

Work in Progress

Policy Brief on Low Carbon Agriculture

SAIN's "Low Carbon Agriculture" project produced the first issue of Policy Brief titled "*Improved Nutrient Management in Agriculture – A Neglected Opportunity for China's Low Carbon Growth Path*". The key messages include:

1. GHG emissions connected with agriculture (in the range 1210-1444 Mt CO₂-equivalent) represent 18-20% of total GHG emissions from China.
2. Manufacture and use of nitrogen (N) fertilizer is the source of 7% of China's GHG emissions (a conservative estimate).
3. There is widespread 30-60% overuse of nitrogen fertilizer on crops in China. This overuse accounts for about 10-15% of total GHG emissions from agriculture.
4. If this N over-use were corrected total GHG emissions could be decreased by >2% and nitrous oxide emissions by 30% or more without compromising China's food security.
5. The above information can contribute to the formulation of a national strategy for low carbon agriculture.

The project team are currently working on an "inventory of technologies" that can be used to increase the efficiency of use of N from fertilizer and manure, using information from on-going research in China. Implementing these will decrease the carbon intensity of Chinese agriculture.

This three year project is funded by UK's Foreign and Commonwealth Office and by China's Ministry of Agriculture, led by Zhang Fusuo (China Agricultural University, zhangfs@cau.edu.cn) and David Powlson, Rothamsted Research, UK, david.powlson@bbsrc.ac.uk).

The full text of the policy brief can be downloaded at:

<http://www.sainonline.org/SAIN-website%28English%29/download/PolicyBrief%20No1final.pdf>

Manure Review Project Kicked Off in Nanjing

The inaugural meeting of the SAIN Manures Review Project in WG1 took place at the Nanjing Agricultural University on the 19-20th April. Researchers (and MSc and PhD students) of the four collaborating organisations; North Wyke Research (UK), Nanjing Agricultural University, Northwest Agricultural & Forestry University and China Agricultural University discussed the project plans and visited a number of manure processing composting plants in the province of Jiangsu.

This project will assess to what extent the nutrients in livestock manure, composted manure and anaerobic digestate are taken account of when applied to soil in selected provinces in China when planning nutrient supply to a



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range of crops. It will collate the information available to assist farmers in managing the nutrients in these organic resources effectively. Importantly, the project will explore the major barriers to utilising the nutrients in these organic resources in an integrated way with inorganic fertilisers. The project will recommend future investment to reduce these barriers and maximise use of nutrients in these organic resources, thus reducing reliance on inorganic fertiliser use. This 18-month project is funded by the UK Department for Environment, Food and Rural Affairs and Chinese Ministry of Agriculture, led by Shen Qirong (Nanjing Agricultural University shenqirong@njau.edu.cn) and Dave Chadwick (North Wyke Research dave.chadwick@bbsrc.ac.uk) For more details see:

[http://www.sainonline.org/SAIN-website\(English\)/pages/News/wg1meeting.html](http://www.sainonline.org/SAIN-website(English)/pages/News/wg1meeting.html)

‘CWR China’: start-up meeting and first training workshop held in Beijing

The start-up meeting and first training workshop of the SAIN project, ‘Conservation for enhanced utilization of crop wild relative diversity for sustainable development and climate change mitigation’ (‘CWR China’) was held at the Institute of Botany, Chinese Academy of Sciences (IBCAS) from 23–28 May 2010. Training was provided to Chinese scientists in crop wild relative (CWR) conservation strategy planning by staff of the School of Biosciences, University of Birmingham.

The overall aim of the project is to develop a conservation and use strategy for CWR species of China using a systematic approach that will secure and provide access to the genetic diversity of the most critical wild plant resources needed for crop improvement for food security in China to mitigate the impact of climate change. This 3-year project is funded by the UK Department for Environment, Food and Rural Affairs and Chinese Ministry of Agriculture, led by Kang Dingming (China Agricultural University, kdm@pku.edu.cn) and Brian Ford-Lloyd (University of Birmingham, b.ford-lloyd@bham.ac.uk). For more details see:

[http://www.sainonline.org/SAIN-website\(English\)/pages/News/CWR China workshope.html](http://www.sainonline.org/SAIN-website(English)/pages/News/CWR China workshope.html)



WG4 Chinese members held meeting in Beijing



Chinese members of SAIN Working Group 4 (Policies to achieve circular agriculture) met together in Beijing on April 13, 2010. The meeting was chaired by Shangbin Gao, the co-chair of the working group, the Director of Agro-Environmental Protection Institution (AEPI). Attendees included all Chinese group members as well as representatives from SAIN Secretariat and UK-China Sustainable Development Dialogue (SDD) programme.

At the meeting, attendees reviewed the progress achieved so far including the development of the two proposals, as well as the challenges the Group faces. The group members also discussed the ways for improving further cooperation between China and the UK in the agriculture sector.

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News about SAIN Members

Prof Pete Smith, co-chair of SAIN Working Group 3, and Prof Keith Smith, member of SAIN Working Group 1, have recently edited two important books published by Earthscan. Congratulations to Pete and Keith.

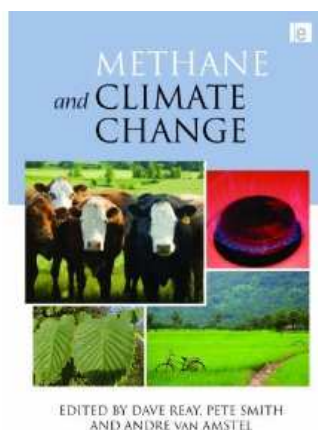
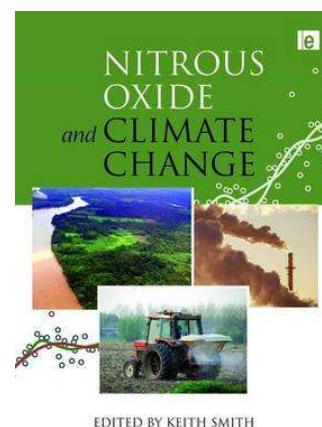
Nitrous Oxide and Climate Change,

Edited by Keith Smith, published by Earthscan, May 2010, 256 pages.

