Report on the assessment of transnational projects funded under the M-ERA.NET Call 2012

M-era.Net

M-ERA.NET 2 has received funding from the European Union´s Horizion 2020 research and innovation programme under grant agreement No 685451.

TABLE OF CONTENT

Executive summary

M-ERA.NET is a network of 43 public funding organisations from 32 European and non-European countries. M-ERA.NET has been implementing annual joint calls for transnational RTD proposals since its start in 2012.
So far the M-ERA.NET network has selected a total of 157 transnational projects for funding with more than 732 participating research groups and companies from 33 countries. 28% of the funded organisations are research organisations, 35% universities, 29% SMEs and 8% large industries. Public funding of around 118 million Euro was mobilised.
In order to follow up on the success of these 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 pilot report covers the results of the assessment of the projects funded from the M-ERA.NET Call 2012. M-ERA.NET selected 23 full proposals for funding, corresponding to requested funding of 16.4 Mio EUR. Projects started in 2013 or 2014 and ended between 2016 and 2018.
The funded projects were assessed through an online questionnaire, covering assessment of scientific results, technical results, economic effects and transnational effects. The survey addressed 87 research groups in 22 finished projects.
The analysis shows that most of the projects were completed according to plan with no or minor changes related to consortium, budget and timeframe. The projects usually started at TRL levels between 1 and 4 and ended at TRL levels 4 or 5. In many cases the innovation-related results comprised new methods, products and/or new processes. The tentative time frame for commercialisation of the results (year to market) was usually between 3 and 5 or more than 5 years. Creating new knowledge (75 %) rather than exploring existing knowledge (25%) reflects the main scientific results. The number of publications in peer reviewed scientific journals and the number of oral presentations is relatively high, indicating a good dissemination of results and a good scientific level of the projects. The projects resulted in at least 47 master degrees and 33 PhD. Access to new international partners and/or access to new know-how were reported as the most common economic effect for the beneficiaries. None of respondents answered that the results will not be utilised any further. Respondents reported that the main added value of M-ERA.NET compared to other transnational funding included simpler rules and procedures and features that were more attractive to newcomers. 87% of respondents reported that the project would not have been realised without M-ERA.NET and in almost all cases the co-operation in the consortium will continue.
The report concludes that the assessed projects are found to have a high impact at scientific and innovation levels as well as positive economic and transnational effects for the involved beneficiaries.

1. Background

M-ERA.NET is a network of 43 public funding organisations from 32 European and non-European countries. M-ERA.NET aims to identify further research programmes for materials research and innovation and to consolidate the cooperation with relevant funding organisations from Europe and beyond. M-ERA.NET started in 2012 under the FP7 scheme and continues from 2016 to 2021 under the Horizon 2020 scheme.

M-ERA.NET has been implementing annual calls since its start in 2012. Calls 2012-2015 were implemented under the FP7 ERA-NET scheme whereas Calls 2016-2018 have been implemented under the H2020 ERA-NET COFUND scheme. Further calls are foreseen.

So far the M-ERA.NET network has selected a total of 157 transnational projects for funding with more than 732 participating research groups and companies from 33 countries. 28% of the funded organisations are research organisations, 35% universities, 29% to SMEs and 8% large industries. Public funding in the range of 118 million Euro was mobilised.

In order to follow up on the success of these 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.

This report covers the results of the assessment of the projects funded from the M-ERA.NET Call 2012. M-ERA.NET selected 23 full proposals for funding, corresponding to requested funding of 16.4 Mio EUR.

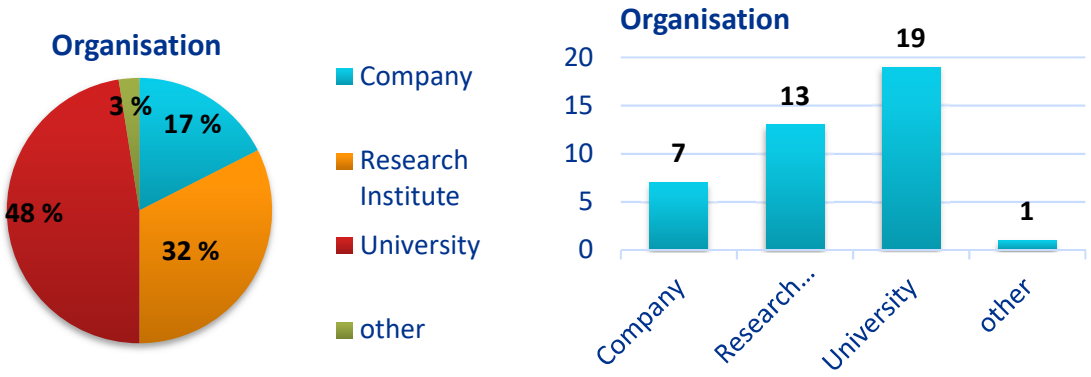
2. Process and Methods

The funded projects were assessed through an online questionnaire. The questionnaire was provided to all funded consortia in late 2017. Data were collected from all parties soon after the completion of the projects. The questionnaire covered the following areas: Scientific results; Technical results; Economic effects; Transnational effects

The survey addressed 87 research groups active in 22 finished projects. A total of 40 responses were received, including 17 coordinators. These responses covered 21 projects.

Thus, the response rates were 95% for projects and 47% for beneficiaries. 48% of the responses came from universities, 32% from research organisations, and 17% from industry.

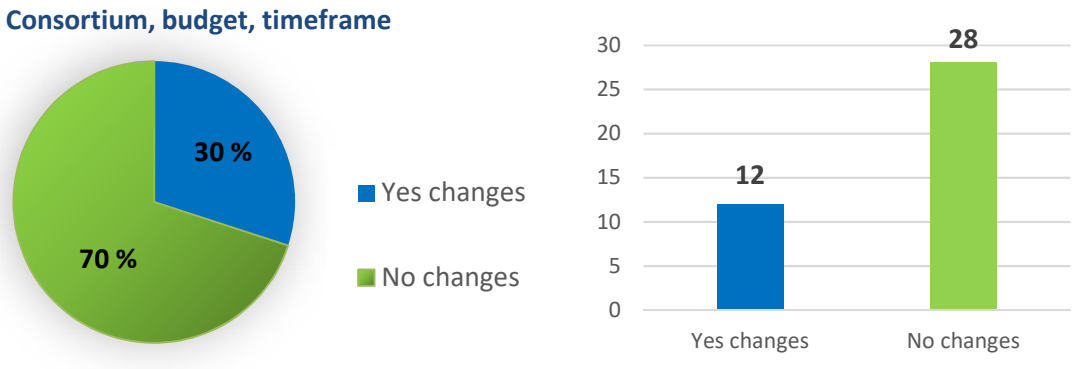
Note: all statistics and graphs presented in this report are related to individual answers from individual partners but not to projects as a whole.



3. Statistics and results

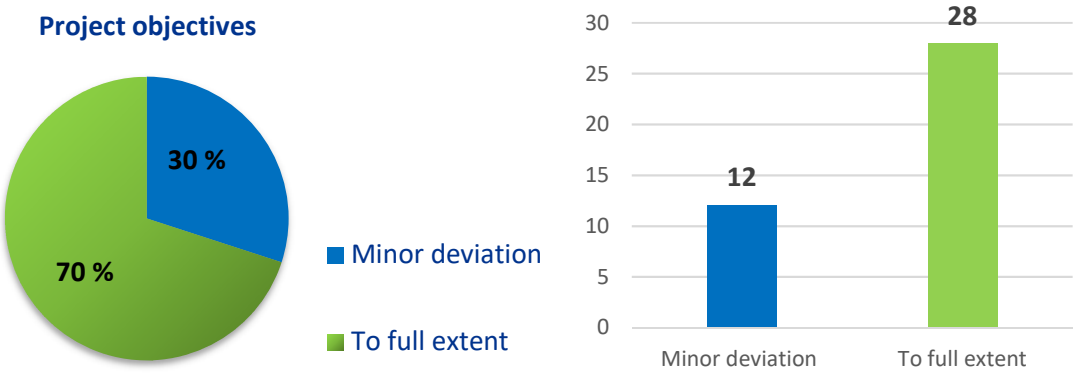
3.1. General results

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



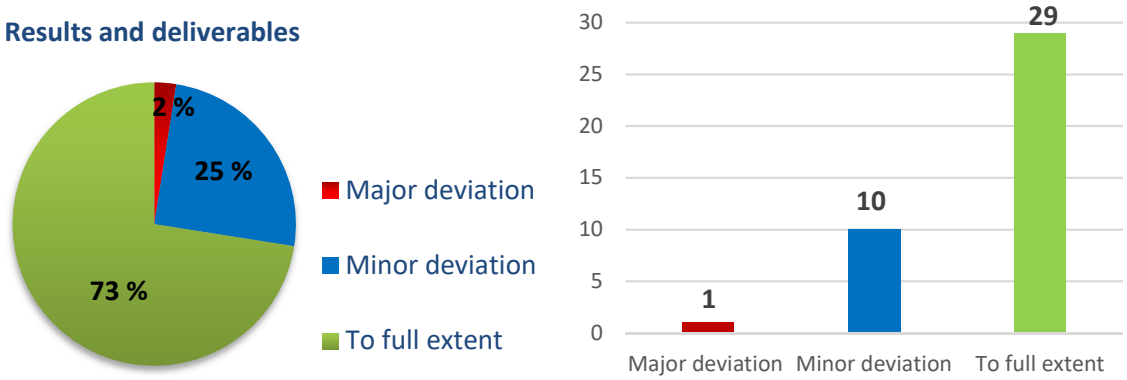
70% of the beneficiaries reported no changes with respect to consortium, budget and/or timeframe whereas 30% of the beneficiaries reported that there have been major changes since the project started.

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



70% of the beneficiaries reported that the project objectives have been accomplished to full extent whereas 30% of the beneficiaries reported minor changes; none of the participants reported major changes in the project objectives.

