TURKEY IN HORIZON 2020
ALTUN/HORIZ/TR2012/0740.14-2/SER/005

H2020 Thematic Oriented Training
" Food and Biotechnology "

Thies Wittig

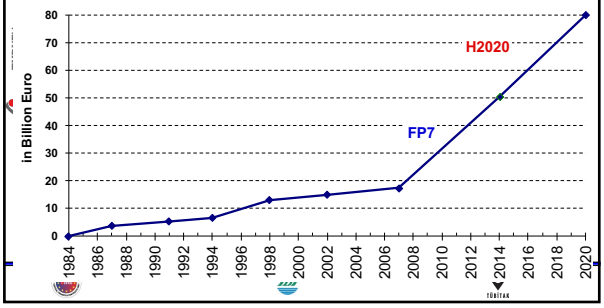
Deputy Team Leader
Project "Turkey in Horizon 2020"

Dr. Thies Wittig

- PhD in Computer Science
- 12 years in industrial research department (signal processing, artificial intelligence)
- In 1995 creation of own company IT Consult GmbH, Germany
- Since 1986 involved in international collaborative research projects, as researcher, manager, coordinator …
- Long experience as EC proposal evaluator and project reviewer
- Until today involved in around 25 projects in Europe, Middle East, Far East and Balkan countries

FP Budget Development

- Horizon 2020 has nearly €80 billion Euro of funding available over 7 years (2014 to 2020).



Principles of EU R&D&I Activities

- Transnational collaboration (min. 3 partners/3 countries from MS or AC)
- Open to all: Industry, SMEs, Universities,…)
- Based on strategic objectives - programme oriented
- Consortia are selected by Calls for Proposals
- Innovative, based on science & technology excellence
- Competitive - competition of the best teams in EU
- Project results are the property of the participants

5

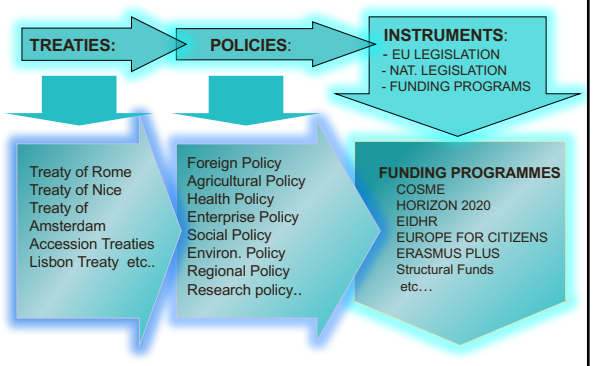
28 (27) Member States and 16 Associated Countries

Associated Countries

- Iceland
- Norway
- Albania
- Bosnia and Herzegovina
- The former Yugoslav Republic of Macedonia
- Montenegro
- Serbia
- **Turkey**
- Israel
- Moldova
- Switzerland
- Faroe Islands
- Ukraine
- Tunisia
- Georgia
- Armenia

6

The logic of EU funding programmes



7

8

What is HORIZON 2020

Horizon 2020 focuses on Research and Innovation.

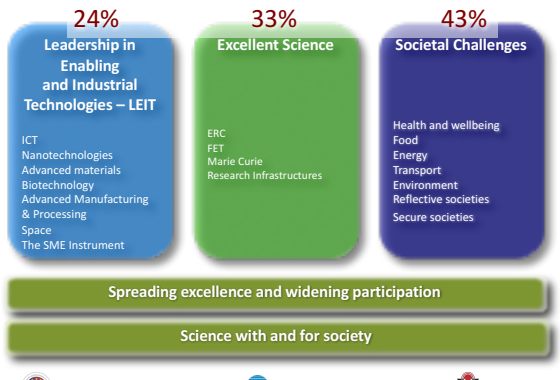
It does not cover, for example, Education or Arts.

It addresses 3 main areas ("Pillars"):

- Technologies to strengthen Industrial Leadership.
- Excellent Science to make European research and innovation system more competitive.
- Societal Challenges, responding to the priorities of the EU2020 Strategy.

