



European Union Research & Innovation Cooperation with India

Focus on bioenergy

Delegation of the European Union to India
Research & Innovation Section

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EU Delegation to India in brief

- **The Delegation was established in 1983**
- **Diplomatic mission representing the European Union (EU) to India together with the 28 Member States**
- **Tasks aimed at enhancing relations between the EU and India – 8 Services**
- **Research & Innovation Service: interface**
 - Enlarge scale, scope and impact of R&I cooperation with India
 - Improve the coordination of Member States research & innovation policies with India
 - Inform on research and innovation matters in India to EU stakeholders
 - Promote Public-Private Partnership in research and innovation



Cooperation Arrangements

- **EU-India S&T agreements** (2001, 2007, 2009 (fusion))
- **Bilateral agreements of EU MSs with India**
- **EU-India Joint Declaration on R&I Cooperation: signed at the EU-India Summit in February 2012, calling for building an “Indo-European Research and Innovation Partnership” with**
 - ✓ Larger scale, scope and impact
 - ✓ Focus on common societal challenges
 - ✓ Enhanced synergies between India, the EU and its Member States

Collaboration Arrangements

Multilateral

EUROPEAN UNION
FP7 & H2020

EU-INDIA
COORDINATED CALLS

EU-MS/AC-INDIA
NEW+INNO INDIGO

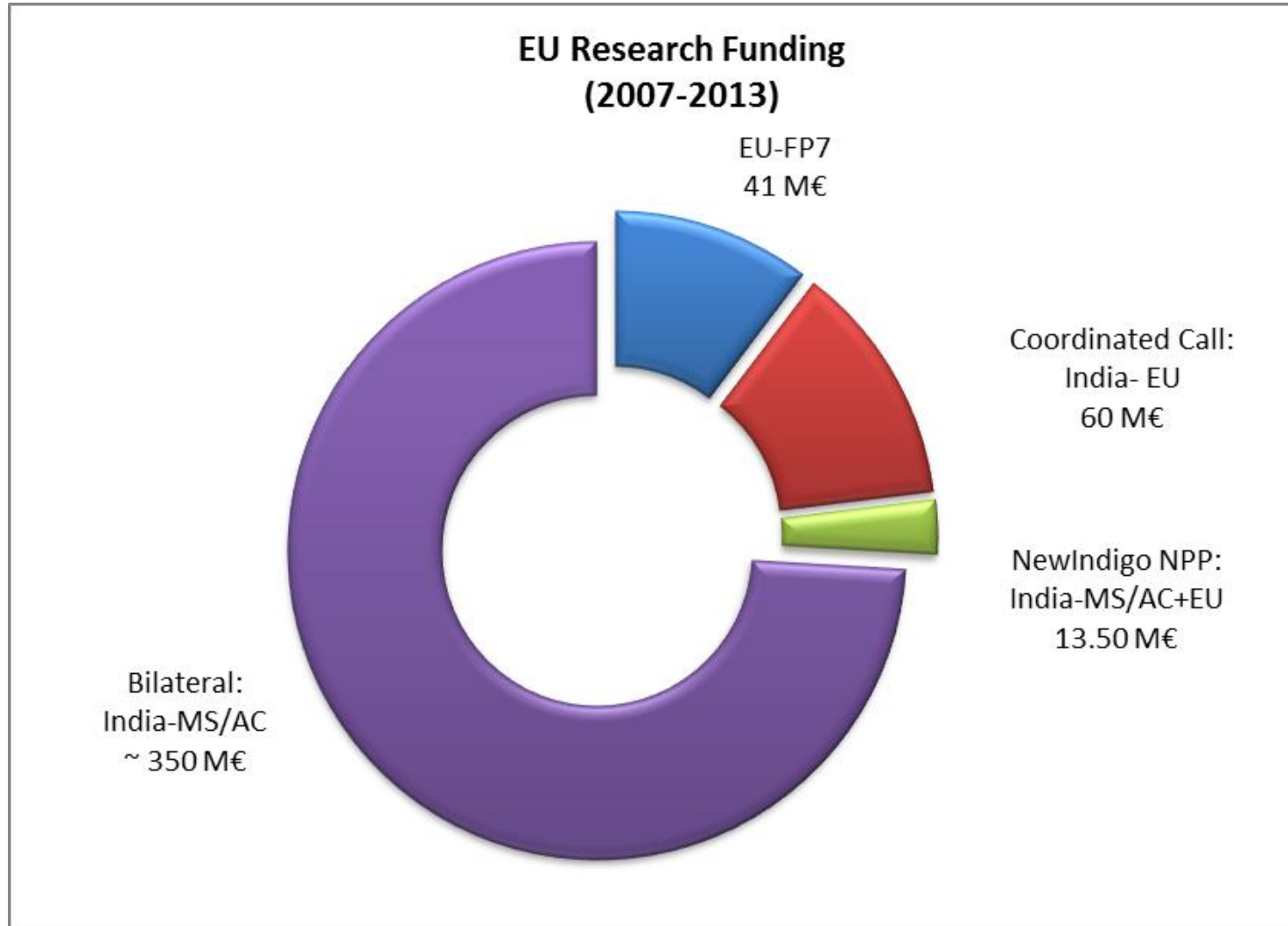
Bilateral

MEMBER STATES (MS)

