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FINAL REPORT Ex-post and Mid-term Evaluation

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List of Abbreviations

AI	Artificial Intelligence
APRE	Agency for Promotion of European Research
CA	Contracting Authority
CCI	Cross Cutting Issues
CoF	Cities of the Future
D	Deliverable
EBN	European Business Innovation Centers Network
EC	European Commission
ECSEL	Electronic Components and Systems for European Leadership JU
EIC	European Innovation Council
ERA	European Research Area
ERC	European Research Council
EU	European Union
EUD	Delegation of the European Union to Türkiye
FA	Financial Agreement
FP	Framework Programme
H2020	Horizon 2020
HE	Horizon Europe
ICT	Information and Communications Technology
IDI	International Development Ireland
IMI	Innovative Medicine Initiative
IPR	Intellectual Property Rights
JPI	Joint Programming Initiative
KE	Key Expert
IMS	Information Multipliers System
IPA	Instrument for Pre-accession Assistance
MoIT	Ministry of Industry and Technology
MSCA	Marie Skłodowska-Curie Actions
NAC	National Aid Coordinator

NCO	National Coordination Office
NCP	National Contact Point
NIS	National Innovation System
NKE	Non-Key Expert
OP	Operational Programme
PCM	Project Cycle Management
PMU	Project Management Unit
PO	Project Officer
R&D	Research and Development
RTD	Research and Technological Development
QA	Quality Assurance
SC	Steering Committee
SCST	Supreme Council of Science and Technology
SMEs	Small and Medium Sized Enterprises
SMEI	SME Instrument
SPO	Senior Programme Officer
SRER	Senior Representative of the End Recipient of Assistance
TA	Technical Assistance
TARAL	Turkish Research Area
TAT	Technical Assistance Team
TC	Training Centre
TEYDEB	Technology and Innovation Funding Programmes Directorate
ToR	Terms of Reference
TTO	Technology Transfer Office
TUBITAK	The Scientific and Technological Research Council of Türkiye
ZSI	The Centre for Social Innovation
AC	Accession Partnership

Table of Contents

1	EXECUTIVE SUMMARY	6
2	INTRODUCTION	11
3	ANSWERED QUESTIONS/FINDINGS.....	17
3.1	Policy Context and Statistical Snapshot	17
3.2	Results	23
3.3	Relevance	28
3.4	Efficiency	29
3.5	Impact	32
3.6	Sustainability	34
4	VISIBILITY	36
5	OVERALL ASSESSMENT EVALUATION	37
6	CONCLUSIONS AND RECOMMENDATIONS.....	39
6.1	Conclusions	39
6.1.1	Input from the Focus Groups.....	40
6.1.2	Input from the Interviews.....	41
6.2	Recommendations	41
6.2.1	EC Türkiye 2022 Report	42
6.2.2	Input from the Focus Group Meetings Report	42
6.2.3	Input from Interviews	45
7	ANNEXES TO THE REPORT	47
7.1	Consultants	47

Final Report: Ex-post and Mid-term Evaluation

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1 Executive Summary

Ex-post evaluation of the implemented project ‘Turkey (Türkiye) in Horizon 2020 – Phase I’ and mid-term evaluation of the ongoing ‘Turkey (Türkiye) in Horizon 2020 – Phase II’ project were carried out to assess the contribution of these two Technical Assistance (TA) projects in providing appropriate solutions for issues related with Turkish participants’ participation to H2020/HE programmes and developing local capacities for the production of tangible results to achieve improved success rates by Turkish participants in H2020/HE programmes.

This evaluation aimed at providing evidence to the respective project stakeholders about the success of the projects with emphasis on the impact of these TA projects on the Turkish Research Area (TARAL). This study was expected to:

- measure the impact of TH2020 projects on increasing the capacity of Turkish participants in obtaining funds from the H2020/HE Programmes;
- tailor the implementation of the remaining part of the ongoing project (‘Phase II’) to reach enhanced impact;
- pave the path for defining a scope and content of any future similar action.

The evaluation was performed according to the methodology of the European Commission’s (EC) Project Cycle Management (PCM) Guidelines. Referred methodology is reflected in the structure of Chapter 3 of the Report, where findings from the evaluation study are presented in subchapters on the policy context, and statistical snapshot of Türkiye’s participation in H2020 in relation to the TH2020 Phase I and Phase II projects, followed by measurable results of the TH2020 projects based on the Final Report from TH2020 Phase I and the most recent TH2020 Phase II Progress Report, and then 5 subchapters presenting an assessment of the TH2020 projects against evaluation criteria which are relevance, efficiency, effectiveness, impact and sustainability. In Chapter 4, a brief assessment of visibility activities under TH2020 projects is presented.

The overall assessment is presented in Chapter 5 and followed by a collection of key conclusions and detailed observations from the stakeholders, as well as Key Experts’ recommendations followed by a summary of suggestions from the stakeholders on strategic, program and operational levels in respective subchapters of Chapter 6. There is a detailed description of

methodologies followed and results presented in Annexes from the desk research, focus groups, and the survey.

On the strategic level, the impact assessment refers to the most recent European Commission Türkiye Report 2022 which states that “the implementation of Türkiye’s action plan to boost the national research and innovation capacity contributed very positively to increase Türkiye’s performance in the last period of Horizon 2020.” Moreover, it refers that “Türkiye has made significant efforts to raise awareness and increase dissemination of the programme in order to expand its participation. The first Horizon Europe results indicated the continuation of the strong and positive trend of Türkiye’s performance.” In that context, it is important to underline that two TA projects under evaluation were core activities for the implementation of the action plan and delivered such a positive impact.

Table 2 displays Türkiye’s overall performance in the Horizon 2020 Programme and its annual breakdown. Comparing the total national contribution of Türkiye to Horizon 2020 at the level of almost 265,5 mln EUR (IPA contribution excluded and rebate), with the total EC contribution received by Turkish participants at the level of almost 279 mln EURO, it is clear that **Türkiye received a net 13,5 mln EUR**. It should be also expressed, that **each EUR invested in the Horizon 2020 created additional 1 EUR 5 cents for TARAL**. It is also worth to mention that although the final success rate of Turkish applications is well below 11.9%¹, which is the average success rate for applications from all countries participating in the Horizon 2020, in some years the success rate of Turkish applications almost reached that level.

The analysis of Key Performance Indicators (KPIs) results of Phase I and Phase II projects, summarized in Section 3.2, proves that Phase I has reached almost all its targets, while Phase II is well underway to exceed the targets. The level of achievement for Phase II is significantly in line with the set targets by KPIs at the moment of evaluation, and (moreover) according to the planning which is reported in the most recent Progress Report 6, the target values by the indicators will be fully achieved by the end of the project².

In Focus Group meetings, **the overall assessment of activities under TH2020 Phase I and II was positive or very positive. A significant role of The Scientific and Technological Research Council of Türkiye (TÜBİTAK) in TH2020 was clearly underlined. All TH2020 Phase I and Phase II stakeholders noticed the complementarity between the TH2020 and other TÜBİTAK programmes, and the important intermediary role of TÜBİTAK between Turkish R&D system and the EU/EC.** They also appreciated the new version of TÜBİTAK website and the constructive role of the Information Multipliers System (IMS) network. However, respondents expect more contacts (training, meetings, consultations) with practitioners, who poses their own experience in proposal

¹ The reference comes from the Horizon Dashboard, mountainously updated source of the most recent statistics for Framework Programs. Please check <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/horizon-dashboard>.

² As of March 2023, Phase II exceeded the KPIs set to measure the project achievements.

drafting, participation in consortia etc. All activities where new contacts, people, companies could be met, and links created were recognized as considerable.

From the perspective of the SMEs, among the particularly useful skills provided by the projects, were practical information on how to collect and use market information in the calls, being very useful for the proposal drafting. Also, the support for the financial part of the proposal was considered very effective and helpful.

Good quality of trainers was underlined and support in cascading knowledge absorbed during IMS training events down to other units, teams, or persons within organizations. Some interviewees recognized participation in the IMS and TH2020 activities as fundamental for their organizations. They recognized close cooperation between the IMS and the National Contact Points (NCPs) as one of the very important elements.

Positive overall assessment of the evaluated projects by participants of the Focus Groups was confirmed by the reactions of respondents to the Survey, but with lower than generally observed level of satisfaction for specific elements presented in previous subchapters. For all activities (except one³), more than half of the respondents “Agree” or “Strongly Agree” that the activity was completely satisfying and useful.

All activities of Phase I received more than half of the agreement (“Agree” or “Strongly Agree”) on the statement that the activity was completely satisfying and useful. More than half of the activities of Phase I showed more than 60% of respondents to agree or fully agree with the statement above as well, with the top activities (General and Introductory Trainings) ranking as high as 71.7%.

All activities of Phase II (except one) received more than half of the agreement (“Agree” or “Strongly Agree”) on the statement that the activity was completely satisfying and useful. More than half of the activities of Phase II showed more than 60% of respondents to agree or fully agree with the statement above as well, with the top activities (Info Day on Horizon Europe Programme) ranking as high as 75,4%.

Wrapping up all the above-mentioned observations and considering experts’ experiences, the overall assessment of the TH2020 Phase I and Phase II was witnessed from various perspectives: strategic, policy, project results and stakeholder perception, as well as in most of the evaluation criteria, was positive. It is important to mention that due to the methodological limitations and lack of well-defined project indicators for assessment of impact and sustainability, the evaluation to a large extent was based on the assessment of the stakeholders’ perception which was very positive.

³ Only ‘International study visits (Phase II)’ received 48.9% of respondents agreeing with its satisfaction and usefulness.

From many observations provided by the stakeholders and results of different types of analysis presented, experts have drawn the following key conclusions from evaluation of the TH2020 Phase I and Phase II projects:

- Both projects' concepts were well defined and linked with the Türkiye national R&D&I policies. They fulfilled assumptions and plans developed within the ERA Roadmap 2019, which created a very detailed strategy for strengthening TARAL and participation in the EU programmes. TH2020 projects built necessary links and strengthened the visibility and presence of TARAL in the European Research Area.
- Strengthening Türkiye's participation in H2020 through TH2020 projects' activities resulted in significant improvement in the number and quality of projects from Türkiye, which is visible in statistics of participation over the time and in positive financial performance.
- But it is equally important to observe the number of improvements in the national R&D ecosystem, from changes in the policies, on the level of new programs, new or improved mechanisms/regulations, and the most applaud case is increased capacity of different institutions, in particular the TÜBİTAK. In the mid and long term, strengthened and better integration with the EU national R&D&I ecosystem could be the most vital effect of the TH2020 programs.
- At the moment of present evaluation, the measurable results of Phase I and Phase II projects prove that Phase I has reached almost all its targets (going beyond target at some points), while Phase II is well underway to reach the targets.
- Besides the measurable impacts of TH2020 projects, perceptions of their results in Türkiye research and innovation communities are very positive. The majority of participants in TH2020 activities are either satisfied or very satisfied with the quality, results and their personal achievements related to it.
- There is a high agreement among TH2020 stakeholders that similar activities should be continued, but with some changes listed in the recommendations.

The above listed general experts' conclusions are supported by a number of more detailed observations from stakeholders presented in the following two subchapters.

From many observations provided by stakeholders and assessment of different aspects of TH2020 Phase I and Phase II projects, the experts have drawn the following key recommendations for further similar activity, fully described in section 6.2 and here summarized as follows:

- The R&D&I community is strongly advocating actions to favor and stimulate the integration of TARAL with the ERA, by opening the TARAL for the EU researchers, supporting both the experienced Türkiye research teams and companies as well as the novice actors. A differentiated approach is needed in order to target a diverse audience of potential participants, varying with their past experiences in the EU programs and organizational/management skills.
- This should be achieved through a significant increase of national expenditures for R&D and supported by a reinforcement of Türkiye presence in the policy and development structures and evaluation bodies.

- Mechanisms for an increased and high-quality presence in the ERA-targeted national programs could be *participation boosters* (e.g., step-in instruments to support participation in Horizon Europe (HE)) and *recipients' enablers* (e.g., top-up instruments that support the actual recipients in HE).
- A stronger national ownership of the support system, such as future NCP/IMS networks, is needed in order to ensure a persistent and dependable foundation for information distribution and participation in the EU programmes, well integrated with nationwide support.

These experts' recommendations are supported by a number of more detailed observations from policy documents and stakeholders presented in the following three subchapters.