9

The H2020 Structure – 3 Pillars



10

Remember: H2020 is called

Framework Programme
for
Research and **Innovation**

11

What is Innovation ?

What is INNOVATION and why is it so important?

- New ideas ?
- New knowledge ?
- New research results ?
- New methodologies ?

Of course, but …

12

What is Innovation ?

- Innovation = Invention (research) + **exploitation**
- A new way of doing things, which is commercialized.
- Schumpeter said “an idea that finds its way to the market”

Innovation relates to **Products**, **Processes**, or **Business Models**

13

… or as Steve Jobs said:

"One of the ways that I believe people express their appreciation to the rest of humanity is to make something wonderful and put it out there."

14

INNOVATION

- Innovation is **not improvement**, it is doing something **different**
- Innovation results in a **significant impact**
- Innovation is **invention applied**
- Innovation can be **disruptive**

Let's look at some examples …

15

INNOVATION

Is this idea from 1956 Innovation?

No!

It never went past this first stage.

16

INNOVATION

1979

Was this SONY walkman an Innovation?

Yes!

A completely new concept that was highly successful on all markets!

Was it a Disruptive Innovation?

No!

There was nothing comparable to it before.

17

INNOVATION

Are MP3 players an Innovation?

Yes!

A new concept (small, light, no moving parts) that is highly successful on all markets!

Was it a Disruptive Innovation?

YES!

It killed the tape-based walkman!

18

INNOVATION

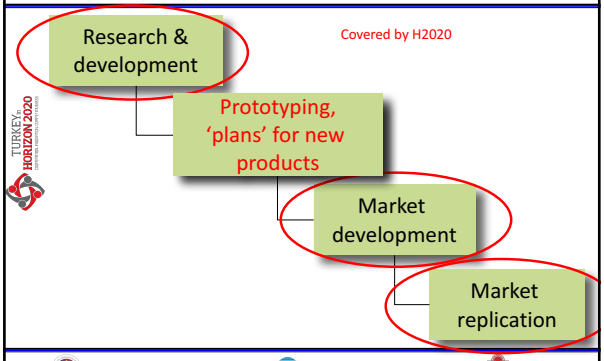
What is next?

Streaming to mobile devices!

Disruptive?
At least a serious threat to MP3 players but also to CDs.

19

The Innovation Chain



20

Research and Innovation

Calls in **Industrial Technologies** and **Societal Challenges** either address

- Research and Innovation (RIA),
- Innovation (IA), or
- Coordination and Support (CSA)

For Innovation calls, the research part has been done previously and some prototype of a certain matureness must exist.

How can we measure such maturity?

21

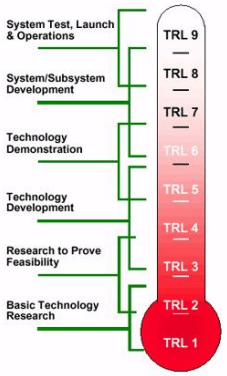
Measuring Technology Matureness

Technology Readiness Levels (TRLs)

- The use of TRLs as a measurement of the maturity level of particular technologies is a new development in Horizon 2020.
- TRLs provide a common understanding of a technology development status
- Many of the call topics have a defined TRL at which the implementation of the proposal is intended to start. For example a project has to start at TRL 3 and end at TRL 5.

22

A measurement of the maturity level of technologies: a new development in H2020



TRL9 – actual system proven in operational environment
TRL8 – system complete and qualifyed
TRL7 – system prototype demonstration in operational environment
TRL6 – technology demonstrated in relevant environment
TRL5 - technology validated in relevant environment
TRL4 – technology validated in LAB
TRL3 – experimental proof of concept
TRL2 – Technology concept formulated
TRL1 - Basic principles observed

23

Innovation and the Private Sector

To ensure that innovation is happening in H2020

SME participation become obligatory in most projects. Around 20% of the total budget for Societal Challenges and LEITs must go to SMEs.

This is good news for SMEs, of course !