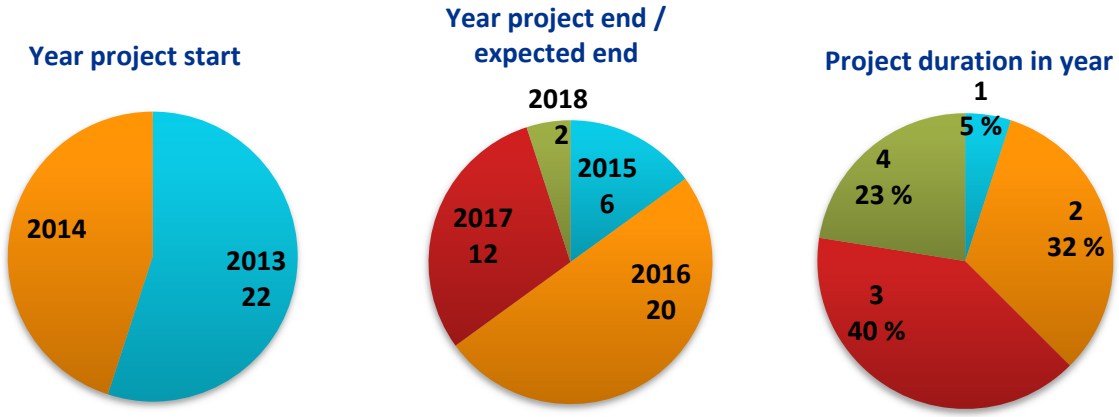
Q3. To which extent have the expected results and planned deliverables been accomplished?



A similar profile is received for the question related to accomplishing of the expected results and deliverables. 73% of the respondents report that the results and deliverables have been fully accomplished whereas 25% report minor and 2% (1 partner) major changes.

The partners reporting major changes question Q1 (related to consortium, budget and timeframe) have in all cases reported changes related to project objectives and/or results and deliverables as well. The partner reporting the major changes in Q3 (on results and deliverables) did not report any other changes.

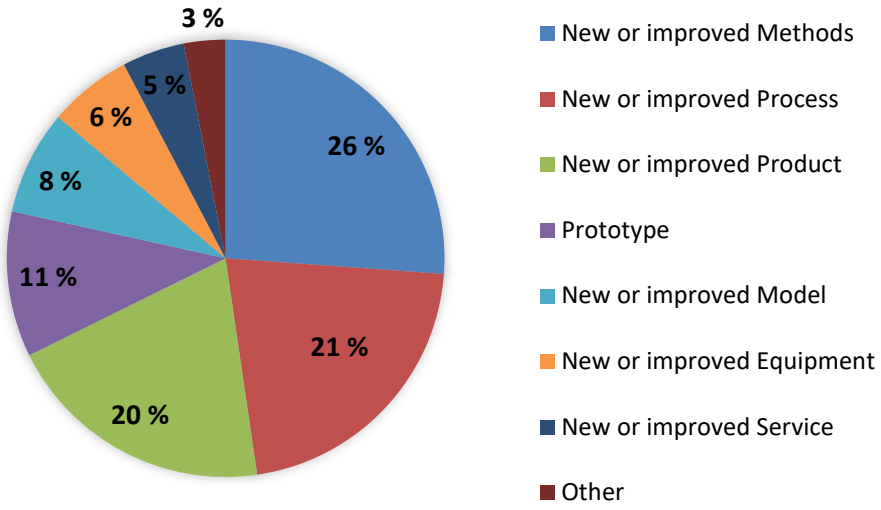
Q4. What is the project timeline?

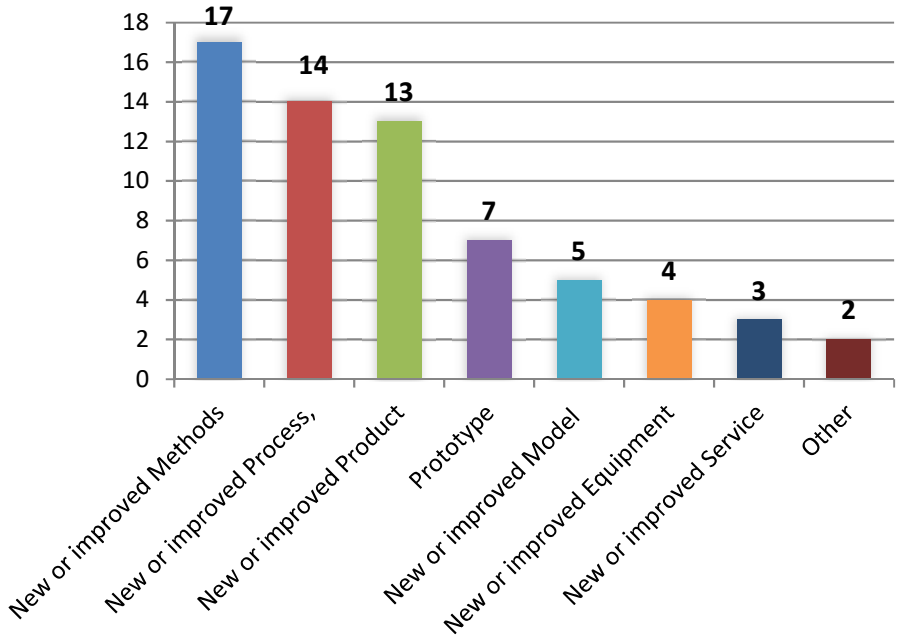


More than half of the respondents started their projects in 2013 and the rest in 2014. 6 respondents finished their projects in 2015, 20 in 2016, 12 in 2017 and 2 respondents reported an expected project end in 2018. In most cases the project period was 2-4 years.

3.2. Innovation oriented results

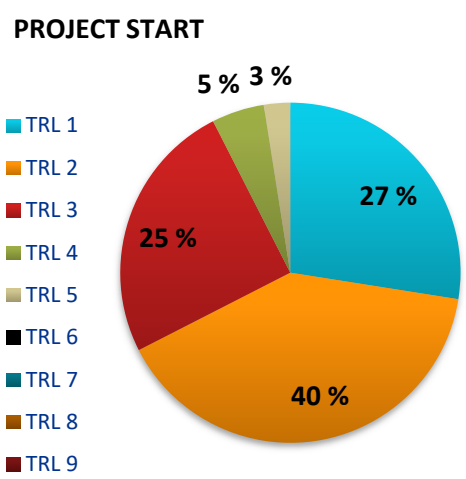
Q5. What type of results have you achieved in this M-ERA.NET project? (multiple answers possible)

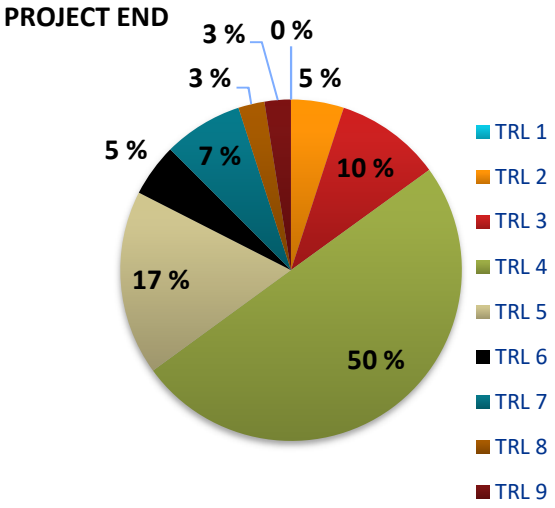


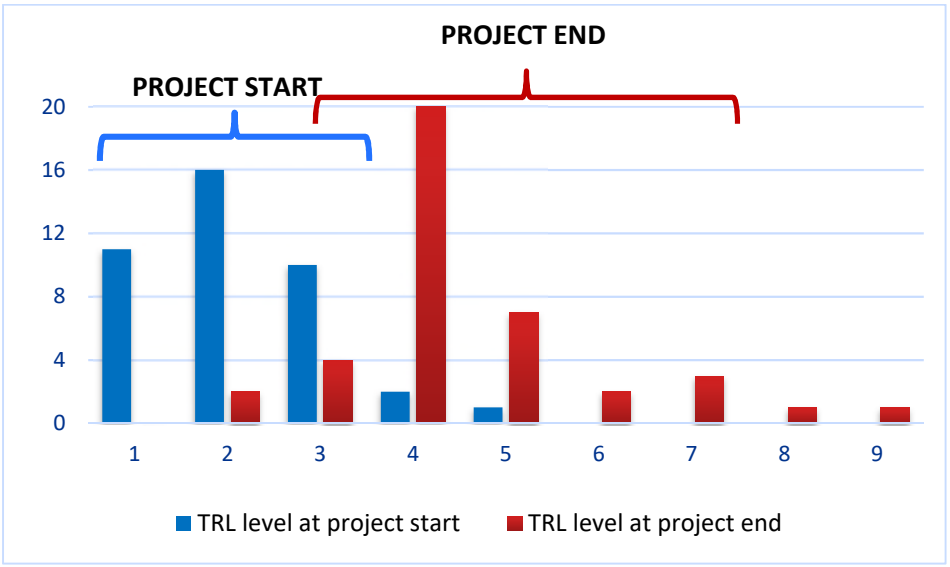


The type of result most frequently achieved is a new or improved method (26%), process (21%) and product (20%). Prototypes represent 11% of the achieved results, followed by models (8%), equipment (6%) or services (5%).

Q6. Please indicate the technology readiness level-(TRL) at project start and project end.



