

CLIMATE-SMART  
**Agriculture**  
2015



Global Science Conference

March 16-18, 2015  
Le Corum, Montpellier France

<http://csa2015.cirad.fr>

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## Welcome to Montpellier, Welcome to CSA 2015!

On behalf of Agropolis International, CIRAD, INRA and IRD, it is our pleasure to welcome you to Montpellier, home to a large scientific community in the fields of agriculture, food, biodiversity and the environment, with about 2700 research scientists and lecturers.

CSA 2015 is the third international conference in a successful series on Climate-smart agriculture (CSA) that was launched by Wageningen University and Research in the Netherlands, in 2011. It then moved to the University of California, Davis, USA in 2013. Over these four years, the concept of climate-smart agriculture has spread worldwide. It is now attracting the attention of many scientists, policy makers, developers, farmers, as well as other stakeholders including the public. Yet, we all know that the scientific validity of the concept needs to be fostered. To simultaneously achieve food security, adaptation and mitigation is not an easy task. Skills from all disciplines, at all scales and in diverse environments, are required.

Such is the objective of the Montpellier CSA 2015 Conference: confront expert knowledge to update the CSA science foundation, showcase key scenarios for agriculture and food systems, identify priorities for action, interface with the policy context and design a roadmap for future research on CSA.

When putting together this event over the past months, we were greatly encouraged by the huge interest from the global scientific community, with about 700 high-quality abstracts submitted, clearly showing that the global challenge of CSA is both vibrant and increasingly addressed. Strong support was also received from different organizers and sponsors, allowing us to invite many keynote speakers and fund the participation of more than 50 young researchers from developing countries. Let us warmly thank all those who made this possible.

Many people have to be thanked for working hard towards the preparation of the conference: the Organizing Committee and the Communication Committee did a wonderful job on all organizational matters: ranging from choosing the venue, to searching for sponsors, organizing social events, publicizing the conference and many more tasks which are necessary to make such an event a success. The contribution and sound advice from CCAFS and the CGIAR Consortium, Wageningen University and Research, the University of California Davis, FAO and GFAR made it possible to structure a world-class event. In addition to financial contributions from all the institutions quoted here, special thanks are due to the French Ministry of Agriculture, Agrifood and Forestry and to the French Ministry of Foreign Affairs and International Development who generously supported the conference, as well as to the *Région Languedoc-Roussillon*, the *Montpellier Méditerranée Métropole*, Agropolis Fondation (Labex Agro) and Labex Cemeb.

The CSA 2015 International Scientific Committee deserves warm thanks for designing the scientific program, identifying session topics and keynote speakers as well as selecting oral and poster contributions and their allocation to the different parallel sessions. Several staff from our institutions worked hard and cannot be thanked one by one. We are very grateful to all.

We very much hope that you will enjoy your stay in Montpellier and benefit from exciting scientific interactions.

**Dr Jean-François Soussana, INRA, Chair, CSA Scientific Committee**

**Dr Patrick Caron, CIRAD, Chair, CSA Organizing Committee**

## Committees

### Scientific Committee

Jean-François Soussana, Chair, INRA, France  
Martial Bernoux, IRD, France  
Mercedes Bustamante, UnB, Brasil  
Bruce Campbell, CCAFS, Denmark  
Harry Clark, NZAGRC, New Zealand  
Sandra Diaz, UNC, Argentina  
Arona Diedhiou, IRD, Sénégal  
Hongmin Dong, CCAS, China  
Vincent Gitz, HLPE/FAO  
Mark Howden, CSIRO, Australia  
Bernard Hubert, Agropolis International, France  
Saleemul Huq, IIED, Bangladesh  
Louise Jackson, UC Davis, USA  
Peter Langridge, U. Adelaide, Australia  
Leslie Lipper, FAO, Italy  
Hermann Lotze-Campen, PIK, Germany  
Peter Minang, ICRAF, Cameroon  
Eddy Moors, WUR, The Netherlands  
Jerry Nelson, IFPRI, USA  
Úrsula Oswald Spring, CRIM, Mexico  
Martin Parry, Imperial College London, UK  
John Porter, U. Copenhagen, Denmark  
Mirjam Pulleman, WUR, The Netherlands  
Marta G. Rivera Ferre, UVIC, Spain  
Cynthia Rosenzweig, GISS, USA  
Pete Smith, U. Aberdeen, UK  
Emmanuel Torquebiau, CIRAD, France  
Maria Isabel Travasso, INTA, Argentina  
Joachim Von Braun, U. Boon, Germany  
Robert Zougmore, CGIAR/ICRISAT, Mali

### Organizing Committee

Patrick Caron, Chair, CIRAD, France  
Jean-Luc Chotte, Co-Chair, IRD, France  
Bruce Campbell, CCAFS, Denmark  
Irina Carpusca, INRA Transfert, France  
Mathias Ginet, Ministère de l'Agriculture, de l'Agroalimentaire et de la Forêt, France  
Bernard Hubert, Agropolis International, France  
Ludovic Larbodière, Ministère de l'Agriculture, de l'Agroalimentaire et de la Forêt, France  
Josette Lewis, UC DAVIS, USA  
Leslie Lipper, FAO, Italy  
Harry Palmier, GFAR, Italy  
Jean-François Soussana, INRA, France  
Emmanuel Torquebiau, CIRAD, France  
Jan Verhagen, WUR, The Netherlands  
Alain Vidal, CGIAR Consortium, France  
Claire Weill, INRA, France

### Local Organizing Committee

Brigitte Cabantous, Agropolis International, France  
Chantal Carrasco, CIRAD, France  
Jean-Luc Chotte, IRD, France  
Nathalie Curiallet, CIRAD, France  
Géraldine Lett, CIRAD, France  
Michelle Tigny, IRD, France  
Emmanuel Torquebiau, CIRAD, France

### Communication Group

Nathalie Curiallet, CIRAD, France  
Dominique Fournier, INRA, France  
Anne Hébert, CIRAD, France  
Géraldine Lett, CIRAD, France  
Béatrice Louvet-Bacle, CIRAD, France  
Vanessa Maedu, CIAT-CCAFS  
Christine Riou, INRA, France  
Valérie Rotival, IRD, France  
Pineda Sherwin, CGIAR Consortium, France  
Emmanuel Torquebiau, CIRAD, France  
Nathalie Villeméjeanne, Agropolis International, France  
Jérémy Zuber, INRA, France

### Website and Communication

Nathalie Curiallet, CIRAD, France  
Philippe Radigon, CIRAD, France

### Design

Delphine Guard, CIRAD, France

## Host institutions

### CIRAD

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**IRD**

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Contact: Jean-Luc Chotte  
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**AGROPOLIS INTERNATIONAL**

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**CGIAR Consortium**

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**CCAFS**

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**FAO**

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## Organizers



## In partnership with



## Montpellier and its surroundings



Montpellier has become over the past decades, a major hub for research on agriculture, environment and sustainable development issues. Montpellier is also one of the oldest University cities in France (XIII<sup>th</sup> Century). It is located on a hilly ground, 10 kilometers inland from the Mediterranean Sea coast. The medieval center, the so-called *Ecusson*, gives the city its unique and intimate feeling.



### Public transport (TAM)

Tickets can be bought from the automatic machines at each tramway station. The tramway Line 1, decorated in blue with white swallows, connects the northern part of the city with the *Odysseum* terminal on the southeast side. Line 2, decorated in a flower-power theme, goes from east to west. The colorful Line 3, designed by the famous fashion designer Christian Lacroix, goes from west to east, arriving near the seaside at Perols. From there, you can rent a bike or take a short walk (around 20 minutes) to get to the beach. The golden Line 4, also designed by Christian Lacroix, is only for downtown. About 30 bus lines are connected to the tramway lines to offer a comprehensive network that will transport you in and around Montpellier. *Le Corum* conference centre is at walking distance from *Le Corum* and *Comédie* tramway Stations.



TAM Ticket fares:

One-way ticket: € 1.50

1-day pass: € 4.00

7-days pass: € 6.00

10-ride pass: € 10.00

### Véломagg' bicycle service

The *Véломagg'* service offers bicycles just the way you want them: available and inexpensive. For your riding pleasure, 50 automatic bike stations with over 2,000 bicycles are available in Montpellier and in the *Métropole* area. Service is open 24/7. All you need is personal identification and you can rent a bicycle to ride the streets of the city and outlying area. You can buy tickets at the *Esplanade* bike station (next to Montpellier Tourist Office).

### Restaurants

A large variety of restaurants, cafés and bars can be found all over Montpellier, with a very large selection available at walking distance from *Le Corum* conference centre. Some of them are open late at night. Prices for a menu usually start at €12 for lunch and €20 for dinner.

## Places of interest in Montpellier



- |  |  |
|--|--|
| <b>1</b> Crowne Plaza Montpellier Corum **** | <b>4</b> Ibis Montpellier Centre Comédie *** |
| <b>2</b> Mercure Montpellier Centre ****     | <b>5</b> Citadines Antigone Montpellier **   |
| <b>3</b> Ibis Montpellier Centre ***         | <b>6</b> Best Western Hotel Eurociel ***     |
|  | <b>7</b> Océania Le Métropole ****           |

 Food and drink areas

### Getting around

Montpellier is the ideal place to stay and take advantage of both the seashore of Southern France and the many hidden treasures in the hinterlands of the *Région Languedoc-Roussillon*. Discover major UNESCO World heritage sites, scenic villages and landscapes, vineyards and vast natural areas such as the Camargue marshland and the Cévennes mountains.

### Natural sites

Camargue marshes, with pink flamingos, ranches with black bulls and white horses, Cévennes mountains, great for biking, mountain biking or bushwalking,

**Pyénées** mountains, between Spain, Andorra and Ariège,  
**Mediterranean coastline**, with many swamps near Montpellier, rocks and cliffs when getting near the Spanish boarder, in the scenic **Côte Vermeille**.

### Historic cities

**Nîmes**, living Roman history (45 kms from Montpellier),

**Sète**, the fascinating birthplace of famous musician Georges Brassens and poet Paul Valéry, located between the Mediterranean Sea and the **Thau lagoon**, famous for its oyster farms (30 kms),

**Pézenas**, Molière's hometown (60 kms),

**Aigues-Mortes**, the medieval city of Saint Louis (30 kms),

**Collioure**, capital of Fauvism painting (190kms).

### UNESCO World heritage sites



The colossal walled city of **Carcassonne**, a magnificent medieval city with its ramparts, the Basilique de St Nazaire and Château Comtal,

The **Pont du Gard**, an impressive Roman aqueduct,

The **Canal du Midi**, a beautiful canal with a succession of straitslocks and tunnels,

The medieval **Abbaye de Gellone**, located in the beautiful village of Saint-Guilhem-le-Désert on the route to Saint Jacques de Compostelle,

The **Causses** (elevated calcareous plateaux) and the unique Cirque de Navacelles.

### Social program

The **Welcome cocktail** will be held at *Le Corum* on **Monday, 16 March, 19:00-21:00**.



The **Gala dinner** will be held at the *Chateau de Pouget* on **Tuesday, 17 March, 18:30-24:00**.

Buses will leave at 18:30 from *Le Corum*, Level 0. The *Chateau de Pouget* is a magnificent castle, dating back to the 12th century, renovated in the 18<sup>th</sup> century and surrounded by vineyards. It is located mid-way between Montpellier and Nîmes.

### Post-conference visits

#### **Visit 1: Climate change adaptation in viticulture and enology at the INRA experimental wine farm of Pech Rouge:**

Innovation technologies for Climate Change adaptation in Viticulture and Enology,

New management and enological practices for the improvement of wine quality and adaptation to Climate Change.– **Departure from Tramway station Occitanie at 08:30.**

#### **Visit 2: Agroforestry and climate change in a Mediterranean setting at the INRA Restinclières experimental farm:**

The Restinclières plots are the most mature agroforestry plots under uninterrupted study in Europe. They allow understanding the behaviour of Agroforestry systems on the long term, including the impact of Climate Change

– **Departure from Tramway station Occitanie at 08:45.**

#### **Visit 3: Montpellier's research infrastructures tour:**

Quarantine facilities for studies on tropical plant pathogens and related hosts (UMR DIADE & IPME)

Regional genotyping technology platform (UMR AGAP)

European Ecotron (CNRS)

Quarantine Ecotrop Platform (UMR ECO & SOLS)

Montpellier Plant Phenotyping Platforms (UMR LEPSE) – **Departure from Tramway station Occitanie at 09:00.**

### Insurance

French health care does not cover visitors to France. Please ensure that you have a suitable insurance coverage in the event of illness or accident. The Organizing Committee will not accept liability for personal injuries sustained by, or for loss or damage to property belonging to the participants.



## Practical information about *Le Corum*

### Venue

*Le Corum* conference centre, Esplanade Charles De Gaulle, BP 2220, 34000 Montpellier – Tel: +33 0(4) 67 61 67 61  
It is located in the city centre of Montpellier, a few minute's walk from *Corum* and *Comédie* tramway stations.



### Registration

**Participants** should check in at the Welcome desk, Level 0 – Tel: +33 (0)4 67 61 66 64.

Open on Sunday 15 March, from 16:00 to 18:30 – Monday 16 March: from 7:30 to 19:00 – Tuesday 17 March: from 8:00 to 18:30 – Wednesday 18 March: from 8:00 to 18:30.

**Media delegates** are expected to check in at the Welcome desk, Level 0.

**Badges** are required for admission to all conference sessions, to the exhibition hall and the lunch area.

### Preview room

Located in **Room Sully 3<sup>bis</sup>, Level 1.**

Sunday 15 March: open from 16:00 to 18:30.

Monday 16 March to Wednesday 18 March: open from 8:00 to 19:00.

It will not be possible to upload presentations directly in the conference lecture room (Auditorium Pasteur) nor in any of the parallel sessions rooms.

### Abstracts

Abstracts for oral and poster presentations are available on the website and on the memory stick.

### Poster exhibitions

It is located in the **Exhibition hall, Level 0.** It will remain accessible throughout the conference

**Poster presenters** should register at the Welcome desk at their arrival, where they will be allocated a display panel. Please note: **Posters for Sessions L1, L2 and L3 will be exposed on Monday, Tuesday and Wednesday respectively.**

### Internet access

Wifi will be accessible in the Pasteur Auditorium, in Parallel Sessions rooms and in the Exhibition Hall, Level 0. **Access code: csa15 – Password: csa15.**

A Cyber Café will be available during the whole conference next to the Welcome desk at Level 0.

### Catering information

Participants will be served a lunch box everyday at Level 3, upon presentation of their badges. Coffee breaks will be served at Level 0.

Participants are kindly asked **not to take food or beverages to the sessions rooms.**

### Messages

A message board is located adjacent to the Welcome desk at Level 0. Messages may be left at the Welcome desk or pinned to the board. No responsibility will be taken to deliver messages personally, so please check this board at regular intervals.

### Cloakroom

It is located next to the Welcome desk at Level 0.

### Lost property

Please report any lost property to the Welcome desk, Level 0.

### Smoking

Le Corum is a designated non-smoking venue.

### Taxis in Montpellier

Taxi Tram – Tel: +33(0)4 67 58 10 10

Allo Taxi 34 – Tel: +33(0)4 67 81 42 74

Taxi Bleu – Tel: +33(0)4 67 03 20 00

Taxi Radio du Midi – Tel: +33(0)4 67 10 00 00

### Doctor

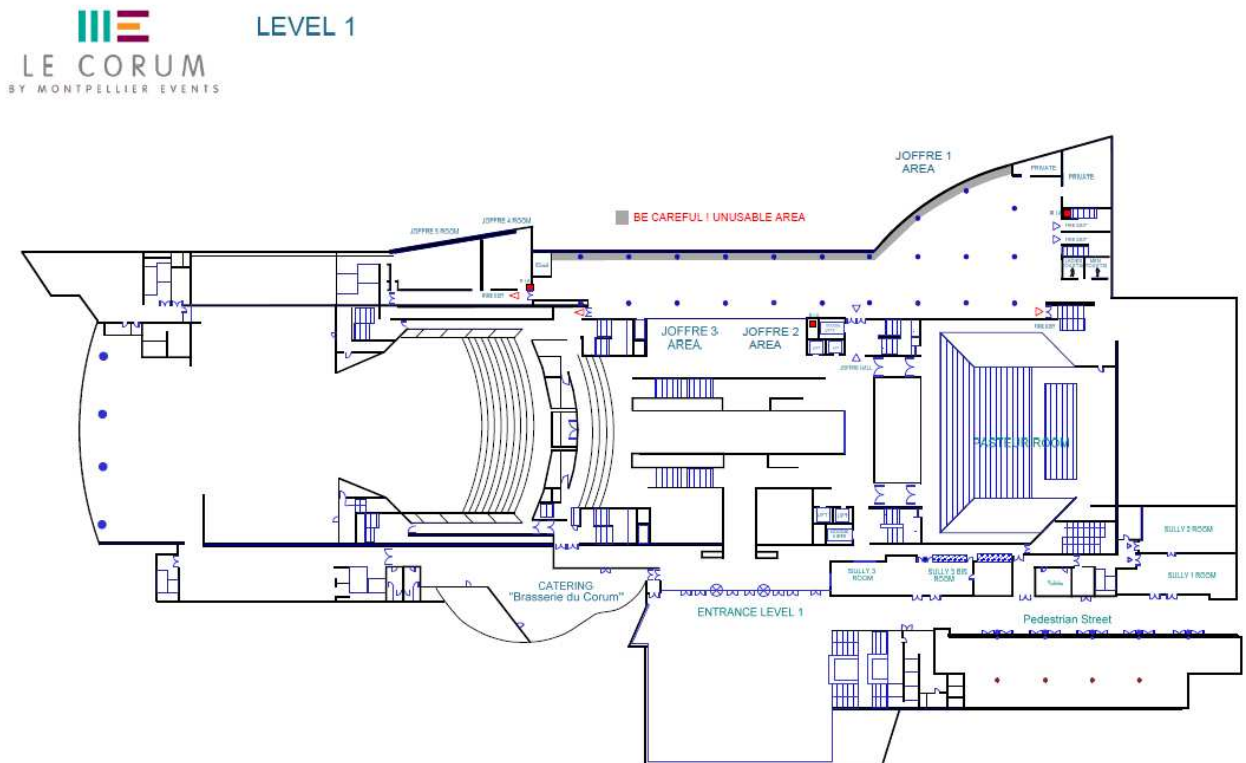
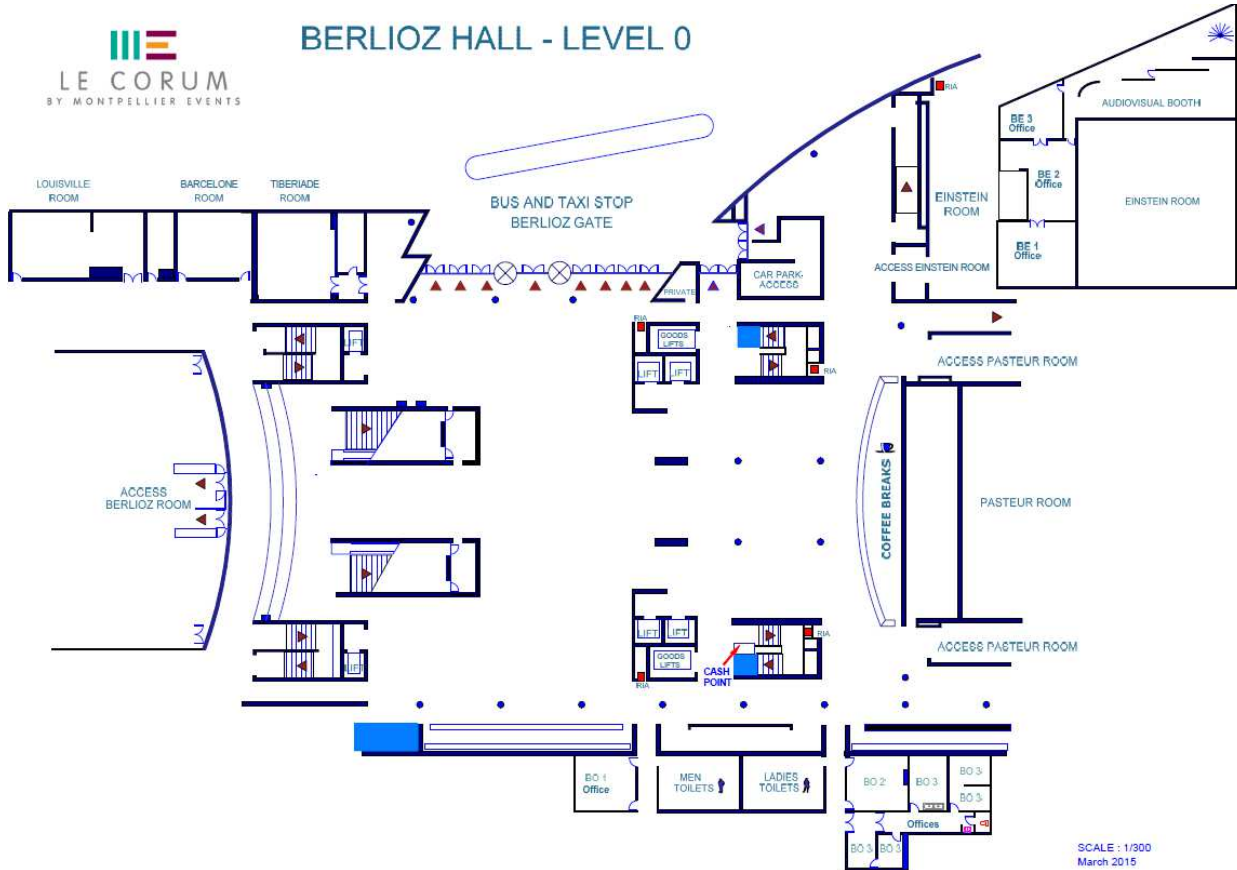
Montpellier Emergency Hospital

Hôpital Lapeyronie, Avenue Charles Flahaut

Tel: 04 67 33 81 67 or 04 67 33 81 68

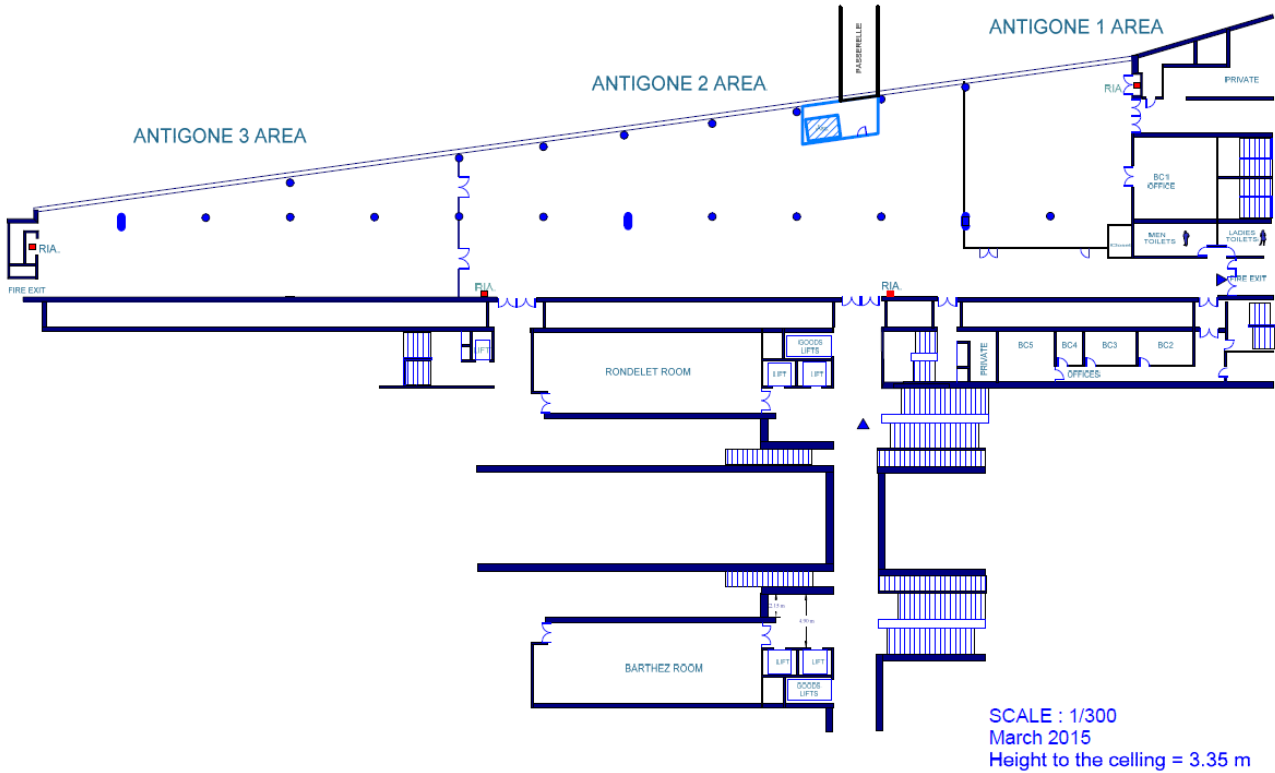
Alternatively, please contact *Le Corum* Reception desk for any assistance – Tel: +33(0)4 67 61 67 61

Maps of Le Corum

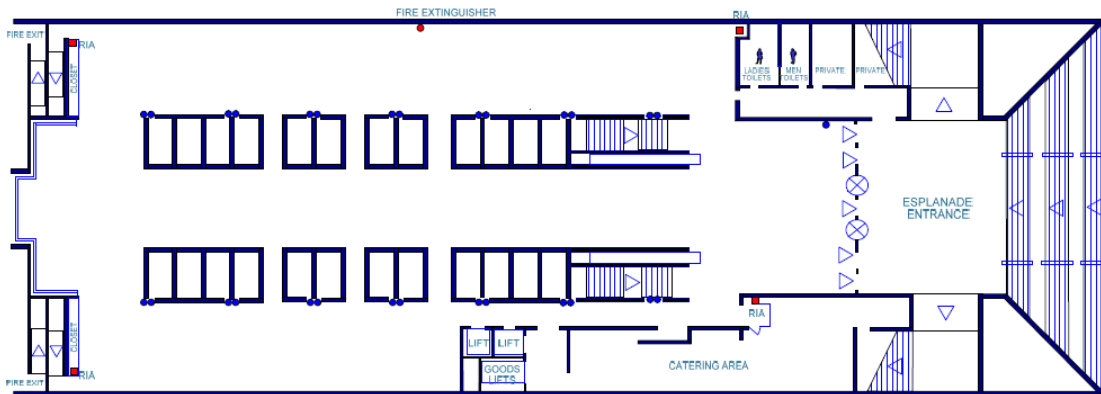




ANTIGONE HALL - LEVEL 2  
Gross Surface = 1.440 sq m



LEVEL 3 - ESPLANADE LOUNGES



# Program overview

Sun., 15 March		Monday, 16 March		Tuesday, 17 March		Wednesday, 18 March		Thursday, 19 March	
	07:30	REGISTRATION	08:30	Special Plenary Keynote on CSA Science-Policy interface: bringing findings of CSA science to policy-makers	08:30	Parallel sessions L3: Towards Climate-smart Solutions & Poster session	08:30	Post-Conf. Visits (departing at 8:30)	
	09:00	Plenary 1: Opening	09:00	Plenary 3: Questions for Climate-Smart Agriculture	09:00	L3.1 Climate adaptation and mitigation services		Visit 1: <b>Pech Rouge</b> Climate change adaptation in viticulture and Enology at an experimental Wine Farm	
	10:30	Coffee break		P3.1 Keynote on Resilience & adaptation		L3.2 Climate-smart cropping systems			
	11:00	Plenary 2: Global dimensions		P3.2 Keynote on Sustainable intensification & mitigation		L3.3 Climate-smart livestock and territories		Visit 2: <b>Restinclières</b> Agroforestry and Climate change in a Mediterranean setting	
		P2.1 Keynote on Climate change, risks, extremes and uncertainties		P3.3 Keynote on Agroecology, soils & ecosystem adaptation		L3.4 Climate-smart landscapes, watersheds and territories			
		P2.2 Keynote on Climate-Smart Agriculture: conceptual framework and brief history	11:00	Coffee break		L3.5 Investment opportunities and funding instruments		Visit 3: <b>Montpellier</b> Research Infrastructures Tour	
		P2.3 Keynote on Impact and adaptation of agriculture to climate change and climatic variability	11:30	Special Plenary Keynote on Land degradation, desertification	08:30	Keynote Speakers lectures			
		P2.4 Keynote on Supply and demand based greenhouse gas mitigation	12:00	Plenary P4: Feedback from L1 parallel sessions (towards regional science agendas)	09:30	Poster session with Coffee break		Visit 3: <b>Montpellier</b> Research Infrastructures Tour	
	13:00	Onsite lunch			11:00	L3 Sessions continue			
	14:00	Parallel sessions L1: Regional dimensions & Poster session	13:00	Onsite lunch	12:30	Onsite lunch		Visit 3: <b>Montpellier</b> Research Infrastructures Tour	
	18:30				13:30	Plenary P5: Feedback from L2 parallel sessions			
	18:45	L1.1 Africa	14:00	Parallel sessions L2: Climate-smart strategies & Poster session	14:30	Plenary P6: Feedback from L3 parallel sessions		Visit 3: <b>Montpellier</b> Research Infrastructures Tour	
		L1.2 Australasia		L2.1 Developing and evaluating climate-smart practices	14:30	Coffee break			
		L1.3 Latin America		L2.2 Facing climatic variability and extremes	15:30	Plenary P7: Round Table on What are the expectations from End-users and Policy makers towards the Scientific community?		Visit 3: <b>Montpellier</b> Research Infrastructures Tour	
		L1.4 Europe		L2.3 Combining mitigation, adaptation and sustainable intensification	16:00	Plenary P8: Towards a CSA science roadmap From Montpellier to the next CSA conference Formal closing session			
		L1.5 North America		L2.4 Breeding and protecting crops and livestock	17:30			Visit 3: <b>Montpellier</b> Research Infrastructures Tour	
		Keynote Speakers lectures		L2.5 Overcoming barriers: policies and institutional arrangements to support CSA					
	14:00	Keynote Speakers lectures	14:00	Keynote Speakers lectures				Visit 3: <b>Montpellier</b> Research Infrastructures Tour	
	15:00	Poster session with Coffee break	15:00	Poster session with Coffee break					
	16:30	L1 Sessions continue	16:30	L2 Sessions continue				Visit 3: <b>Montpellier</b> Research Infrastructures Tour	
	18:00	Award Ceremony: Louis Malassis International Scientific Prize for Agriculture and Food & Olam Prize for Innovation in Food Security – Cocktail starting at 19:00	18:30	Conference Gala dinner at <b>Château de Pourget</b> (departure from Le Corum )					
		By Prof. Sir Gordon Conway						Visit 3: <b>Montpellier</b> Research Infrastructures Tour	

## Detailed schedule

Sunday 15 March 2015	
16:00–18:30	<b>Registration</b>
18:15–19:45	<p style="text-align: center;"><b>Keynote lecture "We are all in the same boat: food production and food security under threat by climate change"</b></p> <p style="text-align: center;">by <b>Professor Sir Gordon Conway</b>, Director, Agriculture for Impact, Imperial College London</p> <p style="text-align: center;"><b>AUDITORIUM EINSTEIN</b></p>
Monday 16 March 2015	
07:30–09:00	<b>Registration</b>
09:00–10:30	<p><b>Plenary 1: Opening Ceremony – AUDITORIUM PASTEUR</b></p> <p><b>Anne-Marie Descôtes</b>, Director General for Global Affairs, Development and Partnerships, French Ministry of Foreign Affairs and International Development  <b>Damien Alary</b>, President of Région Languedoc-Roussillon (tbc)  <b>Philippe Saurel</b>, President of Montpellier Méditerranée Métropole and Mayor of Montpellier, (tbc)  <b>Mihail Dumitru</b>, The Deputy Director General, DG Agriculture and Rural Development, European Commission  <b>Michel Eddi</b>, President Managing Director of CIRAD  <b>François Houllier</b>, President Managing Director of INRA  <b>Michel Laurent</b>, President of IRD  <b>Bernard Hubert</b>, President of Agropolis International  <b>Ren Wang</b>, Assistant Director-General of the Agriculture and Consumer Protection Department at the FAO (tbc)  <b>Juan Lucas Restrepo Ibiza</b>, Chair of the Global Forum on Agricultural Research (GFAR) and Executive Director of CORPOICA, Colombia  <b>Frank Rijsberman</b>, CEO, CGIAR Consortium, Montpellier, France  <b>Linda Katehi</b>, Chancellor, University of California, Davis  <b>Prof. dr. M.J. Kropff</b>, Vice chairman of the Executive Board of Wageningen UR, Rector Magnificus, Wageningen University  <b>Patrick Caron</b>, Director General for Research and Strategy, CIRAD</p>
10:30–11:00	<b>Coffee Break – Level 0</b>
11:00–13:00	<p><b>Plenary 2: Global Dimensions – AUDITORIUM PASTEUR</b></p> <p style="text-align: center;">Chair: Jean-François Soussana</p> <p><b>Hervé le Treut</b> (IPSL): Climate-Change: from global alert to local studies  <b>Ren Wang</b> (FAO): Climate-Smart agriculture: conceptual framework and brief history (tbc)  <b>Mark Howden</b> (CSIRO): From climate adaptation assessment to action and back again: a food system perspective  <b>Pete Smith</b> (University of Aberdeen): Supply and demand based greenhouse gas mitigation</p>
13:00–14:00	<b>Onsite Lunch Break – Level 3</b>

14:00–18:00	<b>Parallel sessions L1: Regional Dimensions &amp; Poster Session</b>
14:00–15:00	<p><b>Parallel session L.1.1: Africa – ROOM SULLY 1</b></p> <p style="text-align: center;"><b>Chair: James Kinyangi</b></p> <p><i>Keynotes</i>  <b>Maggie Opondo</b> (University of Nairobi): Engendering climate resilient agricultural livelihoods in Africa  <b>Bruno Locatelli</b> (CIRAD-CIFOR): Integrating Ecosystem-based Adaptation and Mitigation in Africa: Policy and Practice</p>
15:00–16:30 16:30–18:00	<p><i>Poster Session &amp; Coffee Break</i>  <i>Oral presentations</i>  <b>Tantely Razafimbelo</b> (Antananarivo University): Climate smart practices impact soil organic carbon storage in Madagascar  <b>Katrien Descheemaeker</b> (Wageningen University and Research): A modelling framework to assess climate change and adaptation impact on heterogeneous crop-livestock farming communities  <b>Henderson Ben</b> (CSIRO): Closing yield gaps to increase food supply and mitigate GHG emissions for African smallholders  <b>Kindie Tesfaye</b> (CIMMYT): Potential for taking climate smart agricultural practices to scale: Examples from Sub-Saharan Africa</p>
14:00–15:00	<p><b>Parallel session L.1.2: Australasia – ROOM SULLY 2</b></p> <p style="text-align: center;"><b>Chair: Frédéric Gay</b></p> <p><i>Keynotes</i>  <b>Pramod Aggarwal</b> (CGIAR, CCAFS): Climate-smart agriculture in South Asia: Opportunities and constraints in scaling out  <b>Imelda Bacudo</b> (GAP-CC): Promotion of Climate Resiliency for Food Security in the Association of Southeast Asian Nations: Regional Policy Making and Funding Opportunities</p>
15:00–16:30 16:30–18:00	<p><i>Poster Session &amp; Coffee Break</i>  <i>Oral presentations</i>  <b>Tu Trinh Quang</b> (RIA): Integrated rice-shrimp as a smart strategy to cope with climate change in the Mekong Delta, Vietnam  <b>Guillaume Lacombe</b> (IWMI): Changing rainfall pattern in Northeast Thailand and implications for cropping systems adaptation  <b>Norman Uphoff</b> (Cornell University): A review of contributions that the System of Rice Intensification (SRI) can make to climate-smart agriculture  <b>Sikka Ak</b> (Indian Council of Agricultural Research): Development of climate resilient villages</p>
14:00–15:00	<p><b>Parallel session L.1.3: Latin America – ROOM SULLY 3</b></p> <p style="text-align: center;"><b>Chair: Mirjam Pulleman</b></p> <p><i>Keynotes</i>  <b>Pauline Aldunce</b> (Universidad de Chile): Are we adapting to climate change? The case of the Chilean agricultural sector  <b>Maureen Arguedas-Marín</b> (CATIE): Economic valuation of mangrove’s ecosystem services in Gulf of Nicoya, Costa Rica</p>
15:00–16:30 16:30–18:00	<p><i>Poster Session &amp; Coffee Break</i>  <i>Oral presentations</i>  <b>Michel Schlaifer</b> (ECLAC): The experience in policy dialogue for agriculture and climate change in LAC countries: an overview  <b>Cecilia Turin</b> (International Potato Center): Implications of losing the complementariness of gender roles on CSA strategies in the Peruvian Altiplano  <b>Milagro Saborio-Rodriguez</b> (CATIE): How do coffee farmers adapt to perceived changes in</p>

	<p>climate? Evidence from Central America  <b>Claudia Bouroncle</b> (CATIE): Practices and enabling conditions for climate-smart agriculture: current status in seven countries in Latin America</p>
<p>14:00–15:00</p> <p>15:00–16:30</p> <p>16:30–18:00</p>	<p><b>Parallel session L.1.4: Europe – ROOM RONDELET</b></p> <p style="text-align: center;"><b>Chair: Jean-François Soussana</b></p> <p><i>Keynotes</i>  <b>Patrik Kolar</b> (European Commission): FACCE-JPI: an European partnering initiative to tackle food security and climate change—one of the greatest societal challenges  <b>Niels Götke</b> (Nordic Joint Committee for Agricultural and Food Research &amp; FACCE JPI)</p> <p><i>Poster Session &amp; Coffee Break</i>  <i>Oral presentations</i>  <b>Stefan Fronzek</b> (Finnish Environment Institute): Wheat yield sensitivity to climate change across a European transect for a large ensemble of crop models  <b>Vera Eory</b> (SRUC): Economic assessment of greenhouse gas mitigation on livestock farms  <b>Natalie Trapp</b> (Universität Hamburg): Agricultural Adaptation to Climate Change in the European Union  <b>R.M. Rees</b> (Scotland’s Rural College): Legume supported cropping systems for Europe (Legume Futures)</p>
<p>14:00–15:00</p> <p>15:00–16:30</p> <p>16:30–18:00</p>	<p><b>Parallel session L.1.5: North America – ROOM BARTHEZ</b></p> <p style="text-align: center;"><b>Chair: Cynthia Rosenzweig</b></p> <p><i>Keynotes</i>  <b>Charles Walthall</b> (USDA ARS): Building Climate Smart, Sustainable, Intensive Agriculture For the 21<sup>st</sup> Century and Beyond  <b>Louise Jackson</b> (UC Davis): Scientific Article Summarizing the 2013 CSA Global Science Conference in North America</p> <p><i>Poster Session &amp; Coffee/Tea Break</i>  <i>Oral presentations</i>  <b>Raj Khosla</b> (Colorado State University): The 4-R nutrient stewardship and its role in climate smart agriculture  <b>Brenda V. Ortiz</b> (Auburn University): From climate variability to climate change: building adaptive capacity among row crop farmers in the Southeastern USA  <b>Samuel Sandoval Solis</b> (University of California, Davis): Climate Smart Agriculture and Water Management in California  <b>Bruno Basso</b> (Michigan State University East Lansing): Dealing with climate and yield variability: the role of precision agricultural technologies and crop models</p>
<p>18:00–19:00</p>	<p style="text-align: center;"><b>Award Ceremony: <i>Louis Malassis International Scientific Prize for Agriculture and Food &amp; Olam Prize for Innovation in Food Security</i> – AUDITORIUM PASTEUR</b></p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div>
<p>19:00–20:30</p>	<p><b>Cocktail – Hall, Level 0</b></p>

