

## Work in Progress

### **SAIN is among top priorities of UK China cooperation**

The Fourth UK-China Economic and Financial Dialogue meeting was held in London on 8th September 2011. The meeting was chaired by UK's Chancellor of the Exchequer George Osborne and China's Vice-Premier Wang Qishan. SAIN was listed as cooperation priority in the agreed joint policy outcomes paper:

*Both sides aim to maintain and develop the ongoing cooperation on sustainable agriculture development. The two sides will make full use of UK-China Sustainable Agriculture Innovation Network (SAIN), in order to facilitate the implementation of the Action Plan for UK-China Cooperation on Food Security, explore approaches and methods of assisting other developing countries in increasing food security through UK-China cooperation, promote sustainable agricultural development of the two countries, and contribute to strengthening global food security.*



Full details of the joint policy outcomes paper can be found at:

[http://www.hm-treasury.gov.uk/int\\_ukchina\\_pop.htm](http://www.hm-treasury.gov.uk/int_ukchina_pop.htm)

### **Low carbon agriculture project held workshops in Xi'an and Beijing**

In July a project workshop was held in Xi'an, Shaanxi, the last of the four case-study Provinces to be considered. It was especially valuable to interact with a representative of the Provincial Development and Reform Commission (DRC) and provide guidance on possible ways of including improved N management in the Province low carbon development plan.

In August project team members in the UK met with a Chinese delegation visiting the UK under the auspices of MOA. The group comprised agricultural policy makers, staff involved with farmer training and representatives from agri-industries. It was useful to discuss different approaches to making the delivery of information to farmers more effective and better tailored to their real socio-economic situations, for example taking account of the needs of the many part-time farmers.

In September a highly successful workshop was held in Beijing. This meeting was highly multi-sectoral and multidisciplinary – it included specialists in the science of GHG emissions (including both agriculture and fisheries) from China and abroad, individuals with experience of policy and extension, and social scientists with expertise in the response of farmers to different modes of delivering information. It was also valuable to have representatives from the sugar industry in China; they have pioneered a range of approaches to bring information to farmers to enable them to use N fertilizer more efficiently, and thus reduce unnecessarily high application rates. The workshop also had input from members of another SAIN project, MUC (Manure Utilisation in China); this was especially important because the failure to account of N derived from manures is one cause of over-application of N fertilizer.

## UK-China Sustainable Agriculture Innovation Network (SAIN)



### Agricultural adaptation project workshop held in Huangshan and Hulunbeier

Researchers and students from across China met for workshops in Huangshan and Hulunbeier in July 2011 to share knowledge on adapting agriculture to climate change and to identify research priorities. Participants came from the Chinese Academy of Agricultural Science, Anhui and Inner Mongolian Academies of Agricultural Science, China Meteorological Administration and Reading University, as well as a number of other Chinese universities and Institutes.

Keynote presentations described: techniques for assessing the impacts of climate change on agricultural production; cropping systems in different parts of China; pests and diseases challenges in China; agricultural impact assessment studies in China; examples of recent climate change in China; agricultural adaptation; climate change and agricultural development.

The participants found these seminars very informative. They provided a good opportunity to discuss various methods to assess agricultural impacts, as well as major uncertainties that remain in any assessment methods, and that must be accounted for in future assessments.

### SAIN project continues to generate high quality publications

Two papers produced by SAIN project team “Estimates of Future Agricultural GHG Emissions and Mitigation in China” were published at high impact journals.

Yan, X.Y., Cai, Z., Wang, S.W. & Smith, P. 2011. Direct measurement of soil organic carbon content change in the croplands of China. *Global Change Biology* 17, 1487-1496. doi: 10.1111/j.1365-2486.2010.02286.x

Cheng, K., Pan, G., Smith, P., Luo, T., Li, L.Q., Zheng, J.W., Zhang, X.H., Han, X.J. & Yan, M. 2011. Carbon footprint of China's crop production—an estimation using agro-statistics data over 1993–2007. *Agriculture, Ecosystems and Environment* 142, 231-237. doi:10.1016/j.agee.2011.05.012.



