Cross-theme					
Total: Spreading excellence and widening participation		20	22	78	18.182.531	10.482.973
Science with and for Society	Make scientific and technological careers attractive for young people	11	14	171	21.694.721	1.786.603
	Promote gender equality in research and innovation	5	5	50	11.323.786	664.858
	Integrate society in science and innovation	8	8	155	16.577.456	669.473
	Encourage citizens to engage in science					
	Develop the accessibility and the use of the results of publicly-funded research					
	Develop the governance for the advancement of responsible research and innovation					
	Anticipating and assessing potential environmental, health and safety impacts					

	Improve knowledge on science communication					
	Science with and for Society - Cross-theme	3	3	34	5.299.601	1.123.281
Total: Science with and for Society		27	30	410	54.895.564	4.244.215
Cross-theme	Cross-theme	1	1	3	2.011.250	532.500
Total: Cross-theme		1	1	3	2.011.250	532.500
Euratom Research and Training Programme	Euratom					
Total: Euratom Research and Training Programme						
	Total	456	549	5.880	1.636.070.279	112.344.257

ANNEX#3

**Participation of the Republic of Moldova in H2020 Projects, in accordance to the
Horizon 2020 Pillars and Priority Area.**

MD Moldova (Republic of) ASSOCIATE H2020 Signed Grant Agreements: Participation and Contribution by Priority Area All Action Types						
Pillar	Priority Area	Signed grant agreements with at least one participant from Moldova	Participations from Moldova	All participations in grant agreements	Project cost in grant agreements (EUR)	Net EU financial contribution to all participations from Moldova (EUR)
Excellent Science	European Research Council					
	Future and Emerging Technologies					
	Marie Skłodowska-Curie actions	9	14	107	12.130.151	1.556.000
	Research infrastructures	11	11	404	361.934.397	1.251.596
	Excellent Science - Cross-theme					
Total: Excellent Science		20	25	511	374.064.547	2.807.596
Industrial Leadership	Leadership in enabling and industrial technologies (LEIT)					
	Information and Communication Technologies	2	3	68	5.874.446	166.903
	Nanotechnologies, Advanced Materials and Production					
	Advanced materials					
	Biotechnology					
	Advanced manufacturing and processing					
	Space	1	1	21	1.914.054	42.000
	Access to risk finance					
	Innovation in SMEs	3	12	13	49.975	49.489
	Industrial Leadership - Cross-theme					
Total: Industrial Leadership		6	16	102	7.838.474	258.392
Societal Challenges	Health, demographic change and wellbeing	5	6	77	45.878.197	909.340
	Food security, sustainable agriculture and forestry, marine	5	5	122	26.353.144	336.188

	and maritime and inland water research					
	Secure, clean and efficient energy					
	Smart, green and integrated transport					
	Climate action, environment, resource efficiency and raw materials	9	11	252	112.528.369	315.922
	Europe in a changing world - inclusive, innovative and reflective Societies	7	7	112	16.828.823	465.913
	Secure societies - Protecting freedom and security of Europe and its citizens	7	7	161	47.088.480	606.726
	Societal Challenges - Cross-theme	1	1	27	0	41.554
Total: Societal Challenges		34	37	751	248.677.012	2.675.642
Spreading excellence and widening participation	Teaming of excellent research institutions and low performing RDI regions					
	Twinning of research institutions	3	3	14	2.999.563	1.520.250
	ERA chairs			,		
	Policy Support Facility (PSF)					
	Supporting access to international networks					
	Transnational networks of National Contact Points					
	Spreading excellence and widening participation - Cross-theme					
Total: Spreading excellence and widening participation		3	3	14	2.999.563	1.520.250
Science with and for Society	Make scientific and technological careers attractive for young people	3	3	116	8.307.226	60.725
	Promote gender equality in research and innovation					
	Integrate society in science and innovation					
	Encourage citizens to engage in science					
	Develop the accessibility and the use of the results of publicly-funded research					

