



# 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

- Main STI Policy Making and Programming Body with MoSIT
- Assisting to formulation of STI policies
- Funding R&D



- Carry out research on strategic fields





## Investments

- ✓ 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.



## Initiatives

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



## Novelties

- ✓ 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

## Mobility

An open labour market for researchers

## Investing in European Potential

Optimal transnational co-operation and competition

## 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



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

NIS  
.....  
  
Private sector  
focused ecosystem  
approach  
.....

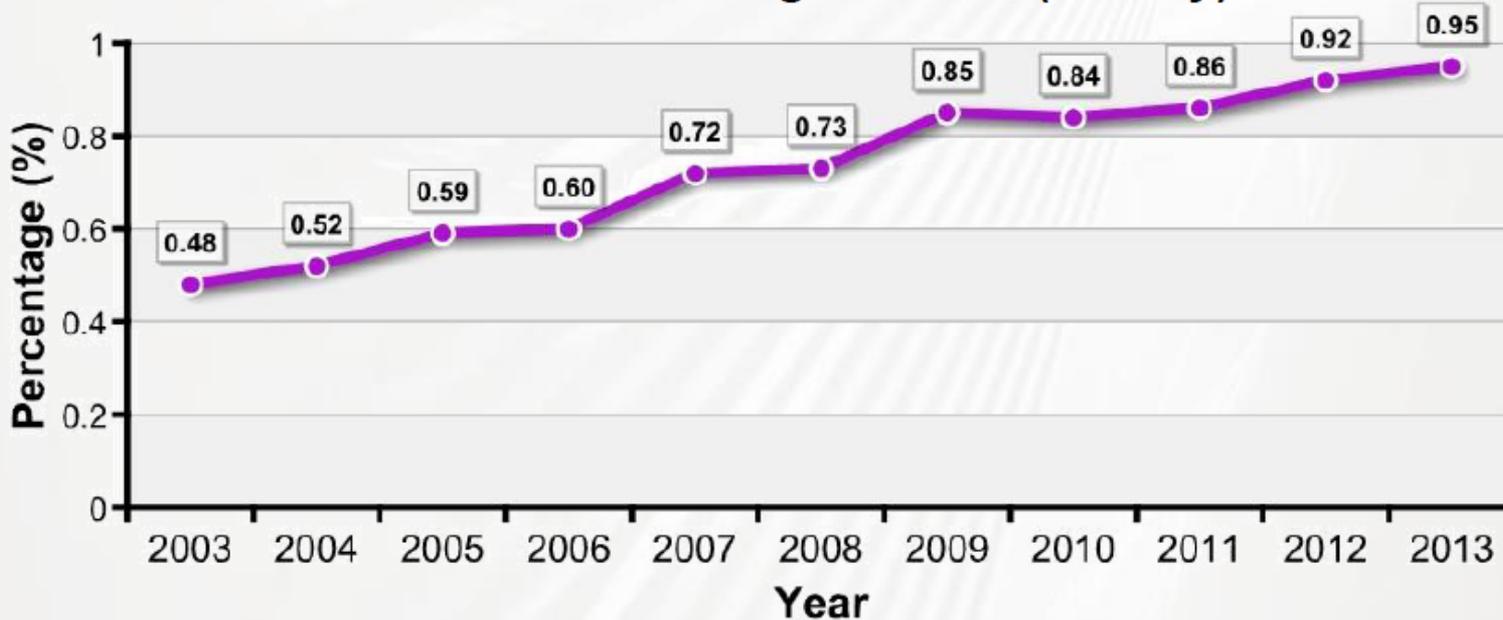


Development and nationalization of key technologies	Increasing added value in export and production
Being among world's most developed 10 economies	Closing the current account deficit

