



# EU-CHINA FOOD, AGRICULTURE AND BIOTECHNOLOGY (FAB) FLAGSHIP INITIATIVE IN HORIZON 2020



## A COMPREHENSIVE RESEARCH AND INNOVATION COOPERATION PROGRAMME TO TACKLE SUSTAINABLE AGRICULTURE, FOOD SECURITY AND SAFETY IN THE EU AND CHINA

**Priority Areas of mutual interest for EU China research and innovation collaboration  
Jointly identified and agreed by European and Chinese policy makers and experts**

1. **Food related issues:** food safety, and quality, food processing, logistics, inspection and controls, traceability, sustainable consumption, food waste;
2. **Sustainable agriculture:** integrated pest management, organic and low-input farming, crop variety development, water and soil management, animal health and welfare, sustainable livestock breeding and production, urban agriculture;
3. **Biotechnologies:** new bio products, biomass sources and standards;



## THE EU-CHINA FAB FLAGSHIP INITIATIVE

The EU China research and innovation flagship initiative on Food, Agriculture and Biotechnologies (FAB) is a comprehensive research and innovation cooperation programme to tackle sustainable agriculture, food security and safety in the EU and China.

Being the two biggest food producers in the world, the EU and China share a common goal to join forces for addressing challenges related to food security, food safety, healthy diets, animal health and sustainable agriculture. Research and innovation cooperation in FAB can make a major contribution to these important common and global challenges.

The EU China Task Force on FAB was created in 2011 as thematic working group under the Joint Steering Committee for EU-China S&T Cooperation. The EU-China FAB Flagship Initiative was officially launched at 2013 EU-China Summit with the signature of a Letter of Intent on Research and Innovation Cooperation in FAB between the European Commission and the Chinese Academy of Agricultural Sciences (CAAS). Through extended discussions among experts from both sides in EU-China Experts' seminars on R&I cooperation on FAB and in EU-China FAB Task Force meetings, mutually beneficial objectives and areas of common interests are identified.



It is in the interest of the EU to ensure that China is moving towards more sustainable agro-food production systems, as unsustainability in China might have severe knock-on effects in an increasingly globalised market. The opportunity to export sustainable technologies and scale-up the potential of the Chinese market will enhance innovation in Europe and contribute to growth and jobs. Ensuring sustainable food production systems in China will also increase global trade predictability, overall productivity, transparency of the food chain and resource-efficiency.



