

INITIATIVE

« **4 PER 1000** »

SOILS FOR FOOD SECURITY AND
CLIMATE

Past members
Scientific and Technical
Committee



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MAGALI GARCIA CARDENAS (BOLIVIA) – 2016 -2020

Magali Garcia is a Bolivian Researcher dedicated since 1990 to the study of agroclimatology and climate change impacts on crops. Initially dedicated to the study of technical and physiological issues of drought resistance and agroclimatic adjustments, later her specialization broaden towards the analysis of climate change impacts on the farming productions systems especially under small farming conditions. She has a Doctorate from Belgium in Applied biological Sciences with more than 20 year of experience on scientific research, being tenure researcher on climatology since 1995 at the University of La Paz, Bolivia. She has a long list of publications in the area of agroclimatology and climate change adaptation of small rural communities. She also hold two Master Degrees on Water Resources from the Netherlands (Wageningen Agricultural University) and Belgium (Katholieke Universiteit Leuven) and a Postdoctoral position at the University of Idaho in the United States.

She had a large coordination with the Bolivian National Program of Climate Change in the adaptation division, which gave her experience on cross work related to the other conventions of UN (Biodiversity and Land Degradation and Desertification). She was part of the adaptation Division since the early years of the studies of Climate Change then she has a large run on this topic. Her experience runs from developing to developed countries where she had long stays and prepared herself in the area of adaptation to climate change impacts especially in the areas of agriculture and water resources. She is fluent in English (she did all her postgraduate and postdoctoral activities at English speaking programs) and in Spanish (her mother tongue), having working knowledge of French, Portuguese and Dutch.

Her experience in the area of adaptation, comes from the direct contact with the general population of several rural communities of the South American Andes but also from being Director and coordinator of several national and international projects all related to adaptation to climate variability and change and early warning schemes, promoting actions for sustainability through the reduction of emission of greenhouse gasses.

Working directly with communities teach several lessons to external actors, because communities deal with every day climate risks and demonstrate the capacity to develop tools and skills to live with climate change impacts in base of the management of the already changing climate conditions. Many communities, which are already facing the impacts of glacier retreat or who are feeling the temperature increases, are changing millenary farming systems towards new production patterns on their own, not even waiting for the government or local institutions to help or support them, and those lessons of successful and practical living strategies are important to be learnt for the benefits of policy makers and scientific community to translate them in applicable actions which could actually benefit societies and that is the area where her main interested of work goes.

She also has large experience working with international organizations such as FAO, UNESCO, HELVETAS and others.

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MARTIN LECKSON KAONGA (ZAMBIA) – 2016 - 2020

Martin Kaonga is Director of Cambridge Centre for Environment in the United Kingdom. He obtained a PhD in agroforestry carbon biogeochemistry from Cambridge University (UK). Martin has more than 15 years' experience in terrestrial ecosystem carbon science and is the author of more than 15 peer-reviewed papers, and the editor of a book entitled 'Agroforestry for Biodiversity and Ecosystem Services: Science and Practice.'

Following a PhD in plant and soil carbon storage and fluxes in agroforestry systems, he took up a position as Director of Conservation Projects at A Rocha International (ARI) in the United Kingdom. Managing a climate change mitigation projects in northern Ghana, Peru and South Africa, he validated baseline plant and soil carbon stocks and simulated changes over a 50-year project cycle using the CO2Fix model. He also developed an aggregator model for recruitment of new project sites and for carbon accounting.

After two years in post at ARI, Martin was appointed as the Director of Science and Conservation, responsible for conservation research and community-based conservation projects in 19 countries. He designed and directed four programmes: Tropical Forest Programme; Mediterranean Conservation Science Programme; Marine and Coastal Research Programme; and European Conservation Programme involving nine countries in western Europe. He directed over 50 projects in 19 countries, including terrestrial and aquatic biodiversity and carbon research projects. These projects had strong components of sustainable agriculture and food security, and climate change adaptation and mitigation. Martin designed and led three carbon research projects, which assessed altitudinal and climate variability effects on biodiversity and carbon dynamics (France); vegetation carbon dynamics and floristic diversity in dry forests of in Eastern Ghats (India); and SOC storage in forest/agroforest ecosystems in Ghana.

Prior to his career at ARI, Martin taught a postgraduate climate change course at University of East London (UK), an undergraduate agroforestry course at the University of Zambia, and agroforestry and agricultural courses at Natural Resources Development College (Zambia). He has also validated eight Plan Vivo agroforestry/forestry and REDD+ projects located in Angola, Fiji, Malawi, Guinea, Mozambique, Tanzania, Sierra Leone, and Uganda.