**NIS** 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

## GERD as a Percentage of GDP (Turkey)

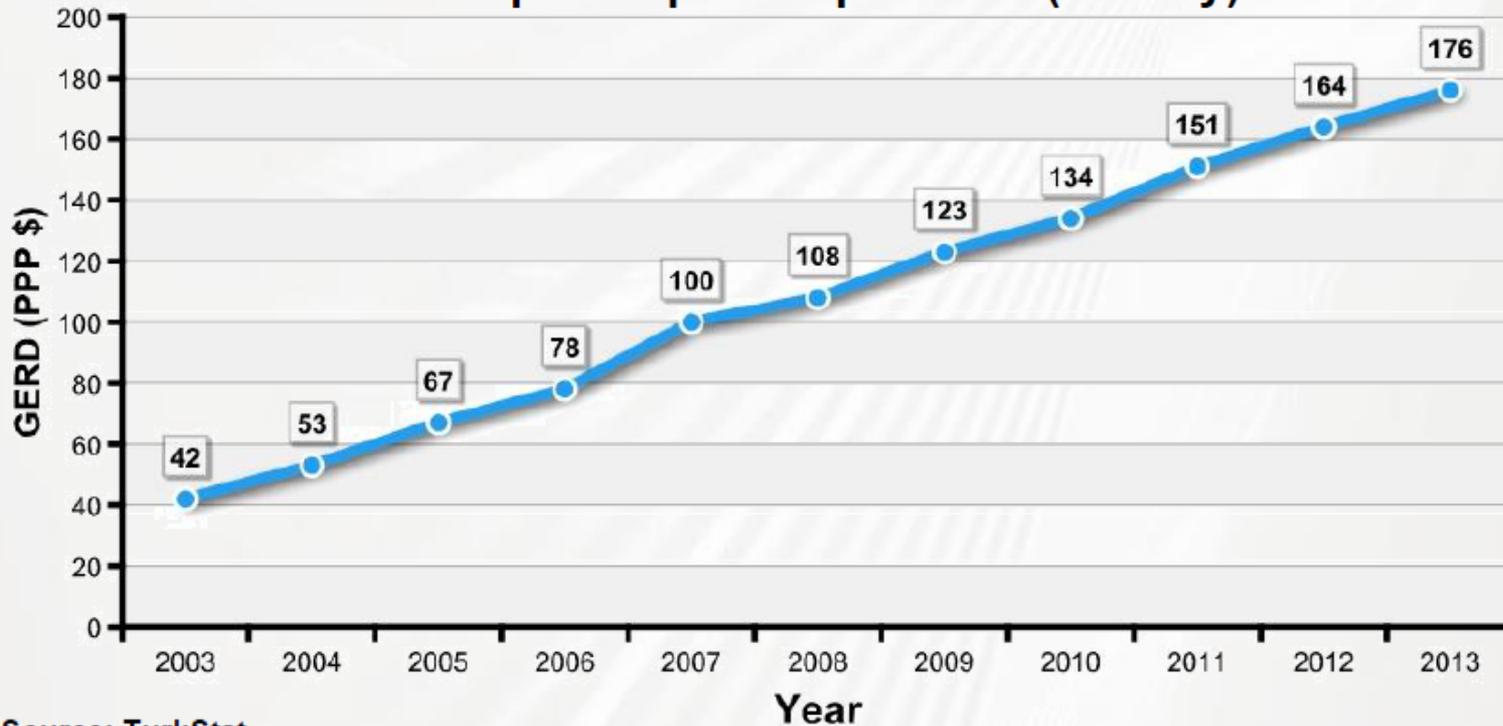


Source: TurkStat

**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

## GERD per Capita Population (Turkey)

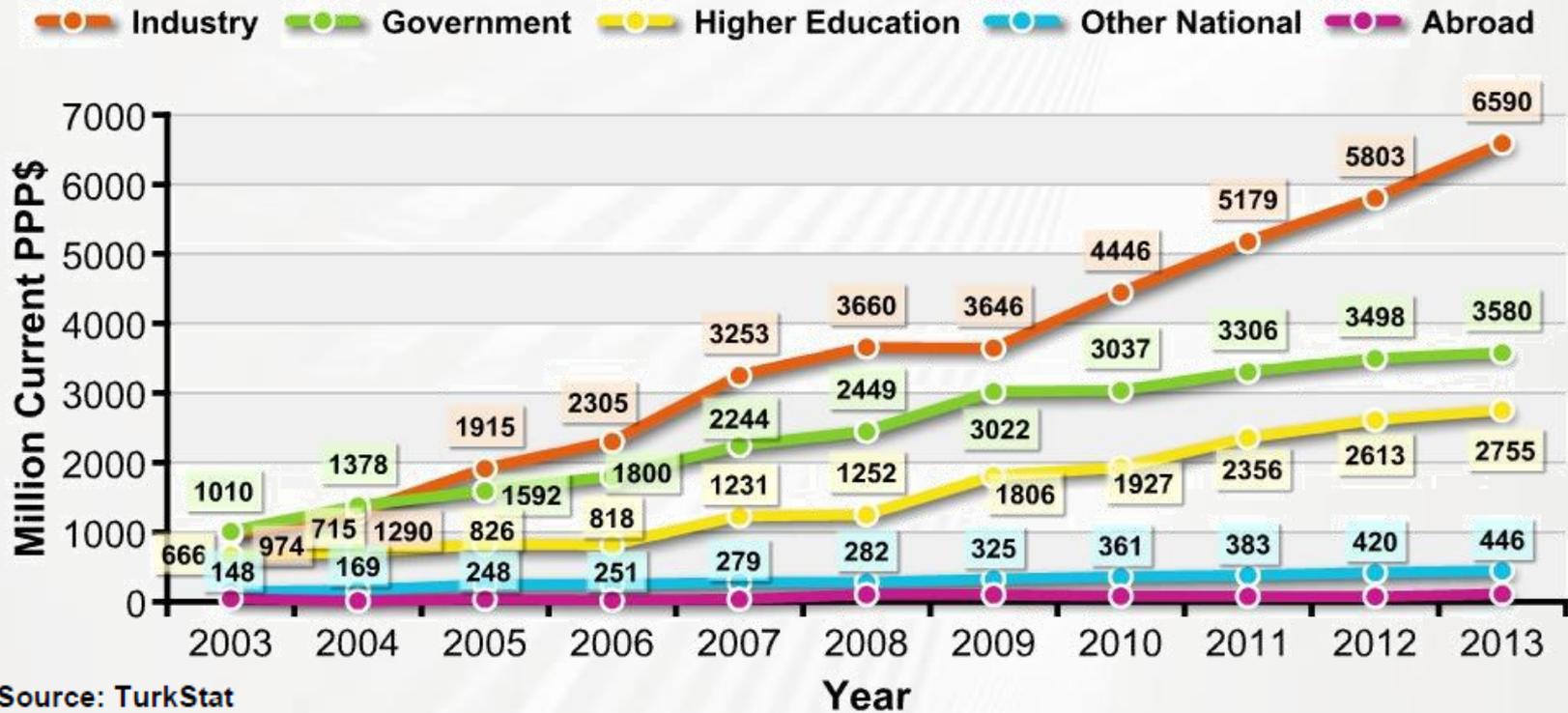


Source: TurkStat

**NIS** 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

**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 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 Automative

## 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)



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

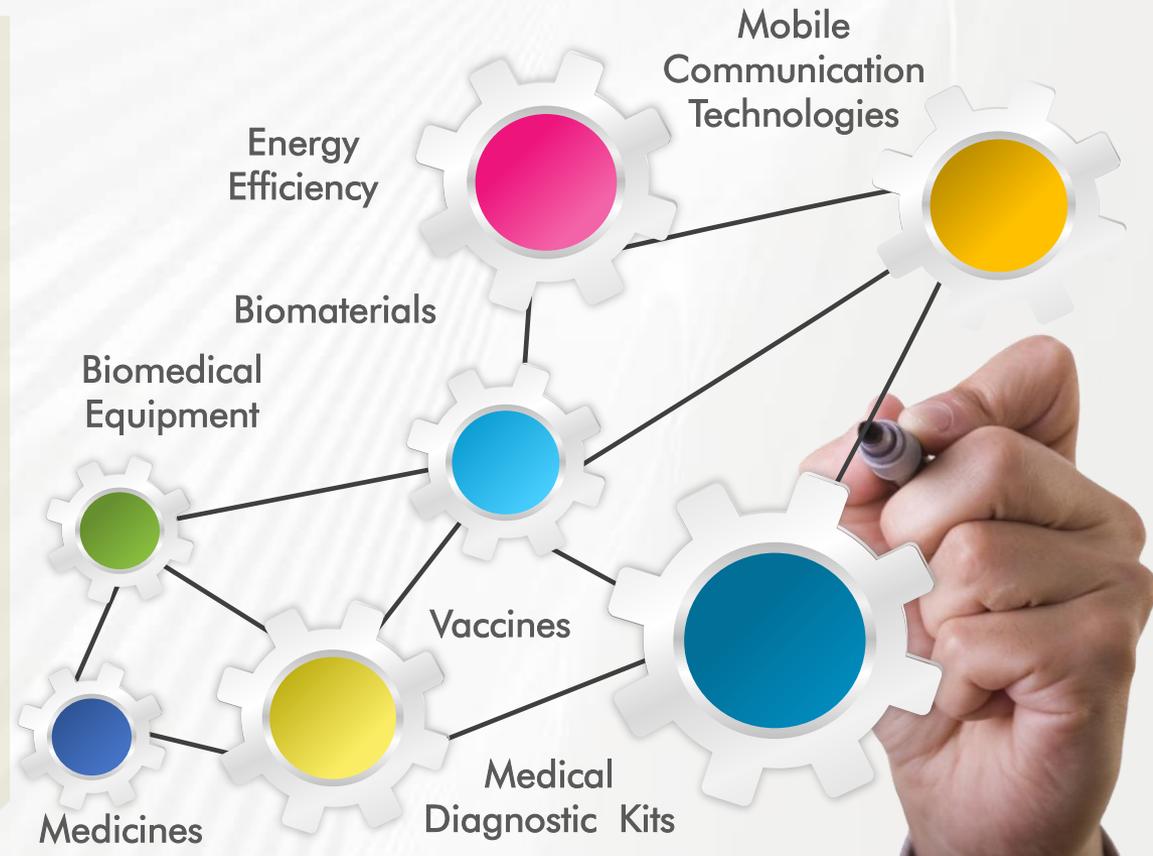
ERA Communication invitation to MS: Introduce or enhance competitive funding through calls for proposals

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 Priorities and Developments in Turkey