	Develop the governance for the advancement of responsible research and innovation	<u>1</u>	<u>1</u>	20	1.967.828	56.250
	Anticipating and assessing potential environmental, health and safety impacts					
	Improve knowledge on science communication					
	Science with and for Society - Cross-theme	<u>1</u>	<u>1</u>	18	799.965	21.406
Total: Science with and for Society		5	5	154	11.075.019	138.381
Cross-theme	Cross-theme					
Total: Cross-theme						
Euratom Research and Training Programme	Euratom					
Total: Euratom Research and Training Programme						
	Total	68	86	1,532	644.654.615	7.400.261

Training modules to enhance participation in the Horizon Europe

#	Training Module	Stakeholders	Expectations
1	NCPs Network services – Minimum standards	NCPs Network Representatives of MER, NARD, ASM	NCPs, LoCPs, ICPs develops their skills for the NCP services delivering. Thematic NCPs are involved in the International NCPs Networks. MER, NARD, ASM familiar with the importance and scope of NCP services and support their activities R&I Organizations, SMEs, NGOs, etc. benefit from qualified NCP services
2	Rules and Responsibilities of Participation in EU FP Programme & EU Strategic Committees (PC&SC) and MOST/IGLO	MER, NARD, ASM, Delegates to EU PC&SC, MOST, NCPs	Delegates to EU PC&SC, MOST familiar with the rules of participation in the meetings. MER, NARD, ASM familiar with the importance and scope of EU PC&SC and MOST activities. MER, NARD, ASM are informed about the results of EU PC&SC and MOST activities.
3	HE2027 Funding Opportunities	MER, NARD, ASM, NCPs, Members of the EU PC&SC, MOST, R&I Institutions, SME, NGO and Civil Society representatives	All participants became familiar on-time about HE2027 opportunities, configuration, missions, partnerships, ERA priorities, open and forthcoming calls
4	Synergy of the EU& National R&I Policies	MER, NARD, ASM, EU PC&SC, MOST, NCPs, ODIMM, CCI, SMEs, R&I Organizations, Business Community, NGO, Civil Society	All participants discuss and express their vision on the R&I policies issues, synergy and intersection of the EU& National policies, existing gaps, propose the adjustment needs, contribute to the roadmaps and strategies development
5	HE 2027 Legal and Financial Issues	MER, NARD, ASM, NCPs, Members of the EU PC&SC, MOST, Fiscal Inspectorates, Ministry of Finance, Court of Accounts, etc.; R&I Institutions, SME, NGO and Civil Society representatives	All participants became familiar with the basic EU rules, provisions and requirements related to the grants' administration legal & financial issues. Accounting offices will keep related records and avoid usual errors in the EU projects management.
6	HE 2027 EU Partnerships	MER, NARD, ASM, NCPs, ODIMM, CCI, SMEs, R&I Organizations, Business Community	All participants became familiar with: -Conditions and principles of Partnerships' establishing. -Type and mode of implementation of Partnerships. -HE2027 Calls in support of Partnerships
7	HE 2027 EU Missions	MER, NARD, ASM, NCPs, ODIMM, CCI, SMEs, R&I Organizations Business Community	All participants became familiar with: -Role and scope of EU Missions. - What portfolio of actions is foreseen for mission operating. - Mission research projects, policy measures and legislative initiatives