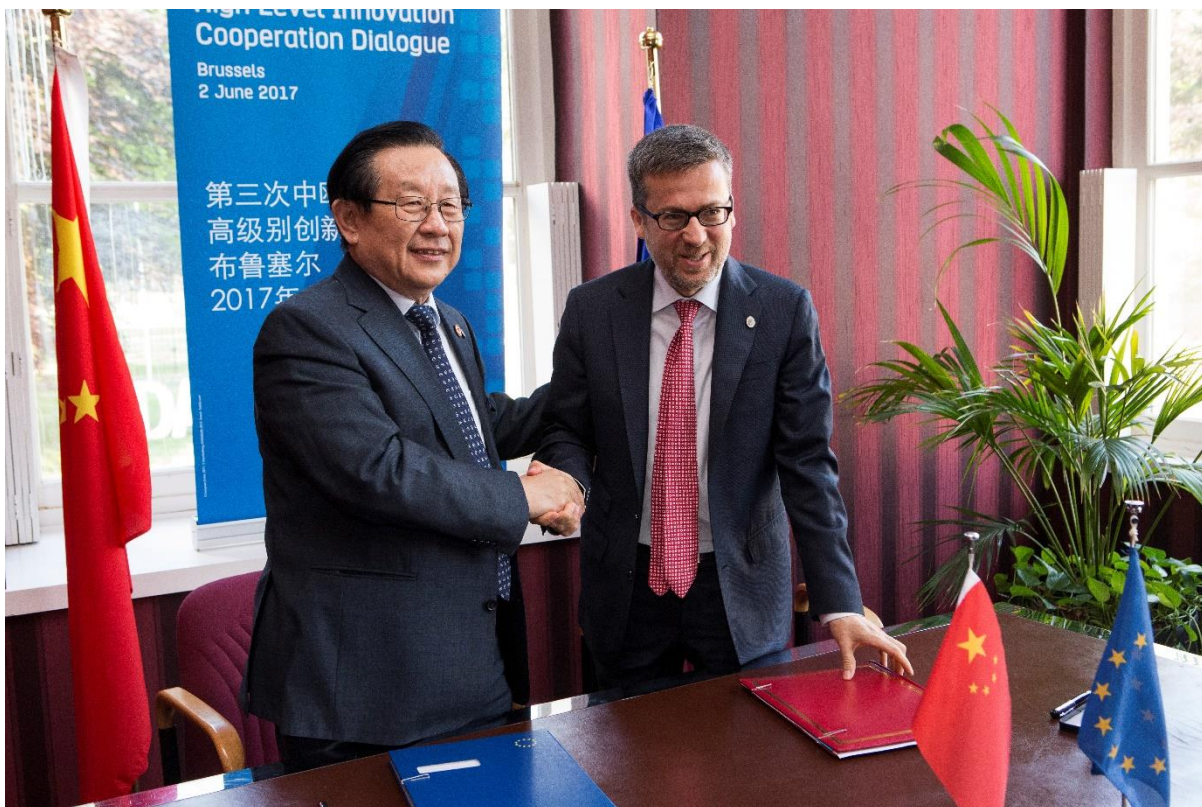


## EU-CHINA CO-FUNDING MECHANISM (CFM) IN HORIZON 2020

In 2014, the Horizon 2020 programme ceased to fund automatically Chinese applicants. Co-Funding Mechanisms (CFM) were needed, eventually set by Chinese authorities to support the joint research activities carried between the EU and China. The China CFM on research and innovation cooperation has played a significant role in supporting the cooperation in topics of mutual interest since its launch in December 2015.

The CFMs involved two Chinese Ministries: MOST (and its China Science and Technology Exchange Centre - CSTEC) and the Ministry of Industry and Information Technology (MIIT), as well as one Chinese funding agency, the National Natural Science Foundation of China (NSFC). MOST, MIIT and NSFC co-funded five different flagship initiatives: food, agriculture and biotechnologies; environment and sustainable urbanisation; surface transport, aviation, biotechnologies for health and the environment.

