

# International Conference on Integrated Systems Research



## Integrated Systems Research for Sustainable Intensification in Smallholder Agriculture Conference Program

### KEY CONFERENCE OUTCOMES

- Demonstrate and share experiences and evidence to the effect that Systems Approaches in agriculture research are effective and contribute to livelihoods and natural resource management.
- Share methods, tools and research approaches used in Systems Research.
- Explore opportunities for new partnerships in Systems Research for development.
- Identify opportunities for cross-system learning, and methods to do this effectively.

#CGIAR\_Systems

March 3-6, 2015, IITA Headquarters in Ibadan, Nigeria.

<http://humidtropics.cgiar.org/international-conference-integrated-systems/>

Organized by:



RESEARCH  
PROGRAM ON  
Integrated Systems  
for the Humid  
Tropics

led by  
**IITA**  
Research for Northern Africa

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Agricultural  
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Dryland Systems

*CGIAR is a global agricultural research partnership for a food-secure future.*

## *International Conference on Integrated Systems*

### **Conference Program: Day 1 – March 3**

- 8:00 CONFERENCE REGISTRATION
- 9:00 OPENING SESSION – Interactive opening session with presentation of the Conference Program, introduction of participants and their expectations
- 10:00 BREAK
- 10:30 OFFICIAL OPENING – Chaired by Dr. Nteranya Sanginga, Director General, IITA  
*Rapporteurs: Bernard Vanlauwe, IITA; Michael Phillips, WorldFish*  
Welcome Addresses:  
**Dr. Nteranya Sanginga**, Director General, International Institute of Tropical Agriculture (IITA)  
**Dr. Kwesi Atta-Krah**, Director, CGIAR Research Program on Integrated Systems for the Humid Tropics (Humidtropics)  
Opening Addresses:  
**Dr. Yemi Akinbamijo**, Executive Director, Forum for Agricultural Research in Africa (FARA)  
**Dr. Frank Rijsberman**, Chief Executive Officer, CGIAR Consortium  
**Ann Tutwiler**, Director General, Bioversity International
- 12:00 SESSION 2 – CONCEPTUAL UNDERPINNINGS OF SYSTEMS RESEARCH: SETTING THE SCENE  
*Rapporteurs: Charles Staver, Bioversity International; Lisa Hiwasaki, ICRAF/Humidtropics*  
**Keynote 1: Prof. David W. Norman**, Professor Emeritus, Kansas State University  
*Historical Trajectory of Farming Systems Research: Past, Present and Future.*
- 12:30 LUNCH
- 14:00 SESSION 2 – CONCEPTUAL UNDERPINNINGS OF SYSTEMS RESEARCH (cont'd)  
**Keynote 2: Dr. Bernard Hubert**, President, Agropolis International  
*Systems Thinking toward Institutional Innovation and Change.*  
**Keynote 3: Cynthia McDougall**, Senior Scientist, Gender & Equity Theme Leader, WorldFish and Aquatic Agricultural Systems  
*Gender in Integrated Systems Research.*  
**Keynote 4: Dr. Marie de Lattre-Gasquet**, Senior Foresight Scientist, CGIAR Consortium  
*Facilitating Changes in Complex Humid Systems: the Role of Foresight.*
- 15:30 BREAK AND GROUP PHOTO
- 16:00 SESSION 3 – DISCUSSION  
*Rapporteurs: Piet van Asten, IITA; Rein van der Hoek, CIAT/Humidtropics*  
*What fundamental parameters qualify R4D as Systems Research?*  
*What are the critical implementation challenges of Systems Research?*
- 18:00 OPENING COCKTAIL RECEPTION
- 19:00 DINNER