<b>Tuesday 17 March</b>	
8:30–9:00	<p><b>Special Plenary Keynote on CSA Science-Policy interface: Bringing findings of CSA science to policy-makers – AUDITORIUM PASTEUR</b></p> <p style="text-align: center;"><b>Chair: Jean-Luc Chotte</b></p> <p><b>Amadou Allahoury</b> (Niger President Office, HLPE): Bringing findings of “CSA science” to policy makers</p>
9:00–11:00	<p><b>Plenary 3: Key Questions for Climate-Smart Agriculture – AUDITORIUM PASTEUR</b></p> <p style="text-align: center;"><b>Chair: Jennie Dey de Pryck</b></p> <p><b>Holger Meinke</b> (University of Tasmania): Adaptation, Resilience and Climate Smart Agriculture – from concepts to action  <b>Mercedes Bustamante</b> (University of Brasilia): Sustainable intensification and mitigation  <b>Pablo Tittone</b> (Wageningen University and Research): Agroecology is climate smart  <b>Sonja Vermeulen</b> (CCAFS) and <b>John Porter</b> (NRI): Climate-smart food systems</p>
11:00–11:30	<b>Coffee Break – Level 3</b>
11:30–12:00	<p><b>Special Plenary Keynote on Land degradation, Desertification – AUDITORIUM PASTEUR</b></p> <p style="text-align: center;"><b>Chair: Jean-Luc Chotte</b></p> <p><b>Bill Payne</b> (University of Nevada): The Tragedy of the Commons Revisited: Land Degradation and Desertification on Public Lands</p>
12:00–13:00	<p><b>Plenary P4 Feedback from L1 parallel sessions – AUDITORIUM PASTEUR</b></p> <p style="text-align: center;"><b>Peter Minang and Jean-Luc Chotte</b></p>
13:00–14:00	<b>Onsite Lunch Break – Level 3</b>
14:00–18:00	<b>Parallel sessions L2: Climate-smart Strategies &amp; <u>Poster Session</u></b>
14:00–15:00	<p><b>Parallel session L2.1: Developing and evaluating climate-smart practices – ROOM SULLY 1</b></p> <p style="text-align: center;"><b>Chair: Munyaradzi Chitakira</b></p> <p><i>Keynotes</i>  <b>Bruce Campbell</b> (CCAFS): Developing and evaluating climate-smart practices and services  <b>Hongmin Dong</b> (Chinese Academy of Agricultural Sciences): Climate-smart agriculture practices and its evaluation (tbc)</p>
15:00–16:30	<i>Poster Session and Coffee Break</i>
16:30–18:00	<p><i>Oral presentations</i>  <b>Byomkesh Talukder</b> (Wilfrid Laurier University): Rain water-based integrated agricultural system: A model for ensuring food security and adaptation in coastal Bangladesh  <b>Hidalgo D. Medina</b> (Commonwealth Scientific and Industrial Research Organization): Additive impacts of climate-smart agriculture practices in mixed crop-livestock systems in Burkina Faso  <b>Ijeoma Emenanjo</b> (The World Bank Group): Developing Indicators for Climate-Smart Agriculture (CSA)  <b>Jan Verhagen</b> (Wageningen UR): Towards metrics to track and assess climate smart agriculture</p>



<p>14:00–15:00</p> <p>15:00–16:30</p> <p>16:30–18:00</p>	<p><b>Parallel session L2.2: Facing climatic variability and extremes – ROOM SULLY 2</b></p> <p style="text-align: center;"><b>Chair: Arona Diedhiou</b></p> <p><i>Keynotes</i>  <b>Robert Zougmore</b> (CCAFS, ICRISAT): Facing climatic variability and extremes  <b>Thierry Lebel</b> (IRD): Rainfall modifications in the context of climate change: the puzzle of the tropical regions</p> <p><i>Poster Session &amp; Coffee Break</i></p> <p><i>Oral presentations</i>  <b>Festo Massawe</b> (University of Nottingham Malaysia Campus): The potential for underutilised crops to improve food security in the face of climate change  <b>David Leclère</b> (IIASA): Changes in climate variability and potential for impacts of droughts on agricultural markets  <b>Jean-Louis Durand</b> (INRA): How precisely do maize crop models simulate the impact of climate change variables on yields and water use?  <b>Anne Mottet</b> (FAO): Modeling livestock production under climate constraint in the African drylands to identify interventions for adaptation</p>
<p>14:00–15:00</p> <p>15:00–16:30</p> <p>16:30–18:00</p>	<p><b>Parallel session L2.3: Combining mitigation, adaptation and sustainable intensification – ROOM SULLY 3</b></p> <p style="text-align: center;"><b>Chair: Louise Jackson</b></p> <p><i>Keynotes</i>  <b>Kenneth Cassman</b> (University of Nebraska–Lincoln): <i>Ex-Ante</i> Evaluation of Climate-Smart Agriculture Options  <b>Lini Wollenberg</b> (University of Vermont, CCAFS): Will sustainable intensification get us to 2 degrees Celsius?</p> <p><i>Poster Session &amp; Coffee/Tea Break</i></p> <p><i>Oral presentations</i>  <b>Monika Zurek</b> (Climate Focus): Climate readiness in smallholder agricultural systems: Lessons learned from REDD+  <b>Ulrich Kleinwechter</b> (IIASA): Assessing low emissions agricultural pathways under alternative climate policy regimes  <b>Laurence Jassogne</b> (IITA): Climate-smart coffee systems in East Africa  <b>Paresh Shirsath</b> (IWMI-New Delhi): Prioritizing Climate-Smart Agricultural Interventions at Multiple Spatial and Temporal Scales</p>
<p>14:00–15:00</p> <p>15:00–16:30</p> <p>16:30–18:00</p>	<p><b>Parallel session L2.4: Breeding and protecting crops and livestock – ROOM RONDELET</b></p> <p style="text-align: center;"><b>Chair: Kenneth Cassman</b></p> <p><i>Keynotes</i>  <b>Jean-Christophe Glaszmann</b> (CIRAD): Plant breeding for climate-smart agriculture  <b>Renaud Lancelot</b> (CIRAD): What impact of climate change on animal health?</p> <p><i>Poster Session &amp; Coffee/Tea Break</i></p> <p><i>Oral presentations</i>  <b>Jos van Bortel</b> (Arcadia Biosciences): Reducing nitrogen run-off and emission, and increasing rice productivity in African rice production environment  <b>Sunil Archak</b> (ICAR-National Bureau of Plant Genetic Resources): Utilization of ex situ collections and climate analogues for enhancing adaptive capacity to climate change  <b>Denis Laloë</b> (Inra/AgroParisTech): Adaptation of Mediterranean bovine livestock to climate constraints. Genetic diversity and breeding systems  <b>François Tardieu</b> (INRA, LEPSE): Towards genotypes adapted to climate change via combination of phenotyping and modelling: The projects DROPS and Phenome</p>

14:00–15:00	<p><b>Parallel session L2.5: Overcoming barriers: policies and institutional arrangements to support CSA – ROOM BARTHEZ</b></p> <p style="text-align: center;"><b>Chair: Allison M. Chatrchyan</b></p> <p><i>Keynotes</i>  <b>Leslie Lipper</b> (FAO): Policies and institutional arrangements to support CSA  <b>Laurent Sédого</b> (WASCAL): Policies and institutions conducive for enhancing the transfer to CSA in Africa</p>
15:00–16:30	<i>Poster Session &amp; Coffee Break</i>
16:30–18:00	<p><i>Oral presentations</i>  <b>Myriam Layaoen</b> (Philippin Rice Research Institute): Schools as climate smart agriculture information hubs  <b>Harry Clark</b> (NZAGRC): Advancing CSA solutions through global collaboration: the Global Research Alliance on Agricultural Greenhouse Gases  <b>Adriana Paolantonio</b> (FAO): Using whole-farm models for policy analysis of climate smart agriculture  <b>Songporne Tongruksawattana</b> (University of Goettingen): Climate shocks and risk attitudes among female and male maize farmers in Kenya</p>
18:30-Till late	<b>Gala dinner at the <i>Château de Pouget</i></b>

### Wednesday 18 March 2015

8:30–12:30	<b>Parallel sessions L3: Towards Climate-smart Solutions &amp; <u>Poster session</u></b>
08:30–09:30	<p><b>Parallel session L3.1: Climate adaptation and mitigation services – ROOM SULLY 1</b></p> <p style="text-align: center;"><b>Chair: Eddy Moors</b></p> <p><i>Keynotes</i>  <b>Cynthia Rosenzweig</b> (NASA's Goddard Institute for Space Studies, AgMIP): AgMIP Contributions to Climate-Smart Agriculture  <b>Eddy Moors</b> (Wageningen University and Research): Adaptation and mitigation services for climate smart agriculture</p>
09:30–11:00	<i>Poster Session &amp; Coffee Break</i>
11:00–12:30	<p><i>Oral presentations</i>  <b>Leila Akhmiss and Abdellatif Rami</b> (IAV Hassan II, CHA / AGROTECH): Public-Private Partnership For Climate-Smart Irrigation Initiative in Morocco: The experience of Souss Massa Region  <b>Vinay Sehgal</b> (Indian Agricultural Research Institute, New Delhi): DSS for monitoring agro-meteorological and crop conditions in India using remote sensing for agro-advisory services  <b>Jacob van Etten</b> (Bioversity International): Can citizen science accelerate climate adaptation by poor farming households?  <b>Fiona Ehrhardt</b> (INRA): An international intercomparison &amp; benchmarking of crop and pasture models simulating GHG emissions and C sequestration</p>
08:30–09:30	<p><b>Parallel session L3.2: Climate-smart cropping systems – ROOM SULLY 2</b></p> <p style="text-align: center;"><b>Chair: Pramod Aggarwal</b></p> <p><i>Keynotes</i>  <b>Michael Obersteiner</b> (IIASA): Climate-Smart Agriculture – adaptation or transformation  <b>Philippe Debaeke</b> (INRA): Designing and assessing climate-smart cropping systems in temperate and tropical agriculture</p>
09:30–11:00	<i>Poster Session &amp; Coffee Break</i>
1:00–12:30	<p><i>Oral presentations</i>  <b>Jean-Jacques Drevon</b> (INRA): Phosphorus use efficiency in symbiotic N<sub>2</sub> fixation for coupling biogeochemical cycles in agrosystems with legumes</p>

	<p><b>Eric Penot</b> (CIRAD): Conservation agriculture and agro-ecology practices to mitigate climatic variations in medium altitude in Madagascar</p> <p><b>Hoyoung Kwon</b> (International Food Policy Research Institute): Agronomic and environmental benefits of climate-smart farming practices modeled for rice-based system in India</p> <p><b>Philippe Vaast</b> (CIRAD, ICRAF): Smallholders' coffee and cocoa agroforestry systems, examples of climate-smart agriculture</p>
<p>08:30–09:30</p> <p>09:30–11:00</p> <p>11:00–12:30</p>	<p><b>Parallel session L3.3: Climate-smart livestock – ROOM SULLY 3</b></p> <p style="text-align: center;"><b>Chair: Mark Howden</b></p> <p><i>Keynotes</i></p> <p><b>Mario Herrero</b> (CSIRO): Climate-smart livestock systems: lessons and future research</p> <p><b>Jean-François Soussana</b> (INRA): Livestock and climate change: combining mitigation and adaptation options and projecting sustainable futures</p> <p><i>Poster Session &amp; Coffee Break</i></p> <p><i>Oral presentations</i></p> <p><b>Petr Havlik</b> (IIASA): Differential climate change impacts on crop and grasslands and the relative livestock production systems competitiveness</p> <p><b>Pierre Gerber</b> (FAO): Efficiency gains for enteric methane mitigation and productivity: contribution to CSA and investment opportunities</p> <p><b>Anne Collin</b> (INRA): Variations in egg incubation temperature enable chicken acclimation through long-lasting changes in energy metabolism</p> <p><b>Juan Pablo Inamagua-Uyaguar</b> (CATIE): Impact of feeding strategies on GHG emissions, income over feed cost and economic efficiency on milk production</p>
<p>08:30–09:30</p> <p>09:30–11:00</p> <p>11:00–12:30</p>	<p><b>Parallel session L3.4: Climate-smart landscapes, watersheds and territories – ROOM RONDELET</b></p> <p style="text-align: center;"><b>Chair: Bruno Rapidel</b></p> <p><i>Keynotes</i></p> <p><b>John Beer</b> (CATIE): Climate Smart Territories; what are they and how do we evaluate progress towards this goal?</p> <p><b>Úrsula Oswald Spring</b> (National Autonomous University of Mexico, UNU-EHS): Towards climate-smart landscapes and watersheds</p> <p><i>Poster Session &amp; Coffee Break</i></p> <p><i>Oral presentations</i></p> <p><b>Jean-Marc Blazy</b> (INRA): Prototyping climate-smart agricultural landscapes: a generic modelling framework and application in a tropical island</p> <p><b>Bruno Locatelli</b> (CIRAD-CIFOR): Managing trade-offs in climate-smart landscapes: A global analysis at multiple levels</p> <p><b>Peter A Minang</b> (ICRAF): Climate-Smart Landscapes: Multifunctionality in Practice</p> <p><b>Adriano Venturieri</b> (Embrapa Amazonia Oriental): A platform for landscape ecoefficiency monitoring and jurisdictional certification in the amazon region</p>

<p>08:30–09:30</p> <p>09:30–11:00 11:00–12:30</p>	<p><b>Parallel session L3.5: Investment opportunities and funding instruments – ROOM BARTHEZ</b></p> <p style="text-align: center;"><b>Chair: Leslie Lipper</b></p> <p><i>Keynotes</i>  <b>Merylyn Hedger</b> (ODI): Delivering Climate Smart Agriculture: prospects from climate finance  <b>Tim Searchinger</b> (Princeton University, WRI): "What Can Fund Climate Smart Agriculture?"</p> <p><i>Poster Session &amp; Coffee Break</i>  <i>Oral presentations</i>  <b>Ada Ignaciuk</b> (OECD): How to deal with trade-offs? - A manual for policymakers  <b>Ana Iglesias</b> (<i>Universidad Politécnica de Madrid</i>): Exploring strategic management of agricultural systems to link mitigation and adaptation to climate change  <b>Armine Avagyan</b> (FAO): Nationally appropriate mitigation actions (NAMAs) for upscaling climate-smart agriculture practices  <b>Helen Greatrex</b> (IRI): A business approach to poverty reduction: weather index based insurance and climate smart agriculture</p>
<p>12:30–13:30</p>	<p><b>Onsite Lunch Break – Level 3</b></p>
<p>13:30–14:30</p>	<p><b>Plenary P5: Feedback from L2 parallel sessions – AUDITORIUM PASTEUR</b></p> <p style="text-align: center;">Louise Jackson and Emmanuel Torquebiau</p>
<p>14:30–15:30</p>	<p><b>Plenary P6: Feedback from L3 parallel sessions – AUDITORIUM PASTEUR</b></p> <p style="text-align: center;">Leslie Lipper and Jean-François Soussana</p>
<p>15:30–16:00</p>	<p><b>Coffee Break – Level 3</b></p>
<p>16:00–17:30</p>	<p><b>Plenary P7 Round Table: What are the expectations from End-users and Policy-makers? – AUDITORIUM PASTEUR</b></p> <p style="text-align: center;"><b>Chair: Alain Vidal</b></p> <p><b>Juan Lucas Restrepo Ibiza</b> (Chair, GFAR and Executive Director, CORPOICA)  <b>Patrice Burger</b>, Executive Director of CARI (On behalf of the French Consortium Coordination Sud Commissions "Climate and Development" and "Food and Agriculture")  <b>Thierry Blandinières</b>, Director General, INVIVO, First French Agricultural Cooperation Group  <b>Ishmael Sunga</b>, CEO and Board secretary, SACAU  <b>Leslie Lipper</b>, Senior Environmental Economist, Agriculture and Development Economics Division, FAO  <b>Victor Vilallobos</b>, Director General, IICA (<i>Instituto Interamericano de Cooperación para la Agricultura</i>) (tbc)</p>
<p>17:30–18:30</p>	<p><b>Plenary P8: Towards a CSA science roadmap From Montpellier to the next CSA conference Formal Closing session – AUDITORIUM PASTEUR</b></p> <p><b>Laurence Tubiana</b>, Ambassador and Special Representative of the French Government for COP21  <b>Martin Bwalya</b>, Head of Agriculture and Food Security Directorate, NEPAD &amp; Co-Chair of the Global Alliance on Climate-smart Agriculture (tbc)  <b>Patrick Caron</b>, CIRAD, Director General for Research and Strategy  <b>Jean-Luc Chotte</b>, IRD, Director of ECO&amp;SOLS Research Unit Officer  <b>Jean-François Soussana</b>, INRA, Scientific Director for Environment</p>

<b>Thursday 19 March 2015</b>	
Day-long (lunch included)	<p><b>Post-Conference Field Trips and Research Infrastructures Tour</b></p> <p><b>Visit 1:</b> Climate change adaptation in Viticulture and Enology at an experimental Wine Farm  <b>Visit 2:</b> Agroforestry and climate change in a Mediterranean setting  <b>Visit 3:</b> Montpellier’s Research Infrastructures Tour</p>
20:00–22:00	<p><b>Public Conference on CSA (in French)</b>  <b>In town at DIAGONAL CAPITOL movie theatre</b>                      5 Rue de Verdun, 34000 Montpellier                      (Tramway station: <i>Comédie</i>)</p> <p><i>« Changement climatique et agriculture : quelles solutions pour l'avenir ? »</i></p> <p><b>Speakers:</b>  <b>Jean-Marc Touzard</b>, <i>Directeur de recherche à l'Inra, Montpellier</i>  <b>Jean-François Soussana</b>, <i>Directeur scientifique Environnement à l'Inra, Paris et membre du GIEC</i>  <b>Yacine Badiane NDour</b>, <i>Directrice du Laboratoire national de recherches sur les productions végétales, Isra-Institut sénégalais de recherche agricole, Dakar, Sénégal</i></p>

## Side events

### Side-events in Montpellier

#### *Annual workshop of the Animal Health & Greenhouse Gas Emissions Intensity Network*

Date: **Sunday, 15 March 2015** – Full day event

Expected attendance: 20

Venue: **Crowne Plaza Montpellier Corum Hotel**

Contact person: Alice Willett at

[animalhealthnetwork@adas.co.uk](mailto:animalhealthnetwork@adas.co.uk)

Website: [www.globalresearchalliance.org/](http://www.globalresearchalliance.org/)

The Animal health and Greenhouse Gas (GHG) Emissions Intensity Network of the Global Research Alliance on Agricultural Greenhouse Gases aims to bring together researchers from around the world to investigate links and synergies between efforts to reduce animal disease and possible GHG mitigation through disease control.

The second annual Network workshop will be held on Sunday 15th March 2015 (full day event) in the margins of Climate-Smart Agriculture 2015 Global Science Conference at Le Corum, Montpellier, France. The workshop will bring together relevant researchers (e.g. animal scientists, veterinary scientists, epidemiologists, economists, GHG researchers) and research funders to develop international links, share information on current research and discuss opportunities to build upon this research, and identify data requirements and expertise needed to progress work on animal health and GHG's.

For further information on the Network, please see the report of the first workshop at

<http://www.globalresearchalliance.org/community/alliance-member-countries/member-country-page-united-kingdom/uk-activities-livestock-research-group/>

#### *CSA Alliance Knowledge action group (Upon invitation)*

Date: **Sunday, 15 March 2015**

Expected attendance: 100

Venue: **Agropolis International**

Contact person: [Federica.Matteoli@fao.org](mailto:Federica.Matteoli@fao.org)

For registration:

<https://www.surveymonkey.com/r/KZW92X7>

Website: <http://www.climatesmartagriculture.org/>

The Knowledge Action Group (KAG) of the ACSA co-led by the FAO and CGIAR/CCAFS is organizing this workshop in order to secure inputs and organize the

work on research priorities for CSA and partnerships to make these priorities possible. The activities identified at the workshop will form inputs into the development of the KAG's action plan.

#### *Global Research Alliance on Greenhouse Gases (GRA) (Upon invitation)*

Date: **Sunday, 15 March 2015**

Expected attendance: 30

Venue: **Le Corum (Room tbc)**

Contact person : [jan.verhagen@wur.nl](mailto:jan.verhagen@wur.nl)

Website: [www.globalresearchalliance.org/](http://www.globalresearchalliance.org/)

The Global Research Alliance on Agricultural Greenhouse Gases brings countries together to find ways to grow more food without growing greenhouse gas emissions.

#### *FACCE JPI Governing Board (Upon invitation)*

Date: **Tuesday, 17 March 2015**

Expected attendance: 35

Venue: **Le Corum (Room Louisville)**

Contact person: [Heather.Mckhann@paris.inra.fr](mailto:Heather.Mckhann@paris.inra.fr)

Website: [www.faccejpi.com/About-Us](http://www.faccejpi.com/About-Us)

FACCE JPI is the Joint Research Programming Initiative on Agriculture, Food Security and Climate Change

#### *CSA and Agroecology working group (Upon invitation)*

Date: **Tuesday 17th March 2015, lunch time**

Expected attendance: 20

Venue: **Le Corum (Room Rondelet)**

Contact person: [Florent.maraux@cirad.fr](mailto:Florent.maraux@cirad.fr) and

[emmanuel.torquebiau@cirad.fr](mailto:emmanuel.torquebiau@cirad.fr)

Meeting of the Technical Advisory Committee of the Project "Knowledge and technical services in the development of "Climate Smart Agriculture" and "Agroecology" approaches", co-organized by CIRAD and FAO.

#### *Global Alliance on CSA (GACSA): presentation (Open to all)*

Date: **Tuesday, 17 March 2015** – lunch time

Expected attendance: To be confirmed

Venue: **Le Corum (Room Barthez)**

Contact person: [Leslie.lipper@fao.org](mailto:Leslie.lipper@fao.org) and

[patrick.caron@cirad.fr](mailto:patrick.caron@cirad.fr)

Website: <http://www.fao.org/climate-smart-agriculture/85725/en/>

GACSA seeks to improve people's food security and nutrition in the face of climate change. Details of the meeting to be confirmed..

***The Regional Multidisciplinary Platform "Rural Communities, Environment and Climate in West Africa" – PPR SREC (Open to all)***

Date: **Wednesday, 18 March 2015** – lunch time  
Expected attendance: 50/60  
Venue: **Le Corum (Room Barthez)**  
Contact person : [jean-luc.chotte@ird.fr](mailto:jean-luc.chotte@ird.fr)  
Website: <http://www.ppr-srec.ird.fr/>

Presentation of PPR SREC, a cross-disciplinary, regionally integrated multi-stakeholders platform for innovative approaches, education and training in West Africa, in the face of climate change and food security.

***AGRINATURA: Annual Meetings and General Assembly 2015 focusing on "Building capacities to address climate change"***

***Upon invitation***

Date: **Thursday, 19 March and Friday, 20 March 2015**  
Expected attendance: 50  
Venue: **IRC/Montpellier SupAgro and Agropolis International**  
Contact person: [pilot@supagro.inra.fr](mailto:pilot@supagro.inra.fr)  
Website: <http://www.agrinatura.eu/>  
See also: <http://www.agropolis.org/news/2015-agrinatura-climate-change-side-event-montpellier.php>

General Assembly and workshop of AGRINATURA, The European Alliance on Agricultural Knowledge for Development.

***Final meeting of the AnimalChange European project***

The large collaborative project **AnimalChange** funded from the European Union's Seventh Framework Programme for research, technological development and demonstration, will hold its final meeting at Agropolis International to present relevant project results.

Date: **Thursday 19 March, 14:00–18:00** (open to all upon **registration** & **Friday, 20 March 2015, 9:00–14:00** (restricted to members of the AnimalChange consortium)

Expected attendance: 80-100  
Venue: **Agropolis International**  
Contact person: [irina.carpusca@paris.inra.fr](mailto:irina.carpusca@paris.inra.fr)  
Website: <http://www.animalchange.eu/>

**Side-event in Paris**

***Gender Seminar and Panel (Open to all)***

"Closing the gender gap in farming under climate change: New knowledge for renewed action"

Date: **Thursday, 19th March 2015, 9.00am – 2.30pm**  
Expected attendance: 100-150  
Venue: **CAP15, 13 Quai De Grenelle, 75015, Paris**  
Website and registrations: <http://ccafs.cgiar.org/closing-gender-gap>

## PLENARY SESSIONS

### PLENARY 1: OPENING CEREMONY

Cf. page 13

### PLENARY 2: GLOBAL DIMENSIONS

Monday, 16 March 2015

11:00–13:00

#### AUDITORIUM PASTEUR

12:30 PLENARY KEYNOTE P2.4: SUPPLY AND DEMAND BASED GREENHOUSE GAS MITIGATION

Supply and demand based greenhouse gas mitigation

Smith Pete

*Institute of Biological Sciences & Scottish Food Security Alliance-Crops, University of Aberdeen, Aberdeen, AB24 3UU, United Kingdom*

11:00 PLENARY KEYNOTE P2.1: CLIMATE CHANGE, RISKS, EXTREMES AND UNCERTAINTIES

Climate Change: from global alert to local studies

Le Treut Hervé

*Laboratoire de Météorologie Dynamique/ Institut Pierre-Simon Laplace, Université Pierre et Marie Curie, Paris, France*

11:30 PLENARY KEYNOTE P2.2: CLIMATE-SMART AGRICULTURE: CONCEPTUAL FRAMEWORK AND BRIEF HISTORY

Climate-Smart agriculture: conceptual framework and brief history

Wang Ren

*Assistant Director-General, Agriculture and Consumer Protection Department, FAO*

12:00 PLENARY KEYNOTE P2.3: IMPACTS AND ADAPTATION OF AGRICULTURE TO CLIMATE CHANGE AND CLIMATIC VARIABILITY

From climate adaptation assessment to action and back again: a food system perspective

Howden Mark, Crimp Steven, Lim-Camacho Lilly, Dowd Anne-Maree

*CSIRO Agriculture, GPO Box 1700, Canberra, ACT 2601, Australia*



**SPECIAL PLENARY  
KEYNOTE ON CSA  
SCIENCE-POLICY  
INTERFACE: Bringing  
findings of CSA science to  
policy-makers**

Tuesday, 17 March 2015

8:30–9:00

**AUDITORIUM PASTEUR**

**Bringing findings of “CSA science” to policy makers**

Allahoury Amadou

*High Level Panel of Experts on Food Security and Nutrition (HLPE), Steering Committee Member  
High Commissioner for Food Security to the  
President of the Republic of Niger*

**PLENARY 3: KEY  
QUESTIONS FOR CLIMATE-  
SMART AGRICULTURE**

Tuesday, 17 March 2015

9:00–11:00

**AUDITORIUM PASTEUR**

**9:00 PLENARY KEYNOTE P3.1:  
RESILIENCE AND ADAPTATION**

**Adaptation, Resilience and Climate Smart  
Agriculture – from concepts to action**

Meinke Holger<sup>1,2</sup>, Baethgen Walter<sup>3</sup>, Meza  
Francisco<sup>4</sup>, Campbell Bruce<sup>5</sup>

<sup>1</sup>Tasmanian Institute of Agriculture, Schools of Land  
and Food, University of Tasmania, Hobart, TAS 7001,  
Australia

<sup>2</sup>Centre for Crop Systems Analysis, Wageningen  
University, the Netherlands

<sup>3</sup>IRI, Columbia University, New York, USA

<sup>4</sup>Pontificia Universidad Católica de Chile, Santiago,  
Chile

<sup>5</sup>CGIAR Research Program on Climate Change,  
Agriculture, and Food Security (CCAFS), c/o  
University of Copenhagen, Denmark

**9:30 PLENARY KEYNOTE P3.2:  
SUSTAINABLE INTENSIFICATION AND  
MITIGATION**

**Sustainable intensification and mitigation**

Bustamante Mercedes M.C.  
University of Brasilia, Brazil

**10:00 PLENARY KEYNOTE P3.3:  
AGROECOLOGY, SOILS AND ECOSYSTEM  
ADAPTATION**

**Agroecology is climate smart**

Pablo Tittonell<sup>1,2</sup>

<sup>1</sup>*Farming Systems Ecology, Wageningen University, the Netherlands*

<sup>2</sup>*Centre de coopération Internationale en Recherche Agronomique pour le Développement (CIRAD), France*

**10:30 PLENARY KEYNOTE P3.4: FOOD SECURITY AND FOOD SYSTEMS**

**Climate-smart food systems**

Vermeulen Sonja J., Porter John R.  
*Department of Plant and Environmental Sciences, University of Copenhagen, Thorvaldsensvej 40, 1871 Frederiksberg C., Denmark*

**SPECIAL PLENARY KEYNOTE ON LAND DEGRADATION, DESERTIFICATION**

**Tuesday, 17 March 2015**

**11:30–12:00**

**AUDITORIUM PASTEUR**

**The tragedy of the commons revisited: land degradation and desertification on public lands**

Payne William A.  
*University of Nevada, USA*

**PLENARY P4: FEEDBACK FROM L1 PARALLEL SESSIONS (towards regional science agendas).**

**Cf. page 16**

**Tuesday, 17 March 2015**

**12:00–13:00**

**AUDITORIUM PASTEUR**

**PLENARY P5: FEEDBACK FROM L2 PARALLEL SESSIONS**

**Cf page 20**

**Wednesday, 18 March 2015**

**13:30–14:30**

**AUDITORIUM PASTEUR**

**PLENARY P6: FEEDBACK FROM L3 PARALLEL SESSIONS**

**Cf. page 20**

**Wednesday, 18 March 2015**

**14:30–15:30**

**AUDITORIUM PASTEUR**

**PLENARY P7: ROUND  
TABLE on What are the  
expectations from End-users  
and Policy makers towards  
the Scientific community?  
Cf. page 20**

Wednesday, 18 March 2015

16:00–17:30

**AUDITORIUM PASTEUR**

**PLENARY P8: TOWARDS A  
CSA SCIENCE ROADMAP  
from Montpellier to the next  
CSA conference Formal  
closing session.  
Cf. page 20**

Wednesday, 18 March 2015

17:30–18:30

**AUDITORIUM PASTEUR**

## PARALLEL SESSION L1 REGIONAL DIMENSIONS

Monday, 16 March 2015

14:00–18:00

### ORAL PRESENTATIONS

#### PARALLEL SESSION L1.1 AFRICA

#### ROOM SULLY 1

#### KEYNOTE PRESENTATIONS

**14:00 Engendering climate resilient agricultural livelihoods in Africa**

Opondo Maggie<sup>1</sup>, Nyasimi Mary<sup>2</sup>

<sup>1</sup>*Institute for Climate Change & Adaptation, University of Nairobi, Kenya*

<sup>2</sup>*International Livestock Research Institute, Nairobi, Kenya*

**14:30 The imperative for ecosystem based adaptation approaches for improved food security and climate resilience in Africa: implications for policy**

Munang Richard

*Africa Regional Climate Change Programme Coordinator, Regional Office for Africa (ROA) - United Nations Environment Programme (UNEP)*

### CONTRIBUTED ORAL PRESENTATIONS

**16:30 Climate smart practices impact soil organic carbon storage in Madagascar**

Razafimbelo Tantely<sup>1</sup>, Razakamanarivo Herintsitohaina<sup>1</sup>, Rafolisy Tovonarivo<sup>1</sup>, Rakotovao Narindra<sup>1</sup>, Saneho Tiana<sup>1</sup>, Andriamananjara Andry<sup>1</sup>, Rakotosamimanana Stéphan<sup>2</sup>, Deffontaines Sylvain<sup>2</sup>, Virginie Falinirina<sup>1</sup>, Laetitia Bernard<sup>3</sup>, Dominique Masse<sup>3</sup>, Albrecht Alain<sup>3</sup>

<sup>1</sup>*Laboratoire des Radioisotopes, Université d'Antananarivo, BP 3383, Antananarivo, Madagascar*

<sup>2</sup>*Agrisud International, Lot VL32M Androntra, 101 Antananarivo, Madagascar*

<sup>3</sup>*Institut de Recherche pour le Développement, UMR Eco&Sols, 34060 Montpellier, France*

**16:45 A modelling framework to assess climate change and adaptation impact on heterogeneous crop-livestock farming communities**

Descheemaeker Katrien<sup>1</sup>, Masikati Patricia<sup>2</sup>, Homann-Kee Tui Sabine<sup>3</sup>, Chibwana Gama Arthur<sup>4</sup>, Crespo Olivier<sup>5</sup>, Claessens Lieven<sup>6</sup>, Walker Sue<sup>7</sup>

<sup>1</sup>*Plant Production Systems, Wageningen University, PO Box 430, 6700 AK Wageningen, The Netherlands*

<sup>2</sup>*World Agroforestry Centre (ICRAF), Lusaka, Zambia*

<sup>3</sup>*International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), P O Box 776, Matopos, Bulawayo, Zimbabwe*

<sup>4</sup>*Lilongwe University of Agriculture and Natural Resources, P.O. Box 21,9 Lilongwe, Malawi*

<sup>5</sup>*Climate System Analysis Group, Environmental and Geographical Science Dept., University of Cape Town, Rondebosch, South Africa*

<sup>6</sup>*International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), P.O. Box 39063, 00623 Nairobi, Kenya*

<sup>7</sup>*Crops For the Future Research Centre, Semenyih, Selangor Darul Ehsan, Malaysia*

**17:00 Closing yield gaps to increase food supply and mitigate GHG emissions for African smallholders**

Henderson Ben<sup>1</sup>, van Wijk Mark<sup>2</sup>, Rigolot Cyrille<sup>1</sup>, Silvestri Silvia<sup>2</sup>, Douxchamps Sabine<sup>2</sup>, Herrero Mario<sup>1</sup>

<sup>1</sup>*CSIRO, 306 Carmody Rd, St Lucia, 4067, Australia*

<sup>2</sup>*ILRI, Nairobi 00100, Kenya*

**17:15 Potential for taking climate smart agricultural practices to scale: examples from Sub-Saharan Africa**

Tesfaye Kindie<sup>1</sup>, Cairns E. Jill<sup>2</sup>, Misiko Michael<sup>1</sup>, Stirling Clare<sup>3</sup>, Abate Tsedeke<sup>4</sup>, Prasanna B.M.<sup>4</sup>, Mekuria Mulugeta<sup>4</sup>

<sup>1</sup>International Maize and Wheat Improvement Center (CIMMYT), Addis Ababa, Ethiopia

<sup>2</sup>CIMMYT, Harare, Zimbabwe

<sup>3</sup>CIMMYT, London, United Kingdom

<sup>4</sup>CIMMYT, Nairobi, Kenya

<sup>3</sup>Research Institute for Aquaculture No.2 (RIA2), No. 116 Nguyen Dinh Chieu, District 1, Ho Chi Minh City, Viet Nam

**16:45 Changing rainfall pattern in Northeast Thailand and implications for cropping systems adaptation**

Lacombe Guillaume<sup>1</sup>, Trébuil Guy<sup>2</sup>

<sup>1</sup>International Water Management Institute (IWMI), Southeast Asia Regional Office, PO Box 4199, Vientiane, Lao PDR

<sup>2</sup>Centre de coopération Internationale en Recherche Agronomique pour de Développement (CIRAD), UMR Innovation, 34398 Montpellier Cedex 5, France

**PARALLEL SESSION L1.2  
AUSTRALASIA**

**ROOM SULLY 2**

**KEYNOTE PRESENTATIONS**

**14:00 Climate-smart agriculture in South Asia: opportunities and constraints in scaling out**

Aggarwal Pramod

CGIAR Research Program on Climate Change, Agriculture and Food Security

International Water Management Institute, New Delhi-110012, India

**14:30 Promotion of climate resiliency for food security in the association of Southeast Asian nations: regional policy making and funding opportunities**

Bacudo Imelda

ASEAN-German Programme on Response to Climate Change, GAPCC

GIZ Jakarta

**CONTRIBUTED ORAL PRESENTATIONS**

**16:30 Integrated rice-shrimp as a smart strategy to cope with climate change in the Mekong Delta, Vietnam**

Trinh Q. Tu<sup>1</sup>, Tran V. Nhung<sup>2</sup>, Phan T. Lam<sup>3</sup>

<sup>1</sup>Research Institute for Aquaculture No.1 (RIA1), Dinh Bang, Tu Son, Bac Ninh, Viet Nam

<sup>2</sup>WorldFish Center (WFC), Jalan Batu Maung, Batu Maung, 11960 Bayan Lepas, Penang, Malaysia

**17:00 A review of contributions that the System of Rice Intensification (SRI) can make to climate-smart agriculture**

Uphoff Norman

SRI-Rice, Cornell University, Ithaca, NY 14853, USA

**17:15 Development of climate resilient villages**

Sikka A.K.<sup>1</sup>, Prasad Y.G.<sup>2</sup>, Srinivasarao C.H.<sup>2</sup>

<sup>1</sup>Indian council of agricultural research, New Delhi 110 012, India

<sup>2</sup>ICAR-central research institute for dryland agriculture, Santoshnagar, Hyderabad 500059, India

**PARALLEL SESSION L1.3  
LATIN AMERICA**

**ROOM SULLY 3**

**KEYNOTE PRESENTATIONS**

**14:00 Are we adapting to climate change? The case of the Chilean agricultural sector**

Aldunce Paulina, Lillo G.

