Recent Uptakes in Turkish STI System
International Cooperation and Competitiveness from European Integration Perspective

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Deputy National Coordinator for Horizon 2020

9 April 2015
Legislative Duties of TÜBİTAK

• Main STI Policy Making and Programming Body with MoSIT
• Assisting to formulation of STI policies
• Funding R&D
• Carry out research on strategic fields
Since the early 2000s, increasing importance to investment in STI; as shown by the continuing rise in government funding for R&D and innovation activities.

- Private sector, industry-academy cooperation centred support mechanisms
- New support programmes of TUBITAK to boost innovation
- Dedicates support mechanism for boosting success in Horizon 2020

NSTIS (2011-2016):
- Create more output from existing research capacity: focus of innovation
- Enhance needs-oriented research capacity
- Defines strategic focus areas for increased science, technology and innovation performance.
- Output based funding, bottom up approach
European Research Area project is launched as a decisive step to realize a unified and highly connected research and innovation landscape to achieve grand economic and social ideals.

Towards promoting growth and job creation

- Building a European STI System
- Widening excellence and reducing STI based clashes
- Increasing competitive power at global scale

**NIS**
More effective national research systems

**Investing in European Potential**
Optimal transnational co-operation and competition

**Mobility**
An open labour market for researchers

**Gender**
Gender equality and gender mainstreaming in Research

**Knowledge circulation**
Optimal circulation, access to and transfer of scientific knowledge including via digital ERA
The ERA proposal after its adoption at the Lisbon Summit was incorporated to the FP6 which took effect at the beginning of 2003 and functionally detailed by DG Research.

The 9th SCST Meeting; 2003: Turkish Research Area (TARAL) phenomenon is introduced.

TARAL is designed in line with ERA: Eliminate duplications and reducing fragmentation among research efforts.

**TARAL**

Activating STI based economic development

- Increasing the welfare/life quality of citizens
- Proposing solutions to societal problems
- Increasing competitive power of Turkey
- Disseminating science and technology culture in society
### ERA and Turkey

**NIS**

**More effective national research systems** – including increased competition within national borders and sustained or greater investment in research

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<table>
<thead>
<tr>
<th>Development and nationalization of key technologies</th>
<th>Increasing added value in export and production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Being among world’s most developed 10 economies</td>
<td>Closing the current account deficit</td>
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</table>

**NIS**

Private sector focused ecosystem approach
More effective national research systems – including increased competition within national borders and sustained or greater investment in research

In last 10 years GERD as % of GDP raised from 0.48 to 0.95 app. doubled

Source: TurkStat
ERA and Turkey

NIS

More effective national research systems – including increased competition within national borders and sustained or greater investment in research

In last 10 years GERD per capita population raised from 42 to 176 $ increased more than 4 times

Source: TurkStat
ERA and Turkey

More effective national research systems – including increased competition within national borders and sustained or greater investment in research

Industry has the biggest share and fastest increase in R&D spending

GERD by Source of Funds (Turkey)

Source: TurkStat
ERA and Turkey

**NIS**

More effective national research systems – including increased competition within national borders and sustained or greater investment in research

ERA Communication invitation to MS: Introduce or enhance competitive funding through calls for proposals

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In 2013, TÜBİTAK developed two new call based, mission-oriented support programmes to improve R&D performance in priority research areas

ICT, Energy, Food, Security, Space

Other priority areas: Machinery Production and Automotive

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For Private Sector
Support Programme for Research, Technological Development and Innovation Projects in Priority Areas (TÜBİTAK 1511)

For Academia and Private/Public Research Institutes
Support Programme for Research, Technological Development and Innovation Projects in Priority Areas (TÜBİTAK-1003)
ERA and Turkey

**NIS**

*More effective national research systems* – including increased competition within national borders and sustained or greater investment in research

**ERA Communication invitation to MS**: Introduce or enhance competitive funding through calls for proposals

In 2013, TÜBİTAK prepared 7 technology roadmaps: feed call based programmes; 1511, 1003 and 1007

**Expert consultation**

Web based questionnaire

Development of University R&D Strategies (1000 in 2015): Smart Specialization
**ERA and Turkey**

**ERA Priorities and Developments in Turkey**

**European Potential**

Optimal transnational co-operation and competition - defining and implementing common research agendas on grand-challenges, raising quality through Europe-wide open competition, and constructing and running effectively key research infrastructures on a pan-European basis.

