AgriLoop's consensus on China-EU priorities for high-value products from agri-food residues

(April 8th, 2025 in Beijing)

I. Background and Vision

China and the EU agree that the complete bioconversion of agricultural organic residues is key to achieving a low-carbon agricultural cycle, addressing climate change and tackling growing pollution and resource crises. At the **Agriloop Innovation Conference**, which took place in **Beijing from 7 to 8 April 2025**, the two sides reached a consensus on research and development, industrialisation promotion, policy coordination, public participation and building a new paradigm of shared vision, common interests and win-win cooperation between China and the EU, based on the roundtable discussion of High-value Products from Agri-food Residues.

II. Core Consensus

1. **Technological collaborative innovation**
    - China and the EU are jointly tackling key technical bottlenecks in the (bio)conversion of agricultural residues (also named waste or by-products), focusing on **high-value utilization of food source** substrates (such as proteins, functional factors), **full functional utilization of non-food source** substrates (such as straw, fruit and vegetable residues), **development of microorganisms and enzymes**, and **large-scale production of bio-based materials** (such as PHA, functional chemicals, microbial proteins).
    - These approaches follow a **circular** organisational and business **model**, that closes loops in the agri-food system and creates sustainable alternatives to today's predominantly linear models (e.g. considering the circularity of fertilising matter and organic matter with regard to soils).
    - Research data and intellectual property are being shared between China and the EU **Joint laboratories** and **technology validation platforms** are being set up to accelerate the transfer of technology from the laboratory to the market.
    - Innovation efforts must focus on **greater interdisciplinarity** and improving the **long-term anticipatory capacity of research** and development in economic, environmental and social areas. The aim is to support a better balance between short- and medium-term mitigation and resilience, and long-term crisis anticipation.

2. **The link between industry and society**
    - Promote the establishment of a China-EU certification system for low-carbon, circular products to reduce technical

barriers to cross-border trade, and facilitate the market circulation of high-quality food components (e.g. proteins and functional substances, etc.) and bio-based products (such as bioplastics, functional food and feed additives).
- Support companies in creating pilot demonstration bases (in Shandong, China and Bordeaux, France), and explore the industrial cooperation model "farmers + processing and marketing companies + scientific research institutions".

3. **Coordinating policies and strategies**
    - Call to China and the EU: governments are required to integrate bioconversion and the high-value use of agricultural residues into the strategic framework for carbon neutrality, and encourage companies to participate through policy tools such as carbon credits and green tax credits.
    - Jointly promote the creation of regional business and applied science clusters and commercial platforms for agricultural residue resources, and optimise resource allocation through market-based pricing mechanisms.
    - Regulatory barriers have been identified, the most significant of which are as follows:
        - PHA is inadequately classified as a single-use plastic in the EU Single-Use Plastics Directive. This is due to its production method, which is considered as "chemical modification" of natural polymers. However this is highly debatable as it involves fermentation processes rather than chemical modification.
        - Under the criteria of the EU Waste Framework Directive criteria, certain waste streams that could be recovered may remain classified as waste rather than being recognised as valuable feedstocks, creating regulatory and economic barriers.

4. **Capacity building and social co-construction**
    - Launch the China-EU Young Scientists Exchange Programme to jointly train professionals in high-value (bio)transformation and the circular economy. Regularly organize the China-EU Waste Biotransformation Innovation Challenge.
    - Strengthen public awareness to popularise the concept of high-value biotransformation and low-carbon cycles by providing concrete examples such as producing plant-based meat, eggs and milk from peanut meal production, transforming tomato residue into bioresin, or converting straw into microbial protein.

III. Suggestions for key areas of cooperation

1. **Joint research on technologies**
    - Prioritised direction:
        - Agricultural residue resources pre-treatment and intelligent sorting technology
        - Green and efficient extraction of intrinsic functional bioproducts
        - Efficient production processes of microbial protein and bio-polyesters (PHA/PHBH, etc.)
        - Carbon and plastic footprint accounting and optimisation of emission reduction in biotransformation processes
        - Prospective studies on the balance between safety, environmental, social and economic risks and benefits of targeted technologies
2. **Industrialisation and demonstration project**
    - Valorisation of by-products from processing cereals, oils, fruits and vegetables (e.g. extraction of dietary fibres, development of functional foods and animal feed).
    - Large-scale production of PHA bioplastics for use in packaging and agricultural films
    - Large-scale production of microbial proteins from residues, for human and animal consumption.
3. **Standardisation and mutual recognition mechanisms**
    - Develop the China-EU Technical Standard for high-value products derived from the conversion of agricultural residues, covering the entire production, certification and marketing chain.
    - Promote mutual recognition of the EU EN standard and the Chinese GB/T standard on high-value bioconversion of agricultural waste (e.g. EN 13432, the standard for compostable materials, food and animal feed).