It is also an important message for universities: purely academic consortia in these 2 areas are out !

24

Types of actions supported by grants

- **Research and Innovation Actions**
- **Innovation Actions**
- **Coordination and Support Actions**
- **SME instrument**
- ERANET Co-fund
- Pre-commercial procurement Co-fund
- Public procurement of innovative solutions Co-fund

26

Research and innovation actions

- Actions primarily consisting of activities aiming to establish new knowledge and/or to explore the feasibility of a new or improved technology, product, process, service or solution.
- For this purpose they may include basic and applied research, technology development and integration, testing and validation on a small-scale prototype in a laboratory or simulated environment.

27

Innovation actions

- Actions primarily consisting of activities directly aiming at producing plans and arrangements or designs for new, altered or improved products, processes or services. Often specific TRL levels are required as a starting point.
- For this purpose they may include prototyping, testing, demonstrating, piloting, large-scale product validation and market replication.

28

Coordination and support actions

Actions consisting primarily of **accompanying measures** such as standardisation, dissemination, awareness-raising and communication, networking, coordination or support services, policy dialogues and mutual learning exercises and studies, including design studies for new infrastructure and may also include complementary activities of networking and coordination between programmes in different countries.

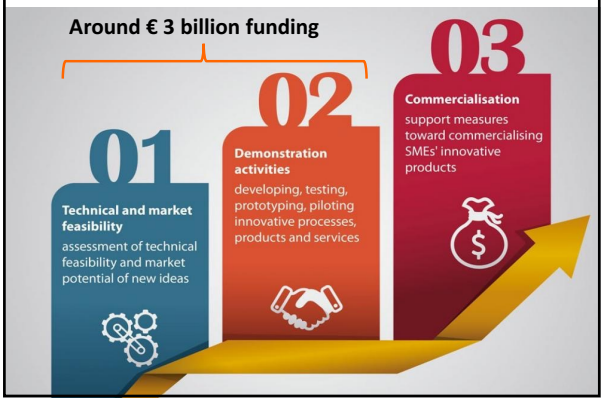
29

Specific opportunities for SMEs

A specific SME instrument comes under the H2020 objective of 'smart, sustainable and inclusive growth', however with a small budget!

30

SME Instrument: The Three Project Phases



The SME Instrument

Phase 1

Concept & Feasibility Assessment

- €50 000 lump sum for feasibility study
- Initial 10 page business proposal to be drafted
- 6 months in duration
- High competition (around 6% success rate)

The SME Instrument

Phase 2

Innovation Project

- Between €0.5 million and €2.5 million in EU funding (70%)
- Develop project through innovation strategy
- Draft a more developed, 30 page business plan
- 1-2 years in duration

The SME Instrument

Phase 3 – Commercialisation

- No direct funding
- Extensive support and coaching
- Facilitate access to risk finance
- Additional support and networking opportunities (EEN)

The SME Instrument

Business coaching

Coaches will drive the performance of the organisation

Coaches suggested by EEN, and selected by the SME

Voluntary business coaching:
- o Phase 1: 3 days
- o Phase 2: 12 days

SMEinst-2016-2017

Stimulating the innovation potential of SMEs for a low carbon and efficient energy system

- Reducing energy consumption and carbon footprint by smart and sustainable use (including energy-efficient products and services as well as 'Smart Cities and Communities'),
- Low-cost, low-carbon electricity supply (including renewable energy as well as CCS and re-use),
- Alternative fuels and mobile energy sources,
- A single, smart European electricity grid,
- New knowledge and technologies, and
- Robust decision making and public engagement.

