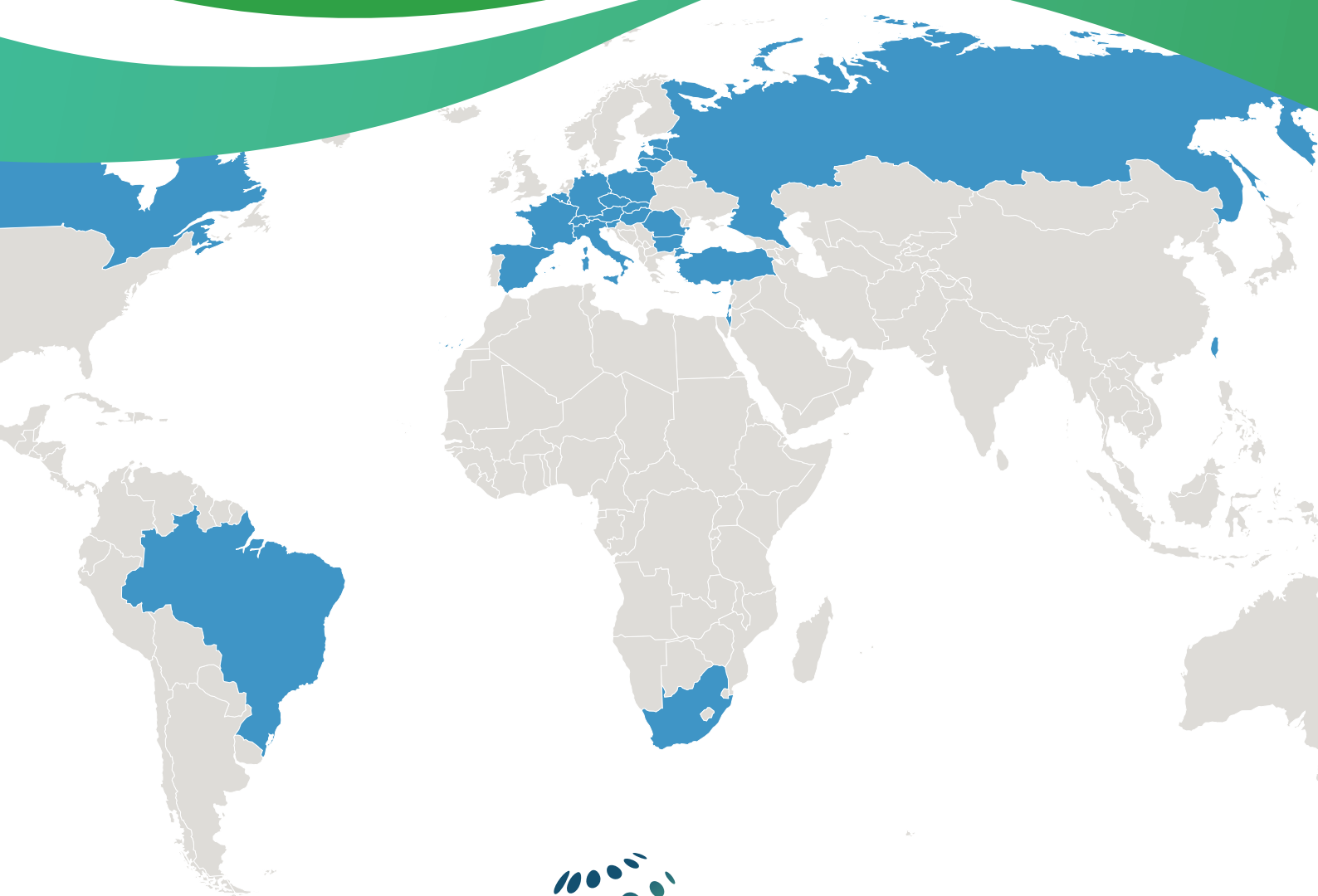


Report on the assessment of transnational projects funded under the M-ERA.NET Call 2019



M-ERA.NET



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Executive summary

This report covers the results of the assessment of the projects funded in the M-ERA.NET Call 2019. 37 full-proposals were selected for funding, corresponding to requested funding of 26.9 Mio EUR.

These projects are allocated to the call topics as follows:

- Functional materials: 13 funded projects
- High performance composites: 6 funded projects
- Innovative surfaces, coatings and interfaces: 10 funded projects
- Materials for Additive Manufacturing: 4 funded projects
- Modeling for materials engineering and processing: no project to be funded
- New strategies for advanced material-based technologies in health applications: 4 funded projects

The funded projects were assessed through an online questionnaire, covering assessment of scientific results, technical results, economic effects, and transnational benefits. The survey addressed 145 projects partners in 37 projects.

Most projects started in 2020 (88%), some in 2021 (9%), and a few in 2022 (3%). Despite the challenges posed by the COVID-19 pandemic, 65% of respondents indicated that the project objectives were fully achieved. Additionally, 56% of respondents reported that the results and deliverables were fully accomplished, and 41% reported only minor changes.

The most commonly achieved scientific results were the creation of new knowledge and the exploration of existing knowledge. 92% of the projects resulted in publications in peer-reviewed scientific journals, with more than 200 publications in total. Project results were also presented at conferences in 97% of the cases. In total, at least 64 Master's degrees and 50 Doctoral degrees have been achieved as a result of the projects.

In terms of innovation and economic results, the most frequently reported outcomes were new or improved products/prototypes (32%) and new or improved methods (29%). The projects usually started at TRL level 2-3 and ended at TRL level 4-6, with a delta TRL in the range of 2-4. The tentative timeframe for commercialization of the results is usually 3-5 years. In 19% of the cases, the patent application was a result of the research in the assessed projects, with a total of between 15-30 patent applications.

Regarding transnational effects, 83% of the respondents had previous experience in transnational projects, while 17% were newcomers. The main added value of M-ERA.NET compared to other transnational funding schemes is simpler rules and procedures and attractiveness to newcomers. 86% of the respondents would not have realized the project without M-ERA.NET. In 82% of the cases, the cooperation in the consortium will continue after the M-ERA.NET project ends.

The report concludes that the assessed projects have a high positive impact at the scientific and innovation level and a positive transnational effect and benefits.

1. Objectives

M-ERA.NET is a strong European network of public funding organisations supporting and increasing coordination and convergence of national and regional funding programmes on research and innovation related to materials and battery technologies to support the European Green Deal.

To follow up on the success of investments, M-ERA.NET has established a systematic approach to monitoring and assessing the impact of its joint transnational calls on an annual basis. This joint analysis complements the routine efforts carried out by the national and regional funding organisations at national and regional level.

This report covers the results of the assessment of the 37 projects funded from the M-ERA.NET Call2019.

2. Process and Methods

The projects funded under the M-ERA.NET Call 2019 were assessed through an online questionnaire. The questionnaire was provided to all parties in the funded project consortia in August 2024. The questionnaire covered the following areas:

- Project implementation
- Project results
- Economic effects
- Transnational benefits

Note: all statistics and graphs presented in this report are related to individual answers from individual beneficiaries, not to project consortia as a whole.

The survey addressed 145 project partners in 37 funded projects. In total, 78 responses were received, including 27 from coordinators. These responses covered 36 projects. The response rates were 97% for projects and 54 % for individual beneficiaries. 39 % of the responses came from universities, 39% from research organisations, and 22 % from industry. Figure 1 shows the profile of organisations for all projects funded under Call 2019 (a) and organisation profile of survey respondents (b)

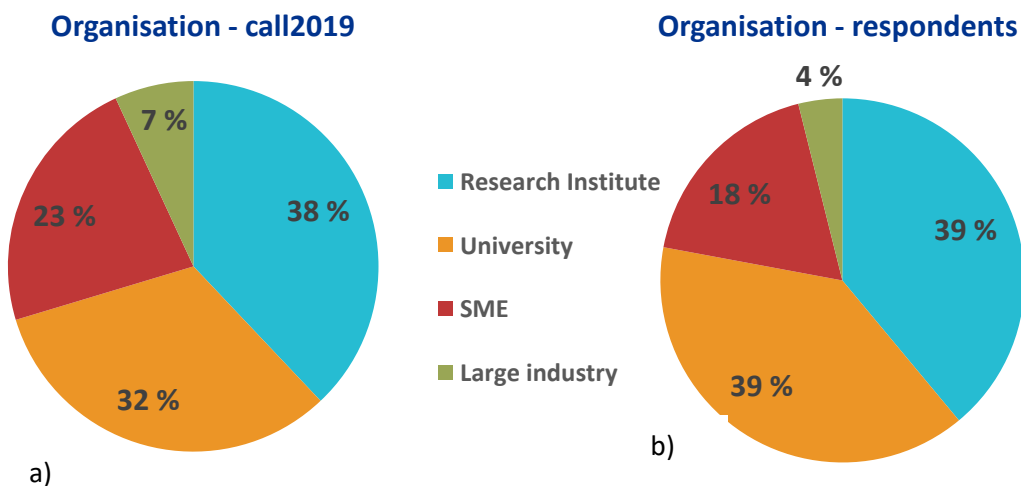


Figure1. Call 2019 a) beneficiaries per organisation type; b) survey respondents per organisation type

3. Statistics and results

3.1 General – project implementation

Q1. Have there been major changes since the project started (consortium, budget, timeframe etc.)?