His research has focused on field studies and modeling of soil organic carbon (SOC) changes in agricultural, agroforestry, and forest ecosystems. He has quantified effects of tree species on SOC storage and fluxes; simulated SOC changes using CO2Fix and RothC models; assessed biochemical effects of litter on SOC dynamics; developed conceptual models of carbon flows in ecosystems; and assessed altitudinal gradient and climate variability effects on ecosystem carbon dynamics. He has also developed fractal and allometric functions for estimation of tree carbon stocks. Martin is also interested in developing methods for field estimation of SOC and in developing digital soil maps for enhancement of food security.

Martin Kaonga is a member of the Institute of Professional Soil Scientists (IPSS) and Institution of Environmental Sciences (IES). His advisory roles have included sitting on the Darwin Expert Committee (UK), Climate Stewards Board, and Plan Vivo Advisory Group.

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CORNELIA RUMPEL (GERMANY) - 2016 - 2023

Cornelia Rumpel is 47 years old and a researcher working for the French National Research Center (CNRS) at the Institute of Ecology and Environmental Sciences Paris. She studied forestry in Germany and Scotland and received a master diploma from the Ludwig-Maximilians University at Munich, Germany in 1994. Afterwards, she worked as a research scientist at the Brandenburg University of Technology in Cottbus, Germany, where she obtained her PhD degree in natural sciences in 1999.

After two years of postdoctoral research at the Technical University in Munich, Germany, she was hired by CNRS and moved to France. In 2006, Cornelia defended her habilitation for research supervision at the University Pierre et Marie Curie in Paris. In 2008, she was promoted Director of Research at CNRS.

During her 20 years lasting carrier, she studied the origin and fate of terrestrial organic matter, aiming to understand the mechanisms controlling carbon sequestration in soils. Her studies concerned various spatial and temporal scales in different environments ranging from soils and sediments in mining areas to natural as well as managed ecosystems, including those affected by fire. Her work was carried out in temperate and tropical climates and the results of her research changed of a number of paradigms. Since a few years, her interest is focused on the development of fertilization strategies and agricultural techniques to reduce greenhouse gas emissions and to foster carbon sequestration in soil.

She has supervised 15 PhD students to successful completion of their work. She is engaged in national and international research projects and she is actively taking part in national and international research assessments. Her work was published in more than 140 papers in international peer reviewed journals, including nature and she was invited more than 30 times to present her work at national and international conferences.

She received a prize from the French government for research excellence and has been selected a Web of Science Highly Cited Researcher in 2016. In addition to her research activities, she also serves on the editorial board of five international journals and the Biogeosciences Executive Committee of the European Geophysical Union.

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SAÏDOU NOUROU SALL (SENEGAL) – 2020 - 2021

Dr Saïdou Nourou Sall (PhD, University of Paris XII) is an Associate Professor in Soil Biochemistry and Ecology, in the Faculty of Agronomy, Aquaculture and Food Sciences in the University Gaston Berger (Saint-Louis, Senegal), since 2010. He is a project manager (diploma of M.Sc. of Management Institute) of several local or international, multi-partners and multi-cultural projects.

From 2000 to 2009, he was junior scientist in IRD (Institut de Recherche pour le Développement) in Senegal. Presently, he is the Head of the department of Agronomy and Crop Productions, Faculty of Agronomy, Aquaculture and Food Sciences, University of Gaston Berger. He is also the Director of the laboratory LABAM (Laboratoire des Sciences Biologiques, Agronomiques et de Modélisation des Systèmes Complexes). The laboratory deals with several topics such as crop and animal productions, aquaculture and food science with almost 30 researchers.

His research program focuses on the relationship between organic matter quality and soil microbial activity enhancing soil fertility and C sequestration in soil. The work is investigating how microbial activity and diversity controlled global C and N cycles. This research is target toward the impact of land use management and climate change context, with a special attention given to the management of organic input, on soil bio - functioning in relation to the capacity of soils to sequester carbon. He also engaged in research action focused on Food Security and Climate Change Adaptation in Smallholder Agricultural Systems.

He published about 40 articles in soil science and ecology.

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YASUHITO SHIRATO (JAPAN) – 2016 - 2023

Received Bachelor (1989) and Master (1991) degree of Agricultural Science from Tohoku University, Japan. Majoured in soil science and mainly working on soil genesis and classification of Andosols (Volcanic ash-derived soils).

