

**EU-China experts' seminar on developing a joint initiative for  
cooperation in research and innovation on Food, Agriculture and  
Biotechnologies (FAB), Beijing 10-11 October 2013**

**Keynote speech:**

**Horizon 2020 and thematic context from EU perspective**

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Dear Vice-President Wang,

Dear Vice-President Li,

Dear Dr Xing, Madame Feng, Professor Li,

Distinguished colleagues and experts,

- Allow me to first express my sincere thanks to the China Agricultural University for warmly welcoming our delegation in your premises and for setting up this excellent opportunity for the EU and China to contribute to the shaping of our future cooperation through the discussions and exchanges during the next two days. My thanks go equally to Madame

Feng and her colleagues from the China Academy of Agricultural Sciences who strongly supported and co-organised this seminar

- I am glad to be here in Beijing this afternoon to talk about Horizon 2020 and the thematic context of a joint initiative for cooperation in research and innovation on Food, Agriculture and Biotechnologies from an EU perspective.

- Deepening and strengthening cooperation in agro-food and biotechnology related issues will be mutually beneficial for both the EU and China. Both parties will identify common challenges, define shared objectives and will gain from designing and implementing joint and coordinated research and innovation programmes and supporting joint challenge-based projects. With the forthcoming Horizon 2020 and the recently launched Chinese Agricultural Science and Innovation Programme for 2013-2025, there is great potential for a reinforced cooperation based on mutual interest and common priorities.

- This will allow sharing ideas, exchanging best practices and searching for innovative solutions to address the common challenges. Such cooperation will enlarge horizons and help both the EU and China to be in a better position for tackling issues like global food security, quality and safety, finding a sustainable model of agriculture, developing a sound bio-economy and ultimately improving their trade relations.

## Horizon 2020

- Allow me to start my speech giving you an overview on Horizon 2020
- The new Horizon 2020 programme, currently under adoption, is the EU's framework programme for research and innovation for the period 2014-2020.
- Horizon 2020 is designed to address the challenges Europe is facing through funding excellent science, technology and innovation. It is central to the Europe 2020 strategy for smart, sustainable and inclusive growth, the Innovation Union flagship to create a knowledge society, and the goal to complete the European Research Area as a single market for knowledge.
- Smart investments in research and innovation are vital to create jobs and put Europe back on a path to growth.
- At the same time Europe faces major challenges such as ageing populations and the depletion of natural resources. This affects all of our lives directly, for example through high health care costs, rising energy prices, congested roads, and threats to security.

- Horizon 2020 represents a break from the past, in order to meet the new challenges and opportunities.
- It brings together all EU level research and innovation funding into a single programme, covering the current 7th research Framework Programme, the innovation activities from the Competitiveness and Innovation Framework Programme, as well as EU funding to the European Institute of Innovation and Technology.
- These currently separate activities have been integrated to allow seamless funding of research and innovation, allowing innovative projects to be supported from the laboratory to commercial exploitation. Previously separate activities have been brought together to focus on the societal challenges such as health, food security, clean energy, transport or climate change.
- All forms of innovation will be included, including innovation in services and social innovation. Support will also be given to develop the market and legal frameworks for innovations to be deployed, such as on public procurement, standard setting and regulations
- Horizon 2020 will also provide a major simplification, with a single set of rules, less paperwork, and faster funding. The aim is to attract the best researchers and innovators regardless of where they are located.

- Horizon 2020 has three priorities: 1) Excellent Science, 2) Industrial Leadership, 3) Societal Challenges.
- Excellent science is at the foundation of economic prosperity and wellbeing. The experience with the European Research Council, demonstrates the value of EU level competition for the best individual teams. In a short number of years, the ERC has already supported Nobel prize-winning scientists and ERC grants are widely regarded as a stamp of excellence.
- Excellent science provides the basis of new technologies. The "Future and Emerging Technologies" scheme will be expanded to support unconventional and pioneering science with the potential to be tomorrow's technologies.
- Excellent science depends on developing, attracting and retaining talent. Through the "Marie Skłodowska Curie" actions, the EU has developed attractive opportunities for researchers to move across countries and improve their careers at all stages.
- Finally, top class research requires access to major infrastructures which are often expensive and only located in a few places in Europe.