2 Introduction

This study is dedicated to the implementation of an ex-post evaluation of the already implemented project: ‘Turkey/Türkiye in Horizon 2020 – Phase I’ and of a mid-term evaluation of the ongoing ‘Turkey/Türkiye in Horizon 2020 – Phase II’ project. **The key question was to assess the contribution of the two TA projects** in providing appropriate solutions for issues related with Turkish participants’ participation to H2020/HE programmes and developing local capacities for the production of tangible results to achieve improved success rates by Turkish participants in H2020/HE programmes.

Although the key (primary) stakeholder of the evaluation is TÜBİTAK, a number of other stakeholders e.g., members of the IMS, academia (Universities, Research Centres, Technology Transfer Offices (TTOs), individual researchers), industry, entrepreneurs (in particular Small and Medium Sized Enterprises (SMEs)) and Non-Governmental Organisations (NGOs) might be interested in the results of the evaluation.

The aim of this evaluation is to provide evidence to the respective stakeholders about the success of the projects with an emphasis on the impact the two projects have on the Turkish Research Area (TARAL). **This evaluation was expected to:**

- measure the impact of TH2020 projects on increasing the capacity of Turkish participants in obtaining funds from the H2020/HE Programmes;
- orient the implementation of the second part of the ongoing project (‘Phase II’) for an enhanced impact;
- pave the way for defining the scope and content of any future similar action.

The evaluation was performed according to the methodology of the EC’s Project Cycle Management Guidelines⁴, addressing in particular the following Evaluation Criteria:

- **Relevance:** With a focus if the projects a) were supportive for national policies such as Accession Partnership (AC), National Programme of Türkiye for the Adoption of the EU Acquis (NPAA), National Development Plan, etc.; b) were relevant to real problems of the target groups/beneficiaries.
- **Efficiency:** How well inputs/means have been converted into activities, in terms of quality, quantity, time and the quality of the results achieved.
- **Effectiveness:** Assessment of the contribution made by the projects’ results on the achievement of the projects’ purposes (with reference to Assumptions). Specific emphasis will be given to the benefits acquired by the target groups/beneficiaries.
- **Impact:** The effect of the projects on its wider environment, and its contribution to the wider policy objectives (as summarized in the projects’ Overall Objectives).

⁴ https://international-partnerships.ec.europa.eu/system/files/2020-09/methodology-aid-delivery-methods-project-cycle-management-200403_en.pdf

- **Sustainability:** To which degree the benefits will continue to flow after the end of the projects (reference to ownership, policy support, economic factors, socio-cultural aspects, institutional and management capacity).

The evaluation activity was implemented by two Senior Non-key Experts – Evaluation Experts: Mr. Vittorio Scarano and Mr. Krzysztof Gulda.

Short Overview of Projects Under Evaluation

Overall objectives, purposes and expected results of two projects under evaluation ‘Türkiye in Horizon 2020 – Phase I’ and the ‘Türkiye in Horizon 2020 – Phase II’ are summarised in a table below.

Türkiye in Horizon 2020 – Phase I	Türkiye in Horizon 2020 – Phase II
<p>Overall Objective The overall project objective is to strengthen the capacity of Türkiye in Science, Technology and Innovation and facilitate the integration of Turkish Research Area to European Research Area through increasing its participation to Horizon 2020.</p>	<p>Overall Objective To strengthen Türkiye’s capacity in Science, Technology, and Innovation / facilitate integration of TARAL to European Research Area (ERA) through increasing its participation to Horizon 2020 and Horizon Europe.</p>
<p>Project Purposes</p> <ul style="list-style-type: none"> • Maintaining the knowledge diffusion established in the previous projects and raising awareness on Horizon 2020 via a variety of training. • Providing the Turkish Research Area with networking events and activities. • Financially supporting Turkish researchers for networking events, project preparation meetings or lobbying activities. • Preparing and printing the necessary documents that will guide the Turkish Researchers. • Developing online tools to disseminate the necessary relevant information. 	<p>Project Purposes</p> <ul style="list-style-type: none"> • Maintaining the knowledge diffusion established in the previous project. • Raising awareness on Horizon2020 via a variety of trainings. • Providing the Turkish Research Area with networking events, activities, project documents and online tools through dissemination of the information. • Knowledge diffusion on Horizon Europe, the next Framework Programme.
<p>Results</p> <p>Result 1: Capacity building of the National Coordination System is achieved through increasing the awareness of TARAL and providing knowledge diffusion on Horizon 2020 in Türkiye. Stimulation of overall Turkish</p>	<p>Results</p> <p>Result 1: Level of awareness and attractiveness of the H2020 and Framework Programmes increased through a fully efficient Information Multipliers System, training and project writing camps and SME support package.</p>

<p>participation in Horizon 2020 is realized by increasing the participation and success rate.</p> <p><u>Result 2:</u> Organizational and financial supports are provided to TARAL for Networking Activities which are highly important for increasing TARAL stakeholders' participation to international R&D projects. Through this, rate of participation and success in Horizon 2020 of Türkiye are to be increased.</p> <p><u>Result 3:</u> Sustainability and dissemination of project results are achieved through preparation and printing of project documents and web site under Activity 3.</p>	<p><u>Result 2:</u> Rate of participation and success in Horizon 2020 of Türkiye increased from 2.000 to 3.500 applications through 2 International Brokerage Events, annually organised award ceremonies, study visits and national advisory group meetings.</p> <p><u>Result 3:</u> Knowledge Diffusion on Horizon Europe realised via launch conference and info-days.</p> <p><u>Result 4:</u> Sustainability and dissemination of project results achieved through preparation and printing of project documents and web site.</p>
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The justifications for the two projects under evaluation came from the Turkish experience of the participation as an associated country in the Framework Programme (FP) 6 and Framework Programme (FP) 7. Initially, TÜBİTAK was awarded the EU grant 'Turkey in FP7', which was followed by 'Turkey in Horizon 2020'(Phase I), which is at present under ex-post evaluation. Although Türkiye has recorded some progress in the FPs participation, the previous lessons learned also referred to the need to raise more awareness about the FP, and a stronger and more sustainable networking between TARAL and ERA. The lack of expected success has provided a baseline for the current project 'Türkiye in Horizon 2020 – Phase II', which is at present under mid-term evaluation.

To strengthen and align TARAL and ERA better, 'TH2020' projects were programmed and funded through the Competitiveness and Innovation Sector Operational Programme (CISOP) under the Instrument for Pre-Accession Assistance (IPA), which concentrates on SMEs operating in the manufacturing sector, tourism, creative industries, social innovation, research and development, technology transfer and commercialisation. The 'Turkey in Horizon 2020 – Phase II' implements also Objective 1.5 on Increasing participation in H2020 Programme of the 'Turkish National Roadmap on European Research Area 2019'.

Evaluation Methodology

According to the Annex III of the Ex-post and Mid-term Evaluation Activity's Terms of Reference (ToR), the evaluation should be centered on *the beneficiaries' perceptions of benefits received* and therefore on how the beneficiaries perceive the machinery associated with the EU Research projects. Therefore, our evaluation was focused, mainly, on *outsiders (beneficiaries)* rather than *insiders*.

We based our approach on a *counterfactual assessment* i.e., the assessment of what the situation would have been if the projects were not introduced with respect to the current situation with the projects terminated (Phase I) / terminating (Phase II). The comparison was undertaken with the

“projects-off” scenario, i.e., one hypothetical scenario where the projects did not take place and actual real situation in order to determine the net effects of the projects’ intervention.

Therefore, the underlying question of our methodology was the counterfactual statement: *“What would have happened if the projects were not conducted?”*. Such approach addressed the request of the ToR: *“A key methodological issue is whether observed or reported change can be partially or entirely attributed to the project/programme, or how far the project/programme has contributed to such change. The Consultant should identify attribution/contribution problems where relevant and carry out its analyses accordingly.”*

As requested by the ToR, the evaluation started with a careful assessment of projects against 5 Evaluation Criteria (relevance, efficiency, effectiveness, impact and sustainability) based on in-depth desk research (review) of documents listed in the ToR *Annex 1– Key documents* under the category *“Relevant documentation from End Recipient of Assistance (ERA) and the Contracting Authority (CA)”*:

- *Accession Partnership (AC);*
- *National Programme of Türkiye for the Adoption of the EU Acquis (NPAA);*
- *National Development Plan.*

Additionally, others related to the EU accession process e.g., EC Enlargement Strategy Papers and EC Türkiye Reports, as well as the Turkish ERA Roadmap from 2019 have been reviewed. The detailed result of the review was summarized in the Evaluation Activity Inception Report and Excel files attached to it (collection of all fragments related to R&D activities in the context of participation in the EU Programmes with the assessment of its importance for the evaluation and assessment of the relevance of Projects under evaluation).

Given our understanding of projects’ results along with 5 Evaluation Criteria, we designed and implemented a **mixed approach** based on three phases of mixed (qualitative/quantitative) and qualitative methods. **Mixed methods** combined quantitative methods based on numerical measurement of project effects and qualitative methods. Those methods are well-suited for the projects to be evaluated as they apply a deductive analytical approach to data samples. However, it must be noted that quantitative assessment was not possible (e.g., impact) for all criteria due to a lack of impact indicators defined for the evaluated projects. There were also not defined baseline values for the majority of indicators, so quantitative measurement of progress was not always possible.

In that context, qualitative methods are particularly useful as they are well suited when the interest exists in explaining **causal patterns, impacts on different groups or subtle processes in complex contexts**, such as scientific research, where many different factors, geography, professional skills, economic structures, social groups, institutional arrangements, employment patterns, past development etc. can only be described in qualitative terms.

Considering above-mentioned conditions, further evaluation was conducted throughout three phases shortly presented below. The phases were presented in detail in the Inception Report and relevant thematic reports that are complementary to the Final Report⁵.

Phase 1-Focus Groups (qualitative method): Focus groups consisted of a small number of individuals brought together to discuss a topic of interest. In our cases, the Focus Groups covered initially the involved stakeholders and beneficiaries of the project activities, to explore the impact and influence that the projects' results obtained in their context.

There were meetings organised with 12 different Focus Groups composed of 60 (out of total number of 112 invited) participants representing a similar type of organization or a similar activity within the evaluated projects. The Focus Group meetings were conducted and structured according to the previously agreed scenario (a limited set of questions/topics proposed for discussion relevant to the assessment of 5 Evaluation Criteria) and lasted 60 – 90 minutes each. It secured comparability of results between two experts and unified outputs from the meetings. Individual Report from each Focus Group meeting was prepared, which fed the Final Report. Integrated conclusions and recommendations were delivered for the Focus Group meetings. The Final Report for the Focus Group meetings is presented as Annex 7.4 to this Final Report.

Phase 2-Survey (mixed method): The survey employed a mixed method (qualitative and quantitative) applying a deductive analytical approach, as the information was gathered from the participating entities for the purpose of constructing quantitative descriptors of the attributes of the larger population of which the entities were members. However, when interpreting the results of the survey, it has to be noted, that quantification of responses is based on individual answers to the survey, which represents the individual, subjective perception of issues under the evaluation. The survey was organized into 9 sections built around 5 Evaluation Criteria, specific activities feedback, and also an open question at the end, for a total of 33 questions. The survey was anonymous, and the **target time** required was around 25-30 minutes.

The Survey was distributed to all types of beneficiaries that participated in the activities of the evaluated projects. Invitation to the survey was sent to 534 beneficiaries, also including persons who were engaged in the Focus Groups. 132 responses were received in total. Detailed presentation of the Survey Questionnaire and analysis of received responses is presented within the Survey & Focus Groups Report.⁶

Phase 3-Interviews (qualitative method): The purpose of the individual interviews was twofold. The first was a more in-depth exploration of some topics collected through the Focus Group meetings, while the second was receiving feedback on the early draft of the Final Report from

⁵ Inception Report and referred annexes of the Final Report cannot be published according to the Personal Data Protection Law (KVKK-Law No. 6698), in addition to limitations the Contractor has with regards to sharing project related documentation publicly.

⁶ The mentioned reports are internal annexes of the Final Evaluation Report. These annexes cannot be published according to the Personal Data Protection Law (KVKK-Law No. 6698)."

evaluation, in particular on formulated conclusions and recommendations. The second purpose was to use an opportunity given by the individual interviews for verification and validation of the evaluators' work.

The individual interviews were conducted with 10 carefully selected persons from the Ministry of Industry and Technology (MoIT) and TÜBİTAK, including National Contact Points (NCPs) and Operation Coordination Unit (OCU) members, who were implementing the projects under the evaluation. Individual interviews lasted around 60 minutes each. Due to the unavailability of some interviewees, written inputs were received instead.