## Conference Program: Day 2 – March 4

- 8:30 SESSION 4 – INTEGRATED SYSTEMS IMPROVEMENT AND SUSTAINABLE INTENSIFICATION  
*Rapporteurs: Edmundo Barrios, ICRAF; Gina Kennedy, Bioversity International*  
**Recap of Day 1: Implementation Challenges**  
**Keynote 6: Dr. Dennis Garrity**, UN Drylands Ambassador & Senior Fellow, ICRAF  
*Understanding African Farming Systems as a Basis for Sustainable Intensification.*  
**Keynote 7: Dr. Linley Chiwona Karlton**, Swedish University of Agricultural Sciences  
*Systemic Nutrition Security Solutions for Transformative Change.*
- 10:30 BREAK
- 11:00 SESSION 5 – THEMATIC PARALLEL SESSIONS – SUSTAINABLE INTENSIFICATION IN PRACTICE  
*Rapporteurs: Jeroen Groot, WUR; Mark Lundy, CIAT*  
**Theme 1: Market-Based Intensification - Dr. Mark Lundy & Dr. Nelson Mango**  
Venue: Musa room
- 11:00 Mango N., CIAT; Clifton Makate C., Lundy M., Siziba, S., Nyikahadzoi K., Gama M., Mwale S., Oluwole F. - *An Assessment of Collective Market Participation for Improved Income among Smallholder Farming Households: A case of Balaka Innovation Platform, Malawi.*
- 11:20 Divine Foundjemi-Tita, Jason Donovan, ICRAF; Dietmar Stoian, Bioversity International; Ann Degrande, Christophe Kouame, ICRAF - *The institutional environment of the cocoa sector in Ghana and Cote d'Ivoire, A call for greater multi-sector collaboration.*
- 11:40 Dietmar Stoian, Bioversity International; Jason Donovan, ICRAF - *A Systems Perspective for Achieving Economic Growth and Livelihood Resilience: Towards a Multi-Chain Approach to Value Chain Development.*
- 12:00 Justus Ochieng, Beatrice Knerr, Department of Development Economics, Migration and Agricultural Policy, University of Kassel; George Owuor, AERC-CMAAE program; Emily Ouma, ILRI - *Effect of Commercialization on Intensification and Productivity in Smallholder Agriculture in Central Africa.*
- 12:20 General Discussion
- 12:50 LUNCH
- Theme 2a: Integration of Crosscutting Issues - Nutrition Sensitive Landscapes - Dr. Gina Kennedy & Dr. Jeroen Groot**  
Venue: Vigna room
- 11:00 Fabrice Declerck, Bioversity International; Roseline Remans, The Earth Institute at Columbia University; Gina Kennedy, Bioversity International; Jeroen Groot, Wageningen University; Shakuntala Thilsted, WorldFish; Natalia Estrada-Carmona, Bioversity International - *Overview of Nutrition Sensitive Landscapes: approach and methods.*
- 11:20 Jeroen Groot, Stéphanie Alvarez, Carl Timler, Wim Paas, Nester Mashingaidze, Trinidad del Rio, Minke Stadler, Katrien Descheemaeker, Lummina Horlings, Inge Brouwer, Wageningen University; Gina Kennedy, Celine Termote, Jessica Raneri, Fabrice Declerck, Natalia Estrada Carmona, Bioversity International; Roseline Remans, Monica Marie Pasqualino, Columbia University; Alan Debrauw, IFPRI; Ray-Yu Yang, AVRDC; Shakuntala Thilsted, Kate Longley, Andrew Ward, Steve Cole, WorldFish; Mwansa Songe, ILRI; Busie Maziya-Dixon, IITA - *Systems Analysis in Nutrition Sensitive Landscapes.*
- 11:40 Shakuntala Thilsted, WorldFish; Natalia Estrada, Bioversity International; Monica Marie Pasqualino, Columbia University; Trinidad del Rio, Jeroen Groot, University

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Wageningen; Gina Kennedy, Fabrice DeClerck, Bioversity International; Roseline Remans, Columbia University - *AAS pilot studies in the Barotse floodplain, Western Zambia.*

12:00 Edith Agbo, University Nangui Abrogoua, Abidjan Côte d'Ivoire; C. Kouame, J. Kahia, L. Diby, L. Coulibaly, ICRAF; A. Mahyao, Centre National de Recherche Agronomique, Cote d'Ivoire; K. Kehlenbeck, ICRAF- *Feeding habits and nutritional status of young children and their mothers in cocoa producing smallholder households of South-West Côte d'Ivoire.*

12:20 Discussion

12:30 LUNCH

### **Theme 3: Integrating Productivity and Natural Resource Management - Dr. Bernard Vanlauwe & Dr. Richard Thomas**

Venue: Manihot room

11:00 Richard Thomas, ICARDA - *Integrated systems research in the development of drylands.*

11:20 Jianchu Xu, ICRAF - *Green Rubber: An integrated system approach for agricultural intensification and conservation in the Mekong Region.*

11:40 Laura Schmitt Olabisi, Robert B. Richardson, Kurt Waldman, Michigan State University - *Modeling the Impact of Sustainable Intensification on Landscapes and Livelihoods using System Dynamics.*

12:00 Justin Nambangia Okolle, IRAD; Victor Afari-sefa, AVRDC; Precilia Tata Ijiang, IRAD; Francis Ajebesone Ngome, IRAD; Jean-Claude Bidogeza, AVRDC - *Evaluation of farmers' knowledge on vegetable pests and diseases and their management practices within cocoa-based farming systems in the Humid Tropics of Cameroon.*

12:20 To Thi Thu Ha, AVRDC/FAVRI; Pepijn Schreinemachers, Jaw-Fen Wang, AVRDC; Nguyen Thi Tan Loc, Le Thi Thuy, Le Nhu Thinh, FAVRI; Andreas Ebert, AVRDC; Narinder Dhillon, AVRDC; Ramasamy Srinivasan, Peter Hanson, Lawrence Kenyon, Ray-Yu Yang, AVRDC; Victor Afari-Sefa, AVRDC - *Sustainable Intensification of Smallholder Agriculture in Northwest Vietnam: Exploring the Potential of Vegetables.*

12:40 LUNCH

### **Theme 4: Conceptual Underpinnings - Sustainable Intensification and Systems Research - Dr. Kwesi Atta-Krah & Dr. Michael Phillips**

Venue: Conference hall

11:00 Simon Attwood, Bioversity International; Park, S.E., Mills, D., Phillips, M., WorldFish - *Sustainable Intensification—Does SI offer a pathway to improved food security and wellbeing for aquatic agricultural system-dependent communities?*

11:20 Jeroen C.J. Groot, Wageningen University (Plant Production Systems Group); Piet van Asten, IITA; Katrien Descheemaeker, Wageningen University (Plant Production Systems Group) - *Sustainable Intensification—Does SI offer a pathway to improved food security and wellbeing for aquatic agricultural system-dependent communities?*

11:40 Randall Ritzema, ILRI; Romain Frelat, ILRI/CIMMYT; Sabine Douxchamps, Silvia Silvestri, ILRI; Mariana Rufino, CIFOR; Mario Herrero, CSIRO; Ken Giller, Wageningen University; Santiago Lopez-Ridaura, CIMMYT; Mark van Wijk, ILRI - *What works where for which farm household: estimated effects of different interventions on food availability across household distributions in East and West Africa.*

