Conference Report – Food Futures

Summary

The idea was for this conference was to bring together scientists to network, and to see the next generation of leading scientists begin to build bridges between themselves – across institutions, disciplines, fields, topics, and ideas. 28 early career young scientists, joined more experienced senior scientists and other actors in the field of food – from chefs to ministers to public health researchers to professors and post-docs conferred at the German-Italian cultural centre at Villa Vigoni in Menaggio, Italy. The locale – on the shores of Lake Como – proved the ideal location to fully explore and debate the food system in its entirety. Themes and research ideas were brought together from a diverse and eclectic group – formulated with scientific exchange and creativity from experts and other leading scientists in the field of sustainability research.

From a programme that was designed to engage via hands-on workshop tools, to focus attention on highlighting key research questions, and planning future research; young scientists took a wide look at the entire system of food – bringing their many diverse research and personal backgrounds
together to highlight priority questions that must be solved in an integrated way. At times, they highlighted the methodologies that existed and the ones that were lacking; calling on and questioning the institutions and frameworks that needed change in order to address the integration of research and also the changes needed to further the careers of young scientists that wish to participate in interdisciplinary research platforms.

Through reflection, young scientists highlighted the fact that there are gaps in their own training. The methodologies for conducting transdisciplinary research are not well documented and do not allow for credible project proposals to be written and funded. Talks together with funding bodies illuminated the structures in place to obtain funding, and requirements to turn their ideas into concrete research, with certain funding agencies looking more towards integrated science research now more than ever.

The network meeting achieved some models for promoting integrated science among young scientists – values that can and should be scaled up within and among the larger research frameworks and agendas like Future Earth. For example, having a wide and diverse group of participants as a base to start to think about integrated research. The selection of extremely bright young scientists from a range of disciplinary research fields and geographical areas provided a bottom-up approach – a group of researchers working on individual specific instances along the chain, that when coming together, can fit their specific research backgrounds to large overarching problems. This is exemplified in the fact that the current conceptual framework for food system research was analysed and questioned – points that emerged were both philosophical and detailed.

They asked the questions on how would information delivered directly to the consumer influence the consumer, questions on the role of farmers, within the actors outside their control like trade policies, and also from a personal perspective – asking how farmers could reduce their greenhouse gas emissions. It was clear that in formulating research questions, the young scientists were thinking of links from the personal, individual actions towards the larger food system – even going as far as to ask the question of the metrics in place to analyse the large systems.

Some overarching themes in the research questions included:

- How do we critique the institutions we have and how do we design better ones?
- How can we harmonise the life and death of the food system – from production to consumption – in line with sustainability, climate change, health and wellbeing?
- How do outside factors influence the food system?
- How can we measure the food system and incorporate other themes into the analysis?
- How can the actors involved in the food system improve it (from farmers to policy makers)?
- How can we manipulate the trends in the food commentary, as it is, to include other aspects that are important (nutrition for example)?
Introduction

On the occasion of the General Assembly of the International Council for Science (ICSU) in Rome, 27th September 2011, Prof. Matthias Kleiner (President of the German Research Foundation, DFG 2009-2012) gave an address on the topic of “Integrated Science: Research Across Borders.” In that, he laid out the problems in doing integrated science and a vision for bringing young early career scientists together to network and come up with research that speaks across borders towards transdisciplinarity.

“To underline our firm conviction of the significance of co-design, interdisciplinary research holds, and to ensure its promotion and continuity, I also want to announce that – starting from next year – DFG will provide for the next three years funding for an annual “DFG-ICSU-ISSC Young Scientist International Networking-Conferences on Integrated Science” for young researchers to meet the leading scientists in the field of global sustainability research.

...to design truly interdisciplinary events, where integrated science can be filled with life. The idea is to provide a venue for scientific exchange and creativity for experts from anywhere in the world for a period of one week and relieve the international participants of the financial burden to finance their participation. Each year different aspects of research on sustainability could be explored in detail.”

In the end the framework was clear – one based on a deep-seated link and collaboration between the social and natural sciences exemplified by ISSC and ICSU, and one that would bear fruit in Villa Vigoni.

Scientific Steering Committee

The members of the Scientific Committee are:

Manfred Nießen, Head of Division, Humanities and Social Sciences, German Research Foundation (DFG)
Judi Wakhungu, Executive Director of the African Centre for Technology Studies (ACTS), Nairobi, Kenya; Minister of Environment/Water and Natural Resources, Kenya
Karen O’Brien, Department of Sociology and Human Geography, University of Oslo (Future Earth Scientific Committee)
Robert Paul Königs, Head of Scientific Affairs, German Research Foundation (DFG) (observer)
Roberto Sanchez-Rodriguez, Professor of Environmental Sciences, Emeritus, University of California Riverside (Future Earth Scientific Committee)
Stephen Zebiak, Director of the Climate Services Initiative at the Earth Institute at Columbia University, and Senior Research Scientist at the International Research Institute for Climate and Society (IRI) (Future Earth Scientific Committee)

Wolfram Mauser, Professor of Geography and Remote Sensing, Ludwig-Maximilians University of Munich

On the 8th October 2012 the first meeting of the Scientific Committee was held. Consisting of key noted scientists and observers, the steering committee had been appointed to act as the guide for the design and implementation of this series of conferences.