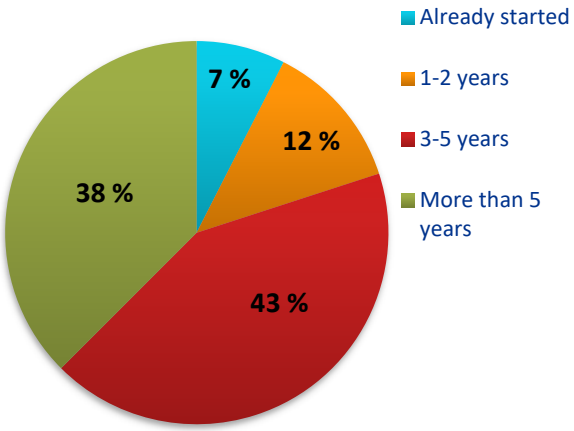


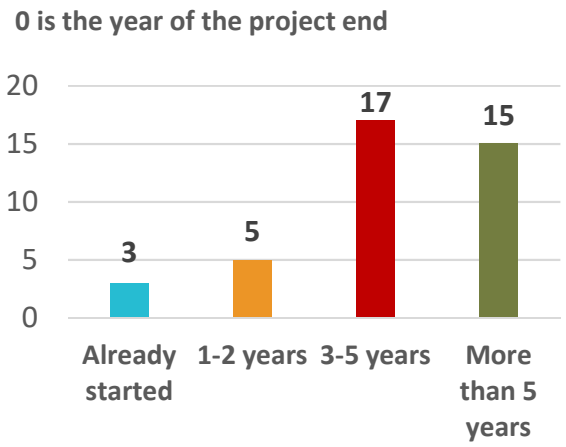


The beneficiaries reported that most projects started at TRL 1-4 and ended at TRL level 4 or 5. The delta TRL (difference between TRL at the project start and TRL at the project end) was usually in the range of 2-3.

Technology Readiness Level-– definition:
TRL 1. basic principles observed
TRL 2. technology concept formulated
TRL 3. experimental proof of concept
TRL 4. technology validated in lab
TRL 5. technology validated in relevant environment
TRL 6. technology demonstrated in relevant environment
TRL 7. system prototype demonstration in operational environment
TRL 8. system complete and qualified
TRL 9. actual system proven in operational environment

Q7. 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?

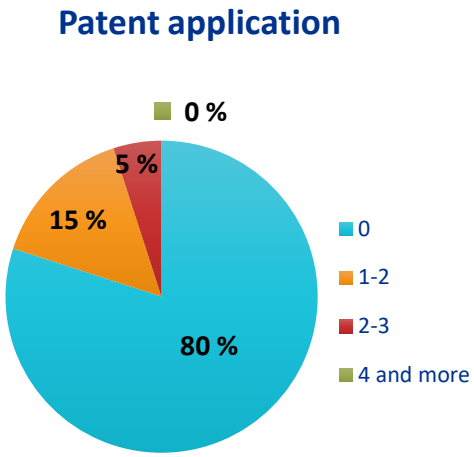


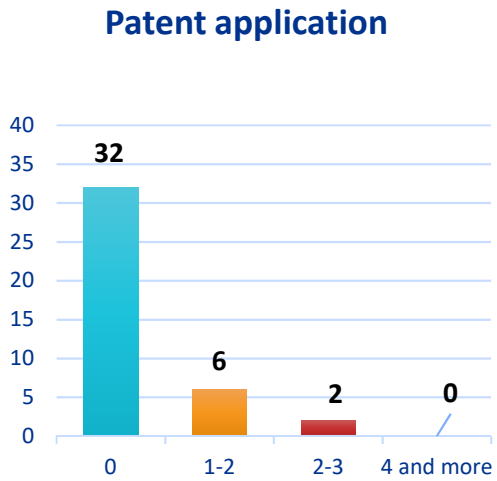


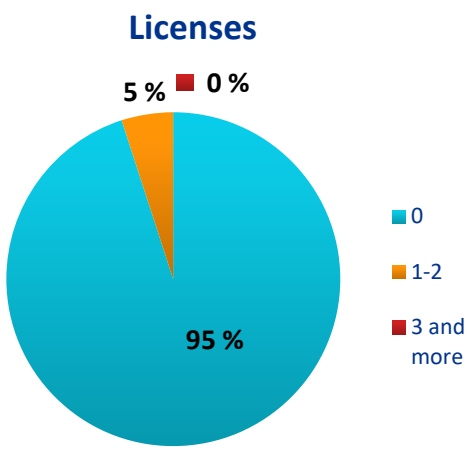
The tentative timeframe for commercialisation of the results (year to market) is usually 3-5 and more than 5 years (43% and 38%). 7% reported that commercialisation of the results already started and 12% expect commercialisation to start within 1-2 years.

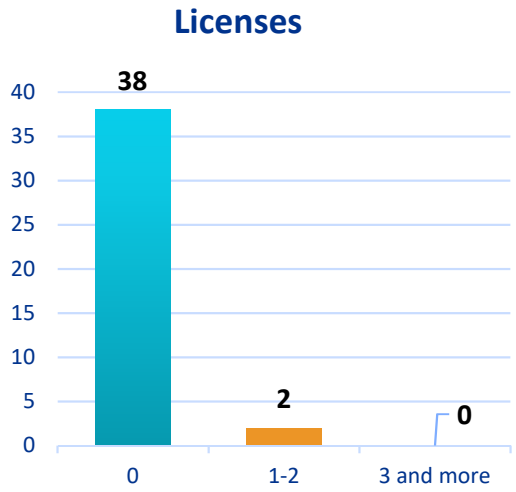
The timeframe from the call announcement to a commercialisation of the results is typically at least 7 years (consisting of: 1.5 - 2 years between the call announcement and the project start; 3-4 years project life time; 3-5 years to market).

Q8: Please specify the number of approved patents/patent applications and licenses corresponding to results from the project for your organisation?







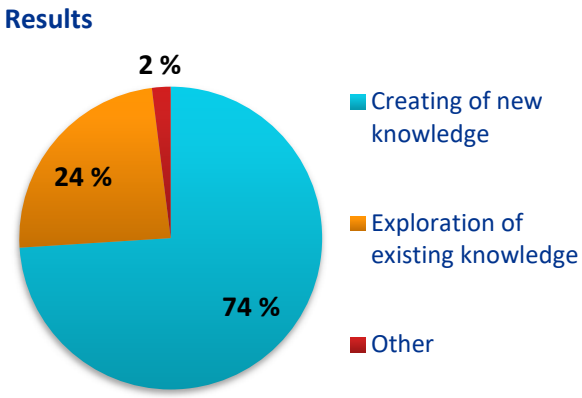


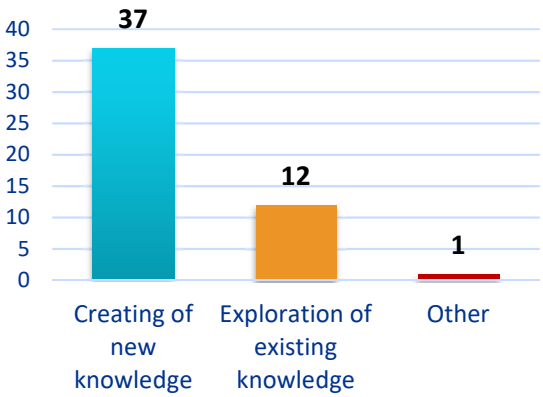
20% of the respondents (=8 responses) have reported patent applications and 4% (2 respondents) have reported licenses as a result of the assessed projects. In total between 12 and20 patent applications and 1-2 licenses have been submitted.

Most often the respondents did not submit any patent application (80%) or license (95%).

3.3. Scientific results

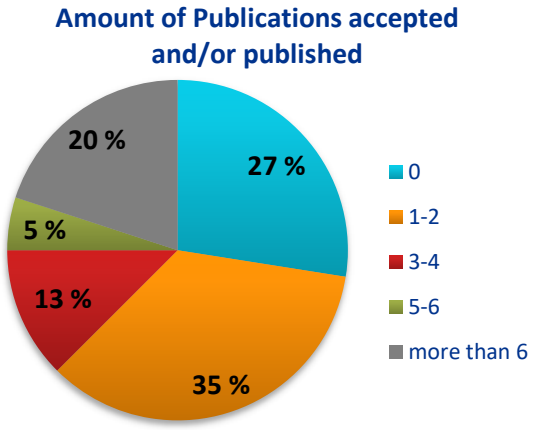
Q9. What are the results achieved? (multiple answers possible)

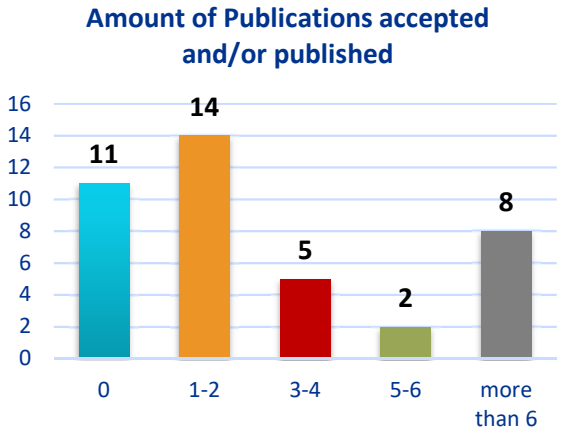




The scientific results most often achieved are the creation of new knowledge (74%), while 24% of the results represent exploration of existing knowledge. Since multiple answers were possible for this question 20% of the respondents reported both the creation of new knowledge and the exploration of the existing knowledge.

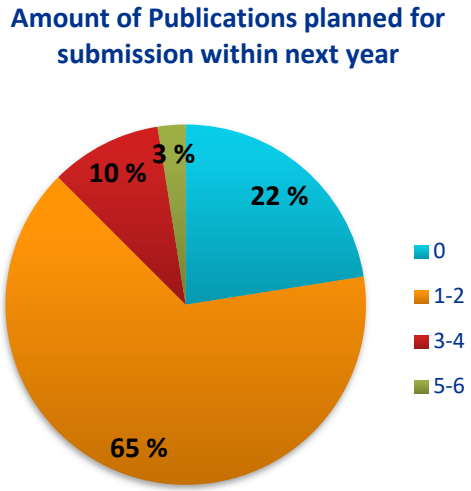
Q10. Please specify the number of publications in peer reviewed scientific journals corresponding to the results from this project for your organisation (first author)

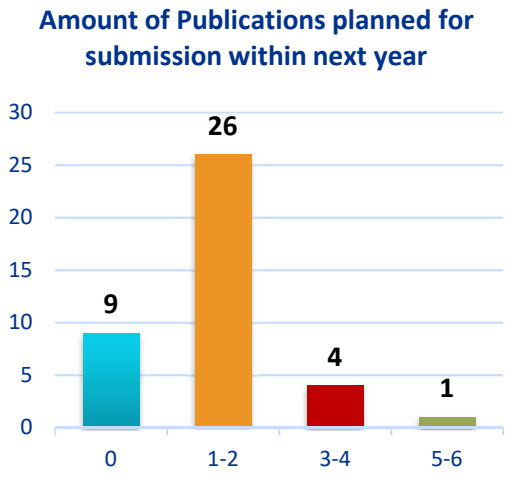




In total, 73 % of the respondents published in peer reviewed scientific journals; the number of publications was between 1-2 in 35% of the cases, between 3-4 in 13%, between 5-6 in 5 % and more than 6 in 20%. The results from the assessed projects were published in at least 95 publications in peer reviewed scientific journals.