- Priority 2: Industrial leadership:

- Innovative companies are at the heart of job creation and growth. However, Europe needs more of such companies, particularly among small and medium-sized enterprises.

- Key enabling technologies - such as advanced manufacturing, microelectronics, nanotechnology and biotechnology - underpin innovation across many industries and sectors. For Europe to build and maintain a lead in these technologies requires strategic investments.

- Priority 3 – Societal challenges

- Meeting the concerns of citizens and society and the EU policy objectives relies on research and innovation. For example, meeting the target to reduce CO2 emissions depends on new technologies and solutions for energy, transport, agriculture and the management of resources. This requires a broad, multi-disciplinary approach that brings together researchers, industry, public bodies and users to create innovative solutions that will meet peoples' needs.

- The priority areas relevant for the joint EU-China FAB research and innovation cooperation initiative concern mainly Societal challenge 2: “Food security, sustainable agriculture and forestry, marine, maritime and inland water research, and the bioeconomy”.

- The specific objective of societal challenge 2 is to secure sufficient supply of safe, healthy and high quality food and other bio-based products, by developing productive, sustainable and resource-efficient primary production systems, fostering related ecosystem services and the recovery of biological diversity, alongside low-carbon supply, processing and marketing chains. This will accelerate the transition to a sustainable European bio-economy, bridging the gap between new technologies and their implementation.
- Additionally the Key Enabling Technology (KET) of Biotechnology within the second priority is of potential interest for the the joint EU-China FAB research and innovation cooperation initiative.
- Horizon 2020 supports all stages in the research and innovation chain, including activities closer to the market Horizon 2020 will support not only research into new technologies and solutions, but also their piloting, demonstration and market uptake.
- Horizon 2020 promotes linkages and interfaces across research areas with particular attention to cross-disciplinary and cross-sectoral research and innovation in a challenged based approach. The strong challenge-based approach will allow considerable freedom to come up with innovative solutions. Broader topics with less prescription will have strong emphasis on expected impact.

- Within the three priorities of Horizon 2020 the social sciences and humanities will be fully integrated. They will be included as an integral part of the activities to address these societal challenges, working beyond the 'silos' of distinct disciplines. This means Social Sciences and Humanities in the widest possible sense: the economists, sociologists, lawyers, but also the anthropologists and the philosophers are welcome.
- Other cross-cutting issues, such as responsible research and innovation including gender, sustainable development and climate change, SME involvement in research and innovation, and broader private sector participation, and more, are given attention. With the aim of deepening the relationship between science and society and reinforcing public confidence in science, Horizon 2020 should foster the informed engagement of citizen's and civil society by developing responsible research agendas that meet citizens' and civil society's concerns and expectations. All research and innovation activities carried out under Horizon 2020 shall comply with ethical principles and relevant national, Union and international legislation.
- International cooperation with third countries is necessary to tackle effectively many specific objectives defined in Horizon 2020. This is the case in particular for all the societal challenges addressed by Horizon 2020, which need to be tackled at the global level.

- International cooperation is also essential for frontier and basic research in order to capture the benefits from emerging science and technology opportunities. Promoting the international mobility of researchers and innovation staff is crucial for enhancing this global cooperation.
- Activities at the international level are particularly important to enhance the competitiveness of European industry by promoting the take-up and trade of novel technologies, for instance through the development of worldwide standards and guidelines, and by promoting the acceptance and deployment of European solutions outside Europe. International cooperation in Horizon 2020 will also support the EU's external and development policies, including international commitments and their related goals.
- Horizon 2020 will continue with the principle of general openness for participation while the list of countries eligible for funding will be renewed. BRIC countries are treated in the same way as industrialized countries and expected to co-fund their participation in programmes and projects.
- In addition to the general opening, a range of targeted actions will be implemented with selected third countries and regions, taking a strategic approach to international cooperation on the basis of common interest and mutual benefit, and promoting coordination and synergies with Member States activities.



