

## ANNEX-1: STAFF LIST

**Nteranya Sanginga** (Director, Soil Microbiologist), (100% TSBF Institute)

### **TSBF Institute – Africa Staff**

#### **Senior Staff:**

Andre Bationo (AfNet Coordinator), (100% TSBF Institute)

Jeroen Huising (Land Use Specialist, BGBD coordinator) (100% TSBF Institute)

Didier Lesueur (Soil Microbiologist, CIRAD) (100% TSBF Institute)

Herbert Murwira (Soil Scientist), (100% TSBF Institute)

Bernard Vanlauwe (Soil Fertility Management), (100% TSBF Institute)

#### **Senior Research Fellows:**

Tilahun Amede (Systems Agronomist), (30% TSBF Institute, 70% AHI)

Robert Delve (Soil Fertility Management), (50% TSBF Institute, 50% Rural Innovation Institute)

Joshua Ramisch (Anthropologist), (100% TSBF Institute)

#### **Post-doctoralf Fellows:**

Anne Muriuki (Soil Scientist) (50% TSBF Institute, 50% ICRAF)

Peter Okoth (Land Use Specialist, BGBD Data Base Manager) (100% TSBF Institute)

#### **Consultants:**

Joyce Jefwa (Mycorrhiza Specialist)

Mike Swift (BGBD Project)

Seth Danso (Rhizobiologist, BGBD Project)

Diane Osgood (Economist, BGBD Project)

Jonas Chianu (Economist, BGBD Project)

Anne Acosta (Editor)

#### **Research Assistants:**

*Kenya* - Helen Wangechi; Isaac Ekise; John Mukalama; Joseph Kimetu; Job Kihara

*Uganda* - Paul Nyende; Peace Kankwatsa; Pamela Pali

*Zimbabwe* - Leonard Rusinamhodzi; Talkmore Mombeyara

**Technical Staff:** Wilson Ngului, (Laboratory Technician); Benson Muli (Laboratory Assistant); Margaret Muthoni (Assistant Lab. Attendant); Francis Njenga (Manual Worker); Laban Nyambega (Research Technician)

**Administration Staff:** Charles Ngutu (Finance Officer); Alice Kareri (Administration Officer); Juliet Ogola (AfNet Secretary); Caren Akech (BGBD Secretary); Caleb Mulogoli (Assistant Account / I.T. Assistant); Henry Agalo (Driver / Field Assistant); Elly Akuro (Driver / Field Assistant)

### **TSBF Institute – Latin America Staff**

#### **Senior Staff:**

Edgar Amézquita (Soil Physics) (80% TSBF Institute; 20% CONDESAN)

Miguel Ayarza (Agronomy) MIS Coordinator, Honduras (75% TSBF Institute, 5% Honduras Coord.)

Edmundo Barrios (Soil Ecology and Biodiversity) (100% TSBF Institute)

Idupulapati M. Rao (Plant Nutrition and Physiology) (40% TSBF Institute, 30% IP1, 30% IP5)

#### **Senior Research Fellows:**

Marco Rondón (Ecosystem services) (100% TSBF Institute)

#### **Consultants:**

Eloina Mesa (Biometrics)

**Research Associates:** Neusa Asakawa; Juan Guillermo Cobo

**Research Assistants:** Gonzalo Borrero; Luis Fernando Chávez; Irlanda Isabel Corrales; María del Pilar Hurtado; Diego Luis Molina; Gloria Ocampo; Jenny Quintero; Mariela Rivera Peña; Gloria Marcela Rodríguez; Marco Tulio Trejo

**Specialists:** Jesús Hernando Galvis; Edilfonso Melo; José Arnulfo Rodríguez

**Secretaries:** Carmen Cervantes de Tchira; Cielo Núñez

**Technicians:** Arvey Alvarez; Enna Bernarda Díaz; Pedro Herrera; Hernán Mina; Jarden Molina; Martin Otero; Maryory Rodríguez; Gonzalo Rojas; Amparo Sánchez; Carlos Arturo Trujillo; Flaminio Toro

**Workers:** Nixon Betancourt; Joaquín Cayapú;; Adolfo Messu; Viviana Ortega; Jaime Romero  
Josefa Salamanca; Luis Soto; Héctor Julio Unda

## ANNEX-2: LIST OF STUDENTS

### A. TSBF Institute - Africa

Name	Nationality	Degree	Status	Institution	Research theme
D. Fatondji	Nigerian	Ph.D.		University of Bonn, Germany	Interaction between water harvesting and soil fertility
Vincent Bado	Burkinabe	Ph.D.		Laval University in Quebec, Canada	Interaction between organic and inorganic nutrient sources in different cropping system in the Sudano sahelian zone of West Africa
Shamie Zingore	Zimbabwean	Ph.D.	Continuing	Wageningen University, Netherlands	Farm-scale evaluation of nutrient use efficiencies of resource management options in smallholder farming systems of Zimbabwe
Chris Nyakanda	Zimbabwean	Ph.D.	Completed	University of Zimbabwe	Effects of Sesbania sesban and cajanus cajan improved fallows on soil moisture and nutrient dynamics and on maize performance in medium rainfall areas of Zimbabwe
Jean Nzuma	Zimbabwean	Ph.D.	Completed	University of Zimbabwe	Manure management options for increasing crop production in smallholder farming systems of Zimbabwe
Bonaventure Kayinamura	Rwandan	Ph.D.	Continuing	University of Zimbabwe	Potential use of three plant species: Glycine Max, mucuna pruriens and crotalaria grahamiana as soil fertility ameliorants in smallholder farming systems in Zimbabwe: synergistic improvements of water and nutrient use efficiencies
Fredrick Ayuke	Kenyan	Ph.D.		University of Nairobi, Kenya	Assessing diversity and population dynamics of macrofauna (earthworms and termites) as influenced by land-use change and impact on soil properties
Margaret Mwangi	Kenyan	Ph.D.		University of Nairobi, Kenya	Soil functional groups: evaluation of ecosystem engineers and soil fertility management within agro forestry ecosystems
Susan Ikerra	Tanzanian	Ph.D.		Sokoine University, Tanzania	Effect of organic materials on MPR dissolution on an Ultisol in Morogoro, Tanzania
Kiros Habtegebriel	Ethiopian	Ph.D.	Continuing	Norway Agricultural University	Development and evaluation of site-specific integrated nutrient management prac-