8	HE 2027 Proposals Writing	MER, NARD, ASM, NCPs, ODIMM, CCI, SMEs, R&I Organizations, Business Community, NGOs	All participants became familiar with the HE2027 opportunities, Funding and Tender Portal configuration, procedure for the organization registration, how to find the appropriate calls, structure of proposals and proposals submission.
9	HE 2027 Project Management	MER, NARD, ASM, NCPs, ODIMM, CCI, SMEs, R&I Organizations, Business Community, NGOs	All participants became familiar with the basic principles of project management, including financial administration, activities implementation, reporting and cross-cutting issues: ethics, gender issues, open science, international cooperation, IPR, etc.
10	ERA Priorities implementation	MER, NARD, ASM, EU PC&SC, MOST, NCPs, ODIMM, CCI, SMEs, R&I Organizations, Business Community, NGO, Civil Society	All participants became familiar with: -ERA priorities, contribute to the new ERA Roadmap and its implementation plan drafting. -HE2027 funding opportunity within the ERA Calls.
11	HE 2027 Research and Innovation intersectoral cooperation	MER, NARD, ASM, EU PC&SC, MOST, NCPs, ODIMM, CCI, SMEs, R&I Organizations, Business Community, NGO, Civil Society	All participants became familiar with: -Basic approach to the HE2027 in supporting innovations and R&I cooperation. -HE2027 funding opportunity within the WPSE, ERA and EIC Calls.
12	HE 2027 & ERA integration Results	MER, NARD, ASM, EU PC&SC, MOST, NCPs, ODIMM, CCI, SMEs, R&I Organizations, Business Community, NGO, Civil Society	Participants complete their knowledge about HE2027 funding opportunities, understand interconnection of the HE2027 Calls with the ERA priorities and other EU strategic visions.
13	Open Science	MER, NARD, ASM, EU PC&SC, MOST, NCPs, ODIMM, CCI, SMEs, R&I Organizations, Business Community, NGO, Civil Society	The Public Authorities and R&I key actors understand the importance of Open Science for participation in HE2027 and integration in ERA. The Open Science National Strategy will be discussed and approved on the Government level and implemented on-time. The R&I organizations, etc. became familiar with the Open Science requirements in proposals writing and projects management.
14	EURAXESS	MER, NARD, ASM, EU PC&SC, MOST, NCPs, ODIMM, CCI, SMEs, R&I Organizations, Business Community, NGO, Civil Society	Participants became familiar with: -ERA priorities, Charter and Code principles, EURAXESS opportunities, procedures of signing the Declarations of Commitment and applying to the EU Logo: HR Excellence in Research. -HE2027 funding opportunity within the ERA Calls.
15	Smart Specialization Strategy	MER, NARD, ASM, EU PC&SC, MOST, NCPs, ODIMM, CCI, SMEs, R&I Organizations, Business Community, NGO, Civil Society	Participants became familiar with: -How to develop, implement smart specialization strategies -Mechanism of 'Smart Specialization Platform' -Thematic Smart Specialization platforms

Recommendations

*For improvement of participation in the EU Framework Programme for Research and Innovation
Horizon Europe (2021-2027)*