3 Answered Questions/Findings

This part of the Final Report from the evaluation of the ‘Turkey in Horizon 2020 – Phase I’ and ‘Turkey in Horizon 2020 – Phase II’ projects start with introducing the policy and programmes context with statistical snapshot of Türkiye’s investments and results of participation in the Horizon 2020 Programme. It is followed by a detailed summary of findings organised around 5 Evaluation Criteria: relevance, effectiveness, efficiency, impact and sustainability. Following subchapters summarizes findings from all components of the performed evaluation: desk research in the Inception Phase, as well as Focus Groups, Survey and Individual interviews.

3.1 Policy Context and Statistical Snapshot

According to the EC Türkiye 2020 Report, Türkiye’s preparations for integration with the European Union in the area of science and research are well advanced. The R&D sector in Türkiye is gaining acceleration in many aspects. The Science, Technology and Innovation Policies Council (STIPC) has developed the “National Science, Technology and Innovation Strategy and Action Plan”, which was presented to the Ministers, Vice Ministers and senior representatives of NGOs via a high-level consultation meeting in September 2019. The plan introduces a novel approach to determining socio-economic targets for STI strategies. The expected outputs and short-term and medium/long-term strategies are determined thereafter. National Science, Technology and Innovation Strategy and Action Plan puts forth the policy priorities, strategic objectives and performance indicators for the national STI ecosystem.

In the R&D sector, the latest statistical data from “Research and Development Activities Survey, 2019” of Turkish Statistical Institute (TUIK) indicates the following: Gross domestic expenditure on research and development in Türkiye increased by 7 billion 420 million TL compared to the previous year and reached to 45 billion 954 million TL in 2019 which corresponds to approximately 16% increase. While gross domestic expenditure on research and development (GERD) in Gross Domestic Product (GDP) was 1.03% in 2018, it became 1.06% in 2019. The leading sector in R&D expenditure was financial and non-financial corporations in 2019. The share of financial and non-financial corporation's R&D expenditures in total R&D expenditure reached 64.2%. This sector was followed by higher education at 29.2% and general government including private non-profit at 6.6%, respectively. Financial and non-financial corporations have become the first financier. 56.3% of R&D expenditure was financed by financial and non-financial corporations in 2019. 29.4% of R&D expenditure was financed by general government, while 12.8% of R&D expenditure was financed by higher education and 1.5% of R&D expenditure was financed by foreign funds and 0.02% of R&D expenditure was financed by other national sources. The total number of full-time equivalent (FTE) R&D personnel was 182,847 in 2019. The annual increase in FTE R&D personnel was 6.2% compared to the previous year. Regarding FTE R&D personnel distribution by sectors, 62.9% was employed in financial and non-financial corporations, 32.3% was employed in higher education and 4.9% was employed in general government, including private non-profit as well in

2019. The total number of FTE female R&D personnel was 58,224 which constitutes 31.8% of total R&D personnel in 2019. The ratio of female R&D personnel in financial and non-financial corporations was 25.7%. This was followed by general government at 28.5% and higher education at 44.4%.

Considering the patent statistics of Türkiye, the total patents granted has reached 13,017 in 2020, marking a 5.2% decrease with respect to the previous year. The foreign patents granted are 10,803, which corresponds to approximately a 7,80% decrease with respect to previous year.

Convergence to ERA Priorities, Innovation Union Commitments and increasing participation in H2020 are and will be of high priority in research and innovation agenda within the context of the new momentum in research and innovation in Türkiye.

National mission-oriented call programmes are conceptualized to provide synergy with Horizon 2020 calls. Currently, national mission-oriented calls are matching by approximately 64% with Horizon 2020 calls. In this regard, a considerable amount of national budget is also allocated for supporting national stakeholders in public-public (such as ERA-NET/EJP COFUND projects, Article 185 Initiatives) and public-private partnerships (such as in ECSEL JU) launched under the Horizon 2020 Programme. The number of stakeholders in the call of ECSEL JU was doubled in 2019 and the number of selected proposals with Turkish stakeholders on ECSEL focus areas, which are also overlapping Türkiye's national priorities on the Information, and Communication area were multiplied as well. TÜBİTAK's current national financial commitment to the Article 185 initiative 'Partnership for Research and Innovation in the Mediterranean Area' (PRIMA Programme) is 5 million € for the first 5 years of the Programme. Due to the high interest from TARAL in the Programme, this figure is expected to be increased. According to the results of the 2019 Calls, a total of 7 projects involving partners from Türkiye have been funded with a total budget of 1,579,186 € in Section 1. In Section 2, a total of 10 projects involving partners from Türkiye have been funded with a total budget of 1,015,602 €. Furthermore, Türkiye is currently the first and only Mediterranean Partner Country (MPC) to ever have a project as coordinator in Section 1 of the Programme. Türkiye is also a project coordinator in Section 2.

As one of the founding members of EUREKA, Türkiye constantly increases its effectiveness on the platform since 1985. In the platform where the public-private partnership is supported with a bottom-up approach, Turkish partners have participated in 181 projects with a total project cost of 131M € in the past five years. During the same period, Türkiye became the top 9th country out of 49 countries in the number of supported projects in all of the EUREKA instruments (Network projects, Eurostars, Clusters, Globalstars).

TÜBİTAK continues its efforts to encourage national participation in Eurostars calls by organizing info days and launching promotional calls. As is known, Eurostars is a joint programme between EUREKA and the European Commission, co-funded from the national budgets of 36 Eurostars Participating States and Partner Countries and by the European Union through Horizon 2020. In the 2014-2020 period, it has a total public budget of €1.14 billion. TÜBİTAK was funding the Turkish participants (SMEs and large companies) joining Eurostars projects with a commitment of 28 million Euros for 7 years of the whole programme.

The following **Table 1** summarizes Türkiye's overall contribution to Horizon 2020 under the Agreement between the EU and the Republic of Türkiye on the "Participation of Republic of Türkiye to Horizon 2020 Programme" and its annual breakdown. For the 2020 financial year, the correction factor applicable to the financial contribution of the Republic of Türkiye, under the Agreement between the EU and the Republic of Türkiye on the "Participation of Republic of Türkiye to Horizon 2020 Programme", was amended to level 0. Türkiye has requested that the budget remaining from the Horizon 2020 financial contribution to be used for increasing the research and innovation capacity of the Turkish Research Area (TARAL) and strengthening its integration into the European Research Area. An Action Plan for the REBATE, describing how Turkey is planning to use the REBATE budget, was prepared and officially submitted to the EC. The implementation of the Action Plan for the REBATE is regularly monitored through meetings organized with the EC.

Table 2 displays Türkiye's overall performance in the Horizon 2020 Programme and its annual breakdown. Comparing the total national contribution of Türkiye to Horizon 2020 at the level of almost 265,5 mln EUR (IPA contribution excluded and REBATE), with total EC contribution received by Turkish participants at the level of almost 279 mln EUR, it is clear that **Türkiye received a net 13,5 mln EUR**. It could be also expressed, that **each EUR invested in the Horizon 2020 created additional 1 EUR 5 CENTS for TARAL**. It is also worth to mention that although the final success rate of Turkish applications is well below 11.9%⁷ which is the average success rate for applications from all countries participating in the Horizon 2020, in some years the success rate of Turkish applications almost reached that level.

As an interesting observation, summary statistics of Türkiye's participation in Horizon 2020 is visualised paying the attention to the implementation start dates of Türkiye in Horizon 2020 Phase I and Phase II as well as the pandemic and was prepared and illustrated in Figure 1 and Figure 2. It was observed that there is no visible reaction to the start and implementation of the TH2020 Phase I on the number of project applications and the number of applicants, while a very clear reaction can be observed for the implementation of the TH2020 Phase II. Moreover, there is a clearly visible impact of the TH2020 Phase I and Phase II on the number of granted projects and the number of participants in the granted projects.

These observations could be interpreted as: **the TH2020 Phase I did not have a measurable effect in stimulating new participants and interest in the participation in Horizon 2020 measured by number of applications and applicants, but there is a significant effect on the quality of applications measured by a growing number of granted projects and fostering cooperation between Turkish partners in the preparation of applications measured by a growing number of participants in successful applications**. This observation is confirmed by a relatively high success rate in the years 2016–2019. For the TH2020 Phase II, pattern observed for Phase I is not fully confirmed. Visualised data could be interpreted as TH2020 Phase II influenced positively all

⁷ The reference comes from the Horizon Dashboard, mountainously updated source of the most recent statistics for Framework Programs. Please check <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/horizon-dashboard>.

measured parameters, which means that **TH2020 Phase II was able to attract more newcomers to the Horizon 2020, which is expressed to be a growing number of applicants and applications, while continuing its effects on quality measured by growing number of granted projects and fostering cooperation between the Turkish partners in preparation of applications measured by growing number of participants in successful applications.** In that context, the lower success rate in the year 2020 could be interpreted as an effect of faster growth in interest in Horizon 2020, than in gaining quality - proposals.

Table 1. Türkiye contribution to the Horizon 2020 Programme under the Agreement between the EU and the Republic of Türkiye

	2014	2015	2016	2017	2018	2019	2020	Total
Total Financial Contribution of Türkiye	€52,213,581.00	€54,864,555.66	€55,155,397.22	€60,143,554.07	€65,839,375.13	€71,605,041.74	€ (272,885.52)	€359,548,619.30
IPA Contribution	€8,143,189.00	€15,277,624.00	€15,087,883.00	€17,000,000.00	€18,500,864.41	€20,003,391.00	€ -	€94,012,951.41
National Financial Contribution of Türkiye (IPA contribution included)	€44,070,392.00	€39,586,931.66	€40,067,514.22	€43,143,554.07	€47,338,510.72	€51,601,650.74	€ (272,885.52)	€265,535,667.89

Table 2. Summary of Türkiye performance in the Horizon 2020 Programme

Year	Number of Project Applications	Number of Applicants	Number of Granted Projects	Number of Participants	EC Contribution	EC Net Contribution	Success Rate	Share of the total H2020 budget
2014	882	1,074	101	138	€ 24,724,603.10	€ 24,784,278.10	11.45%	0.30%
2015	1,224	1,587	102	129	€ 33,078,592.20	€ 33,131,404.70	8.33%	0.39%
2016	1,036	1,334	108	144	€ 29,739,177.15	€ 29,874,939.65	10.42%	0.34%
2017	1,124	1,400	117	174	€ 39,543,928.07	€ 39,709,418.07	10.41%	0.42%
2018	963	1,288	109	175	€ 26,443,153.59	€ 26,600,210.47	11.32%	0.27%
2019	1,285	1,712	129	215	€ 55,205,209.43	€ 54,771,071.24	10.04%	0.48%
2020	1,894	3,009	159	237	€ 69,886,115.29	€ 69,812,481.04	8.39%	0.58%
TOTAL	8,408	11,404	825	1,212	€ 278,620,778.83	€ 278,683,803.27	9.81%	0.41%