MS - INDIA
JOINT CALLS
JOINT CENTRES
JOINT PROGRAMMES

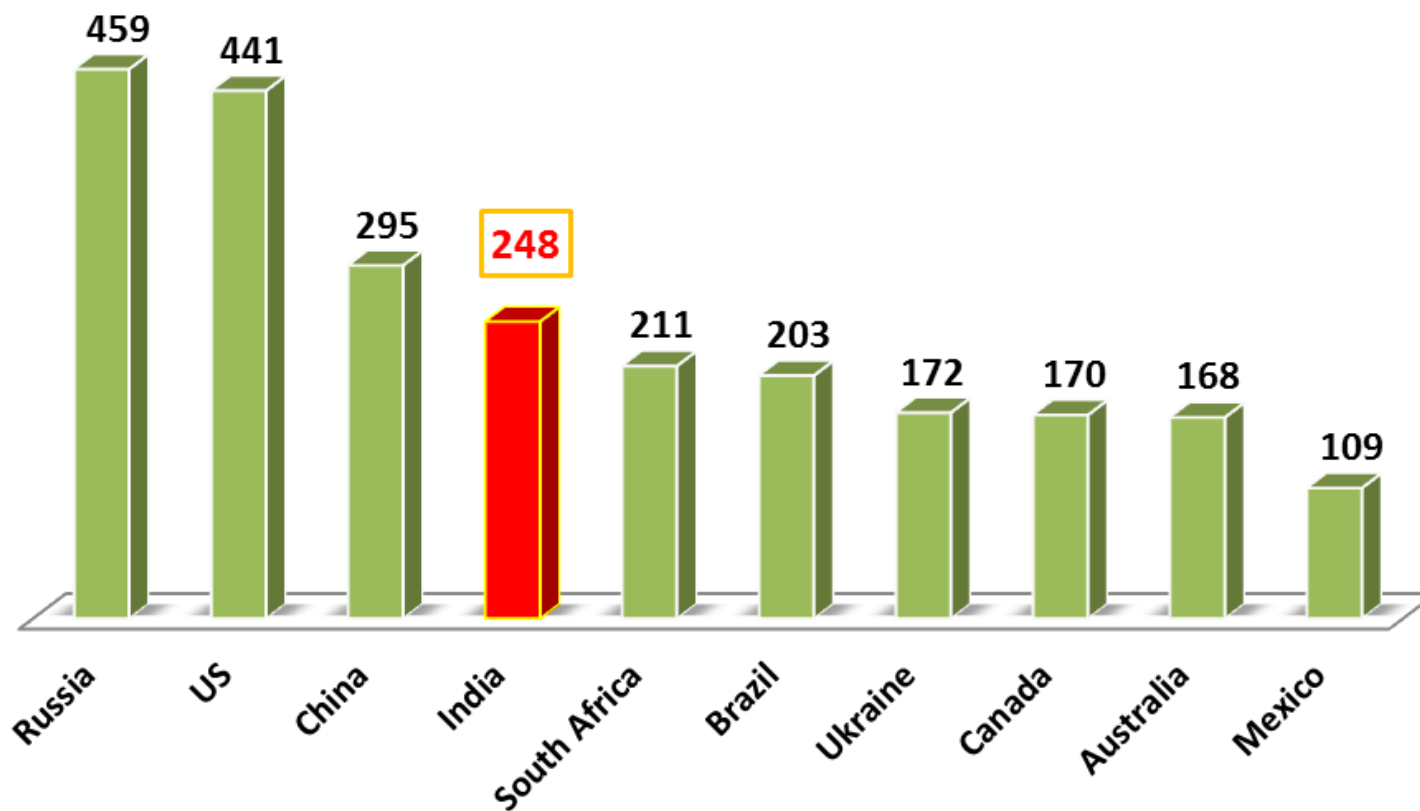
EU Research Programme

- a significant source of funding