1. To develop and implement the **national R&I policies in line with the EU objectives and visions** concerning the participation in HE2027 and integration to the ERA, **the key R&I actors: MER, NARD and ASM should act as unique mechanism to ensure mutual cooperation** and linkage between them to avoid the activities overlapping, fragmentation or misunderstanding. Communication with the MOST, FP Programme and EU Strategic Committees official representatives and national experts is important there to react on-time to the EU R&I policies aspects, news and issues.
2. The research results presented at the annual public auditions has to be evaluated by independent thematic experts (selected from science, civil society and business sectors) for identifying the potential research groups, capable to apply for the corresponding FP thematic areas. **The evaluation results have to be included in the annual report on the state of science in the Republic of Moldova, as well as concrete recommendations related to increasing the participation in HE2027.** The overarching priority – demonstration of participation experience in the EU FP has to be considered. The input of NCP Network is needed to provide the informational support and explain the procedures of applying to the FP Calls for the strong research teams.
3. **MER as responsible public authority for the R&I policies development has to be directly connected with the national official representatives and experts delegated to the MOST, EU FP Programme and Strategic Committees** (ERAC, EOSC, ESFRI, JRC, etc) and to be on-time informed about actual/urgent EU visions and intentions. The staff of the MER's Department for the R&I policies has to participate at the strategic meetings, trainings, committees and working groups.
4. The **NARD has to strengthen its Department of International Cooperation and Sustainable Development** by completing the staff positions with competent and experienced people to intensify the activities for implementation of the Associated Country' status, as well as further development of bilateral and multilateral cooperation. Upon necessity the new appointed staff has to upgrade their skills whenever is possible.
5. The **National Office in supporting R&I Framework Programmes platform has to be established as independent entity with autonomous administration** intersected with the main key actors: MER, NARD and ASM. It has to be concentrated specifically on coordination of the national supporting instruments developed for facilitating of participation in the EU FP and integration to ERA. Main activities have to be focused on providing the appropriate support, services and advices to all stakeholders (scientific and business communities, public authorities, NGO, SMEs, civil society, etc.) regarding the policies, rules, procedures of accessing, participation and management of the FP calls, facilities and other activities.
6. Considering the Moldova's association to the HE2027 and necessity to maximize the implementation impact of Association Country's status in line with the ERA Policy Agenda (2022-2024), to convince the RM Government to **set up the R&I as national priority and increase the funding of R&I sector by achievement the national investments commitment to the 1,25% EU GDP by 2030**, and fostering the development of policy support tools to increase the socio-economic impact of R&I investments at all levels.
7. To increase the preparedness for participation in the EU FP and integration to the ERA, it is necessary to **include the gender issues aspects in the national strategic documents and encourage the R&I organizations to issue the Gender Equality Plans** that will facilitate their participation in HE2027.
8. To enable the Open Science, inclusion through the European Open Science Cloud (EOSC), the – **elaboration of the National Strategy on Open Science Policy and its Implementation Plan are needed with further adoption at the Government level.** The focus has to be paid to investing in human resources, training, education, digital literacy and capacity building for open science, fostering a culture of open science and promoting innovative approaches for open science at different stages of the scientific process, international and multi-stakeholder cooperation, with view to reducing digital, technological and knowledge gaps. Prerequisites for sustainable and consistent implementation of Open Science principles at the national level, such as **Open Science infrastructure and services, incentives for researchers, research assessment and Open Science**

policies' compliance with the EU countries experiences need to be implemented in the Republic of Moldova¹⁷⁵.

9. **Intensification of the NCPs Network services and activities is urgently needed towards the R&I organizations, SMEs, NGOs, etc.**¹⁷⁶ To increase the effectiveness of the National Contact Points services the reorganization of the National NCP Network by raising them to the institutional level is desirable. The thematic NCPs role and activities has to be delegated to the corresponding R&I and other organizations, especially in the cases when they operate within the national R&I priorities. **The full-time employment of several NCPs within the R&I organizations or National Office EU FP to assure continuous informational and promotional activity will maximize the impact of their services.**
10. **Participation of the sectorial national public authorities' representatives involved in the R&I policies development in the EU FP Programme and Strategic Committees is strictly recommended.** The importance of their participation is necessary to discuss the strategic planning at the EU level and ensure links to nationally funded R&I activities and policies in the corresponding fields.
11. **The MOST representative has to intensify the communication with the decision-making national sectorial authorities** with regards to facilitate and enhance the interaction, information exchange and co-operation between the European institution and national R&I system and key Public Authorities on issues related to the EU Framework Programmes, integration to ERA, EU strategical R&I policies and visions.
12. **The evaluation of the 2019-2021 National ERA Roadmap has to be performed** by independent experts and corresponding national key R&I authorities. Considering the evaluation results, the **new ERA Roadmap with reflection of the new ERA priorities had to be drafted for the period 2021-2024 urgently** and the next one for the period 2025-2027 - in 2024. All national roadmaps/strategies have to have proactive character.
13. The **national R&I programmes** funded from the state budget have to include the **evaluation criteria, confirming experience of participation and intentions to apply to the EU FPs**, as well as **contribution to integration to ERA**. The national programmes in support of **technology transfer, innovations and research infrastructure modernization has to be prioritized** over other programmes.
14. The **national specialized programmes to support the participation in EU FPs and integration to ERA has to be further developed**, such as Mobility of Researchers, Connection of the Moldovan Centres of Excellence to the EU Research Infrastructure and Modernization of research infrastructure, European Bonus for applicants to HE2027, NCP Bonus, etc. The list of supporting programmes could be extended and diversified.
15. **Bilateral and multilateral international R&I cooperation development and its realization through the joint calls and projects has to be extended and diversified with involvement of EU Member States or Associated to the HE2027 Countries.** This will facilitate the partner search activities towards creating the basic consortiums eligible or applying to the HE2027 calls and activities.
16. The **supporting programmes for the short-term visits of the Scientific Diaspora Members to Moldova (SDM)** has to be developed in cooperation with the national and international authorities and organizations specialized on migration issues. Involvement of SDM in the national R&I activities and policies development will influence positively to the sustainable partnerships creation and further participation in the EU FPs.
17. The R&I organizations, Public Authorities, SMEs, NGOs, etc. have to be encouraged **to exploit more intensively the opportunities offered within the HE2027 Specific Objective: Widening participation and strengthening the European Research Area**. Training activities have to be extended regarding the different widening instruments related to the 'Widening Participation and Spreading Excellence' (e.g. TEAMING, TWINNING, ERA-CHAIRS, COST, widening fellowships, etc.) and 'Strengthening the European Research Area' part of HE2027.
18. The **visibility of HE2027 Programme, funding opportunities, new ERA priorities and corresponding specific parts (EU Partnerships, Missions, Open Science, Charter& Code principles, etc.) have to be increased and widely disseminated** by R&I - related public authorities, organizations and other stakeholders.
19. **The specialized commission (jurists, economists, R&I responsible authorities, etc.) have to be created to raise the personnel costs problems within the HE2027 projects at the Government level.** The unified