**ERA Communication invitation to MS**

«Step up efforts to implement joint research agendas addressing grand challenges, sharing information about activities in agreed priority areas, ensuring that adequate national funding is committed and strategically aligned at European level in these areas.»

**Performance and Statistics**

- **FPs**
  - FP7: over 1000 projects

- **JPIs**
  - Participating to 9 JPIs
  - Member of GPC
  - Member in 6, Observer in 3 JPI

- **COST**
  - 210 COST actions, 503 researchers
  - (61% Participation)

- **ERA-NETs**
  - Participating to 41 ERA-NETs

- **EUREKA**
  - 8th place among 42 countries

- **Bilateral coop.**
  - 39 countries, 88 global and regional organizations
ERA and Turkey

**ERA Priorities and Developments in Turkey**

**Mobility**

An open labour market for researchers - to ensure the removal of barriers to researcher mobility, training and attractive careers

The support schemes for incoming; outgoing and reintegration fellows are coordinated in through more than 25 science fellowships and grant schemes for research careers

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**Under-graduate**

Fellowships for Visiting Scholars and Academic Staff on Sabbatical Leave
- Conduct research or teach in Turkey

Incoming Research Fellowships for Turkish Citizens
- Conduct research or teach in Turkey.

Graduate Scholarship Program for International Students
- Undergraduate/graduate students/ pursue graduate degree in Turkey.

**Graduate**

Co-Funded Brain Circulation Scheme
- Experienced researchers/conduct research or teach in Turkey.

Research Fellowship Program for International Students & Researchers
- PhD students and young post-doctoral researchers conduct research in Turkey.

**Post-doctoral**

Graduate Scholarship Program For The Least Developed Countries
- Undergraduate/graduate students from the Least Developed Countries/pursue graduate degree in Turkey.

**Scientific Events**

Conduct research or teach in Turkey.
ERA and Turkey

**Mobility**

An open labour market for researchers - to ensure the removal of barriers to researcher mobility, training and attractive careers

- Beyond traditional support mechanisms, TÜBİTAK actively supports the international job opportunities in Turkey through various mechanisms.
- Marie Curie actions are critical for brain gain: 334 Researchers joined TARAL

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Increasing attractiveness of TARAL

A new legal arrangement: foreign researchers or experts to easily come, get residence permit

Incoming Research Fellowships for Turkish Citizens: similar to MSCA, USA, Japan, Canada, etc.

EURAXESS and national initiatives for international job openings
Turkey is represented in **ERAC** and **ERA Related Groups**

- GPC
- Knowledge Transfer
- SGHRM
- SFIC

**European Research Area**
IU and Turkey

As a Europe 2020 Flagship Initiative Innovation Union is key to Europe’s future

Innovation is presented as the best tool and process to increase employment, increase competitiveness and handle societal challenges

1. In times of fiscal constraints, invest in education, R&D, innovation and ICTs
2. EU and national R&I systems need to be better linked and their performance improved
3. Education systems at all levels need to be modernized; world class universities, attract top talent
4. Researchers and innovators must be able to work and cooperate across the EU; realize ERA
5. Access to EU programmes must be simplified and their leverage effect on private sector investment enhanced
6. More innovation out of our research: cooperation between science and business must be enhanced
7. Remaining barriers for entrepreneurs to bring “ideas to market” must be remove
8. EIPs should be launched to accelerate R&D and market deployment of innovations to tackle major societal challenges
9. Strengths in design and creativity must be better exploited: social innovation championed
10. Work better with international partners: open access to R&D programmes, ensure comparable conditions abroad
Developments in Turkey in last 10 years with respect to Innovation Union Recommendations

In times of fiscal constraints, invest in education, R&D, innovation and ICTs. Such investments should where possible not only be protected from budget cuts, but should be stepped up.

**Turkey**

<table>
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<tr>
<th>GERD</th>
<th>EU 28 Average</th>
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| GERD as % of GDP | 2004: 0,5 % ➔ 2012: 0,9 % | 2004: 1,8 % ➔ 2012: 2 % |

| GERD per capita population | 2004: 23.1 € ➔ 2012: 75.6 € | 2004: 394.4 € ➔ 2012: 532.6 € |

Source: Eurostat
IU and Turkey

2. EU and national R&I systems need to be better linked and their performance improved

Greater commitment to FPs: Horizon 2020 Roadmap, Horizon 2020 support mechanism

Greater commitment to ERA: ERAC and related groups

17 new support mechanisms in last two years

Bilateral agreements, COST and EUREKA

10. Work better with international partners: open access to R&D programmes, ensure comparable conditions abroad

Framework Programmes
- FP6 ➔ around 400 Projects
- FP7 ➔ over 1000 Projects
- Horizon 2020 ➔ 63 Projects, 2014

ERA-NETs
- 41 ERA-NETS
  International peer review, joint evaluation and funding decisions

JPIs
- Actively participating in 9 JPIs ➔ In 6 of them member in 3 of them observer

2007-2014

2009-2014

2003-2014
Our education systems at all levels need to be modernized. Excellence must even more become the guiding principle. We need more world-class universities, raise skill levels and attract top talent from abroad.