Figure 1. Graphical Visualization of Türkiye Participation Statistics

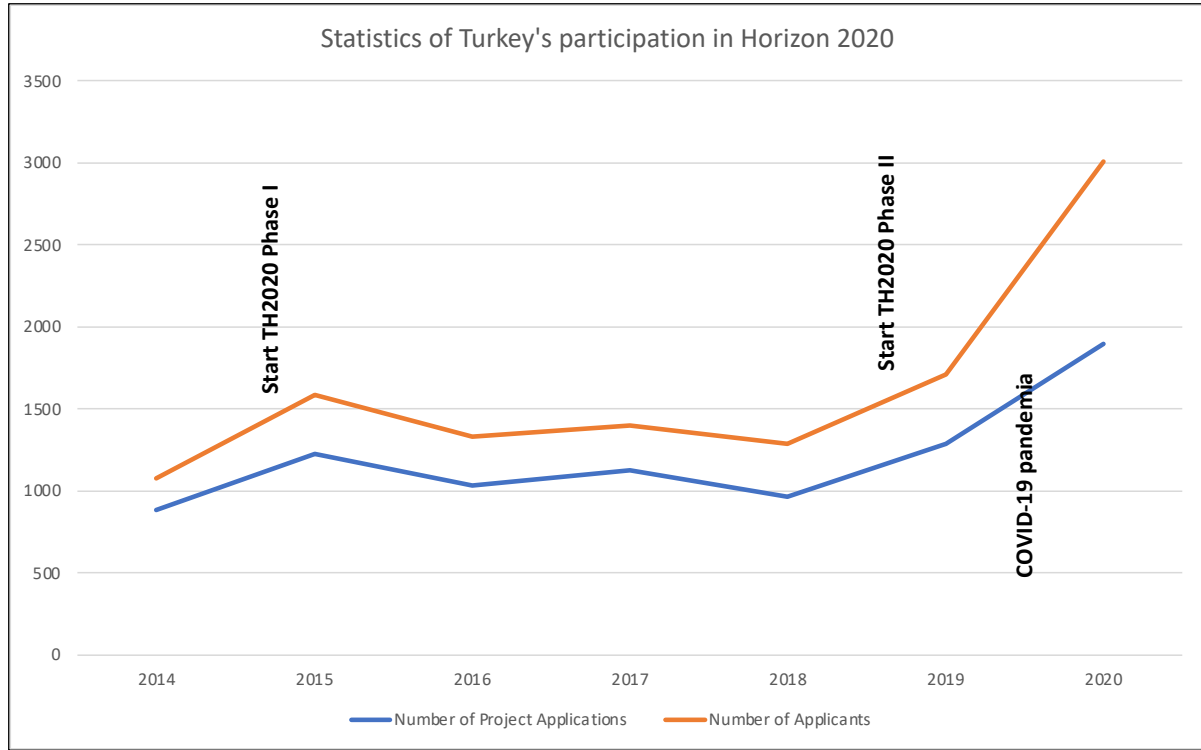
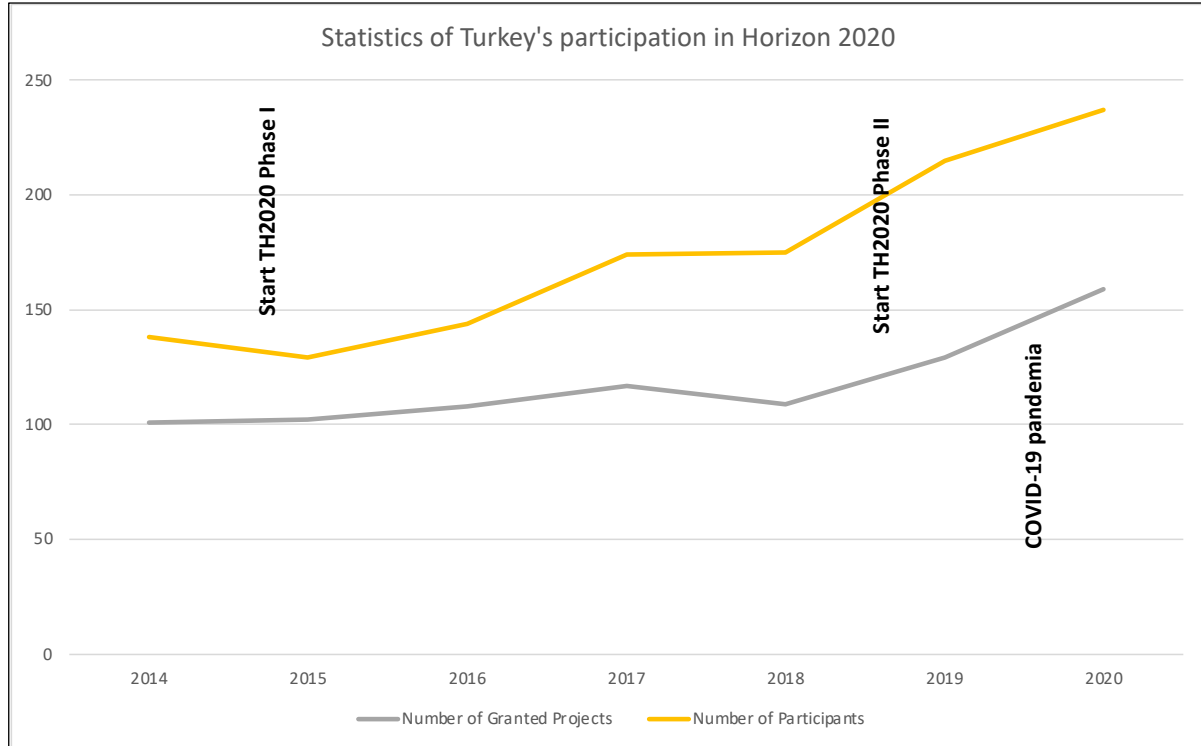


Figure 2. Graphical Visualization of Türkiye Participation Statistics



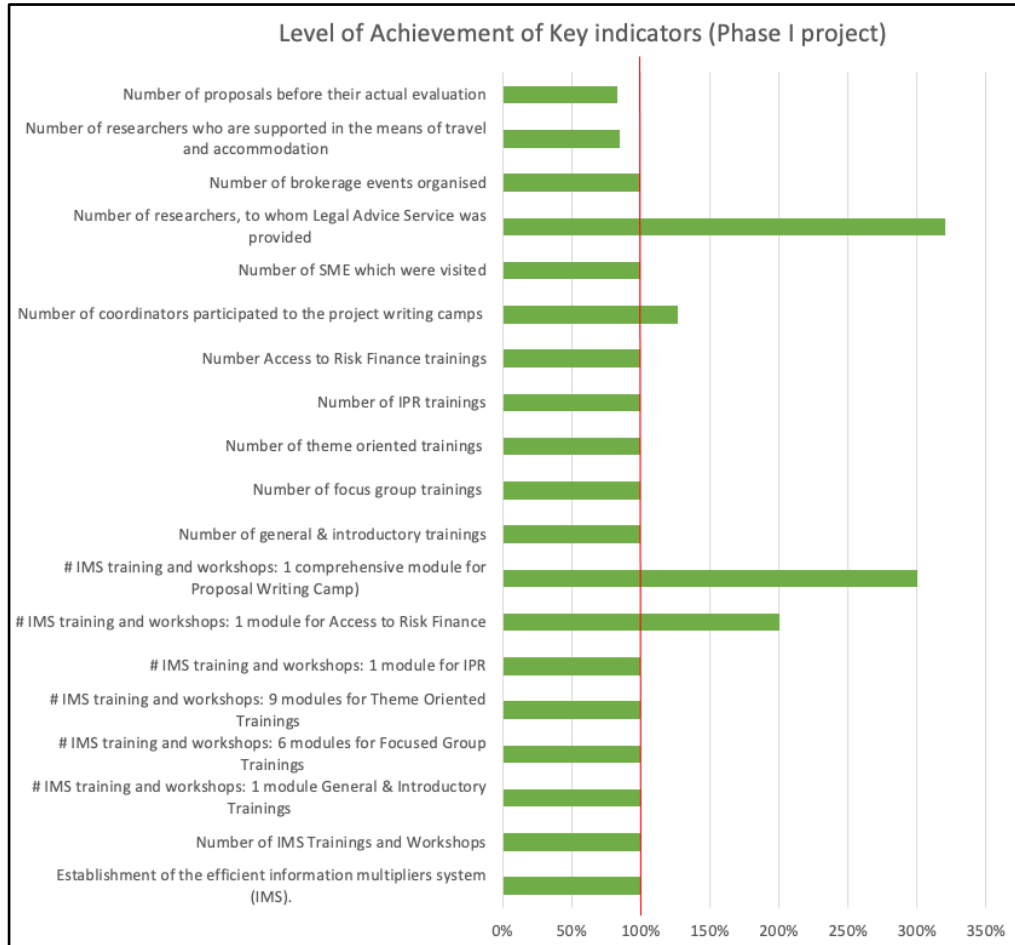
3.2 Results

In this subsection, a review and synthesis of the results achieved in ‘Türkiye in Horizon 2020 – Phase I’ and ‘Türkiye in Horizon 2020 – Phase II’ projects were provided.

The KPIs provided by each project in the Performance Monitoring System (PMS) was considered. Each KPI was rated as per its target level stated within the Projects’ ToR and the level of achievement was defined as the ratio between the actual value and the target.

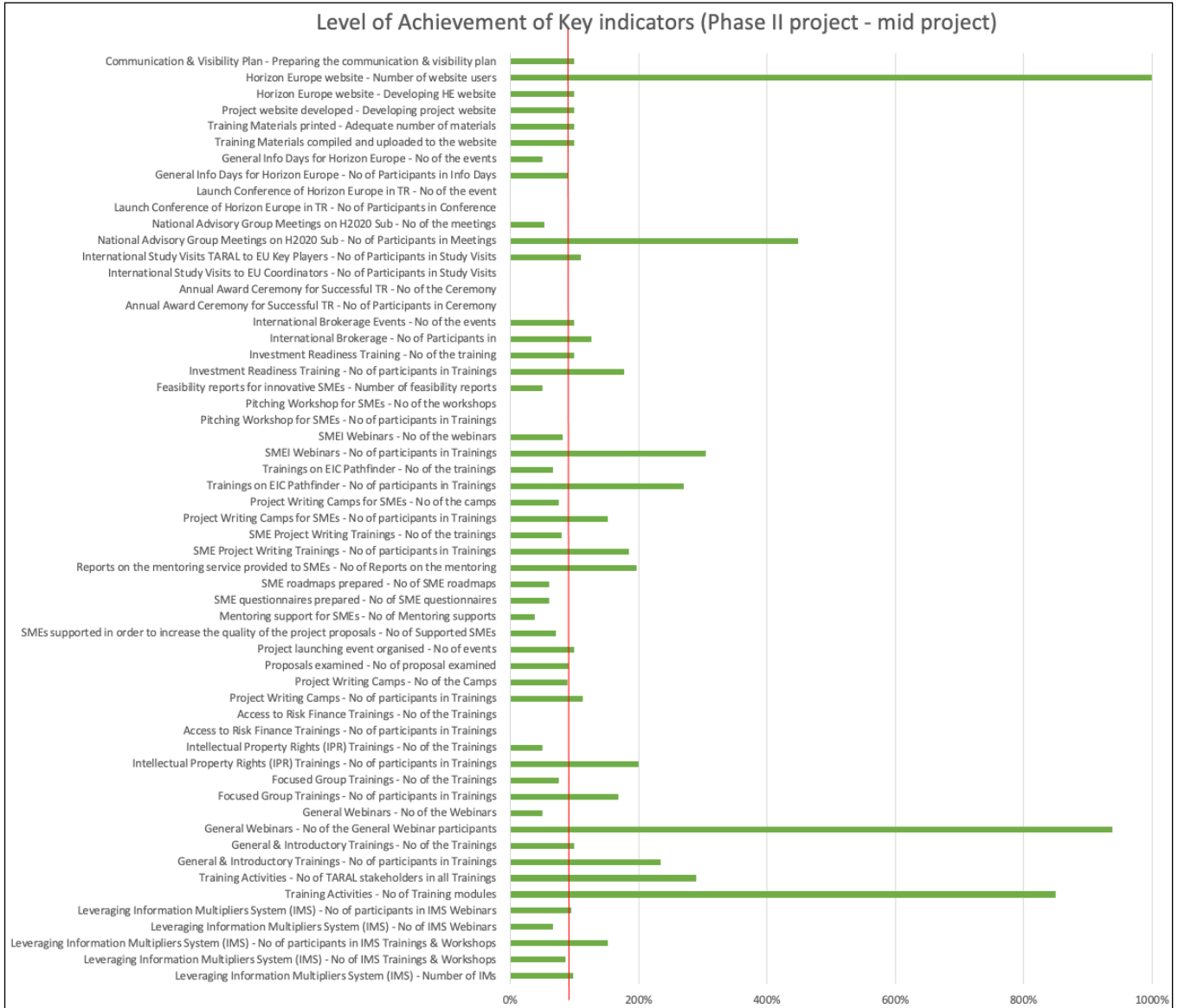
The below chart presents the KPIs that are above or equal to the required level of achievement for each project. For Phase I, being completed, the achievement was required to be 100%, while for Phase II, which is yet to be completed, the required level of achievement is set to be 91%, as the reports provide data for 91% of the duration.