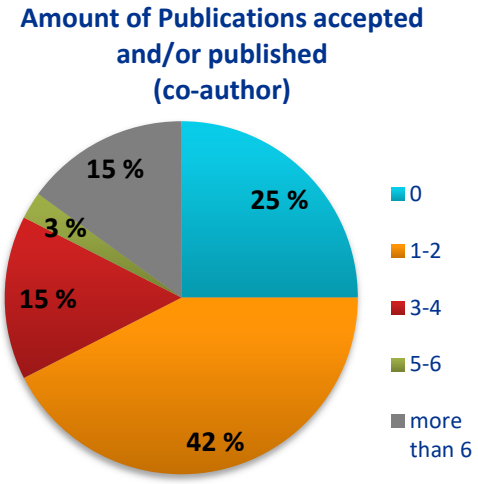
Q11. Please specify the number of publications in peer reviewed scientific journals corresponding to results from this project for your organisation planned for submission within next year (first author)

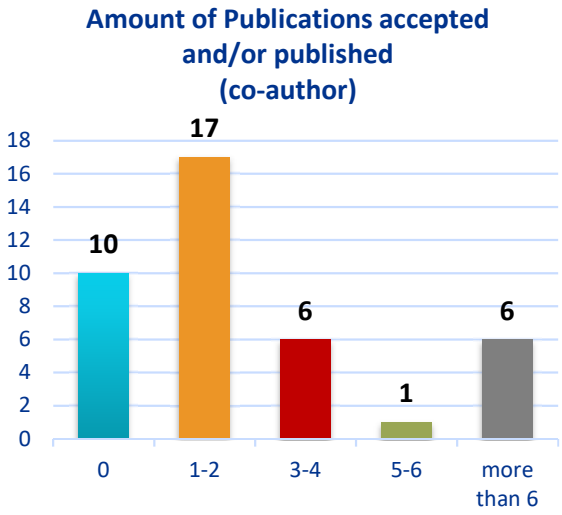




78% of respondents reported scientific publications under preparation/planned for publication during the first year after the project end. In most cases (65%) one or two publications are reported.

Q12 . Please specify the number of publications in peer reviewed scientific journals corresponding to results from this project for your organisation as co-author

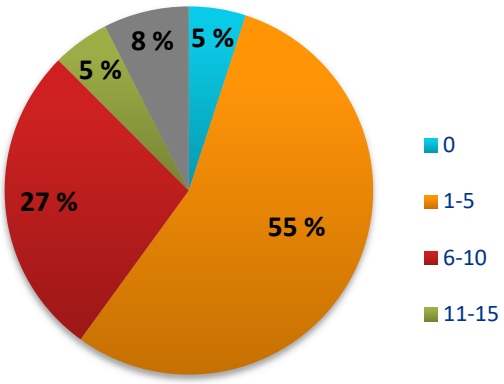


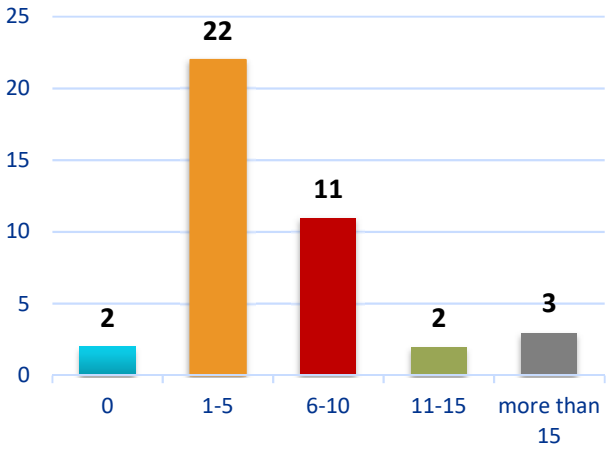


75% reported publications in peer reviewed scientific journals together with other project partner(s) in at least 82 publications.

In total only 3 partners reported no published or planned publications; all these respondents represent companies/industry and reported another type of dissemination activities, such as for example digital media.

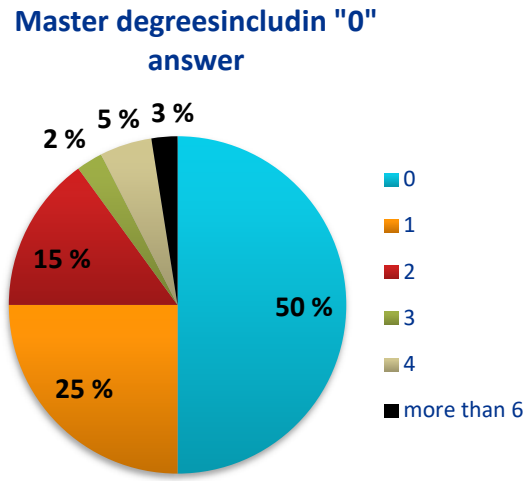
Q13. Please specify the number of conference proceedings/presentations (from this project for your organisation)

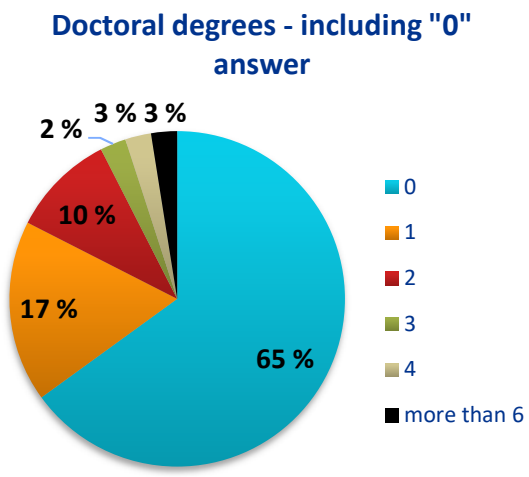




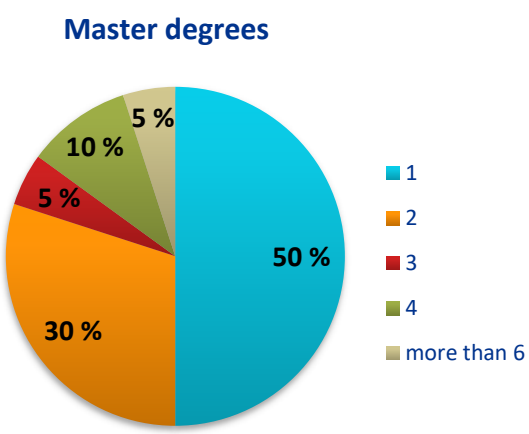
In 55% of the answers the number of conference proceedings/presentations is between 1 and 5. In total between 158 and at least 299 presentations have been done as a result of the projects.

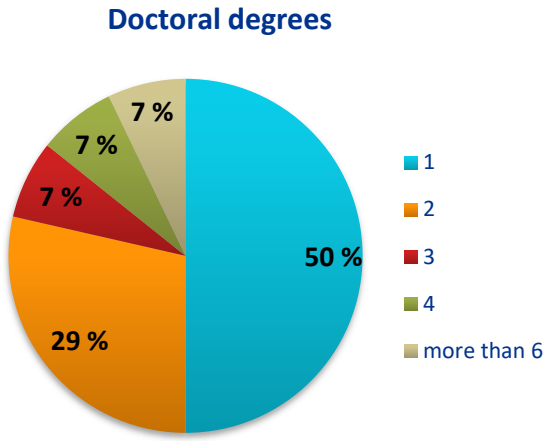
Q14. How many degrees have been achieved as a result of this project (for your organisation)?

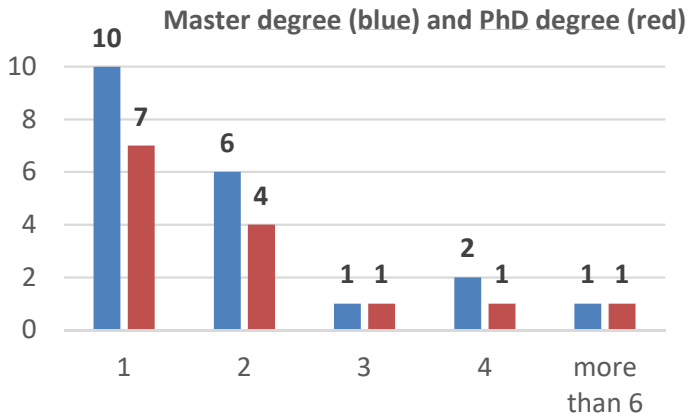




50% of the respondents reported that no master degrees and 65 % that no doctoral degrees have been achieved.