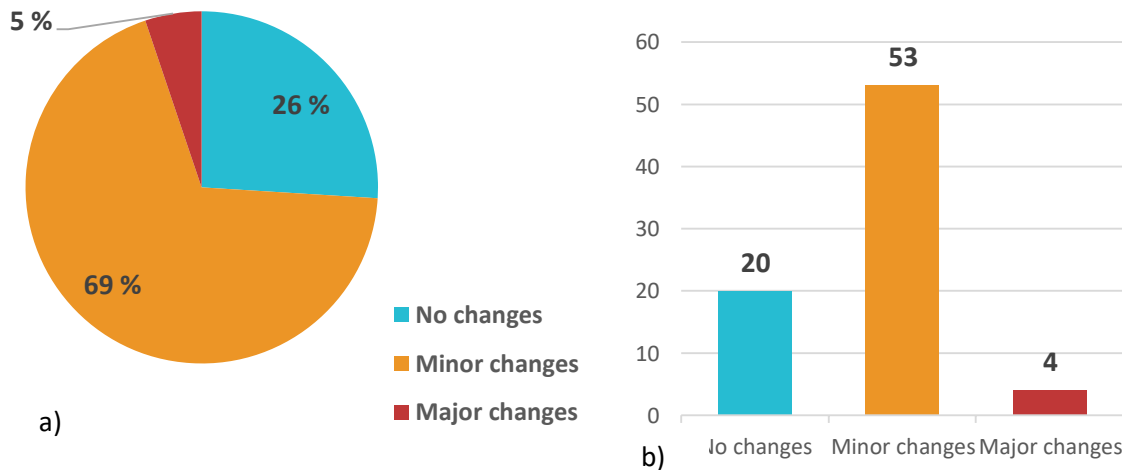


Figure 2. Project implementation – changes in consortium, budget and timeframe shown in % (a) and in number of responses (b)

26% of the respondents reported no changes with respect to consortium, budget and/or timeframe, whereas 74% reported that there have been minor changes and in 5% major changes. These changes are in the most cases connected to the extension of the project period related to COVID-19 pandemic situation.

Q2. To which extent have the project objectives been accomplished?

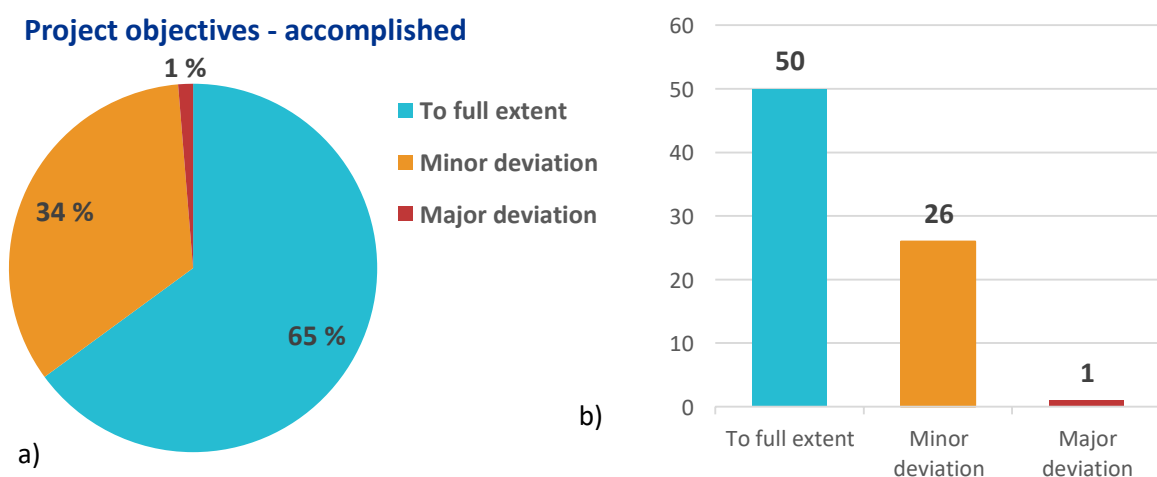


Figure 3. Project implementation – accomplishment of project objectives shown in % (a) and in number of responses (b)

65% of the respondents reported that the project objectives have been accomplished to full extent, whereas 34% reported minor changes and 1 major deviation. The changes were in the most cases related to COVID-19 pandemic situation.

Q3. To which extent have the expected results and planned deliverables been accomplished?

Results and deliverables

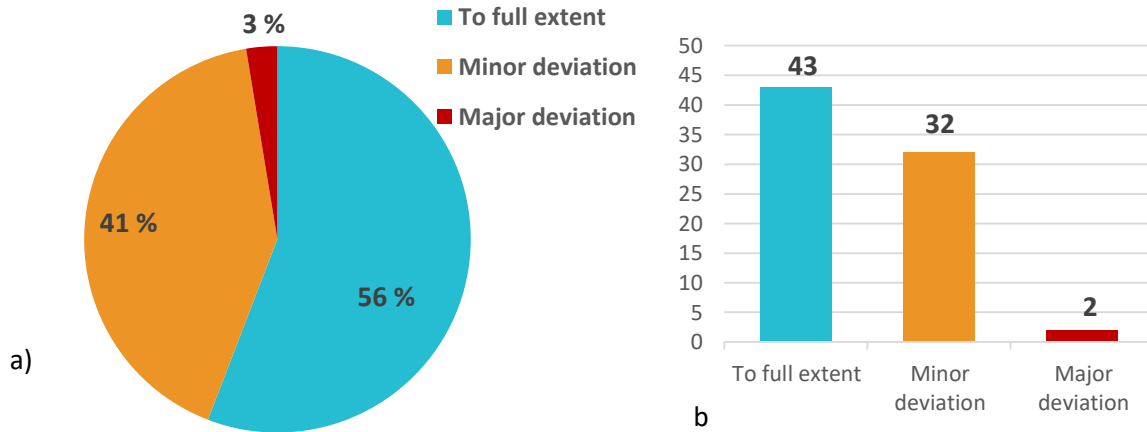


Figure 4. Project implementation – accomplishment of project deliverables shown in % (a) and in number of responses (b)

56% of respondents reported that the results and deliverables have been fully accomplished, whereas 41 % reported minor changes and 3% major changes. This is an increase in “minor changes” answer by 14% compared to the assessment of the project from the previous call 2018. The changes were in the most cases related to COVID-19 pandemic situation.

Q4. What was the project timeline?

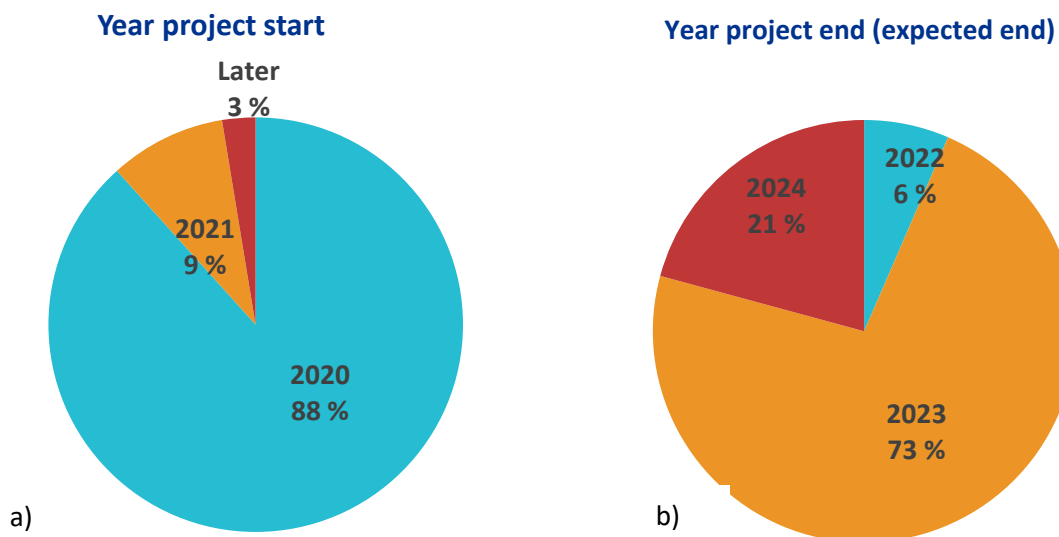


Figure 5. Project timeline. Year project started (a), year project ended or expected end (b)

88% of project partners started project in 2020, 9% in 2021 and 3% (2 partners) in 2022. Most of the projects ended in 2023. This is an increase in project start delay compared to previous call. The delay was primary caused by COVID-19 pandemic situation.