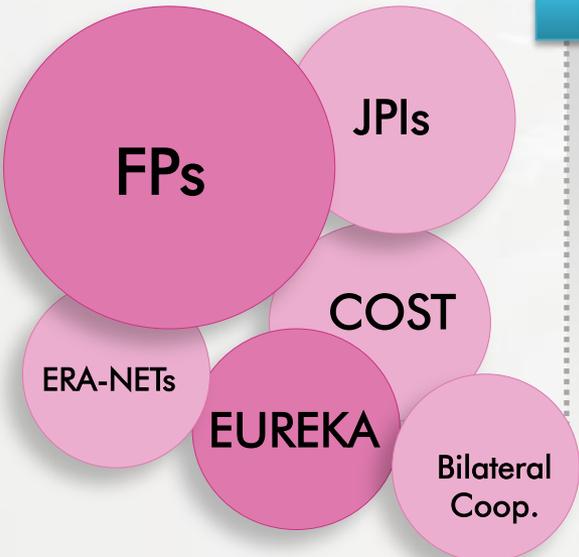
### European Potential

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



- FP7: over 1000 projects

- Participating to 41 ERA-NETs

- EUREKA: 8th place among 42 countries

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

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

- Bilateral coop.: 39 countries, 88 global and regional organizations

## 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

#### Under-graduate

#### Graduate

#### Post-doctoral

#### Scientific Events

##### 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.

##### 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.

##### Graduate Scholarship Program For The Least Developed Countries

- Undergraduate/graduate students from the Least Developed Countries/pursue graduate degree in 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