After finishing master course, from 1991 to 1993, member of Japan Overseas Cooperation Volunteers of JICA in Paraguay, South America, as soil scientist and working in an Agricultural high school in Paraguay for teaching and demonstrating soil organic matter management.

After coming back to Japan, from 1993 to 1995, he worked in an Agricultural school in Japan as technician mainly on Horticulture.

In 1995, employed in Ministry of Agriculture, Forestry and Fisheries, Japan, he worked on soil degradation and desertification in China and Mongolia from 1995 to 2005 and working on soil carbon dynamics mainly on modeling from 1999 to present: Validation and modification of the Rothamsted Carbon (RothC) model by using long-term field experimental datasets and mechanism studies on soil organic matter dynamics. Main achievements are modification of the RothC model for Andosols and for paddy soils, and development of country scale calculation system of soil carbon in agricultural land, which is now used for Japanese National Inventory Report of Greenhouse Gases for UNFCCC.

April 1995-September 1995: Researcher, Division of Research Planning, National Grassland Research Institute,

October 1995-March 2001: Researcher, Division of Soil Science, National Institute of Agro-Environmental Sciences,

April 2001-September 2005: Senior Researcher, Department of Global Resources, National Institute for Agro-Environmental Sciences,

October 2005-December 2007: Research Officer, Ministry of Agriculture, Forestry and Fisheries,

January 2008- March 2010: Senior Researcher, Natural Resources Inventory Center, National Institute for Agro-Environmental Sciences,

April 2010- March 2016: Leader, Research Project for Mitigation of Global Warming, National Institute for Agro-Environmental Sciences,

April 2016- present: Head, Soil Biogeochemistry and Modeling Unit, National Agriculture and Food Research Organization, Institute for Agro-Environmental Sciences (NIAES).

As domestic activities, Director of Japanese Society of Soil Science and Plant Nutrition from 2013 to present, Editor of Japanese Journal of Soil Science and Plant Nutrition from 2009 to 2012, Executive Secretary of Japanese Society of Pedology from 2000 to 2005 and from 2008 to present, and LULUCF (Land Use, Land Use Change and Forestry) Sub-committee of Committee for developing greenhouse gas inventories, Ministry of Environment from 2008 to present.

As international activities, Review editor of 2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol by IPCC from 2013 to 2014, and Editor of Journal "Soil Science and Plant Nutrition" from 2013 to present.

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PETE SMITH (UK) – 2016 - 2019

Pete Smith is the Professor of Soils and Global Change at the Institute of Biological and Environmental Sciences at the University of Aberdeen (Scotland, UK), Science Director of the Scottish Climate Change Centre of Expertise (ClimateXChange) and Director of Food Systems for the Scottish Food Security Alliance-Crops. He leads the University of Aberdeen multi-disciplinary theme on Environment & Food Security.

Since 1996, he has served as Convening Lead Author, Lead Author and Author for the Intergovernmental Panel on Climate Change (IPCC), which was awarded the Nobel Peace Prize in 2007. He was the Convening Lead Author of the Agricultural Mitigation chapter of the IPCC Fourth Assessment Report and for the Agriculture and Forestry Mitigation chapter of the IPCC Fifth Assessment. He has coordinated and participated in many national and international projects on soils, agriculture, bioenergy, food security, greenhouse gases, climate change, mitigation and impacts, and ecosystem modelling. He is a Fellow of the Royal Society of Biology, a Rothamsted Research Fellow, a Fellow of the Institute of Soil Scientists, a Research Fellow of the Royal Society (London; 2008-2013), and a Fellow of the Royal Society of Edinburgh.

He has published >330 peer-reviewed journal papers with total citations of >13000. These papers have received >1000 citations each year since 2010 (and 2000/year since 2015). H-index = 60. He is a Highly Cited Researcher: (<http://hcr.stateofinnovation.thomsonreuters.com/>).

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BRAHIM SOUDI (MAROCCO) – 2016 - 2021

Brahim Soudi, born in the Province of Taroudant, in 1955, is Agronomist from Hassan II Institute of Agronomy and Veterinary Medicine (IAV), in 1982 and he obtained his PhD degree at the Catholic University of Leuven, Belgium in soil Sciences and biological chemistry Department. He stayed at the USA (University of Minnesota and University of Cornell) in 1991 as part of his Post-Doctorate on modeling of Nitrogen and Organic Matter mineralization. He is a professor at the IAV since 1982 where he is responsible for several courses including: basic soil science, management of soil organic matter, biogeochemical cycling, and recycling of organic waste, composting and recycling compost, soil and water monitoring systems under intensive agriculture, environmental assessments, etc. He also coordinated several training modules for the benefit of technical staff within Ministry of Agriculture and Ministry of Environment.