36

SME-1 SME instrument phase 1
Cut-off dates: 03 May 2017
06 September 2017
08 November 2017

SME-2 SME instrument phase 2
Cut-off dates: 06 April 2017
01 June 2017
18 October 2017

37

Example: Project "TAG" H2020-SMEINST-2-2015

38

Example: Project "TAG" H2020-SMEINST-2-2015

Coordinator: LOJIKA BILGI TEKNOLOJILERI VE SERVISLERI TICARET AS

Crowd-Sourcing technology to change how people and cars move in cities (from 1/10/15 to 31/3/17)

"TAG is revolutionizing carpooling for Smart Cities. We are following the disruptive market success of the likes of Airbnb regarding room bookings and Waze in terms of navigation, reaching valuations of tens of billions of Euros. However, well-documented technological problems and bad user experiences have prevented such success in carpooling."

1,745,362 Euro funding

39

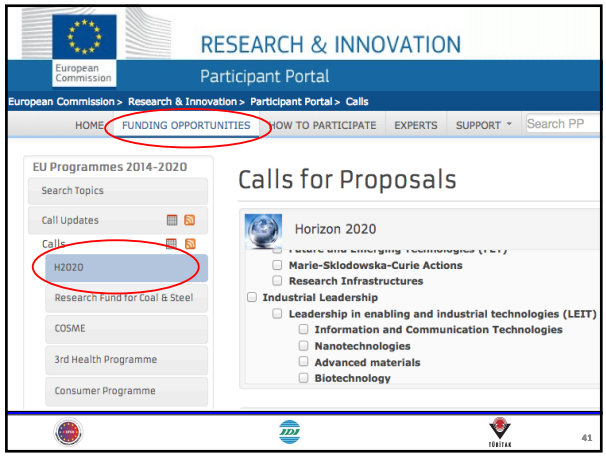
Work Programmes

What are these Work Programmes and what do they contain?

The **Participants Portal**:

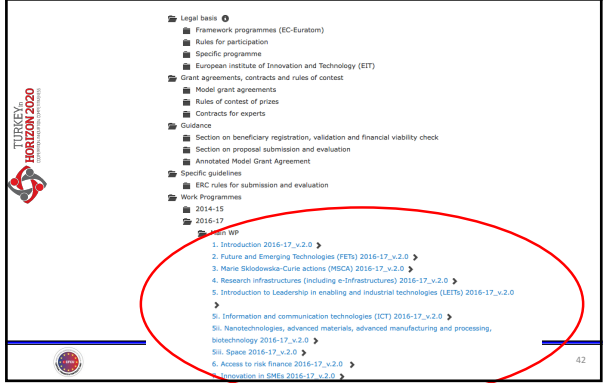
Where to find them:
http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/

40



41

http://ec.europa.eu/research/participants/portal/desktop/en/funding/reference_docs.html



42

1. Introduction 2016-17_v.2.0
2. Future and Emerging Technologies (FETs) 2016-17_v.2.0
3. Marie Sklodowska-Curie actions (MSCA) 2016-17_v.2.0
4. Research infrastructures (including e-Infrastructures) 2016-17_v.2.0
5. Introduction to Leadership in enabling and industrial technologies (LEITs) 2016-17_v.2.0

5i. Information and communication technologies (ICT) 2016-17_v.2.0

5ii. Nanotechnologies, advanced materials, advanced manufacturing and processing, biotechnology 2016-17_v.2.0

5iii. Space 2016-17_v.2.0

6. Access to risk finance 2016-17_v.2.0
7. Innovation in SMEs 2016-17_v.2.0
8. Health, demographic change and wellbeing 2016-17_v.2.0
9. Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy 2016-17_v.2.0
10. Secure, clean and efficient energy 2016-17_v.2.0
11. Smart, green and integrated transport 2016-17_v.2.0

…

European Commission

EN

Horizon 2020

Work Programme 2016 - 2017

9. Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy

Table of contents

Introduction **8**

Call - Sustainable Food Security – Resilient and resource-efficient value chains **16**

Introduction **16**

More resilient and resource efficient value chains **17**

SFS-01-2016: Solutions to multiple and combined stresses in crop production 17

SFS-02-2016: Teaming up for good: Exploiting the benefits of species diversity in cropping systems 19

SFS-03-2016: Testing and breeding for sustainability and resilience in crops 20

SFS-04-2017: New partnerships and tools to enhance European capacities for in-situ conservation 21