Jane Kapkiyai	Kenyan	Ph.D.	Continuing	Cornell University, USA	tices for wheat on Vertisols in semi-arid Northern Ethiopia Effects of Legume Green Manures on Crop Productivity and Nutrient Cycling in Maize-based Cropping Systems of Western Kenya
John Ojiem	Kenyan	Ph.D.	Continuing	Wageningen University, Netherlands	Management of legume green manures in Western Kenya
Jacintha Kimiti		PhD	Continuing	Kenyatta University	Integrating Legumes in the Farming Systems of Eastern Kenya to Enhance Soil Fertility.
Monicah Mucheru		PhD	Continuing	Kenyatta University	N Dynamics as affected by soil fertility status and nutrient replenishment inputs in the central highlands of Kenya.
Edward Yeboah		PhD	Continuing	University of Ghana	Sustaining Crop Productivity: The influence of organic resource quality and quantity'
Mercy Kamau	Kenyan	PhD	Completed	Wageningen University, Netherlands	Socio-economic evaluation of legume-based systems in Western Kenya
Kibiby Mtenga	Uganda	Ph.D.	Continuing	Cornell University	Gender and Soil Fertility Management in Malawi: A Participatory Analysis of Farmers' Incentives to Reinvest in Soil Fertility Management Innovations by Women and Men Farmers.
Peter Ebanyat	Uganda	Ph.D.	Continuing	Wageningen University	Dynamics of Soil Organic Matter and Nitrogen in Farmer Field Schools generated Integrated Soil Fertility Management Practi-ces (draft title).
Isaiah Tabu	Kenyan	Ph.D.	Completed	Egerton University, Kenya	Soil fertility niches, farmer perception and maize yield: a case for improved crop yield in Kabras division, western Kenya
Patrick Ogutu	Kenyan	Ph.D.	Continuing	Moi University, Kenya	Solubilization of rock phosphate in Western Kenya
Peter Kisinyo	Kenyan	Ph.D.	Continuing	Moi University, Kenya	Nitrogen fixation in maize-soybean MBILI intercropping
S. Some	Burkinabe	Ph.D.	Continuing	ZEF, Univ. of Bonn, Germany	Water use efficiency of sorghum based cropping systems in Dano, Burkina Faso
Dilys Sefakor Kpongor	Ghanian	Ph.D.	Continuing	ZEF, University of Bonn, Germany	Evaluation of the best-bet soil fertility restoration technologies in Northern Nigeria
Abdoulaye Saley	Nigerien	Ph.D.	Continuing	North West Univ. South A	Screening forage legumes for adaptation to drought in the

Pauline Chivenge		Ph.D.	Continuing	University of California	dry lands of South Africa The interaction between resource quality and aggregate turnover controls ecosystem nitrogen and carbon cycling.
Pamela Pali		Ph.D.	Continuing	BOKU	Impact of Organic Agriculture in Uganda: Improving Livelihoods through Sustainable Natural Resource Management
Elisabeth Gotschi		Ph.D.	Continuing	BOKU, Vienna, Austria	Social Capital in Smallholder Marketing Groups in Sofala Province, Mozambique.
Jackson Tumwine		Ph.D.	Continuing	BOKU	Linking Farmers to Market: Challenges and Opportunities of Improving Rural Livelihoods for Communities affected by HIV/AIDS in Uganda
Charles Walaga		Ph.D.	Continuing	BOKU	Organic agriculture development and livelihood improvement in Uganda: Future scenarios and policy measures
Michael Misiko	Kenyan	Ph.D.	Continuing	Wageningen University	Knowledge and networks: Challenges and opportunities for scaling up integrated soil fertility management regimes
Nhamo Nhamo	Zimbabwean	M.Phil.	Completed	University of Zimbabwe	An avaluation of the efficacy of organic and inorganic fertilizer combinations in supplying N to crops
L.Rusinamhodzi	Zimbabwean	M.Phil	Continuing	University of Zimbabwe	Effects of cotton cowpea intercropping on crop yields and soil nutrient status under Zimbabwean rain-fed conditions
Talkmore Mombeyarara	Zimbabwean	M.Phil	Continuing	University of Zimbabwe	Potential of Ipomea stenosi-phon as a soil fertility ameliorant in Zimbabwe
Killian Mutiro	Zimbabwean	M.Phil	Continuing	University of Zimbabwe	Adoption of improved manure storage systems by smallholder farmers in drought prone and high potential areas of Zimbabwe
James Kinyua	Kenyan	M.Sc.	Continuing	Kenyatta University, Kenya	Nutrient management by use of agroforestry trees for improved soil productivity
Joseph Kimetu	Kenyan	M.Sc.	Completed	Kenyatta University, Kenya	Nitrogen fertilizer equivalencies based on organic input quality
John Baptist Tumuhairwe	Ugandan	M.Sc.		Makerere University, Uganda	Effect of short-duration Crotalaria grahamiana and Mucuna pruriens fallows on soil productivity in south-eastern Uganda

Matthew Kuule	Ugandan	M.Sc.		Makerere University, Uganda	The effect of green manures, Mucuna, Lablab, Canavalia and Crotalaria on soil fertility and productivity in Tororo District, Uganda
Dennis Wafula	Kenyan	M.Sc.		Jomo Kenyatta University, Kenya	The contribution of different feeding guilds of termites to nutrient cycling in soil
Ali Lule	Ugandan	M.Sc.		Makerere University, Uganda	The role of social capital in adoption of soil fertility technologies
Abas Isabirye	Ugandan	M.Sc.		Makerere University, Uganda	Communication flow between service providers and farmers
Paul Bagenze	Ugandan	M.Sc.		Makerere University, Uganda	Linking farmers preferences and GIS for targeting of soil fertility technologies
Eria Bulega	Ugandan	M.Sc.	Continuing	Makerere University, Uganda	Farmers' adaptation of legume cover crop technology in eastern Uganda
John Mutihero	Zimbabwean	M.Sc.		University of Zimbabwe	An assessment of profitability of cattle manure use and the relative impacts on rural farming households in Mangwende communal area, Zimbabwe
U. Chipfupa	Zimbabwean	M.Sc.	Completed	University of Zimbabwe	The potential of decision guides as an extension tool in improving adoption of integrated soil fertility management options
Charles Nhemachena	Zimbabwean	M.Sc.	Completed	University of Zimbabwe	Comparative analysis of grain legume production and domestic consumption trends in Zimbabwe's dual farming sector and the policy challenges for the post land reform era
Julius Mumo Maithya	Kenyan	M.Sc.	Completed	University of Nairobi	The Competitiveness of Agroforestry-based and other Soil Fertility Enhancement Technologies for Smallholder Food Production in Western Kenya
A.N. Other	Ugandan	M.Sc.		Makerere University, Uganda	Utilization of dual-purpose live barriers for soil water conservation and increased household income
Somoni Franklin Mairura	Kenyan	M.Sc.	Continuing	Kenyatta University, Kenya	The role of indigenous knowledge in management of soil quality among farmers in Chuka and Gachoka divisions
Isabirye Abas	Ugandan	M.Sc.		Makerere University, Uganda	The diffusion of green manure cover crop technologies in Kisoko and Osukulu sub-counties, Tororo district,

