REPORT ON THE VISIT FROM THE CHINESE MINISTRY OF AGRICULTURE AND RURAL AFFAIRS (MARA)

A Co-Creation Approach to International Collaboration on Soil Health

Barcelona, Spain | November 11-12, 2025

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1. Executive Summary

The Basque Living Lab of the European iCOSHELLs project, in close collaboration with AgrotechUPC, the University of Vic, and the Viladecans municipality, hosted a high-level delegation from the Chinese Ministry of Agriculture and Rural Affairs (MARA) on November 11-12, 2025. This two-day visit exemplified the co-creation methodology central to the iCOSHELLs project, bringing together diverse stakeholders from Europe and China to share knowledge, explore collaborative opportunities, and advance global soil health objectives. The visit was structured around key co-creation principles including multi-stakeholder engagement, knowledge exchange, real-world demonstration, and participatory learning.

2. Introduction

1.1 Context and Purpose

The visit from the Ministry of Agriculture and Rural Affairs of China represents a significant milestone in international cooperation on soil health and sustainable practices for the Basque Living Lab. As part of the European Union's Mission Soil and the iCOSHELLs project, this engagement demonstrates the global relevance of soil health challenges and the universal applicability of co-creation methodologies in addressing complex environmental issues.

1.2 Delegation Composition

The Chinese delegation represented multiple levels of agricultural governance and research expertise:

- Mr. Bao Zhe, Director, Rural Energy and Environment Agency, MARA
- Prof. Liu Guanglong, Huazhong Agricultural University (HZAU)
- Ms. Xu Dandan, Agronomist, MARA
- Mr. Zhou Li, Deputy Director General, AEPI
- Mr. Ma Hongju, Deputy Director General, Center for Agricultural Ecology and Resource Protection of Sichuan
- Mr. Luo Shifeng, Deputy Director General, Henan Provincial General Station of Agricultural Ecology and Resource Protection

3. MARA Visit: Day 1 – November 11, 2025

3.2 Visit to BETA Technological Center

Overview of BETA Technological Center

The BETA Technological Center, affiliated with the University of Vic, works to promote sustainability and bioeconomy within the agri-food sector and rural development. The center's main areas of expertise include waste and resource management, renewable energies and bioenergy, climate change mitigation and environmental assessment, circular bioeconomy and bioproducts, sustainable agriculture and livestock systems, and territorial and rural development.

Host Team

- Dr. Sergio Ponsá, Director of the BETA Technological Center
- Dr. Laia Llenas, Deputy Director
- Dr. Ricard Carreras, Head of Knowledge Transfer and Territorial & Sectoral Projects
- Representation from the Government of Catalonia, Department of Agriculture

Activities and Co-Creation Alignment

Time	Activity	Co-Creation Element
11:50	Arrival at Barcelona Airport	Logistical preparation and stakeholder coordination
13:30	Arrival at BETA Technological Center	Welcoming multi-stakeholder environment
13:30-14:00	Welcome and presentation of the center	Define goal/focus; stakeholder introduction
14:00-14:40	Lunch	Informal networking; relationship building
14:40-16:00	Visit, meeting, and presentations	Knowledge exchange; brainstorming solutions
16:00-16:20	Transfer to Selecció Deseuras Biorefinery	Transition to real-world demonstration
16:20-18:00	Visit to facilities and meeting	Real-world relevance; practical implementation
18:20-20:00	Optional sightseeing tour in Vic	Cultural exchange; relationship strengthening

3.3 Visit to Selecció Deseuras Biorefinery

Selecció Deseuras operates a biorefinery that treats livestock manure and other organic residues to produce biogas, which is converted into electrical and thermal energy. The facility also produces organic fertilizers and recovers water, contributing to a circular and sustainable management model. This visit exemplified the co-creation principle of real-world demonstration, showcasing how technological solutions are implemented in practical agricultural settings.

Host

Mr. Toni Deseuras, owner of the facility, accompanied by BETA Technological Center representatives.

Co-Creation Elements in MARA Day 1 Visit

- Practical Implementation: direct observation of soil health and bioeconomy solutions in operation.
- Multi-Stakeholder Collaboration: integration of private sector (farm owner), research institutions, and government representatives.
- Knowledge Transfer: exchange of technical knowledge and operational experiences between Chinese and European stakeholders.
- Site-Based Learning: real-world context for understanding challenges and solutions in sustainable agriculture.