Support Programme for Centres of Excellence (1004)
Support Programme for Establishment of International R&D Labs (1515)

24th SCST Meeting is dedicated to reform of education system

A series of decisions were taken to:

- increase quality of education
- producing new digital content for primary, secondary education, and encouraging digital content in bachelor level
- revision of syllabus
- research on language education in primary and secondary education
- revision of fellowships for postgraduate education abroad
- revision of university entrance system
More innovation out of our research: cooperation between science and business must be enhanced

Remaining barriers for entrepreneurs to bring "ideas to market" must be removed

The last two years witnessed a momentum towards supporting entrepreneurial activities and commercialization of research results. Entrepreneurship is placed at the core of the innovation system approach.

RTDI in Priority Areas
Grant Pr. (1511): increase RTD capability and competitiveness of the companies in priority areas

Entrepreneurship Multi-phased
Pr. (1512): create technology based start-ups with R&D capacity for providing innovative products and services to domestic and international markets.

TTO Grant Pr. (1513): capabilities on awareness, training; nat./international grant proposals; University-industry cooperation; IP management and technology licensing

Private Equity Grant Pr. (1514) fulfil the financial requirements in the seed, start-up and growth stages of R&D start-up companies: innovative products and technologies via private equity funds.

National new ideas and Products Support Pr. (1005): increase national independence and competitiveness

Start-up R&D Projects Support Pr. (3001): researchers that will conduct R&D project for first time
International Cooperation

Framework Programmes
National Coordination Office

INTERNATIONALIZATION

Bilateral Relations

Multilateral Relations

UN

COST

BSEC (KEİ)

SPACE

EMBO

NATO

Bilateral and Multilateral Relations

Internationalization of STI
International Cooperation

(In collaboration with 36 Countries via 40 programmes)
(Members of 88 Multilateral and international Organizations)

Supported Projects
Proposals

Between 2002 and 2014

Collaborative Res. Projects
Travel Grants
Bilateral Cooperation Projects*

Who can apply?

- University
- Private/Public Institutions
- PhD Degree
- BA Degree

<table>
<thead>
<tr>
<th>Project Duration</th>
<th>Up to 36 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Amount</td>
<td>Up to 360,000 TL</td>
</tr>
<tr>
<td>Application Periods</td>
<td>Depends on Joint Calls</td>
</tr>
<tr>
<td>Deadline</td>
<td>Depends on Joint Calls</td>
</tr>
<tr>
<td>Project Incentive Premium</td>
<td>1500 TL/month</td>
</tr>
<tr>
<td>Evaluation Period</td>
<td>4 months</td>
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</table>
International Cooperation

FP 6
2002-2006 (5 years)
17.5 Billion €

FP 7
2007-2013 (7 years)
53.2 Billion €

Horizon 2020
2014-2020 (7 years)
80 Billion €
FP7 as a tool of International Cooperation

FP7 and Turkey

SCST [2006/203] EU Framework Programmes National Coordination Responsibility

Total Budget: 53,2 Billion €, Return Amount: 208,9 Million €

930 Turkish researchers, 9,500 European researchers
200 SME, cooperation with 2,000 European R&D actor
350 Turkish researchers in European research centres

Integration with ERA

• Cooperation with global players
• Multidisciplinary, multipartner research culture
• Accelerated brain gain (334 researchers)

Project Budget
2,8 Billion €
1,012 projects
1,206 partnerships
OBJECTIVE 1
Increasing awareness at national level and realization of training activities

OBJECTIVE 2
Development of initiatives and mechanisms towards encouraging participation to the Programme

OBJECTIVE 3
Identifying capabilities in TARAL, increasing international visibility and developing cooperation with ERA

OBJECTIVE 4
Increasing cooperation with national institutions

OBJECTIVE 5
Developing synergy among national and international R&D programmes

Steadily increasing and widening Turkey’s participation to Horizon 2020 and maximizing the benefits to be utilized through participation to the Programme.