Universidad de Chile, Chile

**14:30 Economic valuation of mangrove's ecosystem services in Gulf of Nicoya, Costa Rica**

Arguedas-Marín Maureen, Cifuentes Miguel, Mercado Leida, Bouroncle Claudia

Centro Agronómico Tropical de Investigación y Enseñanza (CATIE), 7170 CATIE, Turrialba, 30501 Costa Rica

## CONTRIBUTED ORAL PRESENTATIONS

**16:30** The experience in policy dialogue for agriculture and climate change in LAC countries: an overview

Schlaifer Michel<sup>1</sup>, Rodriguez Adrián<sup>2</sup>, Meza Laura<sup>3</sup>

<sup>1</sup>French Embassy – ECLAC, Santiago, Chile

<sup>2</sup>ECLAC, Agricultural Development Unit, Santiago, Chile

<sup>3</sup>FAO, Santiago, Chile

**16:45** Implications of losing the complementariness of gender roles on CSA strategies in the Peruvian Altiplano

Turin Cecilia<sup>1,2</sup>, Valdivia Roberto<sup>1</sup>, Quiroz Roberto<sup>1,2</sup>, Mares Victor<sup>1,2</sup>

<sup>1</sup>International Potato Center (CIP), Global Program on Crop Systems Intensification and Climate Change (CSI-CC), Lima, Peru

<sup>2</sup>CGIAR Research Program on Climate Change, Agriculture and Food Security (CRP CCAFS)

**17:00** How do coffee farmers adapt to perceived changes in climate? Evidence from Central America

Saborio-Rodriguez Milagro<sup>1,2</sup>, Alpizar Francisco<sup>1</sup>, Harvey Celia<sup>3</sup>, Martínez Ruth M.<sup>3</sup>, Vignola Raffaele<sup>1</sup>

<sup>1</sup>CATIE, Apdo 7170, Turrialba, Costa Rica

<sup>2</sup>University of Costa Rica, 11501, San Pedro de Montes de Oca, Costa Rica

<sup>3</sup>Conservation International, Arlington, VA 22202, USA

**17:15** Practices and enabling conditions for climate-smart agriculture: current status in seven countries in Latin America

Bouroncle Claudia<sup>1</sup>, Corner-Dolloff Caitlin<sup>2</sup>, Halliday Andrew<sup>3</sup>, Nowak Andreea<sup>2</sup>, Zavariz Beatriz<sup>2</sup>, Argote Karolina<sup>2</sup>, Baca Maria<sup>4</sup>, Fallot Abigail<sup>1,5</sup>, Le Coq Jean-Francois<sup>5</sup>

<sup>1</sup>CATIE-Climate Change and Watershed Program; 30501 Turrialba, Costa Rica

<sup>2</sup>CIAT-DAPA, Cali, Colombia

<sup>3</sup>CATIE, consultant

<sup>4</sup>CIAT-DATA, consultant

<sup>5</sup>CIRAD UMR ART-DEV, 34000 Montpellier, France

## PARALLEL SESSION L1.4 EUROPE

### ROOM RONDELET

## KEYNOTE PRESENTATIONS

**14:00** EU-funded research & innovation activities in support to Climate Smart Agriculture

Kolar Patrik

Head of Unit "Agri-food Chain", DG Research and Innovation, European Commission, Pl. Rogier 16, BE-1049 Brussels, Belgium

**14:30** FACCE-JPI: a European partnering initiative to tackle food security and climate change – one of the greatest societal challenges

Gøtke Niels

Chair of the FACCE-JPI Governing Board

## CONTRIBUTED ORAL PRESENTATIONS

**16:30** Wheat yield sensitivity to climate change across a European transect for a large ensemble of crop models

Pirttioja Nina<sup>1</sup>, Carter Timothy R.<sup>1</sup>, Fronzek Stefan<sup>1</sup>, Bindi Marco<sup>2</sup>, Hoffmann Holger<sup>3</sup>, Palosuo Taru<sup>4</sup>, Ruiz-Ramos Margarita<sup>5</sup>, Tao Fulu<sup>4</sup>, Trnka Miroslav<sup>6,7</sup>, Acutis Marco<sup>8</sup>, Asseng Senthold<sup>9</sup>, Baranowski Piotr<sup>10</sup>, Basso Bruno<sup>11</sup>, Bodin Per<sup>12</sup>, Buis Samuel<sup>13</sup>, Cammarano Davide<sup>14</sup>, Deligios Paola<sup>15</sup>, Destain Marie-France<sup>16</sup>, Dumont Benjamin<sup>16</sup>, Ewert Frank<sup>3</sup>, Ferrise Roberto<sup>2</sup>, François Louis<sup>16</sup>, Gaiser Thomas<sup>3</sup>, Hlavinka Petr<sup>6,7</sup>, Jacquemin Ingrid<sup>16</sup>, Kersebaum Kurt Christian<sup>17</sup>, Kollas Chris<sup>17</sup>, Krzyszczak Jaromir<sup>10</sup>, Lorite Ignacio J.<sup>18</sup>, Minet Julien<sup>16</sup>, Minguez M. Ines<sup>5</sup>, Montesino Manuel<sup>19</sup>, Moriondo Marco<sup>20</sup>, Müller Christoph<sup>21</sup>, Nendel Claas<sup>17</sup>, Öztürk Isik<sup>22</sup>, Perego Alessia<sup>8</sup>, Rodríguez Alfredo<sup>5</sup>, Ruane Alex C.<sup>23,24</sup>, Ruget Françoise<sup>13</sup>, Sanna Mattia<sup>8</sup>, Semenov Mikhail<sup>25</sup>, Slawinski Cezary<sup>10</sup>, Stratonovitch Pierre<sup>25</sup>, Supit Iwan<sup>26</sup>, Waha Katharina<sup>21</sup>, Wang Enli<sup>27</sup>, Wu Lianhai<sup>28</sup>, Zhao Zhigan<sup>27,29</sup>, Rötter Reimund P.<sup>4</sup>

<sup>1</sup>Finnish Environment Institute (SYKE), 00250 Helsinki, Finland

<sup>2</sup>University of Florence, 50144 Florence, Italy

<sup>3</sup>INRES, University of Bonn, 53115 Bonn, Germany

<sup>4</sup>Luke Natural Resources Institute, 00790 Helsinki, Finland

<sup>5</sup>Universidad Politecnica de Madrid, 28040 Madrid, Spain

<sup>6</sup>Institute of Agrosystems and Bioclimatology, Mendel University in Brno, Brno 613 00, Czech Republic

<sup>7</sup>Global Change Research Centre AS CR, 603 00 Brno, Czech Republic

<sup>8</sup>University of Milan, 20133 Milan, Italy

<sup>9</sup>University of Florida, Gainesville, FL 32611, USA

<sup>10</sup>Institute of Agrophysics, Polish Academy of Sciences, 20-290 Lublin, Poland

<sup>11</sup>Michigan State University, East Lansing, MI 48824, USA

<sup>12</sup>Lund University, 223 62 Lund, Sweden

<sup>13</sup>INRA, UMR 1114 EMMAH, F-84914 Avignon, France

<sup>14</sup>James Hutton Institute, Invergowrie, Dundee, DD2 5DA, Scotland

<sup>15</sup>University of Sassari, 07100 Sassari, Italy

<sup>16</sup>Université de Liège, 4000 Liège, Belgium

<sup>17</sup>Leibniz Centre for Agricultural Landscape Research (ZALF), 15374 Müncheberg, Germany

<sup>18</sup>IFAPA Junta de Andalucía, 14004 Córdoba, Spain

<sup>19</sup>University of Copenhagen, 2630 Taastrup, Denmark

<sup>20</sup>CNR-IBIMET, 50145 Florence, Italy

<sup>21</sup>Potsdam Institute for Climate Impact Research, 14473 Potsdam, Germany

<sup>22</sup>Aarhus University, 8830 Tjele, Denmark

<sup>23</sup>NASA Goddard Institute for Space Studies, New York, NY 10025, USA

<sup>24</sup>Columbia University Center for Climate Systems Research, New York, NY 10025, USA

<sup>25</sup>Rothamsted Research, Harpenden, Herts, AL5 2JQ, United Kingdom

<sup>26</sup>Wageningen University, 6700 AA Wageningen, The Netherlands

<sup>27</sup>CSIRO Agriculture Flagship, 2601 Canberra, Australia

<sup>28</sup>Rothamsted Research, North Wyke, Okehampton EX20 2SB, United Kingdom

<sup>29</sup>China Agricultural University, 100094 Beijing, China

#### 16:45 Economic assessment of greenhouse gas mitigation on livestock farms

Eory Vera<sup>1</sup>, Faverdin Philippe<sup>2</sup>, O'Brien Donal<sup>3</sup>

<sup>1</sup>Scotland's Rural College (SRUC), Land Economy, Environment & Society, EH9 3JG, Edinburgh, United Kingdom

<sup>2</sup>INRA, UMR Physiologie, Environnement et Génétique pour l'Animal et les Systèmes d'Élevage, F-35000 Rennes, France

<sup>3</sup>Teagasc, Animal & Grassland Research and Innovation Centre, Moorepark, Fermoy, Co Cork, Ireland

#### 17:00 Agricultural adaptation to climate change in the European Union

Trapp Natalie, Schneider Uwe A.

Universität Hamburg, KlimaCampus, Research Unit Sustainability and Global Change, Grindelberg 5, 20144 Hamburg, Germany

#### 17:15 Legume supported cropping systems for Europe (Legume Futures)

Rees R.M.<sup>1</sup>, Stoddard, F.<sup>2</sup>, Iannetta, P.<sup>3</sup>, Williams, M.<sup>4</sup>, Zander, P.<sup>5</sup>, Murphy-Bokern, D.<sup>6</sup>, Topp, C.F.E.<sup>1</sup>, Watson, C.A.<sup>1</sup>

<sup>1</sup>Scotland's Rural College, Edinburgh EH9 3JG, United Kingdom

<sup>2</sup>Department of Agricultural Sciences, 00014 University of Helsinki, Finland

<sup>3</sup>James Hutton Institute, Dundee, United Kingdom

<sup>4</sup>Department of Botany, Trinity College Dublin, Ireland

<sup>5</sup>Leibniz Centre for Agricultural Landscape Research (ZALF), 15374 Müncheberg, Germany

<sup>6</sup>Lohne, 49393 Germany

## PARALLEL SESSION L1.5 NORTH AMERICA

### ROOM BARTHEZ

#### KEYNOTE PRESENTATIONS

#### 14:00 Building climate smart, sustainable, intensive agriculture for the 21st century and beyond

Walthall Charles<sup>1</sup>, Hatfield Jerry<sup>2</sup>, Schneider Sally<sup>3</sup>, Boggess Mark<sup>4</sup>

<sup>1</sup>National Program Leader, Natural Resources & Sustainable Agriculture Systems Research

<sup>2</sup>Laboratory Director & Supervisory Plant Physiologist, National Laboratory for Agriculture & Environment

<sup>3</sup>Deputy Administrator, Natural Resources & Sustainable Agriculture Systems Research

<sup>4</sup>Center Director, U.S. Dairy Forage Research Center, USDA Agricultural Research Service

Basso Bruno<sup>1</sup>, Robertson G. Philip<sup>2</sup>, Hatfield Jerry<sup>3</sup>

<sup>1</sup>Department of Geological Sciences and W.K. Kellogg Biological Station, Michigan State University East Lansing, Michigan 48823, USA

<sup>2</sup>Department of Plant, Soil and Microbial Sciences and W.K. Kellogg Biological Station, Michigan State University East Lansing, Michigan 48823, USA

<sup>3</sup>National Laboratory for Agriculture and Environment, Ames, Iowa 50011, USA

**14:30 Scientific article summarizing the 2013 CSA Global Science Conference in North America**

Jackson Louise E.<sup>1</sup>, Steenwerth K.L.<sup>2</sup>

<sup>1</sup>Department of Land, Air and Water Resources, University of California Davis, USA

<sup>2</sup>Crops Pathology and Genetics Research Unit, Agricultural Research Service, United States Department of Agriculture (ARS/USDA), USA

## CONTRIBUTED ORAL PRESENTATIONS

**16:30 The 4-R nutrient stewardship and its role in climate smart agriculture**

Khosla Raj, Longchamps Louis, Reich R.

Department of Soil & Crop Sciences, Colorado State University, Fort Collins, CO, USA

**16:45 From climate variability to climate change: building adaptive capacity among row crop farmers in the Southeastern USA**

Ortiz Brenda V.<sup>1</sup>, Fraisse Clyde<sup>2</sup>, Dourte Daniel<sup>2</sup>, Bartels Wendy-Lin<sup>2</sup>, Zierden David<sup>3</sup>, Knox Pam<sup>4</sup>, Risse Mark<sup>4</sup>, Vellidis George<sup>4</sup>, Templeton Scott<sup>5</sup>, Thomas Michel<sup>6</sup>

<sup>1</sup>Auburn University, Crop, Soil, and Environmental Sciences Department, 36849, Auburn, Alabama, USA

<sup>2</sup>University of Florida, Biological and Agricultural Engineering Department, Gainesville, Florida, USA

<sup>3</sup>Florida State University, Center for Ocean-Atmospheric Prediction Studies (COAPS), 32310, Tallahassee, Florida, USA

<sup>4</sup>University of Georgia, Crop and Soil Sciences Department, 30602, Athens, Georgia, USA

<sup>5</sup>Clemson University, Department of Economics, 29631, Clemson, South Carolina, USA

<sup>6</sup>Florida A&M University, Department of Agribusiness, 32307, Tallahassee, Florida, USA

**17:00 Climate-Smart Agriculture and Water Management in California**

Sandoval Solis Samuel

University of California, Davis One Shields Avenue Davis, California - CA 95616, USA

**17:15 Dealing with climate and yield variability: the role of precision agricultural technologies and crop models**



## POSTER SESSION 1

Monday, 16 March 2015

15:00 – 16:30

### EXHIBITION HALL, LEVEL 0

#### L1.1 AFRICA

##### 1. Is conservation agriculture a climate-smart option for smallholders in sub-Saharan Africa?

Bruelle Guillaume<sup>1</sup>, Naudin Krishna<sup>2</sup>, Scopel Eric<sup>2</sup>, Corbeels Marc<sup>2</sup>, Torquebiau Emmanuel<sup>2</sup>, Penot Eric<sup>3</sup>, Rabeharisoa Lilia<sup>4</sup>, Mapfumo Paul<sup>5</sup>, Tittonnell Pablo<sup>6</sup>

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##### 2. From time uncertainties to climate-smart agriculture in the Sudano-Sahelian zone of Cameroon

Fofiri Nzossie Eric Joël<sup>1</sup>, Bring<sup>2</sup>, Temple Ludovic<sup>3</sup>, Wakponou Anselme<sup>4</sup>

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##### 3. Feeding Ethiopia in changing context: from diagnosis to exploration of climate smart options

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##### 4. Macroalgae as biostimulants of growth and enhance tolerance to Moroccan wheat plants cultivated under salt stress

Latique Salma, Chernane Halima, Mansouri Mounir, El Kaoua Mimoun

Cadi Ayyad University /Department of Biology, Laboratory of Biotechnology, Valorization and Protection of Agro-Resources, Marrakech, Morocco

##### 5. Improving the resilience of fishery stakeholders to the climate change effects. Case of Saint-Louis, Senegal

Diallo Aminata<sup>1</sup>, Sarr Benoit<sup>2</sup>, Thiao Djiga<sup>3</sup>, Sall Moussa<sup>4</sup>

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<sup>4</sup> Regional Coordinator of the MOLOA to the Ecological Monitoring Centre

##### 6. Comparative assessment of maize, finger millet and sorghum for household food security under increasing climatic risk

Rurinda Jairos<sup>1,2,3</sup>, Mapfumo Paul<sup>2,3</sup>, van Wijk T. Mark<sup>1,4</sup>, Mtambanengwe Florence<sup>2,3</sup>, Rufino C. Mariana<sup>4</sup>, Chikowo Regis<sup>2,3</sup>, Giller E. Kenneth<sup>1</sup>

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**7. Choice and risks of management strategies of farming calendar: application to corn production in Southern Benin**

Alle C. S. Ulrich<sup>1</sup>, Baron Christian<sup>2</sup>, Guibert Hervé<sup>2</sup>, Agbossou K. Euloge<sup>1</sup>, Afouda A. Abel<sup>1</sup>

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**8. Land cover changes along tropical highland agroforestry systems: call for an improved climate adaptation**

Matokeo Arbogast<sup>1</sup>, Lyimo James<sup>1</sup>, Lelong Camille<sup>2</sup>, Majule Amos<sup>1</sup>, Masao Catherine<sup>1</sup>, Mathé Pierre-Etienne<sup>3</sup>, Vaast Philippe<sup>4</sup>, Williamson David<sup>4,5</sup>

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**9. Ecological intensification for a climate smart agriculture: applications from Senegal and Burkina Faso**

Masse Dominique<sup>1</sup>, Ndour-Badiane Ndèye Yacine<sup>2</sup>, Hien Edmond<sup>3</sup>, Akpo Léonard-Elie<sup>4</sup>, Diatta Sekouna<sup>4</sup>, Bilgo Ablasse<sup>5</sup>, Hien Victor<sup>5</sup>, Diédhiou Ibrahima<sup>6</sup>, Ndiaye-Cissé Mame Farma<sup>2</sup>, Tall Diouf Laure<sup>2</sup>, Ndienor Moussa<sup>2</sup>, Founoune Mboup Hassna<sup>3</sup>, Feder Frédéric<sup>7</sup>, Médoc Jean-Michel<sup>7</sup>, Lardy Lydie<sup>1</sup>, Assigbetsé Komi<sup>1</sup>, Cournac Laurent<sup>1</sup>

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<sup>7</sup>LMI IESOL, UPR Recyclage et risques, CIRAD, Dakar, Senegal

**10. Incorporating climate change into agricultural research and advisory services in Africa**

Lamboll Richard<sup>1</sup>, Morton John<sup>1</sup>, Kisauzi Dan<sup>2</sup>, Ohiomoba Ifidon<sup>3</sup>, Demby Dady<sup>3</sup>, Mangheni Margaret<sup>4</sup>, Moumouni Ismail<sup>5</sup>, Parkinson Veronā<sup>6</sup>, Suale David<sup>7</sup>, Nelson Valerie<sup>1</sup>, Quan Julian<sup>1</sup>

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**11. Developing community-based climate smart agriculture through participatory action research in West Africa: lesson learnt**

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**12. Indigenous Climate Smart Agriculture (iCSA); local knowledge pool from urban vegetable farmers**

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**13. Mitigation of climate change through soil organic carbon sequestration in smallholder farming systems of Zimbabwe**

Mujuru Lizzie<sup>1</sup>, Mureva Admore<sup>1</sup>, Velthorst Eef, J.<sup>2</sup>, Hoosbeek Marcel R.<sup>2</sup>

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**14. Climate-smart intensification of West-Africa's cocoa systems**

van Asten Piet<sup>1</sup>, Jassogne Laurence<sup>1</sup>, Vaast Philippe<sup>2</sup>, Laderach Peter<sup>3</sup>, Schroth Götz<sup>4</sup>, Lundy Mark<sup>3</sup>, Asare Richard<sup>5</sup>, Muilerman Sander<sup>5</sup>, Ruf R.<sup>6</sup>, Snoeck Didier<sup>6</sup>, Koko Louis<sup>7</sup>, Anim-Kwapong Gilbert<sup>8</sup>, Rossing Walter<sup>9</sup>, Gockwoski James<sup>5</sup>, Giller Ken<sup>9</sup>, Six Johan<sup>10</sup>, Vanlauwe Bernard<sup>11</sup>

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<sup>9</sup>WUR, Wageningen, the Netherlands

<sup>10</sup>ETH, Zurich, Switzerland

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**15. Effect of oil and addition of enzymes on fibre digestion, methane production and performance of sheep**

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University of Pretoria, Pretoria 0002, South Africa

**16. Drought and adaptation strategies of rural maize-legume farmers in Kenya and Tanzania**

Muricho Geoffrey<sup>1</sup>, Tongruksawattana Songporne<sup>1</sup>, Mutheu Judith<sup>2</sup>

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<sup>2</sup>African Economic Research Consortium, Nairobi, Kenya

**17. Biochar as an opportunity for climate-smart agriculture in small-holder farming systems in Kenya**

**18. Farmers' perceptions of rainfall and agronomic trends in Allada plateau in southern Benin**

Alle Cayossi S. Ulrich<sup>1</sup>, Guibert Hervé<sup>2</sup>, Baron Christian<sup>2</sup>, Agbossou Euloge K.<sup>1</sup>, Afouda Abel A.<sup>1</sup>

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**19. Climate and maize storage losses from insect pests in East and Southern Africa**

De Groote Hugo, Gitonga Zachary, Sonder Kai, Mugo Stephen, Tefera Tadele

CIMMYT, PO Box 1041-00621 Nairobi, Kenya

**20. Maize-based farm household typology and vulnerability to climate shocks in Kenya**

Tongruksawattana Songporne<sup>1</sup>, Lopez-Ridaura Santiago<sup>2</sup>, Tesfaye Kindie<sup>3</sup>, Frelat Romain<sup>2</sup>, Gitonga Zachary<sup>1</sup>

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**21. Changing crop practices to address climate related risks among rural farmers in Nyando, western Kenya**

Recha John, Kinyangi James, Radeny Maren  
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Agriculture and Food Security, East Africa Region,  
International Livestock Research Institute, P. O. Box  
30709 - 00100 Nairobi, Kenya

**22. Establishing an operational dialogue between researchers and decision-makers for adaptation to climatic changes in Mali**

Sogoba Bougouna<sup>1</sup>, Ba Allassane<sup>2</sup>, Zougmore Robert<sup>3</sup>, Samake Oumar B.<sup>4</sup>

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**23. Women involvement in agricultural water management: example from supplemental irrigation in the Burkinabe Sahel**

Bologo/Traoré Maïmouna<sup>1</sup>, Fossi Sévère<sup>2</sup>, Zougouri Sita<sup>3</sup>, Bado Eulalie<sup>1,3</sup>

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**24. Assessing potential climate change impacts in smallholder systems in Burkina Faso**

Medina Hidalgo Daniela<sup>1</sup>, Herrero Mario<sup>1</sup>, De Voil P.<sup>3</sup>, Douxchamps Sabine<sup>4</sup>, Thornton Phillip<sup>6</sup>, Van Wijk Mark<sup>5</sup>, Rodriguez Daniel<sup>3</sup>, Prestwidge Di<sup>1</sup>, Henderson B.<sup>1</sup>, Rigolot Cyrille<sup>1,2</sup>

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**25. Micro-level appraisal of success stories of pro-poor climate adaptation and mitigation field experiences**

Bockel Louis<sup>1</sup>, Bernoux Martial<sup>2</sup>, Zingg Felix<sup>1</sup>, Grever Uwe<sup>1</sup>, Chotte Jean-Luc<sup>2</sup>

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**26. Economic analysis of effect of flood on income distribution among farmers in Edo State, Nigeria**

Osasogie Daniel Izevbuwa<sup>1</sup>, Alabi Reuben Adeolu<sup>2</sup>  
Department of Agricultural Economics and Extension, Ambrose Alli University, PMB 14, Ekpoma, Edo State, Nigeria

**27. Identifying farm-level hotspots to target greenhouse gas measurements in smallholder crop-livestock systems**

Ortiz Gonzalo Daniel<sup>1</sup>, Rosenstock Todd S.<sup>2</sup>, Vaast Philippe<sup>3</sup>, Oelofse Myles<sup>1</sup>, de Neergaard Andreas<sup>1</sup>, Albrecht Alain<sup>3</sup>

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**28. Intensification test on maize production in the Sudano-Sahelian zone: techniques, soils, climate and economic conditions**

Guibert Hervé<sup>1</sup>, Olina Bassala Jean-Paul<sup>2</sup>, Vunyingah Michael<sup>2</sup>

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**29. Profile of climate smart agricultural technologies in the dry Guinea savannah and forest zones in Ghana**

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<sup>2</sup>ICRISAT, Bamako, Mali

**30. Contribution to the valorisation of forest species potentialities in promoting climate smart agriculture in Madagascar**

Andriampiolazana Manony<sup>1</sup>, Randevoson Finaritra<sup>1</sup>, Rajoelison Gabrielle<sup>1</sup>, Cailleau Guillaume<sup>2</sup>, Verrecchia Eric<sup>2</sup>, Razakamanarivo Herintsitohaina<sup>3</sup>

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<sup>3</sup>Laboratoire des Radioisotopes - Université d'Antananarivo, Route d'Andraisoro BP 3383, Madagascar

**31. Optimizing rhizosphere microbiology and hydrology of shrub-intercropping for buffering climate change in the Sahel**

Dick Richard<sup>1</sup>, Diédhiou Ibrahima<sup>2</sup>, Dossa Ekwe<sup>3</sup>, Kizito Fred<sup>4</sup>, Chapuis-Lardy Lydie<sup>5,6</sup>, Badiane Ndourb Yacine<sup>7</sup>, Debenport Spencer J.<sup>1</sup>, McSpadden Gardener Brian B.<sup>1</sup>, Assigbetsea Komi B.<sup>5,6</sup>, Bright Matthew<sup>1</sup>, Schreiner Paul<sup>8</sup>, Founoune Mboupc Hassna<sup>7</sup>, Bayala Roger<sup>7</sup>, Diallo Ndeye Hélène<sup>7</sup>

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<sup>8</sup>United States Department of Agriculture, Agricultural Research Service, Corvallis, Oregon, USA

**32. Native shrub management on soil nematofauna: optimization and adaptation to climate change of Sahelian agroecosystems**

Diakhate Sidy<sup>1,2</sup>, Mboupc Hassna Founoune<sup>2</sup>, Ndour Yacine Badiane<sup>1,2</sup>, Chapuis-Lardy Lydie<sup>3</sup>, Dick Richard P.<sup>4</sup>

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**33. Optimal rice cropping systems under uncertainty: case of West Africa Rice Sector Development Hubs**

Lokossou Jourdain<sup>1</sup>, Arouna Aminou<sup>2</sup>, Atacolodjou Annick<sup>3</sup>

<sup>1</sup>University of Abomey-Calavi, Benin

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**34. Effects of intensification of maize and rice production in Tanzania on productivity and environmental impacts**

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**35. Small farming food versus ethanol sugarcane: global constraints and local opportunities for irrigation in Ghana**

Dumas Patrice<sup>1</sup>, Brunelle Thierry<sup>1</sup>, Souty François<sup>1</sup>, Bibas Ruben<sup>1</sup>, Méjean Aurélie<sup>1</sup>, Lazar Attila<sup>2</sup>, Black Emily<sup>2</sup>, Vianna Cuadra Santiago<sup>3</sup>, Vidale Pier Luigi<sup>2</sup>, Verhoef Anna<sup>2</sup>, Wade Andrew<sup>2</sup>

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<sup>2</sup>University of Reading, Reading, United Kingdom

<sup>3</sup>EMBRAPA, Brazil

**36. Nutritive quality of dominant forage species in response to simulated drought in sub-tropical native pasture**

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**37. Variability of effects of compost on nodulation, N acquisition and yield of cowpea in sub-Saharan areas of Burkina Faso**

Zongo Koulibi Fidèle<sup>1</sup>, Clermont-Dauphin Cathy<sup>2</sup>, Drevon Jean Jacques<sup>3</sup>, Blavet Didier<sup>2</sup>, Masse Domonique<sup>2</sup>, Hien Edmond<sup>1,2</sup>

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**38. Potentials of medicinal plants extracts on digestibility, in vitro methane gas production of Eragrostis curvula forage**

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**39. Food security patterns at farm household level: key drivers and options for climate-smart agricultural interventions**

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**40. Analysis of the impact of climate changes in the last thirty years on the second generation of cocoa in Côte d'Ivoire**

Kassin Koffi Emmanuel<sup>1</sup>, Yao Guy Fernand<sup>1</sup>, Diedhiou Arona<sup>2</sup>, Koko Louis Kan Anselme<sup>3</sup>, Assiri Alexis<sup>3</sup>, Kouamé Brou<sup>1</sup>, Konaré Abdourahamane<sup>4</sup>, Kouassi Koffi Nazaire<sup>5</sup>, Yoro Gballou René<sup>1</sup>

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**41. Carbon footprinting of the Irish potato production systems in Zimbabwe**

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<sup>3</sup>Plant Research International, Wageningen University and Research Centre, 6700 AP, Wageningen, the Netherlands

**42. Farmers' access to agrometeorological services in Ido local government area of Oyo state, Nigeria**

Ewebiyi I.O.<sup>1</sup>, Olayemi O.O.<sup>2</sup>, Osikabor B.<sup>2</sup>, Aluko, O.J.<sup>2</sup>, Samuel O.F.<sup>2</sup>

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**43. Impact of dry-wet cycles on carbon mineralization of tropical soils**

Yemadje Pierrot Lionel<sup>1,2</sup>, Guibert Hervé<sup>1</sup>, Bernoux Martial<sup>2</sup>, Deleporte Philippe<sup>3</sup>, Chevallier Tiphaine<sup>2</sup>

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**44. Impact of climate change and desertification on agriculture and food security in Côte d'Ivoire**

Kassin Koffi Emmanuel<sup>1</sup>, Yao Guy Fernand<sup>1</sup>, Diedhiou Arona<sup>2</sup>, Kouamé Brou<sup>1</sup>, Konaré Abdourahamane<sup>3</sup>, Kouassi Koffi Nazaire<sup>4</sup>, Yoro Gballou René<sup>1</sup>

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**45. Exploring institutional dimension of climate-smart agriculture in Nigeria**

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**46. Critical reflection on knowledge and narratives of conservation agriculture in Zambia**

Whitfield Stephen, Dougill, Andrew J., Dyer Jen C., Kalaba, Felix K., Leventon Julia, Stringer Lindsay C. Sustainability Research Institute, University of Leeds, Leeds, LS2 9J, United Kingdom

**47. Positive effect of climate change on cotton and rice in Africa and Madagascar**

Gerardeaux Edward<sup>1</sup>, Krishna Naudin<sup>1</sup>, Ramanantsoanirina Alan<sup>4</sup>, Dusserre Julie<sup>1</sup>, Oetli Pascal<sup>2</sup>, Oumarou Palai<sup>3</sup>, Sultan Benjamin<sup>2</sup>

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<sup>4</sup>Fofifa, Antsirabe, Madagascar

**48. Modeling potential impact of climate change on sorghum and cowpea yields in semi-arid areas of Kenya**

Kitinya Kirina Thomas<sup>1</sup>, Onwonga Richard N.<sup>2</sup>, Kironchi Geoffrey<sup>2</sup>, Mbuvi Joseph P.<sup>2</sup>

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**49. Gender analysis of adaptation strategies of water stress among crop farmers in Asa local government area of Kwara State**

Samuel O.F.<sup>1</sup>, Aluko O.J.<sup>1</sup>, Adejumo A.A.<sup>2</sup>

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<sup>2</sup>Department of Agricultural Extension and Rural Development, University of Ibadan, Nigeria

**50. Matching uses and functional traits of companion trees in cocoa agroforests: a win-win scheme toward resilient systems**

Saj Stéphane<sup>1,2</sup>, Jagoret Patrick<sup>3</sup>

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**51. Water requirements for potato production under climate change**

Farag A.A.<sup>1</sup>, Abdrabbo M.A.<sup>1</sup>, Gad EL-Moula<sup>1</sup>, Manal M.H.<sup>1</sup>, McCarl B. A.<sup>2</sup>

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**52. How smart is Climate Smart Agriculture (CSA)? – Lessons from Northern Nigeria**

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<sup>2</sup>Department of Geography and Regional Planning, Federal University Dutsin-Ma, Katsina State, Nigeria

**53. Integrating climate smart agriculture for food security: the role of private sector investment in Africa**

Kalimunjaye Samuel<sup>1,2</sup>, Olobo Maurice<sup>1</sup>, Kisenyi Vincent<sup>1</sup>, Essegu J.F.<sup>2</sup>, Okatono Isaac<sup>1</sup>

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<sup>2</sup>National Agricultural Research Organisation/National Forestry Resources Research Institute P.O.Box 1752 Kampala, Uganda

**54. Climate variability and Impacts on the population of leaf miner, a pest of the Oil Palm in Nigeria**

Aneni Thomas, Aisagbonhi Charles

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## L1.2 AUSTRALASIA

### 55. The agro-potential of Western Siberia territories in a changing climate

Nikitich Polina<sup>1,2,3</sup>, Bredoire Felix<sup>4,5</sup>, Alvarez Gaël<sup>6</sup>, Barsukov Pavel<sup>7</sup>, Bakker Mark<sup>8</sup>, Buée Marc<sup>9</sup>, Derrien Delphine<sup>1</sup>, Fontaine Sebastien<sup>6</sup>, Kayler Zachary<sup>10</sup>, Rusalimova Olga<sup>7</sup>, Vaishlya Olga<sup>2</sup>, Zeller Bernd<sup>1</sup>

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### 56. Ecological intensification through conservation agriculture in Cambodia: impact on SOC, N and enzymatic activities

Tivet Florent<sup>1,2</sup>, Hok Lyda<sup>3,4</sup>, Boulakia Stéphane<sup>1</sup>, de Moraes Sá João Carlos<sup>5</sup>, Kong Rada<sup>2</sup>, Leng Vira<sup>2</sup>, Briedis Clever<sup>5</sup>

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### 57. Net ecosystem exchange of carbon dioxide and methane in rice fields of northern Indo-Gangetic Plains

Bhatia A.<sup>1</sup>, Kumar A.<sup>1</sup>, Jain N.<sup>1</sup>, Mishra S.V.<sup>1</sup>, Sehgal V. K.<sup>2</sup>, Pathak H.<sup>1</sup>

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<sup>2</sup>Division of Agricultural Physics, IARI, New Delhi-110012, India

### 58. Are tree plantations climate-smart? The case of rubber tree plantations and the natural rubber commodity chain

Gay F.<sup>1</sup>, Anghong S.<sup>2</sup>, Bessou C.<sup>3</sup>, Bottier C.<sup>4</sup>, Brauman A.<sup>5</sup>, Chambon B.<sup>3</sup>, Chantuma P.<sup>6</sup>, Gohet E.<sup>3</sup>, Lacote R.<sup>3</sup>, Liengprayoon S.<sup>7</sup>, Poonpipope K.<sup>8</sup>, Thaler P.<sup>1</sup>, Thanisawanyangkura S.<sup>9</sup>, Vaysse L.<sup>4</sup>, Winsunthorn S.<sup>10</sup>, Sainte-Beuve J.<sup>4</sup>

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### 59. Potential integrated agricultural technologies for climate-smart villages of Southeast Asia

Campilan Dindo

International Center for Tropical Agriculture - Asia Region, c/o Agricultural Genetics Institute, Pham Van Dong, Tu Liem District, Hanoi, Vietnam

### 60. Enhancing productivity and livelihoods among smallholder irrigators through Biochar and fertilizer amendments

Macedo, Jenkins<sup>1</sup>, Souvanhnachit, M.<sup>2</sup>, Rattanavong, S.<sup>3</sup>, Maokhamphiou, B.<sup>4</sup>, Sotoukee, T.<sup>4</sup>, Pavelic, P.<sup>4</sup>, Sarkis, M.<sup>1</sup>, Downs, T.<sup>1</sup>

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**61. Climate change and agriculture in India**

Jha Anil Kumar

Govt. Girls P.G. College, Morar, (Jiwaji University), Gwalior, Madhya Pradesh, India

**62. A suitability assessment for “alternate wetting and drying”: targeting priority areas for mitigation in rice production**

Sander Bjoern Ole<sup>1</sup>, Wassmann Reiner<sup>1</sup>, Nelson Andrew<sup>1</sup>, Palao Leo<sup>1</sup>, Wollenberg Eva<sup>2</sup>

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### L1.3 LATIN AMERICA

**63. Learning to face the challenges posed by climate change to Andean agriculture: teaching the farmers of the future**

Quiroz Roberto, Valdivia Roberto, Turin Cecilia, León-Velarde Carlos, Mares Victor  
International Potato Center (CIP), Lima 12, Lima, Peru

**64. Comparison between a Tier 3 and Tier 2 approach to estimate enteric methane emission in Brazilian beef cattle**

Bannink André<sup>1</sup>, Geraldo de Lima Jacqueline<sup>2</sup>, Van Den Pol-Van Dasselaar Agnes<sup>1</sup>, Menezes Santos Patricia<sup>3</sup>, Resende Siqueira Gustavo<sup>4</sup>, Barioni Luis<sup>5</sup>  
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**65. Effect of climate variability and climate change in the agricultural sector of Panama.**

Martiz Graciela

Ministry of Agricultural Development, Environmental Unit, Panama

**66. Adaptation of small coffee producers to climate change in Nicaragua**

Sepúlveda Norvin

CATIE, Km 8 carretera a Masaya (MAGFOR), código 10000, Managua, Nicaragua

**67. Can CO<sub>2</sub> fertilization compensate for progressive climate change impacts on coffee productivity?**

Ovalle-Rivera Oriana<sup>1</sup>, Van Oijen, Marcel<sup>2</sup>, Läderach Peter<sup>3</sup>, Rounsard Olivier<sup>4</sup>, Rapidel Bruno<sup>5</sup>  
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**68. Agricultural practices, agroecological integrated farms and sustainable indigenous territorial development in Honduras**

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<sup>1</sup>CATIE, The Tropical Agricultural Research and Higher Education Center, Tegucigalpa, Honduras

<sup>2</sup>FUNACH, Action Aid Foundation Honduras. Victoria, Yoro, Honduras

**69. Methane emission efficiency as a function of grazing management in Southern Brazilian grazing systems**

Savian Jean V.<sup>1</sup>, Cezimbra Ian M.<sup>1</sup>, Filho William S.<sup>1</sup>, Bonnet Olivier J.F.<sup>1</sup>, Neto Armindo B.<sup>14</sup>, Schons Radael M.T.<sup>1</sup>, Tischler Marcelo R.<sup>1</sup>, Nunes Pedro A.A.<sup>1</sup>, Almeida Gleice M.<sup>1</sup>, Araújo Bárbara<sup>1</sup>, Barro Raquel<sup>1</sup>, Genro Teresa C.M.<sup>2</sup>, Berndt Alexandre<sup>2</sup>, Barioni Luis G.<sup>2</sup>, Bayer Cimelio<sup>1</sup>, Carvalho Paulo C.F.<sup>1</sup>

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**70. Technological options to increase resilience of production systems to extreme climate events**

Bolaños Benavides Martha Marina., Ospina P. Carlos Eduardo, Rodríguez B. Gonzalo Alfredo,

Martínez M. Juan Carlos, Galindo P. Julio Ricardo, Ayarza Miguel.  
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**71. Supporting dairy family farmers of Pernambuco state (Brazil) to develop a climate-smart agriculture**

Fages Marjolaine<sup>1</sup>, Le Guen Roger<sup>1</sup>, Côrtes Cristiano<sup>2</sup>, Silva de Melo Airon Aparecido<sup>3</sup>

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**72. Energy efficiency of beef cow herds with different calving season in the south-east of Buenos Aires province, Argentina**

Ricci Patricia<sup>1</sup>, Aello, Mario S.<sup>2</sup>, Arroquy José Ignacio<sup>3</sup>, Rearte Daniel<sup>4</sup>

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**73. Does diversification in smallholder coffee landscapes help to face climate change risk? Answers from Nicaragua**

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**74. Ensuring climate smart agriculture is gender-smart: lessons from Latin America**

Twyman Jennifer<sup>1</sup>, Bernier Quinn<sup>2</sup>, Muriel Juliana<sup>1</sup>, Paz Liliana<sup>3</sup>, Ortega Luis<sup>3</sup>

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**75. Do local perceptions converge to climatological data? Case studies in three Brazilian biomes**

Litre Gabriela<sup>1</sup>, Nasuti Stephanie<sup>1</sup>, Lindoso Diego<sup>1</sup>, Saito Carlos<sup>1</sup>, Henke Carlos<sup>1</sup>, Da Silva Carolina Joana<sup>2</sup>, Eiro Flavio<sup>3</sup>

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**76. Does carbon storage of pastures contribute to a climate smart cattle farming after Amazonian deforestation?**