Mercy Karunditu	Kenyan	M.Sc.	Completed	Kenyatta University, Kenya	Uganda Nitrogen fertilizer use efficiency as affected by soil organic matter status in Eastern, Central, and Western Kenya
Boaz Waswa	Kenyan	M.Sc.	Completed	Kenyatta University, Kenya	Soil Organic Matter Status under Different Agroforestry Management Practices in Three Different Sites in Kenya
Grace Agwaru	Ugandan	M.Sc.	Continuing	Makerere University	Assessing Approaches and Developing Methods For Presentation of Research Results To Farmers Within Their Livelihood Situations: A Case Study In Soroti And Arua Districts
Dick Lufafa	Ugandan	M.Sc.	Continuing	Makerere University	On-farm comparison of the economic profitability of selected dual purpose live barriers
Leen Symons		M.Sc.	Completed	Catholic University of Leuven	Quality, quantity and stability of soil organic matter along a climate and soil gradient in Central Kenya
Wim Govaerts		M.Sc.	Continuing	Catholic University of Leuven	Impact of soil fertility status on C mineralization and stabilization as affected by application of mineral N fertilizer in Central Kenya
Geoffrey Okello	Ugandan	M.Sc.	Continuing	Makerere University	Unraveling local soil quality indicators and resource use in Eastern Uganda.
Job Ogada	Kenyan	M.Sc.	Continuing	Egerton University	Unraveling local soil quality indicators and resource use in Western Kenya.
Kiwanka Achilles		M.Sc.	Continuing	Makerere University	Environmental and socio-economic impact of organic farming on the livelihood of small- scale farmers in Uganda
Christine Kiraithe	Kenyan	M.Sc.	Continuing	Moi University, Kenya	The influence of conventional and ‘mbili’ intercropping systems on rooting characteristics, nutrient uptake and yield of intercrops in western Kenya
Mary Baaru	Kenyan	M.Sc.	Continuing	Kenyatta University, Kenya	Effect of organic materials of differing quality and inorganic fertilizer on soil microbial biomass at Kabete, Kenya
Edwin Rotich	Kenyan	M.Sc.	Continuing	Moi University, Kenya	Promoting Conservation Tillage Practices to Sustain Food production and

Emily Ruto	Kenyan	M.Sc.	Continuing	Moi University, Kenya	Improved Rural Livelihoods in Sub-Saharan Africa An attempt to promote the use of prep-pac in western Kenya
Nekesa. Abigail O	Kenyan	M.Sc	Continuing	Moi University, Kenya	A study on the liming effect of Minjingu phosphate rock in an acidic soil in western Kenya
Moses Thuita	Kenyan	M.Sc	Continuing	Moi University, Kenya	On farm testing of phosphorus availability from phosphate rocks as affected by addition of local organic resources in western Kenya
D. Njiwa	Malawi	M.Sc.	Completed	Bunda College of Agriculture	Socio-economic analysis of factors affecting improvements of soil fertility and marketing in smallholder flood plain rice systems of Malawi: A case study of Bua and Kasitu Rice Schemes in Nkhota-kota Rural Development Project
Ruth Adiel Kangai	Kenyan	M.Sc.	Completed	Kenyatta University, Kenya	Assessment of adoption potential of soil fertility improvement technologies in eastern Kenya: the case of Kirege location
John Mwaura Macharia	Kenyan	M.Sc.	Continuing	University of Nairobi	Economic optimization of integrated soil fertility management strategies for maize-based production systems: A case study of smallholder farm typologies in Central Kenya.
Patricia Namwanda	Ugandan	M.Sc	Submitted	Makerere University	Mapping farm types to identify suitable areas and characteristics for the targeting and expansion of legumes as cover crops technology in Tororo district
Norah Namakambo	Uganda	MSc	Continuing	Makerere Univeristy	Application of geographical information systems (gis) for gazettement wetlands in uganda: a case study of Nakivubo wetland in Kampala district
Nahya Nkinzi	Ugandan	MSc	Submitted	Makere University	Mapping land-cover and land use change in Kabale
Anne Griffith	Canadian	B.Sc.	Continuing	University of Toronto	Managing home garden vegetables for soil improvement and food security
Nelson Juma Otwoma	Kenyan	MA	Completed	University of Nairobi	The role of indigenous knowledge in the management of soil fertility among smallholder farmers of Emuhaya division



## B. TSBF Institute - Latin America

Name	Nationality	Degree	Status	Institution	Research theme
Nelson Castañeda	Colombian	Ph.D.	Continuing	University of Goettingen	Genotypic variation in P acquisition & utilization in <i>A. pintoii</i>
Twaha Atenyi	Ugandan	Ph.D.	Continuing	Agricultural University of Norway	Soil phosphorus transformations and organic matter dynamics
Sergio Mejia	Colombian	Ph.D.	Continuing	National University	Identification of candidate genes responsible for adaptation of tropical forage grass, <i>Brachiaria</i> to low phosphorus soils
Alvaro Rincon	Colombian	Ph.D.	Continuing	National University	Integration of maize with forages to recuperate degraded pastures in the Llanos of Colombia
Jesús A. Castillo	Colombian	Ph.D.	Completed	U.Nacional de Colombia, Palmira	Dynamic application of the USLE in the Andean Region
Mariela Rivera P.	Colombian	Ph.D.	Continuing	U.Nacional de Colombia, Palmira	Relationship between arable layer and soil biology
Yolanda Rubiano	Colombian	Ph.D.	Continuing	U.Nacional de Colombia, Palmira	Soil degradation indicators for the Llanos
Edier Humberto Pérez	Colombian	Ph.D.	Continuing	Universidad del Valle, Cali	Pollutants and soil water fluxes
Karen Tscherning	German	Ph.D.	Completed	University of Hohenheim	Simultaneous evaluation of tropical forage legumes for feed value and soil enhancement
Elena Velásquez	Colombian	Ph.D.	Completed	National University/IRD	Biological indicators of soil quality based on macroinvertebrate communities and relationships with soil functional parameters
Jorge F. Navia	Colombian	Ph.D.	Continuing	National University	Impact of residue quality on beneficial soil biota in root-rot infested soils
Natasha Pauli	Australian	Ph.D.	Continuing	Univ. of Western Australia	The potential of the Quesungual Agroforestry System for Soil Biodiversity Conservation and Management in Western Honduras
Julie Major	Canadian	Ph.D.	Continuing	Cornell University USA	Reducing nutrient leaching on acid soils through charcoal amendments to soils
Adriana Arango	Colombian	MSc.	Completed	National University	Identification of candidate genes for aluminium resistance in <i>Brachiaria</i>
Jaumer Ricaurte	Colombian	MSc.	Continuing	National University	Impact of aluminium tolerant <i>Brachiaria</i> genotypes on soil quality characteristics of an oxisol of the altillanura of the Meta Department of Colombia