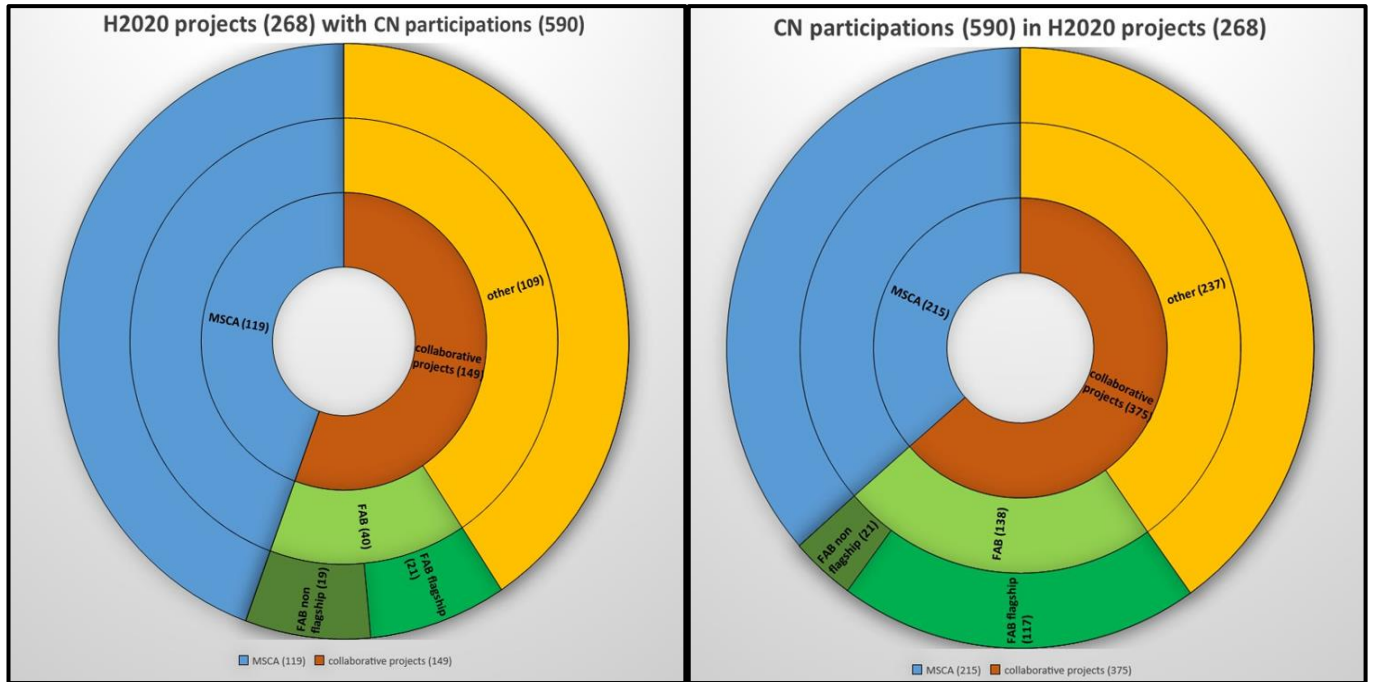
In addition to the flagship initiatives, MOST covered unilaterally the participation of Chinese entities in nine additional areas, for an overall (flagship and other areas) commitment of CNY 200M on an annual basis to provide competitive funding to China-based entities participating in joint projects with European partners under Horizon 2020 calls from 2014-15 and 2016-17 Work Programmes. During the third Innovation Cooperation Dialogue (ICD) meeting, held in June 2017, the CFM was renewed for the period 2018-2020 with the same budget commitment from both sides.