12:00 John Herbert Ainembabazi, IITA-Uganda; M van Wijk, Wageningen University; L Klapwijk, Wageningen University/IITA; PMN Dontsop, IITA-Kalambo; L Jassogne, IITA-Uganda; B Ekesa, Bioversity – Uganda; B Vanlauwe, P van Asten, IITA - *Farming system opportunities and limitations in East and Central Africa: Exploring scenarios to improve welfare and sustainable land use.*

12:20 Stephanie Alvarez, Wim Paas, Wageningen University (Farming Systems Ecology); Katrien Descheemaeker, Wageningen University (Plant Production Systems); Jeroen

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Groot, Wageningen University (Farming Systems Ecology) - *Hypothesis based typologies for capturing diversity.*

12:40 LUNCH

14:00 SESSION 5 – (cont'd)

### **Theme 2a (cont'd): Integration of Crosscutting Issues - Nutrition Sensitive Landscapes - Dr. Gina Kennedy & Dr. Jeroen Groot**

Venue: Vigna room

14:00 Celine Termote, Bioversity International; Francis Odhiambo Oduor - *What has our landscape to offer to community's food security and nutrition; a case of Vihiga County, Kenya.*

14:20 Nester Mashingaidze, IITA/Wageningen University; Jeroen Groot, Wageningen University; Celine Termote, Bioversity International; Ray-Yu Yang, AVRDC; Jessica Raneri, Roseline Remans, Gina Kennedy, Bioversity International - *Multifunctional assessment of nutrition-sensitive landscapes.*

14:40 Justice Djokoto, Central University College, Ghana - *Technical Efficiency Differences between Men and Women Farmers - A Meta-Analytic Assessment.*

15:00 Nancy Johnson, 4NH/IFPRI - *Integrating nutrition to systems research: Impact pathways and theories of change.* Presented by Roseline Remans, The Earth Institute at Columbia University.

15:20 General Discussion

16:00 End of session

### **Theme 2b: Integration of Crosscutting Issues - Gender and Equity - Dr. Anne Rietveld and Dr. Holger Kirscht**

Venue: Musa room

14:00 Amare Tegbaru, IITA - *Resolving the Gender Empowerment Equation in Humidtropics.*

14:20 Miranda Morgan, Afrina Choudhury, WorldFish - *Gender relations and aquaculture technology adoption in Bangladesh: Merging the social and the technical to enable more secure livelihoods.*

14:40 Ademonla Djalal Arinloye, Binam J.N., ICRAF-WCA; Sissoko M.M., Traore P.C.S., ICRISAT; Kalinganire A., ICRAF-WCA; Savadogo P., ICRAF-WCA/ICRISAT - *Marketing and management decisions in the dryland systems: does women voice count?*

15:00 Anne Rietveld, Bioversity International; Holger Kirscht, IITA; Netsayi Mudege, CIP - *Gender Norms and Agricultural Innovation; Insights from Uganda and Nigeria.*

15:20 Silvia Sarapura, Ranjitha Puskur, WorldFish/AAS - *Gender integration in agricultural innovation systems: some considerations to move forward from South-South experiences.*

15:40 General Discussion

16:10 End of session

### **Theme 3 (cont'd): Integrating Productivity and Natural Resource Management - Dr. Bernard Vanlauwe & Dr. Richard Thomas**

Venue: Manihot room

14:00 Carl Timler, Mirja Michalscheck, Wageningen University; Charlotte Klapwijk, Nester Mashingaidze, IITA/Wageningen University; Mary Ollenburger, Wageningen University; Gatien Falconnier, Wageningen University/ICRISAT; Katja Kuivanen, Katrien Descheemaeker, Jeroen Groot, Wageningen University - *Exploring options for sustainable intensification in different farming system types of four Africa RISING countries.*

14:20 Edmundo Barrios, Richard Coe, ICRAF (Kenya); Leon Nabahungu, Rwanda Agriculture Board (RAB); Athanase Mukuralinda, ICRAF (Rwanda); Catherine

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Muthuri, Fergus Sinclair, ICRAF (Kenya) - *Co-developing best-best interventions and protocols for their evaluation in the field through Participatory Trials Design Workshops in Rwanda.*

14:40 Luke Olarinde, FARA; Joachim Binam, Adewale Adekunle, Adeolu Ayanwale and Oluwole Fatunbi - *Impacts of the “Integrated Agricultural Research for Development (IAR4D)” on the adoption of Natural Resources Management (NRM), Crop and Post-harvest Technologies: Evidence from the “Innovation Platforms” approach in West Africa.*

15:00 Saeid Soufizadeh, Javad Shirmohammadi, Reza Deihimfard, Jafar Kambouzia, Korous Khoshbakht, Department of Agroecology, Environmental Sciences Research Institute, Shahid Beheshti University, Iran - *Yield gap assessment is a prerequisite for moving toward ecological intensification: A case study on forage maize in smallholder farmers in Alborz province of Iran.*

15:20 General Discussion

16:00 End of session

### **Theme 4 (cont'd): Conceptual Underpinnings - Sustainable Intensification and Systems Research - Dr. Michael Phillips**