Q5. Was the project timeline influenced by the covid19 pandemic situation?

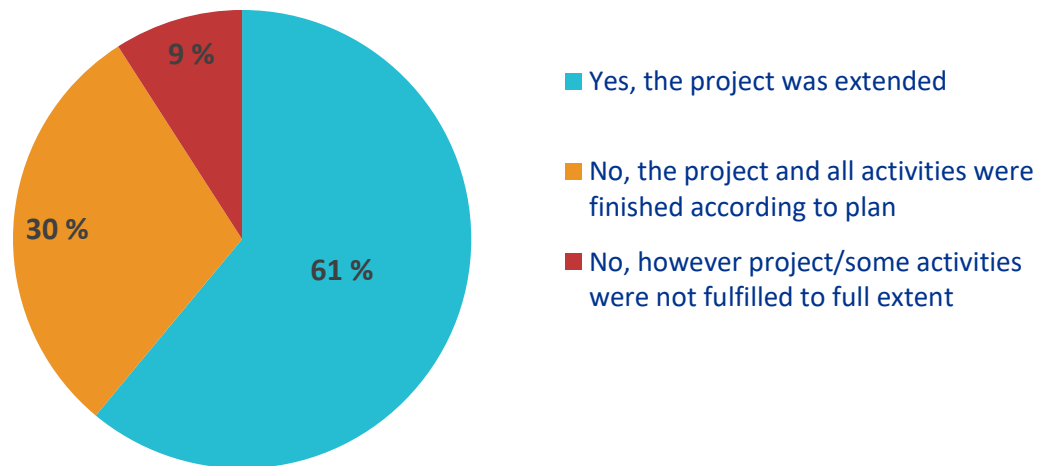


Figure 6. Impact if the Covid19 pandemic situation on the project

In 30%, the project and all planned activities were finished according to plan. In 61%, the project period was extended and in 9% the project was finished according to plan, but some activities were not fulfilled to full extent.

3.2 Project results

3.2.1 Scientific results

Q6. What are the results achieved?

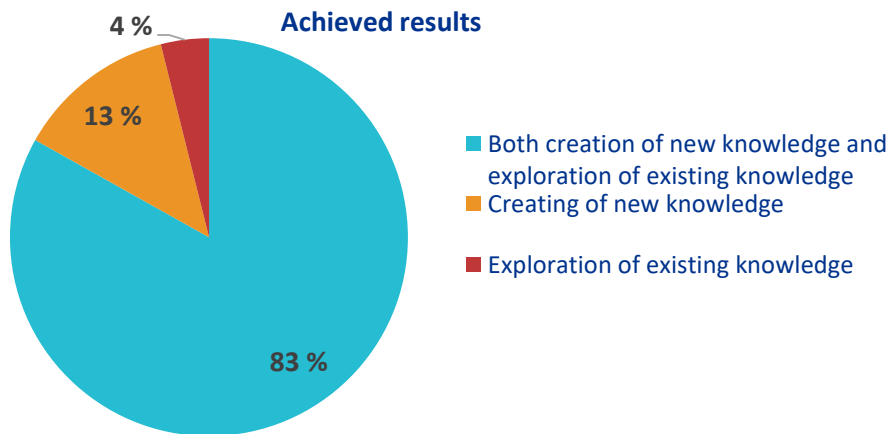


Figure 7. Type of results achieved in the project

The results most usually achieved are both creation of new knowledge and exploration of existing knowledge.

Q7. Please specify number of publications in peer reviewed scientific journals corresponding to results from this project for your organisation

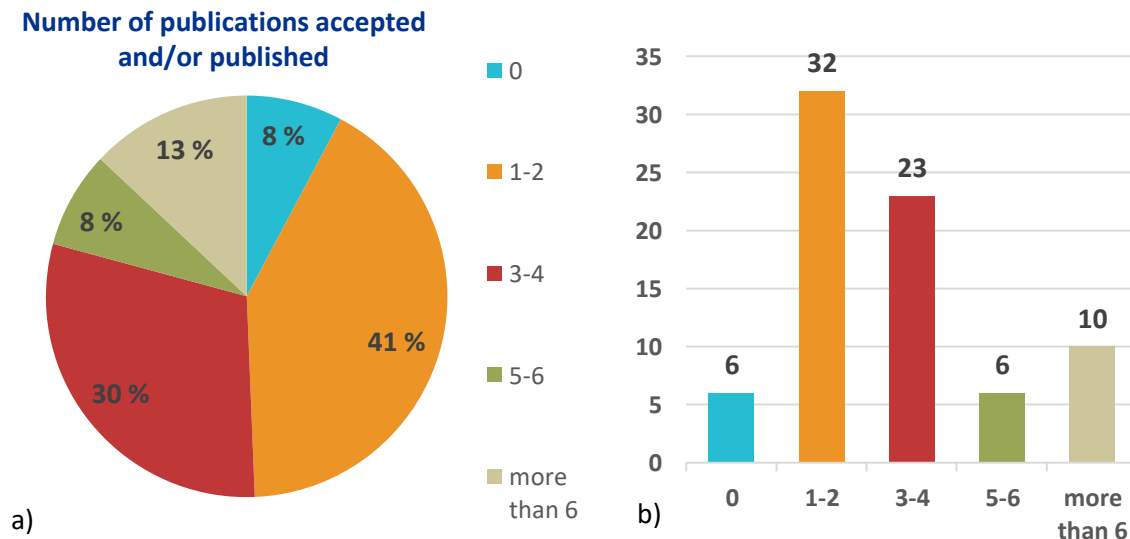


Figure 8. Number of publications in peer reviewed scientific journals shown in % (a) and in number of responses per each category (b)

In 92% of the cases the project results were published in scientific publications in peer reviewed scientific journals. The number of publications was between 1-2 in 41% of the cases, between 3-4 in 30%, between 5-6 in 8 % and more than 6 in 13%. This means that results from the assessed projects were published in more than 200 publications in peer reviewed scientific journals.

Q8. Please specify the number of conference proceedings/presentations where the results from your project were presented (for your organisation)

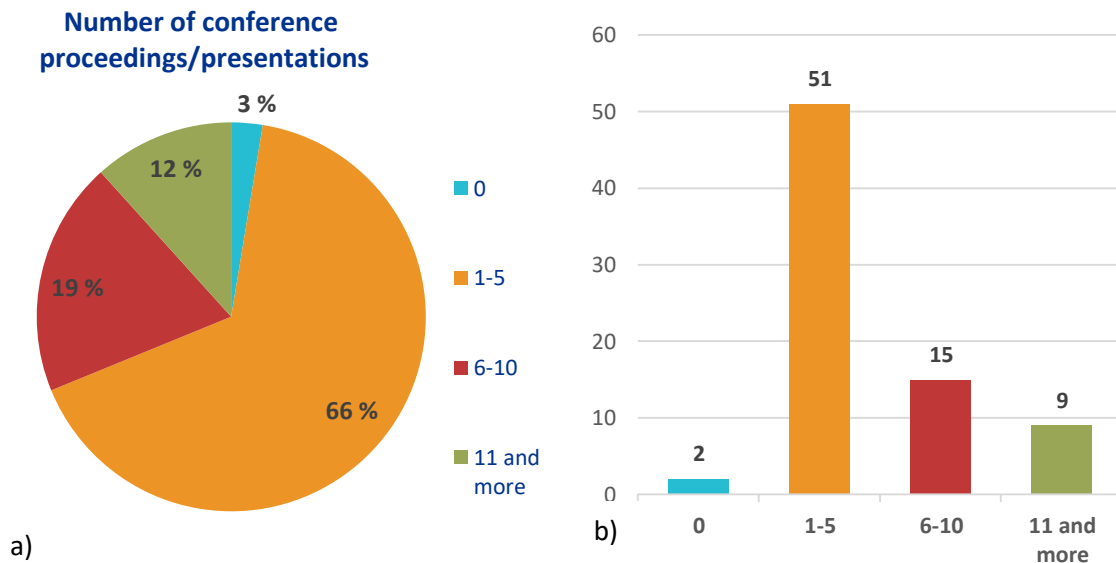


Figure 9. Number of conference proceedings/presentations shown in % (a) and in number of responses per each category (b)

In 97% of the cases the project results were presented at conferences. Only 3% did not present the project results in this form.