“This timely book provides an excellent analysis of the key sources and sinks of the important greenhouse gas nitrous oxide, N₂O, and of likely future trends in emissions and the prospects for mitigation. It will be a valuable source of information to audiences ranging from policy makers to professionals in climate change research and environmental science students.” - *James Galloway, Sidman P. Poole Professor, Dept. Environmental Sciences, University of Virginia, USA; winner of the 2008 Tyler Prize for Environmental Achievement*

More details about the book see:

<http://www.earthscan.co.uk/?TabId=102275&v=511964>



Methane and Climate Change

Edited By Dave Reay, Pete Smith and Andre van Amstel, published by Earthscan, May 2010, 272 pages.

“This book takes a unique and powerful approach to the global methane problem. The organization by the key sources (termites, rice, ruminants etc.) illustrates the global nature of the challenge and directly points the way to novel solutions.” - *Peter M. Groffman, Cary Institute of Ecosystem Studies, USA*

More details about the book see:

<http://www.earthscan.co.uk/?TabId=102281&v=511979>

Forthcoming Event

UK-China Seminar on **The Future of Plant Breeding**

Time: Monday, 20 September 2010

Venue: UK Pavilion, World Expo 2010, Shanghai

This one day seminar aims to deliver an informative workshop and technical exchange / dialogue on the future of plant breeding and its pivotal role in food production /food security, promoting UK excellence and the underpinning science in this field, encouraging debate and discussion, and facilitating the opportunity for future academic and business collaborations between UK and China.

To register your interest in participating in or attending this seminar, please contact Claire Urry, Executive Director, China-Britain Business Council (CBBC):

Email: claire.urry@cbbc.org / Tel: 01507 580255 / Mobile: 07950 390207

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Other News

New Defra Secretary of State announced



Caroline Spelman MP has been appointed Secretary of State for Environment, Food and Rural Affairs by Prime Minister, David Cameron.

Before entering Parliament, Mrs Spelman had an extensive career in the agriculture sector, with fifteen years in the agriculture industry and in-depth experience of the international arena, including as deputy director of the International Confederation of European Beet Growers and a research fellow for the Centre for European Agricultural Studies. She has also authored a book on the non-food use of agricultural products.

For details see: <http://www.defra.gov.uk/news/2010/100512a.htm>

UK-China bid to make food safer for animals and humans

Britain and China have taken a step toward ensuring safer animal feed and the health of China's 1.3 billion humans go hand-in-hand to cut the chances of future contaminated food alerts.

The Chinese Academy of Agricultural Science, Chinese Ministry of Agriculture, the UK Department of Environment, Food and Rural Affairs and UK Food Standards Agency, came together with the UK's largest feed company, Associated British Agriculture, to host a UK-China International Summit on Feed Safety in Beijing.

The aim was to promote joint cooperation in feed and food quality and safety and in agricultural trade as part of the "Action Plan for UK-China Cooperation on Food Security" signed by UK and Chinese Ministers in October 2009.

More details see: <http://ukinchina.fco.gov.uk/en/news/?view=PressR&id=22247812>



Nitrogen control is becoming a binding target in China's 12th five-year plan

According to *Science Times* reported on 6th May, Zhao Hualin, Director General of the Department of Total Pollutants Control, Ministry of Environmental Protection, announced that the level of ammonia nitrogen in the water and nitrogen oxide in the air will be the new binding target in the Ministry's 12th five-year plan. Nitrogen oxides have surpassed sulphur dioxide becoming major pollutant to air and consequently acid rains have changed from sulphur acid rain to nitric acid rain in many parts of China.

For details see: <http://env.people.com.cn/GB/11543775.html>

China Human Development Report 2009/10 published

UNDP China has recently published China Human Development Report 2009/10: "China and a Sustainable Future, Towards a Low Carbon Economy and Society". The report highlights that if China can fully grasp and seize the opportunities at hand, it will be possible to move to a society which is not only environmentally sustainable, but with better conditions for greater job creation, resource efficiency, energy security, food security, and a much improved health situation for its people; a society which, in line with China's own "Xiaokang" vision, is well-balanced and moderately prosperous. The shift towards a low carbon economy and society has become a focal point for China, as reflected in its policy framework, government resolutions and speeches given by President Hu Jintao and Premier Wen Jiabao.

The report can be accessed at <http://www.undp.org.cn/pubs/nhdr/nhdr2010e.pdf>

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Tripling crop yields in tropical Africa

Between 1960 and 2000, Asian and Latin American food production tripled, thanks to the use of high-yielding varieties of crops. Africa can follow suit, but only if depletion of soil nutrients is addressed. Replenishing soil fertility, by using mineral and organic fertilizers, is therefore the primary biophysical requirement for increasing food production in tropical Africa. Many studies have shown that, once this fundamental deficiency has been addressed, the road to food security is open, says Pedro Sánchez from Earth Institute.

For detail see: *Nature Geoscience* **3**, 299 - 300 (2010), available online:

<http://www.nature.com/ngeo/journal/v3/n5/full/ngeo853.html>

For more information about SAIN, please visit:

<http://www.sainonline.org/English.html>

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