Venue: Conference hall

14:00 Charles Staver, Bioversity International; Pablo Siles, CIAT; Oscar Bustamante, Universidad Nacional Agraria, Managua, Nicaragua; Nelson Castellon, Consultant, Nicaragua; Sam Mpiira, NARO/Bioversity - *Improving banana agroecosystem productivity – Lessons for integrated systems intensification.*

14:20 Laurence Jassogne, Piet van Asten, IITA; Peter Laderach, CIAT-Nicaragua; Godfrey Kagezi, National Coffee Research Institute of Uganda (NaCORI) - *Systems research for climate smart agriculture: an example of coffee in East-Africa.*

14:40 Paul Woome, IITA/Humidtropics; Canon Savala, Celister Kaleha, Moses Chemwada, Western Regional Alliance for Technology Evaluation (WeRATE) - *A Situation Analysis of Small-scale Farming Systems in West Kenya Action Site of Humidtropics.*

15:00 General Discussion

16:00 End of session

16:00 BREAK

16:30 SESSION 6 – POSTER PRESENTATIONS

*Rapporteurs: Laurence Jassogne, IITA; Murat Sartas, WUR/IITA*

Brief Introduction in Plenary followed by Interactive Exhibition

### **Theme 1: Conceptual Underpinnings of Systems Research**

1. Nguyen Duy Phuong, Tran DucToan, SFRI; TruongQuoc Can, SRD; Nguyen Thi Tan Loc, FAFRI; Nguyen Van Son, CASRAD; Steven J. Staal, ILRI - *Situational Analysis in Northern Vietnam.* Presented by Lisa Hiwasaki, ICRAF/Humidtropics.
2. Mmaduabuchukwu Mkpado, Department of Agricultural Economics and Extension, Federal University Oye-Ekiti, Nigeria; Mkpado Ndidiama S., Department of Psychology University of Nigeria, Nsukka - *Towards integrating agriculture and energy systems for smallholders in Nigeria.*
3. Perez Muchunguzi, IITA; Tenywa M, Makerere University; Sole A, Van Asten P, IITA; Bakadde R, Agro-Empowerment Centre: Wandera J, NGO Forum Kyankwanzi; Ebanyat P, N2Africa; Olupot G, Makerere University; Lusembo P, Mugisa I, NARO - *The role of multistakeholder processes in systems research for development, the Kiboga-Kyankwanzi case in the Lake Victoria Crescent Zone, Uganda.*
4. Mercy Ndubueze-Ogaraku, University of Port Harcourt, Nigeria; Ekine, D.I., Rivers State University of Science & Technology, Nigeria - *Determinants of Farmers' Choice of Crop Enterprise in the Floodplain Farming in Akwa Ibom State, Nigeria.*

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5. Princewill Ogbonna, J.B. Simonyan, S.E. Ogbe, Michael Okpara University of Agriculture Umudike, Nigeria - *Determinants of output of crops and farmland management practices among smallholder farmers in Ikwuano Local Government Area, Abia State, Nigeria.*
6. J. Aubin, INRA/AGROCAMPUS OUEST; H. Rey-Valette, Université de Montpellier; Mathé S., A. Wilfarta, CIRAD, UMR Innovation; M. Legendre, J. Slembrouck, IRD, UMR ISEM; E. Chia, CIRAD, UMR Innovation; G. Masson, Université de Lorraine; M. Callier, J.P. Blancheton, IFREMER, UMR ECOSYM; A. Tocqueville, ITAVI, Service Aquaculture; D. Caruso, IRD, UMR ISEM and P. Fontaine, Université de Lorraine - *Develop a multidisciplinary-based approach to implement ecological intensification: the example of ponds fish-farming system.* Presented by Bernard Triomphe, CIRAD UMR Innovation.
7. Katja S. Kuivanen, Mirja Michalscheck, Stephanie Alvarez, Jeroen Groot, Wageningen University (Farming Systems Ecology Group); Katrien Descheemaeker, Wageningen University (Plant Production Systems); Samuel Adjei-Nsiah, Forest and Horticultural Crops Research Centre, Kade, College of Agriculture and Consumer Sciences, University of Ghana, Shaibu Mellon Bedi, IITA, Ghana - *A comparison of farm typology approaches in northern Ghana.*