4. MARA Visit: Day 2 – November 12, 2025

4.1 Visit to Agropolis

Overview of Agropolis

Agropolis, managed by AgrotechUPC, is a scientific and agricultural experimentation park belonging to the Polytechnic University of Catalonia (UPC). Located in Viladecans, one of the main horticultural production areas in Catalonia (the Baix Llobregat Agricultural Park), Agropolis covers nearly 10 hectares and acts as a scientific-technical hub. The park offers facilities such as agricultural mechanization halls and various greenhouses, enabling projects linked to innovation and technology transfer in the agri-food sector. Most recently, it has hosted pioneering projects such as the first fully monitored agrivoltaic plant in Catalonia, which combines solar energy generation with crop production, optimizing land use and improving both sustainability and yield for farmers.

Host Team

- Cèlia Guixé Marsiñach (BETA Technological Center)
- Diana Jiménez De Santiago (BETA Technological Center)
- Montse Solsona Rullo (AgrotechUPC)
- Carles Ferreiro Ramirez (Viladecans Municipality), AgroDeltaLab Project

4.2 Activities and Co-Creation Alignment

Time	Activity	Co-Creation Element
09:30-10:30	Welcome by AgrotechUPC and visit to Agropolis	Site-based learning; identify participants and context
10:30-11:00	Meeting with AgrotechUPC: Presentation and potential collaboration	Brainstorming solutions; planning future experiments
11:00-13:00	Meeting with Viladecans municipality and presentation of AgroDeltaLab	Multi-stakeholder engagement; policy co-creation

4.3 The AgroDeltaLab Project

The presentation of the AgroDeltaLab project by the Viladecans municipality demonstrated the practical application of Living Lab principles at the local level. This session exemplified the co-creation methodology's emphasis on multi-level governance, integrating municipal authorities, research institutions, and agricultural practitioners in collaborative innovation processes.

Co-Creation Elements in MARA Day 2 Visit

- Local Government Engagement: municipal leadership in driving sustainable agricultural innovation.
- Policy-Practice Integration: bridging policy frameworks with on-the-ground agricultural practices.
- Territorial Development: contextualizing soil health solutions within specific geographic and socio-economic contexts.
- Innovation Transfer: mechanisms for scaling and replicating successful approaches across regions.

5. Alignment with Co-Creation Methodology

The MARA visit embodied the complete co-creation process adapted for international knowledge exchange and partnership development.

5.1 Multi-Stakeholder Engagement

The MARA visit exemplified the essential co-creation principle of multi-stakeholder engagement. The two-day program brought together stakeholders from multiple sectors and levels:

- Government: Chinese Ministry of Agriculture and Rural Affairs, Viladecans Municipality
- Research Institutions: University of Vic, Polytechnic University of Catalonia, Huazhong Agricultural University
- Technology Centers: BETA Technological Center, AgrotechUPC
- Private Sector: Selecció Deseuras Biorefinery, GAIA (representing the Basque LL)
- Citizens: volunteers at the Agropolis experimentation park

This diverse stakeholder composition ensured multiple perspectives on soil health challenges and solutions, fostering holistic understanding and collaborative potential.

5.2 Knowledge Exchange and Shared Learning

Both days of the visit were structured to facilitate knowledge exchange and learning in real-world context. The sessions created spaces for:

- Comparative Analysis: understanding how different geographic, climatic, and policy contexts shape soil health approaches.
- Technical Knowledge Sharing: exchange of specific technologies, methodologies, and research findings.
- Institutional Learning: understanding different organizational and governance models for agricultural innovation.
- Challenge Identification: recognizing common soil health challenges despite different regional contexts.
- Solution Brainstorming: exploring potential collaborative solutions applicable across contexts

5.3 Real-World Demonstration and Practical Implementation

The co-creation methodology emphasizes real-world relevance and practical applicability. The MARA visit incorporated site visits to operational facilities rather than limiting engagement to theoretical discussions:

- BETA Technological Center: demonstrated research infrastructure and ongoing projects in sustainable agriculture and bioeconomy.
- Selecció Deseuras Biorefinery: showcased practical implementation of circular economy principles in agricultural waste management.
- Agropolis: illustrated innovation in agricultural technology, including agrivoltaic systems combining renewable energy and food production.

These real-world demonstrations provided tangible evidence of how co-created solutions function in practice, addressing the "implementation gap" often present in purely academic or policy-focused exchanges.

