EU-China expert seminar

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Report from the thematic session on

"Soil quality restoration and land management"

Participants

China
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EU
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EU Commission
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1) Overview of relevant running Horizon 2020 projects and/or topics

- **LANDMARK:** LAND Management: Assessment, Research, Knowledge base *"How to make the most of our land? How can we ensure that our soils deliver on the many expectations we have of our land?"*
  Landmark has one Chinese partner and its main focus is on soil functions; starting day May 2015 end Oct. 2019; http://landmark2020.eu/
- **ISQAPER:** Interactive Soil Quality Assessment in Europe and China for Agricultural Productivity and Environmental Resilience.
  ISQAPER has 4 Chinese partners; starting date 2015 end 2018 1Q. http://www.isqaper-project.eu/
- One proposal under final evaluation: SFS 47: Management of soil-water resources in the EU and China and its impact on agro-food ecosystem functions

2) Overview of challenges from the EU and China

Each invited expert presented challenges based on the discussion a common set of issues/challenges was identified:

Issue of degradation

- **soil/land: desertification and degradation (erosion, compaction, contamination, salinization, acidification, alkaline soils), overfertilization, organic matter decline and nutrient depletion/mining, loss of fertile land**

Issue of remediation

- **Soil fertility management, N fixation, microbiological application in crop production and soil bioremediation, Ecological farming, Ecosystem services/biodiversity, conservation agriculture, ICT, precision farming, robotics, Carbon sequestration (CC mitigation), preserving and improving land productivity**

Issue of policy

- **Soil security, science based policy making, better land management, sustainability (SDGs), land degradation neutrality, extension services – dissemination, involvement of farmers, demonstration farms and best practices, stakeholder involvement/awareness raising**

3) Common challenges and role of the R&I

- Soil/land degradation and more particular soil contamination were identified as one of the common challenges where R&I can contribute. New ways of dealing with soil contamination were presented.
- Sustainable management of NPK, N-fixation: research covering issues of GHG and water quality and life cycle assessment of nutrients
- Research in implementing the principles of conservation agriculture and identifying constraints (physical and socio-economic) for its implementation
- Research on the role of roots and rhizosphere in growth and yielding of horticultural plants
- Loss of prime agricultural land

<u>Main direction for future R&I cooperation:</u>

1. microbial-mediated soil quality restoration: R&I will be focused on beneficial microbes and biological nitrogen fixation to resolve over fertilization, acidification, pollutant pollution, organic matter decline, nutrient depletion/mining.

2. farmer/stakeholder involved land management: R&I will be focused on minimal tillage, conservation agriculture, precision farming to solve ecosystem services/biodiversity, soil erosion, carbon sequestration and soil quality improvement.

3. soil contamination: management and restoration of degraded land