### Theme 2: Sustainable Intensification

8. Diego Valbuena, CIAT; Jeroen Groot, Paulo Martinho, Wageningen University; Pablo Siles, CIAT - *Farm-level assessment of an agroforestry system in family agriculture in northern Nicaragua.*
9. Jorita van Valkenhoef, Wageningen Group (Farming Systems Ecology Group/Division of Human Nutrition); Inge Brouwer, Wageningen Group (Division of Human Nutrition); Jeroen Groot, Wageningen University (Farming Systems Ecology Group) - *Incorporating household dietary and nutritional needs in quantitative farming systems analysis.*
10. Karoline A. B. Hemminger, Wageningen University (Farming Systems Ecology Group); Bettina B. Bock, Wageningen University (Rural Sociology Group); Jeroen Groot, Mirja Michalscheck, Carl Timler, Wageningen University (Farming Systems Ecology Group) - *Towards integrated analysis of gender relations in farming systems analysis.*
11. Uma Khumairoh, University of Brawijaya/Wageningen University; Trinidad del Rio, Gonzalo Garnacho Alemany, Egbert A. Lantinga, Wageningen University; Didik Suprayogo, Bambang Guritno, University of Brawijaya; Jeroen Groot, Wageningen University - *Increasing and stabilizing yields by ecological intensification of rice production systems on a gradient of complexity.*
12. F. Abang, AVRDC, Taiwan/Cameroon; R. Srinivasan, AVRDC, Taiwan; S. Kekeunou, Faculty of Science, University of Yaoundé I, Cameroon; M. Yeboah, AVRDC, Cameroon; A. Tenkouano, AVRDC, Mali; R. Hanna, IITA, Cameroon; C. F. Bilong Bilong, Faculty of Science, University of Yaoundé I - *Productivity and Resistance to Aphids of Okra (*Abelmoschus spp.*) Accessions under Humid Tropical Conditions in Cameroon.*
13. Adebola Adedugbe, Bonifab Nigeria - *Engaging youth and women in agricultural development.*
14. Bezabih Emanu, HEDBEZ; Victor Afari-Sefa, AVRDC; Amsalu Ayana, HEDBEZ; Fekadu F. Dinssa, AVRDC; Tesfaye Balemi, Milkessa Temesgen, HEDBEZ - *The Potential for Integrating Vegetables into Staple Production Systems in the Humid Tropics of Ethiopia.*
15. Asare Richard, Department of Geoscience and Natural Resource Management, University of Copenhagen, Denmark/IITA; Victor Afari-Sefa, AVRDC, Tanzania; Yaw Osei-Owusu, Conservation Alliance, Ghana; Opoku Pabi, Institute for Environment and Sanitation, Ghana - *Cocoa agroforestry for increasing forest connectivity in a fragmented landscape in Ghana.*
16. Mollah Mahfuz Ahmed, Department of Agriculture, Government of West Bengal, India; S.K. Bardhanroy, M.S. Kadian, S. Arya, Roberto Quiroz, CIP; S.K. Singh, CPRI (Central Potato Research Institute), India - *Sustainable Intensification of Potato in Non-Traditional Potato Growing Areas in Rice Based System for Increased Productivity and improved Livelihood of Poor Farmers in Humid Agro-Ecology of West Bengal, India.*

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17. Anthony Ojonimi Onoja, Institute of Climate and Society, Mekelle University, Ethiopia; Obukonise Emuejevoke Helen, Department of Agricultural Economics and Extension, University of Port Harcourt, Nigeria; Ajie, Eunice N., Department of Agricultural Sciences, Ignatius Ajuru University of Education, Nigeria - *Cropping Intensification and Profitability of Cassava-Based Farming Households in Cassava-Based Farms in Rivers State, Nigeria.*
18. Amujoyegbe Bamidele, Department of Crop Production and Protection; Adejobi A.O., Bamire A.S, Department of Agricultural Economics, Obafemi Awolowo University, Ile-Ife, Nigeria - *Improving the productivity of integrated tree cropping system in southwestern Nigeria.*
19. Takoutsing Bertin, ICRAF, Cameroon; Ayenkulu Ermias, ICRAF, Kenya; Tchoundjeu Zacharie, ICRAF, Cameroon; Barrios Edmundo, Richard Coe, Shepherd Keith, ICRAF, Kenya - *Land health surveillance for identifying land constraints and targeting sustainable agricultural intensification in smallholder's agriculture in Cameroon.*
20. Desta L.T., Chirwa R., Barthlomew Chataika, Ndengu G., Mponela P., Magreta R., CIAT; Chikowo R, MSU/IITA/Africa RISING - *Participatory Yield Assessment of climbing and bush bean varieties under different management options in Malawi.*
21. Stella Chude, University of Nigeria; Birhane E., Zenebe A., Abadi N., Girma A., Noulekoun F., Mekelle University, Ethiopia - *Transition of Land Use/Land Cover to Agroforestry to Restore a Degraded Land: A Case of Zongi Village Agroforestry System, Tigray, Ethiopia.*
22. Justice Djokoto, Central University College, Ghana; Victor Afari-Sefa, AVRDC; Albert Addo-Quaye, Central University College, Ghana - *Vegetable Supply Chains in Ghana: Production Constraints, Opportunities and Policy Implications for Enhancing Food and Nutritional Security.*
23. Boru Douthwaite, Rodrigo Paz, AAS/WorldFish - *Measuring Capacity to Innovate using Outcome Evidencing.*
24. Sonigitu Ekpe, Ministry of Agriculture and Natural Resources, Cross River State, Nigeria - *Agricultural Credit for Integrated Systems Improvement.*
25. Tosan Fregene, E. K. Ajani, B. O. Omitoyin, and A. O. Onada, Department of Aquaculture and Fisheries Management, University of Ibadan - *Production Indices and Profitability Analysis of Integrated Fish Farming (Fish, Rice, Poultry) Production.*