Blanfort Vincent<sup>1</sup>, Stahl Clément<sup>1,2</sup>, Fontaine Sébastien<sup>3</sup>, Picon-Cochard Catherine<sup>3</sup>, Freycon Vincent<sup>4</sup>, Blanc Lilian<sup>4</sup>, Bonal Damiens<sup>5</sup>, Soussana Jean-François<sup>3</sup>, Lecomte Philippe<sup>1</sup>, Klumpp Katja<sup>3</sup>

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**77. Socio-economic scenarios to develop and test agricultural adaptation policies in Central America and the Andes**

Veeger Marieke, Vervoort Joost

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**78. Future climate change impacts on maize production in the Cerrado of Brazil**

Silva Fernando Macena<sup>1</sup>, Affholder François<sup>2</sup>, Corbeels Marc<sup>1,2</sup>

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**79. Agro-Climatic forecasting system for better decision making in Latin America**

Giraldo Diana, Barrios Camilo, Arango David, Obando Diego

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**80. LivestockPlus: supporting low emission development for livestock sector in Costa Rica and Colombia**

Rao Idupulapati<sup>1</sup>, Jenet Andreas<sup>2</sup>, Tapasco Jeimar<sup>1</sup>, Chirinda Ngonidzashe<sup>1</sup>, Rosenstock Todd<sup>3</sup>, Twyman Jennifer<sup>1</sup>, Laderach Peter<sup>1</sup>, Peters Michael<sup>1</sup>, Arango Jacobo<sup>1</sup>, Hyman Glenn<sup>1</sup>, Barahona Rolando<sup>4</sup>, Nelson Vivas<sup>5</sup>, Camilo Plazas<sup>6</sup>, Mauricio Chacon<sup>7</sup>

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**81. Venezuelan agriculture N management challenges and proposed alternatives**

Pérez Tibisay, Marquina Sorena

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**82. Nitrous oxide emission factors for sheep and cattle excreta in two subtropical Brazilian grazing systems**

Bastos Diego F.<sup>1</sup>, Schirmann Janqueli<sup>1</sup>, Magiero Emanuelle C.<sup>1</sup>, Carvalho Paulo C.F.<sup>2</sup>, Bayer Cimelio<sup>1</sup>

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**83. Sustainability of rice cultivation in an important producing area of Cuba under climatic scenarios**

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**L1.4 EUROPE**

**84. Innovation for Climate Smart Agriculture in Europe**

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**85. Nitrogen and water as inputs in farm bio-economic models: creating an operational modeling framework at the EU level**

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**86. « PigChange »: a project to evaluate the consequences of climate change and mitigation options in pig production**

Renaudeau David<sup>1</sup>, Gourdine Jean Luc<sup>2</sup>, Hassouna Melynda<sup>3</sup>, Robin Paul<sup>3</sup>, Gilbert Hélène<sup>4</sup>, Riquet Juliette<sup>4</sup>, Dourmad Jean Yves<sup>1</sup>

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<sup>4</sup>INRA, UMR 1388 GenPhySE, F31326 Toulouse, France

**87. Assessing the economic GHG abatement potential from the EU-15 dairy sector and underlying uncertainties**

Koslowski Frank<sup>1</sup>, Eory Vera<sup>1</sup>, van den Pol-van Dasselaar Agnes<sup>2</sup>, Fofana Abdulai<sup>1</sup>, de Haan Michel<sup>2</sup>, Lesschen Jan Peter<sup>3</sup>, Moran Dominic<sup>1</sup>

<sup>1</sup>Land Economy, Environment & Society Research Group, Scotland's Rural College, Edinburgh EH9 3JG, Scotland, United Kingdom

<sup>2</sup>Wageningen UR Livestock Research, Postbus 338, 6700 AH Wageningen, the Netherlands

<sup>3</sup>Alterra, Wageningen UR, P.O. Box 47, 6700AA Wageningen, the Netherlands

**88. Concerted action for climate smart livestock systems: research & innovation priorities in climate changing Europe**

Scholte Martin C.Th.<sup>1,2,3</sup>

<sup>1</sup>Board of Directors Wageningen UR

<sup>2</sup>President Animal Task Force

<sup>3</sup>Co-chair GRA Livestock Research Group

**89. An observatory of aromatic and medicinal plants as a possible indicator of the climatic changing evolution conditions**

Hoxha Valter<sup>1</sup>, Ilbert Hélène<sup>2</sup>

<sup>1</sup>UMR TETIS (Mixed Unit of Territories Research, Environment, Remote Sensing and Spatial Information) - House of Remote Sensing - 500 rue Jean-François Breton 34093 Montpellier Cedex 5, France

<sup>2</sup>UMR1110 MOISA (Markets, Organizations, Institutions and Operators Strategies). Campus Montpellier SupAgro / INRA 2 place Pierre Viala 34060 Montpellier Cedex 2, France

**90. The knowledge hub FACCE MACSUR: Modelling agriculture with climate change for food security**

Köchy Martin, Banse Martin

Thünen Institute for Market Analysis, Bundesallee 50, 38116 Braunschweig, Germany

**91. Can functional complementarity of plant strategies enhance drought resilience in associations of Mediterranean grasses?**

Barkaoui Karim<sup>1</sup>, Bristiel Pauline<sup>2</sup>, Birouste Marine<sup>2</sup>, Roumet Catherine<sup>2</sup>, Volaire Florence<sup>3</sup>

<sup>1</sup>CIRAD, UMR SYSTEM, 2 place Pierre Viala, 34060, Montpellier Cedex 2, France

<sup>2</sup>CEFE UMR 5175, Université de Montpellier – Université Paul Valéry –19 EPHE, 1919 route de Mende, 34293 Montpellier Cedex 5, France

<sup>3</sup>INRA, USC 1338, CEFE UMR 5175, Université de Montpellier – Université Paul Valéry –19 EPHE, 1919 route de Mende, 34293 Montpellier Cedex 5, France

**92. Incremental adaptation in crop management for integrated assessments of climate change impacts in Europe**

Webber Heidi<sup>1</sup>, Britz Wolfgang<sup>2</sup>, Zhou G.<sup>1</sup>, de Vries Wim<sup>3</sup>, Wolf Joost<sup>4</sup>, Ewert Frank<sup>1</sup>

<sup>1</sup>INRES, University of Bonn, Bonn, Germany

<sup>2</sup>ILRI, University of Bonn, Bonn, Germany

<sup>3</sup>Alterra, Wageningen University, Wageningen, the Netherlands

<sup>4</sup>Plant Production Systems, Wageningen University, Wageningen, the Netherlands

**93. Sensitivity of maize to climate change in Denmark: an analysis using impact response surface approach**

Ozturk Isik, Silkeborg K. Ib, Olesen E. Jørgen

Department of Agroecology, Aarhus University, Blichers Alle 20 DK-8830, Tjele, Denmark

**94. Is it possible to reduce greenhouse gas emissions without reducing production? An assessment of 26 technical options**

Pellerin Sylvain<sup>1</sup>, Bamière Laure<sup>2</sup>, Angers Denis<sup>3</sup>, Béline Fabrice<sup>4</sup>, Benoît Marc<sup>5</sup>, Butault Jean-Pierre<sup>6</sup>, Chenu Claire<sup>7</sup>, Colnenne-David Caroline<sup>8</sup>, De Cara Stéphane<sup>2</sup>, Delame Nathalie<sup>2</sup>, Doreau Michel<sup>5</sup>, Dupraz Pierre<sup>9</sup>, Faverdin Philippe<sup>10</sup>, Garcia-Launay Florence<sup>10</sup>, Hassouna Melynda<sup>11</sup>, Hénault Catherine<sup>12</sup>, Jeuffroy Marie-Hélène<sup>8</sup>, Klumpp Katja<sup>13</sup>, Metay Aurélie<sup>14</sup>, Moran Dominic<sup>15</sup>, Recous Sylvie<sup>16</sup>, Samson Elisabeth<sup>11</sup>, Savini Isabelle<sup>17</sup>, Pardon Lénaïc<sup>17</sup>

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<sup>2</sup>INRA, UMR Eco-Pub, 78850 Thiverval-Grignon, France

<sup>3</sup>Agriculture et Agroalimentaire Canada, Québec (Québec), G1V2J3, Canada

<sup>4</sup>IRSTEA, UR GERE, 35044 Rennes, France

<sup>5</sup>INRA, UMR Herbivores, 63122 Saint-Genes-Champagnelle, France

<sup>6</sup>INRA, UMR LEF, 54042 Nancy, France

<sup>7</sup>AGROPARISTECH, UMR IEES, 75005 Paris, France

<sup>8</sup>INRA, UMR Agronomie, 78850 Thiverval-Grignon, France

<sup>9</sup>INRA, UMR SMART, 35011 Rennes, France

<sup>10</sup>INRA, UMR PEGASE, 35590 Saint Gilles, France

<sup>11</sup>INRA, UMR SAS, 35042 Rennes, France

<sup>12</sup>INRA, UR USS, 45075 Orléans, France

<sup>13</sup>INRA, UR Ecosystème Prairial, 63039 Clermont-Ferrand, France

<sup>14</sup>SUPAGRO, UMR SYSTEM, 34060 Montpellier, France

<sup>15</sup>SRUC, Land Economy and Environment Research,  
EH9 3JG, Edinburgh, United Kingdom

<sup>16</sup>INRA, UMR FARE, 51686 Reims, France

<sup>17</sup>INRA, DEPE, 75338 Paris, France

**95. Agroforestry for a climate-smart agriculture – a case study in France**

Cardinael Rémi<sup>1,4</sup>, Chevallier Tiphaine<sup>1</sup>, Germon Amandine<sup>3</sup>, Jourdan Christophe<sup>2</sup>, Dupraz Christian<sup>3</sup>, Barthès Bernard<sup>1</sup>, Bernoux Martial<sup>1</sup>, Chenu Claire<sup>4</sup>

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<sup>2</sup>CIRAD, Umr Eco&Sols, 34060 Montpellier, France

<sup>3</sup>INRA, Umr System, 34060 Montpellier, France

<sup>4</sup>AgroParisTech, IEES, 78850 Thiverval-Grignon, France

**96. Impacts of climate and socio-economic change at farm and landscape level in the Netherlands: climate smart agriculture?**

Reidsma Pytrik<sup>1</sup>, Bakker Martha M.<sup>2</sup>, Kanellopoulos Argyris<sup>3,4</sup>, Alam Shah J. <sup>4</sup>, Paas Wim<sup>4,5</sup>, Kros Johannes<sup>6</sup>, de Vries Wim<sup>6,7</sup>

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<sup>7</sup>Environmental Systems Analysis Group, Wageningen University, P.O. Box 47, 6700 AA Wageningen, the Netherlands

**97. Sustainability of agriculture: can climate change adaptations attract youth into agriculture?**

Betigül Onay Özman

YADA Foundation (Yaşama Dair Vakıf), Turkey

## L1.5 NORTH AMERICA

**98. A research program to address agricultural stakeholders' concerns regarding the evolution of crop pests associated with climate change**

Blondlot Anne<sup>1</sup>, Gagnon Annie-Ève<sup>2</sup>, Bourgeois Gaétan<sup>3</sup>, Brodeur Jacques<sup>4</sup>, Mimee Benjamin<sup>3</sup> and colleagues

<sup>1</sup>Ouranos, Montreal, Quebec, Canada

<sup>2</sup>Centre de recherche sur les grains (CÉROM), Saint-Mathieu-de-Beloeil, Quebec, Canada

<sup>3</sup>Agriculture and Agri-Food Canada, Saint-Jean-sur-Richelieu, Quebec, Canada

<sup>4</sup>Institut de recherche en biologie végétale, Université de Montréal, Montreal, Quebec, Canada

**99. Bioenergy crop impacts on soil carbon sequestration, soil biophysical properties and N<sub>2</sub>O emissions in Manhattan, Kansas**

McGowan Andrew<sup>1</sup>, Yishak Elias<sup>2</sup>, Rice Charles<sup>1</sup>

<sup>1</sup>Department of Agronomy: Kansas State University, 66506, Manhattan, United States

<sup>2</sup>Department of Mechanical Engineering: University of Maryland, 20742, College Park, United States

**100. Understanding farm level N<sub>2</sub>O emissions in California systems**

Decock Charlotte<sup>1</sup>, Verhoeven Elizabeth<sup>1</sup>, Pereira Engil<sup>1</sup>, Garland Gina<sup>1</sup>, Kennedy Taryn<sup>2</sup>, Suddick Emma<sup>3</sup>, Burger Martin<sup>4</sup>, Horwath Willam<sup>4</sup>, Six Johan<sup>1</sup>

<sup>1</sup>ETH Zurich, Department of Environmental Systems Science, 8092 Zurich, Switzerland

<sup>2</sup>University of California Davis, Department of Plant Sciences, 95616 Davis, California, USA

<sup>3</sup>Woods Hole Research Center, 02540-1644 Falmouth, Massachusetts, USA

<sup>4</sup>University of California Davis, Department of Land, Air and Water Resources, 95616 Davis, California, USA

**101. A transdisciplinary approach for climate smart management of maize**

Wright Morton Lois, Arritt Raymond, the CSCAP Team

Iowa State University, Ames, Iowa 50011, USA

## PARALLEL SESSION L2 CLIMATE-SMART STRATEGIES

Tuesday, 17 March 2015

14:00–18:00

### ORAL PRESENTATIONS

#### PARALLEL SESSION L2.1 DEVELOPING AND EVALUATING CLIMATE-SMART PRACTICES

#### ROOM SULLY 1

#### KEYNOTE PRESENTATIONS

**14:00** Developing and evaluating climate-smart practices and services

Campbell Bruce M.<sup>1</sup>, Corner-Dolloff C.<sup>2</sup>, Girvetz E.H.<sup>3</sup>, Rosenstock T.<sup>4</sup>

<sup>1</sup>CIAT, c/o University of Copenhagen, Copenhagen, Denmark

<sup>2</sup>CIAT, Cali, Colombia

<sup>3</sup>CIAT, Nairobi, Kenya

<sup>4</sup>ICRAF, Nairobi, Kenya

**14:30** Climate-smart agriculture practices and its evaluation

Dong Hongmin

*Institute of Environment and Sustainable Development in Agriculture, Chinese Academy of Agricultural Sciences, Beijing 100081, China*

### CONTRIBUTED ORAL PRESENTATIONS

**16:30** Rain water-based integrated agricultural system: a model for ensuring food security and adaptation in coastal Bangladesh

Talukder Byomkesh<sup>1</sup>, Blay-Palmer Alison<sup>1</sup>, van Loon Gary<sup>2</sup>

<sup>1</sup>*Department of Geography and Environmental Studies, Wilfrid Laurier University, Waterloo, Canada*

<sup>2</sup>*School of Environmental Studies, Queen's University, Kingston, Canada*

**16:45** Additive impacts of climate-smart agriculture practices in mixed crop-livestock systems in Burkina Faso

Rigolot Cyrille<sup>1,2</sup>, De Voil P.<sup>3</sup>, Douxchamps Sabine<sup>4</sup>, Prestwidge Di<sup>1</sup>, Van Wijk Mark<sup>5</sup>, Thornton Phillip<sup>6</sup>, Henderson B.<sup>1</sup>, Medina Hidalgo D.<sup>1</sup>, Rodriguez Daniel<sup>3</sup>, Herrero Mario<sup>1</sup>

<sup>1</sup>*Commonwealth Scientific and Industrial Research Organization, St Lucia, QLD 4067, Australia*

<sup>2</sup>*INRA, UMR 1273 Metafort, F-63122 Saint Genes Champanelle, France*

<sup>3</sup>*University of Queensland, Queensland Alliance for Agriculture and Food Innovation (QAAFI), Toowoomba, Australia*

<sup>4</sup>*International Livestock Research Institute (ILRI), Ouagadougou, Burkina Faso*

<sup>5</sup>*International Livestock Research Institute (ILRI), PO Box 30709-00100, Nairobi, Kenya*

<sup>6</sup>*CGIAR Research Programme on Climate Change, Agriculture and Food Security, (CAAFS), PO Box 30709-00100, Nairobi, Kenya*

**17:00** Developing indicators for Climate-Smart Agriculture (CSA)

Rawlins Maurice Andres, Heumesser Christine, Emenanjo Ijeoma, Zhao Yuxuan, Braimoh Ademola  
*The World Bank Group, 1818 H St. NW, Washington DC, USA*

**17:15** Towards metrics to track and assess climate smart agriculture

Verhagen Jan, Huib Hengsdijk, Sjaak Conijn, Annemarie Groot, Nico Polman, Theun Vellinga, Eddy Moors

*Wageningen UR, droevendaalsesteeg 4, 6708 pb, Wageningen, the Netherlands*

## PARALLEL SESSION L2.2 FACING CLIMATIC VARIABILITY AND EXTREMES

### ROOM SULLY 2

#### KEYNOTE PRESENTATIONS

##### 14:00 Facing climatic variability and extremes

Zougmore Robert<sup>1</sup>, Rao K.P.C.<sup>2</sup>, Diedhiou Arona<sup>3</sup>

<sup>1</sup>ICRISAT-Mali, BP 320 Bamako Mali

<sup>2</sup>ICRISAT Ethiopia, PO Box 5689, Addis Ababa, Ethiopia

<sup>3</sup>Université de Grenoble, BP 53, 38041, Grenoble Cedex 9, France

##### 14:30 Rainfall modifications in the context of climate change: the puzzle of the tropical regions

Lebel Thierry, Vischel Théo

LTHE, IRD & Université de Grenoble, BP 53, 38041, Grenoble Cedex 9, France

#### CONTRIBUTED ORAL PRESENTATIONS

##### 16:30 The potential for underutilised crops to improve food security in the face of climate change

Massawe Festo<sup>1</sup>, Mayes Sean<sup>1,2</sup>, Cheng A.<sup>1</sup>, Chai, H.H.<sup>1</sup>, Cleasby P.<sup>1</sup>, Symonds R.<sup>1</sup>, Ho W.K.<sup>2</sup>, Siise Aliyu<sup>1</sup>, Wong Q.<sup>1</sup>, Kendabie P.<sup>3</sup>, Yanusa Y.<sup>4</sup>, Azman R.<sup>2</sup>, Azam-Ali Sayed N.<sup>2</sup>

<sup>1</sup>University of Nottingham Malaysia Campus, Malaysia

<sup>2</sup>Crops for the Future, Malaysia

<sup>3</sup>University of Nottingham, United Kingdom

<sup>4</sup>Bayero University Kano, Nigeria

##### 16:45 Changes in climate variability and potential for impacts of droughts on agricultural markets

Leclère David, Havlík Petr

International Institute for Applied System Analysis (IIASA), Ecosystem Services Management program (ESM), Laxenburg, Austria

##### 17:00 How precisely do maize crop models simulate the impact of climate change variables on yields and water use?

Durand Jean-Louis<sup>1</sup>, Bassu Simona<sup>2</sup>, Brisson Nadine<sup>2</sup>, Boote Kenneth<sup>3</sup>, Lizaso Jon<sup>4</sup>, Jones James

W.<sup>5</sup>, Rosenzweig Cynthia<sup>6</sup>, Ruane Alex C.<sup>6</sup>, Adam Myriam<sup>7</sup>, Baron Christian<sup>8</sup>, Basso Bruno<sup>9,10</sup>, Biernath Christian<sup>11</sup>, Boogaard Hendrik<sup>12</sup>, Conijn Sjaak<sup>13</sup>, Corbeels Marc<sup>14</sup>, Deryng Delphine<sup>15</sup>, de Sanctis Giacomo<sup>16</sup>, Gayler Sebastian<sup>17</sup>, Grassini Patricio<sup>18</sup>, Hatfield Jerry<sup>19</sup>, Hoek Steven<sup>12</sup>, Izaurralde Cesar<sup>20</sup>, Jongschaap Raymond R.<sup>13</sup>, Kemanian Armen R.<sup>21</sup>, Kersebaum K. Christian<sup>22</sup>, Kim Soo-Hyung<sup>23</sup>, Kumar Naresh S.<sup>24</sup>, Makowski David<sup>2</sup>, Müller Christoph<sup>25</sup>, Nendel Claas<sup>22</sup>, Priesack Eckart<sup>11</sup>, Pravia Maria Virginia<sup>21</sup>, Sau Federico<sup>4</sup>, Shcherbak Iurii<sup>9,10</sup>, Tao Fulu<sup>26</sup>, Teixeira Edmar<sup>27</sup>, Timlin Dennis<sup>28</sup>, Waha Katharina<sup>24</sup>

<sup>1</sup>Unité de Recherche Pluridisciplinaire sur la Prairie et les Plantes Fourragères, INRA, BP 80006, Lusignan, 86600, France

<sup>2</sup>Unité d'Agronomie, INRA-AgroParisTech, BP 01, Thiverval-Grignon, 78850, France

<sup>3</sup>Department of Agronomy, University of Florida, P.O. Box 110500, Gainesville, FL 32611, USA

<sup>4</sup>Department Produccion Vegetal, Fitotecnia, University Politécnica of Madrid, Madrid, 28040, Spain

<sup>5</sup>Department of Agricultural & Biological Engineering, University of Florida, P.O. Box 110570, Gainesville, FL 32611, USA

<sup>6</sup>Climate Impacts Group, NASA Goddard Institute for Space Studies, 2880 Broadway, New York, NY 10025, USA

<sup>7</sup>UMR AGAP/PAM, CIRAD, Av. Agropolis, Montpellier, France,

<sup>8</sup>CIRAD, UMR TETIS, 500 rue J-F. Breton, Montpellier, F-34093, France

<sup>9</sup>Department of Geological Sciences, Michigan State University, East Lansing, MI, USA

<sup>10</sup>Department Crop Systems, Forestry and Environmental Sciences, University of Basilicata, Potenza, Italy

<sup>11</sup>Institute für Bodenökologie, Helmholtz Zentrum München, Ingolstädter Landstraße 1, D-85764, Neuherberg, Germany

<sup>12</sup>Centre for Geo-Information, Alterra, P.O. Box 47, Wageningen, 6700AA, the Netherlands

<sup>13</sup>WUR-Plant Research International, Wageningen University and Research Centre, P.O. Box 16, 6700AA, Wageningen, the Netherlands

<sup>14</sup>CIRAD-Annual Cropping Systems, C/O Embrapa-Cerrados Km 18, BR 020 - Rodovia Brasília/Fortaleza, CP 08223, CEP 73310-970, Planaltina, DF, Brazil

<sup>15</sup>Tyndall Centre for Climate Change research and School of Environmental Sciences, University of East Anglia, Norwich, NR4 7TJ, United Kingdom

<sup>16</sup>Unité AGROCLIM, INRA, Domaine st Paul Site Agroparc, Avignon Cedex 9, Avignon, 84914, France

<sup>17</sup>Water & Earth System Science (WESS) Competence Cluster, c/o University of Tübingen, Tübingen, 72074, Germany

<sup>18</sup>Department of Agronomy and Horticulture, University of Nebraska-Lincoln, 178 Keim Hall-East Campus, Lincoln, NE 68503-0915, USA

<sup>19</sup>USDA-ARS National Soil Tilth Laboratory for Agriculture and the Environment, 2110 University Boulevard, Ames, IA 50011, USA

<sup>20</sup>Pacific Northwest National Laboratory and University of Maryland, 5825 University Research Court Suite 3500, College Park, MD 20740, USA

<sup>21</sup>Department of Plant Science, The Pennsylvania State University, 247 Agricultural Sciences and Industries Building, University Park, PA 16802, USA

<sup>22</sup>Institute of Landscape Systems Analysis, ZALF, Leibniz-Centre for Agricultural Landscape Research, Eberswalder Str. 84, D-15374, Muencheberg, Germany

<sup>23</sup>School of Environmental and Forest Sciences, University of Washington, Seattle, WA 98195-4115, USA

<sup>24</sup>Indian Agricultural Research Institute, Centre for Environment Science and Climate Resilient Agriculture, New Delhi 110012, India

<sup>25</sup>Potsdam Institute for Climate Impact Research, Telegraphenberg A 31, P.O. Box 60 12 03, D-14412, Potsdam, Germany

<sup>26</sup>Institute of Geographical Sciences and Natural Resources Research, Chinese Academy of Sciences, Beijing, 100101, China

<sup>27</sup>Sustainable Production, The New Zealand Institute for Plant & Food Research Limited, Lincoln, Canterbury, New Zealand

<sup>28</sup>Crop Systems and Global Change Laboratory, USDA/ARS, 10300 Baltimore avenue, BLDG 001 BARC-WEST, Beltsville, 20705-2350 MD, USA

**17:15 Modeling livestock production under climate constraint in the African drylands to identify interventions for adaptation**

Mottet Anne<sup>1</sup>, Conchedda Giulia<sup>1</sup>, de Haan Cees<sup>2</sup>, Msangi S.<sup>3</sup>, Ham Frédéric<sup>4</sup>, Lesnoff Matthieu<sup>5</sup>, Fillol, Erwann<sup>4</sup>, Ickovicz Alexandre<sup>6</sup>, Cervigni Raffaello<sup>2</sup>, Gerber Pierre<sup>1</sup>

<sup>1</sup>FAO, 1Viale delle Terme di Caracalla 00153 Rome, Italy

<sup>2</sup>World Bank, 1818 H St NW, Washington, DC 20433, USA

<sup>3</sup>IFPRI, 2033 K Street, NW, Washington, DC 20006, USA

<sup>4</sup>ACF West Africa Regional Office, Yoff Toundoup, RYA lot No. 11, Dakar, Senegal

<sup>5</sup>CIRAD, Campus de Baillarguet, TA C-112 / A, 34398 Montpellier Cedex 5, France

<sup>6</sup>CIRAD, Campus Montpellier SupAgro-INRA, 2, place P. Viala, 34060 Montpellier cedex 1, France

**PARALLEL SESSION L2.3  
COMBINING MITIGATION,  
ADAPTATION AND SUSTAINABLE  
INTENSIFICATION**

**ROOM SULLY 3**

**KEYNOTE PRESENTATIONS**

**14:00 Ex-ante evaluation of Climate-Smart Agriculture options**

Cassman Kenneth<sup>1</sup>, van Ittersum M. K.<sup>2</sup>, Hochman Z.<sup>3</sup>, McIntosh P.<sup>3</sup>, Grassini P.<sup>1</sup>, Yang H.<sup>1</sup>, van Bussel L.G.J.<sup>2</sup>, Guilpart N.<sup>1</sup>, Van Wart J.<sup>1</sup>, Claessens L.<sup>4</sup>, Boogaard H.<sup>2</sup>, de Groot H.<sup>2</sup>, Wolf J.<sup>2</sup>, van Oort P.<sup>5</sup>

<sup>1</sup>Univ. of Nebraska, USA

<sup>2</sup>Wageningen University, the Netherlands

<sup>3</sup>CSIRO, Australia

<sup>4</sup>ICRISAT, Kenya

<sup>5</sup>AfricaRice

**14:30 Will sustainable intensification get us to 2 degrees Celsius?**

Wollenberg Lini<sup>1</sup>, Richards Meryl<sup>1</sup>, Havlik Petr<sup>2</sup>, Smith Pete<sup>3</sup>, Carter Sarah<sup>4</sup>, Herold Martin<sup>4</sup>

<sup>1</sup>CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), Gund Institute for Ecological Economics, University of Vermont, USA

<sup>2</sup>International Institute for Applied Systems Analysis (IIASA), Austria

<sup>3</sup>University of Aberdeen, United Kingdom

<sup>4</sup>Wageningen University and Research Centre, the Netherlands



## CONTRIBUTED ORAL PRESENTATIONS

### 16:30 Climate readiness in smallholder agricultural systems: Lessons learned from REDD+

Zurek Monika, Streck Charlotte, Roe Stephanie, Haupt Franziska with contributions from Wollenberg Lini and de Pinto Alex  
*Climate Focus, Sarphatikade 13, 1017 WV Amsterdam, the Netherlands*

### 16:45 Assessing low emissions agricultural pathways under alternative climate policy regimes

Kleinwechter Ulrich<sup>1</sup>, Havlik Petr<sup>1</sup>, Levesque Antoine<sup>1</sup>, Forsell Nicklas<sup>1</sup>, Zhang Yuquan W.<sup>1</sup>, Fricko Oliver<sup>2</sup>, Riahi Keywan<sup>2</sup>, Obersteiner Michael<sup>1</sup>  
<sup>1</sup>*International Institute for Applied Systems Analysis (IIASA), Ecosystems Services and Management Program, Schloßplatz 1, 2361 Laxenburg, Austria*  
<sup>2</sup>*International Institute for Applied Systems Analysis (IIASA), Energy Program, Schloßplatz 1, 2361 Laxenburg, Austria*

### 17:00 Climate-smart coffee systems in East Africa

Jassogne Laurence<sup>1</sup>, van Asten Piet<sup>1</sup>, Laderach Peter<sup>2</sup>, Craparo S.<sup>7</sup>, Liebig Theresa<sup>2</sup>, Rahn Eric<sup>2</sup>, Baca Maria<sup>2</sup>, Graefe S.<sup>3</sup>, Whitbread Anthony<sup>3</sup>, Nibasumba Anacle<sup>4</sup>, Ampaire Edidah<sup>1</sup>, Kagezi Godfrey<sup>5</sup>, Vaast Philippe<sup>6</sup>  
<sup>1</sup>*International Institute of Tropical Agriculture (IITA), P.O. 7878, Kampala, Uganda*  
<sup>2</sup>*International Center of Tropical Agriculture (CIAT), Cali, Columbia*  
<sup>3</sup>*Goettingen University, Goettingen, Germany*  
<sup>4</sup>*Institut des Sciences Agronomiques du Burundi (ISABU), Bujumbura, Burundi*  
<sup>5</sup>*National Coffee Research Institute (NaCORI), Mukono, Uganda*  
<sup>6</sup>*World Agroforestry Centre (ICRAF - CIRAD), Nairobi, Kenya*  
<sup>7</sup>*University of Witwatersrand (WITS), South Africa*

### 17:15 Prioritizing climate-smart agricultural interventions at multiple spatial and temporal scales

Shirsath Paresh B.<sup>1</sup>, Dunnett Alex<sup>2</sup>, Aggarwal Pramod K.<sup>3</sup>, Ghosh J.<sup>4</sup>, Joshi Pramod K.<sup>4</sup>, Thornton Phillip<sup>5</sup>, Pal B.<sup>6</sup>  
<sup>1</sup>*PDF- Climate Change Adaptation, CCAFS, IWMI-New Delhi, India*  
<sup>2</sup>*CCAFS, IWMI-New Delhi, India*  
<sup>3</sup>*CCAFS-South Asia, IWMI-New Delhi, India*

<sup>4</sup>*IFPRI, New Delhi, India*

<sup>5</sup>*Theme Leader – Data and Tools, CCAFS*

<sup>6</sup>*ISEC, Bengaluru, India*

## PARALLEL SESSION L2.4 BREEDING AND PROTECTING CROPS AND LIVESTOCK

### ROOM RONDELET

#### KEYNOTE PRESENTATIONS

### 14:00 Plant breeding for climate-smart agriculture

Glazmann Jean Christophe  
*UMR Amélioration Génétique et Adaptation des Plantes (Agap-DDSE), CIRAD, France*

### 14:30 What impact of climate change on animal health?

Lancelot Renaud, Guis Héléne, Lefrançois Thierry  
*Cirad, INRA, UMR CMAEE, France*

#### CONTRIBUTED ORAL PRESENTATIONS

### 16:30 Reducing nitrogen run-off and emission, and increasing rice productivity in African rice production environment

van Boxtel Jos<sup>1</sup>, Selvaraj Michael<sup>2</sup>, Dartey Kofi<sup>3</sup>, Lamo Jimmy<sup>4</sup>, Asante Maxwell<sup>3</sup>, Lu Zhongjin<sup>1</sup>, Ishitani Manabu<sup>2</sup>, Addae Prince<sup>5</sup>, Sanni Kayode<sup>5</sup>  
<sup>1</sup>*Arcadia Biosciences, Davis CA 95618, USA*  
<sup>2</sup>*CIAT, AA6713 Cali, Colombia*  
<sup>3</sup>*CSIR- CRI, PO Box 3785, Kumasi, Ghana*  
<sup>4</sup>*NARO-NaCRRRI, Box 7084, Kampala, Uganda*  
<sup>5</sup>*AATF, PO Box 30709, Nairobi, Kenya*

### 16:45 Utilization of ex situ collections and climate analogues for enhancing adaptive capacity to climate change

Archak Sunil<sup>1</sup>, Semwal D.P.<sup>1</sup>, Pandey Sushil<sup>1</sup>, Mitra Sarika<sup>2</sup>, Mathur P.N.<sup>2</sup>, Agarwal Pramod<sup>3</sup>, Bansal K.C.<sup>1</sup>  
<sup>1</sup>*ICAR-National Bureau of Plant Genetic Resources, Pusa Campus, New Delhi 110 012, India*

<sup>2</sup>Biodiversity International, Pusa Campus, New Delhi  
110 012, India

<sup>3</sup>IWMI, Pusa Campus, New Delhi 110 012, India

Tardieu François

INRA, LEPSE, 34060 Montpellier, France

**17:00 Adaptation of Mediterranean bovine livestock to climate constraints. Genetic diversity and breeding systems**

Flori Laurence<sup>1,2</sup>, Moazami-Goudarzi Katayoun<sup>1</sup>, Lecomte Philippe<sup>3</sup>, Moulin Charles-Henri<sup>3,4</sup>, Thévenon Sophie<sup>2</sup>, Alary Véronique<sup>3</sup>, Casabianca François<sup>5</sup>, Lauvie Anne<sup>5</sup>, Boushaba Nadjet<sup>6</sup>, Saïdi-Mehtar Nadhira<sup>6</sup>, Boujenane Ismail<sup>7</sup>, Araba Abdelillah<sup>7</sup>, Menni Dalal<sup>7</sup>, Pineau Olivier<sup>8</sup>, Ciampolini Roberta<sup>9</sup>, Casu Sara<sup>10</sup>, ElBeltagy Ahmed<sup>11</sup>, Osman Mona-Abdelzaher<sup>11</sup>, Rodellar Clemen<sup>12</sup>, Martinez Amparo<sup>13</sup>, Delgado Juan-Vicente<sup>13</sup>, Landi Vincenzo<sup>13</sup>, Hadjipavlou Georgia<sup>14</sup>, Ligda Christina<sup>15</sup>, Gautier Mathieu<sup>16</sup>, Laloë Denis<sup>1</sup>

<sup>1</sup>INRA/AgroParisTech, GABI, 78352 Jouy-en-Josas, France

<sup>2</sup>Cirad, INTERTRYP, 34000 Montpellier, France

<sup>3</sup>Cirad, SELMET, 34000 Montpellier, France

<sup>4</sup>Montpellier SupAgro, SELMET, 34000 Montpellier, France

<sup>5</sup>INRA, LRDE, 20250 Corte, France

<sup>6</sup>Université des Sciences et de la Technologie d'Oran, Département de Génétique Moléculaire Appliquée, 31000 Oran, Algeria

<sup>7</sup>Institut Agronomique et Vétérinaire Hassan II, Département de Productions et de Biotechnologies Animales, 10101 Rabat, Morocco

<sup>8</sup>La Tour du Valat, 13104 Arles, France

<sup>9</sup>Dipartimento di Scienze Veterinarie, LBG, 56124 Pisa, Italy

<sup>10</sup>Agris Sardegna, Settore Genetica e Biotecnologie, 07100 Sassari, Italy

<sup>11</sup>APRI, Animal Breeding and Genetics, Cairo, Egypt

<sup>12</sup>Facultad de Veterinaria, Lagenbio, 50013 Zaragoza, Spain

<sup>13</sup>Animal Breeding Consulting SL, Laboratorio de Genetica Molecular Aplicada, 14071 Cordoba, Spain

<sup>14</sup>Agricultural Research Institute, 1010 Lefkosia, Cyprus

<sup>15</sup>Veterinary Resarch Institute, NAGREF, 57001 Thessaloniki, Greece

<sup>16</sup>INRA/IRD/Cirad/Montpellier SupAgro, CBGP, 34988 Montferrier-sur-Lez, France

**17:15 Towards genotypes adapted to climate change via combination of phenotyping and modelling: The projects DROPS and Phenome**

**PARALLEL SESSION L2.5  
OVERCOMING BARRIERS: POLICIES  
AND INSTITUTIONAL  
ARRANGEMENTS TO SUPPORT  
CSA**

**ROOM BARTHEZ**

**KEYNOTE PRESENTATIONS**

**14:00 Overcoming barriers: policies and institutional arrangements to support CSA**

Lipper Leslie

FAO Rome, Via delle Terme di Caracalla, Rome, Italy

**14:30 Policies and institutions conducive for enhancing the transfer to CSA in Africa**

Sedogo Laurent<sup>1</sup>, Lamers John<sup>2</sup>, William Fonta<sup>3</sup>

<sup>1</sup>Executive Director WASCAL Accra, Ghana

<sup>2</sup>Coordinator of the Core Research Program of WASCAL, ZEF- University of Bonn, Germany

<sup>3</sup>Research Coordinator, WASCAL Competence Center Ouagadougou, Burkina Faso

**CONTRIBUTED ORAL PRESENTATIONS**

**16:30 Schools as climate smart agriculture information hubs**

Manalo Jaime IV A., Layaoen Myriam G., Balmeo Katherine P., Berto Jayson C., Frediles Christina A., Saludez Fredierick M.

Development Communication Division, Philippine Rice Research Institute, Maligaya, Science City of Munoz, Nueva Ecija 3119, Philippines

**16:45 Advancing CSA solutions through global collaboration: the Global Research Alliance on Agricultural Greenhouse Gases**

Clark Harry<sup>1</sup>, Scholten Martin<sup>2</sup>

<sup>1</sup>NZAGRC, Tennent Drive, Private Bag 11008, Palmerston North 4442, New Zealand

<sup>2</sup>Wageningen UR, Droevendaalsesteeg 4, 6708 PB Wageningen, the Netherlands

**17:00 Using whole-farm models for policy analysis of climate smart agriculture**

Paolantonio Adriana<sup>1</sup>, Branca Giacomo<sup>1</sup>, Arslan Aslihan<sup>1</sup>, Cavatassi Romina<sup>1</sup>, Cacho Oscar<sup>2</sup>

<sup>1</sup>Agricultural Development Economics Division, Food and Agriculture Organization of the UN, Viale delle Terme di Caracalla, Rome 00153, Italy

<sup>2</sup>University of New England, Armidale NSW 2350, Australia

**17:15 Climate shocks and risk attitudes among female and male maize farmers in Kenya**

Wainaina Priscilla<sup>1</sup>, Tongruksawattana Songporne<sup>2</sup>, De Groote Hugo<sup>2</sup>, Gunaratna Nilupa<sup>3</sup>

<sup>1</sup>Department of Agricultural Economics and Rural Development; Georg-August-University of Goettingen, Germany

<sup>2</sup>International Maize and Wheat Improvement Center (CIMMYT), Nairobi, Kenya

<sup>3</sup>Department of Global Health and Population, Harvard School of Public Health, Massachusetts, USA

## POSTER SESSION 2

Tuesday, 17 March 2015

15:00 – 16:30

## EXHIBITION HALL, LEVEL 0

### L2.1 DEVELOPING AND EVALUATING CLIMATE SMART PRACTICES

**1. Climate Smart Management Options for Improving the Soil Fertility and Farm Productivity in the Middle Hills of Nepal**

Shrestha Shiva Kumlar, Shrestha A., Bishwakarma B. K., Allen R.