Oscar Molina	Colombian	M.Sc.	Continuing	National University	Effect of residual P fertilizer and organic manure application on mycorrhizal association of maize-bean rotation in P-fixing Andisol in Cauca, Colombia
Diana L. Correa	Colombian	MSc.	Completed	U.Nacional de Colombia, Palmira	Biological evaluation of the arable layer
Jenny Ordoñez Barragan	Ecuadorian	MSc.	Completed	Wageningen Agric. University	Main factors influencing maize production system in Southern Honduras: An exploratory study
Lyda Zárate	Colombian	M.Sc.	Continuing	National University	Dynamics of water stable soil aggregation mediated by three different AMF species
Belisario Volverás	Colombian	MSc.	Continuing	U.de Nariño, Pasto-Colombia	No-tillage systems in hillsides planted with potato
Jesús H. Galvis	Colombian	MSc.	Continuing	U. Nacional de Colombia, Palmira	Sealing and crusting in the Llanos
Luis C. Pardo	Colombian	MSc	Continuing	Universidad del Valle, Cali	Biological erosion in rain-forest
José Augusto Rodríguez T.	Colombian	MSc.	Continuing	U.Nacional de Colombia, Palmira	Influence of some a amendments in some physical, chemical and biological characteristics of a magnesium soils
Maryory Rodríguez A.	Colombian	MSc.	Continuing	U. Uberlandia, Brazil	A comparison between Colombian and Brazilian Oxisols
José M. Campo Quesada	Colombian	BSc.	Continuing	U.Nacional de Colombia, Palmira	Evaluation of some crop systems in relation to erosion in Volcanic Ash Soils (Pescador, Cauca)
Lina M. Gaviria	Colombian	BSc.	Continuing	U. Suramericana, Neiva (Colombia)	Characterization of surface biogenic structures under different cassava treatments in Santander de Quilichao
Angela Muñoz	Colombian	BSc.	Completed	National University Palmira, Colombia	Fluxes of greenhouse gases in an Intensive dairy farm in Rozo, Colombia
Yenni Lopez	Colombian	BSc.	Continuing	National University	Drought adaptation in common bean
Joisie Rincón	Colombian	BSc.	Continuing	National University	Drought adaptation in Brachiaria
Luisa Jimenez	Colombian	BSc.	Continuing	National University Bogotá, Colombia	Physicochemical Characterization of charcoal for agricultural use.
Andres Ceballos and Victor Bermudez	Colombian	BSc.	Continuing	Universidad del Valle, Cali Colombia	Charcoal production by small scale producers in Colombia: Improvements on the efficiency of production and on safety production .
Andres Pereira Abella	Colombian	BSc.	Continuing	Universidad del Valle, Cali Colombia	Comparison of NIRS vs MIRS methodologies for analysis of total soil Carbon and Nitrogen

### ANNEX-3: LIST OF PARTNERS

TSBF Institute's research for development programme is implemented through projects implemented with a wide range of partners. These include in particular the scientists from NARES and Universities in tropical countries and advanced research institutes and Universities in Developed Countries, who are members of the Programme Networks, of which the largest is the African Network for Soil Biology and Fertility (AfNet) followed by MIS and SARNet. Other projects are implemented through CGIAR system-wide programmes (SWPs) such as AHI and Challenge Programme. Donors for TSBF projects currently include, in addition to the Rockefeller Foundation, CIDA, IDRC, DIFD, IFAD, DANIDA, BMZ, NORAD, USAID, ACIAR and UNEP-GEF and the consortia of donors to the CGIAR's SWPs and CPs. Some of these projects fund the TSBF-CIAT outposted staff in Zimbabwe, Uganda and Honduras.

At the regional basis TSBF-CIAT's alliance with ICRAF and the NARS in East and Southern Africa will be expanded to ICRISAT and CIMMYT and possibly to IITA and WARDA in West Africa. Cooperation with FARA and other regional organization such as ASARECA, CORAF and SACCAR will be strengthened. In Latin America work will focus in Central American hillsides with the MIS consortium, in the Andean hillsides region with CONDESAN and CORPOICA and in the tropical savannas of the Llanos with CORPOICA and the local universities.

#### TSBFI-Africa

**NARES:** ARS, Chilanga, Zambia: Moses Mwale; Agricultural Policy Research Unit of Bunda College, Malawi; AHI-Ethiopia: Tilahun Amede ; AHI-Tanzania: Jeremiah Mowo, Juma Wickama; Areka Research Centre, Ethiopia; Awassa College of Agriculture, Awassa, Ethiopia; Chidetze, Malawi: Webster Sekala; CRRA Niono, Mali: M. Bagoyoko; DR&SS, Zimbabwe: Nhamo Nhamo, Tarasai Mubonderi; Ethiopian Agricultural Research Organization (EARO), Addis, Ethiopia; Holeta Research Center, Holeta, Ethiopia; INERA, Burkina Faso: V. Bado; Institut National de Recherche Agronomique (INRA), Togo-B.K. Tossah; Institut National des Recherches Agricoles du Benin (INRAB), Cotonou, Benin; Institut Togolais de Recherche Agronomique (ITRA), Lome, Togo; Institute for Agricultural Research (IAR), Zaria, Nigeria: E. Iwuafor; KARI-Embu: Alfred Micheni, Francis Kihanda ; KARI-Kakamega, Kenya: Rueben Otsyula, David Mbakaya, Martin Odendo ; KARI-Muguga, Kenya: Stephen Kimani ; KARI-NARL: Nairobi: Stephen Nandwa ;KEFRI, Kenya; Ministry of Agricultural and Livestock; Development (MoALD), Kenya; Ministry of Agriculture, Kenya, Ethiopia, Malawi and Uganda; Ministry of Health, Israel: Dorit Kaluski; NARO, Uganda: John Byalebeka; NSS, Mlingano, Tanga, Tanzania: Susan Ikerra and Atanasio Marandu; Salien Agricultural Research Institute, Lushoto, Tanzania; Soil Research Institute, Kwadaso, Kumasi, Ghana: E. Yeboah; Jomo Kenyatta University of Agriculture and Technology, Nairobi Kenya: Ester Kahangi; Egerton University, Nakuru, Kenya: Isaiah Tabu. Lunze; Ali Diwani of INERA., DR Congo; Leon Nabahunga of ISAR Rwanda.

**AROs:** CDR, Denmark: Esbern Fris-Hassen; Centro Nacional de Pesquisa de Soja (CNPSo), Brazil: George Brown; CSIRO-APSRU, Australia: Merv Probert; FAO, Rome; Foundation for Advanced Studies in International Development (FASID, Tokyo); IDRC, Canada: Guy Vésete; IDRC, Kenya: Luis Navarro; IFDC, Togo: Constant Dangbenon; M. Wopereis, A.Mando; Instituto de Ecologia, A.C., Mexico: Isabelle Barois, Dan Bennack, Carlos Fragoso; International Center for Insect Physiology and Ecology (ICIPE), Nairobi, Kenya; IRD, University of Paris: Patrick Lavelle; World Bank: Beverly Macyntree.