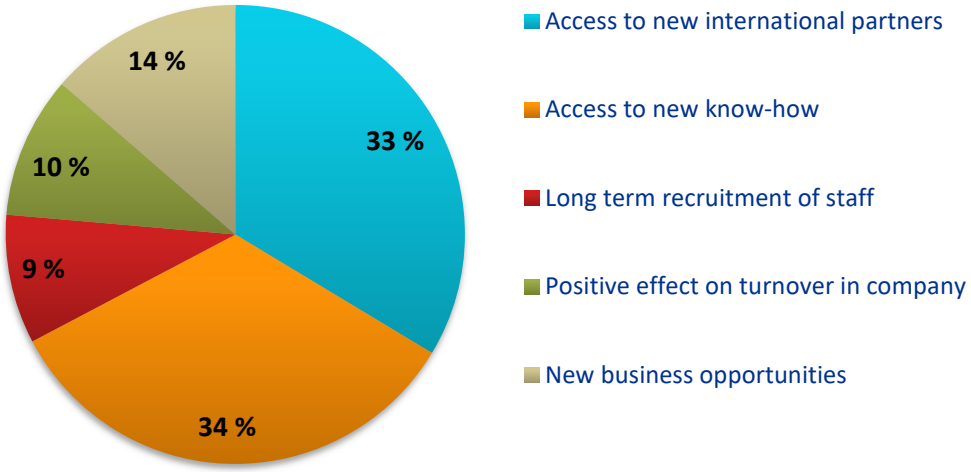


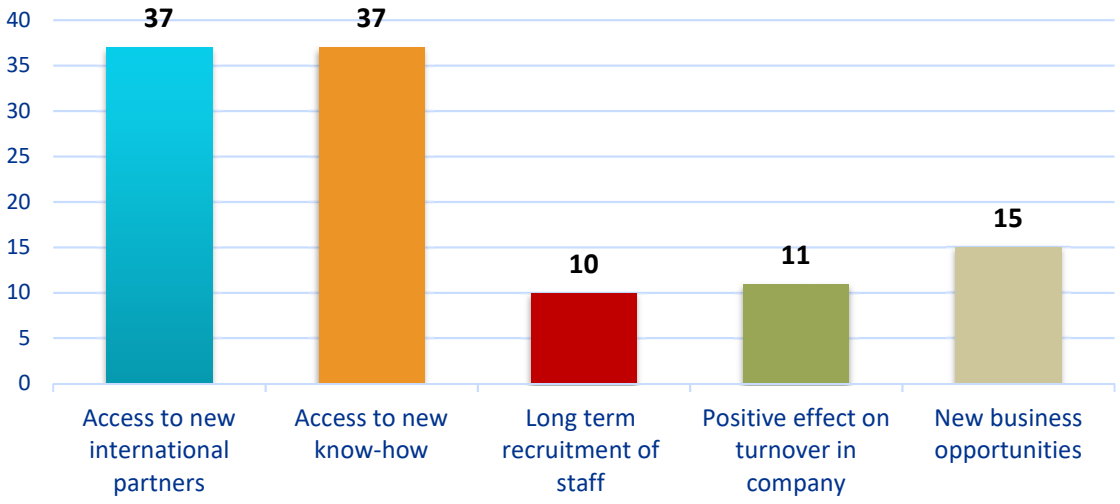


In total, at least 47 master degrees and 33 PhD degrees have been achieved as a result of the assessed projects. The most typical result is 1 master/PhD degree per partner (50% answers).

3.4. Economic effect

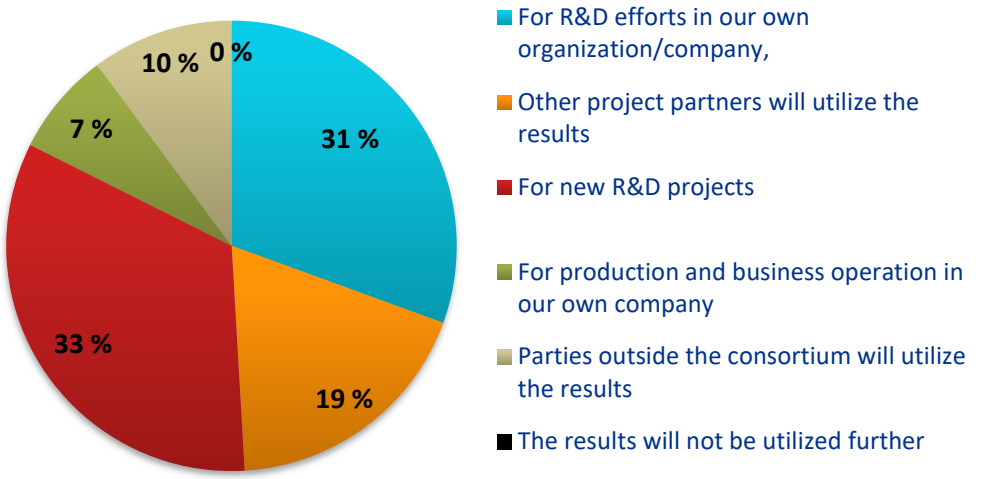
Q15. Please indicate the effect(s) on your institution/company originating from this project (multiple answers possible)

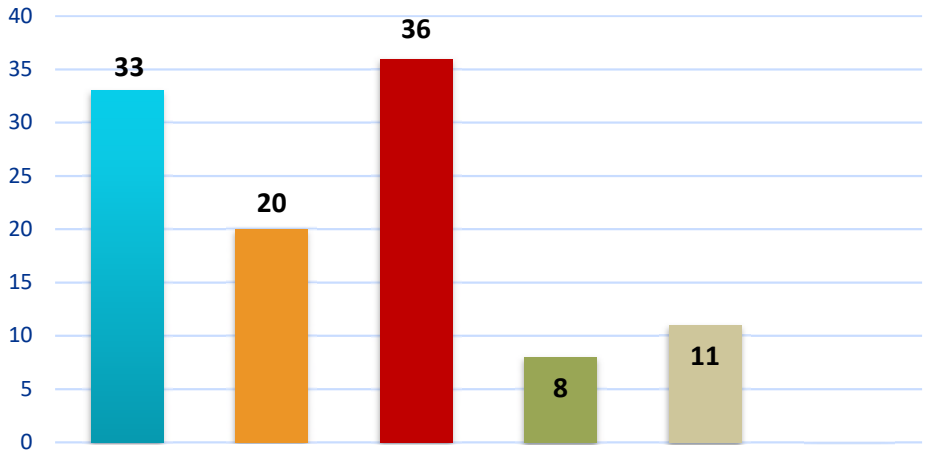




For 33% of respondents the effect was access to new international partners and for 34% access to new know-how. Multiple answers were possible and the most common combination was "new international partners" and "access to new know-how".

Q16. How will the results of the project be used (multiple answers possible)?





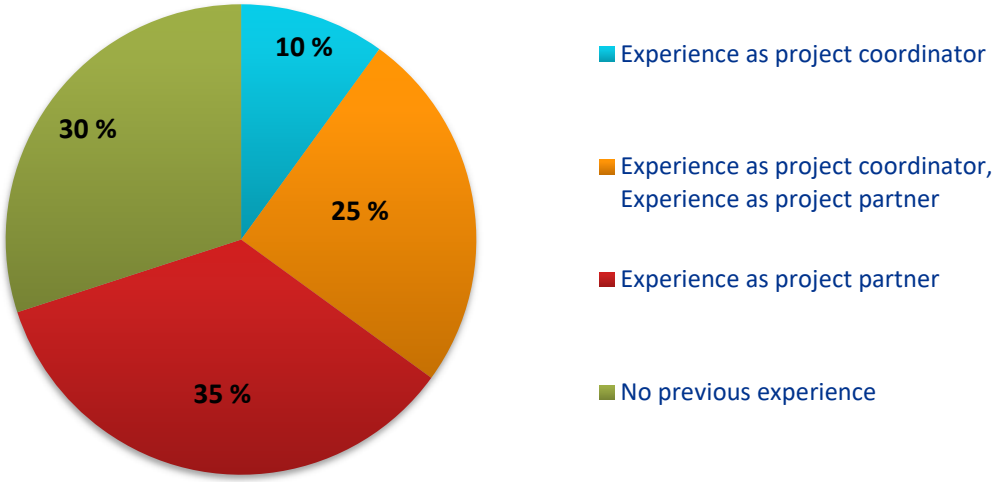
Typically, the research results will be used for R&D efforts in the same organisation or company (31%) and for new R&D projects (33%). Multiple answers were possible and the most common combination of the answers was:

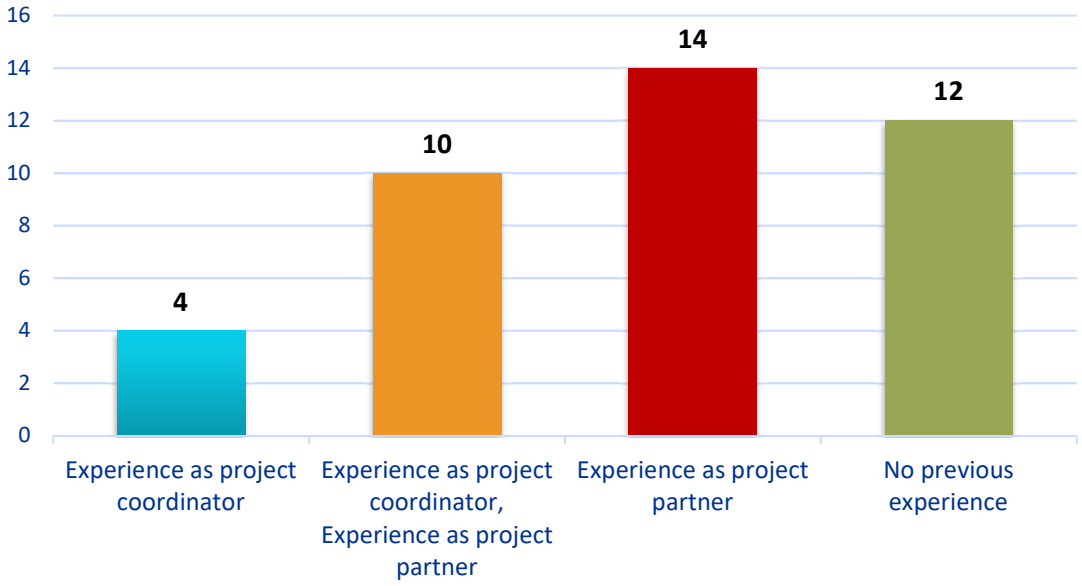
1. For R&D efforts in our own organisation/company, For production and business operation in our own company (9)
2. For R&D efforts in our own organisation/company, Other project partners will utilize the results, For new R&D projects (8)

None of respondents answered that the results will not be utilised further.