SFS-05-2017: Robotics Advances for Precision Farming 22

SFS-06-2016: Weeding - strategies, tools and technologies for sustainable weed management 24

SFS-07-2016-2017: Organic breeding – Increasing the competitiveness of the organic breeding and farming sectors 25

SFS-08-2017: Organic inputs – contentious inputs in organic farming 26

SFS-09-2016: Spotlight on critical outbreak of pests: the case of Xylella fastidiosa 27

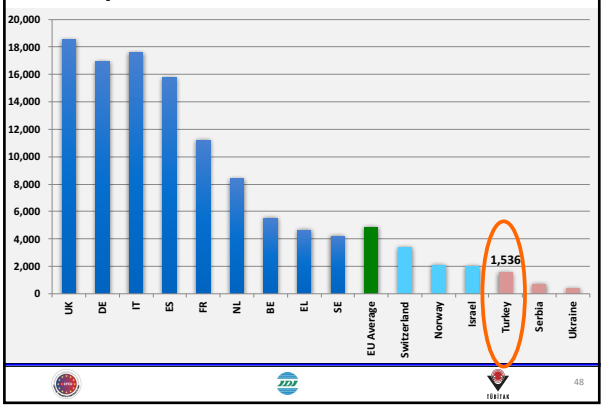
SFS-10-2017: Research and approaches for emerging diseases and pests in plants and terrestrial livestock 29

KEY FACTS AND FIGURES

- Over **76,400 proposals** were submitted in the first two years, requesting a total contribution of €125.4bn.
- Around **9,200** proposals were retained for funding. The overall success rate was **11.8%**.
- Over **9,000** grant agreements were signed by 1/9/16, with a budget allocation of over **€15.9bn** funding.

47

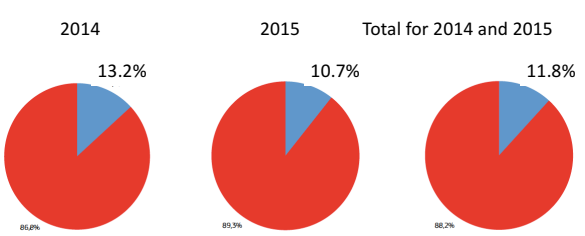
Proposals submitted in the first Two Years



48

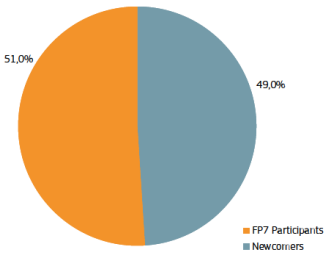
Success Rates

Share of proposals receiving funding



49

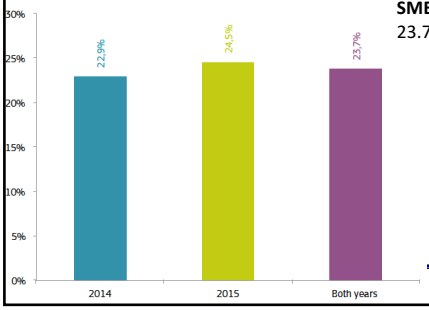
Newcomers in H2020



Around **49%** of the participants in Horizon 2020 are newcomers.