Q9. How many degrees have been achieved as a result of this project (for your organisation)

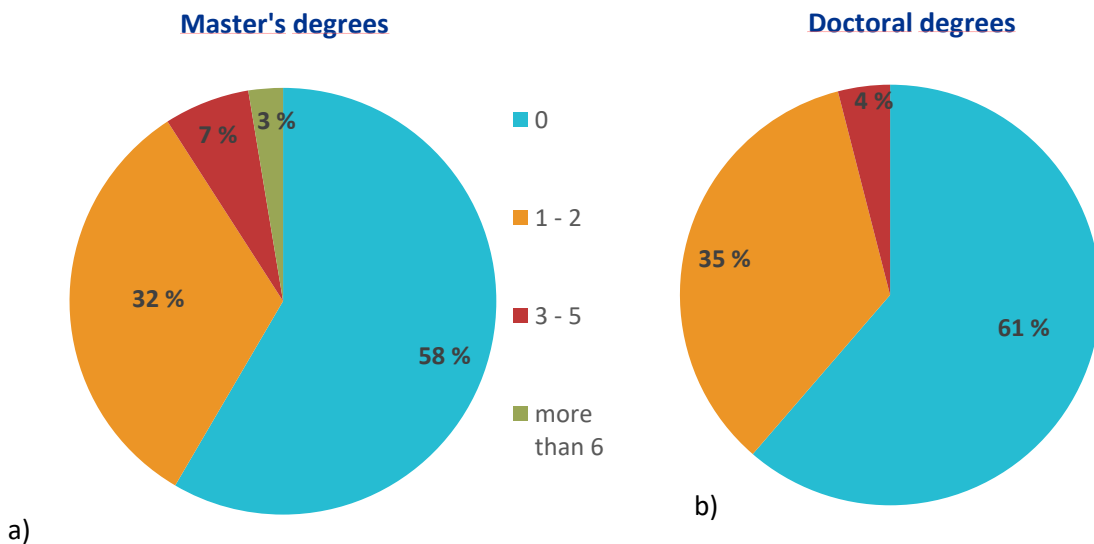


Figure 10. Type of degrees achieved as a result of the project shown in % per each category: (a) Master's degrees (b) Doctoral degree

42% reported that at least 1 Master's degree and 39% that at least 1 Doctoral degree (PhD) were achieved as a result of the project. In the most cases 1-2 degrees were achieved as a result of the project.

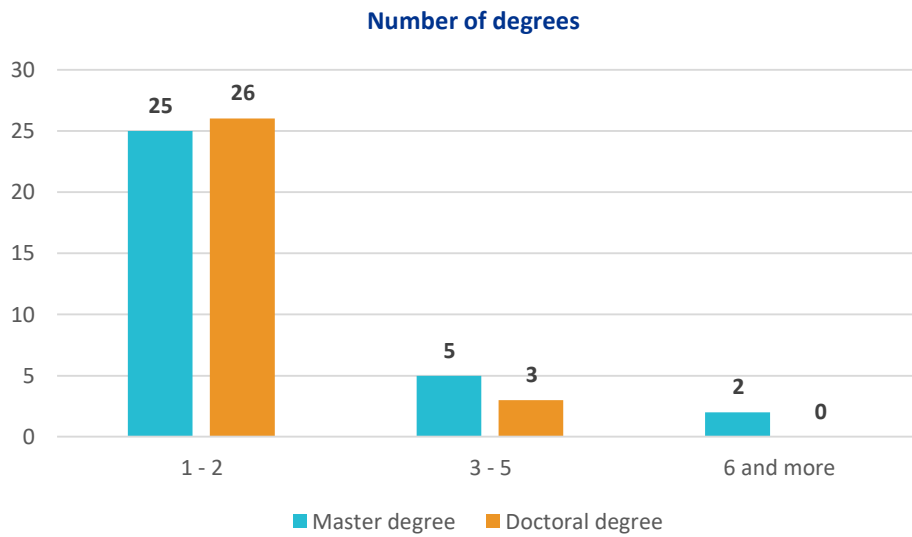


Figure 11. Number and type of degrees achieved in the projects.

Q10. Career stage - how many and what kind of researchers were involved in this project in your organisation?

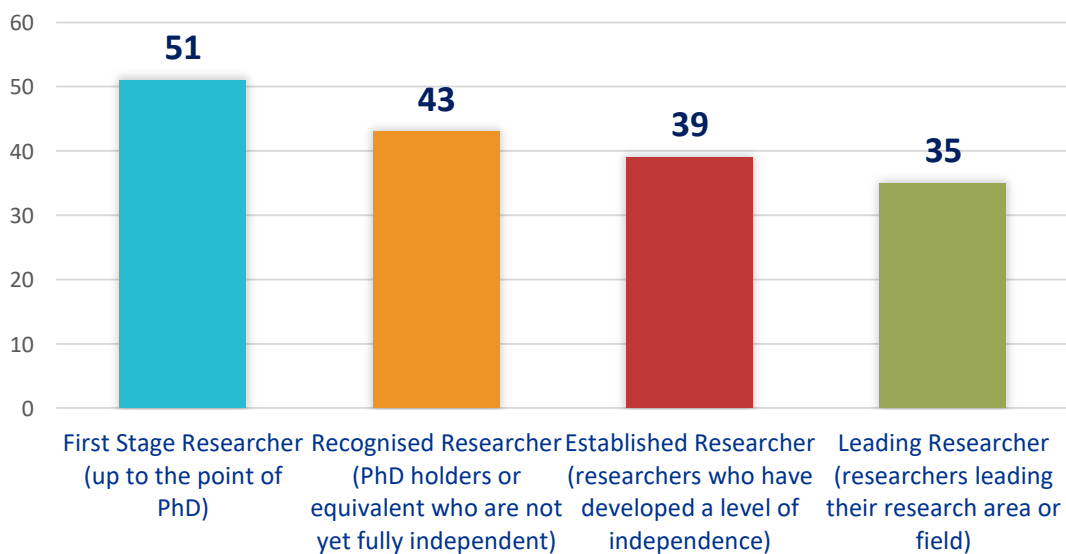


Figure 12. The career stage and number of researchers per each category

Career stages are the various steps in career development that a person will undergo throughout their working life. In recent years a work to define a common European framework for the standardisation of the "research career" was carried out. Figure 13 shows the number of researchers involved in the projects funded in M-ERA.NET call2019 and their career stage.

3.2.2 Innovation oriented results

Q11. Please indicate the technology readiness level-(TRL) at project start and project end

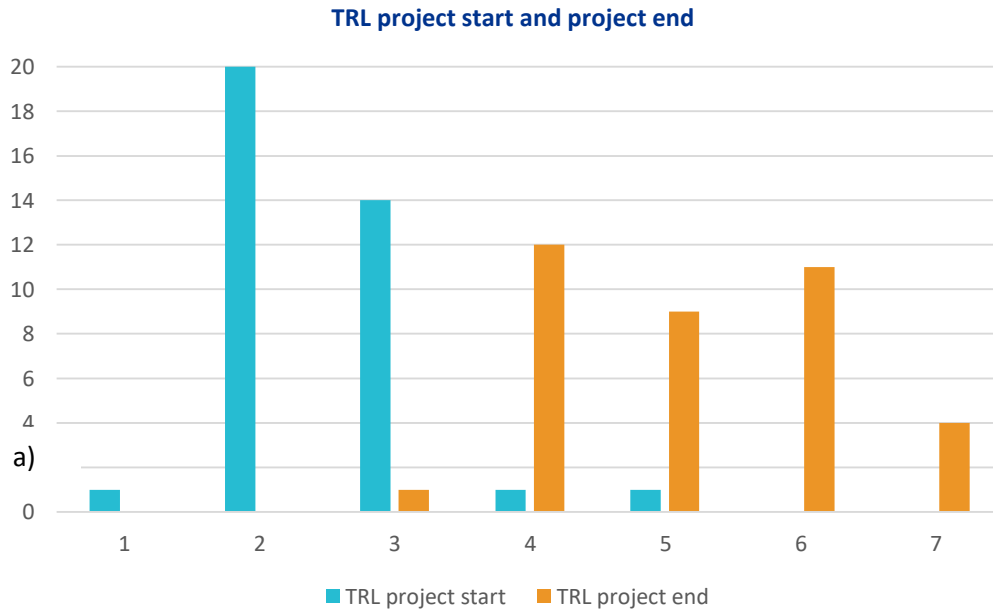
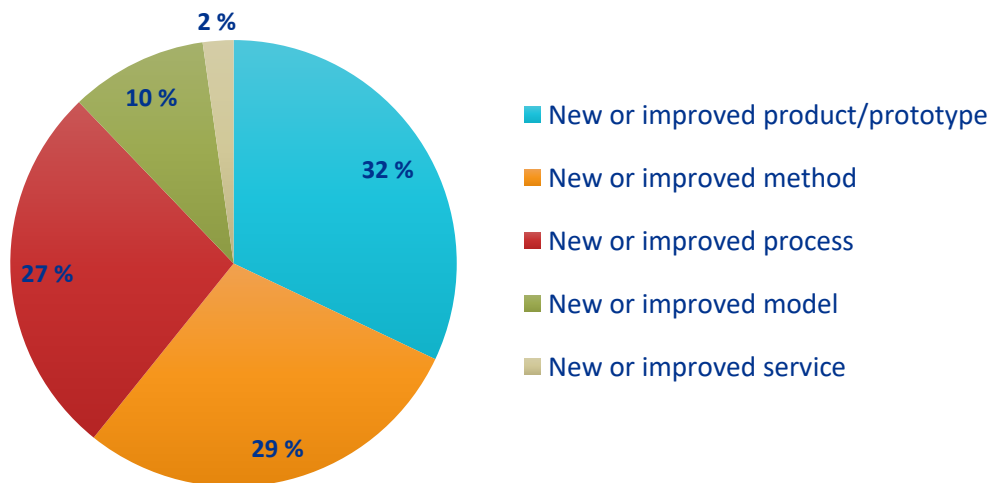