Increasing attractiveness of TARAL

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

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

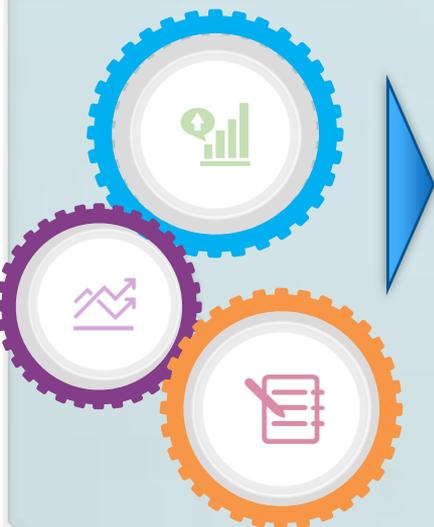
SFIC



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

EU

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 removed
- 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

1

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

EU

### GERD

2004: 1.630 B € → 2012: 5.646 B € **➤ +%246** | EU 28 Average  
2004: 194.340 B € → 2012: 269.548 B € **➤ +%39**

### GERD as % of GDP

2004: 0,5 % → 2012: 0,9 % **➤ +%80** | 2004: 1,8 % → 2012: 2 % **➤ +%11**

### GERD per capita population

2004: 23.1 € → 2012: 75.6 € **➤ +%227** | 2004: 394.4 € → 2012: 532.6 € **➤ +%35**

Source: Eurostat

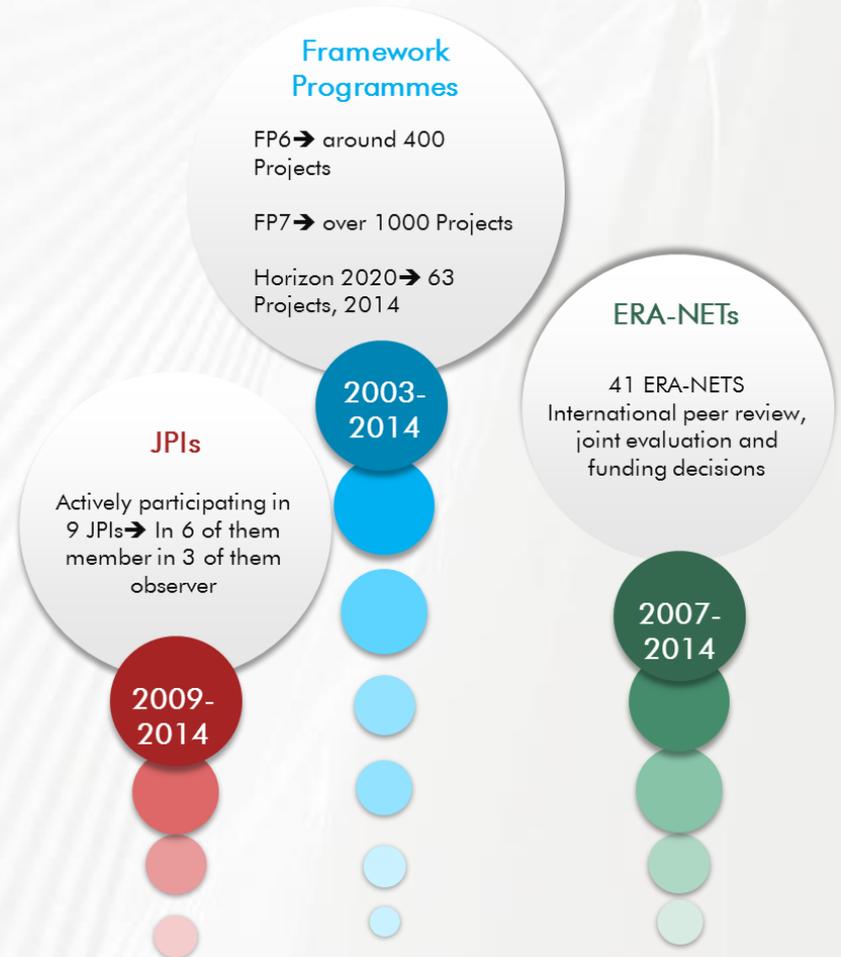
2

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



3

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

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 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

