

PRESS RELEASE

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Soils fundamental to the future of mankind

The British Society of Soil Science today co-hosted Earth Under Pressure: Maximising the value of soils at The Planet Under Pressure conference with the James Hutton Institute, Rothamsted Research and UNEP. Society President, Dr Helaina Black, introduced the session saying *"there is an obvious but neglected opportunity to tackle many of the world's pressing environmental issues by improving soil quality globally"*.

Highlights

- Poverty is the biggest cause of soil degradation in the Himalayan region of India. This is driven by small-holdings, less technical know-how and poor take up of new approaches. (Dr Vikas Sharma).
- Most soil data is over 20 years old and not joined up. Dr Neil McKenzie, CSIRO Land and Water said "Scratching around at our current evidence base (on soils) is frankly embarrassing." Soil data is needed to address food and water security, carbon storage and other challenges faces mankind. There is a need to regularly monitor global soil conditions and the indications from most regions show that the warning signs are serious. This requires regular assessments: mapping, monitoring and forecasting. We need to rebuild the technical capability for surveying soil so that we can make regular reviews of soil quality, just as the IPCC does with the greenhouse gas inventory.
- Prof Diana Wall, Colorado State University "What matters is food webs, not just biodiversity." The function of organisms is much more important than just assessing numbers. Plant roots offer considerable untapped potential to harness more soil to address yield gaps. Prof Peter Gregory said "This is an exciting time to be a soil scientist" as they now have new opportunities in genetics and analytical sciences to understand how plants function and interact with their environment.

Scientists from the James Hutton Institute, joined by distinguished colleagues from around the world, have called for a greater acknowledgement of the importance of soils in climate change mitigation, global food security and maintaining global biodiversity. They say warning signs about soil conditions in many regions are "serious".

The international speakers were Dr Diana Wall, of the School of Global Environmental Sustainability at Colorado State University; Professor Peter Gregory, the Chief Executive of East Malling Research; Dr Neil McKenzie Chief of CSIRO Land and Water in Australia; Dr Fredrick Ayuke of the University of Nairobi in Kenya; and Dr Vikas Sharma, an Associate Professor at Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu and Kashmir, India.

Dr Wall underlined the growth in interest in soil biodiversity. She told the session that the recent surge in soil biodiversity research now means that we have a much better idea of what soil organisms occur where and why. The focus must now be on how to manage soil biodiversity to improve soil condition.

Dr McKenzie said: "We need a global assessment of soil condition that includes mapping, monitoring and forecasting of soils". Advances in digital techniques means that we now have the tools to map the state and trends of soil condition in most regions of the world especially where the warning signs are serious".

Vikas Sharma remarked that "poverty is the biggest cause of soil degradation", which plagues the Jammu and Kashmir region of India. The issues of land tenure for small-holder farms makes it difficult for new approaches to improve farming to be adopted and leads to greater encroachment on forests.

Frederick Ayuke demonstrated the challenges to changing farming practices in Kenya to conserve soils and increase production.

Professor Peter Gregory told the meeting that the area of roots (rhizosphere) might offer the best prospects for improving crop yields. "Plants are things that are just, temporarily, not soil!" Professor Gregory said.

He said there was evidence that mixed cropping could improve the quality of soils. He also spoke of the increasing practice of grafting crop plants to existing root stock: 65% of tomatoes grown in the UK were now being produced in this way. "This is a very exciting time to be a soil scientist," he told delegates.

ENDS

Notes for Editors

About the Society

The **British Society of Soil Science (BSSS)** is a membership organization and educational charity, which together with its professional body **The Institute of Professional Soil Scientists (IPSS)**, seeks to promote the study and profession of soil science. Further information can be found on their websites www.soils.org.uk and www.soilscientist.org

About the Society President, Dr Helaina Black, M.I. Soil Sci, CSci

Dr Black's research experience in soil ecology and soil science spans over 20 years with extensive practical experience in temperate and tropical ecosystems and in the delivery of multidisciplinary projects. Helaina coordinated the cross-institute work package on Management of soils to enhance function and value (WP3.3) as part of the Scottish Government commissioned research programme on Environment – Land Use and Rural Stewardship at the James Hutton Institute, Aberdeen.

About Planet Under Pressure 2012

Based on the latest scientific evidence, the London Planet Under Pressure conference will provide a comprehensive update of our knowledge of the Earth system and the pressure our planet is now under. The London conference will focus the scientific community's and the wider world's attention on climate,

ecological degradation, human well-being, planetary thresholds, food security, energy, governance across scales and poverty alleviation. The conference will discuss solutions, at all scales, to move societies on to a sustainable pathway. It will **provide scientific leadership towards the 2012 UN Rio +20 conference**, also in 2012. Further information available <http://www.planetunderpressure2012.net>

About the James Hutton Institute

The James Hutton Institute was formed in 2011 by the Macaulay Land Use Research Institute in Aberdeen and SCRI, the Scottish Crop Research Institute based in Invergowrie near Dundee, Scotland. The Institute encompasses a distinctive range of integrated, world-class strengths in land, crop, water, environmental and socio-economic science. It undertakes a wide range of research for customers including the Scottish and UK Governments, the EU and other organisations worldwide. The institute has a staff of nearly 600 and 125 PhD students. The Institute organises its research through seven principal themes: Safeguarding Natural Capital, Enhancing Crop Productivity and Utilisation, Delivering Sustainable Production Systems, Controlling Weeds, Pests and Diseases, Managing Catchments and Coasts, Realising Land's Potential and Nurturing Vibrant and Low Carbon Communities. The James Hutton Institute operates commercial subsidiaries. Macaulay Scientific Consulting (MSC) Ltd is a leading environmental consultancy centre offering unparalleled experience in soil and water consultancy, and land evaluation. Mylnefield Research Services (MRS) Ltd undertakes contract research, especially plant breeding, licenses plant varieties internationally and delivers analytical services. The Institute takes its name from the 18th century Scottish Enlightenment scientist, James Hutton, who is widely regarded as the founder of modern geology and who was also an experimental farmer and agronomist.

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