Sustainable Soil Management Programme (SSMP), HELVETAS Swiss Intercooperation Nepal, GPO Box 688, Kathmandu, Nepal

**2. Linking an ecological based system and social resilience to build Climate Smart village model in Niger**

Tougiani Abasse<sup>1</sup>, Adamou Basso<sup>1</sup>, Boureima Moussa<sup>1</sup>, Jules Bayala<sup>2</sup> and Robert Zougmore<sup>3</sup>

<sup>1</sup>Institut National de Recherche Agronomique du Niger, BP429, Niamey, Niger

<sup>2</sup>World Agroforestry research Centre, Sahel Node, Samanko, BP: E5118, Bamako, Mali

<sup>3</sup>Programme CCAFS Afrique de l'Ouest, ICRISAT PO Box 320 Bamako, Mali

**3. Agriculture, climatic risks and food security in disaster-prone coastal landscape of Bangladesh**

Ronju Ahammad

Charles Darwin University, Australia

**4. Assessing economic benefits of the use of climate seasonal forecasts within cowpea and sesame sectors in Burkina Faso**

Ouédraogo Mathieu<sup>1</sup>, Barry Silamana<sup>2</sup>, Kagambega Levy<sup>2</sup>, Somé Léopold<sup>2</sup>, Zougmore Robert<sup>1</sup>

<sup>1</sup>The CGIAR Research Program on Climate Change, Agriculture and Food Security, West Africa Region, ICRISAT, BP 320, Bamako, Mali

<sup>2</sup>Institut de l'Environnement et de Recherches Agricoles (INERA), 04 BP 8645 Ouagadougou 04, Burkina Faso

**5. Measurement of climate change and its effect: comparison between an objective method and population perceptions**

Azeufouet Alain Simplicie<sup>1</sup>, Fofiri Nzossie Eric Joël<sup>2</sup>, Bring Christophe<sup>2</sup>

<sup>1</sup>Ministère de l'Agriculture et du développement rural / DESA, BP. 294 issea Yaoundé, Cameroon

<sup>2</sup>Département de géographie, Université de Ngaoundéré BP 454, Cameroon

**6. A set of indicators to evaluate policies for climate smart agriculture**

Bonati Guido, Altobelli Filiberto  
Istituto Nazionale di Economia Agraria, Via Nomentana 41, 00161 Roma, Italy

**7. Developing and evaluating CSA practices at country level: lessons learned from Malawi**

Phiri George<sup>1</sup>, Lipper Leslie<sup>2</sup>, Asfaw Solomon<sup>3</sup>, Cattaneo Andrea<sup>4</sup>, Cavatassi Romina<sup>5</sup>, Paolantino Adriana<sup>3</sup>, McCarthy Nancy<sup>6</sup>, Spairani Alessandro<sup>7</sup>, Branca Giacomo<sup>8</sup>, Grewer Uwe<sup>9</sup>, Mann Wendy<sup>10</sup>

<sup>1</sup>CSA Technical Coordinator, FAO, Malawi

<sup>2</sup>Senior Environmental Economist, FAO Rome, Viale delle Terme di Caracalla, Rome, Italy

<sup>3</sup>Economist, FAO Rome, Italy

<sup>4</sup>CSA Project Leader, FAO Rome, Italy

<sup>5</sup>CSA Project Coordinator, FAO Rome, Italy

<sup>6</sup>LEAD Analytics, Washington DC, USA

<sup>7</sup>CSA project officer, FAO Rome, Italy

<sup>8</sup>University of Tuscia, Viterbo, Italy

<sup>9</sup>Agricultural Mitigation Consultant, FAO Rome, Italy

<sup>10</sup>Senior Policy Consultant, FAO Rome, Italy

**8. Developing and evaluating CSA practices at country level: lessons learned from the Zambian experience**

Kokwe Misael<sup>1</sup>, Lipper Leslie<sup>2</sup>, Arslan Aslihan<sup>3</sup>, Cattaneo Andrea<sup>4</sup>, McCarthy Nancy<sup>5</sup>, Spairani Alessandro<sup>6</sup>, Branca Giacomo<sup>7</sup>, Grewer Uwe<sup>8</sup>, Mann Wendy<sup>9</sup>

<sup>1</sup>CSA Technical Coordinator, FAO Zambia, FAO Representation Hse 5, Addis Ababa Drive, Ridgeway 10101 LUSAKA, Zambia

<sup>2</sup>Senior Environmental Economist, FAO Rome, Via delle Terme di Caracalla, Rome, Italy

<sup>3</sup>Natural Resource Economist, FAO Rome, Italy

<sup>4</sup>CSA Project Leader, FAO Rome, Italy

<sup>5</sup>LEAD Analytics, Washington DC, USA

<sup>6</sup>CSA project officer, FAO Rome, Italy

<sup>7</sup>University of Tuscia, Viterbo, Italy

<sup>8</sup>Agricultural Mitigation Consultant, FAO Rome, Italy

<sup>9</sup>Senior Policy Consultant, FAO Rome, Italy

**9. Millet and sorghum leaf pruning and transplantation as adaptation techniques to rainfall variability in the Sahel**

Alhassane A., Traore S.B., Sarr B., Lawali M. N., Seybou O. A. B, Chaibou B.

Centre Régional AGRHYMET, PO Box 11011, Niamey, Niger

**10. CSA menus of practices in the MICCA pilots**

Rioux Janie, Rosenstock Todd, Kirui Josephine, Mpanda Mathew, Massoro Erasto, Karttunen Kaisa  
Food and Agriculture Organization of the UN, Viale delle Terme di Caracalla, Rome 0015, Italy

**11. Sustainability of broiler production in the context of climate change – Evaluation of new incubation strategies**

Nyuiadzi Dzidzo<sup>1,10</sup>, Méda Bertrand<sup>1</sup>, Travel Angélique<sup>2</sup>, Berri Cécile<sup>1</sup>, Bignon Laure<sup>2</sup>, Leterrier Christine<sup>3,4,5,6</sup>, Guilloteau Laurence<sup>7</sup>, Coustham Vincent<sup>1</sup>, Dusart Léonie<sup>2</sup>, Mercierand Frédéric<sup>8</sup>, Delaveau Joël<sup>8</sup>, Grasteau Sandrine<sup>1</sup>, Tona Kokou<sup>9</sup>, Bouvarel Isabelle<sup>2</sup>, Collin Anne<sup>1</sup>

<sup>1</sup>INRA, UR83 Recherches Avicoles, F-37380, Nouzilly, France

<sup>2</sup>Institut Technique de l'Aviculture, F-37380, Nouzilly, France

<sup>3</sup>INRA, UMR85 Physiologie de la Reproduction et des Comportements, F-3738, Nouzilly, France

<sup>4</sup>CNRS, UMR7247, F-37380, Nouzilly, France

<sup>5</sup>Université François Rabelais de Tours, F-37000, Tours, France

<sup>6</sup>IFCE, F-37380, Nouzilly, France

<sup>7</sup>INRA Val-de-Loire, F-37380, Nouzilly, France

<sup>8</sup>INRA, UE1295 Pôle d'Expérimentation Avicole de Tours, F-37380, Nouzilly, France

<sup>9</sup>Centre d'Excellence Régionale sur les Sciences Aviaires (CERSA), University of Lomé, B.P. 1515, Lomé, Togo

<sup>10</sup>Institut Togolais de Recherche Agronomique (ITRA), BP 1163, Lomé, Togo

**12. An analytical framework for Climate-Smart Agriculture at the community level**

Chandra Alvin, McNamara Karen, Dargusch Paul  
*School of Geography Planning and Environmental Management, University of Queensland, St Lucia Campus, Brisbane, QLD 4072, Australia*

**13. Are cropping practices developed by Sub-Saharan farmers climate-smart? Case study of millet cropping system in Senegal**

Tall Laure<sup>1</sup>, Mbengue Medoune<sup>2</sup>, Ndour B. Yacine<sup>1</sup>, Masse Dominique<sup>2</sup>, Clermont-Dauphin Cathy<sup>3</sup>  
<sup>1</sup>*Institut Sénégalais de Recherches Agricoles (ISRA), Laboratoire National sur les productions végétales (LNRPV), Dakar, Senegal*  
<sup>2</sup>*Institut de Recherche pour le Développement (IRD), LMI IESOL, Dakar, Senegal*  
<sup>3</sup>*Institut de Recherche pour le Développement (IRD), UMR Eco&Sol, Montpellier, France*

**14. Namibia specific climate smart agricultural land use practices: a budding vehicle for improving ecosystem services**

Kuhn Nikolaus J., Naanda Martha Talamondjila, Bloemertz Lena  
*Physical Geography and Environmental Change, Department of Environmental Sciences, University of Basel (UNIBAS), Klingelbergstrasse 27, 4056 Basel, Switzerland*

**15. A two-dimension evaluation of CSA practices. Evaluating practices by indicators and reduce non-observable variable bias**

Maldonado Jorge<sup>1</sup>, Gómez John<sup>1</sup>, Corner-Doloff Caitlin<sup>2</sup>, Lizarazo Miguel<sup>2</sup>  
<sup>1</sup>*Universidad de los Andes, Bogotá, Colombia*  
<sup>2</sup>*International Center for Tropical Agriculture (CIAT), Decision and Policy Analysis, Cali, Colombia*

**16. Balancing complexity and usability when modelling farm scale production and greenhouse gas emissions**

Hutchings Nicholas, Kristensen Ib  
*Dept of Agroecology, Aarhus University, Blichers Alle 1, 8830 Tjele, Denmark*

**17. An impact assessment of distinct agricultural climate protection measures for the implementation on 10 000 Swiss farms**

Prechsl Ulrich E., Alig Ceesay Martina, Wolff Veronika, Gaillard Gérard  
*Agroscope, Institute for Sustainability Sciences, Reckenholzstrasse 191, CH-8046 Zurich, Switzerland*

**18. How biodiversity-agriculture integration meets environmental expectations in a changing climate: a gender perspective**

Chitakira Munyaradzi  
*Department of Environmental Sciences, University of South Africa, Johannesburg 1710, South Africa*

**19. Analysing constraints to the improvement of cattle productivity via trypanosomosis treatment in West Africa**

MacLeod Michael<sup>1</sup>, Eory Vera<sup>1</sup>, Wint G.R.W.<sup>2</sup>, Shaw Alexandra P.M.<sup>3</sup>, Gerber Pierre<sup>4</sup>, Cecchi Giuliano<sup>5</sup>, Mattioli Raffaele C.<sup>4</sup>, Robinson Tim P.<sup>6</sup>  
<sup>1</sup>*Land Economy, Environment and Society Group, SRUC, Edinburgh, EH9 3JG, United Kingdom*  
<sup>2</sup>*Environmental Research Group Oxford (ERGO), Department of Zoology, South Parks Road, Oxford, OX1 3PS, United Kingdom*  
<sup>3</sup>*AP Consultants, 22 Walworth Enterprise Centre, Duke Close, Andover, SP10 5AP, United Kingdom*  
<sup>4</sup>*Food and Agriculture Organization of the United Nations (FAO), Animal Production and Health Division. Viale delle Terme di Caracalla, 00153 Rome, Italy*  
<sup>5</sup>*Food and Agriculture Organization of the United Nations, Sub-regional Office for Eastern Africa, CMC Road, P.O. Box 5536, Addis Ababa, Ethiopia*  
<sup>6</sup>*Livestock Systems and Environment (LSE), International Livestock Research Institute (ILRI), P.O. Box 30709, 00100 Nairobi, Kenya*

**20. Emission of N<sub>2</sub>O from soil received saline and sodic water: effects of compost and gypsum applications**

Dheri Gurmeet Singh<sup>1</sup>, Lal Rattan<sup>2</sup>  
<sup>1</sup>*Department of Soil Science, Punjab Agricultural University, Ludhiana-141004, India*  
<sup>2</sup>*Carbon Management and sequestration Center, The Ohio State University, Columbus, USA*

**21. Climate-Smart Agriculture livelihood options for displaced population on Yap Island**

Krishnapillai Murukesan V.  
*Cooperative Research and Extension, College of Micronesia-FSM, Yap Campus, Colonia, Yap, FM 96943, Federated States of Micronesia*

**22. Evaluating the cost-effectiveness of development investments**

Luedeling Eike<sup>1</sup>, De Leeuw Jan<sup>2</sup>, Rosenstock Todd S.<sup>2</sup>, Lamanna Christine<sup>2</sup>, Shepherd Keith<sup>2</sup>

<sup>1</sup>World Agroforestry Centre and Center for Development Research (ZEF), University of Bonn, Walter-Flex-Str. 3, 53113 Bonn, Germany

<sup>2</sup>World Agroforestry Centre, PO Box 30677, 00100, Nairobi, Kenya

**23. MAPA project: resilient agro-climatic adaptation models for livestock production systems in Boyacá, Colombia**

López-Cepeda Michael, Bolaños-Benavides Martha, García-Gómez Gustavo  
CORPOICA (Colombian Corporation of Agricultural Research), Tibaitatá Investigation Center. Postcode: P.O. Box 344300. Bogotá, Colombia

**24. Assessing the determinants of adaptation strategies at farm level: the case of wine growers in South-East France**

Graveline Nina, Grémont Marine  
BRGM, 1039, avenue de Pinville. 34000 Montpellier, France

**25. Determinants of adoption of climate smart agriculture in coastal Bangladesh**

Saroar Md Mustafa  
Urban and Rural Planning Discipline, Khulna University, Khulna 9208, Bangladesh

**26. Evolution of soil functional diversity after changes in management practices and effects on N<sub>2</sub>O emissions**

Recous Sylvie<sup>1</sup>, Léonard Joël<sup>2</sup>, Alavoine Gonzague<sup>1</sup>, Amossé Joël<sup>2,3</sup>, Bertrand Michel<sup>3</sup>, Boizard Hubert<sup>2</sup>, Brunet Nicolas<sup>2</sup>, Chauvat Matthieu<sup>4</sup>, Cheviron Nathalie<sup>5</sup>, Cluzeau Daniel<sup>6</sup>, Coudrain Valérie<sup>1,5</sup>, Dequiet Samuel<sup>7</sup>, Duparque Annie<sup>8</sup>, Duval Jérôme<sup>2</sup>, Hedde Mickaël<sup>5</sup>, Maron Pierre-Alain<sup>7</sup>, Peyrard Céline<sup>2</sup>, Philippot Laurent<sup>7</sup>, Mary Bruno<sup>2</sup>

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<sup>2</sup>INRA, UR AgrolImpact, Laon, France

<sup>3</sup>INRA, UMR AgroParisTech Agronomie, Thiverval-Grignon, France

<sup>4</sup>University of Rouen, ECODIV laboratory, Mont-Saint-Aignan, France

<sup>5</sup>INRA, UR PESSAC, Versailles, France

<sup>6</sup>Université de Rennes, UMR CNRS Ecobio, Rennes, France

<sup>7</sup>INRA, UMR AGROECOLOGIE, Dijon, France

<sup>8</sup>AgroTranfert Ressources et Territoires, Estrées-Mons, France

**27. Opportunities and challenges in China's irrigation water-energy nexus**

Cremades Roger<sup>1</sup>, Rothausen Sabrina G.S.A.<sup>2</sup>, Conway Declan<sup>3</sup>, Wang Jinxia<sup>4</sup>, Zou Xiaoxia<sup>5</sup>, Li Yu'e<sup>5</sup>

<sup>1</sup>International Max Planck Research School on Earth System Modeling (IMPRS-ESM), Hamburg, Germany, and; Research Unit, Sustainability and Global Change, University of Hamburg, Germany

<sup>2</sup>Department of Geography, University of Copenhagen, Copenhagen, Denmark

<sup>3</sup>Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science, London, United Kingdom

<sup>4</sup>Center for Chinese Agricultural Policy, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, Beijing, 100101, P.R. China

<sup>5</sup>Institute of Environment and Sustainable Development in Agriculture, Chinese Academy of Agricultural Sciences, 100081 Beijing, P.R. China

**28. A climate smart strategy to reduce risks and increase resilience of agricultural production systems in Colombia**

Ayarza Miguel Angel, Rojas Edwin, Aguilera Elizabeth, Bolaños Martha, Arce Blanca, Rodríguez Gonzalo, Martínez Juan Carlos, Bautista Luis  
Corporacion Colombiana de Investigacion Agropecuaria, Corpoica, Km 14, via Bogota-Mosquera, Bogota, Colombia

**29. Interpretation of GHG emissions from mixed crop, grassland and ruminant systems using the FarmSim model**

Carozzi Marco<sup>1</sup>, Martin Raphaël<sup>2</sup>, Klumpp Katja<sup>2</sup>, Borrás David<sup>2</sup>, Eza Ulrich<sup>2</sup>, Rumpel Cornelia<sup>3</sup>, Crème Alexandra<sup>3</sup>, Le Roux Xavier<sup>4</sup>, Poly Frank<sup>4</sup>, Chabbi Abad<sup>3</sup>, Massad Raia Silvia<sup>1</sup>

<sup>1</sup>INRA, AgroParisTech, UMR 1091 Environnement et Grandes Cultures, 78850 Thiverval-Grignon, France

<sup>2</sup>INRA, UR 0874 UREP Unité de Recherche sur l'Ecosystème Prairial, 63100 Clermont-Ferrand, France

<sup>3</sup>BIOEMCO, UMR 7618, CNRS-INRA-ENS-Paris 6, bât EGER, 78850 Thiverval-Grignon, France

<sup>4</sup>Université de Lyon, INRA, CNRS, Université Lyon 1, Microbial Ecology Centre (UMR 5557 CNRS, USC 1364 INRA), Villeurbanne, France

**30. DAYCENT parameterization and uncertainty assessment for modelling Swiss crops**

Necpalova Magdalena, Lee Juhwan, Six Johan  
ETH-Zurich, Sustainable Agroecosystems,  
Tannenstrasse 1, 8092 Zurich, Switzerland

<sup>2</sup>Tropenbos International, 6701 AN Wageningen, and  
Utrecht University, department of Biology, Section of  
Ecology & Biodiversity, 3584 CH Utrecht, the  
Netherlands

**31. The yield response of intercrop system to rainfall changes on the southern slopes of Mt. Kenya in Embu**

Kanampiu Fred<sup>1</sup>, Njeru M.James<sup>1</sup>, Kitonyo Onesmus<sup>2</sup>, Micheni Alfred<sup>3</sup>

<sup>1</sup>International Maize and Wheat Improvement Centre, P.O. Box 1041-00621, Nairobi, Kenya

<sup>2</sup>The University of Adelaide, Adelaide SA 5005, Australia

<sup>3</sup>Kenya Agricultural Research Institute, P.O. Box 27-60100, Embu, Kenya

**32. Rain water harvest technology as a tool for climate smart agriculture for small holder farmer in Bangladesh**

Abdullah Hasan Muhammad, Ahamed Tofayel, Miah Md Gisahuddin, Rahman Mezanur  
Department of Agroforestry and Environment,  
Bangabandhu Sheikh Mujibur Rahman Agricultural University, Gazipur-1706, Bangladesh

**33. Greenhouse gases emission efficiency of alternative tillage practices in wheat farming systems of Bangladesh**

Aravindakshan Sreejith<sup>1</sup>, Tittonell Pablo<sup>1</sup>, Krupnik T.J.<sup>2</sup>, Scholberg J.M.S.<sup>1</sup>, Groot J.C.J.<sup>1</sup>, Rossi Frederick<sup>2</sup>

<sup>1</sup>Farming Systems Ecology Group, Wageningen University, 6708PB, Wageningen, the Netherlands

<sup>2</sup>International Maize and Wheat Improvement Center (CIMMYT), Bangladesh Country Office, Dhaka, 1212, Bangladesh

**34. Enabling synergies between development, climate change and conservation through land use practices portfolio approach**

Duguma Lalisa A., Minang Peter A.  
World Agroforestry Centre, P.O .Box 30677 -00100  
Un Avenue Gigiri, Nairobi, Kenya

**35. Coffee agroforestry systems in Peru – a double dividend for biodiversity and small scale farmers?**

Jezeer Rosalien E.<sup>1</sup>, Verweij Pita A.<sup>1</sup>, Boot Rene G.A.<sup>2</sup>

<sup>1</sup>Utrecht University, Copernicus Institute of Sustainable Development, Section of Energy and Resources, 3584 CS, Utrecht, the Netherlands

**36. Soil carbon input by below- and above-ground biomass in rainfed cropping systems in the highlands, Madagascar**

Laingo Irintsoa Rasolofo<sup>1</sup>, Naudin Krishna<sup>2</sup>, Botoela Odom<sup>1</sup>, Razafimbelo Tantely<sup>3</sup>

<sup>1</sup>FOFIFA Ampandrianomby, BP 1690 Antananarivo 101, Madagascar

<sup>2</sup>UPR AIDA, CIRAD, F-34398 Montpellier, France

<sup>3</sup>Laboratoire des Radio-Isotopes (LRI), Université d'Antananarivo, BP3383, Antananarivo 101, Madagascar

**37. Climate Smart livestock development in natural and improved savannas of an extensive ranch in central Africa (RDC)**

Lecomte Phillipe<sup>1</sup>, Duclos A.<sup>1,2</sup>, Juanes Xaveir<sup>1</sup>, Ndao Séga<sup>3</sup>, De Crem Ph.<sup>4</sup>, Vigne Mathieu<sup>1</sup>, Blanfort Vincent<sup>1</sup>

<sup>1</sup>CIRAD, UMR Selmet, Montpellier, France

<sup>2</sup>UMRH Clermont, France

<sup>3</sup>ISRA, CRZ Kolda, Senegal

<sup>4</sup>Orgaman-JVL, Kinshasa, RD Congo

**38. Targeting CSA in Southern Tanzania under multiple uncertainties**

Lamanna Christine<sup>1</sup>, Rosenstock Todd S.<sup>1,2</sup>, Luedeling Eike<sup>3</sup>

<sup>1</sup>World Agroforestry Centre (ICRAF), Nairobi, Kenya

<sup>2</sup>CGIAR Research Program on Climate Change, Agriculture, and Food Security (CCAFS), Nairobi, Kenya

<sup>3</sup>World Agroforestry Centre (ICRAF), Bonn, Germany

**39. Opportunities and limitations of emissions intensity as a metric for climate change mitigation from the livestock sector**

Schulte Rogier P.O.<sup>1</sup>, Reisinger Andy<sup>2</sup>, Clark Harry<sup>2</sup>, Donnellan Trevor<sup>1</sup>, Lanigan Gary<sup>1</sup>

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**40. Climate smart agriculture from field to farm scale: a model based approach for Southern Africa**

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**41. Mainstreaming climate smart agriculture practices through climate smart villages: scalable evidences from South Asia**

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**42. Towards a scalable framework for evaluating and prioritizing climate-smart agriculture practices and programs**

Corner-Dolloff Caitlin<sup>1</sup>, Jarvis Andrew<sup>1,2</sup>, Loboguerrero Ana Maria<sup>2</sup>, Lizarazo Miguel<sup>2</sup>, Nowak Andreea<sup>1</sup>, Andrieu Nadine<sup>1,3</sup>, Howland Fanny<sup>1</sup>, Smith Cathy<sup>4</sup>, Maldonado Jorge<sup>5</sup>, Gomez John<sup>5</sup>, Rosenstock Todd S.<sup>6</sup>, Girvetz Evan H.<sup>1</sup>

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**43. Repeated inputs of organic matter in the long term protect soils from global changes**

Feder Frédéric<sup>1</sup>, Diallo Falilou<sup>2</sup>, Ntoma Rachel<sup>2,3</sup>, Masse Dominique<sup>2</sup>, Diome Farid<sup>3</sup>, Akpo Léonard Elie<sup>3</sup>

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**44. The use of agroforestry practices by dairy farmers in Malawi**

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**45. Towards climate-smart dairy value chains in Tanzania**

Notenbaert An<sup>1</sup>, Paul B.<sup>1</sup>, Fraval S.<sup>2</sup>, Morris J.<sup>4</sup>, Ran Y.<sup>5</sup>, Herrero Mario<sup>5</sup>, Mugatha S.<sup>2</sup>, Lannerstad M.<sup>2</sup>, Barron J.<sup>4</sup>

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**46. Adapting pest management practices in sub-Saharan horticultural cropping systems in the context of climate change**

Ratnadass Alain, Chailleux Anaïs, Martin Thibaud, Simon Serge, Vayssières Jean-François

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**47. Promoting Climate Smart Agriculture in Nigeria: Household strategies and determinants among farmers**



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<sup>2</sup>Dept. of Agricultural and Environmental Engineering, Obafemi Awolowo University, Ile-Ife, Nigeria

#### 48. Climate forecast, sustainable land and practices management, useful tools for implementation a climate smart village

Ndour Ndeye Yacine Badiane<sup>1</sup>, Ndiaye Ousmane<sup>2</sup>, Sall Moussa<sup>1</sup>, Sanogo Diaminatou<sup>1</sup>, Toure Katim<sup>1</sup>, Thiam Djibril<sup>3</sup>, Moussa Abdoulaye<sup>4,5</sup>, Ouedraogo Mathieu<sup>4,5</sup>, Bayala Jules<sup>6</sup>, Zougmore Robert<sup>4,5</sup>

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#### 49. Characterization of biochar properties derived from willow plant biomass for carbon sequestration and agricultural use

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#### 50. Assessing mitigation potential of agricultural practices in tropical, developing country systems

Richards Meryl<sup>1,2</sup>, Metzel Ruth<sup>3</sup>, Chirinda Ngonidzache<sup>4</sup>, Ly Proyuth<sup>5</sup>, Nyamadzawo George<sup>6</sup>, Quynh Vuduong<sup>7</sup>, Shi Yuefeng<sup>8</sup>, de Neergaard Andreas<sup>9</sup>, Oelofse Myles<sup>9</sup>, Wollenberg Eva<sup>1,2</sup>, Rosenstock Todd<sup>10</sup>

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<sup>10</sup>World Agroforestry Centre, Nairobi 00100, Kenya

#### 51. PERPHECLIM ACCAF Project - Perennial fruit crops and forest phenology evolution facing climatic changes

Garcia de Cortazar-Atauri Iñaki<sup>1</sup>, Audergon Jean Marc<sup>2</sup>, Bertuzzi Patrick<sup>1</sup>, Anger Christel<sup>3</sup>, Bonhomm, Marc<sup>4</sup>, Chuine Isabelle<sup>5</sup>, Davi Hendrik<sup>6</sup>, Delzon Sylvain<sup>7</sup>, Duchêne Eric<sup>8</sup>, Legave Jean Michel<sup>9</sup>, Pichot Christian<sup>6</sup>, Raynal Hélène<sup>10</sup>, Van Leeuwen Cornelis<sup>11</sup>, PERPHECLIM Team<sup>12</sup>

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#### 52. Potential for biochar to mitigate N<sub>2</sub>O emissions is minimal at the field scale and in upland cropping systems

Verhoeven Elizabeth<sup>1,2</sup>, Pereira Engil<sup>1,2</sup>, Decock Charlotte<sup>2</sup>, Suddick Emma<sup>1,3</sup>, Angst Teri<sup>1</sup>, Six Johan<sup>1,2</sup>

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<sup>3</sup>Department of Earth, Ocean, and Atmospheric Sciences, Florida State University. Tallahassee, FL, 32306, USA

**53. Facilitating climate adaptation in irrigated agriculture with decision support systems: El Molino platform**

Meza Francisco<sup>1,2</sup>, Poblete David<sup>1</sup>, Vicuña Sebastian<sup>1</sup>, Gurovich Luis<sup>1,2</sup>, Miranda Marcelo<sup>1,2</sup>, Melo Oscar<sup>1,2</sup>

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**54. A model-based approach for adapting cropping systems to climate change**

Mottes Charles<sup>1,2</sup>, Makowski David<sup>1,2</sup>, Doré Thierry<sup>2,1</sup>

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**55. Tweaking the system: optimization of mitigation strategies in smallholder flooded rice systems**

de Neergaard Andreas<sup>1</sup>, Ly Proyuth<sup>1</sup>, Vu Quynh Duong<sup>2</sup>, Pandey Arjun<sup>1</sup>, Islam Syed<sup>1</sup>, Tariq Azeem<sup>1</sup>, Jensen Lars Stoumann<sup>1</sup>

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**56. Effect of coated and uncoated dietary nitrate on dairy cow health and dairy product quality**

Van Adrichem Peter S.J.<sup>1</sup>, Heck Jeroen M.L.<sup>2</sup>, Perdok Hink B.<sup>1</sup>, Rademaker Jan L.W.<sup>3</sup>, Newbold John R.<sup>1</sup>

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**57. Rainwater harvesting and conservation: climate smart sustainable techniques for homestead and cropland production**

Botha J.J., Anderson J.J.

ARC-Institute for Soil, Climate and Water, Private Bag X01, Glen, 9360, South Africa

**58. Pathways for Climate Smart Agriculture (CSA) in the drylands of Africa**

Aune Jens B.<sup>1</sup>, Adama Coulibaly<sup>2</sup>, ElGailani Abdalla<sup>3</sup>, Abdelrahman Ousman<sup>3</sup>

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<sup>3</sup>Agricultural Research Corporation/EIObeid Research Station, EIObeid, Sudan

**59. Climate-smart agriculture: panacea, propaganda or paradigm shift?**

Rosenstock Todd S.<sup>1</sup>, Lamanna Christine<sup>2</sup>, Tully Katherine L.<sup>3</sup>, Corner-Dolloff Caitlin<sup>4</sup>, Lazaro Miguel<sup>4</sup>, Girvetz Evan H.<sup>5</sup>

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**60. Evaluating agricultural mitigation and scaling up climate-smart practices using the FAO EX-Ante Carbon-balance Tool**

Bernoux Martial<sup>1</sup>, Bockel Louis<sup>2</sup>, Grewer Uwe<sup>2</sup>, François Jean-Luc<sup>3</sup>, Rossin Nicolas<sup>4</sup>, Braimoh Ademola<sup>5</sup>

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<sup>3</sup>AFD, ARB, Paris, France

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**61. Characterization, stability, availability of nutrients and microbial effects of kiln produced biochars**

Purakayastha T.J.<sup>1</sup>, Savita Kumari<sup>1</sup>, Pathak H.<sup>2</sup>

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**62. Effect of pyrolysis temperatures on stability and priming effects of C<sub>3</sub> and C<sub>4</sub> biochars applied to two different soils**

Purakayastha T. J.<sup>1</sup>, Das K.C.<sup>2</sup>, Gaskin Julia<sup>3</sup>, Harris Keith<sup>2</sup>, Smith J. L.<sup>4</sup>, Savita Kumari<sup>1</sup>

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<sup>4</sup>USDA-ARS, Pacific West Area Land Management and Water, Conservation Research Unit, Pullman, WA 99164-6421, USA

**63. Smallholders farm carbon footprint reduced by agroecological practices (Highlands & East Coast, Madagascar)**

Rakotavao Narindra<sup>1</sup>, Razakaratrio Joyce<sup>1</sup>, Razafimbelo Tantely<sup>1</sup>, Deffontaines Sylvain<sup>2</sup>, Rakotosamimanana Stéphan<sup>2</sup>, Jahiel Michel<sup>3,4</sup>, Albrecht Alain<sup>5</sup>

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**64. Climate Smart Agriculture imperative in Nepal: prospect and challenges**

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**65. Big data from small farms: analysis of drivers of food security across farming systems in sub Saharan Africa**

van Wijk Mark T.<sup>1</sup>, Frelat Romain<sup>1,2</sup>, Lopez Ridaura Santiago<sup>2</sup>, van Asten Piet<sup>3</sup>, Djurfeldt Anders<sup>4</sup>, Douxchamps Sabine<sup>5</sup>, Paul Birthe<sup>6</sup>, Ritzema Randall<sup>7</sup>, Rodriguez Daniel<sup>8</sup>, Giller Ken E.<sup>9</sup>, Herrero Mario<sup>10</sup>

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**66. Participatory action research in climate-smart villages of Tanzania: fast track for new potato resilient varieties**

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<sup>4</sup>District Agricultural Irrigation and Cooperatives Office, Horticulture department, Lushoto, Tanzania

**67. Prospects of climate smart agriculture (CSA) under low-input and rain-fed conditions in southern Africa**

Rusinamhodzi Leonard<sup>1</sup>, Thierfelder Christian<sup>2</sup>, Berre David<sup>2</sup>, Lopez Ridaura Santiago<sup>3</sup> Mkuhlani Siyabusa<sup>2</sup>, Nyagumbo Isaiah<sup>2</sup>, Corbeels Marc<sup>4</sup>

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**68. Climate change, promising technologies and ex ante analysis of impacts on agriculture and food security to 2050**

Wiebe Keith<sup>1</sup>, Robinson Sherman<sup>1</sup>, Mason-D’Croz Danie<sup>1</sup>, Islam Shahnaila<sup>1</sup>, Robertson Richard<sup>1</sup>, Cennachi Nicola<sup>1</sup>, Rosegrant Mark<sup>1</sup>, Creamer Bernardo<sup>2</sup>, Sika Gbegbelebege<sup>3</sup>, Hareau Guy<sup>4</sup>, Kleinwechter Ulrich<sup>5</sup>, Nedumaran Swamikannu<sup>6</sup>, Mottaleb Khondoker<sup>7</sup>

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**69. Strategies for developing climate resilient genotypes of rice and chickpea**

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**70. Simulation of spot blotch in wheat as strategic decision support for adaptation practice in changing scenario**

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**71. To evaluate reforestation in farms: a tool for smallholders and the sustainability of their initiatives (EvaRefo)**

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**72. Backyard potted yam cultivation in Abuja, Nigeria**

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**73. Meta-analysis of the effect of dietary nitrate on enteric methane emissions in ruminants**

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**74. Climate smart strategies to strengthened coffee farmers adaptive capacity to climate change**

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**75. Linking agricultural adaptation strategies and food security: evidence from West Africa**

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#### 76. Quantifying greenhouse gas emissions and carbon storage at the local scale in the U.S.