## **UK-China Sustainable Agriculture Innovation Network (SAIN)**

### **Two more Policy Briefs released**

*SAIN Policy Brief No 3: Greenhouse-gas Emissions from Energy Use in the Water Sector*

This issue of Policy Brief was produced by project team “ADMIT: Harmonising Adaptation and Mitigation for agriculture and water in China”. You can read the full text at:

<http://www.sainonline.org/SAIN-website%28English%29/download/SAIN%20Policy%20Brief%20No3.pdf>

*SAIN Policy Brief No 4: The Importance of China's Crop Wild Relatives for the Future of Food and Farming*

This Brief is produced by project team “Conservation for enhanced utilization of crop wild relative diversity for sustainable development and climate change mitigation”. The full text is available at:

<http://www.sainonline.org/SAIN-website%28English%29/download/SAIN%20Policy%20Brief%20No4.pdf>

### **Forthcoming Event**

#### **8-15 October**

Dr Laurence Smith (SOAS, University of London), Prof Kevin Hiscock (University of East Anglia) and Dr Hadrian Cook will visit Agri-environment Protection Institute in Tianjin and China Agricultural University in Beijing. During their visit, they will give public lectures on the following topics:

- Developing a catchment management template to mitigate non-point source pollution in China: a summary of the topics and conclusions of a scoping study by the China-UK Sustainable Agriculture Innovation Network (SAIN), by Hadrian Cook and Laurence Smith
- Catchment Management Approaches: International Lessons and Examples for Policy and Governance for Provision of Environmental Goods, by Laurence Smith
- Design and implementation of high-resolution monitoring of diffuse water pollution from agriculture: the Wensum Demonstration Test Catchment Project in Eastern England, by Kevin Hiscock
- Sinking or swimming? Surveying community based catchment groups in England and Wales, by Hadrian Cook

Please contact Lai Xin ([laixin@caas.net.cn](mailto:laixin@caas.net.cn)) for more details.

#### **13-15 October**

SAIN Working Group Co-chairs (China) meeting will be held in Wu Xi, on 14-15 October.

#### **3-8 November**

The Met Office Hadley Centre is going to be running a SAIN Climate Science workshop in Beijing and Chengdu, China at the beginning of Nov 2011, 3rd-4th Nov in Beijing and 7th-8th Nov in Chengdu.

The aim of the workshop is to give scientific and technical training necessary to use regional climate modelling system-PRECIS products and address many issues involved in its applications. This will include an introduction to the PRECIS system, constructing climate scenarios for impact studies, uncertainties in climate modelling, PRECIS system related data analysis. The workshop will focus on issues about climate extremes, how to use PRECIS climate scenarios for impact studies, such as flood risk and status of crop pests assessment under climate change.

One afternoon hands-on session will also be provided to help users to use PRECIS utilities & software to process and analyse the PRECIS data for the purpose of deriving climate extremes. A demonstration of how to install PRECIS utilities & software is given at the end of the workshop, PRECIS utilities (pc version) can be obtained for free during the workshop.

If you are interested in attending please contact [chang.wang@metoffice.gov.uk](mailto:chang.wang@metoffice.gov.uk) and [juhui@ami.ac.cn](mailto:juhui@ami.ac.cn)



## UK-China Sustainable Agriculture Innovation Network (SAIN)

### **1-2 December**

SAIN project “Estimates of future agricultural greenhouse gas emissions and mitigation in China” will hold second project workshop on 1-2 December in University Aberdeen. The confirmed presentations include:

Name	Affiliation	Title of presentations
Kun Cheng	Nanjing Agric. University	Re-estimation of SOC sequestration of China's croplands
Ming Yan	Nanjing Agric. University	C footprint of China's agricultural production
Lianqing Li	Nanjing Agric. University	Biochar-based fertilizer and mitigation of N fertilizer induced emission in croplands
Ruijun Long	Lanzhou University	China's grassland and the GHGs mitigation in livestock?
Dali Nayak	University of Aberdeen	Effect of management practices on the SOC sequestration of China's cropland: A meta-analysis
Dali Nayak	University of Aberdeen	Effect of management practices on the GHG emission of China's cropland: A meta-analysis
Dominic Moran	Scottish Agricultural College	Marginal abatement costs use gas mitigation in green grasslands in Inner Mongolia

Please contact Dali Nayak ([d.nayak@abdn.ac.uk](mailto:d.nayak@abdn.ac.uk)) for more details.

### **Other News**

#### **China is going to tackle groundwater pollution in the next ten years**

According to the Xinhua News Agency, Beijing, 24th August, the State Council adopted a national plan aimed at protecting the safety of groundwater resources and avoiding pollution - National Groundwater Pollution Prevention Plan (2011-2020).

Groundwater accounts 18 percent of China's water supply. In the northern regions, 65 percent of the water supply for residential use, half of the water supply for industrial use and 33 percent of the water supply for agricultural irrigation depends on ground water. Of 657 cities across the country, more than 400 are using groundwater as a major source of drinking water. Falling water levels due to over-exploitation as well as tainting by sewage seepage, domestic and industrial waste, fertilizers and pesticides leaching have worsened the quality of groundwater and caused pollution.