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



**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.

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



**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.

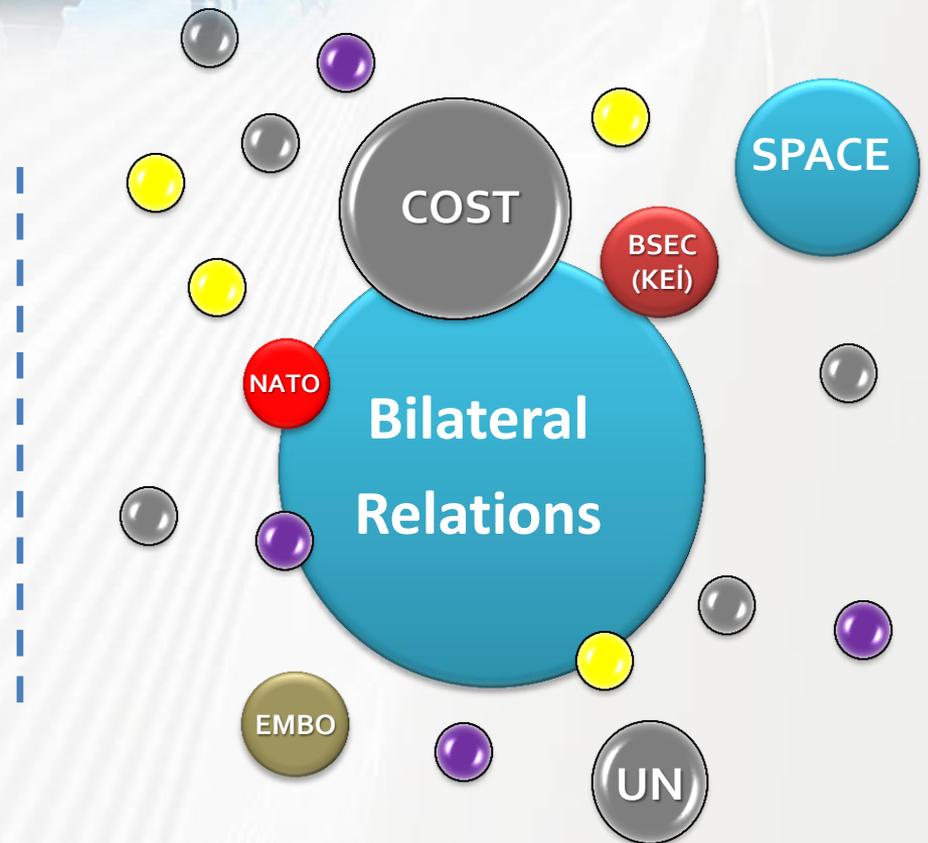


## Framework Programmes National Coordination Office



## Bilateral and Multilateral Relations

Internationalization of STI

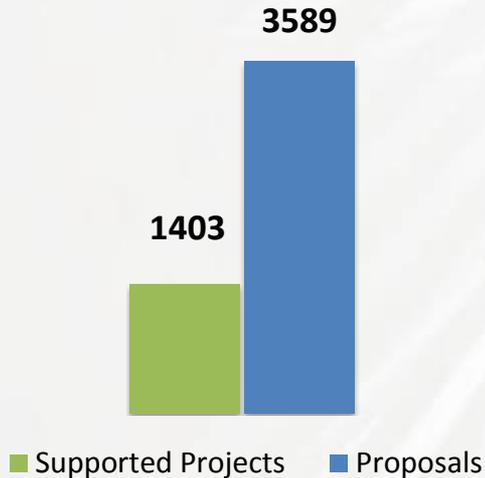


# International Cooperation

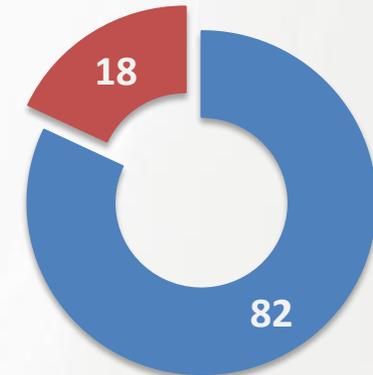


(In collaboration with **36** Countries via **40** programmes)  
(Members of **88** Multilateral and international Organizations)

Bilateral Relations



Between  
2002 and 2014



■ Collaborative Res. Projects  
■ Travel Grants

## Bilateral Cooperation Projects\*

### Who can apply?



- University

PhD Degree



- Private/ Public Institutions

BA Degree

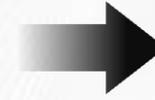
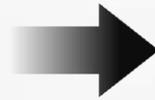


<b>Project Duration</b>	Up to 36 months
<b>Project Amount</b>	Up to 360.000 TL

<b>Application Periods</b>	Depends on Joint Calls
<b>Deadline</b>	Depends on Joint Calls

<b>Project Incentive Premium</b>	1500 TL/month
<b>Evaluation Period</b>	4 months

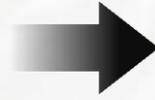
# International Cooperation



**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 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

## H2020 ROADMAP FOR 2015 VISION OF HORIZON 2020

### 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

OBJECTIVES  
H2020 ROADMAP

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**  
.....