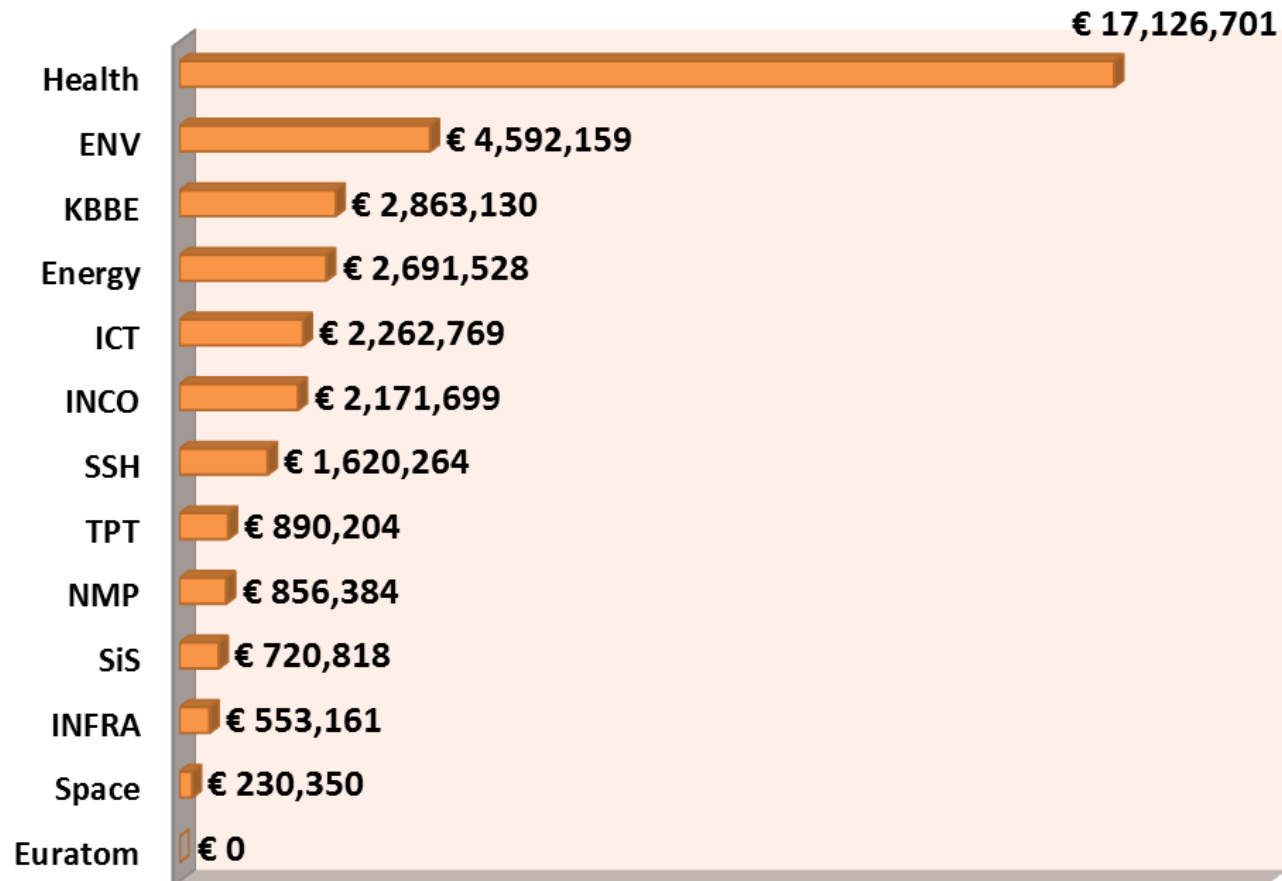
FP7 Main Actors (2007-2013)

Participations



EU Contribution allocated to India (2007-2013)