19:00 DINNER



## Conference Program: Day 3 – March 5

- 8:30 SESSION 7 – PARTNERSHIPS AND INSTITUTIONAL ARRANGEMENTS FOR INNOVATION, SCALING UP AND IMPACT  
*Rapporteurs: Anne Rietveld, Bioversity International; Nelson Mango, CIAT*  
**Recap of Day 2: Sustainable Intensification in Systems Research - What does it really mean?**  
**Keynote 8: Dr. Fergus Sinclair**, Systems Science Leader, ICRAF  
*Systems Science at the Scale of Impact: Reconciling Bottom Up Participation with the Production of Widely Applicable Research Outputs.*  
**Julienne Kuiseu**, Capacity Strengthening Programme Assistant, CORAF/WECARD  
*A paradigm shift in agricultural research for development: Innovation Platforms as a vehicle for change and impact in Smallholder Agriculture in West and Central Africa.*
- 10:30 BREAK
- 11:00 SESSION 7 – (cont'd)  
*Rapporteurs: Herve Bisseleua, ICRAF; Holger Kirscht, IITA*  
**Dr. Cees Leeuwis & Seerp Wigboldus** - *What kinds of 'systems' are we dealing with? Implications for System Research and Scaling?*  
**Dr. Marc Schut & Murat Sartas** - *Documenting Platform Dynamics and Outcomes: Theory, Tools and First Results.*  
**Roundtable Discussion - Dr. Lisa Hiwasaki, Dr. Latifou Idrissou, Dr. Chris Okafor & Dr. Rein Van der Hoek** - *Institutional Constraints and Opportunities in Implementing Integrated Agricultural Research for Development (IAR4D).*  
**Table Discussion - Challenges for Partnerships and Institutional Arrangements.**
- 13:00 LUNCH
- 14:30 SESSION 8 – POSTER PRESENTATIONS  
*Rapporteurs: Marc Schut, WUR/IITA; Latifou Idrissou, IITA*  
Brief Introduction in Plenary followed by Interactive Exhibition  
**Theme 2: Sustainable Intensification (cont'd)**
26. Manjurul Karim, Golam Faruque, Kazi Ahmed Kabir, Barman Benoy and Michael Phillips, WorldFish - *Evolution of Bangladesh "gher" floodplain farming systems and challenges for productivity and resilience.*
  27. MB Jumbo, D Makumbi, G Mahuku, CIMMYT; M Bekunda, I Hoeschle-Zeledon, IITA - *Integration of Maize Lethal Necrosis Disease Management in Crop/Livestock Intensification to Enhance Productivity of Smallholder Agricultural Production Systems in East Africa - an Africa RISING Approach.* Presented by Janet Njeri Kimunye, CIMMYT.
  28. Carlos León Velarde, Roberto Quiroz, CIP - *Dual-purpose sweet potato for improving smallholder production systems.* Presented by Victor Mares, CIP.
  29. Anthony Kimaro, ICRAF; Patrick Okori, ICRISAT; Elirehema Swai, Agricultural Research Institute, Tanzania; Ahazi Mkoma, Sokoine University of Agriculture/ICRAF; Mathew Mpanda, Abdala Liingilie, Martha Swamila, ICRAF - Tanzania Country Programme - *Optimizing Growth and Yield of Maize, Pigeonpea and Fodder Trees in Kongwa and Kiteto Districts, Tanzania.*
  30. Aston Oliver Mulwafu, Betserai Isaac Nyoka, Godfrey Kundhlande, Mateete Bekunda, ICRAF - *Exploiting niches for livestock intensification in farming systems in Malawi.*
  31. Shem Kuyah, JKUAT/ICRAF; Ingrid Öborn, ICRAF/SLU; Anders Malmer, A Sigrun Dahlin, Mattias Jonsson, SLU; Fergus L Sinclair, ICRAF - *Trees on farms enhance ecosystem service provision in Sub-Saharan Africa.*

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32. Ogbe, S.E., Princewill Ogbonna, Michael Okpara, University of Agriculture Umudike, Nigeria; R.O. Mejeha - *Sources of income and demand for Micro-financing for Agro-enterprise investment among rural women in Abia State, Nigeria.*
33. Randall Ritzema, ILRI - *Aqueous Productivity: an enhanced indicator for agricultural water management in the monsoonal tropics and drylands.*
34. Silvia Sarapura, WorldFish/AAS - *Gender and Investment and Assessment Strategies in Innovation Systems - the Case of Papa Andina, Peru.*
35. Gregory Sikumba, ILRI; Walter Mangesho, TALIRI; Ben Lukuyu, ILRI; Festo Ngulu, Mateete Bekunda, IITA - *Participatory evaluation of productivity and farmer preferences of selected Napier grass (*Pennisetumpurpureum*) accessions in northern Tanzania.*
36. Mary Mutemi, Maureen Njenga, Anne Kuria, ICRAF; Genevieve Lamond, ICRAF/ School of Environment, Natural Resources and Geography, Bangor University, UK; Ingrid Öborn, ICRAF/SLU; Jonathan Muriuki, Fergus Sinclair, ICRAF - *Local knowledge of farmers on challenges and opportunities for sustainably intensifying integrated tree-crop-livestock systems in two villages in Western Kenya.*
37. Chiwimbo Gwenambira, Regis Chikowo, Plant, Soil and Microbial Sciences Department, Michigan State University; Bekunda Mateete, Sieglinde Snapp, Africa RISING - *Below and aboveground pigeonpea productivity in a novel doubled-up legume cropping system across three agro-ecologies in central Malawi.*
38. Paul Woomer, IITA; Bonface Omondi, Celister Kaleha, Moses Chemwada, Western Regional Alliance for Technology Evaluation - *On-farm Testing of Improved Legume Varieties and Management in the West Kenya Action Site.*