**Thematic targeting in the Joint EU-China initiative for cooperation  
in research and innovation on Food, Agriculture and  
Biotechnologies**

- This leads me over to the second part of my speech addressing the thematic targeting in the joint EU-China FAB research and innovation cooperation initiative.
  
- With the Horizon 2020 international cooperation strategy moving from a project level cooperation to a programme level approach there is a potential to work with China as an equal partner and to develop EU-China FAB cooperation which is substantial, balanced and based on a shared definition of strategic objectives and content of activities. In Horizon 2020 there will be no more automatic funding for participants from China (and other BRIC countries), therefore alternative funding instruments will need to be considered, for instance through joint and coordinated calls with co-funding from both the EU through Horizon 2020 and Chinese authorities through their national programmes.
  
- It will also be necessary to liaise with EU Member States in order to build on their bilateral activities with China and to promote the scaling up of linkages between European research programmes at EU or Member

State level, and related research programmes coordinated by Chinese institutions, in particular the Chinese Academy for Agricultural Sciences. This may open new opportunities within the range of programme-level partnering initiatives.

- A coherent and cross-cutting set of priority areas is now proposed for enhanced cooperation, based on previous conclusions of the FAB Task Force in November 2012, and new synergies with the Sustainable Urbanisation initiative.
- The specific objectives of cooperation in these priority areas contribute to and reinforce the overall strategy. The thematic targeting based on mutually beneficial objectives will help to shape programme-level cooperation activities and identify challenge-based topics of mutual interest. These could feed into priority areas for future joint calls in the area of FAB, or contribute to other programme-level activities.
- It may be appropriate to involve Horizon 2020 partnering initiatives, such as joint programming initiatives, ERA-Nets, European Technology Platforms, or Public-Private partnerships (PPPs). In the so-called PPPs, Horizon 2020 funds are combined with private sector funds in key areas where research and innovation could contribute to Europe's wider competitiveness goals and help tackle societal challenges, such as the

PPP in the Bio-based Industries (BBI) aiming at using renewable natural resources and innovative technologies for greener everyday products.

- Successful cooperation with highest possible impact needs to be based on mutual benefit in a “win-win” approach, considering both EU and Chinese interest, and possibly additional benefits at global level. In line with this spirit, research and innovation cooperation should also promote “triple win” situations combining enhanced economic development with commercial opportunities and jobs, benefits for the societies, and respect of the environment and a sustainable use of resources within the limits and regeneration capacity of the planet. A multi-stakeholder approach in cooperation activities, encouraging a dialogue between political, social, economic and other stakeholder groups, seems particularly suited to address the challenges in their full complexity, cover the complete value chains and raise societal engagement and public acceptance of new technologies.

**Conclusion: Towards cross-cutting strategic objectives for EU-China joint initiative for cooperation in research and innovation on Food, Agriculture and Biotechnologies**

- Let me conclude by drawing up a picture of what could be a set of cross-cutting strategic objectives for the EU-China FAB research and innovation initiative. In my concluding remarks, I shall raise more questions and inspire thought, than providing answers.

- **Contribute to safer and healthier food for consumers through better standards and more sustainable production methods**

- Food safety is a major concern for consumers both in Europe and in China, and is kept high on the agenda due to repeated food scandals. Food safety issues also negatively impact on trade exchanges. At the same time there seems to be a noteworthy paradigm change with a resulting demand pull for high quality, healthy, ethical and sustainable food, in many countries in Europe, but potentially also increasingly in China with its growing and more prosperous middle class.

