The AAA initiative launched at COP22 in Marrakech is: (i) visionary and bold, (ii) critical to ushering the Green Revolution in Africa, (iii) in accord with SDGs of the U.N., (iv) complementary to 4PT initiative of COP21, and (v) essential to global and regional peace and stability. Prof. Lal is a member of the International High Level Advisory Panel to AAA. More about the AAA initiative and COP22 on pages 2 and 3...

Winter at C-MASC: The snowfall on 13th December beautifully decorated the landscape. However, the cold front that followed dipped the temperatures to -15°C (5°F) by early morning of 15th December. The well defined annual cyclic change in seasons in central Ohio are integral to biogeophysical and biogeochemical processes.
Showcase Agriculture and Food Security at COP22
Marrakech, Morocco
14-15 November 2016

Prof. Lal participated in 3 events at COP22:

**Adaptation of African Agriculture: From Science to Action.** This event was organized on 13th November 2016 by the Ministry of Agriculture of Morocco in collaboration with CCAFS of CGIAR. Prof. Lal’s presentation was "Food Security and Climate Change."

**Sustainable Oases:** A New Moroccan initiative was launched on 14th November and was chaired by HE Mr. Aziz Akhannouch, Minister of Agriculture and Fisheries of Morocco.

**Showcase Agriculture and Food Security:** The Higher Level Session was attended by H.E. Mr. Aziz Akhannouch (2nd from left), Minister of Agriculture of Morocco. H.E. Mr. Stéphane Le Foll, Minister of Agriculture and Fisheries, France (3rd from left above), Mr. José Grazio da Silva (4th from left) and Mr. Emanuel Faber, CEO, Danone (1st from left), and Mr. Miguel Arias Cañete, European Commission, Climate Action and Energy. In addition, many diplomats made presentations in this session which was moderated by Prof. Lal.

More about this on page 3...
A high level meeting on "Climate Friendly Landscapes" was held at Lancaster House on 26th October 2016. The meeting was organized and hosted by The Prince of Wales’ International Sustainability Unit in cooperation with the U.K. and French Government. The meeting was attended by HRH The Prince of Wales and by the Minister of Agriculture of France, Mr. Stéphane Le Foll. The meeting addressed the "4 per 1000: Soils for Food Security and Climate" initiative adopted at COP21 in Paris in December 2015, and provided background information on COP22 in Marrakech. The meeting was attended by ~100 participants. Prof. Lal's presentation was entitled "Soil Carbon Sequestration: Technical Potential and Options. Prof. Lal also visited Sir David King, a Science Advisor to the U.K. Government, and Sir. Gordon Convoy, Head of the Montpellier Panel. Sir. Gordon is Prof. of Intl. Development at the Imperial College, London.
IUSS Inter-Congress Meeting
Rio de Janeiro, Brazil
20-25 November 2016

The IUSS Inter-Congress Meeting was organized in Rio from 20-25 November 2016. The meeting was attended by the executive Council of IUSS and represented members of the national society of soil sciences from around the world. In addition to the business meeting of the Executive Council and Executive Committee of IUSS, one-day symposium was held on "Soil Science: Beyond Food and Fuel" which is also the theme of the 21st World Congress of Soil Science to be held in Rio in 2018. Papers presented at the symposium will be reviewed, edited, and published as an IUSS book. During the International Decade of the Soil (2015-2024), IUSS will publish one book each year on a theme of global relevance. Thus, two books already published are entitled, "Soil Matters" and "Soil and the Urban Environment." The forthcoming book, "Soil Science: Beyond Food and Fuel" will be the third book in this series.

The photo above includes members of the Executive Committee of IUSS and two guests. From left to right: Dr. Kazuyuki Inubushi, Dr. Winfried Blum, Dr. Christian Feller, Dr. Rainer Horn (President), Dr. Takashi Kosaki (President Elect), Dr. Flavio Camargo (Vice President, Chair Organizing Committee, 21st WCSS), Dr. Eduardo Mansoor (FAO, Rome), Dr. Sigbert Huber (Secretary, IUSS), Dr. Manuel Limonta (ICSU, Latin America), and Dr. Rattan Lal (President from 1/1/2017).

Black Rivers of the Tropics

The dark color of some rivers of the tropics comes from leaching of humic acid in sandy soils. Rio Negro, the left tributary of the Amazon, is the largest blackwater river in the world. The black color is due to incomplete breakdown of the phenol-containing vegetation. Contrary to the common belief of "hunger rivers" these blackwaters support a rich diversity of fauna. In the foreground of the photo of a black river near Tampa, Florida, is an alligator bathing in the sun. This river is close to the venue of the meeting of DOD (SERDP-SAB) for which Prof. Lal is a member of the Scientific Advisory Board.
Prof. Hartemink, former Secretary General of IUSS, visited C-MASC on 2nd December. He presented the SENR seminar entitled "Digital Soil Morphometrics: New Ways of looking at the Soil Profile." Alfred's pedology research focuses on digital soil morphometrics, soil mapping, and soil carbon. Alfred has global experience in conducting research on soil science in Tanzania, Congo, Indonesia, Kenya, Australia and Papua New Guinea. He was a senior researcher at ISRIC: World Soil Information Center, Wageningen, Netherland. Alfred obtained his PhD degree in soil science from the University of Reading, U.K. under the guidance of the late Prof. Dennis Greenland.