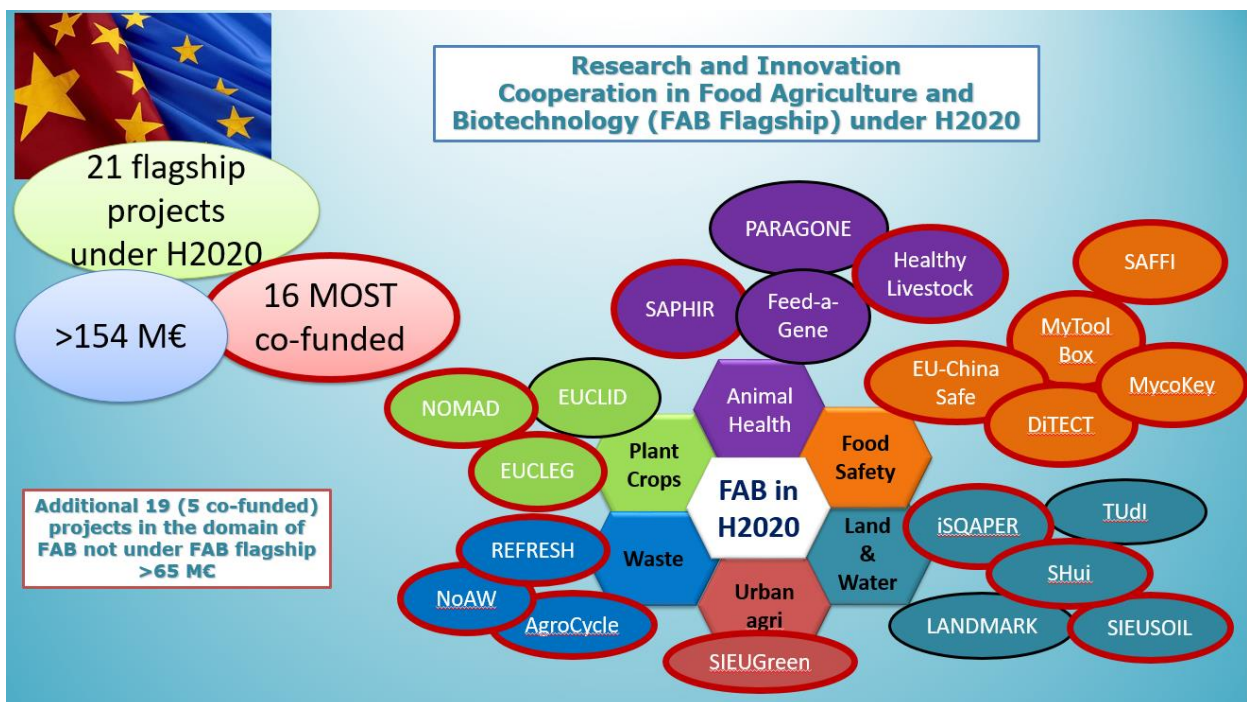


# FAB IN H2020 WITH THE CO-FUNDING MECHANISM

The CFM set by MOST has supported the flagship initiative on FAB, for which the two sides (EC and MOST) secured an overall investment of more than 154 M€ altogether under Horizon 2020 (from 2014 to 2020), supporting 21 projects, 16 of which were co-funded, with a successful co-funding rate of almost 80%. This represents the highest co-funding success rate in H2020 flagships supported by MOST. The FAB flagship represents the largest portion of H2020 collaborative projects with Chinese participants, accounting for almost 1/3 of all H2020 Chinese entities participations in collaborative projects.



In addition to projects from FAB flagship, Horizon 2020 saw an additional set of projects (19) in the domain of food, agriculture and biotechnology with Chinese participation, although in topics outside those agreed under the FAB flagship initiative, thus marking a leverage effect of the flagship instrument in setting the cooperation in a specific domain of mutual interest.





# FAB FLAGSHIP IN H2020 WORK PROGRAMME 2014-2015

In the context of the policy dialogue between the EU and China in the areas of Food, Agriculture and Biotechnologies, the Directorate General for Research and Innovation (DG RTD) and the Directorate General for Agriculture and Rural development (DG AGRI) of the European Commission organised, together with the Chinese Academy of Agricultural Sciences (CAAS) and the China Agricultural University (CAU), a bilateral thematic expert seminar in Beijing on 10-11 October 2013, back-to-back with the third 'FAB Task-Force meeting'.

The Task Force took note that a more strategic, focused and balanced cooperation between the EU and China was needed, in particular by developing joint and co-funded programmes, projects and initiatives with funds coming from both the EU through Horizon 2020 and China through relevant programmes.

The identification of priority areas of mutual interest marked the first phase of the FAB flagship initiative implemented under Horizon 2020, with the work programme 2014/2015 including seven topics in areas of common interest, which resulted in eleven projects with European and Chinese participants.

- Tackling losses from terrestrial animal diseases
- Genetics, nutrition, and alternative feed sources for terrestrial livestock production
- EU-China cooperation on IPM in agriculture
- Soil quality and function
- A systems approach for the reduction, recycling and reuse of food waste
- Biological contamination of crops and the food chain
- Ensuring sustainable use of agricultural waste, co-products and by-products

**EUCLID**  
EU-CHINA Lever for IPM Demonstration  
[www.euclidipm.org](http://www.euclidipm.org)

**HORIZON 2020  
WORK PROGRAMME  
2014-2015**

**LANDMARK**  
LAND Assessment, Knowledge base  
Management: Research,  
[www.landmark2020.eu](http://www.landmark2020.eu)

**SAPHIR**  
Strengthening Animal Production and Health through the Immune Response  
[www.h2020-saphir.eu](http://www.h2020-saphir.eu)