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#### 77. A systemic approach to evaluate shea parklands as possible smart agriculture to be intensified in Sudanese Africa

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#### 78. Participatory methodology of agricultural extension to Climate Smart Agriculture development: a case in Brazil

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## L2.2 FACING CLIMATIC VARIABILITY AND EXTREMES

#### 79. Consequences of high temperatures and drought on peach fruit production strongly depend on their period of occurrence

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**80. Reducing uncertainty in prediction of wheat performance under climate change**

Martre Pierre<sup>1,2</sup>, Asseng Senthold<sup>3</sup>, Ewert Frank<sup>4</sup>, Rötter Reimund<sup>5</sup>, Lobell David<sup>6</sup>, Cammarano Davide<sup>1</sup>, Kimball Bruce<sup>7</sup>, Ottman Mike<sup>8</sup>, Wall Gerard<sup>7</sup>, White Jeffrey<sup>7</sup>, Reynolds Matthew<sup>9</sup>, Alderman Phillip<sup>9</sup>, Prasad Vara<sup>10</sup>, Aggarwal Pramod<sup>11</sup>, Anothai Jakarat<sup>12</sup>, Basso Bruno<sup>13</sup>, Biernath Christian<sup>14</sup>, Challinor Andy<sup>15,16</sup>, De Sanctis Giacomo<sup>17,18</sup>, Doltra Jordi<sup>19</sup>, Fereres E.<sup>20</sup>, Garcia-Vila Margarita<sup>20</sup>, Gayler Sebastian<sup>21</sup>, Hoogenboom Gerrit<sup>12</sup>, Hunt Anthony<sup>22</sup>, Izaurralde César<sup>23,24</sup>, Jabloun M.<sup>25</sup>, Jones Curtis<sup>23</sup>, Kersebaum Christian<sup>26</sup>, Koehler Ann-Kristin<sup>15</sup>, Müller Christoph<sup>27</sup>, Naresh Kumar Soora<sup>28</sup>, Nendel Claas<sup>26</sup>, O'Leary Garry<sup>29</sup>, Olesen Jorgen E.<sup>25</sup>, Palosuo Taru<sup>5</sup>, Priesack Eckart<sup>14</sup>, Eyshi Rezaei Ehsan<sup>2</sup>, Ruane Alex<sup>30</sup>, Semenov Mikhail<sup>31</sup>, Shcherbak Iruii<sup>13</sup>, Stöckle Claudio<sup>32</sup>, Stratonovitch Pierre<sup>31</sup>, Streck Thilo<sup>33</sup>, Supit Iwan<sup>34</sup>, Tao Falu<sup>5,35</sup>, Thorburn Peter<sup>36</sup>, Waha Katharina<sup>27</sup>, Wang Enli<sup>37</sup>, Wallach Daniel<sup>38</sup>, Wolf Joost<sup>34</sup>, Zhao Z.<sup>39,37</sup>, Zhu Yan<sup>40</sup>

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**81. Managing climate induced risks and adaptation in the agriculture sector; a case of Punjab province Pakistan**

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**82. Veille Agro Climatique (VAC): a real time monitoring tool for agroclimatic conditions**

Huard Frédéric, Ripoch Dominique, Persyn Benoit  
INRA AgroClim, site Agroparc, 84914 Avignon Cedex 9, France

**83. Modelling of extreme climate events for South Africa using historical data and general circulation models**

Debushe Legesse K.<sup>1</sup>, Diriba Tadele A.<sup>1</sup>, Hassen Abubeker<sup>2</sup>, Botai Joel<sup>3</sup>  
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**84. Beyond incremental change: transformation to climate-smart agriculture in response to changing extremes**

Dowd Anne-Maree<sup>1</sup>, Howden Mark<sup>2</sup>, Rickards Lauren<sup>3</sup>, Fleming Aysha<sup>1</sup>, Jakku Emma<sup>1</sup>, Gaillard Estelle<sup>1</sup>

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**85. Strengthening the capacity of local extension services to face agroclimatic risks for production systems**

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**86. Grassland manipulation experiments across climatic zones**

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**87. Building a global framework for banana resilience and adaptation under increased weather variability and uncertainty**

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**88. Gauging the effects of extreme climate events on European crop yields**

Ben-Ari Tamara<sup>1</sup>, Adrian Juliette<sup>1</sup>, Calanca Pierluigi<sup>2</sup>, Klein Tommy<sup>2</sup>, Van der Velde Marijn<sup>3</sup>, Niemeyer Stefan<sup>3</sup>, Bellocchi Gianni<sup>4</sup>, Makowski David<sup>1</sup>

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**89. Development of district contingency plans as a coping strategy to face climate variability and extremes in agriculture**

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**90. Why role of local institution is crucial in Climate Smart Agriculture? Some evidence from rice-wheat system of Nepal**

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**91. Introducing a legume cover crop in rubber plantations is not necessarily an option for their sustainability in dry areas**

Clermont-Dauphin Cathy<sup>1,2</sup>, Suvannang Nopmanee<sup>2</sup>, Pongwichian Pirach<sup>2</sup>, Cheylan Vincent<sup>1,2</sup>, Hammecker Claude<sup>1,2</sup>, Harmand Jean-Michel<sup>3</sup>

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**92. Sustainability of the Koga irrigation scheme: adaptive water management to deal with climate variability and change**

Beza Berhanu Demissie, Alemseged Tamiru Haile International Water Management Institute (IWMI), Ethiopia

**93. Pearl millet yields and climate evolution across the last 20 years in central Senegal. A yield gap study**

Kouakou Patrice<sup>1,2</sup>, Muller Bertrand<sup>1,3,5</sup>, Affholder François<sup>2</sup>, Guissé Aliou<sup>4</sup>, Sultan Benjamin<sup>6</sup>

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**94. Effective adaptation strategies and risk reduction to increased climatic variability among coffee farmers in Mesoamerica**

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**95. Impact of climate change on crop production in southern Mali and the potential of adaptation strategies**

Traore Bouba<sup>1</sup>, Corbeels Marc<sup>2</sup>, van Wijk Marc T.<sup>3</sup>, Descheemaeker Katrien<sup>3</sup>, Giller Ken E.<sup>3</sup>

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**96. Use of regional climate model output for modelling the effects of future extremes in agriculture**

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**97. Drought resistant and resilient plant functional types can maintain production in intensively managed grassland**

Hofer Daniel<sup>1,3</sup>, Suter Matthias<sup>1</sup>, Hoekstra Nyncke J.<sup>1,2</sup>, Haughey Eamon<sup>2</sup>, Finn John A.<sup>2</sup>, Buchmann Nina<sup>3</sup>, Lüscher Andreas<sup>1</sup>

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**98. Phenotypic variation among and within thirty accessions of *Onobrychis viciifolia* examined under climate change scenarios**

Malisch Carsten<sup>1,2</sup>, Suter Daniel<sup>1</sup>, Studer Bruno<sup>2</sup>, Salminen Juha-Pekka<sup>3</sup>, Lüscher Andreas<sup>1</sup>

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<sup>3</sup>University of Turku, Department of Chemistry, Vatselankatu 2, FI-20014 Turku, Finland

**99. Participatory assessment of vulnerability to climate change for improved adaptations to climate smart agriculture**

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**100. Adaptation strategies for livestock production systems in a changing environment**

Marble Yvane<sup>1</sup>, Salgado Paulo<sup>2</sup>, Nidumolu Uday<sup>3</sup>, Andriarimalala J.H.<sup>4</sup>, Enjalric Gaelle<sup>1</sup>, Tillard Emmanuel<sup>1</sup>

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**101. Impact of climate extreme and variability on agriculture: a case from mountain community of eastern Nepal**

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<sup>2</sup>The Small Earth Nepal, Kathmandu, Nepal

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**102. Analyses of extreme weather events and its impact to agriculture smallholders in Gandaki River Basin of Nepal Himalaya**

Dahal Piyush<sup>1</sup>, Shrestha Nicky Shree<sup>2</sup>, Shrestha Madan Lall<sup>3</sup>, Panthi Jeeban<sup>1</sup>, Krakauer Nir Y<sup>4</sup>

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**103. Developmental competence and expression pattern of heat shock protein genes in buffalo oocytes during heat stress**

Ashraf Syma<sup>1</sup>, Dhanda Suman<sup>2</sup>, Shah Syed Mohamad<sup>3</sup>, Saini Neha<sup>3</sup>, Kumar Anil<sup>1</sup>, Goud Sridhar<sup>1</sup>, Chauhan Manmohan<sup>3</sup>, Upadhyay Ramesh<sup>1</sup>

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**104. Heat tolerance in wheat identified as a key trait for increased yield potential in Europe under climate change**

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**105. Is livelihood diversification Climate-Smart Agricultural strategy? Micro-evidence from Malawi**

Asfaw Solomon<sup>1</sup>, McCarthy Nancy<sup>2</sup>, Cavatassi Romina<sup>1</sup>, Paolantonio Adriana<sup>1</sup>, Amare Mulubrhan<sup>3</sup>, Lipper Leslie<sup>1</sup>

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**106. Prospering rural vulnerable despite climate change: implications for “Triple Win”**

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**107. Participatory climate risk management at short-term and seasonal scales – examples from South Asia**

Nidumolu Uday<sup>1</sup>, Roth Christian<sup>2</sup>, Howden Mark, Hochman Zvi<sup>2</sup>, Hayman Peter<sup>5</sup>, Raji Reddy D.<sup>6</sup>,

Lim-Camacho Lilly<sup>3</sup>, Gaillard Estelle<sup>4</sup>, Marambe Marambe<sup>7</sup>

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<sup>7</sup>Faculty of Agriculture, University of Peradeniya, Peradeniya 20400, Sri Lanka

**108. Establishment of dynamic-transfer system for agro-climate knowledge and farmers’ response**

Fahim M. A.<sup>1</sup>, Abou Hadid A.F.<sup>1</sup>, El-Marsafawy S.M.<sup>2</sup>

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**109. Empirical assessment of climate change on major agricultural crops of Punjab, Pakistan**

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**110. Perceptions on climate change and impacts on ecosystem services in eastern Africa: implications for policy actions**

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**111. Irrigation management of salt water: study of potato and pea grown in intercropping with olive in southern Tunisia**

Ben Hassen Nadia<sup>1</sup>, Nagez Kamel<sup>2</sup>

<sup>1</sup>National institution of agronomy of Tunisia (INAT), Tunisia

<sup>2</sup>Institut of arid region of Medenine (IRA), Tunisia

**112. Assessment of the variability of yield of maize in Lilongwe district in relation to climate using DSSAT model**

Kamanga Mphangera<sup>1</sup>, Mhango Wezzie-Bunda<sup>2</sup>

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## L2.3 COMBINING MITIGATION, ADAPTATION AND SUSTAINABLE INTENSIFICATION

**113. Agricultural intensification trajectories and climate smart agriculture in Nicaraguan tropical systems**

Carreño-Rocabado Geovana<sup>1,2</sup>, Oblitas Samuel<sup>2</sup>, Somarriba Eduardo<sup>2</sup>, Ordoñez Jenny<sup>1,2</sup>

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**114. Value of estimating farm GHG budgets making use of process-based modelling**

Bannink André<sup>1</sup>, Lanigan Gary<sup>2</sup>, Hutchings Nick<sup>3</sup>, Van Den Pol-Van Dasselaar Agnes<sup>1</sup>

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**115. Farmer's perceptions on climate change and prospects for climate smart agriculture along the tree cover transition curve**

Ordonez Jenny C.<sup>1</sup>, Leguia E.<sup>2</sup>, Rapidel Bruno<sup>3</sup>, Somarriba E.<sup>2</sup>

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**116. The Agritech Water Cluster – Promoting collaboration to manage future water needs of the agriculture sector**

Hiscock Kevin, Osborn Timothy, Lovett Andrew, Dorling Stephen, Welters Ruth, Fitt Peter  
University of East Anglia, Norwich Research Park, Norwich Norfolk NR4 7TJ, United Kingdom

**117. Climate change mitigation and agricultural development scenarios for the high plains of Eastern Colombia**

Hyman Glenn, Loboguerrero Ana Maria, Aracely Castro, Idupulapati Rao, Peters Michael  
International Center for Tropical Agriculture, Colombia

**118. Contributing to CSA progress through a national multidisciplinary research program on adaptation to climate change**

Caquet Thierry<sup>1</sup>, Bréda Nathalie<sup>2</sup>, Guehl Jean-Marc<sup>2</sup>, Amigues Jean-Pierre<sup>3</sup>, Chalvet-Monfray Karine<sup>4</sup>, Debaeke Philippe<sup>5</sup>, Gascuel Chantal<sup>6</sup>, Le Gouis Jacques<sup>7</sup>, Plantard Olivier<sup>8</sup>, Touzard Jean-Marc<sup>9</sup>, Soussana Jean-François<sup>10</sup>

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<sup>10</sup>INRA, Collège de Direction, 147 rue de l'Université, F-75338 Paris Cedex 07, France

**119. Could agroforestry be a way to limit soil erosion susceptibility under a temperate climate?**

Monnier Yogan, Stokes Alexia

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**120. Scientific and policy recommendations for climate smart arable agriculture in Europe: lessons from the past decade**

Freibauer Annette<sup>1</sup>, Don Axel<sup>1</sup>, Dechow Rene<sup>1</sup>, Heidkamp Arne<sup>1</sup>, Prietz Roland<sup>1</sup> and GHG-Europe project partners<sup>2</sup>

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<sup>2</sup>EU Collaborative Research Project GHG-Europe, www.ghg-europe.eu

**121. Adaptation to climate change through land-use change in France and implications for greenhouse gas emissions**

Ay Jean-Sauveur<sup>1</sup>, Chakir Raja<sup>2</sup>, De Cara Stéphane<sup>2</sup>

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**122. Mitigating GHG emissions from ruminant livestock systems**

Klumpp Katja<sup>1</sup>, Doreau Michel<sup>2</sup>, Faverdin Philippe<sup>3</sup>, Jeuffroy Marie-Hélène<sup>4</sup>, Bamière Laure<sup>5</sup>, Pardon Lénaïc<sup>6</sup>, Soussana Jean-François<sup>7</sup>, Pellerin Sylvain<sup>8</sup>

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**123. Global assessment of technological innovation for climate change in developing countries: opportunities and challenges**

Adenle Ademola A.<sup>1</sup>, Azadi Hossein<sup>2</sup>, Arbiol Joseph<sup>3</sup>

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**124. Synergies and trade-offs of adaptation and mitigation on dairy farms**

Topp C.F.E.<sup>1</sup>, O'Brien D.<sup>2</sup>, Faverdin P.<sup>3</sup>, Stienezen M.W.J.<sup>4</sup>, Wreford A.<sup>1</sup>, Olesen J.E.<sup>5</sup>

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**125. Land management practices as a coping mechanism to frequent and prolonged drought spells by smallholder farms**

Kagabo Désiré Mbarushimana, Ndayisaba Pierre Celestin, Musana Bernard Segatagara, Manzi Maximilian, Mutimura Mupenzi, Hirwa Claire D'André, Nyiransengimana Eugénie, Shumbusho Felicien, Bagirubwira Aphrodis, Ebong Cyprian Rwanda Agriculture Board (RAB), P.O. Box 5016 Kigali, Rwanda

**126. Sustainable intensification of global maize cropping systems: balancing yield increase and nitrous oxide emissions**

Deryng Delphine<sup>1,2</sup>, Conway Declan<sup>3</sup>, Ramankutty Navin<sup>4,5</sup>

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**127. Temperature impact on CO<sub>2</sub> emissions and nutrients availability in Malagasy soils under different farming practices**

Andriamananjara Andry<sup>1</sup>, Chevallier Tiphaine<sup>2</sup>, Rasolo Njara Narindra<sup>1</sup>, Razakamahefa Allan Luigi<sup>1</sup>, Razakamanarivo Herintsitohaina<sup>1</sup>, Razafimbelo Tantely<sup>1</sup>

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**128. The synergies of fertilization on carbon sequestration and food security in China**

Li Yue, Li Jianling, Zhu Yongchang, Zhou Weiping, Chen Minpeng, Qin Xiaobo, Wan Yunfan, Liu shuo, Gao Qingzhu

Institute of Environment and Sustainable Development in Agriculture, Chinese Academy of Agricultural Sciences, Room 609, Building IEDA, No.12, Zhongguancun South Street, Haidian District, Beijing, China

**129. Adaptation to climate variability: evaluation of adaptation tools for the agricultural sector in Guanacaste, Costa Rica**

Largui Mathilde<sup>1</sup>, Barbier Bruno<sup>2</sup>, Leclerc Grégoire<sup>1</sup>

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**130. Efficiently mitigating climate change through improved land management in smallholder agriculture of Malawi and Zambia**

Grewer Uwe<sup>1</sup>, Branca Giacomo<sup>2</sup>, Cattaneo Andrea<sup>1</sup>, Vetter Sylvia<sup>3</sup>, Paolantonio Adriana<sup>1</sup>

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**131. Climate-Smart water and nitrogen management strategies for lowland rice**

Gaihre Yam K.<sup>1</sup>, Bindraban Prem<sup>2</sup>, Singh Upendra<sup>3</sup>, Sanabria Joaquin<sup>3</sup>, and Satter Abdus<sup>1</sup>

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**132. Storing C in agricultural soils: evaluating triple-win climate-smart actions for France**

Chenu Claire<sup>1</sup>, Angers Denis<sup>2</sup>, Metay Aurélie<sup>3</sup>, Colnenne-David Caroline<sup>4</sup>, Klumpp Katja<sup>5</sup>, Bamière Laure<sup>6</sup>, Pardon Lénaïc<sup>7</sup>, Pellerin Sylvain<sup>8</sup>

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**133. Innovative cropping systems under GHG emissions constraint: results of a long-term field trial assessment**

Colnenne-David Caroline, Grandeau Gilles, Tanneau Véronique, Jeuffroy Marie-Hélène, Doré Thierry

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**134. Contribution of agroforestry to livelihoods and climate change mitigation in Western Kenya**

Reppin Saskia<sup>1</sup>, Oelofse Myles<sup>1</sup>, de Neergaard Andreas<sup>1</sup>, Rosenstock Todd S.<sup>2</sup>

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**135. Alternative water management minimizes greenhouse gas emissions from rice systems while maintaining yield**

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<sup>2</sup>Department of Crop, Soil, & Environmental Sciences, University of Arkansas, Fayetteville, AR, 72701, USA

**136. Climate mitigation: trade-offs between agricultural product carbon footprints and land use intensity**

Plassmann Katharina, Brentrup Frank, Lammel Joachim

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**137. Integrated fertiliser microdosing and organic manure to adapt to climate variability and change in Northern Benin**

Tovihoudji G. Pierre<sup>1,2,3</sup>, Akponikpè P. B. Irénikatché<sup>1</sup>, Agbossou Euloge<sup>2</sup>, Biolders Charles<sup>3</sup>

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**138. The Global Yield Gap Atlas for targeting sustainable intensification options for smallholders in Sub-Saharan Africa**

Claessens Lieven<sup>1,2</sup>, Cassman Kenneth G.<sup>3</sup>, van Ittersum Martin K.<sup>2</sup>, van Bussel Lenny G.J.<sup>2</sup>, Wolf Joost<sup>2</sup>, van Wart Justin P.<sup>3</sup>, Grassini Patricio<sup>3</sup>, Yang

Haishun<sup>3</sup>, Boogaard Hendrik<sup>2</sup>, de Groot Hugo<sup>2</sup>, Pavuluri Kiran<sup>3</sup>, Guilpart Nicolas<sup>3</sup>

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**139. Impacts of agricultural diversity on self-sufficiency for forage, feeding costs and GHG emissions in dairy systems**

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**140. Water resources transfers through southern African food trade: resource efficiency and climate adaptation**

Dalin Carole, Conway Declan

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**141. Municipal solid waste composts as organic inputs in vegetable gardening cropping systems in Mahajanga, Madagascar**

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**142. Evaluating the impact of rising fertilizer prices on crop yields**

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**143. Agent based model analysis on the impact of agricultural land-use change adaptation in semi-arid Ghana**

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<sup>4</sup>World Agroforestry Centre, Bogor, Indonesia

<sup>5</sup>Agricultural Engineering, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

**144. The gathering of Non-Timber Forest Products as adaptation strategy to climate change in the rural community of Niaguis**

Ndao Mohamed Lamine

Sciences of Humanities and Society, Gaston Berger University of Saint Louis, Senegal

**145. Optimisation of the nitrogen fertilisation in the context of climate change**

Dumont Benjamin<sup>1,2</sup>, Basso Bruno<sup>2</sup>, Destain Jean-Pierre<sup>1</sup>, Bodson Bernard<sup>1</sup>, Destain Marie-France<sup>1</sup>

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**146. Climate change impacts on crops production and adaptive measures from farmers' perspective in North-East China**

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**147. Emissions mitigation by sustainable intensification in Brazilian livestock production**

De Oliveira Silva Rafael<sup>1,2</sup>, Barioni Luis Gustavo<sup>3</sup>, Hall Julian A. J.<sup>1</sup>, Folegatti Matsuura Marilia<sup>4</sup>, Albertini T. Zanetti<sup>5</sup>, Fernandes F. A.<sup>6</sup>, Moran Dominic<sup>2</sup>

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## L2.4 BREEDING AND PROTECTING CROPS AND LIVESTOCK

**148. Adaptation of tropical cattle breeds to their environment, in the perspective of climatic change**

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**149. Genetic diversity of Dactylis glomerata in the response to temperature during germination**

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**150. Globally representative C. arabica variety trial site selection in a changing climate**

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**151. "ReColAd": Collaborative network on farm animal adaptation to environmental changes**

Zerjal Tatiana<sup>1</sup>, Laloë Denis<sup>1</sup>, Mondonnet Nathalie<sup>2</sup>, Naves Michel<sup>2</sup>, Collin Anne<sup>3</sup>, Thévenon Sophie<sup>4</sup>, Renaudeau David<sup>5</sup>

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<sup>5</sup>INRA UMR1348 PEGASE, F35590 Rennes, France

**152. Crop diversity as an adaptation strategy to climate change in West Africa**

Piquet J.<sup>1,2,3</sup>, Barnaud Adeline<sup>1,2,3</sup>, Barry M.B.<sup>4</sup>, Berthouly-Salazar C.<sup>1,2,3</sup>, Diallo M.A.T.<sup>4</sup>, Deu M.<sup>5</sup>, Kané N.A.<sup>3</sup>, Leclerc C.<sup>5</sup>, Noyer J.L.<sup>5</sup>, Pham J.L.<sup>1,6</sup>, Vigouroux Y.<sup>1</sup>, Billot C.<sup>5</sup>

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<sup>2</sup>LMI LAPSE, Dakar, Senegal

<sup>3</sup>ISRA, LNRPV, Centre de Bel Air, Dakar, Senegal

<sup>4</sup>IRAG, Conakry, Guinea

<sup>5</sup>CIRAD, UMR AGAP, Montpellier, France

<sup>6</sup>Agropolis Foundation, Montpellier, France

**153. Genetic variability and phenotypic characterization of thermotolerance in rainbow trout**

Dupont-Nivet Mathilde<sup>1</sup>, Colson V.<sup>2</sup>, Crusot M.<sup>1</sup>, Labbé L.<sup>3</sup>, Rigaudeau D.<sup>4</sup>, Prunet P.<sup>2</sup>, Quillet E.<sup>1</sup>, Leguen I.<sup>2</sup>

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<sup>2</sup>INRA, UR1037 Fish Physiology and Genomics, F-35000 Rennes, France

<sup>3</sup>INRA, UE0937 PEIMA, Pisciculture Expérimentale INRA des Monts d'Arrée, 29450 Sizun, France

<sup>4</sup>INRA, UE 0907 IERP, Infectiologie Expérimentale Rongeurs et Poissons, Jouy en Josas, France

**154. NGS for identifying wild-to-cultivated gene flow for African crops adaptation**

Berthouly-Salazar Cécile<sup>1,2,4</sup>, Barnaud Adeline<sup>1,2,4</sup>, Scarcelli Nora<sup>1</sup>, Billot Claire<sup>3</sup>, Mariac Cédric<sup>1</sup>, Kane Ndjido<sup>2,4</sup>, Vigouroux Yves<sup>1</sup>

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<sup>3</sup>CIRAD, UMR AGAP, F-34398 Montpellier, France

<sup>4</sup>ISRA, LNRPV, Centre de Bel Air, Dakar, Senegal

**155. Impact of pea genetic variability on the control of N<sub>2</sub>O reduction by soil-microorganisms-plant systems**

Bourion V.<sup>1</sup>, Revellin C.<sup>1</sup>, Bizouard F.<sup>1</sup>, De Larambergue H.<sup>1</sup>, Aubert V.<sup>1</sup>, Duc G.<sup>1</sup>, Hénault C.<sup>2</sup>

<sup>1</sup>INRA, UMR AgroEcologie, 21000 Dijon, France

<sup>2</sup>INRA, UR SOLS, 0272, 45075 Orleans Cedex, France

**156. Using crop-climate models for designing climate-smart breeding strategies**

Koehler Ann-Kristin<sup>1</sup>, Ramirez-Villegas Julian<sup>1,2,3</sup>, Challinor Andrew J.<sup>1,3</sup>

<sup>1</sup>School of Earth and Environment, University of Leeds, Leeds, United Kingdom

<sup>2</sup>CGIAR Research Program on Climate Change, Agriculture and Food Security, CCAFS, Cali, Colombia

<sup>3</sup>International Center for Tropical Agriculture, CIAT, Cali, Colombia

**157. Genetics of tolerance of extra-early Quality Protein Maize inbreds under contrasting environments**

Annor Benjamin<sup>1</sup>, Badu-Apraku B.<sup>1</sup>, Aken'Ova M.E.<sup>2</sup>

<sup>1</sup>International Institute of Tropical Agriculture, Ibadan, Nigeria

<sup>2</sup>University of Ibadan, Nigeria

**158. Adaptation of alfalfa ecotypes to climate change**

Julien Lionel<sup>1</sup>, Delalande Magalie<sup>2</sup>, Sartre Pascal<sup>2</sup>, Carpon Jean-Marie<sup>3</sup>, Blandineau Claude<sup>2</sup>, Bastianelli Denis<sup>1</sup>, Huguenin Johann<sup>1</sup>

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<sup>2</sup>INRA, UE DIASCOPE, Montpellier, France

<sup>3</sup>INRA, UMR-SELMET, Montpellier, France

**159. Improvement of yield and related characters of temperate maize (Zea mays L.) under three water regimes**

Murtadha M.A.<sup>1</sup>, Alghamdi S.S.<sup>2</sup>

<sup>1</sup>Osun State University, College of Agriculture, Ejigbo. Osun State, Nigeria

<sup>2</sup>College of Food and Agricultural Sciences, King Saud University, P.O. Box 2454, Riyadh 11451, Saudi Arabia

**160. Breeding for sunflower hybrids adapted to climate change: the SUNRISE collaborative and multi-disciplinary project**

Debaeke Philippe<sup>1</sup>, Coque M.<sup>2</sup>, Muñoz S.<sup>3</sup>, Mangin B.<sup>4</sup>, Gouzy J.<sup>3</sup>, Kephaliacos C.<sup>5</sup>, Piquemal J.<sup>6</sup>, Pinochet X.<sup>7</sup>, Vincourt P.<sup>3</sup>, Langlade N.<sup>3</sup>

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<sup>2</sup>BIOGEMMA, 31700 Mondonville, France



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<sup>4</sup>INRA, UR MIAT, 31326 Castanet-Tolosan, France

<sup>5</sup>ENFA, LEREPS, 31326 Castanet-Tolosan, France

<sup>6</sup>SYNGENTA Seeds, 31042 Saint-Sauveur, France

<sup>7</sup>CETIOM, 78850 Thiverval-Grignon, France

**161. Climate change in tropical environment: what impact on agricultural pests and diseases?**

**What crop protection strategies?**

Goebel François-Régis<sup>1</sup>, Cilas Christian<sup>2</sup>

<sup>1</sup>UPR AIDA, CIRAD, Campus de Lavalette - 34398 Montpellier cedex 5, France

<sup>2</sup>UPR Bioagresseurs, CIRAD, Campus international de Baillarguet - 34398 Montpellier cedex 5, France

**162. Understanding the genetic diversity of Ethiopian oilseed Noug (Guizotia abyssinica) for its improvement and conservation**

Weldeyohannes Misteru<sup>1</sup>, Gari Abel<sup>2</sup>, Hannes Dempewolf<sup>3</sup>

<sup>1</sup>Ethiopian Institute of Agricultural Research, Holetta Agricultural Research Center P.O. Box.31, Holetta, Ethiopia

<sup>2</sup>Departments of Biology, Addis Ababa University, P.O. Box 1176, Addis Ababa, Ethiopia

<sup>3</sup>Global Diversity Trust, 53115, Bonn, Germany

**163. Proteomics in the drive for climate smart livestock production**

Eckersall David<sup>1</sup>, Almeida Andre<sup>2</sup>

<sup>1</sup>Institute of Biodiversity, Animal Health & Comparative Medicine, University of Glasgow, G41 4HQ, Glasgow, United Kingdom

<sup>2</sup>Instituto de Investigação Científica Tropical, Lisboa, Portugal; CIISA – Centro Interdisciplinar de Investigação em Sanidade Animal, Lisboa, Portugal

<sup>3</sup>ITQB – Instituto de Tecnologia Química e Biológica da UNL, Oeiras, Portugal

<sup>4</sup>IBET – Instituto de Biologia Experimental e Tecnológica CVZ – Centro de Veterinária e Zootecnia, Av. Univ. Técnica, 1300-477 Lisboa, Portugal

**164. Bridging landscape genomics and quantitative genetics for a regional adaptation of European grasslands to climate-change**

Sampoux Jean-Paul<sup>1</sup>, Manel Stéphanie<sup>2</sup>, Hegarty Matthew J.<sup>3</sup>, Dehmer Klaus J.<sup>4</sup>, Willner Evelin<sup>4</sup>

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<sup>2</sup>EPHE – CEFE, UMR 5175, 34293 Montpellier Cedex 5, France

<sup>3</sup>IBERS – Aberystwyth University, SY23 3EE, Ceredigion, Wales, United Kingdom

<sup>4</sup>IPK, Genebank Department / Satellite Collections North, 23999 Malchow / Poel, Germany

**165. Ecological niche of R. fistulosa in climate change context: what future for lowland rice production in West-Africa?**

Zossou Norliette, Gouwakinnou Gérard, Idelphonse Sode, Sinsin Brice

Laboratories of Applied Ecology, Faculty of Agronomics Sciences, University of Abomey-Calavi, Benin

**166. Effects of heat stress and sulfur restriction during seed filling on grain characteristics in rapeseed**

Brunel-Muguet Sophie<sup>1,2,3</sup>, D'Hooghe Philippe<sup>1,2,3</sup>, Bataillé Marie-Paule<sup>1,2,3</sup>, Larré Colette<sup>4</sup>, Kim Tae-Hwan<sup>1,2,3,5</sup>, Jacques Trouverie<sup>1,2,3</sup>, Avice Jean-Christophe<sup>1,2,3</sup>, Etienne Philippe<sup>1,2,3</sup>, Dürr Carolyne<sup>6</sup> Hélène Gautier<sup>1</sup>

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<sup>3</sup>UCBN, UMR INRA–UCBN 950 Ecophysiologie Végétale, Agronomie & nutritions N.C.S., F-14032 Caen, France

<sup>4</sup>INRA UR1268 BIA, Rue de la Géraudière, BP 71627, F-44316 Nantes, France

<sup>5</sup>Environment-Friendly Agriculture Research Center (EFARC), Department of Animal Science, Institute of Agricultural Science and Technology, College of Agriculture & Life Science, Chonnam National University, Buk-Gwangju, P.O. Box 205, Gwangju 500-600, South Korea

<sup>6</sup>INRA, UMR 1345, Institute of Research on Horticulture and seeds, F-49045, Beaucozéz, France

**167. Selection of families new of rice for their adaptability of lowland in West Africa**

Oteyamm Magloire<sup>1</sup>, Sie Moussa<sup>2</sup>, Ahanchede Adam<sup>3</sup>

<sup>1</sup>AfricaRice, Cotonou, Benin

<sup>2</sup>National centre of research applied to rural development, Ampandrianomby – Antananarivo, Madagascar

<sup>3</sup>University of Abomey-Calavi Faculty of Agricultural Sciences, Cotonou, Benin

**168. Evaluation of triticale genotypes for food and feed security in Egypt**

Hozayn M.<sup>1</sup>, Abd El-Monem A.A.<sup>2,3</sup>, Abd El-lateef E.M.<sup>1</sup>

<sup>1</sup>Field Crop Research Dept. , Agriculture and Biology Div., National Research Centre, El Buhouth St., Dokki, Cairo, Egypt

<sup>2</sup>Botany Dept., Agriculture and Biological Division, National research centre, El Behouth St., Dokki, Cairo, Egypt

<sup>3</sup>Biology Dept., Fac. of Sci., Tabuk Univ., Branch Tayma, Saudi Arabia

**169. Improving Bambara groundnut for global food security: MAGIC populations for ideotype development and genomic analysis**

Aliyu Siise<sup>1,2,3</sup>, Kendabie Presidor<sup>1, 2</sup>, Murchie Erik<sup>1</sup>, Massawe J. Festo<sup>2</sup>, Mayes Sean<sup>3</sup>

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<sup>2</sup>School of Biosciences, University of Nottingham Malaysian Campus, Jalan Broga, Semenyih, 43500, Selangor, Malaysia

<sup>3</sup>Crops for the Future Research Centre (CFRC), Jalan Broga, Semenyih 43500, Selangor, Malaysia

**170. Genetics in controlling small ruminant's internal nematodes infestation in the era of climate change**

Matebesi-Ranthimo P.A.M.<sup>1,2</sup>, Cloete S.W.P.<sup>3,4</sup>, van Wyk J.B.<sup>2</sup>, Olivier J.J.<sup>4</sup>

<sup>1</sup>National University of Lesotho, P.O. Roma 180, Roma, Lesotho

<sup>2</sup>University of the Free State, P.O. Box 339, Bloemfontein 9300, South Africa

<sup>3</sup>University of Stellenbosch, Private Bag X1, Matieland, 7602, South Africa

<sup>4</sup>Institute for Animal Production: Elsenburg, Private Bag X1, Elsenburg, 7609, South Africa

**171. Climate change impact on incidence of mite (Tetranychus urticae Koch) infesting ladysfinger in sub-Himalayan India**

Ghosh Sunil

Department of Agricultural Entomology, Bidhan Chandra Krishi Viswavidyalaya (BCKV), (Agril. University), AINP on Agril. Acarology, Directorate of Research, PO: Kalyani, Dist: Nadia, West Bengal-741235, India

**L2.5 OVERCOMING BARRIERS: POLICIES AND INSTITUTIONAL ARRANGEMENTS TO SUPPORT CSA**

**172. Cross-scale policy dynamics and climate smart agriculture**

Crane Todd, Robinson Lance

Livestock Systems and Environment, International Livestock Research Institute, Box 30709, Nairobi 00100, Kenya

**173. Theory and criteria for improved understanding of Climate Smart Territories (CST)**

Janet Andreas<sup>1</sup>, Van Etten Jacob<sup>2</sup>, Sepulveda Claudia<sup>1</sup>, Martinez-Salinas Alejandra<sup>1,3</sup>, Villanueva Cristobal<sup>1</sup>, Sanabria Oscar<sup>1</sup>, Louman Baastian<sup>1</sup>, Alpizar Francisco<sup>1</sup>

<sup>1</sup>Centro Agronómico Tropical de Investigación y Enseñanza (CATIE), 30501 Turrialba, Costa Rica

<sup>2</sup>Bioversity International, 30501 Turrialba, Costa Rica

<sup>3</sup>Department of Fish and Wildlife Sciences, University of Idaho, Moscow, ID, USA

**174. Scenario-guided policy development and investment for Climate Smart Agriculture in Cambodia**

Peou Rathana<sup>1</sup>, Vervoort Joost<sup>2,3</sup>, Lipper Leslie<sup>4</sup>, Cattaneo Andrea<sup>4</sup>, Cavatassi Romina<sup>4</sup>

<sup>1</sup>South East Asia Regional Scenarios Coordinator, CGIAR CRP7: Climate Change, Agriculture and Food Security (CAAFS), IRRI-CAAFS SEA Regional Office, Hanoi, Vietnam

<sup>2</sup>Environmental Change Institute, Oxford University Centre for the Environment, South Parks Road, Oxford, OX1 3QY, United Kingdom

<sup>3</sup>CGIAR programme for Climate Change, Agriculture and Food security, University of Copenhagen, Faculty of Science, Department of Plant and Environmental Sciences, Rolighedsvej 21, DK-1958, Frederiksberg C, Denmark

<sup>4</sup>FAO- EPIC, Viale delle Terme di Caracalla, 00153 Rome, Italy

**175. Effects of the Jordanian rainfed barley-livestock producer perceptions and values on their adaptation to climate change**

Auerbach Anita<sup>1</sup>, Yigezu Yigezu<sup>2</sup>, Haddadin Maissa<sup>2</sup>, El-Shater Tamer<sup>2</sup>, Akroush Samia<sup>2</sup>, De Pauw Eddy<sup>2</sup>, Guendel Sabine<sup>1</sup>

<sup>1</sup>University of London (SOAS), Senate House, Malet Street, London, WC1E 7HU, United Kingdom

<sup>2</sup>ICARDA, P.O. Box 950764 Amman 11195, Jordan

**176. Climate Smart Agriculture in the Northeast: assessing stakeholders' belief-action gaps and research/extension capacity**

Chatrchyan Allison<sup>1</sup>, Tobin Daniel<sup>2</sup>, Radhakrishna Rama<sup>2</sup>, Allred Shorna<sup>1</sup>

<sup>1</sup>Cornell University, Cornell Institute for Climate Change and Agriculture, College of Agriculture and Life Sciences, 206 Rice Hall, Ithaca, NY 14853, USA

<sup>2</sup>Penn State University, Department of Agricultural Economics, Sociology, and Education, 102 Ferguson Building, University Park, PA 16802, USA

**177. Barriers to the adoption and diffusion of CSA technological innovations in Europe**

Blok Vincent<sup>1</sup>, Long Thomas<sup>1</sup>, Coninx Ingrid<sup>2</sup>

<sup>1</sup>Wageningen UR, MST, Wageningen, 6706KN, the Netherlands

<sup>2</sup>Wageningen UR, Alterra, Wageningen, 6706KN, the Netherlands

**178. Necessity of clear concepts and convergence of discourse for a climate-smart agriculture (Costa Rica)**

Laffourcade Roland<sup>1,3</sup>, Dhorne Soazic<sup>1,4</sup>, Gutiérrez Montes Isabel<sup>2</sup>, Rapidel Bruno<sup>5,6</sup>, Sibelet Nicole<sup>1,2</sup>

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<sup>3</sup>AgroParistech, Montpellier, France

<sup>4</sup>AgroParistech UMR 1048 SADAPT AgroParisTech-INRA, Paris, France

<sup>5</sup>CIRAD, UMR SYSTEM, F-37398 Montpellier, France

<sup>6</sup>CATIE, Agroforestería, CATIE, 7170 Turrialba 30501, Costa Rica

**179. A rights-based approach to realizing socially equitable development outcomes from climate smart agriculture**

Park S.E.<sup>1</sup>, Ensor J.E.<sup>2</sup>

<sup>1</sup>WorldFish, Jalan Batu Maung, Batu Maung, 11960, Bayan Lepas, Penang, Malaysia

<sup>2</sup>Stockholm Environment Institute, Environment Department, Grimston House, University of York, Heslington, York, YO10 5DD, United Kingdom

**180. Implications of alternative GHG emission metrics for emission trends and targets**

Reisinger Andy

New Zealand Agricultural Greenhouse Gas Research Centre, Palmerston North 4442, New Zealand

**181. Climate smart agriculture without climate smart spatial planning?**

Razpotnik Visković Nika

Research Centre of the Slovenian Academy of the Sciences and Arts, Anton Melik Geographical Institute, 1000 Ljubljana, Slovenia

**182. Forestry and agriculture in the climate change governance: Non-UNFCCC venues for enhancing action**

Soto Cinthia

Research Assistant (PhD candidate) at Wageningen University, Trompstraat 166, The Hague, 2518 BP, The Netherlands

**183. Barriers to uptake of conservation agriculture in Malawi: multi-level analyses & development planning implications**

Dougill Andrew<sup>1</sup>, Whitfield Stephen<sup>1</sup>, Wood Ben<sup>1</sup>, Chinseu Edna<sup>1</sup>, Mkwambisi David<sup>2</sup>, Stringer Lindsay<sup>1</sup>

<sup>1</sup>School of Earth & Environment, University of Leeds, Leeds, United Kingdom

<sup>2</sup>Department of Natural Resources, Lilongwe University of Agriculture and Natural Resources, Lilongwe, Malawi

**184. Policies for climate-smart agriculture: contribution of agroforestry literature**

Durey Louis<sup>1</sup>, Le Coq Jean François<sup>2</sup>

<sup>1</sup>AGROPARISTECH (Institut des sciences et de l'industrie du vivant et de l'environnement), 16 rue Claude Bernard F-75231 Paris Cedex 05, France

<sup>2</sup>CIRAD, UMR ART-Dev, F-34398 Montpellier Cedex 5, France; UNA (National University of Costa Rica), CINPE, Heredia, Costa Rica

**185. Learning and sharing for action: experiences of Ghana climate change and food security platform**

Karbo Naaminong<sup>1</sup>, Botchway Vincent<sup>1</sup>, Zougmore Robert<sup>2</sup>, Odum K. S.<sup>1</sup>

<sup>1</sup>CSIR-Animal Research Institute, Accra, Ghana

<sup>2</sup>ICRISAT, Bamako, Mali

**186. Linking climate change adaptation and mitigation: Implications for Central America**

Cuéllar Nelson, Kandel Susan, Gómez Ileana, Cartagena Rafael, Luna Fausto, Díaz Oscar

Fundación PRISMA, Pasaje Sagrado Corazón #821,  
Colonia Escalón, San Salvador, El Salvador

<sup>2</sup>World Agroforestry Centre, United Nations Avenue,  
P. O. Box 30677, Nairobi, Kenya

**187. Social learning in support of CSA: getting to outcomes and impact**

Förch Wiebke<sup>1</sup>, Thornton Philip<sup>1</sup>, Schuetz Tonya<sup>2</sup>,  
Harvey Blane<sup>3</sup>

<sup>1</sup>CCAFS, ILRI, PO Box 30709, Nairobi 00100, Kenya

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<sup>3</sup>Collaborative Adaptation Research Initiative in  
Africa and Asia (CARIAA), IDRC, PO Box 8500,  
Ottawa, ON K1G 3H9, Canada

**188. Policy instruments for Climate Smart Agriculture: toward a specific integrated analytical framework**

Le Coq Jean-Francois<sup>1,2</sup>, Fallot Abigail<sup>3,4</sup>, Bouroncle  
Claudia<sup>4</sup>

<sup>1</sup>CIRAD UMR ART-DEV, 34000 Montpellier, France

<sup>2</sup>UNA/CINPE, 3000 Heredia, Costa Rica

<sup>3</sup>CIRAD UPR GREEN, 34000 Montpellier, France

<sup>4</sup>CATIE-Climate Change and Watershed group; 30  
501 Turrialba, Costa Rica

**189. Building local capacity in agricultural carbon projects in Kenya and Uganda through participatory action research**

Shames Seth<sup>1</sup>, Heiner Krista<sup>1</sup>, Masiga Moses<sup>2</sup>,  
Recha John<sup>3</sup>, Kapukha Martha<sup>4</sup>, Ssempala Annet<sup>5</sup>,  
Wekesa Amos<sup>4</sup>

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#600, Washington, DC 20036, USA

<sup>2</sup>ENR Africa Associates, P.O. Box 72287, Kampala,  
Uganda

<sup>3</sup>Environmental Resources Management Center for  
Sustainable Development [ERMCSO], Utumishi  
Cooperative House, Mezzanine Floor, Mamlaka  
Road, Off Nyeyere Road, P.O. BOX 1728 – 00100,  
Nairobi, Kenya

