

Agri-Tech in China: Newton Network

Introduction



Introduction

The Agri-Tech in China: Newton Network develops and supports new UK-China agri-tech partnerships to address the challenges facing modern agriculture.

The Network builds and supports partnerships that grow UK excellence in satellite imaging, remote sensing, smart sensors, robotics and data-intensive science into new space-enabled solutions for enhanced productivity and sustainability in rural China.

The Network is an initiative of the Science and Technology Facilities Council's portfolio of innovation programmes, coordinated by staff at STFC's Rutherford Appleton Laboratory in Oxfordshire, UK. All projects in the network use, demonstrate and develop space-enabled technologies in agriculture.



Newton Network Projects

1. Agritech in China Newton Network+ (ATCNN)

Partners: Rothamsted Research*; China Agricultural University; University of Reading; University of East Anglia; Scotland's Rural College; CABI.

2. Synthesis of remote sensing and novel ground truth sensors to develop high resolution soil moisture monitoring in China and the UK

Partners: University of Lincoln* (*lead agency*); Institute of Eco-environment and Agrometeorology; Chinese Academy of Meteorological Sciences (CAMS); Nanjing University of Information Science and Technology (NUIST); Centre for Ecology and Hydrology; University of Aberystwyth

3. Precision Agriculture for Family farms in China

Partners: University of Newcastle*, Beihang University; NERCITA; FERA; Ag-Space; RAL-Space.

4. Integrating Advanced Earth Observation and Environmental Information for Sustainable Management of Crop Pests and Diseases

Partners: CABI*; RADI; CAAS; University of Exeter; Kings College, London; Zhejiang University; Rothamsted Research

5. Regional crop monitoring and assessment with quantitative remote sensing and data assimilation

Partners: UCL/NCEO*; CAAS; IARRP-CAAS; Beijing University; Beijing Normal University; Assimila.

6. Enabling Wide Area Persistent Remote Sensing for Agriculture Applications

Partners: Loughborough University*; Cranfield University, University of Manchester, National Institute of Agricultural Botany.



Pathfinder Projects (completed)

1. Applying UK weather risk analysis expertise to China viticulture – incorporating data sets into GIS platform for wine.

Partners: Climate wine consulting Ltd. with Northwest Agriculture and Forestry University.

2. Production of a report on the potential of capsule inspection technology for irrigation systems in China.

Partners: University of Exeter with Shanghai Jiaotong University.

3. Technical and economic feasibility studies on the potential of the Internet of things to transform after-sales service of hay-baling machines.

Partners: Liverpool John Moores University and Yulong Machinery Ltd.

4. Development of a roadmap for big data best practices.

Partners: University of Kent with Henan University.



Proof of Concept Projects (completed)

1. Proof of concept and investigation of feasibility of an intelligent irrigation system.

Partners: Loughborough University, with Jiangsu University

2. Development of a novel automated big-data driven approach for crop disease detection.

Partners: Manchester Metropolitan University with Institute of Remote Sensing and Digital Earth (RADI), Chinese Academy of Agricultural Sciences.

3. Application of multispectral remote sensing techniques developed in the UK to help with the development of yield forecasting systems and early blight detection of potato crops in China.

Partners: National Institute of Agricultural Botany and Cranfield University with the China Center for Resources Satellite Data and Application and Beijing Yagro Navitech.

4. Boosting the exchange of robotics technology for the safe and efficient harvest of fruits and vegetable crops grown in glasshouses and plastic tunnels.

Partners: University of Plymouth with Sunqiao Co. and Shanghai Jiaotong University.



Small Projects (in progress)

1. Management Zone Delineation and Decision Support System for Small-scale Farming at Village Level in North China Plain.

Partners: James Hutton Institute; China Agriculture University; RSK ADAS Ltd; Rothamsted Research; Courtyard Agriculture; Hebei Agricultural University; Henan Agricultural University

2. NeWMap: Enhanced Farm-specific NutriEnt and Water Stress Maps

Partners: University College, London; Loughborough University; China Agricultural University.

3. Scoping an Information Management System for China's Agriculture

Partners: RSK ADAS Ltd: China Agriculture University; Courtyard Agriculture; VIP Farms

4. Space Robotic Technologies for Plant Grafting

Partners: University of Strathclyde; China Academy of Launch Vehicle Technology; China Agriculture University; Shandong Agriculture University.



Get Involved

Apply for Funding for your Project

The Network runs periodic calls for proposals:

- Small projects – up to £30,000
- Large projects – up to £100,000

Please see www.agritechinchina.org for details

Join the Network

- Network-funded project partners automatically become members of the network.
- Individuals can sign up for updates on the website.

Join an Open Innovation Workshop

- The Network runs periodic Open Innovation workshops that bring together interested parties to discuss and develop new ideas and projects.

Forthcoming Events - 2018

20-21 March 2018

Annual Meeting of the Agri-Tech in China Newton Network

Please see www.agritechinchina.org for details



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