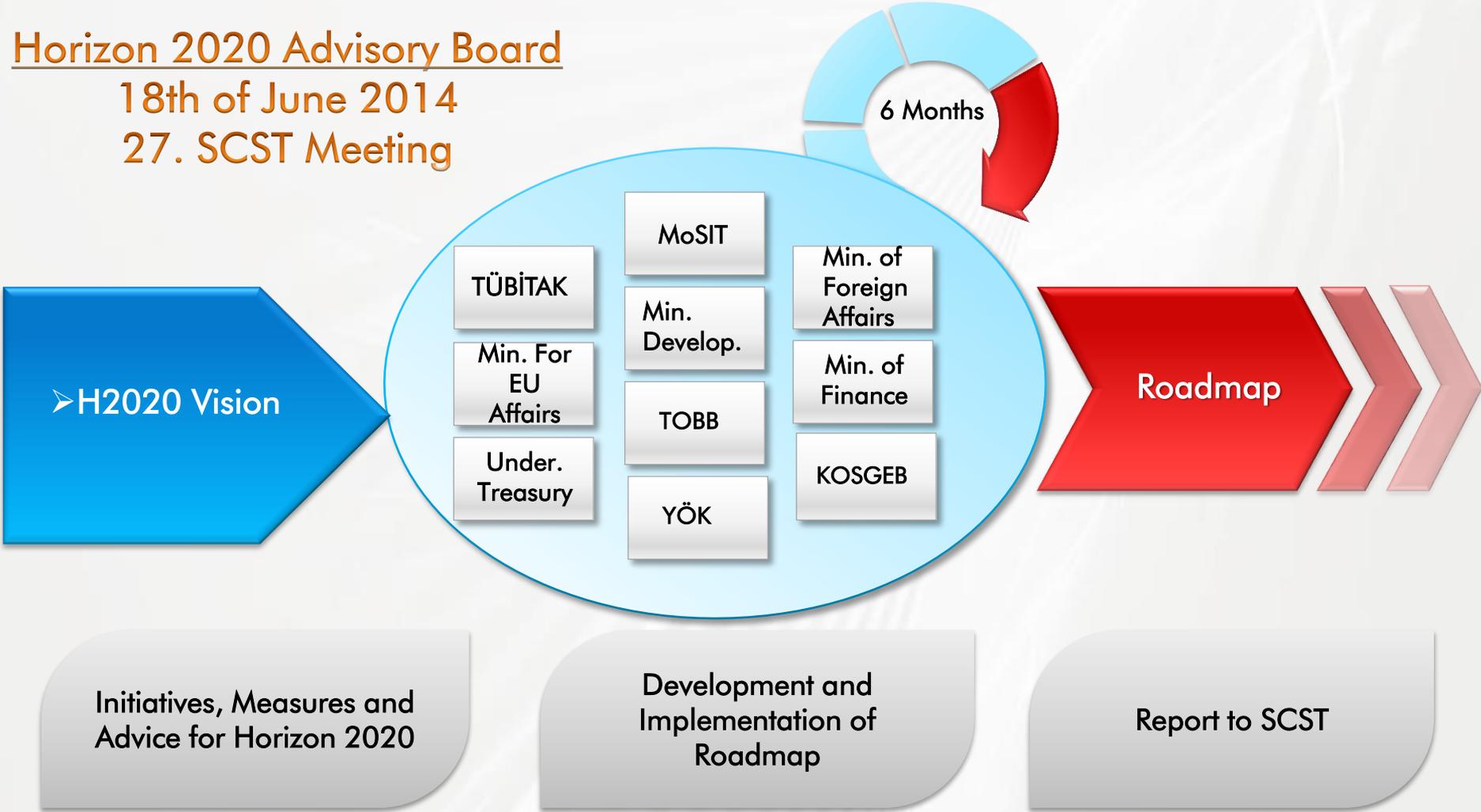
Integration with ERA

## Development and Implementation of H2020 Roadmap within the context of the Vision

### Horizon 2020 Advisory Board

18th of June 2014

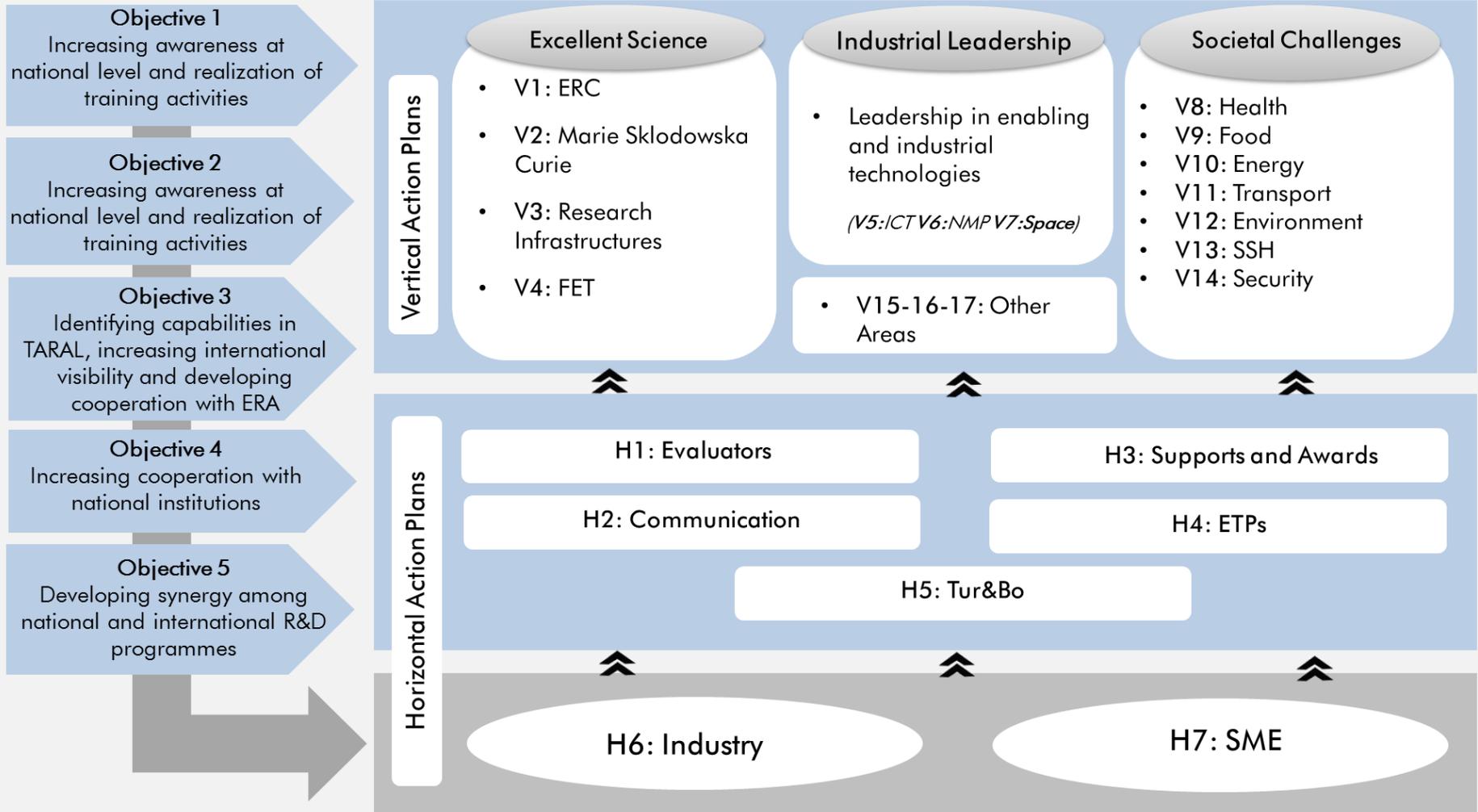
27. SCST Meeting



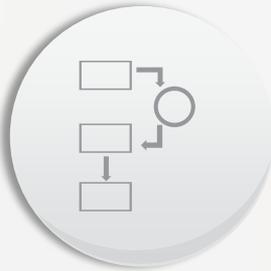
# Horizon 2020 Roadmap Components

## 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 : Training and Awareness Raising



### Technology Transfer Offices

- 23 October 2014
- 13 October 2015



### EEN Network

- 10 February 2015



### Industrial Organizations

- 20 February 2015



### Women Researchers

- 9 March 2015



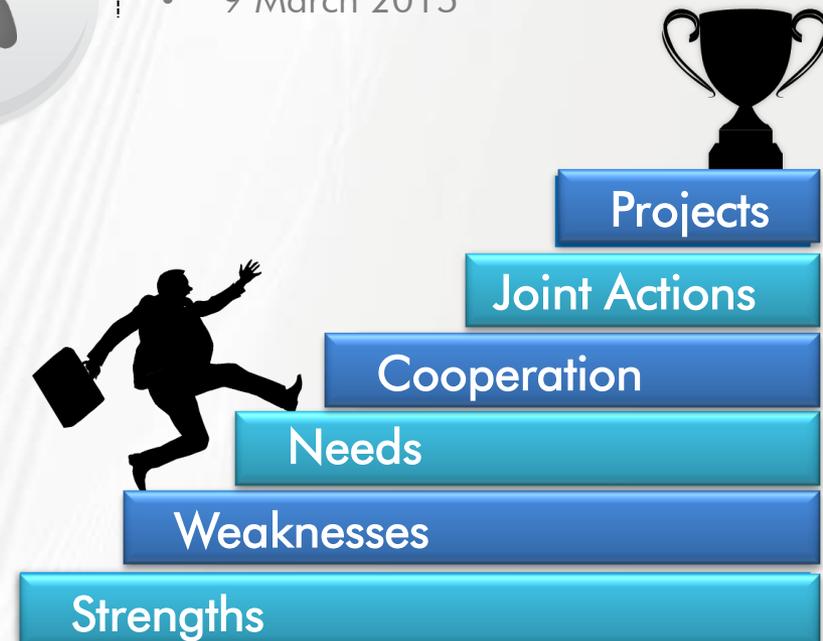
### Evaluators

- 29 January 2015



### Development Agencies

- Cooperation in H2020



## 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



TÜBİTAK



### Technical Workshop in H2020

12-13 February 2015  
120 participants

### Target Groups

Industry, SME, Academy,  
NGOs, Public Institutions

### SME Mentorship

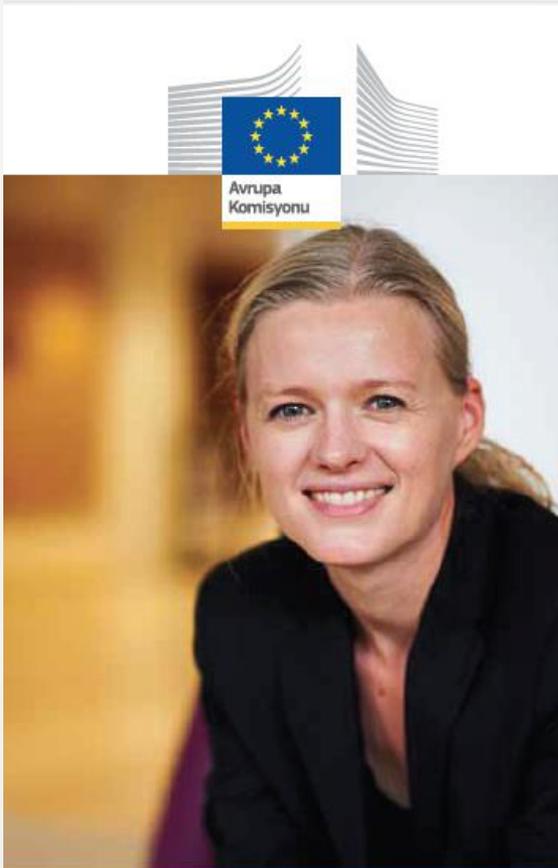
Minimum 100 SME

### Face to Face Meetings

1.000 researchers and firms



Min. 150 Event → 7.000 Participants



**MARIE SKŁODOWSKA-CURIE  
PROGRAMLARI**

*Bir sonraki kariyer hamleniz!*

Eğitim  
Ve Kültür

## Objective 1: Training and Awareness Raising

▶ Preparation of materials in Turkish with EC

▶ H2020 poster/booklet

▶ Poster/booklet in all sub domains