Bill Richards:
A no-till Pioneer, Innovator and Role Model Farmer in Circleville, Ohio

The tillage radish, also called the oilseed radish or daikon radish (*Raphanus sativus*), is an important vegetable in Asia. In central Ohio, it is grown as a cover crop to improve soil structure and capture nutrients. Bill Richards grows this on about 300 acres. The tuberous tap root can be 30 to 40 cm long and 2-4 cm in diameter, part of which grows aboveground and part below ground.

An informal meeting was held at the farm of Mr. Bill Richards (first on the left) on 30th November. The meeting was initiated by Mr. Ernie Stea (second from left), working with "Solutions From the Land." The meeting was also attended by Mr. Reid Detchon, Senior Vice President for Energy and Climate with the U.N. Foundation, Prof. Lal (right) and Mr. Randall Reeder (Prof. Emeritus, FABE) attended the discussions and benefitted from the views of Mr. Bill Richards on sustainable management of soils. Mr. Richards was Chief of SCS (now NRCS) from 1990 to 1993. He is a no-till pioneer, spokesman, innovator, a role model and a source of inspiration to all academician, land managers and farmers.
Dr. Gulab Singh Yadav
Indian Council of Agricultural Research
ICAR Research Complex for NEW Region
Tripura Centre, Lembucherra, West Tripura – 799 210
India

I Dr. Gulab Singh Yadav, scientist (Agronomy) at ICAR Research Complex for NEH Region Tripura Centre, Lembucherra, Tripura, India. I have been selected under Department of Biotechnology, Govt. of India’s overseas associateship programme for North Easter Region for 20115-16. I has joined the C-MASC on 27th September 2016 to work on “Role of carbon dynamics in mitigation of greenhouse gases emissions” for one year as a visiting scholar. I have done my Master and Doctoral degree in Agronomy from Indian Agricultural Research Institute (IARI), India.

My research mainly focused on sustaining the productivity of rice–rice cropping system in north East Region of India, Carbon sequestration in paddy soils, conservation agriculture, integrated farming system, climate resilience agriculture. I also act as co-partner of project on “Increasing the food legumes production by small farmers to strengthen the food and nutritional security through adoption of improved technologies and governance within South-South cooperation” funded by OCP Foundation, Morocco in collaboration with ICARDA office of New Delhi, India. I was also nodal officer of “National Mission for Sustaining the Himalayan Ecosystems (NMSHE) Taskforce 6” (Funded by Department of Science and Technology, Govt. of India) for Tripura Centre. I have support more 10000 farmers of Tripura for enhancing their livelihood under varies project (NAIP, NICRA, TSP, NMSHE etc.) by providing training, technical knowledge and critical inputs. I have developed the sustainable lentil production technology for rice fallow land of Tripura, Developed the Groundnut–Potato–Baby Corn cropping system for irrigated medium land of Tripura, Rice-fish-duck based farming system models, and standardized the system of rice intensification (SRI) and integrated crop management technology for rice production in Tripura. I have published more 50 articles, books chapters, technical manual. I am a member of two reputed societies and attended several national and international seminar, conferences, workshop etc. I have coordinate and organized varies training programme, one short courses, one national seminar and one workshop.

Qingqing Cao
Environmental Research Institute
Shandong University
P. R. China

I am a second year Ph.D. Student from Shandong University, China. My major during B.S. and M.S. are Biological Engineering in Shandongjianzhu University and Analytical Chemistry in Shandong University, respectively. And now, my major is Environmental Science. My research in China focuses on the carbon composition and distribution in sediments of river wetland and constructed wetland in China. And meanwhile, I also work on heavy metal contamination and microbial ecology in wetland. I hope I can understand the transformation mechanism of carbon and nitrogen from plants to soils and sediments comprehensively.
Dr. Jayanta Layek’s research summary was selected to be presented at the International Scholar Research Exposition on 18th November 2016. His presentation entitled "Land use model for sustainable production and climate resilience in Eastern Himalayas" focused on developing a land use model in sloping hill for sustaining forest ecosystem and enhancing livelihood security of farmers by supplying diversified food, fodder and conserving natural resources.