### Theme 3: Innovation Systems

39. Adewale Adekunle, FARA; Olarinde Luke, Ladoko Akintola University of Technology, Nigeria; Fatunbi Oluwole, FARA - *Access to Information and Financial Services in the Innovation Platforms in the KKM PLS of the SSA CP.* Presented by Adeolu Ayanwale, FARA.
40. Ronner, E., Descheemaeker, K., Wageningen University (Plant Production Systems); Almekinders, C.J.M., Wageningen University (Knowledge, Technology and Innovation); Ebanyat, P., IITA; Giller, K.E., Wageningen University (Plant Production Systems) - *Co-design of improved climbing bean technologies in Uganda.*
41. Latifou Idrissou, Humidtropics; Leonard Hinnou, Mark Schut, IITA/Wageningen - *Improving Tree Crop Systems in Nigeria and Cameroon Action Sites: the Humidtropics Perspective.*
42. Turmel, M., Staver, C., Bioversity International; Valbuena, D., Siles, P., Guharay, F., CIAT; van den Hoek, R., CIAT/Humidtropics; Mena, M, CIAT - *Piloting integrated systems intensification through innovation platforms in Northern Nicaragua.*
43. Sole A, IITA; Tenywa M, Makerere University; Perez Muchunguzi, IITA; Van Asten P, IITA; Kamugisha R, Clement O, ICRAF; Mukulu F, Mukono Local Government; Ssabaganzi R, Oine P, Wakiso Local Government; Babirye G, VEDCO; Lusembo P, Mugisa I NARO - *Experiences and process followed based in a system research approach for development in the Mukono/Wakiso R4D Platform, Uganda.*
44. Nils Teufel, Esther Kihoro, Collins Adoyo, Carlos Quiros, Jane Poole, Mark van Wijk, Aziz Karimov, ILRI. *Farming system patterns: cluster analysis from the Humidtropics baseline survey in Western Kenya.* Presented by Randall Ritzema, ILRI.
45. Murat Sartas, IITA/Wageningen University/Swedish University of Agricultural Sciences; Perez Muchunguzi, Anna Sole, IITA; Dieuwke Lamers, IITA; Sylvia Namazzi, Swedish University of Agricultural Sciences; Moureen Awori, IITA, Marc Schut, IITA/Wageningen University; Cees Leeuwis, Wageningen University; Piet Van Asten, IITA - *The stepping stones to success: how we achieved co-investment and reflective learning in multi-stakeholder platforms in Uganda.*
46. Aurelie Toillier, CIRAD, UMR Innovation, Burkina Faso; Eduardo Chia, CIRAD, UMR Innovation, France; Souleymane Ouedraogo, INERA; Der Dabire, CIRDES, UR-PAN;

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Alassane Ba, IDR; Koutou Mahamoudou, CIRDES, UR-PAN; Alassane Ba, IER; Michel Havard, CIRAD, UMR Innovation, Burkina Faso; Patrice Toe, Eric Vall, CIRAD, UMR Innovation, France - *How innovation platforms can facilitate sustainable intensification? Insights from multi-level systems research in West-Africa*. Presented by Bernard Triomphe, CIRAD, UMR Innovation.

47. Wim Paas, Wageningen University (Farming Systems Ecology); Perez Muchunguzi, Anna Sole, Dieuwke Lamers, Piet van Asten, IITA; Moses Tenywa, Department of Agricultural Production, Makerere University; Jeroen Groot, Wageningen University (Farming Systems Ecology) - *Fuzzy Cognitive Mapping for Innovation Platforms and Research in Development*.

### Theme 4: Scaling for Impact

48. Belyou Haile, Carlo Azzarri, Cleo Roberts, IFPRI - *Characterizing adopters of sustainable intensification innovations: Evidence from Africa RISING program in Malawi and Tanzania*. Presented by Jeroen Groot, Wageningen University.
49. Kamara Alpha, IITA; Paul Amaza, Department of Agricultural Economics & Extension, University of Jos, Nigeria; Jim Ellis-Jones, Agriculture-4-Development - *Using the participatory research and Extension approach to promote sustainable agriculture in Borno State, Nigeria*.

16:00 BREAK

16:30 SESSION 9 – THEMATIC PARALLEL SESSIONS – PARTNERSHIPS AND INSTITUTIONAL ARRANGEMENTS FOR INNOVATION, SCALING UP AND IMPACT  
*Rapporteur: Ann Degrande, ICRAF*

### Theme 1: Performance and Impact of Multi-Stakeholder Innovation Platforms - **Dr. Cees Leeuwis & Dr. Lisa Hiwasaki**

Venue: Musa room

16:30 Murat Sartas, IITA/Wageningen University/Swedish University of Agricultural Sciences; Marc Schut, IITA/Wageningen University; Linley Chiwona Karlton, Swedish University of Agricultural Science; Piet Van Asten, IITA; Cees Leeuwis, Wageningen University - *Opportunities for higher impact agricultural research for development – A systematic review on a generic theory of change linking multi-stakeholder platforms to development outcomes and available tools*.

16:50 Adeolu Ayanwale, FARA; Olarinde Luke, Ladoko Akintola University of Technology, Nigeria; Fatunbi Oluwole, Adewale Adekunle, FARA - *Innovation Platforms, Gender relations and Household food security in the KKM PLS of the SSA CP*.

17:10 Sospeter Nyamwaro, CIAT-Uganda; Buruchara R, CIAT-Kenya; Tenywa MM, Makerere University Uganda; Mogabo J, Rwanda Agricultural Board; Wanjiku C, CIAT-Rwanda; Kalibwani R, Bishop Stuart University, Uganda; Twebaze J, Kabale, Local Government Uganda; Fatunbi AO, Adekunle AA, FARA - *Development Trajectories of Innovation Platforms in Lake Kivu Action Site*.