Figure 3: Level of Achievement for Phase I project (target is set to 100% and indicated by the vertical red line)

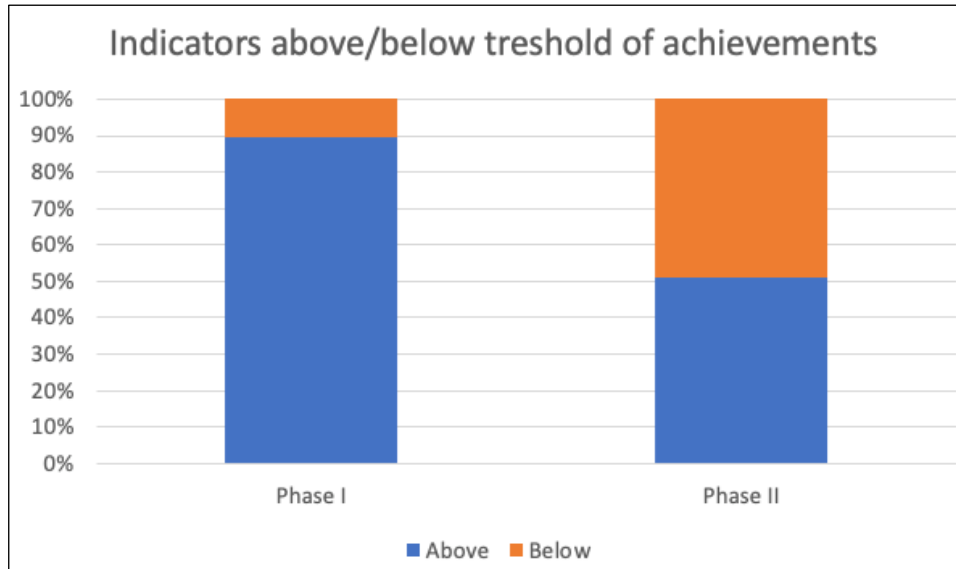


The following chart shows the level of achievement (as defined before) for the Phase II project (that is not yet completed). Data comes from the Annex 4 of the Progress Report no.6.

Figure 4: Level of achievement for Phase II project (target is set to 91%, as the reports provide data up to 91% of the project and are indicated by the vertical red line)

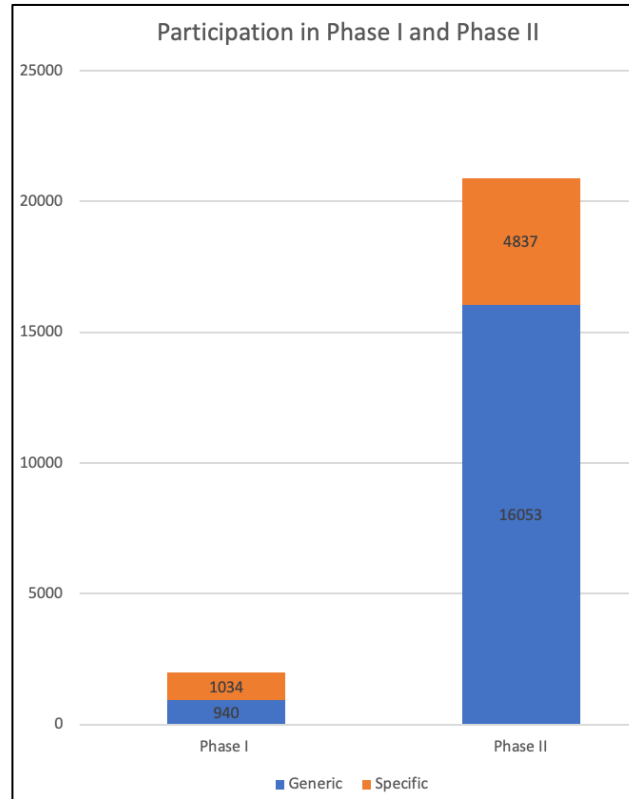


**Figure 5: The Number of KPIs for Each Project that are Above or Below the Threshold
(100% For Phase I And 91% For Phase II)**



Among the Objectively Verifiable Indicators (OVIs) reported for Phase I and Phase II, important is the participation level, which we chart here (the chart can be seen below) as subdividing the participation (i.e., number of participants) into general events (like General and Introductory trainings IMS training, Webinars, General Info Days, etc.) and specific events (like Focused group training, IPR training, Writing camps, etc.).

Figure 6: Level of Participation for Each Project



An interesting suggestion coming out from the personal interviews was to improve the evaluation of event's engagement. The proposal was to consider the ratio of submitted evaluation questionnaires to the total number of participants as a proxy for the engagement, given that the time for filling up the questionnaire is meant to report to the organizers about their feedback and comments. As an example, proposed indicator was adopted to the first two Proposal Writing Camps for SMEs and the SMEI Webinars that were described within the Progress Report 1 for the Phase II project.

Event	# Participants	# Questionnaires	Engagement
Camp 1	28	18	0,64
Camp 2	39	21	0,54
Webinar 1	86	21	0,24
Webinar 2	77	29	0,38

As a remark, the engagement level proposed here (up to 1 for max engagement) is showing that the two in-place/physical Camps ensured a higher engagement level compared to the two online Webinars.

3.3 Relevance

According to the methodology of the EC's Project Cycle Management Guidelines, assessment of the relevance was focused on questions to what degree the projects: a) were supportive for national policies such as Accession Partnership (AC), National Programme of Türkiye for the Adoption of the EU Acquis (NPAA), National Development Plan, etc.; b) were relevant to real problems of the target groups/beneficiaries.

The main conclusions from the analysis of documents listed in Annex I of the Ex-post and Mid-term Evaluation Activity's ToR and others are the following:

- Three documents listed above in Annex I provide a very broad, general policy framework for R&D activity in Türkiye. The importance of the EU accession process is often underlined, with indirect relation to the R&D policy area (usually in the context of industrial policy, competitiveness etc.). Participation in the EU Framework Programs for R&I is not explicitly mentioned.
- 11th Development Plan (EDP) provides a more precise policy orientation for the R&D&I area, with many references to specific policy measures to be implemented in that area. The number of industrial priority sectors and other important manufacturing industries were listed for which targeted support measures were planned. It could provide also a policy orientation for the prioritisation of efforts for the internationalisation of research (including cooperation under the EU FP).
- **EDP specifies that “promotion, information and capacity building activities, support and reward programs will be realized in order to ensure our participation to the EU Research and Innovation Framework Programs through qualified projects and to increase the return rates of the programs. The national support programs will be implemented in a harmonized and complementary manner with the EU Framework Programs in order to integrate into the European Research Area”.** This is the only reference to the EU Framework Programmes in the above-mentioned documents.

The most important reference document for the H2020 Phase II is the Turkish ERA Roadmap from 2019, which created a very detailed strategy and plan for strengthening TARAL and participation in the EU programmes. In particular in *Priority 1 Objective 1.5 Increasing participation in H2020 Programme*, a number of measures were proposed, including “Technical Assistance for Türkiye in the Horizon 2020-Phase II project”. Four-fold purpose of the project was proposed with some explicit goals, which were the same as objectives and purposes presented in the Project ToR for H2020 Phase II.

All EC Reports on Türkiye from 2014 to 2022, which were used mostly to assess relevance to real problems of the target groups/beneficiaries, state that “Türkiye’s preparations in the area of science and research are well advanced” and “the cooperation between Türkiye and EU is good but there is a room for improvement”. However, participation in the EU FPs is assessed as progressing but still not satisfactory in comparison to Türkiye’s potential.

In the EC Report in 2019 on Türkiye, it is stated that “participation in Horizon 2020 is stagnant at a level that is too low”, but the Horizon 2020 Action Plan (Rebate Action Plan) is recognized as an important element to be quickly implemented. Furthermore, in the EC Report in 2021 on Türkiye, it is stated that “notably the implementation of the action plan to boost the national research and innovation capacity as well as its alignment with the European Research Area (ERA) has contributed positively to Türkiye’s better performance in the Horizon 2020”. The most recent EC Report in 2022 on Türkiye states that “Türkiye made good progress during the reporting period”. Notably Türkiye signed the association agreement for Horizon Europe for the 2021-2027 period. Türkiye intensified its efforts to raise awareness on Horizon Europe to further increase its participation. Türkiye well addressed the recommendations made in the previous report.”

Due to the nature of the relevance assessment, TH2020 Phase I and Phase II projects’ documentation was analysed with a focus on Logical Frameworks and definition of objectives, outputs and results against the context defined by above-listed documents.

Overall summary of the assessment of relevance is very positive. Proposed objectives (and means of implementation and results) of TH2020 projects addressed the policy context very well. It is well proven, that TH2020 Projects were supportive for national policies such as Accession Partnership (AC), National Programme of Türkiye for the Adoption of the EU Acquis (NPAA), National Development Plan, etc. and they were relevant to real problems of the target groups/beneficiaries.

The above overall assessment was confirmed by respondents of the Survey. More than 79% of the respondents noticed the relevance of TH2020 (Phase I and Phase II) in the Turkish Research Area and Turkish National policies (score 6 or more out of 10). Additionally, more than 70% of the respondents see the activities of TH2020 (Phase I and Phase II) as fully responding (Agree or Strongly Agree) to the needs of their organization, with an increased level of agreement to 73% about the quality and quantity responding to the needs of the organization.

3.4 Efficiency

According to the methodology of the EC’s Project Cycle Management Guidelines, assessment of the efficiency was focused on the question on how well inputs/means have been converted into activities, in terms of quality, quantity, time and the quality of the results achieved.

In the desk research, the efficiency of TH2020 Phase I and Phase II was evaluated along the following dimensions:

- **Quality:** for every action in the program, the design of public events/networking/dissemination action was considered. For public events, the following aspects were evaluated: clarity of objectives, the organization, the logistics (for hybrid/remote events also the quality of digital tools used), the quality and experience of the speakers, the level of interaction (i.e., Q&A sessions), the personalized (1-to-1) or small group activities.
- **Quality of results achieved:** the results obtained were evaluated in comparison with the objectives stated in the organization and purposes of the event/networking /dissemination action. For most of the events, a survey was presented to the participants, with 1 to 5 grading along the axis of Organization, Presentations, Training materials, Proficiency of the speakers and Expectations, and in some cases also some additional questions.
- **Quantity:** mostly, the number of (actual) participants (not only registered) was evaluated, in comparison with the target goals of the Project ToRs, making a difference between the remote events (where participation is easier but content delivery and interactions are more difficult) and in-place/hybrid events.
- **Time:** events/networking/dissemination actions planning along with the time of the project. The purpose was to evaluate if the number of events and their distribution over the time of the project was sufficient to achieve the purpose. It must be stated that the COVID-19 emergency has changed some plans and therefore for most of Phase II, the timing schedule and regularity were not evaluated.

The Analysis Led to the Following Conclusive Remarks:

- **The actions were, in general, well-designed and conducted, with appropriate means and specific well-defined and timely purposes.** The agendas were well designed, and events often included (whenever appropriate) interactive activities, to engage the audience and collect feedback during the event itself, as well as group activities that were later during the event discussed/presented. The documentation of the events was also well appreciated, and the tools used (for hybrid/remote meetings due to the COVID-19 emergency) were state-of-the-art. Some of the events' description in Phase II did not include the name of the speakers.
- The evaluation of results achieved was conducted with post-event surveys (for events) which suffered from the limitations of being filled only by a percentage of the participants, therefore offering a partial view of the satisfaction level of the audience about the Organization, Presentations, Training materials, Proficiency of the speakers and their Expectations of the event. Only in some cases, free text remarks were addressed (and reported), which is a very powerful tool to detect positive/negative feedback not included in the questions.
- In many cases, the survey was not useful to evaluate the quality of the results as it did not report on the number of respondents but only the percentage, which makes the results not significant. Therefore, such evaluations were ignored.

- About dissemination activities, the quantity of events and networking activities was appropriate and fitted to the purposes. Their distribution in timing was influenced by the COVID-19 limitations and their effectiveness was also strongly limited, especially in the case of Activity 2 “Networking” activities. Using B2Match tool, very well perceived as an effective tool by the participants, proved itself a suitable and effective solution to the pandemic-related networking problems.
- The quality of the dissemination activities was well evaluated, although a coherent digital strategy was devised only in the second half of the Phase II project, with some promising results, that would have been much more significant (in quantitative terms and as widespread diffusion) would the social activities be performed since the beginning.

The above overall assessment was confirmed by respondents of the Survey. More than 83% of the respondents appreciated (score 6 or more out of 10) the quality of the activities conducted in order to achieve the objectives, while 79% appreciated the quantity of the activities.

Additionally, more than 70% of the respondents recognized the quality and quantity of the activities of TH2020 (Phase I and Phase II) as fully responding (Agree or Strongly Agree) to the needs of the organization, with an increase of agreement to over 76% about quality and quantity of the activities conducted as fully responding to the personal needs. In both cases, only roughly 10% disagreed (“Strongly disagree” or “Disagree”) with both statements. Effectiveness

According to the methodology of the EC’s Project Cycle Management Guidelines, effectiveness was evaluated through assessment of the contribution made by the projects’ results to the achievement of the projects’ purposes. Specific emphasis was given to the benefits acquired by the target groups/beneficiaries.