¹⁷⁵ Open Science agenda in the Republic of Moldova: national policies and actions. https://ibn.idsi.md/vizualizare_articol/165969

¹⁷⁶ https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ncp-guiding-principles_he_en.pdf

approach has to be approved at the national level for the personnel cost's calculation within the international projects. Increasing the salaries classifications within the R&I budgetary sector could be the most appropriate solution.

20. The human skills development regarding the rules and procedures of participation in HE2027 and integration to ERA have to be organized continuously with **involvement of the national NCPs Network and international experts from EC, DG R&D or EU MS/AC**. The **intensification of NCPs services is needed** in providing the individual consulting, trainings, practical seminars and promotional events. Besides **the specific training modules could be organized outside the country by foreign experts** to explain the EU approach to the legal and financial issues, project management, reporting, auditing and new elements within the HE2027: ERA priorities, simplification of project management, EU partnerships and missions, new requirements to open science, etc.
21. **The national programmes, strategic documents, activities and reports have to include the requirements to respect the main EU provisions related to the Open Science, Charter & Code, Gender Issues, Ethic aspects, IPR, etc.** with the purpose – to create the environment at the national level, where these principles will be transformed in usual practice within the research and innovation system. The R&I organizations have to be encouraged to respect the principles laid down in the Commission Recommendation C(2005)576 on the European Charter for Researchers and the Code of Conduct for their Recruitment, as well as **to apply for the “Human Resources Excellence in Research” EU Logo**.
22. The **Technology Level Readiness scaled approach could be applied within the national projects to assess the stage of technology proposed at the beginning and finalizing the national projects**. It could be done on the self-declared base or by establishing the projects' evaluation scheme. Further support to the implemented projects could be offered by NARD/NCPs to assist the projects beneficiaries in applying to the appropriate funding schemes and Calls within the Pillars 2 and 3.
23. The **focus on innovations have to be considered wherever is possible** at the national level and within R&I system, projects and activities. The cooperation between the scientific and business communities have to be encouraged and trained for **participation in the Horizon Europe funding opportunities offered through the pillars of the programme and the specific parts such as Clusters, Missions, Partnerships, Widening, EIT KICs and newly established activities of the European Innovation Council in Horizon Europe**.