17:30 General Discussion

18:00 End of session

### Theme 2: Approaches to Scaling - **Dr. Ann Degrande & Dr. Boru Douthwaite**

Venue: Vigna room

16:30 Boru Douthwaite, Marina Apgar, Rodrigo Paz and other members, AAS/WorldFish - *Theory of change as lever of change*.

16:50 Sygnola Tsafack, Ann Degrande, ICRAF/Humidtropics; Steven Franzel, Brent Simpson, Michigan State University - *Farmer-to-farmer extension in Cameroon: practice, opportunities and challenges*.

17:10 Degrande Ann, Chiatoh Maryben, Nimino Godwill, Ngaunkam Precilia, ICRAF, Cameroon; Franzel Steven, Place Frank, ICRAF, Kenya - *What drives agroforestry adoption in Cameroon?*

17:30 General Discussion

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18:00 End of session

### **Theme 3: Institutional and Methodological Issues in Working in Multi-Stakeholder Settings - Dr. Bernard Triomphe & Dr. Marc Schut**

Venue: Conference hall

16:30 Bernard Triomphe, CIRAD UMR Innovation; Anne Floquet, University of Abomey-Calavi; Brigid Letty, INR, South Africa; Geoffrey Kamau, KARI Kenya; Ann Waters-Bayer, ETC Foundation - *Engaging local stakeholders in more inclusive innovation processes. Lessons from a review of innovation experiences in African smallholder agriculture.*

16:50 Iddo Dror, Lukuyu, B., Duncan, A., Blummel, M., ILRI - *Leveraging instructional design and learning theories to improve productivity in smallholder systems: The FEAST experience.*

17:10 Marc Schut, IITA/ Wageningen University; Cyrille Hicintuka, ISABU; Sylvain Mapatano, DIOBASS; Leon Nabahungu, RAB; Perez Muchunguzi, Chris Okafor, Emmanuel Njukwe, Jean-Prosper Kanyaruguru, Piet van Asten, Bernard Vanlauwe, IITA - *Entry points for innovation for sustainable intensification of agricultural systems in Central Africa.*

17:30 General Discussion

18:00 End of session

### **Theme 4: From Farm to Landscape and Further: Integration of Scales - Dr. Herve Bisseleua**

Venue: Manihot room

16:30 Herve Bisseleua, Humidtropics, IITA/ICRAF - *From farm to landscape and further: Increasing the capacity for integrated research system and innovation.*

16:50 Suhas P Wani, KV Raju, K Krishnappa, KL Sahrawat, ICRISAT - *Scaling-up of Productivity Enhancement in Rainfed Agriculture.* Presented by K.H. Anantha, ICRISAT.

17:10 Seerp Wigboldus, Wageningen University; Marc Schut, IITA/Wageningen University; Katharina Schiller, Onno Giller, Laurens Klerkx, Marijn Poortvliet, Anne Marike Lokhorst, Cees Leeuwis, Wageningen University - *Enhancing dynamic systems research by activating integrative perspectives on processes of scaling up in agricultural development and innovation.*

17:30 General Discussion

18:00 End of session

19:00 DINNER RECEPTION WITH ENTERTAINMENT

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### **Conference Program: Day 4 – March 6**

- 8:30 SESSION 10 – FORESIGHT IN SYSTEMS RESEARCH FOR DEVELOPMENT IMPACT  
*Rapporteurs: Ingrid Oborn, ICRAF; Chris Okafor, IITA/Humidtropics*  
**Recap of Day 3: What Challenges Surround Partnerships and Institutional Arrangements?**
- 9:00 **Dr. Dolapo Enahoro**, PIM/ILRI  
*Foresight Modeling to Guide Sustainable Intensification of Smallholder Systems*
- 9:15 **Dr. Randall Ritzema**, ILRI  
*Agricultural futures in the humid tropics: A multi-scale approach*
- 9:30 **Dr. Michael Phillips**, WorldFish  
*Future-smart research agendas: Engaging and empowering local stakeholders through foresight*
- 9:45 Brief Introduction in Plenary followed by Facilitated Discussion on:  
*Opportunities and Challenges in Using Different Approaches to Foresight in Systems Research*  
Panelists: **Dr. Dolapo Enahoro**, PIM/ILRI; **Dr. Randall Ritzema**, ILRI;  
**Dr. Michael Phillips**, WorldFish; **Dr. Marie de Lattre-Gasquet**, CGIAR Consortium
- 10:30 BREAK
- 11:00 SESSION 11 – FUTURE DIRECTIONS: HOW TO TAKE SYSTEMS RESEARCH FORWARD?  
*Rapporteurs: Cees Leeuwis, WUR; Fergus Sinclair, ICRAF*  
**Dr. Richard Thomas**, Director, Drylands  
**Dr. Michael Phillips**, Discipline Director, Aquaculture and Genetic Improvement, WorldFish representing Patrick Dugan, Director, AAS  
**Dr. Kwesi Atta-Krah**, Director, Humidtropics  
Brief Presentations by CGIAR Research Program Directors in Plenary followed by an Interactive Panel Discussion
- 12:30 LUNCH
- 14:00 OFFICIAL CLOSING SESSION  
*Rapporteurs: Randall Ritzema, ILRI; Amare Tegbaru, IITA*  
Key Messages and Summary of Conference  
Closing Remarks
- 15:30 BREAK
- 16:00 FIELD VISIT  
Tour of IITA Campus facilities and installations (optional)