- Predictions from Leatherhead Food Research (LFR) (<http://www.foodmanufacture.co.uk/Business-News/Seven-top-trends-for-the-food-industry-in-2013-LFR>) on the top trends for the food industry

in 2013 state that sustainability will continue to raise up the corporate agenda, and emerging markets are increasingly becoming important, referring also to 'natural' and 'clean' label policy, and more attention to 'health', 'provenance' and 'bio-diversity' standards. Efforts to reduce salt, fat and sugar are expected to lead to technological break-throughs with incremental changes.

- Enhancing food safety seems an obvious candidate for a strategic objective of the FAB initiative. In this area, Europe has reliable traceability processes and standards to enhance food safety and food quality, and a good track record and even more potential to produce high quality and healthy food, and make healthier options available.

- **Mitigate contagion risks from livestock-borne diseases and reduce economic losses through enhanced disease control and more sustainable animal husbandry methods**

- Livestock-borne diseases and the thread of zoonosis, spreading rapidly in our inter-connected world, is not only a major concern to society both in the EU and China, but also the source of important economic losses. Mitigate such contagion risks and reduce economic losses would have major mutual benefits both for the EU and China.

- Beyond the animal health sector there should be obvious interest also to widen the perspective and look at more sustainable production systems, including and breeding and reproduction.

- **Increase food security and mitigate current and future pressure on global biomass availability through reduction of food waste and promotion of more sustainable consumption patterns and diets**

- The complex food-feed-feedstock nexus is gaining attention and more questions come up how to best conciliate food security for a growing population and availability of biomass for industrial, energy and other uses, within the boundaries of the planet's limited resources.

While technology may contribute through breeding techniques or precision agriculture, there are two major leverages to address the food-feed-feedstock nexus, without compromising on food security: food waste and diets.

- Figures may slightly vary, but concord that substantial quantities of food are wasted at all stages of the production chain. Solutions might be technological, organisational and behavioural. Again there would seem to be key strategic interest for the EU and China to jointly tackle this challenge.

- In its report entitled "The Food Wastage Footprint", the U.N. Food and Agriculture Organisation (FAO) estimated that every year about a third of all food for human consumption, around 1.3 billion tonnes, is wasted, along with all the energy, water and chemicals needed to produce it and dispose of it. Almost 30 percent of the world's farmland, and a volume of water equivalent to the annual discharge of the River Volga, are in effect being used in vain. If it were a country, it would be the world's third biggest emitter after China and the United States, suggesting that more efficient food use could contribute substantially to global efforts to cut greenhouse gases to limit global warming.
- In the industrialised world, much of the waste comes from consumers buying too much and throwing away what they do not eat. In developing countries, it is mainly the result of inefficient farming and a lack of proper storage facilities. Food wastage reduction would not only avoid pressure on scarce natural resources but also decrease the need to raise food production by 60 percent in order to meet the 2050 population demand.
- Overconsumption and unhealthy diets are increasingly a major public health issue in Europe and elsewhere with the rise of obesity and other lifestyle related diseases. According to a recent study of the Asian Development Bank, obesity and malnutrition pose twin threats to Asia-Pacific's healthy food future. The region's drive for food security has

focused too narrowly on quantity, with a surge in obesity and still high levels of malnutrition in some countries, highlighting the need for a new approach.

- There are important economic consequences of unhealthy diets and consumption patterns with high intake of fatty, salty, sugary food. In this context, overconsumption of meat beyond reasonable and healthy quantities is also part of the problem of unhealthy diets. It is also unsustainable, due to the resources needed for livestock production as compared to plant-based food.

- A leading advisory committee on the future of agriculture, made up of experts from EU Member States (known as the EU Standing Committee on Agriculture Research (SCAR) concluded in their latest report that the average Western diet with high intakes of meat, fat and sugar is a risk for individual health, social systems and the environmental life support systems. The promotion of a healthy diet also reduces the environmental footprint of food consumption in Europe and globally. And the Strategic Research Agenda of the Joint Programming Initiative 'A healthy diet for a healthy life' states that, based on global changes in the availability of food and growing competition for biomass (food and feed raw materials, fuels and fibres) and changing climate conditions, studies on diet and health

should consider these factors and explore, for example, alternatives for meat proteins.