To assess how activities proved themselves effective in the achievement of projects’ purposes, the activities were evaluated according to their contributions, in particular with specific target groups and beneficiaries. The list of beneficiaries (from ToR) is the following: TÜBİTAK, Universities, Chamber of Commerce, Regional Authorities, NGOs, Technology Transfer Offices and Private Sector (in particular SMEs).

The analysis based on desk research led to the following observations:

- **While the activities for universities (and research, in general) and SMEs were very well organized with specific measures to address the needs of each of the target audiences, some beneficiaries were less specifically addressed by the activities (such as Regional Authorities, Technology Transfer Offices).** In this way, there are some reasons to doubt the effectiveness of the measure for those audiences, as feedback provided is not separated by category (i.e., we do not know how many of the participants in a specific category ranked the event/activity). One category (NGOs) is totally missed by the activities, not mentioned nor addressed.
- In the same way, dissemination activities were not explicitly targeting specific audiences, with material tailored to each of them (except the SMEs, that are well curated). The detailed

Communication and Visibility Plan does not specifically address the different beneficiaries through social media or the website.

The above assessment was not fully confirmed by respondents of the Survey. More than 86% of the respondents evaluated well (score 6 or more, out of 10) the effectiveness of the activities to increase knowledge and awareness of H2020 and increase participation in the EU Frameworks. More than 81% evaluated well the activities' effectiveness in improving the networking of the Turkish Research Area.

Additionally, more than 69% of the respondents agreed (Agree or Strongly Agree) that activities of TH2020 (Phase I and Phase II) fully achieved the Project Purposes for the organization which increased to 77% of the respondents when considering the achievement of Project Purposes personally as professionals. In both cases, only roughly 10% disagreed (Strongly disagree or Disagree) with both statements.

3.5 Impact

According to the methodology of the EC's Project Cycle Management Guidelines, assessment of the impact was focused on assessment of effects of the projects on its wider environment, and its contribution to the wider policy objectives (as summarized in the projects' Overall Objectives).

Impact assessment of the TH2020 Phase I and TH2020 Phase II projects was strongly influenced by a lack of impact indicators defined for the evaluated projects. On the other hand, it is well known, that impact indicators are not easy to measure even when they are defined. In case of the absence of relevant impact indicators, we decided to use an ex-post tracking of project capacity building activities' results through identification of success stories, which can prove casual links between projects' interventions and beneficiary achievements in the EU Framework Programmes. Identified success stories might be used as a proxy of impact indicators.

However, on the strategic level, the impact assessment could be based on the most recent EC Report on Türkiye in 2022. The Report states that "the implementation of Türkiye's action plan to boost the national research and innovation capacity contributed very positively to increase Türkiye's performance in the last period of Horizon 2020. However, the overall performance was somewhat below expectations. No in-depth assessment on the programme's results were made so far despite continuous recommendations from the European Commission in order to seek lessons learnt that might help to obtain better results from the Horizon Europe." The present study fulfils the EC call for in-depth assessment. Moreover, the Report says that "Türkiye has made efforts to raise awareness and increase dissemination of the program in order to expand its participation. The first Horizon Europe results indicated the continuation of the strong and positive trend of Türkiye's performance."

During the Focus Group meetings, participants were asked to identify the key success or failure factors for successful participation in the EU programs in their own experience or other known cases. This identification could help to understand casual links between inputs (TH2020 projects contribution), outputs (results) and impacts (long term effects).

Although opinions of the vast majority of interviewed persons was very positive or positive about the general impacts of the TH2020 Phase I and Phase II projects, and many opinions, that on their own experience they could observe indirect and direct positive effects of the TH2020 on their activities and progress in the participation in the EU programs (even if there were not always successful, in some groups (three focus groups: FG8, FG10, FG12) participants were not able to propose any specific example for casual links.

Representatives of the TÜBİTAK stressed out that they were not in the position to provide personal evidence of activities that could be linked to results, but they were also positive or very positive on the effects of TH2020 on successful proposals.

In all other Focus Groups, participants were able to identify different types of activities and specific examples of causal links which could illustrate the positive effects of TH2020 projects' activities on participants and/or their proposals. Several participants referred to all types of networking activities (brokerage events, match making-events, project writing camps, visits) as particularly important and these were recognized as the main sources of success for their successful activities in the EU FPs. In many cases, they directly linked participation in a single networking activity with the identification of the right partner and further final successes of their proposals. Some participants linked their final success with participation in networking activities combined with direct support received from TÜBİTAK.

Moreover, participants were able to identify and provide specific examples of causal links between TH2020 activities and the impact on the quality of their proposals or positive results in evaluation:

- Example 1: researcher in the process of preparation of application participated in Focus Group training and received informal ('friendly') evaluation by the experts before sending application and clearly reported a significant increase in the quality of the proposal (still under evaluation).
- Example 2: researcher participated in a match-making event, in its effect he joined 5 different consortia and the proposal prepared with one of them was scored above threshold.
- Example 3: positive and important role of TÜBİTAK in the development of project proposals for Teaming call was given, underlining building of the partnerships with other public entities, and playing a positive role as an intermediary body to the EC.
- Example 4: multiple positive impacts of training on financial issues (preparation of financial statements, introducing of depreciation methodology, certification of financial statements) to address project budget issues properly.
- Example 5: encouraging role of IMS trainings to take the role of consortium coordinator. Even though the projects did not succeed in the evaluation, they expressed a satisfaction that they can prepare proposals without consultancy company support – which is an important capacity building element.

- **Example 6:** positive impact of the IMS training on strategic planning and consortium creation process. They implemented learnt methodology and went through project development process and consortium building according to received tips (failed with first attempt, but then consequently improved it and now waiting for evaluation).

In one case, a participant pointed out a successful experience of the **entire cycle** of project preparation supported by the TH2020 activities as the initial discussion of the idea started at the Information Multipliers event, which also provided the needed networking, and then with other TH2020 activities (training camps), supported to present a proposal that was accepted with the participant as a coordinator.

Overall positive assessment of projects' impact was confirmed by respondents of the Survey. More than 87% of the respondents evaluated well (score 6 or more, out of 10) the impact of the activities in strengthening the capacity of Türkiye in Science, Technology and Innovation and facilitating the integration of Türkiye in the European Research Area. More than 85% considered impactful the activities in increasing participation in Horizon 2020/Horizon Europe.

Additionally, more than 67% of the respondents agreed (Agree or Strongly Agree) that activities of TH2020 (Phase I and Phase II) fully impacted the strengthening of the capacity of the organization in Science, Technology and Innovation, while the amount increased to 77% of the respondents when the impact was referred to their personal capacity as professionals. In both cases, only a percentage slightly above 10% disagreed (Strongly disagree or Disagree) with both statements.

3.6 Sustainability

According to the methodology of the EC's Project Cycle Management Guidelines, assessment of the sustainability was focused on the degree of benefits which will continue to flow after the end of the projects (with reference to ownership, policy support, economic factors, socio-cultural aspects, institutional and management capacity).

The evaluation of the sustainability of two projects was conducted, to assess "to which degree the benefits will continue to flow after the end of the projects" and, in particular, the dimensions of ownership, policy support, economic factors, socio-cultural aspects, institutional and management capacity.

The conclusive remarks from the desk research are the following:

Ownership: in order to ensure the sustainability of the projects, the activities have to bring forward and instil the feeling (among beneficiaries) that the results of the projects were stable **because** they own them and can make progress after the project lifetime. In this direction, particularly useful is the IMS which was designed to empower and enable a large audience of skilled and trained individuals as information dissemination actors. The actions taken to empower and train the IMS appeared to be very consistent and coherent with the purpose. The target of providing increased knowledge about H2020 and HE, about proposal writing and other issues, was very well planned

and corrective actions were taken (see Progress Report No. 5 for Phase II) to ensure the engagement. The missing item is the evaluation of whether the degree of ownership for presence of Türkiye in H2020 and HE matured due to the actions of the program.

Economic factors: several well-designed activities, many of them performed as one-to-one (mentoring), were promoted with the purpose of assisting SMEs in successfully participating in Horizon EU Framework Programmes, thereby empowering with a wider vision of innovation in their field. The support provided to the beneficiaries (especially by Phase II project) to identify the specific innovation paths, which are followed in HE and advised to be followed by potential applicants from Türkiye as well, would help to ensure greater sustainability of the results within the Turkish economical sector with increased level of innovation capacities.

Institutional and Policy support: there was a lack of participation from the public authorities in the activities, which could significantly limit the sustainability of the activities and benefits, outside the directly involved (and beneficiaries). Public Authorities, i.e., among towns and regional public authorities, that often can provide useful insights into the citizens' needs. Interesting considerations on gender-mainstreaming in research and innovation (also as a mandatory eligible criterion) were considered in the Progress Report No. 6 for Phase II, where the suggestion for further exploration of the data available about advanced gender mainstreaming in R&I, which would be certainly very important, as a contribution to increased sustainability of the activities, after the end of the project, about the gender equal participation.

Socio-cultural aspects: the projects addressed (partially) some socio-cultural aspects by providing communication and dissemination with general audiences through good (and improved over the period of the projects) coverage by traditional (printed) means and digital (social media). Extended outreach and leverage of project activities through information material was the basis for the sustainability and good participation and dissemination obtained through digital channels were important, although monodirectional.

The overall assessment of project sustainability presented above was even more positive in the reactions of respondents to the Survey. More than 80% of the respondents evaluated well (score 6 or more, out of 10) the probability that the benefits in terms of economic-socio-cultural aspects, produced by the TH2020 (Phase I and Phase II) will be retained.

Additionally, more than 75% of the respondents agreed (Agree or Strongly Agree) that benefits activities of TH2020 (Phase I and Phase II) in institutional/management capacity will be retained. Moreover, more than 69% of the respondents agreed (Agree or Strongly Agree) that all benefits (in economic-socio-cultural and institutional/management capacity) will be retained in the respondents' organization.

It is very important to mention that 90% of the respondents evaluated well (score 6 or more, out of 10) that all benefits (in economic-socio-cultural and institutional/management capacity) will be

certainly retained by themselves, as professionals and that they will contribute to competences and skills well after the end of the project.

4 Visibility

In general, during the Focus Group meetings, the quality of the materials presented on the website was considered as very good and particularly helpful (recordings, presentation) to improve and widely disseminated awareness about the available programs.

However, there were also observations, that activities about dissemination were not explicitly targeting specific audiences, with material tailored to each of them (except the SMEs, that were well curated). The detailed Communication and Visibility Plan did not specifically address the different beneficiaries through social media or the website.

In an individual interview, it was mentioned, that the high interest and visibility of project website was not reflected in stakeholders' engagement on social media (much lower number of followers in social media than then number of visitors on the website). Also, it was mentioned that it is important that the website becomes the repository of all the data about the programs, offering access (only for internal use) to NCPs to a database of information about activities.

Another issue mentioned was that communication through social media and the design of the Website should include more skills coming from the communication experts and creative thinking, in order to engage different audiences. The material used in social media should be designed in a different way (e.g., more concise) than the material used for the website. In fact, while it looks that the website is successful (also due to the references to the material contained on the website provided in the extensive mailing lists that are used), the social network has smaller engagement, thereby lacking to address a general audience, especially of young age.

In expert opinion, the visibility strategy was able to achieve most of the goals of disseminating the results, through traditional means (press, website) and through social media. The target for increasing the engagement of users in the most used social media could be better achieved by targeting specific different audiences (by age group, by type (researchers, private industry, PA, etc.)) through different social media means. Statistics can be retrieved (in literature or through dedicated agencies) about the analysis of audiences in different social media. A general audience among young people (future researchers, employers/employees in private industry etc.) is not explicitly addressed, as also witnessed by the absence of a very popular social media like TikTok among the list of the used social channels.

5 Overall Assessment Evaluation

On the strategic level, which could be assessed through the most recent EC Report on Türkiye from 2022, it is stressed that **Türkiye “intensified its efforts to raise awareness on Horizon Europe to further increase its participation. Türkiye well addressed the recommendations made in the previous report.”** Moreover, it says “Türkiye has made efforts to raise awareness and increase dissemination of the program in order to expand its participation. The first Horizon Europe results indicated the continuation of the strong and positive trend of Türkiye’s performance.” In that context, it is important to underline that two TA projects under evaluation were core activities implemented the action plan and delivered such a positive impact.