IV. Suggested implementation mechanism

1. **Joint Working Group and Sustainable Network**
    - A "joint working group" will be set up by Chinese and European agricultural authorities, research institutions (the Chinese Academy of Agricultural Sciences and INRAE in France) and business representatives will be established to coordinate research, technology and development: project implementation and policy harmonisation.
    - This working group is expected to expand through a network of Sino-EU stakeholders with long-standing ties, common interests and regular joint events.
    - Try to maintain the network through various means, including face-to-face events, online meetings, a website, newsletters,

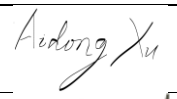
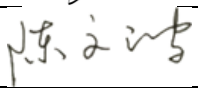
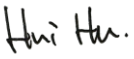
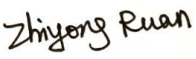
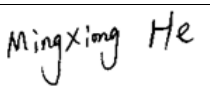
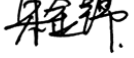
WeChat group discussions, etc. thanks to dedicated and well identified researchers both from EU and China.

2. **Financial support**
    - Create a sustainable fund for China-EU Agricultural Circular Economy Cooperation, focused on supporting prospective studies, technology pilot tests, marketing and staff exchanges.
    - Encourage green financial instruments (e.g. green bonds, ESG investments) to participate in the financing of the network/working group and related projects.

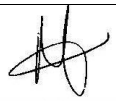
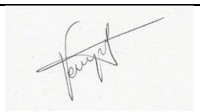
3. **Evaluation and monitoring**
    - Publish an annual progress report on China-EU Cooperation on High Value-added Conversion of agricultural residues, making data on the technical, economic and environmental benefits publicly available.
    - Appoint advisors and/or monitors from European and Chinese authorities.
    - Establish an independent third-party evaluation mechanism to ensure transparency of cooperation and efficient use of resources.

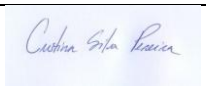
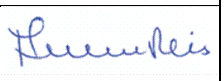
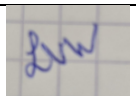
Signatory of Representatives:

- **Chinese Representatives**

Representative	Organization	Signature
Aimin Shi	Institute of Food Science and Technology, Chinese Academy of Agricultural Sciences, China	
Aidong Xu	China Technology Market Association	
Wenbo Chen	COFCO Nutrition & Health Research Institute, China	
Yuguang Zhou	China Agricultural University, China	
Gang Li	Beijing Technology and Business University, China	
Hui Hu	Institute of Food Science and Technology, Chinese Academy of Agricultural Sciences, China	
Zhiyong Ruan	Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences, China	
Wei Gao	Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences, China	
Mingxiong He	Biogas Institute of Ministry of Agriculture and Rural Affairs, China	
Xiaolong Yao	Beijing Technology and Business University, China	
Jinjin Zhu	Institute of Food Science and Technology, Chinese Academy of Agricultural Sciences, China	

- **AGRILOOP ExCom Members**

Representative	Organization	Signature
Nathalie Gontard	National Research Institute for Agriculture, Food and Environment, France	
Burkhard Schaer	ECOZEPT, France	
Anne Verniquet	DSS+, Switzerland	

Jan Broeze	Wageningen University & Research, the Netherlands	
Miguel Mauricio Iglesias	University of Santiago de Compostela, Spain	
Annalisa Tassoni	University of Bologna, Italy	
Cristina Silva Pereira	ITQB NOVA, Portugal	
Chahinez Aouf	National Research Institute for Agriculture, Food and Environment, France	
Maria Reis	NOVA University of Lisbon, Portugal	
Ramon Ganigue	Ghent University, Belgium	
David Bolzonella	University of Verona, Italy	
Laetitia Van Wonterghem	Avecom, Belgium	
Melanie Fenna	Biorenewables Development Centre, UK	
Hélène Angellier-Coussy	Université de Montpellier, France	

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