**Universities:** Alemaya University, Alemaya, Ethiopia; Amadou Bello University, Zaria, Nigeria: E. Iwuafor; Catholic University of Leuven (K.U.Leuven), Leuven, Belgium; Cornell University, Ithaca,

USA: Chris Barrett, Janice Thies, Johanness Lehmann; Egerton University, Tegemeo Institute, Kenya; Exeter University, UK: Jo Anderson; University of Reading; Jawaharlal Nehru University, India: KG Saxena; Kenyatta University: Daniel Mugendi, Ruth Kangai, Monicah Mucheru and James Kinyua; Makerere University, Uganda: Mary Okwakol, Mary Silver Mekelle University, Ethiopia; Sokoine University of Agriculture: Susan Ikerra; Université de Cocody: Yao Tano; Université Federal de Lavras, Brasil: Fatima Moreira; University Lampung, Indonesia: FX Susilo, Muhajir Utomo; University of Abidjan-Cocody, Côte d'Ivoire: Y. Tano; University of Agricultural Sciences: DJ Bagyaraj; University of Nairobi: Leonita Muruli, Isaac Nyamongo, Lydia Kimenye, Richard Mibey; University of Reading: Geoff Warren; University of Zambia; University of Zimbabwe: Paul Mapfumo and Florence Mtambanengwe; Wageningen Agricultural University, Wageningen, The Netherlands: Ken Giller, Lijbert Brussaard; University of London, Queens Mary College, UK: David Bignell; University of California, Davis: Johan Six, Roberta Gentile.

**International and Regional Agricultural Research Centers:** CIMMYT, Kenya: Hugo de Groote, Mirjam Pulleman; CIP, Kenya: Charles Crissman; ICRAF, Kenya: Frank Place, Steve Franzel, Noordin Qureish, Bashir Jama, Richard Coe, Keith Shepherd; ICRISAT, Kenya: Ade Freeman; ICRISAT, Mali: Tabo; ICRISAT, Niger: Aboudoulaye, Abdoulaye and Mahamane; ICRISAT, Zimbabwe: John Dimes; IITA Ibadan, Nigeria- Abdou; IITA Uganda: Piet van Asten, Cliff Gold, Suleiman Okech; ILRI, Kenya: Patti Kristjanson, Steve Staal, Philip Thornton, Mario Herrero, Dannie Romney; ICIPE: Zia Khan; AATF: Mpoko Bokanga.

**NGOs:** Africa 2000 Network (A2N), Uganda; Africare, Zimbabwe; AREX, Zimbabwe: W.Mpangwa, J.Nzuma; AT (Uganda); Bunda College of Agriculture, Malawi; CARITAS, Uganda; CNFA; DARTS, Malawi: W.Sakala; DR&SS, Zambia: M.Mwale; Farmer Groups in Vihiga, Siaya, Busia, Teso, and Kakamega districts of western Kenya and Meru South district of central Kenya; Tororo and Mayuge districts of Uganda; farmer groups in Lushoto (Tanzania), Togo and Benin; Forestry Research Institute (FORI), Uganda; FOSEM, Uganda; KWAP (Kenya Woodfuel and Agroforestry Project); PLAN International, Uganda; SDARMP, Zimbabwe: D.Saunders; SG2000 Agriculture Programme, Uganda; Smallholder Floodplain Development Project, Malawi: J. Chisenga; System-wide Livestock Program (SLP); SACRED Africa in Kenya ; World Vision in Rwanda; Food for the Hungry and Innovation Resource Management in DR Congo.

### **TSBFI-Latin America**

**NARES:** CORPOICA–Bogotá, Colombia: Tito Diaz; CORPOICA–Bucaramanga, Colombia: Hernando Méndez; CORPOICA-Espinal, Eduardo Barragán Quijano; CORPOICA–La Libertad (Villavicencio), Colombia: A. Rincón, J.J. Rivera, Samuel Caicedo, Edgar Almanza, C.J. Escobar, Jaime H. Bernal, José E. Baquero, Emilio García, Rubén Valencia, Carmen R. Salamanca; CORPOICA – Macagual, Colombia: Carlos Julio Escobar; CORPOICA–Medellín, Colombia: Alvaro Tamayo; CORPOICA - Montería (*CI-Turipaná*): Nora Jiménez, Sony Reza, Socorro Cajas, Carlos Sánchez, Joaquín García, Jorge Negrete; CORPOICA–Obonuco (Pasto), Colombia: Luis F. Campuzano, Bernardo García, Belisario Volverás; CORPOICA–Palmira, Colombia: Jorge Peña, Gloria Ortiz, Carlos Arturo Rincón, Ferney Salazar, Diego Aristizábal, Argemiro Domínguez, Juan Jaramillo; CORPOICA -Popayán, Rodrigo Torres; CORPOICA – Tibaitatá, Colombia: Inés Toro, Margarita Ramírez; Instituto de Investigaciones Agropecuarias, Chile: Angélica Sadzawka; IGAC (Instituto Geográfico Agustín Codazzi), Bogotá-Colombia: Marco Aurelio Velandia, Napoleón Ordóñez; IIAP (Instituto de Investigaciones Ambientales del Pacífico), Quibdó (Chocó), Colombia: Eduardo García Vega, Luis Carlos Pardo Locarno, Jesús Eduardo Arrollo Valencia; IICA, Bogotá-Colombia: MADR-Ministerio de Agricultura y Desarrollo Rural de Colombia: Carlos Gustavo Cano Sanz, Fabio Clavijo, Ximena Rueda; PRONATTA-Ministerio de Agricultura y Desarrollo Rural de Colombia: Luis Ernesto Villegas Ramírez;

**NGOs:** ASOGRANDE, Caicedonia, Colombia: Roberto Tisnes Mejía; CENICAFE, Chinchiná: Alveiro Salamanca, Nestor Riaño, Siavosh Sadeghiankh; CENIPALMA, Bogotá: Fernando Munévar, Pedro León Gómez, María Cristina Díaz; CIPASLA, Pescador: Rodrigo Vivas; CIPAV, Cali: Enrique Murgueitio, María Cristina Amézquita, María Elena Gómez; COLCIENCIAS, Bogotá: Oscar Duarte, Jaime Jiménez, María Cristina Durán, Oscar Vargas; COSMOAGRO, Palmira: Antonio López; CRC (Corporación Regional del Cauca), Popayán: Jesús A. Chávez, Juan Carlos Maya; CVC (Corporación del Valle del Cauca), Cali: Eduardo Varela, Alvaro Calero Aguado; FEDEARROZ, Ibagué: Alvaro Salive, Luis Armando Castilla; INPOFOS (Instituto de Fósforo y Potasio), Ecuador: José Espinosa; MONOMEROS COLOMBO-VENEZOLANOS, Bogotá: Ricardo Guerrero, Alberto Osorno; PALMAS DE CASANARE, Bogotá: Miguel Guzmán; Asociación de la Ciencia del Suelo, Argentina: Fernando García; CONDESAN: Consortium for the Sustainable Development of the Andean Ecoregion; Sociedad Colombiana de la Ciencia del Suelo-SCCS, Bogotá-Colombia: Francisco Silva Mojica, Alvaro García; Sociedad Mexicana de la Ciencia del Suelo, Mexico: Edna Alvarez;