The State Council urged governments of all levels to list pollution prevention and underground water control in their working agendas and to set up an underground water environmental supervision system by 2015.

A ground water pollution and prevention mechanism must also be established by 2020 to monitor polluters, improve water quality and guarantee the safety of underground water in key regions.

For details see: [http://news.xinhuanet.com/politics/2011-08/24/c\\_121905657.htm](http://news.xinhuanet.com/politics/2011-08/24/c_121905657.htm)

#### **New strategy to save and protect England's Wildlife**

A plan to create better habitats and join up the homes of some of England's most iconic wildlife has been published on 19 August 2011.

'Biodiversity 2020: A strategy for England's wildlife and ecosystem services' aims to halt the loss of England's habitats and species, and follows up the groundbreaking global agreement reached at the Convention on Biological Diversity (CBD) conference held in Nagoya, Japan, in October 2010.

The Strategy's priorities for action include:

- a more integrated large-scale approach to conservation on land and at sea
- putting people at the heart of biodiversity policy
- reducing environmental pressures
- improving our knowledge

For details see: <http://www.defra.gov.uk/news/2011/08/19/england-biodiversity-strateg/>

## UK-China Sustainable Agriculture Innovation Network (SAIN)

### BoTian Sugar's Beet Academy

To achieve sustainable development on sugar beet growing and to offer improved service to beet growers, BoTian have put training and development in agronomy and mechanisation skills at the heart of their agricultural drive.

As an innovative way to improve to disseminate knowledge and skills of beet agronomy and mechanisation, BoTian Sugar and the Chinese National Beet Industry System jointly established a 'Beet Academy' which pulls in experts from China and Europe to train their staff in the best agricultural practices and advanced agricultural technologies. The first training course was organised in the Inner Mongolia Agriculture University in Huhehot in August with 67 trainees. In the future, a range of courses from foundation to advanced will be provided catalysing more opportunities of learning, the targeted trainee will cover key big growers, the local government, and key stakeholders of local beet growing and development. For more about BoTian Sugar please visit: <http://botiansugar.com/aspx/en/>



### Useful publications

#### ***Payments for Ecosystem Services and Food Security***

A healthy ecosystem can provide a variety of crucial services for public goods, such as clean water, nutrient cycling, climate regulation and food security services that contribute directly or indirectly to human well-being. Yet today, many ecosystems are in decline; this is of particular importance to agriculture, which depends on ecosystem services. Loss of healthy ecosystems will seriously affect the production of food, both today and in the future. Payments for Ecosystem Services (PES) is an economic instrument designed to provide positive incentives to users of agricultural land and those involved in coastal or marine management. These incentives are expected to result in continued or improved provision of ecosystem services, which, in turn, will benefit society as a whole.

The full report is available at: <http://www.fao.org/docrep/014/i2100e/i2100e00.htm>

#### ***Ecosystems for water and food security***

Against the current challenges to enhance food security worldwide, the publication aims at illustrating the importance of healthy ecosystems for the provisioning of key services that contribute to food security. Such ecosystem services are water provisioning and food production. In this regard the publication will provide an overview of the linkages between ecosystems, water, and food security. The publication further will explore how to manage ecosystems for a variety of ecosystem services such as provisioning of water and food, and how to manage ecosystems in a sustainable way so they can substantially contribute to enhancing current and future food security.

The full report is available at: <http://www.unep.org/pdf/depi-ecosystems-food-secr.pdf>

#### ***FAO Methodology for Sustainable Grassland Management (SGM)***

The methodology aims to estimate the reduction of greenhouse gas emissions from grassland and increase grassland soil organic carbon stock by applying sustainable grassland management practices (SGM). This methodology is applicable to projects that introduce SGM into a grassland landscape subject to conditions such that the soil organic carbon would remain constant or decrease in the absence of the project. Where biogeochemical models can be demonstrated to be applicable in the project region, they may be used in estimation of soil carbon pool changes. Where such models are not applicable, the methodology provides guidance for estimation of soil organic carbon pool changes using direct measurement methods.

Read full report at: [http://www.fao.org/fileadmin/user\\_upload/newsroom/docs/fao-sgm-methodology.pdf](http://www.fao.org/fileadmin/user_upload/newsroom/docs/fao-sgm-methodology.pdf)

***For more information about SAIN, please visit: <http://www.sainonline.org/English.html>  
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