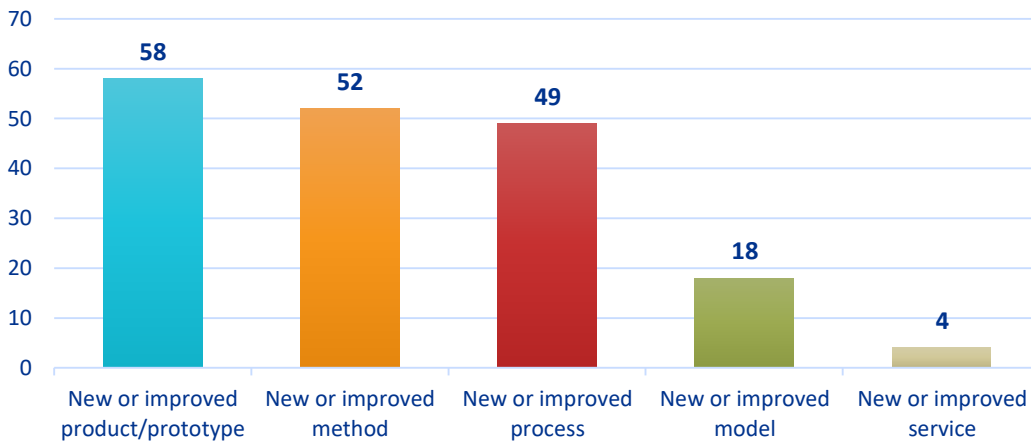
Figure 13. TRL level at project start and project end

Most of the projects started at TRL 2-3 and ended at TRL level 4-6. The delta TRL (difference between TRL at the project start and TRL at the project end) was usually in the range of 2-4.

Q12. What type of results have you achieved in this M-ERA.NET project? (Multiple answers possible)



a)



b)

Figure 14. Type of innovation result shown in % (a) and in number of responses per each category (b)

The type of result most frequently achieved is a *New or improved product/Prototype* (32%) and *New or improved method* (29%).

Q13. What is the main impact of this project?

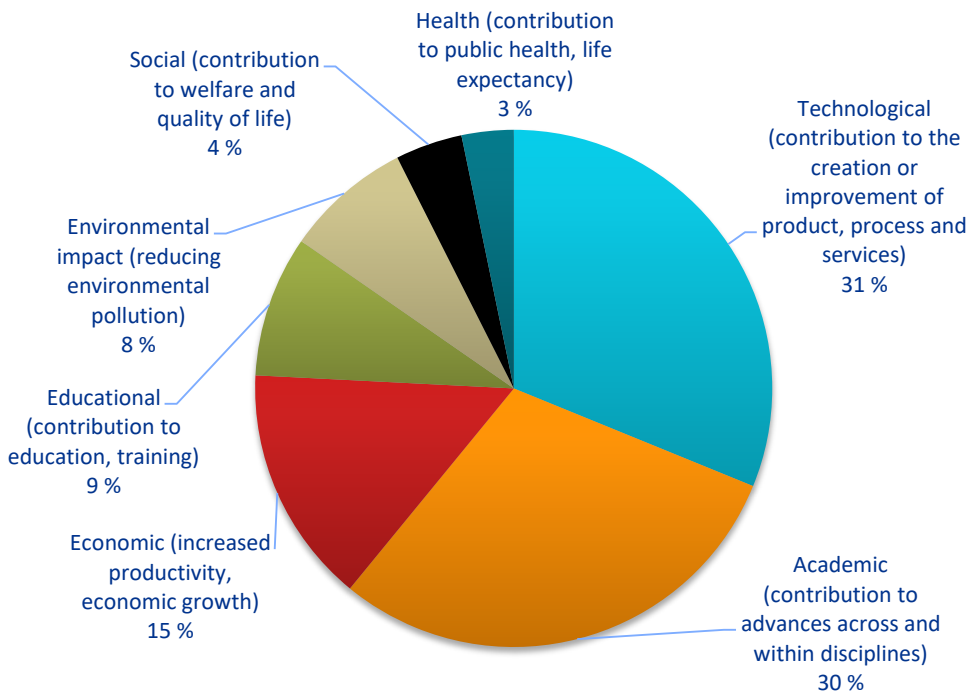


Figure 15. The main impact of the project shown in % per each category.

Q14. What is the tentative time frame for commercialisation of the results from this project (year to market), where 0 is the end date of the project?

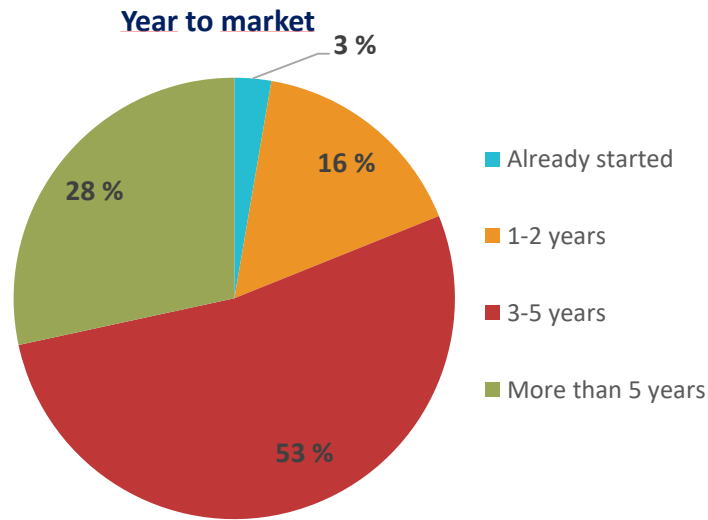


Figure 16. Tentative time frame for commercialisation (year to marked)

The tentative timeframe for commercialisation of the results (year to market) is most likely 3-5 years (53%). In 3% of the cases the commercialisation of the results has already started.

Q15. Please specify the number of approved patents, patent applications and licenses corresponding to results from the project for your organisation

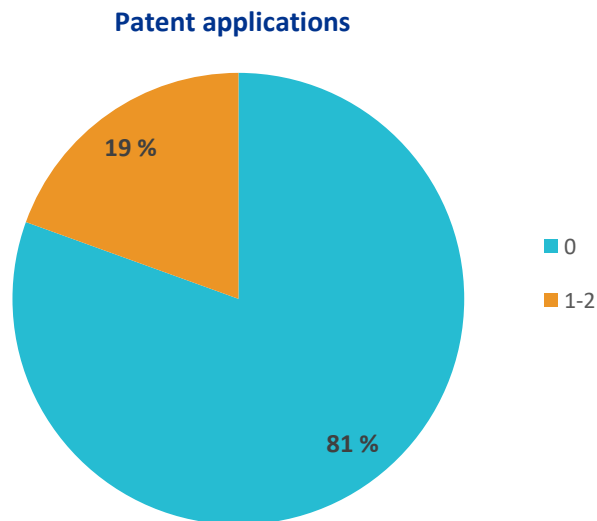


Figure 17. Patent applications shown in % per each category including all responses (a), and the number of submitted patent applications per each category (b).

In 19% of the cases the patent application was a result of the research in the assessed project. In total between 15-30 patents applications were submitted

Q16. Are you familiar with "Open Innovation Test Beds"?

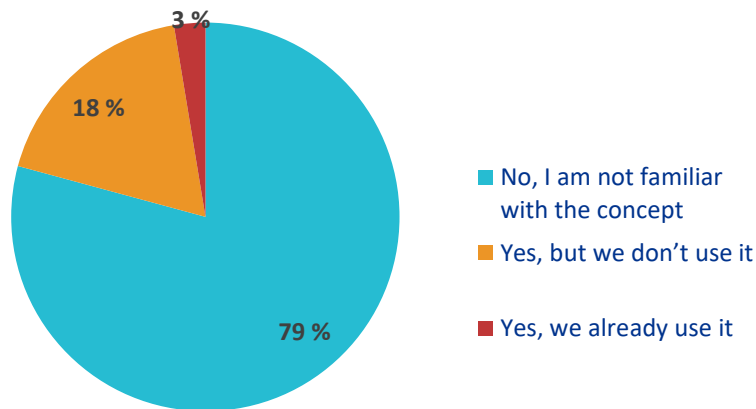


Figure 18. Familiarity with open innovation test bed concept

Open Innovation Test Beds (OITB) were initiated by the EU in Horizon 2020 to provide the community access to physical facilities, capabilities and services required for the development, testing and upscaling in industrial environments¹. Until 2023 the EU has invested more than EUR 319 million in Open Innovation Test Beds. The Call 2019 project beneficiaries were asked if they were familiar with this concept/offer and whether they have used this opportunity for their activities related to the M-ERA.NET call2019. Only 21% of the respondents were familiar with the OITB concept, but only 3% used it in the assessed project. 79% of the respondents were not familiar with the concept.