On the project level, the analysis of KPIs of the results of Phase I and Phase II projects, summarized in Section 3.2, demonstrates that Phase I has reached almost all its targets, while Phase II is well underway to reach the targets, as the level of achievement is significantly in line with the target at that level of advancement, and (moreover) planning is reported (in the most recent narrative report which is Progress Report 6) to complete and achieve the target values for the indicators by the end of the project.

In Focus Group meetings, **an overall assessment of activities under TH2020 Phase I and II was positive or significantly positive. A very constructive role of TÜBİTAK in TH2020 was clearly underlined.** The majority of respondents reported the multidimensional impact of TH2020 from structural changes and capacity building in TÜBİTAK, NCP, IMS and at university offices, to the individually gained knowledge, experience, and self-confidence in relation to their own proposals. Both Program activities were recognized as relevant to Türkiye’s needs, but respondents observed that many researchers and companies are still not aware of opportunities created by the EU FPs. They recognized trainings as the most important activities, in particular for the IMS and strengthening NCPs, trainings on horizontal issues, Focus Group trainings and match-making events with the participation of large number of Turkish participants. Participants of the Focus Groups meetings see both direct and indirect effects of TH2020 activities. However, they also see a space for improvement e.g., in addressing different needs of different groups of researchers/stakeholders depending on their level of understanding/engagement in the UE FPs (e.g., addressing needs of young researchers).

All TH2020 Phase I and Phase II stakeholders see complementarity between the TH2020 and other TÜBİTAK programs and the crucial intermediary role of TÜBİTAK between the Turkish R&D ecosystem and the EU/EC. They also appreciated the new version of TÜBİTAK website and beneficial role of the IMS network. However, respondents expect more contacts (training, meetings, consultations) with practitioners, who poses their large practical experience in proposal drafting, participation of consortia etc. All activities where new contact, people, companies could be met, and links could be created were recognized as very important. Positively recognized was the process of following up rejected proposals for further improvement for resubmission to the EU but also, in some cases, the possibility of getting some national funds for the projects that were ranked well but

not funded by the EU. The regular information about new calls, follow-up activities for rejected proposals was also very appreciated.

From the perspective of the SMEs, among the particular useful skills provided, were the information about how to collect and use market information in the calls which is very useful for proposals. Also, the support for the financial part of the proposal was considered as very effective and helpful, in particular, for SMEs that would need to allocate some considerable time for preparing sound and convincing business plans. Even programs that were less effective for the experienced participants (such as one to one mentoring) were in the end beneficial for the networking provided with the persons conducting the mentoring.

Good quality of trainers was underlined and the support in cascading knowledge absorbed during IMS training series down to other units, teams or persons within organizations. Some interviewed persons recognized participation in the IMS and TH2020 activities as fundamental for their organizations. They recognized close cooperation between IMS and NCPs as a very important element.

Although favorable opinions on national efforts, respondents identified barriers related to language proficiency and availability of national grants for technology development support to companies.

Positive overall assessment of evaluated projects by participants of the Focus Groups was confirmed by reactions of respondents to the Survey, but with lower than generally observed level of satisfaction for specific elements presented in previous subchapters. For all activities (except one), more than half of the respondents “Agree” or “Strongly Agree” that the activity was completely satisfying and useful. The average score for all activities shows more than 60% of “Agree” or “Fully Agree” with the satisfaction and usefulness of the activities. Additionally, for all activities (except one), more than half of the respondents “Agree” or “Strongly Agree” that the activity was completely satisfying and useful. More than half of the activities presented more than 60% of respondents to “Agree” or “Fully Agree” with the statement, with the top activities ranking as high as 75,4% (Info Day on Horizon Europe Program).

All activities of Phase I received more than half of the agreement (“Agree” or “Strongly Agree”) on the statement that activity was completely satisfying and useful. More than half of the activities of Phase I showed more than 60% of respondents to “Agree” or “Fully Agree” with the statement, with the top activities ranking as high as 71.7% (General and Introductory Training).

All activities of Phase II (but one) received more than half of the agreement (“Agree” or “Strongly Agree”) on the statement that activity was completely satisfying and useful. More than half of the activities of Phase II show more than 60% of respondents “Agree” or “Fully Agree” with the statement, with the top activities ranking as high as 75,4% (Info Day on Horizon Europe Program).

Wrapping up all the above-mentioned observations and considering experts’ experiences, the overall assessment of the TH2020 Phase I and Phase II seen in all perspectives: strategic, policy, project results and stakeholder perception, as well as in most of the evaluation criteria was very positive. It is important to mention that due to methodological limitations and a lack of well-defined

project indicators assessing the impact and sustainability, the evaluation was based on assessment of stakeholders' perception to a large extent.

6 Conclusions and Recommendations

6.1 Conclusions

From many observations provided by the stakeholders and results of different types of analysis presented in previous Chapters, we came up with the following key conclusions from the evaluation of the TH2020 Phase I and Phase II projects:

- Both projects' concepts were well defined and linked with the Türkiye's national R&D&I policies. They fulfilled the plans developed within the ERA Roadmap 2019, which created a well-detailed strategy for strengthening TARAL and participation in the EU programmes. TH2020 projects built necessary links and boosted the visibility and presence of TARAL in the European Research Area.
- Strengthening Türkiye's participation in the H2020 Programme through TH2020 projects' activities resulted in significant increase in the numbers and improvement of the quality of projects from Türkiye, which is clearly visible in the participation statistics over the time and in positive financial performance.
- It is equally important to mention the number of improvements in the national R&D ecosystem, from changes in policies, to the level of new programs, new or improved mechanisms/regulations, and the most applaud case, which is increased capacity of different institutions, in particular the TÜBİTAK. In the mid and long term, a well-strengthened and better integrated ecosystem with the EU national R&D&I ecosystem could be the most important effect of the TH2020 projects.
- Measurable results of Phase I and Phase II projects illustrate that Phase I reached almost all its targets (going beyond targets at some points), while Phase II is well under way to reach the set targets.
- Beside the measurable effects of the TH2020 projects, the perception of the results in the Turkish research and innovation communities are very concrete. The majority of participants in the TH2020 activities were satisfied or very satisfied with the quality, results and their personal achievements.
- There is a high agreement among the TH2020 stakeholders, that similar activities should be continued, but with some changes listed in recommendations.

These general experts' conclusions are supported with number of more detailed observations from stakeholders presented in the following two subchapters.

6.1.1 Input from the Focus Groups

There is a wide consensus among representatives of different stakeholder groups about the **complementarity of Türkiye and the EU research, development and innovation policies**, as well as the importance of the participation of the Turkish researchers, entrepreneurs and administration in the EU Framework Programs, starting from the FP6 as associated partners till today.

Many respondents clearly correlate a **connection between the EU and national priorities** (e.g., through National Development Plan), but a better alignment of policies and further activities on the policies area is needed (particularly in areas like Green Deal, Open Access etc.).

Concerning the importance for Turkish researchers' and entrepreneurs' participation in the EU R&D Framework Programmes, they put on the first-place prestige (recognition and visibility) and access to large grants not available in Türkiye for similar activities (research close to market, competitive financing for personnel and equipment, including access to HPC). In general, in comparison to the Turkish system, the **EU system of grants is recognized as more flexible**, less bureaucratic, less demanding in technical and organizational aspects and allows to bring project results to the market.

In some interviews, gender aspects related to participation in the EU Programs were raised as particularly important for the Turkish women entrepreneurs and research communities, e.g., the **EU activities provide visibility to women researchers** that can help in moving towards equal representation of genders in the research area. Moreover, some participants pointed out the EU Programmes' transformative effect and positive impact on the community, including raising awareness of modern trends and participation in setting up rules for future industries (e.g., AI ethics). Although similar perceptions of many general aspects related to the participation of Türkiye in the EU Programmes by different types of stakeholders can be observed, there are still visible differences.

Representatives of the research community, often understand the effects of participation in the EU FPs beyond obvious interest in the participation in frontier research and technology projects. but They express **interest in building "the bigger picture" of the global research market and increasing visibility and recognition** of Turkish universities and research organizations. The interdisciplinarity of the FP research projects was also emphasized.

Concerning the importance for the Turkish companies and representatives of businesses, they recognize Europe as the third largest market, after US and China, and therefore it is critical for the research institutions and entrepreneurs to be connected. It was pointed out that **participation in the EU programmes is particularly useful for the companies**, as academia already has other channels to get connected (like conferences, scientific organizations, etc.). Entrepreneurs underlined the importance of access to finance, but even more possible exploitation of project results, which creates a value chain with the industry (but also introduction of open science principles), access/participation in state-of-the-art research and networking effects (opening new doors).

6.1.2 Input from the Interviews

In this subchapter, summary of the proposals/suggestions collected during the interviews is presented. It must be mentioned that several conclusions from the interviews were already reported in the Focus Groups, so we add the ones to complement the conclusions reported in Section 6.1.1.

Several respondents outlined that the **institutionalization of a sustainable IMS is very important** and not sufficiently guaranteed by the current structure. In fact, being centered on few representatives within each organization, there is limitation in ensuring the organizational memory.. Moreover, another suggestion was that IMS should focus more on the private industry rather than on the public. The institutionalization of IMS would require a full involvement of NCPs and regional development agencies, with strong coordination between national and regional governments.

Another key issue presented was the current **lack of flexibility** to accommodate changes in the EU programs. Few examples proved that some activities were less effective because several programs changed the operational structures. (e.g., SMEs EIC instruments).

It is important to **sustain the commitment of companies and academia** towards the European projects, despite *easier access* to national funding. Companies and academia should be rewarded more for their participation in the EU projects, by providing access to additional national funding. In particular, given the different ways in which partners can participate in the EU proposals, it could be useful to **stimulate Turkish partners to participate in R&D Work packages** and supporting them with matching funds.

Main objective around the companies is to **attract newcomers** by inviting more companies into the programs, not only the ones that are somewhat tied to academia (e.g., spin-offs, from techno parks) but also from other venues. The current issue with the companies is to provide a sustainable approach to the participation in the EU programmes so that they have the resources and the time to become competitive.

6.2 Recommendations

From many observations provided by stakeholders and assessment of different aspects of TH2020 Phase I and Phase II projects presented in previous Chapters, we draw the following key recommendations for further similar activity:

- Without any doubt, activities to better integrate TARAL with the ERA, in particular through better alignment with the EU policy objectives, opening the TARAL for EU researchers, intensified and more focused support for best Türkiye research teams and companies, as well as widening access to EU programmes for newcomers are recommended and expected by the R&D&I communities.
- However, it would not be possible without a significant increase in national expenditures on R&D, in particular on areas of excellence and competitive advantage of Türkiye research and industry.

- It should be accompanied with strengthened Türkiye presence in the EU policy and program development structures (e.g., ERAC, program committees, etc.), as well as better = presence in the evaluation bodies (or as individual evaluators).
- Strengthening participation in the ERA-targeted national programs and financial schemes could be organized around step-in (grants supporting future participation in Horizon Europe (HE)) and top-up instruments (supporting recipients of the Horizon Europe).
- In expert's view, there is a need for stronger national ownership of certain elements of the support system, which should be built and supported through national resources. It is particularly important for future NCP&IMS network, which should be a skeleton for institutional support to the participation in HE. There are several success stories for similar national NCP networks in countries like Austria, Poland or Italy, which could be an inspiration for creation of a stable, reliable and effective system of support and information distribution on opportunities in HE. Moreover, support and information system for the EU R&D&I programs should be integrated with nationwide institutional support and information system on all available EU funding opportunities.
- Future strengthened participation in the HE initiatives should clearly differentiate stakeholder groups and address their needs in more focused and targeted way. There is still a need to create favorable conditions for wider participation of newcomers in HE, recruited mostly among young generation of research and young deep-tech startups. On the other hand, needs of well advanced and experienced research teams or SMEs in their participation in more responsible roles (e.g., leaders of consortia) should be also well addressed.

These general expert recommendations were supported with a number of more detailed observations from the policy documents and stakeholders presented in the following three subchapters.

6.2.1 EC Türkiye 2022 Report

In the coming years, Türkiye should in particular:

- continue its efforts towards aligning its national research area (TARAL) with the new European Research Area (ERA).
- step up efforts to increase innovation activities particularly in the field of environment related technologies to make up for the decline in the Innovation Scoreboard of 2021.
- expand cooperation in the fields of Innovation and EU Missions through full utilisation of Horizon Europe.