In the area of scientific research, he participated and coordinated several research projects for national institutions and in the framework of international cooperation, particularly in the following fields: impact of intensive agriculture on soil quality and water, the status of organic matter in agricultural systems in arid and semi-arid zones, modeling of the transfer and transformation of nitrogen, the dynamics of organic matter in salt-affected lands, establishment and optimizing soil and water quality monitoring in irrigated areas, soil degradation under irrigation, etc. In connection with this research activity, he supervised many works graduation and PhD theses. He is author and co-author of over 60 scientific papers and author of books and guidance manuals. It is also reviewer for some scientific journals.

He worked for several years as General Secretary of the Moroccan Association of Soil Science; he is also a member of several associations active in the field of environment and sustainable development.

Recently he acts as an expert for international organizations (FAO, GIZ, EIB, KfW, UNDP, World Bank, ADB, USAID, etc.) in the field of environment, climate change adaptation and fight against desertification, strategies elaborating, etc. He also recently coordinates scientific consortiums on Initiative (4 per 1000) and for Moroccan Initiative “Triple A or Adaptation of Agriculture in Africa”.

Brahim is certified facilitator by various organizations and has a significance experience (since 2002) in institutional analysis and arrangements around development programs and projects.

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DAVID WHITEHEAD (NEW ZEALAND) – 2016 - 2021

David Whitehead studied as an undergraduate at the University of York, UK and started his research career in crop physiology at Rothamsted Research and the University of London. This led to Post-Doctoral work at the University of Edinburgh investigating forest water use in relation to wood structure. He moved to New Zealand where he continued to investigate the processes regulating carbon, water and energy exchange in *Pinus radiata* forests. Subsequently David's focus changed to investigating the response of forest ecosystems to elevated carbon dioxide concentration and carbon exchange in indigenous forest ecosystems. Most recently, He continues his work on above- and below-ground carbon balance in grazed grassland systems, with a focus on soil carbon and nitrogen dynamics.

David Whitehead is a Principal Investigator with the New Zealand Agricultural Greenhouse Gas Research Centre and leads a major national research programme into measuring and modelling changes in soil carbon, leading to management options to increase soil carbon stocks. He is also leading a new, collaborative research programme to investigate ways to manipulate soil carbon inputs to grasslands that will lead to maintaining soil carbon but reduced leaching losses of nitrogen and nitrous oxide emissions.

The outcomes of David's work at the science/policy interface are to determine appropriate and feasible management practices that will increase the resilience of agricultural systems to climate change and enhance adaptation, mitigate greenhouse gas emissions and, through improved productivity and ecosystem services, support food security.

He received a certificate acknowledging his contribution to the Nobel Peace Prize for 2007 awarded to the Intergovernmental Panel on Climate Change and was elected as a Fellow of the Royal Society of New Zealand in 2012. He continues to mentor PhD students and teach undergraduate courses in plant and soil biology.

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LINI WOLLENBERG (USA) – 2016 – 2022

Lini Wollenberg leads the low emissions development work of the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) and is a Research Associate Professor at the Gund Institute for Ecological Economics and Rubenstein School of Environment and Natural Resources, University of Vermont. The program helps to improve estimates of GHG emissions in smallholder farm systems, provide tools and information to decision-makers and support implementation of low emissions agricultural practices and policies at large scales.

Lini was previously the Director of the Center for Sustainable Agriculture at the University of Vermont (2007-2009); Principle Scientist at the Center for International Forestry Research (CIFOR) (1994-2005); and Program Officer for Asia's Rural Poverty and Resources Program at the Ford Foundation (1991-1994). She is a member of the Forest, Trees and Livelihoods editorial board. She received her BS, MSc, and PhD degrees in natural resource management from the University of California, Berkeley, USA. Her PhD dissertation examined soil conservation among upland farmers in the Philippines.

Areas of Lini's expertise include climate change mitigation and land use, local governance of natural resources, environment and development policy, community-based forest management, participatory action research and adaptive collaborative management. She has worked primarily in Asia, especially Indonesian Borneo.

Lini has produced over 70 publications and assisted in more than 85 publications of research partners.

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