3.5. Transnational effect

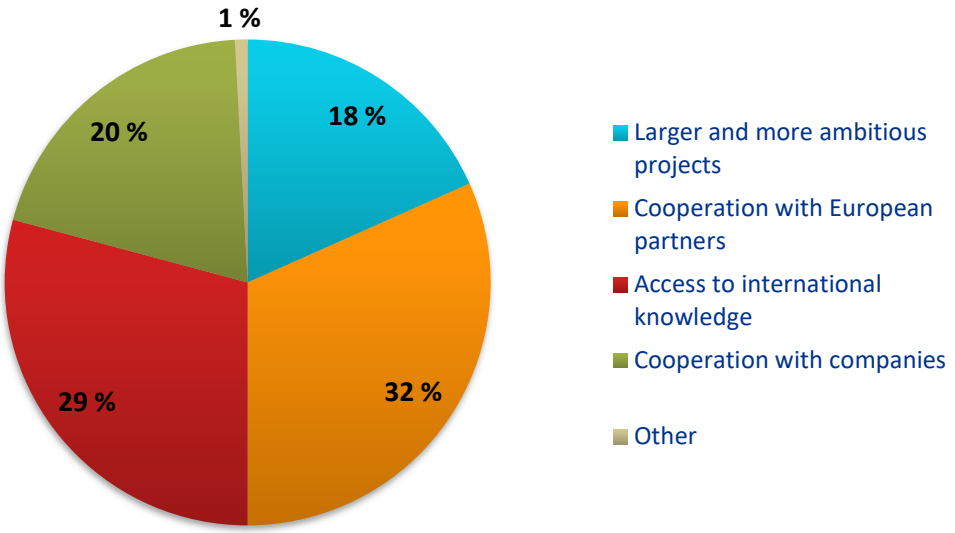
Q17. Please indicate your previous experience in transnational projects (multiple answers possible)





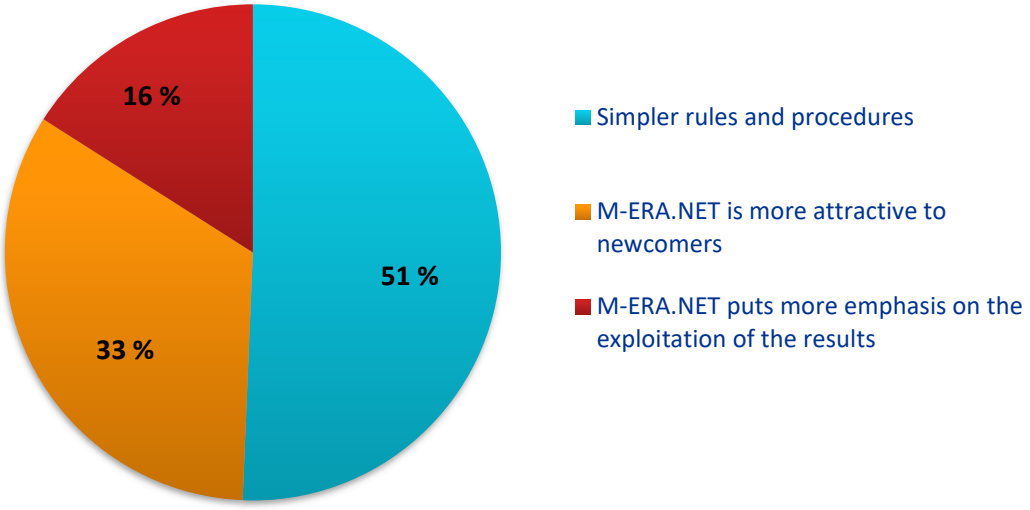
70% of the respondents had previous experience in transnational projects: 10% as project coordinator, 35% as project partner and 25% both as coordinator and partner.
30% are newcomers to transnational cooperation.

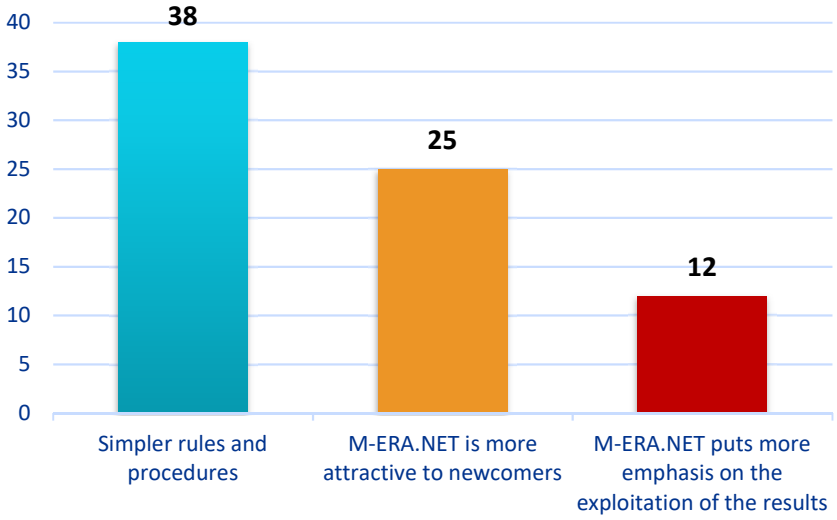
Q18. What is the main added value of M-ERA.NET compared to national funding? (multiple answers possible)



The main added value of M-ERA.NET compared to national funding is the cooperation with European partners (28%) and access to international knowledge (29%).
Combination of *Cooperation with European partners, Access to international knowledge, Cooperation with companies* is the most common multiple answer.

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



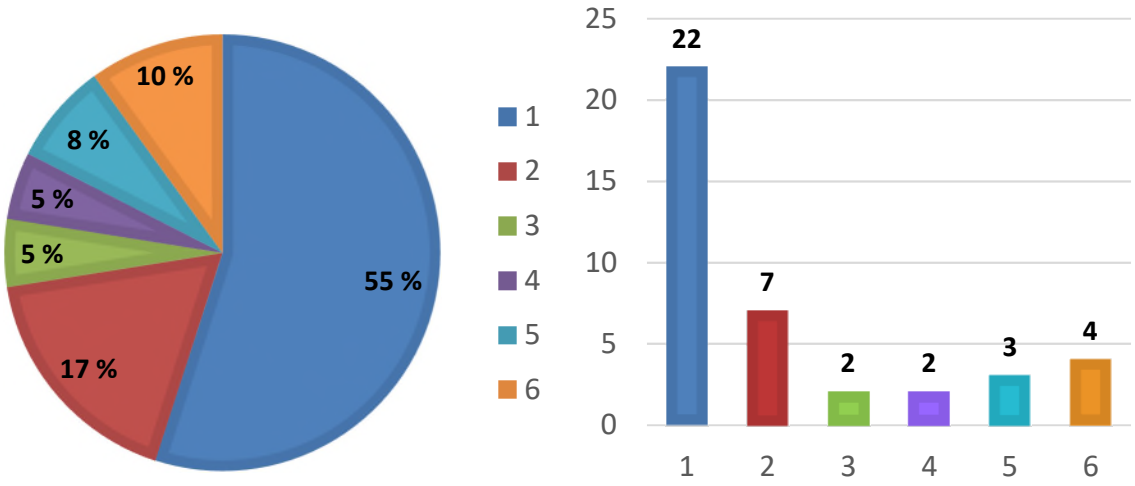


The main added value of M-ERA.NET compared to other transnational funding are a *simpler rules and procedures* (51%) and *more attractive features for newcomers* (33%). 30% of the respondents were newcomers as indicated in Q17.

Q20. Experiences regarding implementation of the project

a) All project partners are committed to the project

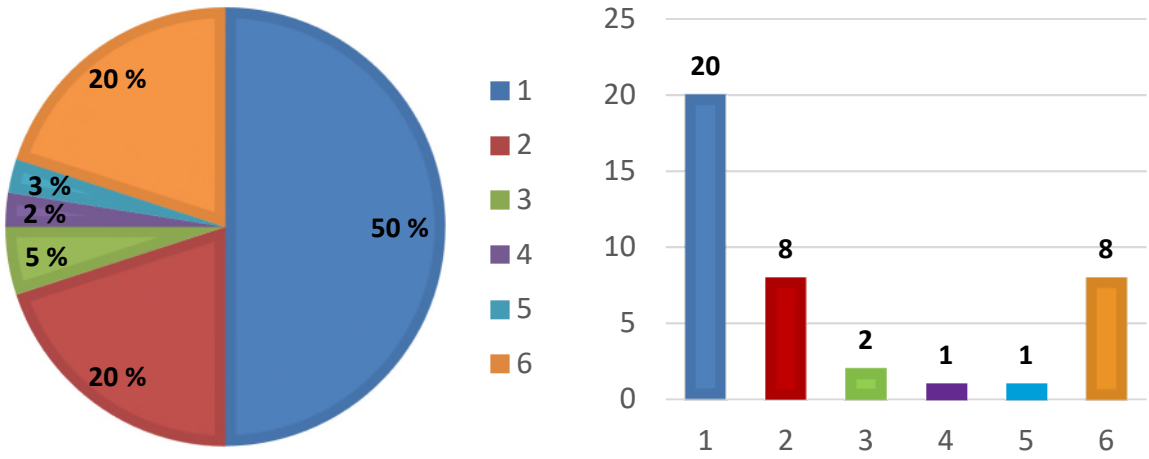
Scale: 1 agree to full extent – 6 do not agree



77% of the respondents answered from fully agree to agree on the question if all project partners were committed to the project.