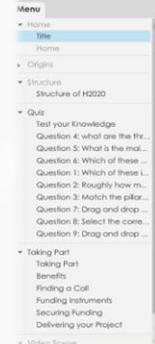
▶ Success Story booklet/film; for H2020 and industry in H2020 themes

**19 Poster  
20 Booklet  
2 Films  
20.000 People**

**E-learning  
mechanisms**

**Social Media**

TurkeyinFP7



## Support and Award Programme to Encourage Participation to International Cooperation

H2020 Travel Support



- Participation to Multipartner Projects (Flight tickets, accomodation 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

Individual Participation

Leadership

Encouraging Success

ERC Principle Investigator Support Programme

- Increasing participation and success in ERC
- Support up to 12.500€ per project

MSCA Pre-evaluation Support Programme

- Increasing success in individual projects:, MSCA IF&COFUND
- Support up to 1.000€-8.000€ per projects

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€

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 of 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 fellowshisp holders
- COST action proposers

## Application, Eligibility and Requirements

### Award:

- Multipartner Project
  - Single partner SME Projects : 5.250 €
  - MSCA Projects (80 score) : 2.000 €  
(90 score) : 3.000 €
- Partner : 3.500 €
- Coordinator : 7.000 €

### 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 threshold limit in each call

- Success in resubmission: right to apply for success award



## Success Awards

Calculation Example			