Q17. What is in your opinion the largest benefit(s) of using the open innovation test beds?

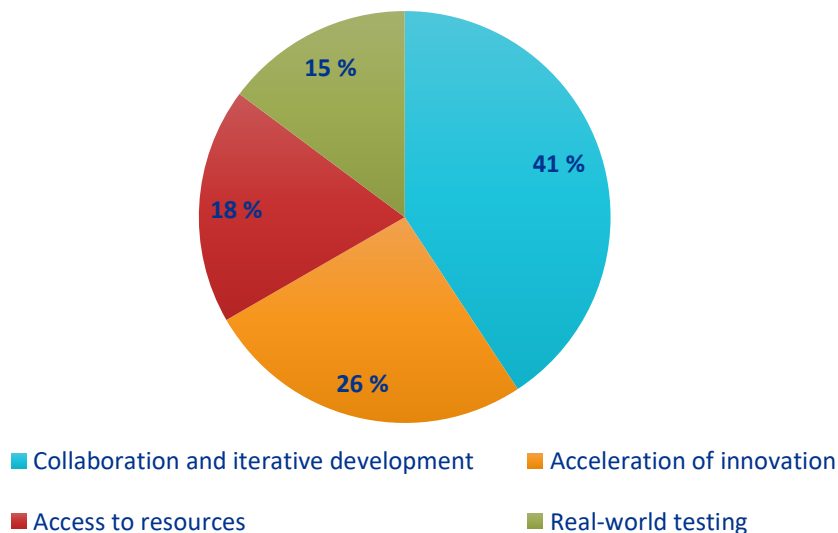


Figure 19. The largest benefit(s) of using Open Innovation Test Beds

The beneficiaries familiar with the OITB concept were asked what they considered to be the largest benefits of using Open Innovation Test Beds. Out of the 14 responses received, collaboration, interactive development, and acceleration of innovation were identified as the largest benefits of the OITB.

¹ <https://cordis.europa.eu/article/id/436434-open-innovation-test-beds-to-accelerate-european-innovation>

3.3 Transnational benefits

Q18. Please indicate previous experiences in transnational funding programs (e.g. ERA-Networks)?

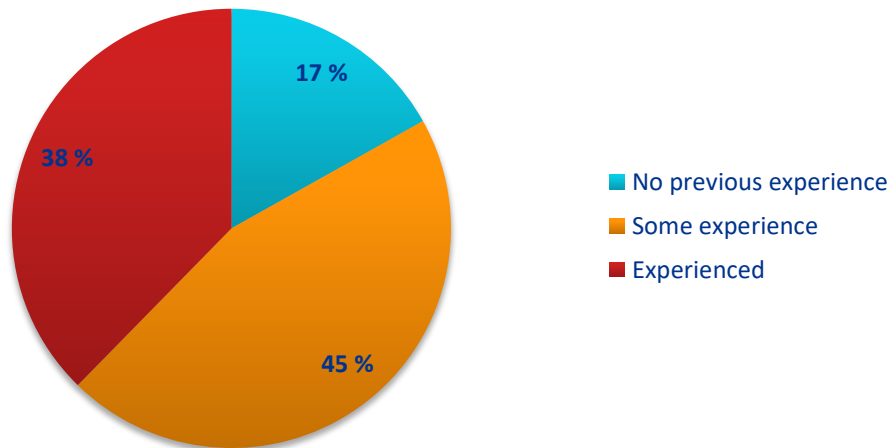


Figure 20. Previous experience in transnational project

83% of the respondents had at least some previous experiences in transnational projects, while 17% were newcomers to transnational project cooperation.

Q19. What is the main added value of M-ERA.NET compared to other transnational funding, e.g. EU framework programme?

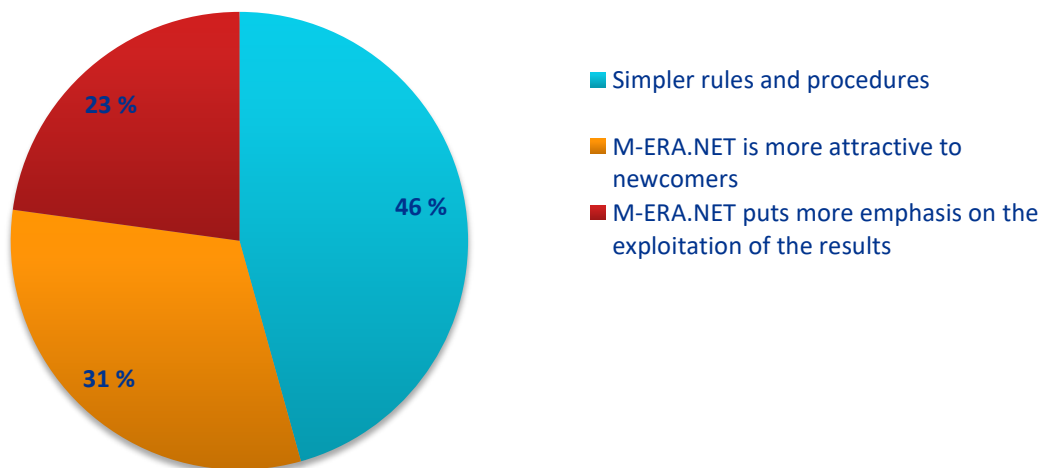


Figure 21. Added value of M-ERA.NET compared to other transnational funding e.g., EU framework programme.

The main added value of M-ERA.NET compared to other transnational funding are simpler rules and procedures and more attractivity for newcomers.

Q20. Experiences regarding implementation of the project

a) Were all project partners committed to the project?

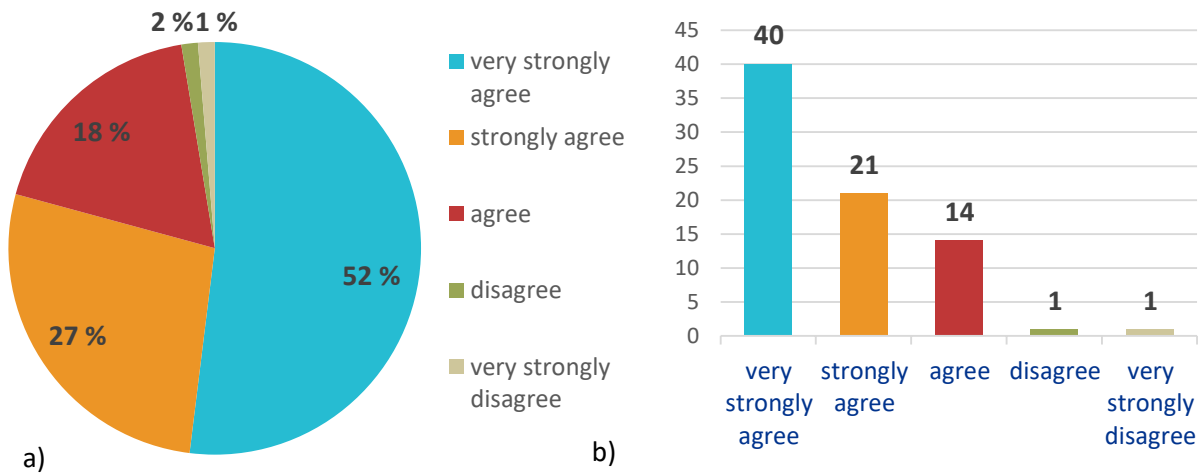


Figure 22. Project partners committed to the project in % (a) and in the number of responses per each category (b)

97% respondents agreed that the project partners were committed to the project: agree very strongly (52%), agree strongly (27%) and agree (18%). 1 respondent disagreed and 1 strongly disagreed.

b) Was the consortium stable during the project implementation?