b) The consortium is stable during the project implementation

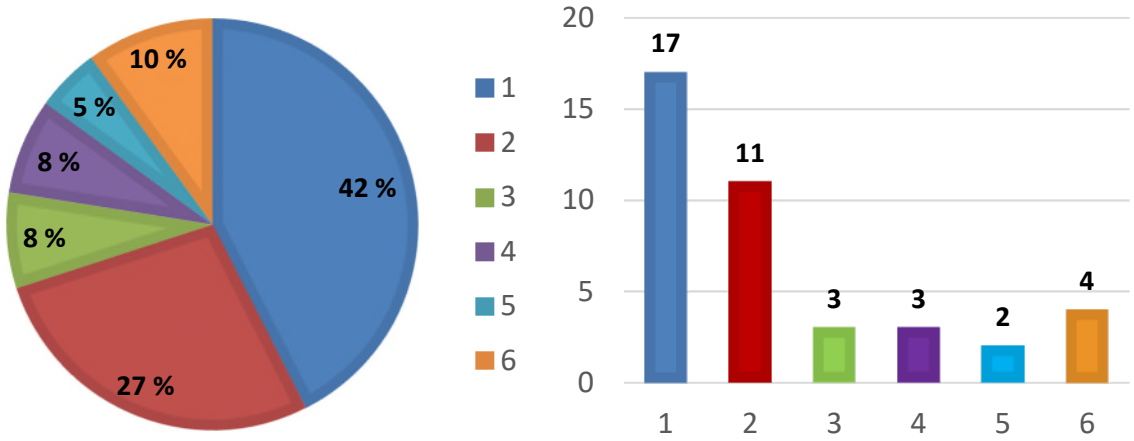
Scale: 1 agree to full extent – 6 do not agree



75% reported consortium to be stable during the project implementation.

c) The project`s objectives are realistic (i.e. budget, effort , time)

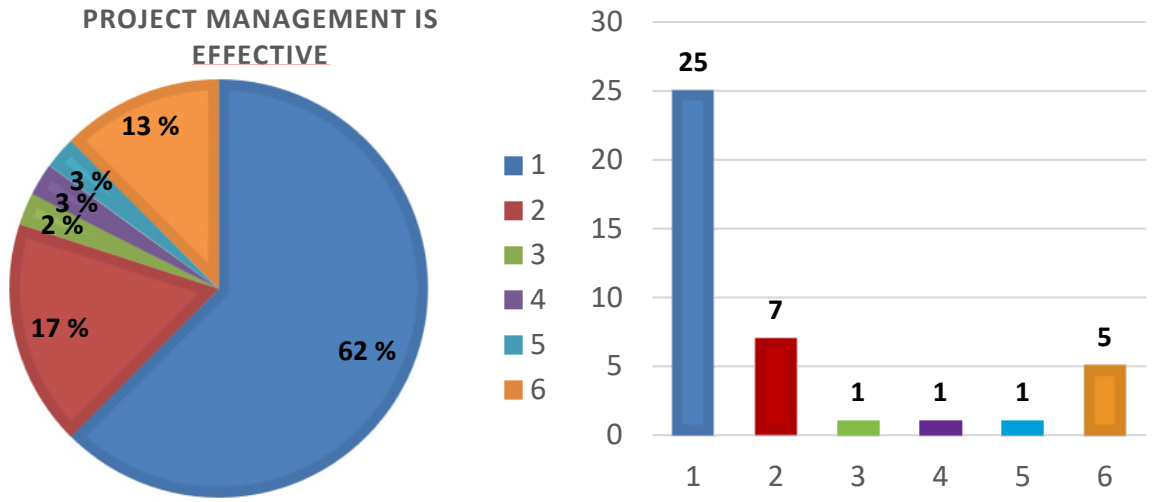
Scale: 1 agree to full extent – 6 do not agree



77% answered that the project`s objectives (i.e. budget, effort, time) were realistic.

d) Project management is effective

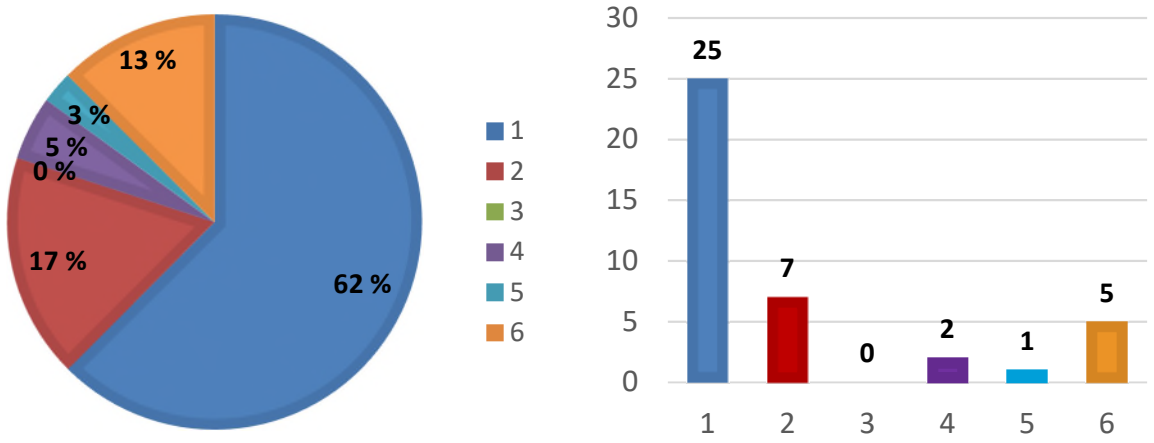
Scale: 1 agree to full extent – 6 do not agree



The project management was considered effective by 82%. 13% of the respondents (5) fully disagree on the effectivity of the management in the project.

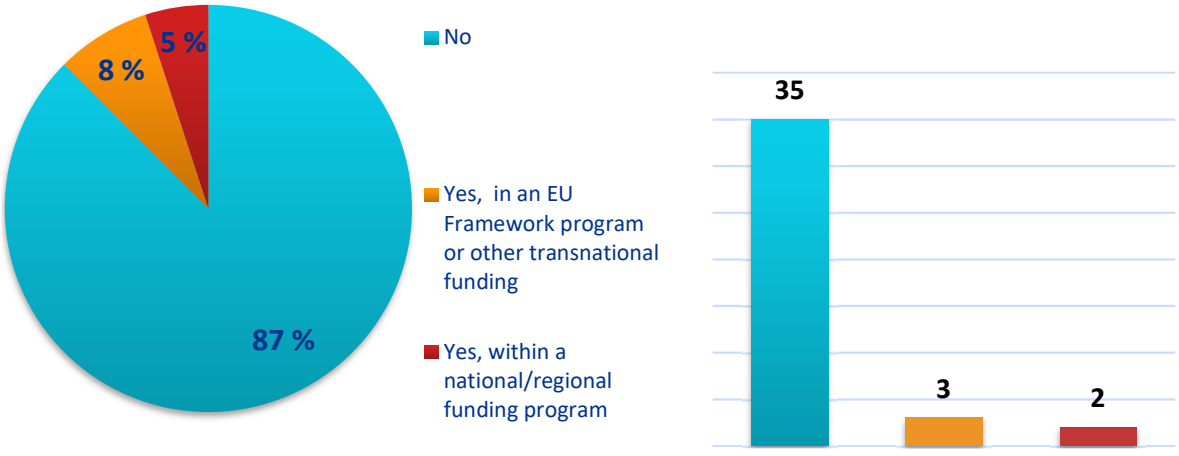
e) Interaction with the national/regional funding agency is supportive during the project implementation

Scale: 1 agree to full extend – 6 do not agree



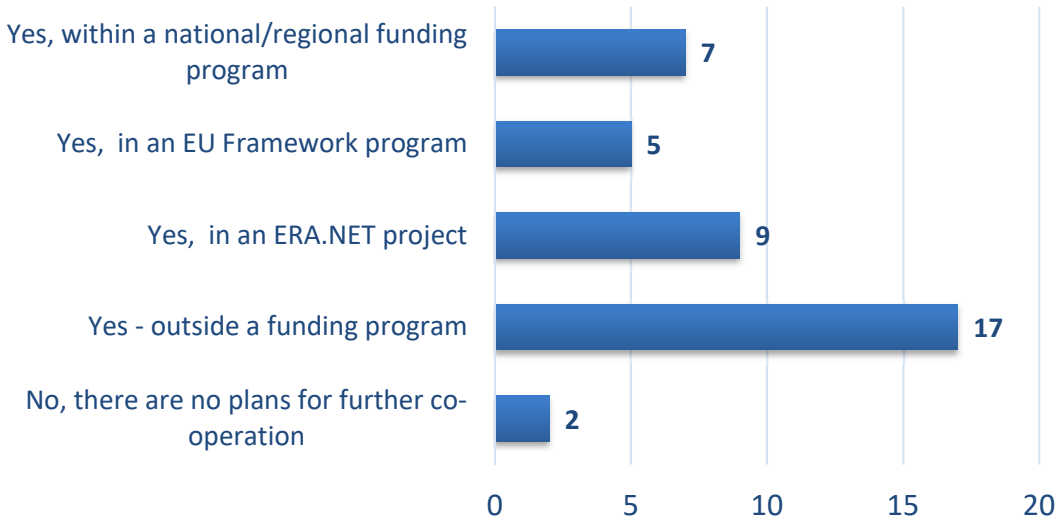
The national regional agency was supportive during the project implementation in 79%, while 21% of the respondents did not find the national/regional funding agency supportive (8 partners).

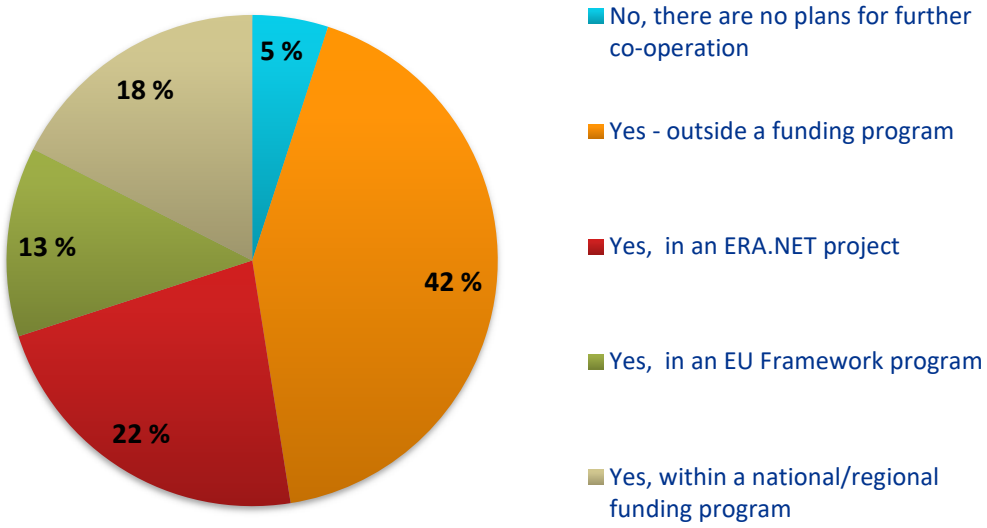
Q21. Would the project have been realised without M-ERA.NET?