**REFRESH**  
Resource Efficient Food and dRink for the Entire Supply cHain  
[www.eu-refresh.org](http://www.eu-refresh.org)

**ISQAPER**  
Interactive Soil Quality Assessment in Europe and China for Agricultural Productivity and Environmental Resilience  
[www.isqaper-project.eu](http://www.isqaper-project.eu)

**FEED-A-GENE**  
Adapting the feed, the animal and the feeding techniques to improve the efficiency and sustainability of monogastric livestock production systems  
[www.feed-a-gene.eu](http://www.feed-a-gene.eu)

**MyToolBox**  
Food and Feed through an Integrated Tool Box for Mycotoxin Management  
<https://www.mytoolbox.eu/>

**MycKey**  
Integrated and innovative key actions for mycotoxin management in the food and feed chain  
<http://www.mycKey.eu/>

**Agrocycle**  
Sustainable techno-economic solutions for agricultural value chain  
<http://www.agrocycle.eu/>

**NoAW**  
Innovative approaches to turn agricultural waste into ecological and economic assets  
<http://noaw2020.eu/>

**PARAGONE**  
Vaccines for animal parasites  
<http://www.paragoneh2020.eu/>





## FAB FLAGSHIP IN H2020 WORK PROGRAMME 2016-2017

Building on the initial cooperation effort, both sides agreed at the FAB Task Force meeting in June 2014 to reinforce the cooperation under the EU-China FAB Flagship initiative in 2016/2017 by focussing on several priorities. This second phase of the FAB Flagship covered five topics, which were jointly identified and drafted for the first time ever within the EU-China FAB Task Force. The calls resulted in five projects, one for each of the five topics.

**Increase overall transparency of processed agri-food products**  
**Joint plant breeding to decrease EU's and China's dependency on protein imports**  
**Resource-efficient urban agriculture for multiple benefits – contribution to the EU-China Urbanisation Partnership**  
**Alternative production system to address anti-microbial drug usage, animal welfare and the impact on health**  
**Management of soil water resources in the EU and China and impact on agro-ecosystem functions**

### EU-China-Safe

Delivering an Effective, Resilient and Sustainable EU-China Food Safety Partnership  
[www.euchinasafe.eu](http://www.euchinasafe.eu)

### PROJECTS/TOPICS IN WORK PROGRAMME 2016-2017

### EUCLEG

Breeding forage and grain legumes to increase EU's and China's protein self-sufficiency  
<http://www.eucleg.eu/>

### SiEUGreen

Sino-European innovative green and smart cities  
<https://www.nmbu.no/en/projects/sieugreen>

### HealthyLivestock

Tackling Antimicrobial Resistance through improved livestock Health and Welfare  
<http://healthylivestock.net/>

### SHui

Soil Hydrology research platform underpinning innovation to manage water scarcity in European and Chinese cropping systems  
<https://www.shui-eu.org/>

## FAB FLAGSHIP IN H2020 WORK PROGRAMME 2018-2020

For the Work Programme 2018-2020, a more balanced EU-China cooperation was envisaged with emphasis on integrated approaches to food safety in agri-food chain, high-efficient management of soil quality and land resources, healthy soils for healthy food production, and use of biogas digestate for high-quality organic fertilisers, fertilisers and other topics with common interests when it is appropriate. 4 topics were planned and 5 projects were awarded.

**Highly efficient management of soil quality and land resources**  
**High-quality organic fertilisers from biogas digestate**  
**Integrated approaches to food safety controls across the food chain**  
**Healthy soils for healthy food production**

### SIEUSOIL

SINO-EU Soil Observatory for intelligent Land Use Management  
<https://www.sieusoil.eu/>

### PROJECTS/TOPICS IN WORK PROGRAMME 2018-2020

### NOMAD

Novel Organic recovery using Mobile Advanced technology  
<https://www.projectnomad.eu/>

### SAFFI

Safe Food for Infants in the EU and China; Taking microbial and chemical hazards off your baby's menu  
<http://www.saffi.eu/>