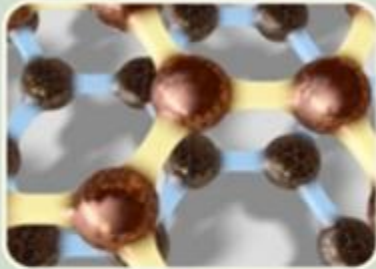
Distribution per Thematic Area



41 Million €

Horizon 2020

The basics: three priorities



Excellent
science

Industrial
leadership

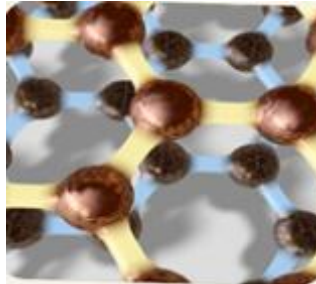
Societal
challenges

1. Excellent Science

To raise the level of excellence in Europe's science base, make Europe an attractive location for researchers and secure Europe's long-term competitiveness

- **European Research Council**
supporting the most talented and creative individuals and their teams to carry out frontier research;

- **Future and Emerging Technologies**
collaborative research to open up new and promising fields of research and innovation;



- **Marie Skłodowska-Curie Actions**,
providing researchers with excellent training and career development

- **Research Infrastructures** accessible to all researchers in Europe and beyond.



Proposed funding (€ million, 2014-2020)*

<i>European Research Council (ERC)</i> Frontier research by the best individual teams	13 095
<i>Future and Emerging Technologies</i> Collaborative research to open new fields of innovation	2 696
<i>Marie Skłodowska-Curie actions (MSCA)</i> Opportunities for training and career development	6 162
<i>Research infrastructures (including e-infrastructure)</i> Ensuring access to world-class facilities	2 488

* All funding figures in this presentation are subject to the pending Multiannual Financial Framework Regulation by the EP and the Council

Horizon 2020

2. Industrial leadership

To make Europe a more attractive location to invest in R&I, by promoting activities where businesses set the agenda

- Leadership in enabling and industrial technologies (LEIT)

- Information and Communication Technologies
- Key enabling technologies (Micro-/nanoelectronics; nanotechnologies; photonics, advanced material, industrial biotechnology and advanced manufacturing technologies);
- Space

- Access to finance

- for innovative enterprises, financial instruments in partnership with the European Investment Bank;



- Innovation in SME

Proposed funding (€ million, 2014-2020)

<p><i>Leadership in enabling and industrial technologies (LEITs)</i> (ICT, nanotechnologies, materials, biotechnology, manufacturing, space)</p>	13 557
<p><i>Access to risk finance</i> Leveraging private finance and venture capital for research and innovation</p>	2 842
<p><i>Innovation in SMEs</i> Fostering all forms of innovation in all types of SMEs</p>	616 + complemented by expected 20% of budget of societal challenges + LEITs and <i>'Access to risk finance'</i> with strong SME focus

Horizon 2020

3. Societal challenges

Actions from research to market with a new focus on innovation-related activities (in the framework of Europe 2020):

1. Health, demographic change and wellbeing
2. Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the bio-economy;
3. Secure, clean and efficient energy
4. Smart, green and integrated transport
5. Climate action, environment, resource efficiency and raw materials
6. Inclusive, innovative and reflective societies
7. Secure societies



Proposed funding (€ million, 2014-2020)

Health, demographic change and wellbeing	7 472
Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the Bioeconomy	3 851
Secure, clean and efficient energy *	5 931
Smart, green and integrated transport	6 339
Climate action, environment, resource efficiency and raw materials	3 081
Inclusive, innovative and reflective societies	1 310
Secure societies	1 695
<i>Science with and for society</i>	462
<i>Spreading excellence and widening participation</i>	816

* Additional funding for nuclear safety and security from the Euratom Treaty activities (2014-2018)

International cooperation in Horizon 2020

Key message:

Horizon 2020 is **open to participation** from across the world!

Clear ambition to substantially increase participation of international partners!

How?