6.2.2 Input from the Focus Group Meetings Report

In this subchapter, summary of the proposals/suggestions collected during the Focus Group meetings are presented. It is grouped and concluded around several, the most often issues raised by participants, but also the most important in the evaluators' opinion. The evaluators discussed contributions from the Focus Group meetings in the context of their own experience to provide input for further discussion on possible future programmes of similar type.

Summarising, all suggestions could be grouped around two major types of different, but complementing natures:

- general/policy relevant which addresses more general issues that can shape the overall approach for future programmes;
- operational/implementation relevant, which can help to implement programmes in a more effective manner and responding to target groups' needs way.

General/Policy Relevant Suggestions:

- The importance of the EU Framework programmes in several dimensions/aspects were very strongly stressed by the representatives of all types of Focus Groups. In particular, the impact of the EU programmes on shaping national research, innovation and industrial policies (as a policy input for alignment of national policies with the EU policies) was recognized with suggestion of a stronger stimulation of Turkish participants from strategically important national economy sectors on one hand, but also a stronger engagement of Turkish representatives in programme committees and other EU policy-shaping bodies.
- An understanding of the importance and complexity of the EU programmes, and financial instruments' landscape led to suggestions related to a more comprehensive approach, better dissemination of information and coordination between different public authorities towards stronger presence and participation in activities beyond the EU Framework Programmes for Research and Innovations (raising awareness of other than R&D&I opportunities to create a full picture of the EU funding).
- Although TH2020 projects and their impact on different types of stakeholders were rated very high, and the successes and advancement of many groups were recognised, raising awareness across all groups of stakeholders (with a special focus on young researchers, entrepreneurs, and public administration) is still very important. In many opinions supported by the evaluators' observations, awareness-raising activities, e.g., training series for newcomers in FPs and stakeholders in the early stage of engagement are still necessary.
- On the other hand, advanced, well targeted activities addressed to more advanced audiences e.g., in horizontal, technical, and financial issues, individual mentoring or pre-evaluation of proposals are still recognised as very important and expected. In that context, activities attracting and encouraging more Turkish coordinators will be appreciated.
- Increasing Türkiye's participation in the EU programmes is not only related to the effectiveness of supporting programs e.g., TH2020, but is strongly correlated with the level of the national R&D funding. It is a clear message from the Focus Groups supported by the evaluators, that more extensive national R&D funding is fundamental for building strong national R&D capacity (both in terms of infrastructure and human capital) which will support national economy and create favourable conditions for EU and worldwide research presence. In particular, a need for dedicated matching funds for the most promising (highly evaluated but not financed projects and research groups) was recognised as very important.
- All networking, study visits and match making-activities of the TH2020 projects (in particular when Turkish representatives were able to visit foreign countries) were highly rated, but the

Focus Group participants recognised the promotion of overall Turkish R&D potential abroad as an important success factor. Study visits for foreign researchers or entrepreneurs in Türkiye could be also organised as an alternative option.

- Without any doubt, the role of TÜBİTAK and IMS were recognised as very curial and their activities profoundly successful. This activity should be continued, and even strengthened. However, participants observed also space for improvements in a number of elements e.g.: strengthening links between the NCP and IMS members, stronger role of the NCP in building the organisational capacity of IMS members, engagement of more people in the IMS development activities (training), better structured approach for information management within IMS network for better identification of partners within a network, reward system for successful IMS organisations and individuals.

Operational/Implementation Relevant Suggestions:

- Activities facing the problem of English language literacy: train the trainers in English, but deliver training to final beneficiaries on complex issues e.g., financial matters in Turkish (sometimes even in Turkish, it is hard to understand the rules);
- Needs to optimize the participation of SMEs: suggestion to organize shorter training activities (no coffee breaks etc.) because long-period trainings (e.g., one- or two-days long training types) are too demanding for SMEs with limited staff; mentoring programs should be expanded and extended in time, at least 6 months or even more, so that the new start-up companies can benefit from them more. Also, the projects should cover other aspects besides the marketing phases. It is important for SMEs to receive “between projects” support to maintain cashflows, which is a critical issue for SMEs;
- Management of information issues: distribution of information organized well in advance to avoid “last minute” proposal writing; keep up with a continued flow of information (emails, newsletters, etc.) about calls, opportunities, events towards the potential stakeholders; keep the presentation from the EU officers as they are helpful in interpreting the calls and the overall context;
- Adjustment of target groups to the type of events: different type of events for different levels of experience and skills;
- Support for participating in the EU networks (like Euclid network) could be very helpful as it provides an environment for researchers’ networking from Türkiye;
- Strong support for organization of more targeted (narrow in scope) meetings for participants chosen for the purpose;
- Mobility issues: devote some budget to increase traveling and visiting Schengen area countries as the budget available is really limited and there is a need for support with visa issues;
- More co-creation events: for the cases where the project proposals could be developed in a collaborative way.

Moreover, the implementation of the TH2020 Phase II project was heavily impacted by the COVID-19 pandemic. As a consequence, the number of activities and method of implementation was converted from physical events to on-line or hybrid form. At each Focus Group meeting, special attention was given to this issue and opinions about the effectiveness of on-line vs real-life activities, as well as the preferences of participants were collected.

In general, participants presented mixed views and at most of the Focus Group meetings, it was impossible to agree on common opinion. Although the majority of opinions described on-line meetings, as less effective in networking (harder to build trust among participants, find partners, lack of informal relations etc.), access to a wider international audience and lower cost of participation (less time consuming, fewer travel costs etc. in particularly raised by SMEs representatives) were often appreciated.

The majority also agreed that the effectiveness of different forms of meetings depends on the topic and level of advancement of participants (no problem with on-line for advanced participants, but training events for newcomers and networking activities is more effective during physical meetings).

6.2.3 Input from Interviews

In this subchapter, summary of the proposals/suggestions collected during the interviews is presented. The recommendations were voiced by one or several respondents, presented here also for the shared opinion of the evaluators. Among questions asked during the personal interviews, the evaluators often asked to provide inputs and feedback for improvement of further programmes. Some of the comments and recommendations were also reported in the Focus Groups, so here we only report the ones that add something to what described before.

Suggestions can be grouped around two major types of different, but complementing natures:

- policy relevant which addresses more general issues that can shape overall approach to future programmes,
- operational/implementation relevant, which can help to implement programmes in a more effective and responding to target groups' needs.

General/Policy Relevant Suggestions:

- A recommendation for the IMS is to find a way to make it sustainable, by providing additional funding at the national level, involving organizations in a stable way, rather than through (few) IMS participants. It was also suggested that the connection between NCPs and IMS should be strengthened and institutionalized, forming a network of organizations, funded also at the national level, so that it is not only working during the next project but also afterwards. The target is the capacity building for the Turkish research ecosystem, so that it is stable and supportive of economic, social and scientific growth.

- To improve the **flexibility** of the programmes, a recommendation was to have, in future programmes, a mid-project alignment step, that allows to re-design and tuning of activities that have a more generic target (e.g. “Support for SMEs”), so that, if needed, some of the activities in the second phase of the project can better follow the evolution of the EU programmes in all the fields.
- Be more focussed on the **public communication of the results of Turkish participation** in the EU programs, for a wide audience. Be sure to underline the successes of the programs.
- Capacity building not only targeting the beneficiaries but also **strengthening the system of Turkish Research Area (TARAL)**, building a sustainable system within the country. This can be achieved also by providing **capacity-building training for the NCPs** in terms of horizontal issues, such as innovation ecosystems, quadruple helix, data management plans, with more hands-on experiences, so that the capacity can also be built on the policy side.
- Institutionalization of the links between NCPs and Technology Transfer Offices, with specific KPIs and resources to share activities.

Operational/implementation relevant suggestions:

- Careful combination of online and physical meetings. While some advantages of online participation (increases the participation rate within organizations, given the absence of travel costs) are present, online activities are tougher to assess the benefits. Activities like Info Days could be organized as large events, possibly online, followed by several physical meetings, spread throughout the country.
- Connect the visibility activities that are traditionally working well (mailing list, website) with social media channels, by producing shorter and more entertaining material for social media.
- Organize a repository of (partly public) **data about Turkish participation in the EU programmes**, that are updated and that can be used by the NCPs in order to provide useful insights on the participation in the programs, indicating (for example) particularly successful ones and also the ones that still can be improved. For example, it was mentioned that the data provided in the report drafts circulated before the interviews was very important and can be of high benefit to the officials involved.

7 Annexes to the Report

7.1 Consultants

Krzysztof Gulda, entrepreneur, researcher, strategist in public and private sector, international consultant with unique, multidisciplinary experience in all sectors of the knowledge triangle. Strongly engaged in support for spin-off creation from the University of Warsaw as a Board Member of the University SPV company organized to manage portfolio of companies established by the researchers or students.

Graduated from Physics Faculty of Warsaw University and Postgraduate Study on Intellectual Property at the Warsaw University, brings together understanding of advanced technologies and research methodologies with focus on IP management and commercialization. Since 2003 to 2009, Director in the Ministry of Economy responsible for strategy and programming for innovation, entrepreneurship, sustainable development and horizontal industrial policy. Since 2009 to 2012, Director of the Strategy Department in the Ministry of Science and Higher Education responsible for strategy development for research, higher education and innovation, but also for European and international affairs. He introduced to public administration modern management model for department organization based on flat organizational structure oriented on project activity.

Expert in development of national and regional innovation strategies with strong focus on horizontal relations between innovation and other policies, including research, entrepreneurship, human development, intellectual property and sustainable industrial policy. Specific areas of expertise cover academic entrepreneurship (start-up development, seed and VC capital, incubators), building business – academia relationship, innovations systems (from national, regional to networks and clusters) and evaluation of programs, instruments and projects on different stages (ex-ant, mid-term, ex-post).

Former Vice Chair of the European Research Area and Innovation Committee (ERAC) - advisory body to the European Council and the European Commission, member of the OECD Committee for Science and Technology Policy (CSTP) and Committee for Industry, Innovation and Entrepreneurship (CIIE); former Chair of the United Nations Economic Commission for Europe Team of Specialists on Innovation and Competitiveness Policies (UN ECE - TOS ICP). Recently, Council Member of the National Centre for Research and Development in Poland.

Vittorio Scarano received in 1990 the Laurea in "Scienze dell'Informazione" (Computer Science) from the University of Salerno (Italy) and in 1995 received the Dottorato di Ricerca (PhD) in Applied Mathematics and Computer Science at the University of Naples (Italy).

From 1995 to 2001, he was an Assistant Professor at the Facoltà di Scienze MM. FF. e NN of the Università di Salerno. Since 2001, he has been working as an Associate Professor at the Facoltà di Scienze MM. FF. e NN (School of Mathematical, Physical and Natural Sciences) of the Università di Salerno. He is a member of the Dipartimento di Informatica ed Applicazioni (Department of Computer Science and Applications) "R.M. Capocelli" of the Università di Salerno since 1995.

Since 1996, he has been co-directing the ISISLab Laboratory within the Department. ISISLab has been hosting, until now, the research activity of 21 PhD students, more than 40 collaborators (grants, fellowships) and provided support for more than 240 theses (Bachelor and Master level) with computing facilities such as a 38-nodes IBM cluster, file and application servers, teaching lab, a stereoscopic screen, augmented reality devices etc. He is co-author of more than 170 papers in internationally refereed journals and conferences of IEEE, ACM, etc. and its current Scopus bibliometric indicators are H-Index: 21 with a total number of citations: 3071.

He has been a part of more than 20 Program Committees or International Conferences since 2000 and is actively involved in the organization (Steering Committee) of the Adaptive Hypermedia conferences and the Information Visualization conferences. He has been reviewer for more than 30 among Journals, Conferences and Workshops. His research was first directed at the parallel architectures and algorithms, with an emphasis on models and techniques for automatic mapping of programs to multiprocessor architectures. More recently, his interests in this area were expanded to cover overlay networks and peer2peer architectures.

Vittorio Scarano has actively participated in several research projects at the EU (FP6, FP7, H2020) and national (since 2002) levels. He has been an evaluator of projects for University of Chicago (USA), University of Skövde (Sweden), University of Cyprus, Ministry of University and Research (Italy) and University of Milano.

He was the Chair of the Scientific and Technical Committee of the Regional Center for Information and Communication Technology (CERICT) was 2021-2022. Delegate to participate to the European University proposal NEOLaIA (Consortium of 9 universities for a Joint European University). Member of the Scientific and Technical Committee of the "ICT for Cultural Heritage" inter-departmental research Center of University of Salerno. He is also the Chair of the ISISLab which is a Research Lab of the Department of Computer Science of University of Salerno (Italy).