**AROs:** Agricultural University of Norway, Norway; Prof. B.R. Singh; Berlin University of Technology, Berlin, Germany: Wolfgang Wilcke; CENA/Universidad de Sao Paulo, Dr. Carlos Cerri; College on Soil Physics, Trieste, Italy: Miroslav Kutilek, Idelfonso Pla; ETH, Zurich, Switzerland; Prof. E. Frossard, A. Oberson; FAO-Lempira Sur, Honduras: Luis A. Welchez, Paul Compton; GTZ: German Technical Cooperation; Fabio Bermúdez; IVIC (Instituto Venezolano de Investigaciones Científicas), Jose San Jose; INTA/CENIA, Managua, Nicaragua: Jellin Pavon; IRD, France, C. Feller, P. Lavelle; North Carolina University, USA: Jot Smith; Ohio State University, USA: Rattan Lal; PEQUIVEN (Petroquímicos de Venezuela): Juan A. Comerma; Swedish Agricultural University, Sweden, Prof. O. Andren; Universidad de Lleida, Spain: Idelfonso Pla-Sentis; Universidad de Salamanca, Spain: Juan Gallardo; Universita di Trieste, Italy: Giancarlo Ghirardi; Université de Rouen, Rouen, France: Thibaud Decaëns; University of California-Davis, United States: Donald Nielsen; University of Chile; Prof. M. Pinto; University of Freiburg; E. Wellmann; University of Gottingen, Germany, N. Claassen; University of Ghent, Belgium: Donald M. Gabriels; University of Hohenheim, Germany, R. Schultze-Kraft; Wageningen University, The Netherlands: Ken Giller, Ruerd Ruben, Peter Burman.; Cornell University: Janice Thies, Jonhannes Lehmann; University of Western Australia, Australia: Arthur Conacher.

**International and Regional Agricultural Research Centers:** CATIE, Costa Rica: J. Beer; IFDC, USA/CIMMYT, Ethiopia: D. Friesen.

**Colombian Universities:** Instituto de Educación Técnica Profesional, Roldanillo: Gustavo A. Ramírez, Alma Lida Obregón; Instituto Técnico Agropecuario-ITA, Buga: Manuel Amaya Navarro; Universidad de Caldas: Franco Obando, William Chavarriaga; Universidad de Córdoba, Montería: Iván Darío Bustamante; Universidad de la Amazonía: Bertha Ramírez; Universidad de Nariño: Hugo Ruíz Erazo, Jesús A. Castillo, Germán Arteaga Meneses, Javier García Alzate; Universidad del Cauca: Clara Hernández, Edier Humberto Pérez; Universidad del Pacífico: Alfredo León, Arnulfo Gómez-Carabalí; Universidad del Valle: Patricia Chacón, James Montoya, Martha Páez, Norberto Benitez, Enrique Peña, Celina Torres, Carmen Rosa Forero; Universidad Distrital de Bogotá: Miguel Cadena; Universidad Nacional de Colombia (UNC), Bogota: Jesús Diaz; UNC-Palmira, Colombia: Edgar Madero, Marina Sánchez de Prager, Eugenio Escobar, Raúl Madriñán, Juan Carlos Menjivar, Carmen Rosa Bonilla, Oscar Herrera, A. García; UNC-Medellín, Colombia: Raúl Zapata, Johnbrynner García; Universidad Pedagógica y Tecnológica de Colombia, Tunja: Hugo Castro Franco; Universidad Surcolombiana, Neiva, Colombia: Armando Torrente; Universidad Tecnológica de los Llanos: Jorge Muñoz, Gabriel Romero, Obed García, Julio César Moreno; Universidad Tecnológica de Pereira: Alex Feijoo; Universidad Javeriana, Bogota: Amanda Varela.

**Regional Universities:** Universidad Central de Venezuela (UCV): Deyanira Lobo; Universidad de Costa Rica: Alfredo Alvarado, W. Forsythe; Universidad de la Frontera, Temuco (Chile): Itilier Salazar; Universidad de los Andes, Mérida, Venezuela: Lina Sarmiento, Dimas Acevedo; Univ. Federal Rural de

Rio de Janeiro (UFRRJ), Brazil, R. Berbara, S. Urquiaga, R. Boddey; Universidad Nacional Agraria (UNA), Nicaragua: Matilde Somarriba; Universidad Nacional de Agricultura, Honduras, José T. Reyes; Universidad Nacional Autónoma (Mexico): Laura Bertha Reyes; Universidade Estadual de Londrina, Brazil: María de Fátima Guimaraes, Ricardo Ralich; Universidade Federal de Santa Maria, Brazil: Telmo Jorge Amado.

## ANNEX-4: LIST OF PUBLICATIONS

### TSBF Institute - Africa

#### *Refereed journal articles*

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- Amede, T. and Schubert, S. 2003. Mechanisms of drought resistance in grain legumes. II. Stomatal closure and root growth. *SINET: Journal of Science* 26 (2): 137-144.
- Amede, T., Stroud, A. and Aune, J. 2004. Advancing human nutrition without degrading land resources through modelling cropping systems in the Ethiopian Highlands. *Food and Nutrition Bulletin*, Boston. In Press (December, 2004).
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- Delve, R.J. and Jama, B. *Mucuna pruriens* and *Canavalia ensiformis* legume cover crops: Sole crop productivity, nutrient balance, farmer evaluation and management implications. (Submitted to *African Crop Science Journal*).
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- Jefwa, J. M., Mwangi L. M., Odee, D. and Mugambi G. Preliminary studies on mycorrhizal symbiosis in plant conservation, forestry and farming systems in Kenya. *Journal of Tropical Microbiology*, Volume. 3 Number 1, October 2004 (Special issue on Belowground Biodiversity in Kenya) (in press).
- Kahindi, J.H.P., Karanja, N.K., Odee D. and Mwaura F. B. The Diversity of Biological Nitrogen Fixing Systems in Kenya. *Journal of Tropical Microbiology*, Volume. 3 Number 1, October 2004 (Special issue on Belowground Biodiversity in Kenya) (in press).
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- Mando, A., Ouattara, B., Sédogo, M., Stroosnijder, L., Ouattara, K., Brussaard, L. and Vanlauwe, B. 2004. Long-term effect of tillage and manure application on soil organic C, particulate organic matter and crop performance under Sudano-Sahelian conditions. Soil & Tillage Research. In Press.
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- Oorts, K., Vanlauwe, B., Recous, S. and Merckx, R. 2004. Redistribution of particulate organic matter in different states of decomposition during ultrasonic dispersion, *European Journal of Soil Science*. In Press.
- Otwoma, T., Misiko, M.T. and Ramisch, J.J. 2005. Understanding local knowledge of soil quality indicators in Vihiga District, Western Kenya. *Agroforestry Systems* (In review).
- Pali, P.N., Bashaasha, B., Delve, R.J, Miiro, R.. Profitability analysis and linear programming to optimize the use of biomass transfer and improved fallow species for soil fertility improvement. (Submitted to *African Crop Science Journal*).
- Place, F., Barrett, C.B., Freeman, H.A., Ramisch, J.J. and Vanlauwe, B. 2003. Integrated soil fertility management: evidence on adoption and impact in African smallholder agriculture. *Food Policy* 28, 365–378.
- Probert, M.E., Delve, R.J., Kimani, S.K. and Dimes, J.P. 2005 Modeling nitrogen mineralization from organic sources: representing quality aspects by varying C:N ratios of sub-pools. *Soil Biology and Biochemistry* (In press).
- Ramisch, J.J. 2004. Inequality, agro-pastoral exchanges, and soil fertility gradients in Southern Mali. *Agriculture, Ecosystems, and Environment* (In press).
- Rufino, M.C., Rowe, E.C., Delve, R.J. and Giller, K.E. Nitrogen cycling efficiencies through livestock in African resource-poor mixed farming systems: A review (Submitted to *Agroecosystems and Environment*).
- Sanginga, P.C., Best, R., Chitsike, C., Delve, R.J., Kaaria, S. and Kirkby, R. 2004. Linking Smallholder Farmers to Markets in East Africa: Empowering Mountain Communities to Identify Market Opportunities and Develop Rural Agroenterprises. *Mountain Research and Development* 2004 24 (4) 288–291.
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- Tittonell, P., Vanlauwe, B., Leffelaar, P.A., Rowe, E. and Giller, K.E. 2005. Exploring diversity in soil fertility management of smallholder farms in western Kenya. I. Heterogeneity at region and farm scale. *Agriculture, Ecosystems and Environment* (in review).
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- Tumuhairwe, J.B., Jama, B. Delve, R.J. and Rwakaikara-Silver, M.C. 2005. Mineral nitrogen contribution of *Crotalaria grahamiana* and *Mucuna pruriens* short-fallow in eastern Uganda. *African Crop Science Journal* (In press).