451 million Euro
Integration with ERA
Development and Implementation of H2020 Roadmap within the context of the Vision

Horizon 2020 Advisory Board
18th of June 2014
27. SCST Meeting

Horizon 2020 Vision

- TÜBİTAK
- Min. For EU Affairs
- Under. Treasury
- MoSIT
- Min. Develop.
- TOBB
- YÖK
- Min. of Foreign Affairs
- Min. of Finance
- KOSGEB

Roadmap

Initiatives, Measures and Advice for Horizon 2020

Development and Implementation of Roadmap

Report to SCST
Horizon 2020 Roadmap Components

2015 Roadmap for Horizon 2020

**Vision:** Steadily increasing and widening Turkey’s participation to Horizon 2020 and maximizing the benefits to be utilized through participation to the Programme.

**Objective 1**
Increasing awareness at national level and realization of training activities

**Objective 2**
Increasing awareness at national level and realization of training activities

**Objective 3**
Identifying capabilities in TARAL, increasing international visibility and developing cooperation with ERA

**Objective 4**
Increasing cooperation with national institutions

**Objective 5**
Developing synergy among national and international R&D programmes

**Vertical Action Plans**

**Excellent Science**
- V1: ERC
- V2: Marie Skłodowska Curie
- V3: Research Infrastructures
- V4: FET

**Industrial Leadership**
- Leadership in enabling and industrial technologies
  (V5: ICT V6: NMP V7: Space)
  - V15-16-17: Other Areas

**Societal Challenges**
- V8: Health
- V9: Food
- V10: Energy
- V11: Transport
- V12: Environment
- V13: SSH
- V14: Security

**Horizontal Action Plans**

**H1:** Evaluators
**H2:** Communication
**H3:** Supports and Awards
**H4:** ETPs
**H5:** Tur&Bo
**H6:** Industry
**H7:** SME
Dedicated Workshops

Objective 1: Training and Awareness Raising

Technology Transfer Offices
- 23 October 2014
- 13 October 2015

Industrial Organizations
- 20 February 2015

Evaluators
- 29 January 2015

Development Agencies
- Cooperation in H2020

EEN Network
- 10 February 2015

Women Researchers
- 9 March 2015

Projects
Joint Actions
Cooperation
Needs
Weaknesses
Strengths
Objective 1 : Training and Awareness Raising
Increasing awareness at national level and realization of training activities

Activities of 2014

Universities, Industrial Organizations, SMEs, Public Institutions and Research Teams

Horizon 2020  Support/Award  Consortium Building  Project writing/submission

173 Event ➔ 7,000 Participants
818 Face to Face Meeting
Objective 1: Training and Awareness Raising, Activities of 2015

Technical Workshop in H2020
12-13 February 2015
120 participants

Target Groups
Industry, SME, Academy, NGOs, Public Institutions

SME Mentorship
Minimum 100 SME

Face to Face Meetings
1,000 researchers and firms

Min. 150 Event ➔ 7,000 Participants
Objective 1: Training and Awareness Raising

- Preparation of materials in Turkish with EC
- H2020 poster/booklet
- Poster/booklet in all sub domains
- Success Story booklet/film; for H2020 and industry in H2020 themes

19 Poster
20 Booklet
2 Films
20,000 People

E-learning mechanisms
Social Media
Supporting and Encouraging Participation

Support and Award Programme to Encourage Participation to International Cooperation

**H2020 Travel Support**
- Participation to Multipartner Projects (Flight tickets, accommodation and transport, meeting fee, visa, daily allowance)
- Per travel 1.500€ max.

**H2020 Coordinators Support Programme**
- Supporting coordinators in multipartner projects
- Up to 30.000€ per coordinators

**Networking**
- ERC Principle Investigator Support Programme
  - Increasing participation and success in ERC
  - Support up to 12.500€ per project

**Individual Participation**
- MSCA Pre-evaluation Support Programme
  - Increasing success in individual projects: MSCA IF&COFUND
  - Support up to 1.000€-8.000€ per projects

**Leadership**
- Success and Above Treshold Awards
  - Above treshold: up to 7.000€
  - Success: %80 to project team, %20 to organization
  - 220.000€ ---- 18.900€
  - 1.200.000€ ---- 64.500€

**Encouraging Success**
- ERC Awards
  - Above treshold: up to 12.000€
  - Success: Fixed rate + %9
  - Transfer Award: Fixed Rate
ERC Principal Investigator Support Programme