- Healthier 'flexitarian' consumption patterns seem to gain momentum and public campaigns, such as 'Thursday Veggie Day' seem to have success and industry support. Would a triple-win for society, for the environment and for economic development in need of affordable biomass be possible? Another question linked to values and identity. Will a certain trend in Chinese society to imitate, in a catch-up approach, sedentary Occidental lifestyles with unhealthy diets continue and grow, or on the contrary will there be emergence of a thriving, innovative, well-educated and health conscious youth at the fore-front of setting new sustainable lifestyles for the world of tomorrow?

- **Contribute to global environmental and climate goals and maintain the capacity to ensure food security in future through more sustainably managed natural resources in primary production**

- Primary production methods and management of key resources such as water and soil have a direct impact on a number of international commitments with their related goals, such as on climate, desertification, biodiversity or others. At the same time credible sources are concerned

about the evolution of current food production systems. Among these, SCAR concluded in a recent report that:

- Many of today's food production systems compromise the capacity of Earth to produce food in the future. Globally, and in many regions including Europe, food production is exceeding environmental limits or is close to doing so. Nitrogen synthesis exceeds the planetary boundary by factor of four and phosphorus use has reached the planetary boundary. Land use change and land degradation, and the dependence on fossil energy contribute about one-fourth of Greenhouse Gas emissions. Agriculture, including fisheries, is the single largest driver of biodiversity loss. Regionally, water extracted by irrigation exceeds the replenishment of the resource.

- Contribution to global environmental goals and preservation of the capacity to continue producing food in future would therefore seem a key strategic objective, where more sustainable organic or low-input farming systems, Integrated Pest Management, and efficient water and soil management could contribute. Further increasing negative impacts of environmental degradation on agricultural productivity in China might jeopardize the Chinese capacity to ensure domestic food security and, as a consequence, impact global food security and commodity markets elsewhere. Given its weight, moderate changes in China could have

substantial repercussions both on markets, as on global climate and environmental goals. Or would China be even at a turning point in its development model, conditioning also its agricultural production patterns, with enhanced consideration to environmental issues and to the limits of the eco-system? Would signals of a move into that direction bring reputational benefit to China in the international scene and in a globalizing public opinion of citizens and consumers?

- **Contribute to the strategic agenda of sustainable urbanization and enhance food security in a context of increasing urbanisation**
- Today more than half of the world population is living in urban environments, and this tendency is on the increase. Within this trend, megacities are expanding. Urban agriculture, be it in community gardens or directly on rooftops of supermarkets, can provide fresh food with short supply chains and could compensate to a certain degree for lack or loss of agricultural land. There is also an innovative tendency to grow vertically which might merit an assessment of its overall resource efficiency balance. Many issues for research and innovation, both on the more technological side as on the side of socio-economic aspects with social innovation might be up in that area. This could also enhance urban greening, in synergy with the sustainable urbanisation flagship.

- **Contribute to growth and jobs by enhancing development and business opportunities**

- ‘Growth and jobs’ is the overarching objective of the Europe 2020 strategy to which both Horizon 2020 as the ‘Innovation Union’ flagship contribute. Also international cooperation in science, technology and innovation should be targeted to contribute the Europe 2020 strategy to strengthen competitiveness.

- While there may be increasingly interesting and mutually beneficial opportunities in many areas, including the growing sector of bio-based industries, appropriate framework conditions for the deployment of innovative solutions play a key role in this context. It could be expected that European industry would assess very carefully if conditions for fostering competitiveness are met before engaging into cooperation on research and innovation in certain particular sectors of interest.

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- Thank you very much for your attention, and I wish you inspiring and fruitful discussions and exchanges during the seminar.

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