- Tumuhairwe, J.B., Jama, B., Delve, R.J. and Rwakaikara-Silver, M.C. 2005. Financial benefits of *Crotalaria grahamiana* and *Mucuna pruriens* short-duration fallow in eastern Uganda. *African Crop Science Journal* (In press).
- Vanlauwe, B. and Giller, K.E. 2005. Popular myths around soil fertility management in sub-Saharan Africa 2005 Nutrient Cycling in Agroecosystems (in review).
- Vanlauwe, B., Aihou, K., Tossah, B.K., Diels, J., Sanginga, N. and Merckx, R. 2004. *Senna siamea* trees recycle Ca from a Ca-rich subsoil and increase the topsoil pH in agroforestry systems in the West African derived savanna zone. *Plant and Soil*, *In Press*.
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- Vanlauwe, B., Gachengo, C., Shepherd, K., Barrios, E., Cadisch and G., Palm, C.A. 2005. Laboratory validation of a resource quality-based conceptual framework for organic matter management. *Soil Science Society of America Journal*, *In Press*.

### **Refereed book chapters**

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- Albrecht, A., Cadisch, G., Blanchart, E., Sitompul, S.M. and Vanlauwe, B. 2003. Belowground inputs: relationships with soil quality, soil C storage and soil structure. *In: Belowground Interactions in Tropical Agroecosystems* (Eds: M van Noordwijk, CK Ong, G Cadisch). CABI, Wallingford, UK, pp.193-207.
- Amede, T. 2004. Pathways for fitting legumes into East African Highland Farming Systems: A dual approach. pp.21-29. Key Note paper. In: S. Waddington (ed). Grain legumes and green manures for soil fertility in Southern Africa: Taking Stocks of Progress. Soil Fert Net and CIMMYT – Zimbabwe. Harare, Zimbabwe. 266 p.
- Amede, T. and Kirkby, R. 2004. Guidelines for Integration of Legume Cover Crops into the Farming Systems of East African Highlands. pp.43-64. In: Bationo, A. 2004. Managing nutrient cycles to sustain soil fertility in Sub-Saharan Africa. Academic Science Publishers. 608 p.
- Amede, T., Amézquita, E., Ashby, J., Ayarza, M., Barrios, E., Bationo, A., Beebe, S., Bellotti, A., Blair, M., Delve, R., Fujisaka, S., Howeler, R., Johnson, N., Kaaria, S., Kelemu, S., Kerridge, P., Kirkby, R., Lascano, C., Lefroy, R., Mahuku, G., Murwira, H., Obertur, T., Pachico, D., Peters, M., Ramisch, J., Rao, I., Rondon, M., Sanginga, P., Swift, M. and Vanlauwe, B. 2004. Biological nitrogen fixation: A key input to integrated soil fertility management in the tropics. In: R. Serraj (ed) *Symbiotic nitrogen fixation: Prospects for enhanced application in tropical agriculture*. Raju Primlani for Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi, India, pp.113-143.
- Bationo, A., Kihara, J., Vanlauwe, B., Kimetu, J. and Sahrawat, K.L. 2004. Integrated Nutrient Management – Concepts and Experience from Sub-Saharan Africa. Book chapter.
- Carsky, R.J., Sanginga, N., Schulz, S., Douthwaite, B., Manyong, V.M., Diels, J., Vanlauwe, B. and Keatinge, J.D.H. 2004. The ability to fix N is not the only key to delivery of benefits of BNF to farmers: Experience of IITA in the savannas of Africa. In: R Serraj (Ed.) *Symbiotic Nitrogen Fixation: Prospects for Enhanced Application in Tropical Agriculture*. Oxford and IBH Publishing, New Delhi, India, pp.145-161.
- Delve, R.J., Probert, M.E. and Dimes, J.P. 2004. Improved Capabilities in Modeling and Recommendations. In: Delve, R.J. and Probert, M.E., ed., 2004. Modeling nutrient management in tropical cropping systems. ACIAR Proceedings No. 114, 136p.
- Kinyangi, J., Delve, R.J. and Probert, M.E. 2004. Testing the APSIM Model with Data from a Phosphorus and Nitrogen Replenishment Experiment on an Oxisol in Western Kenya. In: Delve,

- R.J. and Probert, M.E., ed., 2004. Modeling nutrient management in tropical cropping systems. ACIAR Proceedings No. 114, 136p.
- Murwira, H.K. and Chikowo, R. 2004. A synthesis of integrated soil fertility management (process and adaptive) research in southern Africa. Soil Fertility Consortium for Southern Africa.
- Probert, M.E., Delve, R.J., Kimani, S.K. and Dimes, J.P. 2004. The APSIM Manure Module: Improvements in Predictability and Application to Laboratory Studies. In: Delve, R.J. and Probert, M.E., ed. 2004. Modeling nutrient management in tropical cropping systems. ACIAR Proceedings No. 114, 136p.
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- Ramisch, J.J. 2004. "Understanding soil in its social context: Integrating social and natural science research within AFNET", in Bationo, A. (ed.) Managing Nutrient Cycles to Sustain Soil Fertility in Sub-Saharan Africa, p.p. 501-522.
- Ramisch, J.J., Misiko, M.T., Mairura, F.S. and Otwoma, N.T., 2004. Whose land degradation counts? Contentious understandings of soil fertility management in Western Kenya, invited Chapter in Indigenous knowledge: Contentions and Transformations, G. Dei and N.N. Wane (eds.), University of Toronto Press. (In press)
- Vanlauwe, B. 2004. Integrated soil fertility management research at TSBF: the framework, the principles, and their application. In: Managing Nutrient Cycles to Sustain Soil Fertility in Sub-Saharan Africa, Ed. A Bationo. Academy Science Publishers, Nairobi, pp.25-42.