<sup>4</sup>Vi-Agroforestry Regional Office, P.O. Box 457 67  
00100 Nairobi, Kenya

<sup>5</sup>Environmental Conservation Trust of Uganda  
(ECOTRUST), Plot 49 Nakiwogo Road, Entebbe,  
Uganda

**190. What does it take to see transformative adaptation? Evidence from sub-Saharan Africa**

Bernier Quinn<sup>1</sup>, Kristjanson Patti<sup>2</sup>, Meinzen-Dick  
Ruth<sup>1</sup>

<sup>1</sup>International Food Policy Research Institute, 2033 K  
Street NW, Washington DC, 20006, USA

**191. Is technical information what policy makers need to take action on the climate change adaptation of smallholder farmers?**

Donatti Camila I.<sup>1</sup>, Martínez-Rodríguez M.R.<sup>1</sup>,  
Harvey Celia A.<sup>1</sup>, Vignola R.<sup>2</sup>, Rodríguez C.M.<sup>3</sup>

<sup>1</sup>Conservation International, The Betty and Gordon  
Moore Center for Science and Oceans, 22202,  
Arlington, VA, USA

<sup>2</sup>CATIE, Climate Change and Watershed Program,  
7170, Turrialba, Costa Rica

<sup>3</sup>Conservation International, Center for  
Environmental and Peace, 22202, Arlington, VA,  
USA

**192. Drip irrigation works: drip irrigation kits do not**

Davidson Michael

Davidson Consultants, 1169 Boston Street,  
Altadena, CA 91001, USA

## PARALLEL SESSION L3 TOWARDS CLIMATE- SMART SOLUTIONS

Wednesday, 18 March 2015

8:30–12:30

### ORAL PRESENTATIONS

#### PARALLEL SESSION L3.1 CLIMATE ADAPTATION AND MITIGATION SERVICES

#### ROOM SULLY 1

#### KEYNOTE PRESENTATIONS

08:30 AgMIP Contributions to Climate-Smart  
Agriculture

Rosenzweig Cynthia<sup>1,2</sup>

<sup>1</sup>NASA Goddard Institute for Space Studies, 2880  
Broadway, New York, NY 10025, USA

<sup>2</sup>Center for Climate Systems Research, Columbia  
University, New York, NY 10025, USA

09:00 Adaptation and mitigation services for  
climate smart agriculture

Moors Eddy, Groot Annemarie, Werners Saskia  
Alterra-Wageningen UR, Wageningen, the  
Netherlands

#### CONTRIBUTED ORAL PRESENTATIONS

11:00 Public-private partnership for climate-  
smart irrigation initiative in Morocco: the  
experience of Souss Massa Region

Lahcen Kenny<sup>1</sup>, Hafidi Brahim<sup>2</sup>, El Faskaoui  
Mhamed<sup>3</sup>, Rami Abdellatif<sup>4</sup>, Akhmisse Laila<sup>5</sup>,  
Chemaou Hasna<sup>5</sup>

<sup>1</sup>IAV Hassan II, CHA / AGROTECH, Agadir, Morocco

<sup>2</sup>Conseil Régional du Souss Massa Draa, Agadir,  
Morocco

<sup>3</sup>Agence du Bassin Hydraulique du Souss Massa  
Draa, Agadir, Morocco

<sup>4</sup>Agrotech-SMD; Agadir, Morocco

<sup>5</sup>Fondation Credit Agricole du Maroc pour le  
Développement Durable, Rabat, Morocco

11:15 DSS for monitoring agro-meteorological  
and crop conditions in India using remote sensing  
for agro-advisory services

Sehgal Vinay, Singh Malti, Verma Rakeshwar,  
Vashisth Ananta, Pathak Himanshu

Division of Agricultural Physics, Indian Agricultural  
Research Institute, New Delhi - 110012, India

11:30 Can citizen science accelerate climate  
adaptation by poor farming households?

van Etten Jacob<sup>1</sup>, Alwang Jeffrey<sup>2</sup>, Arnaud  
Elizabeth<sup>3</sup>, Beza Eskender<sup>4</sup>, Calderer Lluís<sup>1</sup>,  
Crichton Rhiannon<sup>3</sup>, Eitzinger Anton<sup>5</sup>, van  
Duijvendijk Kees<sup>6</sup>, Fadda Carlo<sup>7</sup>, Fantahun  
Basazen<sup>8</sup>, van de Gevel Jeske<sup>7</sup>, Gotor Elisabetta<sup>9</sup>,  
Kassahun Mengistu Dejene<sup>10</sup>, Kaushik S.S.<sup>11</sup>,  
Kidane Yosef G.<sup>12</sup>, Mathur Prem<sup>13</sup>, Mercado  
Leida<sup>14</sup>, Mitra Sarika<sup>13</sup>, Moeller Anne Marie<sup>15</sup>,  
Mondal Ashis<sup>16</sup>, Pè M. Enrico<sup>17</sup>, Richter Susan<sup>2</sup>,  
Rosas Juan Carlos<sup>18</sup>, Singh R.K.<sup>19</sup>, Solanki I.S.<sup>20</sup>,  
Steinke Jonathan<sup>1,21</sup>, Van den Bergh Inge<sup>22</sup>,  
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Center for Tropical Agriculture, Cali, Colombia

<sup>6</sup>Lund University, SE-221 00 Lund, Sweden

<sup>7</sup>Bioversity International, Sub-Saharan Africa Office,  
Nairobi, Kenya

<sup>8</sup>Ethiopian Biodiversity Institute (EBI), Addis Ababa,  
Ethiopia

<sup>9</sup>Bioversity International, Via dei Tre Denari 472/a, Maccaresse 00057, Italy

<sup>10</sup>Department of Dryland Crop and Horticulture Science, Mekelle University, Mekelle, Tigray, Ethiopia

<sup>11</sup>Krishi Vigyan Kendra, Satna - 485331 (M.P.), India

<sup>12</sup>Sirinka Agricultural Research Centre, Woldia, Ethiopia

<sup>13</sup>Bioversity International, Asia, Pacific and Oceania Office, New Delhi, India

<sup>14</sup>CATIE - Tropical Agricultural Research and Higher Education Center, 7170, Turrialba, Costa Rica

<sup>15</sup>Humana People to People India, New Delhi-110070, India

<sup>16</sup>Action for Social Advancement, Bhopal, Madhya Pradesh-462016, India

<sup>17</sup>Scuola Superiore S. Anna, Piazza Martiri Della Libertà, 33, 56127 Pisa, Italy

<sup>18</sup>Zamorano Pan-American Agricultural School, Honduras

<sup>19</sup>NEFORD, Vishnupuri, Aliganj, Lucknow, India

<sup>20</sup>S. Pusa Bihar, Indian Agricultural Research Institute - IARI, New Delhi, India

<sup>21</sup>Humboldt-Universität, 10099 Berlin, Germany

<sup>22</sup>Bioversity International, Belgium Office, W. De Croylaan 42, 3001 Heverlee, Belgium

<sup>23</sup>Department of Geography, Penn State University, 16802, University Park, Pennsylvania, USA

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<sup>11</sup>Indian Agricultural Research Institute, New Delhi, India

<sup>12</sup>University of Florence, DISPAA, Florence, Italy

<sup>13</sup>Desertification Research Centre, University of Sassari, Italy

<sup>14</sup>Cantabria Agricultural Research and Training Centre, Muriedas, Spain

<sup>15</sup>ARC-RPS, Research Centre for the Soil-Plant System, Roma, Italy

<sup>16</sup>Agriculture and Agri-Food Canada, Ottawa, Canada

<sup>17</sup>Tasmanian institute of Agriculture, Burnie, Australia

<sup>18</sup>Landcare Research, Palmerston North, New Zealand

<sup>19</sup>INRA, UPR 1158 AgroImpact, Laon, France

<sup>20</sup>INRA AgroParisTech UMR EGC, Thiverval-Grignon France

<sup>21</sup>CSIRO, Australia

<sup>22</sup>Swiss Federal Institute of Technology ETH Zurich, Zurich, Switzerland

<sup>23</sup>SRUC Edinburgh Campus, Scotland, United Kingdom

<sup>24</sup>The New Zealand Institute for Plant & Food Research, New Zealand

<sup>25</sup>Department of Sustainable Soil Science and Grassland System, Rothamsted Research, United Kingdom

<sup>26</sup>Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China

#### 11:45 An international intercomparison & benchmarking of crop and pasture models simulating GHG emissions and C sequestration

Ehrhardt Fiona<sup>1</sup>, Soussana Jean-François<sup>1</sup>, Grace Peter<sup>2</sup>, Recous Sylvie<sup>3</sup>, Snow Val<sup>4</sup>, Bellocchi Gianni<sup>5</sup>, Beaurais Josef<sup>6</sup>, Easter Mark<sup>7</sup>, Liebig Mark<sup>8</sup>, Smith Pete<sup>9</sup>, Celso Aita<sup>10</sup>, Bhatia Arti<sup>11</sup>, Brilli Lorenzo<sup>12</sup>, Conant Rich<sup>7</sup>, Deligios Paola<sup>13</sup>, Doltra Jordi<sup>14</sup>, Farina Roberta<sup>15</sup>, Fitton Nuala<sup>9</sup>, Grant Brian<sup>16</sup>, Harrison Matthew<sup>17</sup>, Kirschbaum Miko<sup>18</sup>, Klumpp Katja<sup>5</sup>, Léonard Joël<sup>19</sup>, Lieffering Mark<sup>6</sup>, Martin Raphaël<sup>5</sup>, Massad Raia Sylvia<sup>20</sup>, Meier Elizabeth<sup>21</sup>, Merbold Lutz<sup>22</sup>, Moore Andrew<sup>21</sup>, Mula Laura<sup>13</sup>, Newton Paul<sup>21</sup>, Pattey Elizabeth<sup>16</sup>, Rees Bob<sup>23</sup>, Sharp Joanna<sup>24</sup>, Shcherbak Iurii<sup>2</sup>, Smith Ward<sup>16</sup>, Topp Kairsty<sup>23</sup>, Wu Lianhai<sup>25</sup>, Zhang Wen<sup>26</sup>

<sup>1</sup>INRA, Paris, France

<sup>2</sup>Queensland University of Technology, Brisbane, Australia

<sup>3</sup>INRA, UMR FARE, Reims, France

<sup>4</sup>AgResearch, Lincoln Research Centre, Christchurch, New Zealand

<sup>5</sup>INRA, Grassland Ecosystem Research (UR874), Clermont Ferrand, France

<sup>6</sup>AgResearch Grasslands, Palmerston North, New Zealand

<sup>7</sup>NREL, Colorado State University, Fort Collins, USA

<sup>8</sup>USDA Agricultural Research Service, Mandan, USA

## PARALLEL SESSION L3.2 CLIMATE-SMART CROPPING SYSTEMS

### ROOM SULLY 2

#### KEYNOTE PRESENTATIONS

08:30 Climate Smart Agriculture – adaptation or transformation

Obersteiner Michael<sup>1</sup>, Leclère David<sup>1</sup>, Havlík Petr<sup>1</sup>, Fuss Sabine<sup>2,1</sup>, Schmid Erwin<sup>3</sup>, Mosnier Aline<sup>1</sup>, Walsh Brian<sup>1</sup>, Valin Hugo<sup>1</sup>, Herrero Mario<sup>4</sup>, Khabarov Nikolai<sup>1</sup>

<sup>1</sup>Ecosystem Services Management, International Institute of Applied System Analysis, Laxenburg, Austria

<sup>2</sup>Resources and International Trade Group, Mercator Research Institute on Global Commons and Climate Change, Berlin, Germany

<sup>3</sup>Institute for Sustainable Economic Development, University of Natural Resources and Life Sciences, Vienna, Austria

<sup>4</sup>Commonwealth Scientific and Industrial Research Organisation, 306 Carmody Road, 4067 Qld, Australia

**09:00 Designing and assessing climate-smart cropping systems in temperate and tropical agriculture**

Debaeke Philippe<sup>1</sup>, Pellerin Sylvain<sup>2</sup>, Scopel Eric<sup>3</sup>

<sup>1</sup>INRA, UMR AGIR, 31326 Castanet-Tolosan, France

<sup>2</sup>INRA, UMR ISPA, 33883 Villenave d'Ornon, France

<sup>3</sup>CIRAD, UR AIDA, 34398 Montpellier, France

<sup>3</sup>FOFIFA, Apandrianomby, 101 Antananarivo, Madagascar

**11:30 Agronomic and environmental benefits of climate-smart farming practices modeled for rice-based system in India**

Kwon Hoyoung, de Pinto Alessandro, Haruna Akiko  
Environment and Production Technology Division, International Food Policy Research Institute, 2033 K Street, NW, 20006-1002 Washington DC, USA

**11:45 Smallholders' coffee and cocoa agroforestry systems; examples of climate-smart agriculture**

Vaast Philippe<sup>1</sup>, Harmand Jean-Michel<sup>2</sup>, Somarriba Eduardo<sup>3</sup>

<sup>1</sup>CIRAD, UMR Eco&Sols, ICRAF United Nations Avenue POBOX 30677, Nairobi Kenya

<sup>2</sup>CIRAD, UMR Eco&Sols, 2 Place Viala (Bat. 12), 34060 Montpellier cedex 2, France

<sup>3</sup>CATIE, 7170, Cartago, Turrialba 30501, Costa Rica

**CONTRIBUTED ORAL PRESENTATIONS**

**11:00 Phosphorus use efficiency in symbiotic N<sub>2</sub> fixation for coupling bio-geochemical cycles in agrosystems with legumes**

Drevon Jean-Jacques<sup>1</sup>, Amenc Laurie<sup>1</sup>, Bargaz Adnan<sup>2</sup>, Becquer Thierry<sup>1</sup>, Blavet Didier<sup>1</sup>, Gérard Frédéric<sup>1</sup>, Domergue Odile<sup>3</sup>, Lazali Mohamed<sup>4</sup>, ZamanAllah Mainassara<sup>5</sup>

<sup>1</sup>INRA Ecologie Fonctionnelle & Biogéochimie des Sols & Agroécosystèmes, 1 Place Viala, F34060, Montpellier, France

<sup>2</sup>Swedish University of Agricultural Sciences, Department of Biosystems and Technology, PO Box 103, SE-230 53 Alnarp, Sweden

<sup>3</sup>Laboratoire des Symbioses Tropicales et Méditerranéennes, Campus International de Baillarguet, 34398 Montpellier Cedex 5, France

<sup>4</sup>Université de Khemis Miliana, Route Theniet El Had, Soufay 44225 Ain Defla, Algeria

<sup>5</sup>CIMMYT, Southern Africa Regional Office, Peg Mazowe Road MP163, Mt Pleasant, Harare, Zimbabwe

**11:15 Conservation agriculture and agroecology practices to mitigate climatic variations in medium altitude in Madagascar**

Penot Eric<sup>1</sup>, Fèvre Valentin<sup>2</sup>, Flodrops Patricia<sup>2</sup>, Razafimahatratra Hanitriniaina Mamy<sup>3</sup>

<sup>1</sup>CIRAD UMR innovation, DP SPAD, DR CIRAD, BP 853, Anpandrianomby, 101 Antananarivo, Madagascar

<sup>2</sup>Agroparistech, DP SPAD, DR CIRAD, BP 853, Anpandrianomby, 101 Antananarivo, Madagascar

**PARALLEL SESSION L3.3  
CLIMATE-SMART LIVESTOCK**

**ROOM SULLY 3**

**KEYNOTE PRESENTATIONS**

**08:30 Climate-smart livestock systems: lessons and future research**

Herrero Mario<sup>1</sup>, Thornton Philip K.<sup>2</sup>, van Wijk Mark<sup>3</sup>, Rigolot Cyrille<sup>1,4</sup>, Havlik Petr<sup>5</sup>, Henderson Benjamin<sup>1</sup>, Ash Andrew<sup>1</sup>, Crimp Steven<sup>1</sup>, Howden Stuart Mark<sup>1</sup>

<sup>1</sup>Commonwealth Scientific and Industrial Research Organisation, Agriculture Flagship, Australia

<sup>2</sup>CGIAR Research Programme on Climate Change, Agriculture and Food Security, ILRI, Nairobi, Kenya

<sup>3</sup>International Livestock Research Institute, Nairobi, Kenya

<sup>4</sup>INRA, UMR 1273 Metafort, F-63122 Saint Genes Champanelle, France

<sup>5</sup>International Institute for Applied Systems Analysis, Laxenburg, Austria

**09:00 Livestock and climate change: combining mitigation and adaptation options and projecting sustainable futures**

Soussana Jean-François<sup>1</sup> and the EC FP7 'AnimalChange' consortium (see [www.animalchange.eu](http://www.animalchange.eu))

<sup>1</sup>INRA, Paris, France

**CONTRIBUTED ORAL PRESENTATIONS**

**11:00 Differential climate change impacts on crop and grasslands and the relative livestock production systems competitiveness**

Havlik Petr<sup>1</sup>, Leclere David<sup>1</sup>, Valin Hugo<sup>1</sup>, Herrero Mario<sup>2</sup>, Schmid Erwin<sup>3</sup>, Obersteiner Michael<sup>1</sup>

<sup>1</sup>International Institute for Applied Systems Analysis, Schlossplatz 1, A-2361 Laxenburg, Austria

<sup>2</sup>Commonwealth Scientific and Industrial Research Organisation 306 Carmody Road, St Lucia, 4067 QLD, Australia

<sup>3</sup>University of Natural Resources and Life Sciences, Feistmantelstraße 4, A-1180 Vienna, Austria

**11:15 Efficiency gains for enteric methane mitigation and productivity: contribution to CSA and investment opportunities.**

Gerber Pierre<sup>1</sup>, Opio Carolyn<sup>1</sup>, Mottet Anne<sup>1</sup>, Steinfeld Henning<sup>1</sup>, Hatton Victoria<sup>2</sup>, Clark Harry<sup>2</sup>

<sup>1</sup>Food and Agriculture Organization of the United Nations, Rome, Italy

<sup>2</sup>New Zealand Agricultural Greenhouse Gas Research Centre, Palmerston North, New Zealand

**11:30 Variations in egg incubation temperature enable chicken acclimation through long-lasting changes in energy metabolism**

Loyau Thomas<sup>1</sup>, Métayer-Coustard Sonia<sup>1</sup>, Berri Cécile<sup>1</sup>, Mignon-Grasteau Sandrine<sup>1</sup>, Hennequet-Antier Christelle<sup>1</sup>, Praud Christophe<sup>1</sup>, Duclos Michel J.<sup>1</sup>, Tesseraud Sophie<sup>1</sup>, Coustham Vincent<sup>1</sup>, Nyuiadzi Dzidzo<sup>1,2</sup>, David Sarah-Anne<sup>1</sup>, Everaert Nadia<sup>3,4</sup>, Siegel Paul B.<sup>5</sup>, Yalçın Servet<sup>6</sup>, Yahav Shlomo<sup>7</sup>, Collin Anne<sup>1</sup>

<sup>1</sup>INRA, UR83 Recherches Avicoles, F-37380, Nouzilly, France

<sup>2</sup>Institut Togolais de Recherche Agronomique (ITRA), BP 1163, Lomé, Togo

<sup>3</sup>KU Leuven, Department of Biosystems, B-3001 Leuven, Belgium

<sup>4</sup>University of Liège, Gembloux Agro-Bio Tech, Animal Science Unit, B-5030 Gembloux, Belgium

<sup>5</sup>Virginia Polytechnic Institute and State University, Department of Animal and Poultry Sciences, Blacksburg, Virginia 24061-0306, USA

<sup>6</sup>Ege University, Faculty of Agriculture, Department of Animal Science, 35100 Izmir, Turkey

<sup>7</sup>Institute of Animal Science, The Volcani Center, Bet Dagan P.O. Box 6, 50250, Israel

**11:45 Impact of feeding strategies on GHG emissions, income over feed cost and economic efficiency on milk production**

Inamagua-Uyaguari Juan Pablo<sup>1</sup>, Jenet Andreas<sup>1</sup>, Wattiaux Michel<sup>3</sup>, Guerra Leonardo<sup>1</sup>, Vilchez Sergio<sup>1</sup>, Chacón-Cascante Adriana<sup>1</sup>, Posada Karla<sup>1</sup>, Barrantes Luz<sup>2</sup>, Casasola Francisco<sup>1</sup>, Villanueva Cristobal<sup>1</sup>, Leon Hector<sup>4</sup>, Lapidus Daniel<sup>5</sup>

<sup>1</sup>Centro Agronómico Tropical de Investigación y Enseñanza (CATIE), 30501 Turrialba, Costa Rica

<sup>2</sup>Universidad de Costa Rica, Centro de Investigación en Economía Agrícola y Desarrollo Agroempresarial (CIEDA) 141-2400 Costa Rica

<sup>3</sup>University of Wisconsin-Madison, USA

<sup>4</sup>Cooperativa Dos Pinos; 179-4060 Alajuela, Costa Rica

<sup>5</sup>U.S. Department of Agriculture, 1400 Independence Ave., S.W.; Washington, DC 20250 USA

**PARALLEL SESSION L3.4  
CLIMATE-SMART LANDSCAPES,  
WATERSHEDS AND TERRITORIES**

**ROOM RONDELET**

**KEYNOTE PRESENTATIONS**

**08:30 Climate Smart Territories; what are they and how do we evaluate progress towards this goal?**

Beer John<sup>1</sup>, Louman Bastiaan<sup>1</sup>, Mercado Leida<sup>1</sup>, Scherr Sara<sup>2</sup>, Van Etten Jacob<sup>3</sup>

<sup>1</sup>CATIE, Costa Rica

<sup>2</sup>EcoAgriculture Partners, USA

<sup>3</sup>Bioversity International

**09:00 Towards climate smart landscapes and watersheds**

Oswald-Spring Úrsula  
CRIM-UNAM, Mexico

**CONTRIBUTED ORAL PRESENTATIONS**

**11:00 Prototyping climate-smart agricultural landscapes: a generic modelling framework and application in a tropical island**

Blazy Jean-Marc<sup>1</sup>, Chopin Pierre<sup>1</sup>, Doré Thierry<sup>2,3</sup>, Guindé Loïc<sup>1</sup>, Paul Jacky<sup>1</sup>, Sierra Jorge<sup>1</sup>



<sup>1</sup>INRA, UR1321 ASTRO Agrosystèmes tropicaux, F-97170 Petit-Bourg (Guadeloupe), France

<sup>2</sup>AgroParisTech, UMR 211 Agronomie, F-78850 Thiverval-Grignon, France

<sup>3</sup>INRA, UMR 211 Agronomie, F-78850 Thiverval-Grignon, France

**11:15 Managing trade-offs in climate-smart landscapes: a global analysis at multiple levels**

Locatelli Bruno<sup>1</sup>, Pramova Emilia<sup>2</sup>, Chazarin Florie<sup>2</sup>, Fedele Giacomo<sup>3</sup>

<sup>1</sup>CIRAD-CIFOR, Montpellier 34098, France

<sup>2</sup>CIFOR, Av La Molina 1895, Lima 15024, Peru

<sup>3</sup>CIFOR, Jalan Cifor, Bogor 16000, Indonesia

**11:30 Climate-smart landscapes: multifunctionality in practice**

Minang Peter A., Van Noordwijk Meine, Duguma Lalisa A.

ICRAF, UN Avenue, Gigiri, P O Box 30677-00100, Nairobi, Kenya

**11:45 A platform for landscape ecoefficiency monitoring and jurisdictional certification in the Amazon region**

Venturieri Adriano<sup>1</sup>, Pocard-Chapuis René<sup>2</sup>, Laurent François<sup>3</sup>, Plassin Sophie<sup>2</sup>, Thalès Marcelo<sup>4</sup>, Moura Fabricia<sup>4</sup>, Pimentel Gustavo<sup>5</sup>, Piketty Marie-Gabrielle<sup>6</sup>

<sup>1</sup>Embrapa Amazonia Oriental, Belém - PA, 66095-100, Brazil

<sup>2</sup>UMR SELMET – CIRAD, Paragominas - PA, 68626-140, Brazil

<sup>3</sup>Université du Maine, Le Mans 72085, France

<sup>4</sup>Museu Paraense Emilio Goeldi, Belém - PA, 66095-100, Brazil

<sup>5</sup>Embrapa Amazonia Oriental, Belém - PA 66095-100, Brazil

<sup>6</sup>UR GREEN – CIRAD, Montpellier 34000, France

Hedger Merylyn, Nakhooda Smita, Norman Marigold

Overseas Development Institute, London, United Kingdom

**09:00 “What Can Fund Climate Smart Agriculture?”**

Searchinger Timothy D.

Princeton University, USA

**CONTRIBUTED ORAL PRESENTATIONS**

**11:00 How to deal with trade-offs? – A manual for policymakers**

Ignaciuk Ada

OECD, 2 rue Andre Pascal, 75016 Paris, France

**11:15 Exploring strategic management of agricultural systems to link mitigation and adaptation to climate change**

Iglesias Ana, Sanchez Berta

Department of Agricultural Economics and Social Sciences, Universidad Politécnica de Madrid, Madrid, Spain

**11:30 Nationally appropriate mitigation actions (NAMAs) for upscaling climate-smart agriculture practices**

Avagyan Armine, Karttunen Kaisa, De Vit Caroline, Rioux Janie

Food and Agriculture Organisation of the United Nations (FAO), Viale delle Terme di Caracalla, 00153 Rome, Italy

**11:45 A business approach to poverty reduction: weather index based insurance and climate smart agriculture**

Greatrex Helen<sup>1</sup>, Hansen James<sup>1</sup>, Hellin Jon<sup>2</sup>, Osgood Daniel Edward<sup>1</sup>

<sup>1</sup>International Research Institute for Climate and Society (IRI), Columbia University, Lamont Doherty Earth, 61 Route 9W, Palisades, New York 10964-1000, USA

<sup>2</sup>International Maize and Wheat Improvement Center (CIMMYT), Apdo. Postal 6-641, Mexico, D.F. 06600, Mexico

**PARALLEL SESSION L3.5  
INVESTMENT OPPORTUNITIES  
AND FUNDING INSTRUMENTS**

**ROOM BARTHEZ**

**KEYNOTE PRESENTATIONS**

**08:30 Delivering Climate Smart Agriculture: prospects from climate finance**

## POSTER SESSION 3

Wednesday, 18 March 2015

9:30–11:00

### EXHIBITION HALL, LEVEL 0

L3.1 Climate adaptation and mitigation services

#### 1. Scaling up climate information services within climate smart agriculture

Jay Alexa<sup>1</sup>, Tall Arame<sup>2</sup>

<sup>1</sup>International Research Institute for Climate and Society, Earth Institute, Columbia University, 61 Route 9W, Palisades, NY 10964, USA

<sup>2</sup>International Food Policy Research Institute, 2033 K Street, NW Washington, DC 20006-1002, USA

#### 2. Upscaling climate smart agriculture for food security in the Sahel region

Bilgo Ablasse<sup>1</sup>, Subsol Sébastien<sup>1</sup>, Botoni Yaro Edwige<sup>2</sup>, Sarr Benoit<sup>1</sup>

<sup>1</sup>Centre Régional AGRHYMET, BP 11011 Niamey, Niger

<sup>2</sup>Secrétariat Exécutif du Comité permanent Inter-Etats de Lutte contre la Sécheresse au Sahel (CILSS), 03 BP 7049, Ouagadougou, Burkina Faso

#### 3. Index-based insurance for income stabilization for smallholder farms in Central Asia

Bobojonov Ihtiyor<sup>1</sup>, Aw-Hassan Aden<sup>2</sup>, Biradar Chandrashekar<sup>2</sup>, Nurbekov Aziz<sup>3</sup>

<sup>1</sup>Leibniz Institute of Agricultural Development in Transition Economies (IAMO), Germany

<sup>2</sup>ICARDA, Abdoun Al-Shamalie, Khalid Abu Dalbough Str., Amman 11195, Jordan

<sup>3</sup>ICARD, Tashkent, Uzbekistan

#### 4. Preliminary results obtained in the CLIF Project on climate change impact on fungal pathosystems

Huber Laurent<sup>1</sup>, Bancal Marie-Odile<sup>1</sup>, Zurfluh Olivier<sup>1</sup>, Huard Frédéric<sup>2</sup>, Launay Marie<sup>2</sup>, Andrivon Didier<sup>3</sup>, Androdias Annabelle<sup>3</sup>, Corbière Roselyne<sup>3</sup>, Mariette Nicolas<sup>3</sup>, Belaid Yosra<sup>4</sup>, de Vallavieille-Pope Claude<sup>4</sup>

<sup>1</sup>INRA, UMR 1091 EGC, F-78850 Thiverval-Grignon, France

<sup>2</sup>INRA, US 1116 AGROCLIM, F-84914 Avignon, France

<sup>3</sup>INRA, UMR 1349 IGEPP, F-35653 Le Rheu, France

<sup>4</sup>INRA, UR 1290 Bioger, F-78850 Thiverval-Grignon, France

#### 5. Modelling greenhouse gas emission under extensive livestock production systems in Kalahari South Africa

Tesfamariam Eyob H.<sup>1</sup>, Hassen Abubeker<sup>2</sup>, Booyse Maruzaan<sup>2</sup>, Hutchings Nicholas J.<sup>3</sup>, Stienezen Marcia<sup>4</sup>

<sup>1</sup>Department of Plant Production and Soil Science, University of Pretoria, South Africa

<sup>2</sup>Department of Animal and Wild Life Sciences, University of Pretoria, South Africa

<sup>3</sup>Department of Agroecology - Climate and Water, Aarhus University, Denmark

<sup>4</sup>Wageningen UR Livestock Research, Wageningen, the Netherlands

#### 6. Institutionalizing crop yield forecasting for early warning in Nepal

Gyawali Dhiraj Raj<sup>1</sup>, Kanel Damodar<sup>1</sup>, Burja Kurstin Vance<sup>1</sup>, Arun Khatri-Chhetri<sup>2</sup>

<sup>1</sup>United Nations World Food Programme, Nepal Food Security Monitoring System (NeKSAP), Vulnerability Analysis and Mapping (VAM), Lalitpur, Nepal

<sup>2</sup>CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), International Water Management Institute, New Delhi, India

#### 7. Analysis of extreme climate events and their impact on maize and wheat

Diriba Tadele Akeba<sup>1</sup>, Debusho Legesse Kassa<sup>1</sup>, Botai Joel<sup>2</sup>, Hassen Abubeker<sup>3</sup>

<sup>1</sup>University of Pretoria, Department of Statistics, Private Bag X20, Hatfield, 0028 Pretoria, South Africa.

<sup>2</sup>University of Pretoria, Department of Geography, Geoinformatics and Meteorology, 0028 Pretoria, South Africa

<sup>3</sup>University of Pretoria, Department of Animal and Wildlife Sciences, 0028 Pretoria, South Africa

#### 8. Farmer rice field adaptation technology for rice-wheat cropping system in Punjab, Pakistan under future changing climate

Ahmad Ashfaq<sup>1</sup>, Wajid Aftab<sup>1</sup>, Khaliq Tasneem<sup>1</sup>, Habib-ur-Rehman M.<sup>1</sup>, Rasul Fahd<sup>1</sup>, Saeed Umer<sup>1</sup>, Hussain Jamshad<sup>1</sup>, Hoogenboom Gerrit<sup>2</sup>

<sup>1</sup>Agro-climatology Lab., Department of Agronomy, University of Agriculture, Faisalabad, 38040, Pakistan

<sup>2</sup>College of Agriculture, Human, and Natural Resources Sciences, Washington States University, Prosser, WA 99350-8694, USA

### 9. Are autonomous adaptation help to improve resilience of farmers? Insights from local scale analysis from South India

Dhanya Praveen, Ramachandran Andimuthu, Palanivelu Kandasamy  
Centre for Climate Change and Adaptation Research, College of Engineering, Guindy Campus, Anna University, Sardar Patel Road, Chennai – 600 025, India

### 10. Developing web services to foster the adaptation of agriculture, forestry and water management to climate change

Bréda Nathalie<sup>1</sup>, Caquet Thierry<sup>2</sup>, Gascuel-Oudou Chantal<sup>3</sup>, Soussana Jean-François<sup>4</sup>

<sup>1</sup>INRA, UMR 1137 INRA-Université de Lorraine "Forest Ecology and Ecophysiology-EEF", Route de la Forêt d'Amance, F-54280 Champenoux, France

<sup>2</sup>INRA, UAR 1275 Ecology of Forests, Grasslands and Freshwater Systems Division, Route de la Forêt d'Amance, F-54280 Champenoux, France

<sup>3</sup>INRA, UMR 1069 INRA-Agrocampus Ouest "Soil, Agro and hydroSystem-SAS", 65 rue de Saint-Brieuc, F-35042 Rennes Cedex, France

<sup>4</sup>INRA, Collège de Direction, 147 rue de l'Université, F-75338 Paris Cedex 07, France

### 11. Evaluation of GHGs, C stocks and yields from European cropping and pasture systems under two climate change scenarios

Carozzi Marco<sup>1</sup>, Massad Raia Silvia<sup>1</sup>, Klumpp Katja<sup>2</sup>, Eza Ulrich<sup>2</sup>, Shtiliyanova Anastasiya<sup>2</sup>, Drouet Jean-Louis<sup>1</sup>, Martin Raphaël<sup>2</sup>

<sup>1</sup>INRA, AgroParisTech, UMR 1091 Environnement et Grandes Cultures, 78850 Thiverval-Grignon, France

<sup>2</sup>INRA, UR 0874 UREP Unité de Recherche sur l'Ecosystème Prairial, 63100 Clermont-Ferrand, France

### 12. Food security and climate change: a vulnerability analysis of agricultural livelihoods in Central America

Imbach Pablo<sup>1</sup>, Bouroncle Claudia<sup>1</sup>, Läderach Peter<sup>2</sup>, Medellín Claudia<sup>1</sup>, Beatriz Rodríguez<sup>2</sup>, Armando Martínez<sup>2</sup>

<sup>1</sup>CATIE, Climate Change and Watersheds Program, CATIE 7170, Turrialba, Costa Rica

<sup>2</sup>CIAT, Decision and Policy Analysis Program, Cali, Colombia

### 13. Impact of climate change on household income and poverty levels: empirical evidence from South Asia

Rahut Dil Bahadur<sup>1</sup>, Aryal Jeetendra<sup>2</sup>, Ali Akhter<sup>3</sup>, Behera Bhagirath<sup>4</sup>

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### 14. Irrigated rice practices changes in the Senegal River Valley according to climate and constraints evolutions

Baldé Alpha Bocar<sup>1</sup>, Muller Bertrand<sup>1,2</sup>, Van Oort Pepijn<sup>3</sup>, Ndiaye Ousmane<sup>4</sup>, Stuerz Sabine<sup>5</sup>, Sow Abdoulaye<sup>1</sup>, Diack Salif<sup>6</sup>, Ndour Maimouna<sup>1</sup>, Dingkuhn Michael<sup>7</sup>

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<sup>7</sup>CIRAD/International Rice Research Institute (IRRI), Los Banos, Philippines

### 15. Towards high resolution adaptation strategies to climate variability and change

Neethling Etienne<sup>1,2</sup>, Le Roux Renan<sup>1</sup>, Barbeau Gérard<sup>2</sup>, Quéno Hervé<sup>1</sup>, Rouan Mathias<sup>3</sup>, Tissot Cyril<sup>3</sup>

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<sup>3</sup>GEOMER-CNRS, UMR 6554 LETG, Université de Bretagne Occidentale, 29280 Plouzané, France

### 16. AgMIP's transdisciplinary approach to regional integrated assessment of climate impact, vulnerability & adaptation

Antle John<sup>1</sup>, Valdivia Roberto<sup>1</sup>, Boote Ken<sup>2</sup>, Hatfield Jerry<sup>3</sup>, Janssen Sander<sup>4</sup>, Jones Jim<sup>2</sup>, Porter Cheryl<sup>2</sup>, Rosenzweig Cynthia<sup>5</sup>, Ruane Alex<sup>5</sup>, Thorburn Peter<sup>6</sup>

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### 17. Representative agricultural pathways for integrated assessment of climate change, vulnerability & adaptation impacts

Valdivia Roberto O.<sup>1</sup>, Antle John M.<sup>1</sup>, Rosenzweig Cynthia<sup>2</sup>, Ruane Alex<sup>2</sup>, Vervoort Joost<sup>3</sup>, Ashfaq Muhammad<sup>4</sup>, Hattie Ibrahima<sup>5</sup>, Homman-Kee Tui Sabine<sup>6</sup>, Mulwa Richard<sup>7</sup>, Nhemachena Charles<sup>8</sup>, Ponnusamy Paramasivam<sup>9</sup>, Herath Dumindu<sup>10</sup>, Singh Harbir<sup>11</sup>

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### 18. Trends in dry spell and extreme rainfall events and significance for alternative and sustainable agriculture in Malawi

Mloza-Banda Medrina L.<sup>1</sup>, Mloza-Banda H. R.<sup>2</sup>, De Pue Jan<sup>1</sup>, Cornelis Wim<sup>1</sup>

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<sup>2</sup>University Of Malawi, Faculty of Agriculture, Department of Crop and Soil Sciences, P.O. Box 219, Lilongwe, Malawi

### 19. Analysing the quality and reconstructing daily weather data for crop growth simulation models

Mkuhlani Siyabusa<sup>1</sup>, Berre David<sup>1</sup>, Corbeels Marc<sup>2</sup>, Romain Frelat<sup>3</sup>, Rusinamhodzi Leonard<sup>4</sup>, Lopez-Ridaura Santiago<sup>3</sup>

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### 20. Gender assessment of climate change adaptation strategies in south-western Nigeria

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Department of Agricultural Extension & Rural development, University of Ibadan, Oyo State, Nigeria

### 21. Sensitivity analysis for climate change impacts, adaptation and mitigation projection with pasture models

Bellocchi Gianni<sup>1</sup>, Ehrhardt Fiona<sup>2</sup>, Soussana Jean-François<sup>2</sup>, Conant Rich<sup>3</sup>, Fitton Nuala<sup>4</sup>, Harrison Matthew<sup>5</sup>, Lieffering Mark<sup>6</sup>, Minet Julien<sup>7</sup>, Martin Raphaël<sup>1</sup>, Moore Andrew<sup>8</sup>, Myrriotis Vasileios<sup>9</sup>, Rolinski Susanne<sup>10</sup>, Ruget Françoise<sup>11</sup>, Snow Val<sup>12</sup>, Wang Hong<sup>13</sup>, Wu Lianhai<sup>14</sup>

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<sup>14</sup>Department of Sustainable Soil Science and Grassland System, Rothamsted Research, United Kingdom

## 22. Biochar: an environment friendly approach to mitigate climate change

Arshad Muhammad Naveed<sup>1</sup>, Ahmad Ashfaq<sup>1</sup>, Wajid Aftab<sup>1</sup>, Rasul Fahd<sup>1</sup>, Khaliq Tasneem<sup>1</sup>, Fatima Hafiza Naheed<sup>2</sup>

<sup>1</sup>Agro-Climatology Laboratory, Department of Agronomy, University of Agriculture, Faisalabad, Pakistan

<sup>2</sup>Department of Life Sciences, Islamia University, Bahawalpur, Pakistan