- **General opening**
- **Targeted international cooperation actions** across Horizon 2020
- Supported by **horizontal international cooperation activities** (in Horizon 2020 Challenge 6: follow-up to Capacities INCO programme)

General opening

- Horizon 2020 is **open to participation** from across the world
- **Automatic funding:**
 - ✓ Member States (including overseas departments and overseas territories)
 - ✓ Associated Countries
 - ✓ exhaustive list of countries in annex to work programme (but: no longer BRIC + Mexico in this list!)
- For other countries, funding only in **exceptional cases:**
 - ✓ when provision is made in the call text
 - ✓ bilateral agreement (e.g. Health challenge – NIH)
 - ✓ when the Commission deems it essential (case by case assessment)



Funding of Indian participants (provisional)

Type of project	Funding of Indian participants
Classical collaborative projects ("open calls for proposals")	"No automatic funding" – but funding will be available (1) when specified in the Work Programme, or (2) when Indian participation is deemed to be essential in the action, or (3) when provided for under a bilateral S&T agreement.
ERC (European Research Council) grants	Yes , no changes for individual Indian researchers
MSCAs (Marie Skłodowska-Curie Actions)	
Coordinated calls for proposals	Yes (by Indian authorities)
Bilateral funding (e.g. INNO INDIGO)	Yes (funding by EU MSs + India)

2- Horizon 2020 with a focus on bioenergy topics

Priority 3. Societal challenges

Proposed funding (€ million, 2014-2020)

Health, demographic change and wellbeing	7 472
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Call LCE: areas to be addressed

	AREA	TRL	TYPE
LCE 1	New knowledge and technologies	2 > 3-4	RIA
Renewable electricity and heating/cooling			
LCE 2	Developing the next generation technologies of renewable electricity and heating/cooling	3-4 > 4-5	RIA
LCE 3	Demonstration of renewable electricity and heating/cooling	5-6 > 6-7	IA
LCE 4	Market uptake of existing and emerging renewable electricity, heating and cooling technologies	7-9	CSA

RIA: Research & Innovation Actions

IA: Innovation Actions

CSA: Coordination & Support Action

Research and
Innovation

LCE-02 – 2014 - Challenge

• Specific challenge in bioenergy

- *Improving efficiency of biomass CHP systems while widening the feedstock base* – Micro and small-scale CHP (0.5-250 kW and 0.25-1 MW input power respectively) have a high potential for heat and electricity production for decentralized applications. **Cost effective, robust and environmentally friendly micro and small-scale CHP systems with high thermal and electrical efficiency** need to be developed allowing the use of solid, liquid or gaseous sustainable biomass feedstock, such as agricultural and forest residues, upgraded solid or liquid bioenergy carriers with higher energy density, industrial by-products and biogas/biomethane.
- Indicative budget: 3-6 M€

LCE-02 – 2015 - Challenge

Specific challenge in bioenergy

- *Improving efficiency of low emission biomass heating systems while widening the feedstock base* – Current residential-scale boilers can combust only one type of feedstock (e.g. wood chips, wood pellets). **New flexible and robust residential-scale low emission boilers** for heat applications need to be developed using a wider range of sustainable feedstock (including mixtures) with high ash content such as agricultural and forest residues, upgraded solid or liquid bioenergy carriers with higher energy density and industrial by-products.
- Indicative budget: 3-6 M€

	AREA	TRL	TYPE
Sustainable biofuels and alternative fuels for transport			
LCE 11	Developing next generation technologies for biofuels and sustainable alternative fuels	3-4 > 4-5	RIA
LCE 12	Demonstrating advanced biofuel technologies	5-7 > 6-7	IA
LCE 13	Partnering with Brazil on advanced biofuels	5-7 > 6-7	IA
LCE 14	Market uptake of existing and emerging sustainable bioenergy	7-9	CSA

RIA: Research & Innovation Actions

IA: Innovation Actions

CSA: Coordination & Support Action

LCE-11 – 2014/2015 - Challenges

Research, indicative budget 3-6 M€

Europe has limited biomass and land resources to cope with an increased demand for fuels and other uses. Thus, in the long-term perspective, new technologies of sustainable biofuels and alternative fuels need to be developed that radically improve the state-of-art.

→ *The challenges are*

- Improving **conversion efficiency** and/or **enlargement of the biomass** feedstock basis.
- Developing **alternative fuels** through use of new and sustainable resources from non-biomass non-fossil sources
- **Improving the economic, environmental and social benefits** relative to fossil fuels and currently available biofuels, notably regarding cost reduction, minimisation of demand on natural resources (land and water in particular), enhanced energy balance, reduced GHG emissions (including carbon stock changes) and development of rural areas.