Photographed above right: Dr. Caroline Whitacre, Senior Vice President for Research; Dr. Rattan Lal; Dr. Layek; Dr. Gifty Ako-Adounvo, Assistant Vice Provost for International Affairs.
Dr. Sajid Hussain, visiting scholar at C-MASC, completed his Ph.D degree in Agronomy on 15th December 2016 at the University of Agriculture, Faisalabad, Pakistan. The title of his thesis is "Mitigation of Drought Stress in Maize Hybrid Through Different Nutrient Management Strategies". C-MASC congratulates Dr. Sajid Hussain at this important accomplishment.

Nall Moonilall, current Ph.D student, was recently selected as a recipient for the 2016-2017 Ohio State University Office of Energy and Environment Research Grant as well as a 2017 Ohio Nursery and Landscape Association (ONLA) Scholarship. Congrats Nall!

Dr. Toru Nakajima has been appointed as an Assistant Professor at Tokyo University of Agriculture (TUA), Department of Bioproduction and Environmental Engineering (BEE). He will start the role as an Assistant Professor in TUA from April 2017 with a focus on land and water use engineering and farmland engineering, including theories and techniques for utilizing soil, water, and natural resources with conserving environment and ecosystem.

He was a postdoctoral researcher at C-MASC from October 2011 to October 2014, and returned to Japan as a postdoctoral researcher at Tokyo Metropolitan University (TMU) under the supervision of Prof. Kosaki. He secured another postdoctoral position at Meiji University. At Meiji University, he studied GHG emissions from paddy rice field using CO₂ and CH₄ isotope gases analyzer, and conducted research on energy crop such as Miscanthus, Corn, and Sunflower in a contaminated region by radioactive cesium in Fukushima, Japan.

Toru is excited about his new position at BEE, TUA. He also would like to give credit to C-MASC, TMU, and Meiji University for shaping my career to secure an academic position. He is looking forward to start collaborative research opportunities with C-MASC.

Dr. Lal is the recipient of Elsevier Atlas Award

Dr. Rattan Lal’s article “Food security in a changing climate,” published in the journal Ecohydrology & Hydrobiology, has been selected from thousands of recently published articles in 1800 journals to be awarded the Elsevier Atlas Award. The award will be presented by Elsevier Publishers in March 2017. Find more information about this, including an interview with Dr. Lal here.
Encyclopedia of Soil Science
Third Edition

The third edition of Encyclopedia of Soil Science now spans three volumes and covers ground on a global scale. A definitive guide designed for both coursework and self-study, this latest version describes every branch of soil science and delves into trans-disciplinary issues that focus on inter-connectivity or the nexus approach. Find more information including a table of contents here.


Climate Change and Multi-Dimensional Sustainability in African Agriculture

This 35-chapter book is based on the international conference on Climate Change and Multi-Dimensional Sustainability in African Agriculture held at Morogoro, Tanzania, 3-5 June 2015. The book is thematically based on four pillars of sustainability, with focus on sub-Saharan Africa (SSA): Environment, Economic, Social and Institutional. Find more information including a table of contents here.

Happy Holidays & Season's Greetings

Photographed above: C-MASC students, visiting scholars and staff celebrate the Thanksgiving holiday in November.

SENR Holiday Party

SENR hosted an annual holiday party for faculty and staff. Photographed above (left; from left to right) is Jayanta Layek, Gulab Singh Yadav, Dr. Jeff Sharp (Director of SENR), Laura Conover, Jose Guzman, Peter Renz, Basant Rimal, Nicola Lorenz, Klaus Lorenz, Rattan Lal and Ram Swaroop Meena. The event was set up and organized by Audrey McCray (right) and other SENR staff.
2016 C-MASC Publications

Books Edited

Referred Journal Articles
Referred Journal Articles (continued)


Chapters in Multi-Authored Books

Chapters in Multi-Authored Books (continued)


Voluntary Contributions


Invited Keynote Presentations

96. Lal, R. 2016. Tenets of Soil Quality Management. Pakistan
100. Lal, R. 2016. Evolution of Conservation Agriculture. Federal University of Mato Grosso (UFMT), Cuiaba, Brazil 9-13 May 2016
101. Lal, R. 2016. The Ohio State University. Federal University of Mato Grosso (UFMT), Cuiaba, Brazil 9-13 May 2016
102. Lal, R. 2016. Soils and World Food Security. GIFS Conference, Saskatoon, Canada, 14-16 June
103. Lal, R. 2016. Soil Health and Sustainability. GIFS Conference, Saskatoon, Canada, 14-16 June
Invited Keynote Presentations (continued)

105. Lal, R. 2016. Soil C for Climate Change, Food Security and SDGs of the U.N. Brussels, Belgium

Miscellaneous

121. Lal, R. 2016. Soils and Climate change: is the solution to CO₂ under our feet? Farm Journal

Do you have a 2016 publication with Dr. Lal that you do not see on this list? Please contact Laura Conover (conover.55@osu.edu) with the reference information.

Do you have contributions for our next newsletter? Please contact us!
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