## 23. Response of fine rice cultivars to various transplanting dates under climate change scenario of Pakistan

Arshad Muhammad Naveed<sup>1</sup>, Ahmad Ashfaq<sup>1</sup>, Wajid Aftab<sup>1</sup>, Rasul Fahd<sup>1</sup>, Khaliq Tasneem<sup>1</sup>, Fatima Hafiza Naheed<sup>2</sup>

<sup>1</sup>Agro-Climatology Laboratory, Department of Agronomy, University of Agriculture, Faisalabad, Pakistan

<sup>2</sup>Department of Life Sciences, Islamia University, Bahawalpur, Pakistan

## 24. Climate smart services: case studies in Senegal, Burkina, and Colombia

Andrieu Nadine<sup>1,2</sup>, Howland Fanny<sup>2</sup>, Ndiaye Ousmane<sup>3</sup>, Faure Guy<sup>1</sup>, Bonilla Osana<sup>2</sup>, Eduardo Chia<sup>3,4</sup>

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<sup>3</sup>ANACIM, Dakar, Senegal

<sup>4</sup>INRA, UMR Innovation, 34090 Montpellier, France

## 25. Climate-smart cropping patterns on exposed coasts and near-coastal uplands, central Vietnam

Phan Huong Lien<sup>1</sup>, Le Dinh Hoa<sup>1</sup>, Dam Viet Bac<sup>2</sup>, Simelton Elisabeth<sup>2</sup>

<sup>1</sup>Farmers Association, Ha Tinh, Vietnam

<sup>2</sup>World Agroforestry Centre (ICRAF), Ha Noi, Vietnam

## 26. Adoption of climatic challenges mitigating strategies at farm level: empirical evidence from South Asia

Ali Akhter<sup>1</sup>, Rahut Dil Bahadur<sup>2</sup>, Behera Bhagirath<sup>3</sup>

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<sup>3</sup>Department of Humanities and Social Sciences, Indian Institute of Technology Kharagpur, Kharagpur-721302, West Bengal, India

## 27. Can ecosystem-based adaptation help smallholder farmers adapt to climate change?

Harvey Celia<sup>1</sup>, Alpizar Francisco<sup>2</sup>, Avelino Jacques<sup>3,4</sup>, Bautista Pavel<sup>2</sup>, Cardenas Jose Mario<sup>2</sup>, Donatti Camila<sup>1</sup>, Rodríguez-Martínez Ruth<sup>1</sup>, Rapidel Bruno<sup>3</sup>, Saborio Milagro<sup>2</sup>, Vignola Rafaelle<sup>2</sup>, Viguera Barbara<sup>2</sup>

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<sup>2</sup>CATIE, Apdo 7170, Turrialba, Costa Rica

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## 28. ITK Vigne, a decision-support tool to adapt wine production to climate change, with or without irrigation

Stoop Philippe<sup>1</sup>, Bsaiibes Aline<sup>1</sup>, Gelly Marc<sup>1</sup>, Ojeda Hernan<sup>2</sup>, Lebon Eric<sup>3</sup>, Jourdan Christophe<sup>4</sup>, Trambouze William<sup>5</sup>, Laget Frédéric<sup>6</sup>, Ruetsch Gabriel<sup>7</sup>, Debiolles Loïc<sup>8</sup>

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<sup>8</sup>Netafim France, 13120 Gardanne, France

## 29. QUICKScan: A decision support tool for a participatory exploration of land use mitigation and adaptation options

Winograd Manuel, Verweij Peter, Perez-Soba Marta, van Eupen Michiel  
 ALTEERRA - Team Earth Informatics, Wageningen University and Research Centre, P.O. Box 47, 6700 AA Wageningen, The Netherlands

**30. Gender specific perceptions and adoption of the climate-smart Push-pull technology in eastern Africa**

Khan Zeyaur R.<sup>1</sup>, Murage A. W.<sup>1</sup>, Pittchar Jimmy O.<sup>1</sup>, Midega Charles A. O.<sup>1</sup>, Ooko Charles O.<sup>1</sup>, Pickett John A.<sup>2</sup>

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<sup>2</sup>Rothamsted Research, Harpenden, Herts AL5 2JQ, United Kingdom

**31. Critical issues for the design and operation of business models for technological CSA innovations**

Long Thomas B., Blok Vincent  
 Management Studies Group, Leeuwenborch, Hollandseweg 1, Wageningen UR, Wageningen, 6706 KN, The Netherlands,

**32. Building resilience to climate change: the role of robust methods**

Dittrich Ruth, Wreford Anita, Moran Dominic  
 Scotland's Rural College/ Land Economy and Environment Group, Kings Buildings, West Mains Road, Edinburgh EH9 3JG, United Kingdom

**33. Co-design of scenarios and adaptation strategies to climate change in the highlands of Madagascar**

Maureaud Clémentine<sup>1</sup>, Prigent Cybill<sup>1</sup>, Delmotte Sylvestre<sup>1,2</sup>, Raboanarielina Cara M.<sup>3</sup>, Penot Eric<sup>4</sup>, Barbier Jean-Marc<sup>1</sup>

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**34. Climate change adaptation in the dry zone of Honduras: learning by doing**

Sanders Arie, Tenorio Erika.  
 Zamorano University, Apdo. 93 Tegucigalpa, Honduras

**35. From plot to regional scale, spatial modelling of crop systems using interaction graphs**

Jahel Camille<sup>1</sup>, Baron Christian<sup>1</sup>, Vall Eric<sup>2</sup>, Bégué Agnès<sup>1</sup>, Dupuy Stéphane<sup>1</sup>, Lo Seen Danny<sup>1</sup>

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**36. Climate Smart Agriculture, mitigation and adaptation, agro biodiversity conservation in Georgia**

Nadiradze Kakha<sup>1</sup>, Phirosmanashvili Nana<sup>2</sup>

<sup>1</sup>Association for Farmers Rights Defense, AFRD President, Country Representative and National Coordinator for South Caucasus Countries of the Coalition for Sustained Excellence in Food and Health Protection, Georgia

<sup>2</sup>General Manager, Association for Farmers Rights Defense, AFRD, 30 App 5 B 1 MD Vazisubani Tbilisi 0190 Georgia

**37. Sensor-aided conservation agriculture: climate smart nitrogen and weed management in maize-wheat system**

Oyeogbe Anthony I.<sup>1</sup>, Das Tapas K.<sup>1</sup>, Bhatia Arti<sup>2</sup>, Bandyopadhyay Kalikinkar<sup>3</sup>

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<sup>3</sup>Indian Agricultural Research Institute, Division of Agricultural Physics, 110012, New Delhi, India

**38. Climate Change from the lens of a smallholders and their landscapes**

Solis Juan Pablo<sup>1</sup>, Clemens Harry<sup>2</sup>, Douma Willy<sup>2</sup>

<sup>1</sup>Humanists Institute for Cooperation in Developing Countries (Hivos), Programme Officer, Regional Hub for South America, La Paz, Bolivia

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**39. Assessing the vulnerability of sorghum to changing climate conditions in West Africa semi-arid tropics**

Akinseye Folorunso M.<sup>1,2</sup>, Diancoumba Madina<sup>1</sup>, Adam Myriam<sup>3</sup>, Traore Pierre C. Sibiry<sup>1</sup>, Agele Samuel O.<sup>4</sup>, Whitbread Anthony M.<sup>5</sup>

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**40. Network of experiments to phenotype contrasted sorghum and to model its adaptability in West African environments**

Adam Myriam<sup>1,2,3</sup>, Muller Bertrand<sup>1,4</sup>, Traore Pierre C. Sibiry<sup>2</sup>, Folorunso Akinseye<sup>2</sup>, Ndiaye Malick<sup>4</sup>

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**41. e-Agro Climate Initiatives - Ghana**

Yeboah Obeng Albert, Odoi Alice, Amoateng Prince

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**42. Climate-smart, site-specific agriculture: reducing uncertainty on when, where and how to grow rice in Colombia**

Jimenez Daniel<sup>1</sup>, Delerce Sylvain<sup>1</sup>, Dorado Hugo Andres<sup>1</sup>, Garces Gabriel<sup>2</sup>, Castilla Luis Armando<sup>2</sup>, Torres Edgar<sup>3</sup>, Rebolledo Maria Camila<sup>3</sup>, Barrios Camilo<sup>4</sup>, Jarvis Andy<sup>5</sup>

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**43. Microclimate drives pests in complex agricultural landscapes: how to monitor and analyse fine-scale climate data?**

Faye Émile<sup>1,2,4</sup>, Rebaudo François<sup>1</sup>, Herrera Mario<sup>3</sup>, Dangles Olivier<sup>3,4</sup>

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**44. Enhancing women farmers' access to climate smart technologies through participatory approach in rice farming households**

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<sup>1</sup>Social Scientist, Cuu Long Delta Rice Research Institute, Vietnam

<sup>2</sup>Socioeconomist-Gender Specialist, Consultant, International Rice Research Institute- CCAFS SEA

**45. Assessment of community based biodiversity management for adaptation to climate change in Kaski district, Nepal**

Paudel Pratima<sup>1</sup>, Khanal Arjun<sup>1</sup>, Bhattarai Indira<sup>2</sup>

<sup>1</sup>Database Officer: Centre for Environmental and Agricultural Policy Research, Extension and Development, Nepal

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**46. Degradation of forest and agricultural resources and adaptation strategies in Middle Casamance (Senegal)**

Toure Labaly, Sy Boubou Aldiouma, Cormier Salem Marie Christine

Laboratoire LEIDI/ LMI PATEO, Université Gaston Berger, BP 234, Saint-Louis, Senegal

**47. Climate change and adaptation strategies of households as threats to food security in rural Southwest Nigeria**

Oluwatayo Isaac B.

Department of Agricultural Economics and Animal Production, School of Agricultural and Environmental Sciences, University of Limpopo, Private Bag X1106, Sovenga 0727, South Africa

**48. Analysis of the adaptive capacity of rural farm households to climate change risks In Nigeria**

Thompson Olaniran Anthony, Alese. Folakemi B. Department of Agricultural and Resource Economics, The Federal University of Technology, Akure, Ondo State, Nigeria

**L3.2 Climate-smart cropping systems**

**49. Climate smart village model for climate change adaptation and mitigation:**

**implications for smallholder farmers in Ghana**

Buah Samuel Saaka<sup>1</sup>, Bayala Jules<sup>2</sup>, Moussa Abdoulaye<sup>3</sup>, Ouedraogo Mathieu<sup>3</sup>, Zougmore Robert<sup>3</sup>

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**50. Agro Climate Calendar, a simple methodology to identify local adaptation for farm objectives**

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**51. Drip system and climate change adaptation**

Cheikh Mohamed Vadhel

Cheikhna A. Aiadra, Associations ATED-APEM-GP, Ilôt B Tevraq Zeina, BP 5275, Nouakchott, Mauritania

**52. Comparison of methodological approaches for durum wheat in-field monitoring and early-yield prediction**

Orlandini Simone<sup>1</sup>, Dalla Marta Anna<sup>1</sup>, Mancini Marco<sup>2</sup>, Orlando Francesca<sup>3</sup>

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**53. Increasing vegetable research investments in South Africa for climate-smart vegetable research**

Rancho Manana<sup>1</sup>, Liebenberg Frikkie<sup>2</sup>, Kirsten Johann<sup>2</sup>

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**54. Improving farmers' innovation capacity for climate-smart forest and agricultural practices in Bangladesh**

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<sup>2</sup>University of Guelph, Ontario, Canada

**55. Finding niches for neglected crops in the semi-arid to better manage climate risk under smallholder farm conditions**

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<sup>2</sup>Georg-August University Göttingen, Crop Production Systems in the Tropics, Göttingen 37075, Germany

**56. Reducing the use of nitrogen fertilizers: how and what potential impact on N<sub>2</sub>O emissions from French agriculture?**

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**57. Climate Smart agriculture: farmers' perception and practices in Nepal**

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**58. The FACCE-ERA-NET+ project Climate-CAFÉ: climate change adaptability of cropping and farming systems for Europe**

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### 59. Climate smart agriculture: Towards a concerted definition of national priorities in Mali

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### 60. New crops for a new climate: understanding farmers' behavior towards sesame and cowpea crops in Sahel

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<sup>2</sup>Centre International de Recherche Agricole pour le Développement (CIRAD)

### 61. Climate change and rainfed agriculture: how to extend the campaign and improve the Burkinabe agricultural production?

Fossi Sévère<sup>1</sup>, Diarra Abdoulaye<sup>1</sup>, Gado D. Hassane<sup>1</sup>, Barbier Bruno<sup>2</sup>, Yacouba Hamma<sup>1</sup>

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<sup>2</sup>Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD), Direction Régionale Afrique de l'Ouest Côtière, 00221, Dakar, Senegal

### 62. Evolution of the rainy season and peasant adaptation in the Northeast of Benin (West Africa)

Zakari Soufouyane<sup>1,2</sup>, Yabi Ibouaïma<sup>2</sup>

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### 63. Fitting sweet potato into low input cropping systems within contrasting agro-ecologies of KwaZulu-Natal, South Africa

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### 64. Study of sequestration of soil organic carbon under conservation agriculture and choice of simulation model

Moussadak Rachid<sup>1</sup>, Mrabet Rachid<sup>1</sup>, Lembaid Ibtissame<sup>2</sup>

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<sup>2</sup>Université Mohammed V Agdal faculté des sciences, BP 1014, RP Rabat, Morocco

### 65. Integrated approaches to adaptation to climate change and food security in Maradi (Southern Niger)

Moussa Na Abou Mamouda, Sambou Bienvenu, Seck Moussa  
Cheikh Anta Diop University, Faculty of Sciences and Technics, Institute of Environmental Sciences, Dakar, Senegal

### 66. Can woody plants management provide soil amendments to enhance agroecosystem productivity and resilience in West Africa?

Felix Georges<sup>1</sup>, Hien Edmond<sup>2</sup>, Lahmar Rabah<sup>3,4</sup>, Douzet Jean-Marie<sup>3</sup>, Founoune-Mboup Hassna<sup>5</sup>, Ndour Yacine<sup>5</sup>, Niang Dial<sup>4</sup>, Séguis Lus<sup>6</sup>, Gautier Denis<sup>7</sup>, Zongo Edmond<sup>8</sup>, Manlay Raphael<sup>9</sup>, Barthes Bernard<sup>9</sup>, Clermont-Dauphin Cathy<sup>9</sup>, Masse Dominique<sup>9</sup>, Belem Mahamadou<sup>10</sup>, Groot Jeroen<sup>1</sup>, Scholberg Johannes<sup>1</sup>, Tiftonell Pablo<sup>1</sup>, Cournac Laurent<sup>9</sup>

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### 67. Dynamic capacity of the adaptability of steppe sheep breeding systems in response to the challenge of climate change

Kanoun Mohamed<sup>1</sup>, Huguenin Johann<sup>2</sup>, Yakhlef Hacène<sup>3</sup>, Meguellatti-Kanoun Amèle<sup>1</sup>, Dutilly Céline<sup>2</sup>

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### 68. Do practices of Sahelian smallholder farmers impact native agroforestry shrubs functioning?

Issoufou Hassane Bil-Assanou<sup>1</sup>, Demarty Jérôme<sup>3</sup>, Velluet Cécile<sup>3</sup>, Mahamane Ali<sup>1,2</sup>, Saadou Mahamane<sup>1,2</sup>, Cappelaere Bernard<sup>3</sup>, Seghieri Josiane<sup>3</sup>

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### 69. STICS: a generic and robust soil-crop model for modelling agrosystems response in various climatic conditions

Beaudoin Nicolas<sup>1</sup>, Buis Samuel<sup>2</sup>, Ripoche Dominique<sup>3</sup>, Justes Eric<sup>4</sup>, Bertuzzi Patrick<sup>3</sup>, Casellas Eri<sup>5</sup>, Constantin Julie<sup>4</sup>, Dumont Benjamin<sup>6</sup>, Durand Jean Louis<sup>7</sup>, Garcia de Cortazar-Atauri Iñaki<sup>3</sup>, Jégo Guillaume<sup>8</sup>, Launay Marie<sup>3</sup>, Le Bas Christine<sup>9</sup>, Lecharpentier Patrice<sup>2</sup>, Leonard Joël<sup>1</sup>, Mar Bruno<sup>1</sup>, Poupa Jean Claude<sup>10</sup>, Ruget Françoise<sup>2</sup>, Louarn Gaetan<sup>7</sup>, Coucheney Elsa<sup>11</sup>

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**70. A model assessment of the adaptation of Mediterranean agroforestry systems to climate change**

Gosme Marie, Schuller Aurélien, Talbot Grégoire, Dupraz Christian  
INRA, UMR1230 SYSTEM, 2 Place Pierre Viala, 34060 Montpellier cedex 2, France

**71. The effect of organic amendments and water pulses on GHG emissions from rice production systems using  $\delta^{13}\text{C}$  isotope**

Tariq Azeem, Stoumann Jensen Lars, Faiz-UL Islam Syed, de Neergaard Andreas  
Department of Plant and Environmental Sciences, University of Copenhagen, Denmark

**72. Nurse plant effect on mycorrhizal soil infectivity and soil fertility restoration in Madagascar upland rice farming**

Baohanta Rondro<sup>1</sup>, Randriambanona Herizo<sup>1</sup>, Andrianandrasana M. Doret<sup>3</sup>, Razakatiana Adamson T.<sup>3</sup>, Razananirina Jefferson<sup>3</sup>, Rajaonarimamy Elinarindra<sup>3</sup>, Ducouso Marc<sup>2</sup>, Duponnois Robin<sup>2</sup>, Ramanankierana Heriniaina<sup>1</sup>  
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**73. Extension of oil palm in altitude under global change in North Sumatra: ecophysiological responses and yield**

Lamade Emmanuelle<sup>1</sup>, Hijri Darlan Nuzul<sup>2</sup>, Listia Eka<sup>2</sup>, Hasan Siregar Hasril<sup>2</sup>

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**74. Impact of climate on major cereal crops production in Sokoto State, Nigeria**

Sokoto Mohammed Bello<sup>1</sup>, Tanko Likita<sup>2</sup>, Abdullahi Yusuf M.<sup>3</sup>, Lamidi Wasii Agunbiade<sup>4</sup>

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<sup>4</sup>Department of Agricultural Education, Osun State College of Education, P.M.B 208, Ila-Orangun, Osun State, Nigeria

**75. Resource-conserving agriculture for restoring soil productivity and climate change mitigation in northern Ethiopia**

Araya Tesfay<sup>1,2</sup>, Nyssen Jan<sup>2</sup>, Mnkeni Pearson<sup>1</sup>, Baudron Frédéric<sup>3</sup>, Lanckriet Sil<sup>4</sup>, Cornelis Wim<sup>5</sup>

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<sup>5</sup>Ghent University, Department of Soil Management, Coupure Links 653, B-9000 Gent, Belgium

**76. Millet (*Pennisetum glaucum*)-acacia association for sustainable improvements in agricultural productivity in Niger**

Abdou Maman Manssour<sup>1,2</sup>, Assoumane Aïchatou<sup>2,3</sup>, Alzouma Mayaki Zoubeirou<sup>2</sup>, Elhadji Seybou Djibo<sup>2</sup>, Karimou Ambouta Jean-Marie<sup>1</sup>, Vigouroux Yves<sup>4</sup>

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**77. Collection of farming address climate changes in the department Kaolack / Senegal**

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<sup>2</sup>Département de Géographie/ Faculté des Lettres et des Sciences Humaines (FLSH), Université Cheikh Anta DIOP Dakar, Bp: 15568 Dakar Fann, Senegal

**78. Mitigating methane emission in rice ecosystem by drip irrigation**

Theivasigamani Parthasarathi<sup>1</sup>, Koothan Vanitha<sup>2</sup> and Vered Eli<sup>3</sup>

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<sup>2</sup>Tamil Nadu Rice Research Institute, Aduthurai, Tamil Nadu Agricultural University, Thanjavur, Tamil Nadu, India

<sup>3</sup>Netafim Irrigation Ltd., Israel

### 79. Eating more grain legumes and less meat promotes climate smart cropping systems

Carlsson Georg<sup>1</sup>, Konfor Pamela<sup>1</sup>, Hallström Elinor<sup>2</sup>, Jensen Erik Steen<sup>1</sup>

<sup>1</sup>Swedish University of Agricultural Sciences (SLU), Department of Biosystems and Technology, SE-23053 Alnarp, Sweden

<sup>2</sup>Lund University, Department of Environmental and Energy Systems Studies, SE-22100 Lund, Sweden

### 80. Acacia catechu trees in rice fields: a climate smart traditional agricultural system of Northern Bangladesh

Kabir M. Alamgir<sup>1</sup>, Hossain A. S. M. Iqbal<sup>2</sup>, Nandi Rajasree<sup>3</sup>

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<sup>3</sup>Institute of Forestry and Environmental Sciences, Chittagong University, Chittagong 4331, Bangladesh

### 81. Soil carbon sequestration under traditional management of smallholder's oil palm plantations in Sudano-Guinean context

Aholoukpè Hervé<sup>1</sup>, Amadji Guillaume<sup>2</sup>, Chotte Jean-Luc<sup>3</sup>, Bernoux Martial<sup>3</sup>, Flori Albert<sup>4</sup>, Dubos Bernard<sup>4</sup>, Blavet Didier<sup>3</sup>

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### 82. Impact of climatic variables on rice yield in Bangladesh: a spatio-temporal analysis

Ara Iffat, Ostendorf Bertram, Lewis Megan

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## L3.3 Climate-smart livestock

### 83. Productivity and mitigation effects of alternative feeding practices in smallholder dairy farms in the north of Vietnam

Le Dinh Phung<sup>1</sup>, Ramírez-Restrepo Carlos Alberto<sup>2</sup>, Le Duc Ngoan<sup>1</sup>, Dinh Van Dung<sup>3</sup>, Vu Chi Cuong<sup>4</sup>, Le Thi Hoa Sen<sup>1</sup>, Herrero Mario<sup>2</sup>, Solano-Patiño César<sup>5</sup>, Lerner Amy<sup>6</sup>, Searchinger D. Timothy<sup>6</sup>

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<sup>6</sup>Woodrow Wilson School of Public and International Affairs Science, Technology, and Environmental Policy Princeton University, NJ, USA

### 84. Building climate smart pastoralism in the Sahel: ways forward

Wane Abdrahmane<sup>1</sup>, Ickowicz Alexandre<sup>2</sup>, Touré Ibra<sup>3</sup>

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### 85. Climate and animal diseases: the case of 2009/2010 rift valley fever outbreaks in South Africa

Mdlulwa Zimbini<sup>1</sup>, Kirsten Johann<sup>2</sup>, Klein Kurt<sup>3</sup>

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<sup>2</sup>University of Pretoria, Pretoria 00012, South Africa

<sup>3</sup>University of Lethbridge, Lethbridge T1k3m43, Canada

### 86. Cattle ranching in the Amazon: quantifying synergies between intensification, mitigation and profitability

Poccard-Chapuis René<sup>1</sup>, Bonaudo T.<sup>2</sup>, Pachoud C.<sup>3</sup>, Duverger A.<sup>3</sup>, Ribeiro C.<sup>4</sup>, Clerc A.S.<sup>2</sup>, Castro R.<sup>5</sup>

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<sup>5</sup>EMBRAPA Amazonia Oriental, NAPT Belém-Brasília, Paragominas 68626140, Brazil

### 87. Potential multi-dimensional impacts and tradeoffs of improved livestock feeding scenarios in Babati, Tanzania

Paul Birthe K.<sup>1</sup>, Birnholz Celine<sup>1</sup>, Groot Jeroen C.J.<sup>2</sup>, Herrero Mario<sup>3</sup>, Notenbaert An<sup>1</sup>, Timler Carl<sup>2</sup>, Klapwijk Lotte<sup>4</sup>, Tittonell Pablo<sup>2</sup>

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<sup>3</sup>CSIRO, Australia

<sup>4</sup>IITA, DR Congo

### 88. Towards climate smart dairy cattle in Rwanda: mapping feed resource potential under climate and land use scenarios

Kagabo Desire Mbarushimana, Musana Bernard Segatagara, Manzi Maximillian, Mutimura Mupenzi, Hirwa Claire D' Andre, Nyiransengimana Eugenie, Shumbusho Felicien, Bagirubwira Aphrodis, Ebong Cyprian  
Rwanda Agriculture Board (RAB), P.O. Box 5016 Kigali, Rwanda

### 89. Protein supplementation improves saline water utilization in lambs

Agustín Lopez<sup>1,3</sup>, Arroquy José Ignacio<sup>1,2,3</sup>, Fissolo Héctor Miguel<sup>1</sup>, Juárez Sequeira Ana Verónica<sup>2,3</sup>, Barrionuevo María Celeste<sup>3</sup>

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### 90. An optimal live-weight gain in winter improves growing performance and reduces CH<sub>4</sub> in tropical beef cattle systems

José Ignacio Arroquy<sup>1,2,3</sup>, Ricci Patricia<sup>4</sup>, Lopez Agustín<sup>1,3</sup>, Juárez Sequeira Ana<sup>2,3</sup>, Rearte Daniel<sup>5</sup>

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### 91. Global farm platforms for sustainable ruminant livestock production

Rice C.W.<sup>1</sup>, Ashok B.<sup>2</sup>, Collier S.<sup>3</sup>, Dungait J.<sup>4</sup>, Eisler M.<sup>5</sup>, Jahn M.<sup>3</sup>, Liu J.<sup>6</sup> and Lee M.<sup>4,5</sup>

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### 92. Climate change, livestock productivity and poverty: empirical evidence from south Asian countries

Behera, Bhagirath<sup>1</sup>, Rahut, Dil Bahadur<sup>2</sup>, Ali Akhter<sup>3</sup>, Aryal, Jeetendra<sup>4</sup>

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<sup>4</sup>Socioeconomics Program, CIMMYT, New Delhi, India

### 93. Solutions for greenhouse gases mitigation in ruminant farming: how to favor their adoption?

Doreau Michel<sup>1</sup>, Faverdin Philippe<sup>2</sup>, Guyomard Hervé<sup>3</sup>, Peyraud Jean-Louis<sup>3</sup>

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### 94. Perception of climate change and adaptation of herd conduct mode in Burkina Faso during rainy season

Pagabeleguem Soumaila<sup>1</sup>, Sangaré Mamadou<sup>1</sup>, Vall Eric<sup>2</sup>

<sup>1</sup>Centre International de Recherche-Développement sur l'Élevage en Zone subhumide (CIRDES), 454, Bobo-Dioulasso, Burkina Faso

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#### 95. Mini-livestock ranching – raising climate-smart insects for nutrition and livelihoods

McGill Wendy Lu

Independent Researcher, Denver, CO, USA

#### 96. Evaluating animal mobility in relation to climate change mitigation: Combining models to face methodological challenges

Lasseur Jacques<sup>1</sup>, Vigan Aurore<sup>2</sup>, Benoit Marc<sup>3</sup>, Mouillot Florent<sup>4</sup>, Dutilly Céline<sup>2</sup>, Eugene Maguy<sup>3</sup>, Mansard Laura<sup>3</sup>, Lecomte Philippe<sup>2</sup>

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#### 97. Substitution of maize silage with barley silage in dairy cow diet as mitigation strategy: effect on milk quality

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Consiglio per la Ricerca e Sperimentazione in Agricoltura, Centro di Ricerca per le Produzioni foraggere e lattiero-casearie CRA-FLC via Porcellasco, 7, 26100 Cremona, Italy

#### 98. Towards climate smart livestock systems in Tanzania: assessing opportunities to meet the triple win

Shikuku Kelvin<sup>1</sup>, Paul Birthe<sup>1</sup>, Mwongera Caroline<sup>1</sup>, Winowiecki Leigh<sup>1</sup>, Laderach Peter<sup>1</sup>, Silvestri Silvia<sup>2</sup>

<sup>1</sup>CIAT, 823-00621, Nairobi, Kenya

<sup>2</sup>International Livestock Research Institute (ILRI), 00100, Nairobi, Kenya

#### 99. Predicting effects of cattle growth promoting technologies on methane emissions using TAURUS ration formulation software

Oltjen James W.<sup>1</sup>, Kebreab E.<sup>1</sup>, Oltjen S.L.<sup>1</sup>, Ahmadi A.<sup>1</sup>, Stackhouse-Lawson K.R.<sup>2</sup>

<sup>1</sup>Department of Animal Science, University of California, Davis, California 95616, USA

<sup>2</sup>National Cattlemen's Beef Association, 9110 East Nichols Avenue, Suite 300, Centennial, Colorado 80112, USA

#### 100. Farm scale greenhouse gas budget; grazing is smart

Koncz Péter<sup>1</sup>, Pintér Krisztina<sup>2</sup>, Hidy Dóra<sup>1</sup>, Balogh János<sup>2</sup>, Papp Marianna<sup>1</sup>, Fóti Szilvia<sup>2</sup>, Hortváth László<sup>3</sup>, Nagy Zoltán<sup>1,2</sup>

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<sup>3</sup>Hungarian Meteorological Service, Gilice tér 39, 1181 Budapest, Hungary

#### 101. Effect of ambient temperature on lactating sows, a meta-analysis and modeling approach

Dourmad Jean-Yves<sup>1,2</sup>, Le Velly Valentine<sup>1,2</sup>, Lechartier Cyril<sup>3</sup>, Gourdine Jean-Luc<sup>4</sup>, Renaudeau David<sup>1,2</sup>

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#### 102. Greenhouse gas and ammonia emissions from ceramsite covered compared with uncovered during dairy slurry storage

Zhu Zhiping, Dong Hongmin, Liu Chong, Huang Wenqiang

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#### 103. Grass-legume mixtures enhance nitrogen yield over a wide range of legume proportions and environmental conditions

Suter Matthias<sup>1</sup>, Finn John A.<sup>2</sup>, Connolly John<sup>3</sup>, Loges Ralf<sup>4</sup>, Lüscher Andreas<sup>1</sup>

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<sup>4</sup>Institut für Pflanzenbau und Pflanzenzüchtung, Christian-Albrechts-Universität, Kiel, Germany

**104. Classifying livestock systems for public policy guidance: the example of Colombia's livestock sector**

Amy M. Lerner<sup>1</sup>, Cesar Solano<sup>2</sup>, Jesus David Martinez<sup>3</sup>, Julian Esteban Rivera<sup>4</sup>, Julian Chara<sup>4</sup>, Michael Peters<sup>3</sup>, Timothy Searchinger<sup>1</sup>, Mario Herrero<sup>5</sup>

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<sup>5</sup>CSIRO, Box 2583, 4001 Brisbane, Australia

**105. Influence of xylanase enzyme on in vitro methane production and rumen fermentation of tikiya (*Eleocharis dulcis*)**

Gajaweera Chandima J.<sup>1</sup>, Serasinghe R.T.<sup>1</sup>, Premaratne S.<sup>2</sup>

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**106. The effect of sunflower oil and the phenolic essential oils on methane emission in dairy cattle**

Guerouali Abdelhai, Amrani, H., Oumane, H Institut Agronomique et Vétérinaire Hassan II, Rabat, Morocco

**107. Utilization of saline water by Barbarine lambs in the dry areas under climate change**

Mehdi elGHarbi Wiem<sup>1</sup>, Ben Salem Hichem<sup>2</sup>, Abidi Sourour<sup>1</sup>

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**108. Impact of feeding and breeding interventions towards climate resilient dairying system in India**

Garg Manget Ram Animal Nutrition Group, National Dairy Development Board, Anand 388 001, Gujarat, India

**L3.4 Climate-smart landscapes, watersheds and territories**

**109. Large-scale land restoration – creating the conditions for success**

Bossio Deborah<sup>1</sup>, Victor Michael<sup>2</sup>

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**110. Regional impacts of climate change and adaptation through crop systems spatial distribution: the VIGIE-MED project**

Chanzy André<sup>1</sup>, Davy Hendrick<sup>2</sup>, Géniaux Ghislain<sup>3</sup>, Rigolot Eric<sup>2</sup>, Debolini Marta<sup>1</sup>, Garrigues Sébastien<sup>1</sup>, Guérif Martine<sup>1</sup>, Clastre Philippe<sup>1</sup>, Lecharpentier Patrice<sup>1</sup>

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**111. Interdisciplinary approach to climate change in an intensely-managed agricultural landscape in California, USA**

Jackson Louise E.<sup>1</sup>, Carlisle E.A.<sup>1</sup>, Haden V.R.<sup>2</sup>, Lee H.<sup>1</sup>, Mehta V.<sup>3</sup>, Purkey D.<sup>3</sup>, Sumner D.A.<sup>1</sup>, Wheeler S.W.<sup>1</sup>

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**112. Building a shared representation of the landscape as a socio-ecological system and visualizing the challenges of CSA**

Fallot Abigail<sup>1</sup>, Salinas Julio Cesar<sup>2</sup>, Devisscher Tahia<sup>3</sup>, Aguilar Teresa<sup>4</sup>, Vides-Almonacid Roberto<sup>2</sup>, Le Coq Jean-François<sup>5</sup>

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**113. Climate-smart territory approach: for an effective address of Climate Smart Agriculture**

Mendoza César, Bastiaan Louman, Villalobos Roger, Carrera Fernando, Watler William  
 CATIE 7170, Turrialba 30501, Cartago, Costa Rica

**114. Landscape scale assessments for strategic targeting of climate smart agriculture practices in East Africa**

Winowiecki Leigh<sup>1</sup>, Vagen Tor-Gunnar<sup>2</sup>, Laderach Peter<sup>3</sup>, Twyman Jennifer<sup>3</sup>, Eitzinger Anton<sup>3</sup>, Mashisia Kelvin<sup>1</sup>, Mwongera Caroline<sup>1</sup>, Okolo Wendy<sup>1</sup>, Rodriguez Beatriz<sup>3</sup>

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<sup>3</sup>International Center for Tropical Agriculture (CIAT), Cali, Colombia

**115. The FACCE-ERA-Net Plus project "Climate smart Agriculture on Organic Soils" (CAOS)**

Tiemeyer Bärbel<sup>1</sup>, Berglund Kerstin<sup>2</sup>, Lærke Poul Erik<sup>3</sup>, Mander Ülo<sup>4</sup>, Regina Kristiina<sup>5</sup>, Röder Norbert<sup>6</sup>, van den Akker Jan<sup>7</sup>

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**116. The potential of fish as a climate smart adaptation and mitigation strategy**

Ward Andrew<sup>1</sup>, Park Sarah E.<sup>2</sup>, Kam Suan Pheng<sup>2</sup>, Thilsted Shakuntala Haraksingh<sup>3</sup>

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**117. Water uptake in deep soil layers by tropical eucalypt plantations: consequences for water resources under climate change**

Christina M.<sup>1</sup>, Laclau J.-P.<sup>1,2</sup>, Nouvellon Y.<sup>1,3</sup>, Bouillet J.-P.<sup>1,3</sup>, Lambais G.R.<sup>4</sup>, Stape J.L.<sup>5</sup>, Le Maire G.<sup>1</sup>

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**118. Land use practices among pastoralists as potential climate smart options for dry land ecosystems.**

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**119. Spatial models of farms territories, policy instrument and climate change: application in Chorotega (Costa Rica)**

Bonin Muriel<sup>1</sup>, Le Coq Jean-François<sup>2</sup>, Lamour Anaïs<sup>3</sup>, Saenz Fernando<sup>4</sup>

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**120. Landscape management to develop agroforestry in Central-Africa**

Peltier Régis<sup>1</sup>, Dubiez Emilien<sup>1</sup>, Marquant Baptiste<sup>2</sup>, Peroches Adrien<sup>3</sup>, Diowo Simon<sup>4</sup>, Yamba Yamba Timothée<sup>4</sup>, Palou Madi Oumarou<sup>5</sup>

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**121. Governance for climate smart landscapes: a case from Makueni County, Kenya**

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**122. A landscape approach to co-designing climate change adaptation and mitigation strategies with farming communities**



Castella Jean-Christophe<sup>1,2</sup>, Lienhard Pascal<sup>1</sup>, Phimmason Sisavath<sup>3</sup>, Chaivanhna Soulikone<sup>3</sup>, Khamxaykhay Chanthasone<sup>3</sup>, Frank Enjalric<sup>1</sup>

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### 123. Adapting landscape mosaics within Mediterranean rainfed agrosystems for managing crop production, water & soil resources

Jacob Frédéric<sup>1</sup>, Mekki Insaf<sup>2</sup>, Chikhaoui Mohamed<sup>3</sup>, Amami Hacib<sup>2</sup>, Bahri Haithem<sup>2</sup>, Bailly Jean-Stéphane<sup>4</sup>, Ben Mechlia Nétij<sup>5</sup>, Biarnès Anne<sup>1</sup>, Bouaziz Ahmed<sup>3</sup>, Chehata Nesrine<sup>6</sup>, Colin François<sup>7</sup>, Corvisy Alain<sup>8</sup>, Coulouma Guillaume<sup>9</sup>, El Amrani Mohamed<sup>10</sup>, Fabre Jean-Christophe<sup>9</sup>, Feurer Denis<sup>1</sup>, Follain Stéphane<sup>7</sup>, Gana Alia<sup>11</sup>, Gary Christian<sup>12</sup>, Gomez Cécile<sup>1</sup>, Hérivaux Cécile<sup>13</sup>, Huard Frédéric<sup>14</sup>, Jaïez Zaineb<sup>2</sup>, Khattabi Abdelattif<sup>15</sup>, Lagacherie Philippe<sup>9</sup>, Le Bissonnais Yves<sup>9</sup>, Lhomme Jean-Paul<sup>1</sup>, Masmoudi Moncef<sup>5</sup>, Montes Carlo<sup>1</sup>, Moussa Roger<sup>9</sup>, Moussadek Rached<sup>16</sup>, Naimi Mustapha<sup>3</sup>, Ouerghemmi Walid<sup>1</sup>, Planchon Olivier<sup>1</sup>, Prévot Laurent<sup>9</sup>, Quénot Hervé<sup>17</sup>, Rabotin Michaël<sup>9</sup>, Raclot Damien<sup>1</sup>, Rinaudo Jean-Daniel<sup>13</sup>, Sabir Mohamed<sup>15</sup>, Sannier Christophe<sup>8</sup>, Vinatier Fabrice<sup>9</sup>, Voltz Marc<sup>9</sup>, Zairi Abdelaziz<sup>2</sup>, Zitouna-Chebbi Rim<sup>2</sup>

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<sup>16</sup>INRA, Rabat, Morocco

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### 124. Watershed and biodiversity restoration in the Western highlands of Cameroon under climate change

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### L3.5 Investment opportunities and funding instruments

#### 125. Livestock farmers' investment toward climate-smart production: impact of an incentive program in Chorotega, Costa Rica

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#### 126. 25 million African farming families by 2025: science-development partnerships for scaling climate-smart agriculture

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#### 127. Microfinance and Climate Smart Agriculture: integrated farming system and social business

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**128. The CLIFF Network: breaking knowledge barriers for climate change mitigation research in developing countries**

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**129. Community Based Crop Insurance for Climate Risk Management**

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**130. Adaptation strategies for floodplain agriculture in Amazonia**

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**131. Afforestation and the unemployment nexus in the West African forest reserves localities: case study of Nigeria**

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