Budget	Formula	Partner	Coordinator
220.000	$3.500\text{€} + (\text{budget} \times 7\%)$	18.900	37.800
500.000	$8.500\text{€} + (\text{budget} \times 5\%)$	33.500	67.000
1.200.000	$28.500\text{€} + (\text{budget} \times 3\%)$	64.500	129.000

First payment after application: above threshold award amount

SME Instrument Single beneficiary and MSCA IF Projects Partner \* 1,5

## ERC Success Award

Programme	Formula
ERC Starting Grant	25.000 € + (budget x 9%)
ERC Consolidator Grant	30.000 € + (budget x 9%)
ERC Advanced Grant	35.000 € + (budget x 9%)

## Example (Euro/€)

Project Budget	Starting Grant	Advanced Grant
1.500.000	160.000	170.000
3.000.000	295.000	305.000



2014  
Turkey- Germany  
Year of Science and  
Education

## 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

# Turkey-Germany Science and Education Year



Closing Ceremony of Turkey-Germany Science Year, 12th of March 2015



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



Cooperation possibilities in STI  
Opportunities in H2020





2015  
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

SINCE 2010  
15 EVENTS ; USA & EUROPE

INCREASING ATTRACTIVENESS OF  
TARAF AT INTERNATIONAL ARENA



## ACTIVITIES

National Funds for  
Reintegration

Horizon 2020 for  
Reintegration; ERC and MSCA

As a result of these activities  
334 reintegration via MSCA  
and 1 ERC Grant



**Thank you for your attention..**