For 87 % respondents the project would not have been realised without M-ERA.NET. Only 5 respondents answered that the project would have been realised either within a national/reginal funding or in a EU framework or other transnational funding.

Q22. Will the co-operation in the consortium continue?





In 95% of the reported cases the co-operation in the consortium will continue. Most usually the cooperation will continue outside a funding programme (42%) and in an ERA.NET project (22%). Only 2 respondents answered that there are no plans for further cooperation.

4. Conclusions

General

- The responses to the questionnaire cover **21 of 22 projects** funded in call 2012 giving a good background for assessing the impact
- Most of the beneficiaries (**70%**) reported there have been **no changes** in consortium, budget and/or timeframe during project duration

Innovation results

- Most commonly the results are **new methods, products** and/or **new processes** rather than prototypes, models, equipment or services.
- The tentative time frame for **commercialisation** of the results (year to market) are usually **3-5** and more than **5 years**
- The projects usually started at **TRL level 1-4** and ended at TRL level **4 or 5**. The delta TRL was usually between 2 and 3.
- In total between **12-20 patent** applications and **1-2 licenses** have been submitted; however the majority of the respondents did not submit any patent or licence application.

Scientific results

- Reported scientific results are **creating new knowledge (75 %)** and exploration of existing knowledge (25%).
- The number of publications in peer reviewed scientific journals and the number of oral presentations is relatively high, indicating a **good dissemination** of results and a good scientific level of the projects
- **Significant numbers** of publications are **planned for submission** within one year
- At least **47 master degrees** and **33 PhD** have been achieved as a result of funded projects

Economic effect

- The effects on the institution/company originating from the project is usually **access to new international partners** and/or **access to new know-how**
- Most usually, the research results will be used for **R&D efforts** in the same organisation or company and for **new R&D projects**
- None of respondents answered that the results will not be utilised further.

Transnational effects

- **70%** of the respondents had previous **experience** in transnational projects while 30% are newcomers to transnational cooperation.
- The main added value of M-ERA.NET compared to other transnational funding are **simpler rules and procedures** and more **attractive features to newcomers**
- **87%** of the respondents report that the project would **not been realised** without M-ERA.NET
- **70 % fully agree/agree** on a **good implementation** of the project
- **In 95%** the **co-operation** in the consortium **will continue**. Most usually the cooperation will continue outside a funding program and in an ERA.NET project

Annex: questionnaire

Assessment of funded projects from the joint calls by the previous M-ERA.NET (2012-2016) and from additional joint calls by M-ERA.NET 2.

General Information

- Project acronym
- Project title
- Call year
    - Call topic
- Name of organisation
- Category organisation
    - University
    - Research Institute
    - Company
    - Other
- Category project partner
    - Coordinator
    - Partner
- Country
- Financing agency
- Year project start
- Year project end (expected end)

1. General

- Have there been major changes since the project started (consortium, budget, timeframe etc.)?
    - Y/N
    - if Y please explain

- To which extent have the project objectives been accomplished?
    - To full extent
    - Minor deviation – please explain
    - Major deviation - please explain

- To which extent have the expected results and deliverables been accomplished?
    - To full extent
    - Minor deviation – please explain
    - Major deviation - please explain

2. Results

2.1 Innovation oriented results

- What type of results have you achieved in this M-ERA.NET project (multiple answers possible)?
    - o New or improved product
    - o New or improved method
    - o New or improved model
    - o New or improved process
    - o New or improved service
    - o New or improved equipment
    - o Prototype
    - o Other, please specify

- **Please indicate the technology readiness level (TRL) at project start and project end**?
    - o TRL level project start (1-9)
    - o TRL level project end (1-9)

Technology Readiness Level – definition:

TRL 1. basic principles observed
TRL 2. technology concept formulated
TRL 3. experimental proof of concept
TRL 4. technology validated in lab
TRL 5. technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)
TRL 6. technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)
TRL 7. system prototype demonstration in operational environment
TRL 8. system complete and qualified
TRL 9. actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies; or in space)

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

- Please specify the number of approved patents/patent applications and licenses corresponding to results from the project for your organisation (first autor)
    - o Patent/patent applications 0 1-2 3-4 more than 4
    - o Licenses 0 1-2 3-4 more than 4

Comments:

2.2 Scientific results

- What are the results achieved?
  - Creating of new knowledge
  - Exploration of existing knowledge
  - Other

- Please specify the number of publications in peer reviewed scientific journals corresponding to the results from this project for your organisation (first autor)

	Number				
o Publications accepted and/or published	0	1-2	3-4	5-6	more than 6
o Publications planned for submission within next year	0	1-2	3-4	5-6	more than 6

- Please specify the number of publications in peer reviewed scientific journals corresponding to the results from this project for your organisation (co-autor)

	Number				
o Publications accepted and/or published	0	1-2	3-4	5-6	more than 6
o Publications planned for submission within next year	0	1-2	3-4	5-6	more than 6

- Please specify number of conference proceedings/presentations
  - o 0 1-5 6-10 10-15 more than 15
  - o Other dissemination activity - specify

- How many degrees have been achieved as a result of this project (for your organisation)?
  - o Master degrees 0 1 2 3 5 6 more than 6
  - o Doctoral degrees 0 1 2 3 5 6 more than 6

Comments:

3. Economic effects

- Please indicate the effect(s) on your institution/company originating from this project (multiple answers possible)
  - o Positive effect on turnover in company
  - o New business opportunities
  - o Long term recruitment of staff (permanent or non-permanent)
  - o Access to new know-how
  - o Access to new international partners

- How will the results of the project be used (multiple answers possible)?
  - o For R&D efforts in our own organization/company
  - o For production and business operation in our own company
  - o Other project partners will utilize the results
  - o Parties outside the consortium will utilize the results
  - o For new R&D projects
  - o The results will not be utilized further – please explain
  - o Other , please explain

Comments:

4. Transnational effects

- Please indicate your previous experience in transnational projects (multiple answers possible)
    - o No previous experience
    - o Experience as project coordinator
    - o Experience as project partner

- What is the main added value of M-ERA.NET compared to national funding? (multiple answers possible)
    - o Larger and more ambitious projects
    - o Cooperation with European partners
    - o Access to international knowledge
    - o Cooperation with companies
    - o Other , please specify

- What is the added value of M-ERA.NET compared to other transnational funding e.g. EU framework programme?
    - o Simpler rules and procedures
    - o M-era.NET is more attractive to newcomers
    - o M-era.NET puts more emphasis on the exploitation of the results

- Would the project have been realised without M-ERA.Net?
    - o No
    - o Yes – outside a funding program
    - o Yes, within a national/regional funding program
    - o Yes, in an EU Framework program or other transnational funding

- Experiences regarding implementation of the project
  Scale: 1 agree to full extend – 6 do not agree
    - o All project partners are committed to the project
    - o The consortium is stable during the project implementation
    - o The project`s objectives are realistic (i.e. budget, effort , time)
    - o Project management is effective
    - o Interaction with the national/regional funding agency is supportive during the project implementation
    - o Outcomes will be shared fair among the partners according to their inputs.

- Will the co-operation in the consortium continue?
    - o Yes – outside a funding program
    - o Yes, within a national/regional funding program
    - o Yes, in an ERA.NET project
    - o Yes, in an EU Framework program
    - o No, there are no plans for further co-operation

Comments:

Annex: Call 2012 -list of funded projects

Acronym	Title
APOSEMA	Advanced Nanohybrid Composites and Photonic Materials for Multifunctional Opto-Chemical Sensors
BAC-COAT	Development of bacteria formulations for seed coating and seed production
BIOTERFACE	Design of BIOcompatible and customized inTERs, surFACE and coatings for Intra Ocular Lens (IOLs)
CAPDESIGN	Encapsulation of polymeric healing agents in self-healing concrete: capsule design
CarLa	Ag/Si doped carbon layer for bio-medical application
EnReCom	Encapsulation of Reactive Components in Coatings
FASS	Physically based modelling and simulation of the mechanical behaviour of metallic thin film systems and fine grained surfaces under cyclic loading
GoIMPLANT	Tough, Strong and Resorbable Orthopaedic Implants
Hi2CoRe	High performance properties, for high frequency applications, by combining silver coatings and Rheo cast aluminium
HiDEPO	High deposition rate laser cladding in hydraulic applications
LaminaLion	Conformal layer-by-layer growth of hybrid polymer/inorganic nanolaminates for Li-ion batteries
MACOSYS	Magnetically active anisotropic composite systems
MAGPHOGLAS	New doped boro-phosphate vitreous materials, as nano-powders and nano-structured thin films, with high optical and magnetic properties, for photonics
MATSENS	New materials for electrochemical sensors in microfluidic platforms: Application to molecular recognition
MC2	Multiscale Computational-driven design of novel hard nanostructured Coatings
MOC@SUPCAP	Design of new metallic oxide-carbon hybrid composites for supercapacitors electrodes
NANOCOATIL	High performance nanostructured coatings using ionic liquids based on choline chloride
PCPLASTER	Phase Change Material (PCM) enhanced plaster for upgrading the energy efficiency of contemporary and historic buildings
RADESOL	RAtional DEsign of blends for bulk heterojunction SOLar cells
SurfLenses	Surface modifications to control drug release from therapeutic ophthalmic lenses
VOCSENSOR	Hybrid Materials for Low Cost Volatile Organic Compound Sensor System
XOPTICS	Surface engineering and advanced coatings for the next generation of X-ray diffractive optics

Note: information on the results of the Call 2012 and the funded projects is also available here:
https://m-era.net/joint-calls/joint-call-2012/results-of-2012-170715.pdf
https://m-era.net/joint-calls/joint-call-2012/funded-projects1.pdf
https://www.era-learn.eu/network-information/networks/m-era-net/m-era-net-joint-call-2012