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- Amede, T. and Zewdie, E. (eds). 2003. Challenges of land degradation to agriculture in Ethiopia. Proceedings of the Ethiopian Society of Soil Sciences, Feb 28-Mar 1, 2002, Addis Ababa, Ethiopia. 181 p.
- Amede, T., Assefa, H. and Stroud, A. (eds). 2004. Participatory research in action: Ethiopian Experiences. Ethiopian Agricultural Research Organization and African Highlands Initiative. 144 p.
- Amede, T., Kimani, P., Ronno, W., Lunze, L. and Mbikay, N. 2004. Coping with Drought: Strategies to improve genetic adaptation of common bean to drought prone regions of Africa. CIAT Occasional Publication Series, No. 38. 2004.
- Bationo, A. (ed). 2004. Managing Nutrient Cycles to Sustain Soil Fertility in Sub-Saharan Africa. (A book edited by Andre Bationo).
- Bationo, A., Kimetu, J. and Kihara, J. (eds). 2004. Improving human welfare and environmental conservation by empowering farmers to combat soil fertility degradation: Abstracts of the International Symposium of the African Network for Soil Biology and Fertility (AfNet) of TSBF Institute of CIAT (Booklet).
- Delve, R.J. and Probert, M.E., ed. 2004. Modeling nutrient management in tropical cropping systems. ACIAR Proceedings No. 114, 136p.
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### ***Workshop presentations***

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### ***Research Briefs***

- Amede, T. 2003. Restoring Soil Fertility in the Highlands of East Africa through Participatory Research. *AHI Brief* No A1.
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### ***Other publications***

Other forms of intellectual property: (*contribution to the development of databases, patents, copyright material, plant variety rights etc.*)

1. Soil fertility gradient database (Vanlauwe B.)

***Refereed journal articles***

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### ***Books Edited***

- Guimarães, E. P., Sanz, J.I., Rao, I.M., Amézquita, M.C., Amézquita, E. and Thomas, R.J. (eds). 2004. Agropastoral Systems for the Tropical Savannas of Latin America. CIAT, Cali, Colombia and EMBRAPA, Brazil. pp. 342.

### ***Conference proceedings***

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#### ***Workshop presentations***

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- Salamanca A., Sadeghian, S. and Amézquita, E. 2004. Efecto de la densidad aparente de dos suelos de la zona cafetera sobre el crecimiento temprano del cafeto (Abstract 11-05). In: Ivonne G. Valenzuela Balcázar (compiled). Program and Memories of the XVI Latin American Congress and XII Colombian Congress of Soil Science, First edition, Sociedad Colombiana de la Ciencia del Suelo (SCCS), Palmira, Colombia. 176 p.
- Subbarao, G.V., Ito, O., Rao, I.M. and Rondon, M. 2004. Nitrification inhibition in root exudates of tropical grasses. Abstract vol. 50, no. 9-41. Presentation at Japanese society of soil science and plant nutrition annual meeting, September, 2004.

#### ***Abstracts of poster presentations***

- Bolaños-B. M., Castilla, L.A., Zárate, L., Ricaurte, J., Navia, J., Sánchez, M. and Bonilla, C.R. 2004. Efecto rizosférico “in vitro” de arroz, maíz, sorgo, crotalaria, frijón y leucaena sobre el pH. Poster presented at XVI Latin American Congress and XII Colombian Soil Science Congress “CLACS 2004”, Cartagena, Colombia. September 27 to October 1, 2004.
- Borrero G., Friesen, D.K., Oberson, A., Rodríguez, M. and Rao, I.M. 2004. Destinos del fósforo aplicado como fertilizante en Oxisoles de los Llanos Orientales de Colombia. Fraccionamiento secuencial. Poster presented at XVI Latin American Congress and XII Colombian Soil Science Congress “CLACS 2004”, Cartagena, Colombia. September 27 to October 1, 2004.
- Escobar L.F., Barrios, E. and Varela, A. 2004. Efecto del sistema de uso del suelo sobre la abundancia de poblaciones nativas de rizobios en la Microcuenca Potrerillo, Departamento del Cauca. Poster presented at XVI Latin American Congress and XII Colombian Soil Science Congress “CLACS 2004”, Cartagena, Colombia. September 27 to October 1, 2004.
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- Rivera Peña M. and Amézquita, E. 2004. Evaluación del modelo CERES-Maize en la variedad Sicuani V-110 en Oxisoles de los Llanos Orientales de Colombia. Poster presented at XVI Latin American Congress and XII Colombian Soil Science Congress "CLACS 2004", Cartagena, Colombia. September 27 to October 1, 2004.
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- Subbarao, G.V., Ito, O., Wang, H., Nakahara, K., Ishikawa, T., Suenaga, K., Samejima, H., Rondon, M., Rao, IM., and Ishitani, M. 2004. Can nitrification be inhibited/regulated biologically? New approaches to develop germplasm to minimize nitrogen losses in crop-livestock systems. Poster presented at 3<sup>rd</sup> International Nitrogen Conference, October 12-16<sup>th</sup> 2004, Nanjing, China.
- Torrente-T.A., Becerra, C.G., Barney, B.F., García O., A., Escobar Ch., C.A. and Amézquita, E. 2004. Evaluación de métodos de conductividad hidráulica saturada en suelos magnéticos del Valle del Cauca. Poster presented at XVI Latin American Congress and XII Colombian Soil Science Congress "CLACS 2004", Cartagena, Colombia. September 27 to October 1, 2004.
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#### ***Extensión Bulletins***

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- Amézquita E., Hoyos Garcés, P. and Molina López, D.L. 2004. Construcción de una capa arable en la Altillanura plana de los Llanos Orientales de Colombia. Boletín Técnico. CIAT-PRONATTA-CORPOICA-UNILLANOS. Cali, Colombia. 35 p.
- Amézquita E. and Campo, J.M. 2004. Manual operacional del minisimulador de lluvia CIAT Centro Internacional De Agricultura Tropical, Unidad de Suelos, Palmira, Colombia.

#### ***Brochures and Software***

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- Quintero, M. and Amézquita, E. 2003. Guía para el uso de "árboles de decisión": Alternativas de Uso de la Tierra para los Llanos Orientales de Colombia. Estudio de Caso: Puerto López, Meta. Centro Internacional de Agricultura Tropical CIAT. Ministerio de Agricultura y Desarrollo Rural (Internal Report).