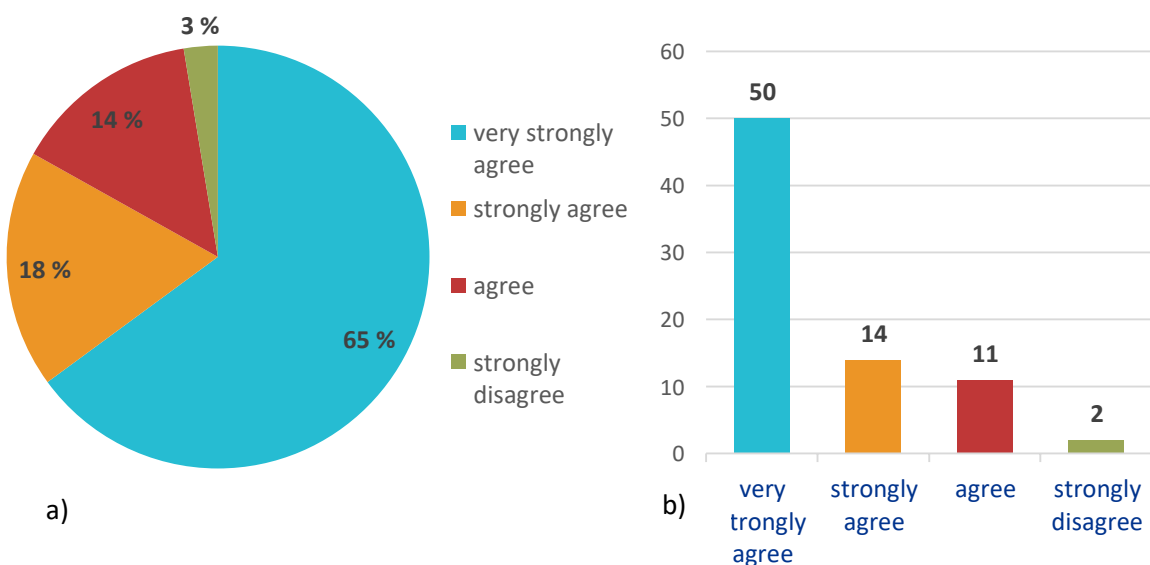


Figure 23. Stability of the project consortium during the project implementation shown in % (a) and in the number of responses per each category (b).

97% respondents experienced stable consortia during the project implementation, answering from "very strongly agree" to "agree". Two respondents were not satisfied with the consortium stability during project implementation.

c) Were the project objectives realistic (i.e. budget, effort, time)?

The project's objectives were realistic (i.e. budget, effort, time)

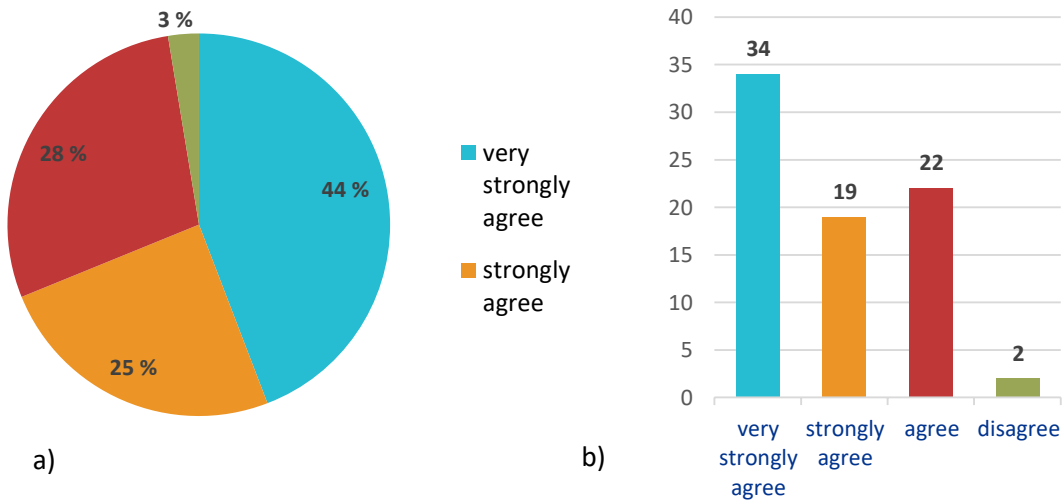


Figure 24. Realistic project objectives: a) shown in %, b) In numbers of responses per each category

The most responses indicated that project objectives were realistic. The answers were: very strongly agree (44%), strongly agree (25%) and agree (24%). Two respondents answered "disagree and none answered "strongly disagree" or "very strongly disagree" on this question.

d) Was the project management effective?

Project management is effective

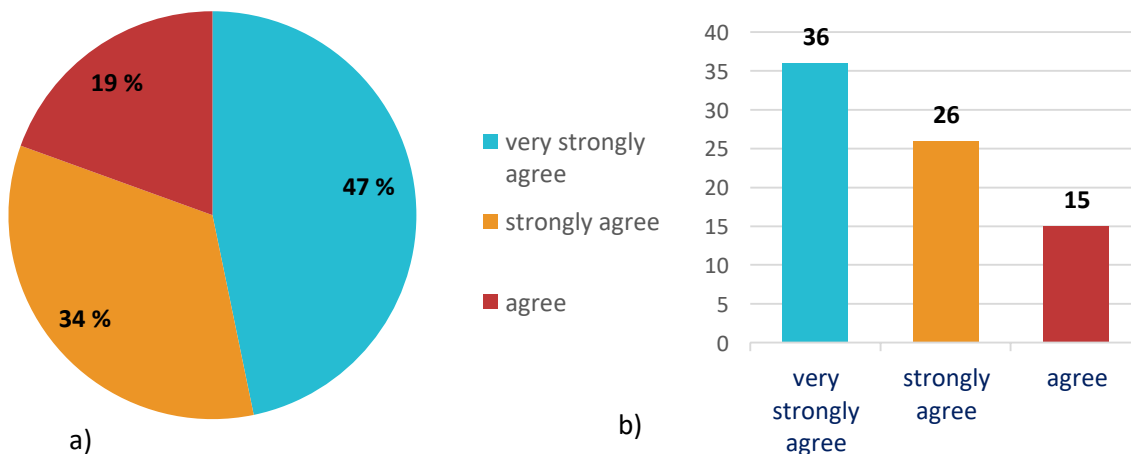


Figure 25. Effectivity of the project management shown in % (a) and in the numbers of responses (b) per each category.

The received answers indicate that the project management was good and effective in all cases. No respondent disagreed.

Q21. Was the interaction with the national/regional funding agency supportive throughout the application process and during the project implementation?

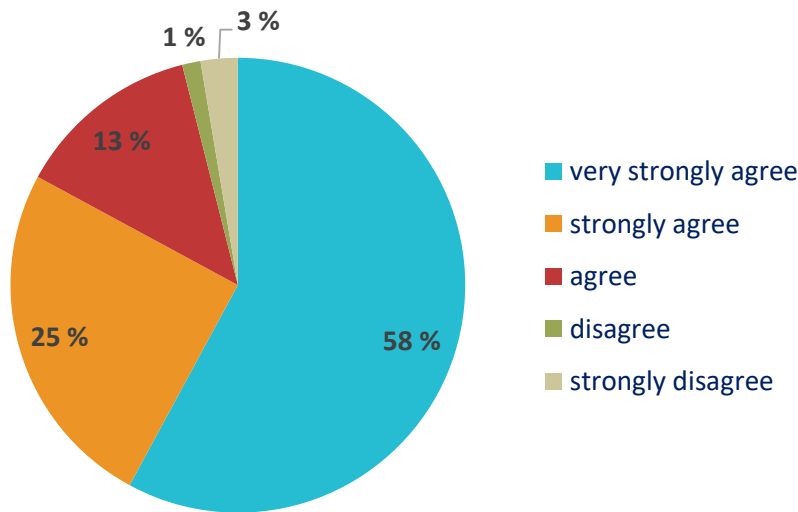


Figure 26. The interaction with the national/regional funding agency throughout the application process and during the project implementation

The national/regional agencies were supportive both during the application process and project implementation for 97% of the respondents. Only 3 respondents did not find the national/regional funding agency supportive.

Q22. Would the project have been realised without M-ERA.NET?

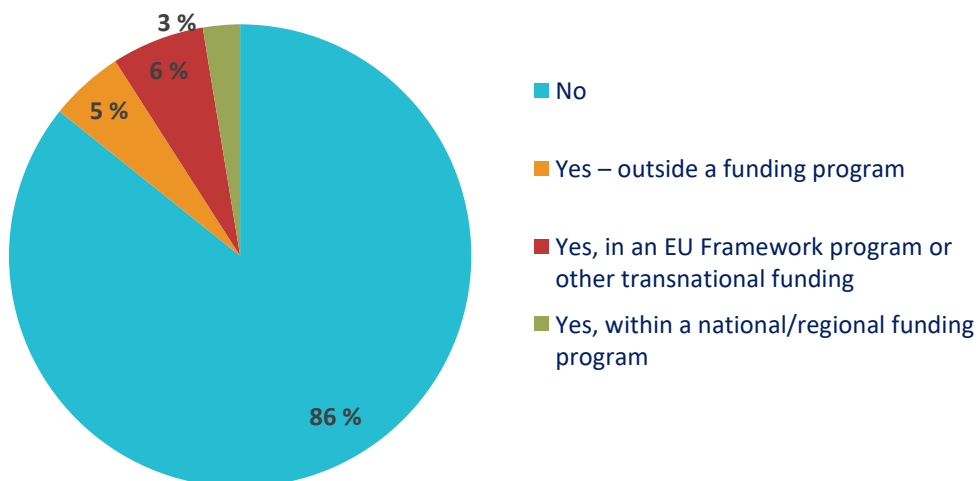


Figure 27. Project realisation without M-ERA.NET

For 86% of the respondents the project would have not been realised without M-ERA.NET. Only 11 respondents would have realised the project without M-ERA.NET, either in the EU framework programme or within a national/regional funding program.