**ERC Project Writing – Submission Training**
- Conceptualizing and writing project idea
- Participation to 2 trainings
- Per training incl. travel 2,500 €

**ERC Pre-evaluation Support**
- Evaluation by professionals before submission
  - Evaluation of Project idea
  - Written scientific evaluation: B Forms
  - Via internet, telephone, meeting
  - Travel support
- Up to 7,500 €

**ERC Interviews Support**
- Participation to ERC interview trainings
- Participation to 1 training
- Per training incl. travel 2,500 €

**EXCEPTIONS**
- Previous ERC grantees
- ERC applicants succeeded in 2. phase
- MSCA IF grant holders
- TÜBİTAK Science Award Holders /TÜBİTAK-TWAS award holders
- EMBO Settlement Support Programme, Young Researchers, Long-term fellowhip holders
- COST action proposers
Above Treshold Award

Application, Eligibility and Requirements

Award:
- Multipartner Project
  Partner: 3,500 €
  Coordinator: 7,000 €
- Single partner SME Projects
- MSCA Projects (80 score)
  (90 score)
  : 2,000 €
  : 3,000 €

ERC Awards
- A Score Reserve List: 12,000 €
- A Score non-reserve: 9,000 €
- B Score: 6,000 €

- To project team and coordinator
- Due to above treshold limit in each call
- Success in resubmission: right to apply for success award
### Success Awards

#### Calculation Example

<table>
<thead>
<tr>
<th>Budget</th>
<th>Formula</th>
<th>Partner</th>
<th>Coordinator</th>
</tr>
</thead>
<tbody>
<tr>
<td>220.000</td>
<td>3.500€ + (budget x 7%)</td>
<td>18.900</td>
<td>37.800</td>
</tr>
<tr>
<td>500.000</td>
<td>8.500€ + (budget x 5%)</td>
<td>33.500</td>
<td>67.000</td>
</tr>
<tr>
<td>1.200.000</td>
<td>28.500€ + (budget x 3%)</td>
<td>64.500</td>
<td>129.000</td>
</tr>
</tbody>
</table>

First payment after application: above threshold award amount

SME Instrument Single beneficiary and MSCA IF Projects Partner * 1,5
## ERC Success Award

<table>
<thead>
<tr>
<th>Programme</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERC Starting Grant</td>
<td>25.000 € + (budget x 9%)</td>
</tr>
<tr>
<td>ERC Consolidator Grant</td>
<td>30.000 € + (budget x 9%)</td>
</tr>
<tr>
<td>ERC Advanced Grant</td>
<td>35.000 € + (budget x 9%)</td>
</tr>
</tbody>
</table>

### Example (Euro/€)

<table>
<thead>
<tr>
<th>Project Budget</th>
<th>Starting Grant</th>
<th>Advanced Grant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.500.000</td>
<td>160.000</td>
<td>170.000</td>
</tr>
<tr>
<td>3.000.000</td>
<td>295.000</td>
<td>305.000</td>
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Organization Support

- Joint scientific activities (Turkey&Germany) in Turkey
- Total: 74 Events
- 1,000 Turkish-780 German Researchers

2+2 Programme

- Deadline: 23 March 2015
- University-Industry Cooperation
Closing Ceremony of Turkey-Germany Science Year, 12th of March 2015

Minister of Science, Industry and Technology, Fikri İŞIK
Minister of Education and Research
Johanna WANKA

Cooperation possibilities in STI
Opportunities in H2020
Turkey-UK Science and Innovation Year

Opening Ceremony
- 24th of March 2015, Ankara
- High-level attendance

Newton-Katip Çelebi Fund
- Officially announced in September 2014
- 40 million pounds of joint fund for 5 years between Turkey and UK

Support Programmes
- People: Mobility of Researchers
- Research: Research Cooperation
- Translation: Innovation Cooperation

Horizon 2020 dedicated activities
Destination Turkey Events

**Destination Turkey**

**SINCE 2010**
**15 EVENTS; USA & EUROPE**

**INCREASING ATTRACTIVENESS OF TURKEY AT INTERNATIONAL ARENA**

**ACTIVITIES**

<table>
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<tr>
<th>National Funds for Reintegration</th>
<th>Horizon 2020 for Reintegration; ERC and MSCA</th>
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As a result of these activities
334 reintegration via MSCA
and 1 ERC Grant
Thank you for your attention..