LCE-12 – 2014/2015 - Challenges

Demonstration, indicative budget 5-20 M€

New and advanced biofuels using sustainable feedstock need to reach the market (cf. EIBI value-chains)

→ *The challenges are*

- Proving that **advanced biofuels and bioenergy carriers** technologies, are technically viable, environmentally and socially sustainable, and potentially cost-competitive at commercial scale.
- Developing **logistic systems** for a sound, safe and sustainable feedstock supply.

LCE-14 – 2014/2015 - Challenges

CSA, indicative budget 1-2 M€

Sustainable bioenergy technologies (both existing and emerging) need to further penetrate the market.

→ *The challenges are*

- Encouraging the EU farmers and foresters to produce also energy and energy intermediaries
- Setting up or strengthening sustainable local bioenergy supply chains
- Development of methodologies for the traceability of biomass feedstocks

Call competitive low-carbon energy - Deadlines

Topics*	2014		2015
LCE2, LCE11	01/04/2014 (Stage 1)	23/09/2014 (Stage 2)	
LCE14	07/05/2014		
LCE2, LCE11	03/09/2014 (Stage 1)		03/03/2015 (Stage 2)
LCE12	10/09/2014		
LCE12, LCE14			03/03/2015
LCE13			05/05/2015

* Corresponds to the topic code in the work-programme

Call competitive low-carbon energy : Budget (M€)

Topics*	Short-hand Description	2014	2015
LCE1	New knoweldge & tech.	20	
LCE2, LCE11	RES – Research	60	59
LCE3, LCE12	RES - Demonstration	73	80
LCE4, LCE14	Market uptake	20	20
LCE13	Joint topic with Brazil		10

* Corresponds to the topic code in the work-programme



RESEARCH & INNOVATION

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Welcome to the Research and Innovation Participant Portal

About the Participant Portal

The Participant Portal is the central point for the electronic administration of research and innovation activities. It provides services for managing research projects throughout their lifecycle.

The Participant Portal supports activities funded by the following EU programmes:

- 7th Framework Programme for Research and Technological Development (FP7)
- Competitiveness and Innovation Framework Programme (CIP)

Using the Participant Portal:

As a guest user, browse the public pages to:

- search for funding opportunities
- download guidance and legal documents
- search for the participant identification code (PIC) of an organisation
- contact the FP7 support services and browse the FAQ for guidance on the Participant Portal tools

As a registered user, benefit from personalised services for proposal submission, negotiation, and project management.



WHATS NEW

FUNDING OPPORTUNITIES

HOW TO PARTICIPATE?

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ACCESS MY PERSONAL AREA

INFORMATION AND SUPPORT



RESEARCH & INNOVATION

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BETA VERSION 4

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Horizon 2020

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Search keywords: Search

Horizon 2020 predefined criteria:

- [Cross-cutting Key-Enabling Technologies \(KETs\)](#)
- [International cooperation](#)
- [ERA-NET](#)
- [SME Instrument](#)
- [Gender](#)
- [Socio-economic science and Humanities](#)

3 results

Filter options: Open calls Closed calls Forthcoming calls

Sort by: Publication date Title Deadline Call ID

Topic: [SFS 7 - 2014: Optimising external nutrient inputs in intensive crop production systems in Europe](#)

European crop production is facing more and more difficulties in remaining competitive in the global market for many reasons. One of these reasons is certainly the high cost of external nutrient inputs necessary

[More...](#)

Call title: Sustainable Food Security Status: **Open**
Call identifier: [H2020-SFS-2014/2015](#) Deadline: 2014-03-18

Topic: [WATER 2 - 2014/2015: Integrated approaches to water and climate change](#)

The rising demands of a growing world population for food, water, materials and energy will put increasing pressures on land use, water resources and ecosystems. Energy consumption is expected to increase,

[More...](#)

Call title: Water Innovation: Boosting its value for Europe Status: **Open**
Call identifier: [H2020-WATER-2014/2015](#) Deadline: 2014-03-18

Topic: [WATER 5 - 2014/2015: Strengthening international R&I cooperation in the field of water](#)

Developing countries, especially in Africa, are facing serious challenges for sustaining its development. Sustainable water supply and sanitation is fundamental to the food security, health, survival

[More...](#)

Call title: Water Innovation: Boosting its value for Europe Status: **Open**
Call identifier: [H2020-WATER-2014/2015](#) Deadline: 2014-03-18



Horizon 2020

Wish you success !

[For more information](#)
**R&I web pages of the
EU Delegation to India:**

http://eeas.europa.eu/delegations/india/eu_india/research_innovation