5.4 Planning and Facilitation Elements

Co-Creation Planning Element	Implementation in MARA Visit
Define Goal/Focus	Clear objectives: international collaboration on soil health, knowledge exchange, potential future partnerships
Identify Participants	Strategic selection of diverse stakeholders across government, research, technology, and practice
Select Location and Format	Multiple site visits to operational facilities; combination of presentations, tours, and meetings
Scheduling and Duration	Two-day format allowing depth of engagement without participant fatigue
Language	Multilingual support ensuring clear communication and active participation
Define Roles and Responsibilities	Clear host assignments for each component of the visit
Preparation and Materials	Pre-prepared presentations, facility tours, and informational materials
Facilitation Techniques	Mix of formal presentations, interactive facility tours, and informal discussion

5.5 Key Co-Creation Outcomes

This exchange of experiences with MARA strengthens the dissemination and transfer of knowledge, as well as the search for new opportunities for collaboration between different actors in the sector, as well as international links.

- Policy-Practice Integration: direct engagement between policymakers (government officials) and implementers (researchers, municipal authorities).
- Institutional Learning: understanding different governance models for Living Labs and agricultural innovation.
- Scalability Assessment: evaluating how local initiatives like AgroDeltaLab might inform larger regional or international efforts.
- Future Iteration Planning: laying groundwork for potential long-term collaboration between the Basque Living Lab with Chinese and Catalan projects and institutions.

5.6 Challenges and Adaptations

While the visit successfully applied co-creation principles, certain adaptations were necessary for the international collaboration context:

Challenge	Co-Creation Adaptation
Language and cultural differences	Multilingual facilitation; cultural sensitivity in presentation and discussion formats
Limited time for deep collaboration	Intensive two-day format maximizing face-to-face interaction; focus on relationship building
Different institutional contexts	Emphasis on learning about governance models rather than assuming direct transferability
Geographic distance for future collaboration	Exploring digital collaboration tools
Varying policy and regulatory frameworks	Focus on principles and approaches rather than specific regulatory mechanisms

6. Conclusions and Future Directions

6.1 Lessons Learned for Co-Creation Practice

Several lessons emerge from the MARA visit that can inform future co-creation activities in international contexts:

- Site Visits Are Essential: Real-world demonstrations significantly enhance understanding and credibility compared to presentations alone
- Multiple Formats Enhance Engagement: Combination of presentations, facility tours, and discussions maintains participant engagement and accommodates different learning styles
- Cultural Sensitivity Matters: Attention to cultural context, language, and communication styles facilitates more effective collaboration
- Time for Informal Interaction: Meals and informal activities (such as the optional sightseeing) provide valuable relationship-building opportunities
- Clear Objectives with Flexibility: Well-defined visit goals combined with flexibility to follow participant interests optimizes outcomes
- Multi-Actor Representation: including stakeholders from various backgrounds and organizational levels (directors, researchers, practitioners) enriches discussions

6.2 Future Directions

There are several promising directions for collaboration in advancing soil health. First, technology exchange programs offer opportunities to pilot test technologies under the specific conditions of the sites of the Basque Living Lab, incorporating necessary adaptations to fit local land, climate, or stakeholder conditions. Additionally, there is interest in forming Living Lab partnerships, which would involve the creation of collaboration among Living Labs that work with the different approaches for innovation and knowledge sharing in sustainable soil management.

6.3 Final Reflection

The MARA visit exemplified the power of co-creation methodology to transcend traditional knowledge transfer models. Rather than a unidirectional flow of information, the two-day engagement created a collaborative space where Chinese and European stakeholders learned together, shared challenges and solutions, and envisioned future partnerships. The visit demonstrated that soil health requires collaborative approaches that integrate diverse perspectives, honour different contexts, and build on complementary strengths. These two days have been an opportunity to focus on a common cause with high global impact that is being addressed through the Soil Mission at the European level. The meeting of different perspectives is always constructive, as well as an opportunity to strengthen ties between Europe and China in the field of soil health.

The successful application of co-creation principles to this international visit provides a valuable model for future cross-border collaboration within the iCOSHELLs project and beyond. It demonstrates that the Living Lab methodology and co-creation approach are not merely tools for developing specific soil health solutions within defined geographic contexts but rather represent a flexible and powerful framework for fostering innovation, learning, and collaboration across boundaries of geography, culture, and institutional context.

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