50

EU financial contribution share to SMEs in LEIT* and Societal Challenge Pillar

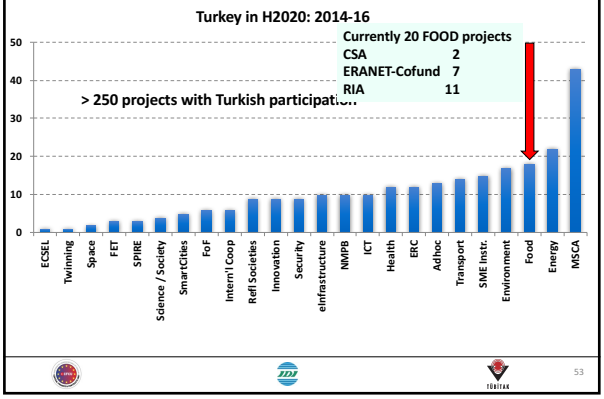


The **20%** budget target for the funding of **SMEs** was achieved: 23.7%

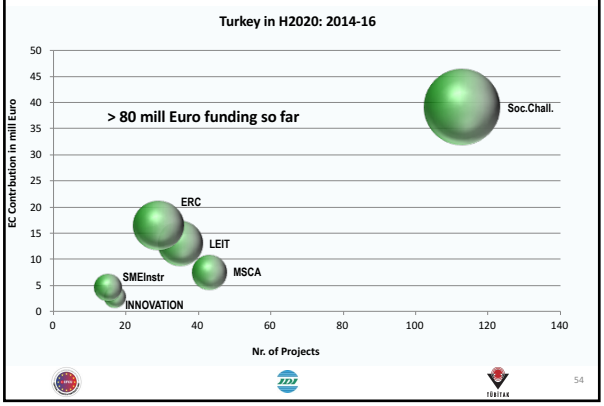
51

How about Turkey?

Turkey in H2020



Turkey in H2020



Rules of Participation

Minimum conditions

- For standard collaborative actions
  - At least, 3 legal entities, each established in different MS/AC
- For SME Instrument, programme co-fund, CSA
  - 1 legal entity established in a MS/AC

Additional conditions

- To be set out in the Work Programme (i.e. number of participants, type of participants, etc.)

56

Evaluation of proposals

Evaluation Criteria

- **Excellence**
- **Impact**
  - *Higher weighting for innovation actions*
- **Quality and efficiency in the implementation**

➢ Details, weightings and thresholds defined in WP
➢ Evaluation carried out by independent experts
➢ Possibility of a 2 stage submission procedure

57

Simplified Funding Model

One reimbursement rate by action

The same rate for all beneficiaries and all activities:

- Up to 100% for Research and Innovation actions
- Up to 70% for innovation (non-profit entities up to 100%)
- Up to 70% for PCP co-fund, 33% for ERANET co-fund, 20% for PPI co-fund

58

Simplified Funding Model

A single method for calculation of indirect costs:

- Flat rate of 25% of total direct costs, excluding subcontracting, costs of third parties and financial support to third parties

59

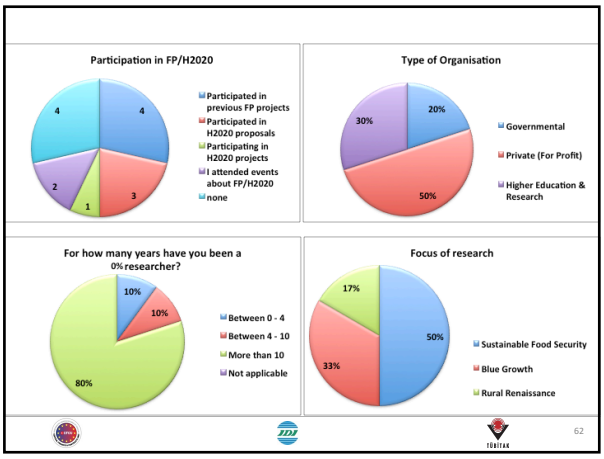
Eligible costs

Main cost categories:

- Personnel costs
- Costs of subcontracting
- Other direct costs
  - Travel costs and subsistence allowances
  - Depreciation costs of equipment
  - Costs of other goods and services (including non-deductible VAT)

60

THE FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION
HORIZON 2020
Our Event today:
61


Participation in FP/H2020
4
4
3
1
2
Participated in previous FP projects
Participated in H2020 proposals
Participating in H2020 projects
I attended events about FP/H2020
none
Type of Organisation
20%
50%
30%
Governmental
Private (For Profit)
Higher Education & Research
For how many years have you been a researcher?
10%
10%
80%
Between 0 - 4
Between 4 - 10
More than 10
Not applicable
Focus of research
50%
33%
17%
Sustainable Food Security
Blue Growth
Rural Renaissance
62