Q23. Will the co-operation in the project consortium continue?

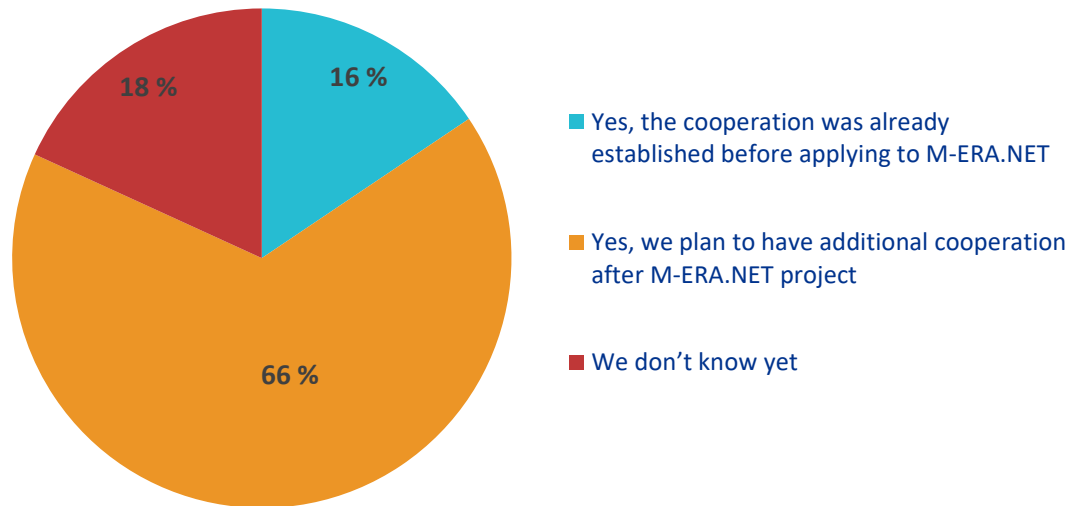


Figure 28. Future cooperation of project consortia

In 82 % of the cases, the co-operation in the consortium will continue beyond this M-ERA.NET project, while 18% don't know yet if the cooperation will continue. No one answered that there are no plans for further cooperation.

3.4 Conclusions

Project implementation

Most of the projects started in 2020 (88%), some in 2021 (9%), and a few in 2022 (3%). 74% reported minor changes in the consortium, budget, and/or timeframe, while 5% reported major changes. These changes were mainly related to the extension of the project period due to the COVID-19 pandemic. Despite this, 65% of respondents indicated that the project objectives were fully achieved, while 34% reported minor changes. 56% of respondents reported that the results and deliverables were fully accomplished, while 41% reported minor changes 4.

Scientific results

The most commonly achieved results were both the creation of new knowledge and the exploration of existing knowledge. 92% of the projects resulted in publications in peer-reviewed scientific journals, with more than 200 publications in total. Additionally, project results were presented at conferences in 97% of the cases 7. In total, at least 64 Master's degrees and 50 Doctoral degrees have been achieved as a result of the projects.

Innovation and economic results

The most frequently reported results are new or improved products/prototypes (32%) and new or improved methods (29%). The projects usually started at TRL level 2-3 and ended at TRL level 4-6, with a delta TRL in the range of 2-4. The tentative timeframe for commercialization of the results is usually 3-5 years. In 19% of the cases, the patent application was a result of the research in the assessed projects, with a total of between 15-30 patent applications.

Transnational effects

83% of the respondents had previous experience in transnational projects, while 17% were newcomers. The main added value of M-ERA.NET compared to other transnational funding schemes is simpler rules and procedures and attractiveness to newcomers. 86% of the respondents would not have realized the project without M-ERA.NET. In 82% of the cases, the cooperation in the consortium will continue after the M-ERA.NET project ends.

The report concludes that the assessed projects have a high impact at the scientific and innovation level and a positive transnational effect and benefits.

The covered 36 out of 37 projects funded in Call 2019, giving a good background for assessing the impact. The report concludes that the assessed projects are found to have a high impact at scientific and innovation level and a positive transnational effect and benefits.

4. Attachments

Annex 1. Questionnaire call2019

Assessment of funded projects from the additional joint calls by the previous M-ERA.NET (2017--2020) and from additional joint calls by M-ERA.NET 3.

1. Project acronym

2. Category of your organisation

- University
- Research Institute
- SME
- Large industry
- Other

3. Category - role in the project

- Coordinator
- Partner

4. Year project start

- 2021
- 2022
- Later

5. Year project end (expected end)

- 2023
- 2024
- 2025 or later

6. Have there been changes since the project started (consortium, budget, timeframe etc.)?

- No changes
- Minor changes
- Major changes

7. To which extent have the project objectives been accomplished?

- To full extent
- Minor deviation
- Major deviation

8. To which extent have the expected results and deliverables been accomplished?

- To full extent
- Minor deviation

- Major deviation

9. Was the project influenced by the covid19 pandemic situation?

- No, the project and all activities were finished according to plan
- No, however project/some activities were not fulfilled to full extent
- Yes, the project was extended

10. Experiences regarding implementation of the project

| | very strongly agree | strongly agree | agree | disagree | strongly disagree | very strongly disagree |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|
| All project partners were committed to the project | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| The consortium was stable during the project implementation | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| The project's objectives were realistic (i.e. budget, effort, time) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Project management is effective | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| The national/regional funding agency was supportive throughout the application and implementation process | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

11. What are the results achieved?

- Creating of new knowledge
- Exploration of existing knowledge
- Both creation of new knowledge and exploration of existing knowledge

12. Please specify number of publications submitted, accepted or published in peer reviewed scientific journals corresponding to results from this project (for your organisation)

- 0
- 1-2
- 3-4
- 5 and more

13. Please specify number of conference proceedings/presentations where the project results were presented (by your organisation)

- 0
- 1-5
- 6-10
- 11 and more

14. How many Master's degrees have been achieved in this project (for your organisation)?

- 0
- 1 - 2
- 3 - 5
- 6 and more

15. How many Doctoral degrees have been achieved in this project (for your organisation)?

- 0
- 1 - 2
- 3 - 5
- 6 and more

16. What career stages were primarily involved in this project (your organization)?

- First Stage Researcher (up to the point of PhD)
- Recognised Researcher (PhD holders or equivalent who are not yet fully independent)
- Established Researcher (researchers who have developed a level of independence)
- Leading Researcher (researchers leading their research area or field)

17. What was the main impact of this project (multiple answer possible)

- Academic (contribution to advances across and within disciplines)
- Technological (contribution to the creation or improvement of product, process and services)
- Economic (increased productivity, economic growth)
- Educational (contribution to education, training)
- Environmental impact (reducing environmental pollution, climate crises etc)
- Social (contribution to welfare and quality of life)
- Health (contribution to public health, life expectancy)

18. What type of the results have you achieved in this M-ERA.NET project (multiple answer possible)?

- New or improved method
- New or improved product/prototype
- New or improved process
- New or improved model
- New or improved service

19. What is the tentative time frame for commercialisation of the results from this project (year to market), where 0 is the end date of the project?

- Already started
- 1-2 years
- 3-5 years
- More than 5 years

20. Please specify the number of approved patents, patent applications/licenses corresponding to results from the project (your organisation)

- 0
- 1-2
- 3 and more

21. Are you familiar with Open Innovation Test Beds (OITBs) concept (europa.eu)?

- Yes, we already use it
- Yes, but we don't use it
- No, I am not familiar with the concept

22. If 'yes' on previous question: What is in your opinion the largest benefit(s) of using the open innovation test beds (multiple answer possible)?

- Collaboration and iterative development
- Acceleration of innovation
- Real-world testing
- Access to resources

23. Please indicate your previous experience in transnational projects

- No previous experience
- Some experience
- Experienced

24. What is the added value of M-ERA.NET compared to other transnational funding e.g. EU framework programme (multiple answer possible)?

- Simpler rules and procedures
- M-ERA.NET is more attractive to newcomers
- M-ERA.NET puts more emphasis on the exploitation of the results

25. Will the co-operation in the consortium continue?

- Yes, the cooperation was already established before applying to M-ERA.NET
- Yes, we plan to have additional cooperation after M-ERA.NET project
- We don't know yet
- No, there are no plans for further co-operation

26. Would the project have been realised without M-ERA.NET?

- No
- Yes – outside a funding program
- Yes, within a national/regional funding program
- Yes, in an EU Framework program or other transnational funding

Annex 2. Call 2019 -list of funded projects

[List of funded projects Call-2019.pdf](#)