### DITECT

New cloud-enabled storage system to predict food safety  
<https://ditect.eu/>

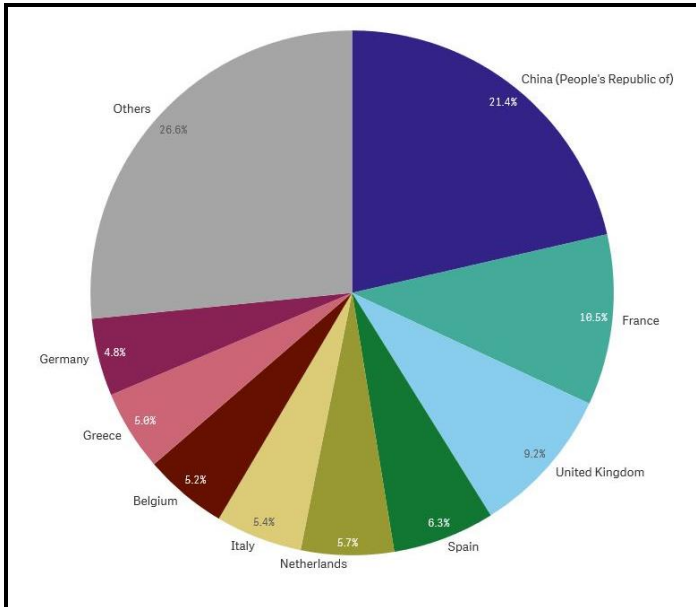
### TUdi

Developing an integrated platform of alternatives to reverse soil degradation.

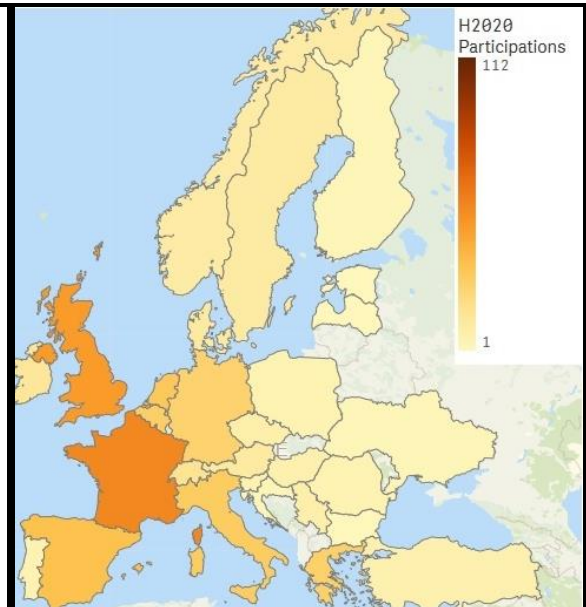


## IMPACT OF THE FAB FLAGSHIP UNDER H2020

The FAB flagship initiative was able to mobilize the cooperation among Chinese entities and organizations from almost all EU member States, with a prominent role played by Mediterranean countries, Benelux and Germany. With the content of certain topics being explicitly multilateral, the FAB flagship initiative has expanded ties beyond EU, involving also several third countries, in particular from South America and Africa.



Distribution of participants in the 21 projects from H2020 FAB flagship according to the country of origin. Being part of all the 21 projects, China has the largest share



Distribution of participants from EU MS and other European countries. Restricting it to the EU, major role is played by Mediterranean countries, Benelux and Germany

The FAB flagship initiative was able to mobilize the cooperation among Chinese entities and organizations from almost all EU member States, with a prominent role played by Mediterranean countries, Benelux and Germany. With the content of certain topics being explicitly multilateral, the FAB flagship initiative has expanded the cooperation beyond just the EU, involving also several third countries, in particular from South America and Africa.

Overall, the projects funded under FAB flagship initiative in Horizon 2020 applied so far 10 patents and produced more than 750 publications, 60% of them in peer review journals and more than 90% of them in open access mode, thus allowing a wide dissemination and a high impact.