During the first meeting, the parameters for the conference were established – the set of criteria young participating scientists had to meet, the topic for the first conference, and the overall structure and theme. It was decided that the topic and the programme of the first seminar would be Food and fall under the general framework of “Future Earth.”

Over the last few years, the overarching international science bodies (ICSU and ISSC included) have been involved in many consultative processes to design a new international framework for conducting integrated science that will have relevance at both the national and global levels. This framework, called “Future Earth”, consists of three primary themes: The Dynamic Planet; Global Development, and Transformation toward Sustainability, as well as two important cross cutting approaches that Future Earth will foster – namely the co-design of research agendas with stakeholders, and innovative communication models for high-impact research.

In that vein, the objectives of the conference were set out to –

- bring your voices from the regions to focus on what research and transformation is needed
- develop a map of research areas, questions and pathways that need to be pursued
- build a network of colleagues that will be professional and enduring

Thus, the programme was structured around the three themes of “Future Earth” as well as cross-cutting entities that go beyond those pillars.

The Call, distribution, and participant selection

Once the parameters (no more than 10 years experience post-PhD, and preferably under 40 years of age) for participants had been laid out by the Scientific Committee the call was issued to over 200 partners and member organizations among the ISSC and ICSU’s networks – eliciting over 300 applications. Applications were ranked and selectively chosen by members of the Scientific Committee and organizing team. Selected candidates truly represented the international and integrated nature of science today (with an equal spread in gender, discipline, and geographic location).

In November of 2012 Mary Scholes, from the University of the Witwatersrand, Johannesburg, South Africa was appointed as convener for the conference. The leadership of Mary Scholes working
together with the organizing team in designing a very engaging conference using participatory tools and bringing high quality of science is one that is uniquely acknowledged.

**Seminar programme**

It was decided that if the conference was to meet its objectives as much time as possible must be allowed for interaction and discussion, therefore the number and time allocated to plenary talks was kept to a minimum. For each of the themes, there were 3 sessions; in the first session a speaker gave an overview presentation on the current state of wisdom of that topic, that address was followed by a question and answer period; the second session, facilitated by senior scientists, and attended by all the participants engaged in a variety of hands-on workshop tools, and the third session, also facilitated by senior scientists, focused attention on the young scientists, who planned a future research programme and highlighted key research questions.

The programme was designed to give all participants an overview of the current status of our knowledge, an opportunity to interact in a very hands-on way and a session in which to brainstorm and map the needed research future.

Each of the cross cutting modules were workshopped with the young scientists (again facilitated by the senior scientists), with each session resulting in a set of research questions. The aim of the conference was to bring together creative multidimensional, interdisciplinary and transdisciplinary perspectives to address such a complex topic like food systems.
Opening Keynote: Futures Visioning – Chantell Ilbury opened the conference’s activities by outlining exactly how one does thinking on the future. What models are used and exactly what a world 50 years from now might look like. Scenarios for health, food, water, security, equity, justice, were all explored and mapped out. Along with the concept of scenarios – “flags” and “possibilities” are key markers for when that future we do mitigate towards slowly becomes the present.

Introducing Future Earth:
What is Future Earth? The new high-level global organization of research programmes seeks to, at its heart; revolutionize the way research is conducted. Both presentations on the origins of
Future Earth made it clear that it needs to engage a new generation of diverse researchers from all regions – and it sees this conference as an important first step towards that.

Steven Wilson gives introduction to Future Earth

**Theme 1:**

**Dynamic planet** – introduced by Tara Garnett, Judi Wakhungu laid out the African context in a presentation entitled “Feeding 7 Billion in the Context of a Dynamic Planet: Smallholder Farming & the Future of Food”. She started by posing the question “What is a Safe Operating Space?” and related that to the world we currently inhabit.

“The global community must operate within three limits – the quantity of food that can be produced under a given climate; the quantity needed by a growing and changing population; and the effect of food production on the climate. At present we operate outside the safe space. If current trends in population growth, diets, crop yields, and climate change continue the world will still be outside the safe space in 2050. There are various changes that we can make to enlarge the safe space. Global demand for food will increase with population growth, but the amount of food per person can be decreased by reducing waste in supply chains; ensuring equitable access to food; more resource efficient vegetable rich diets; agricultural innovation; matching crops to environments. Mitigating emissions of
greenhouse gases from agricultural activities will allow people to be fed while helping keep the global climate within a tolerable range”

Through a series of examples and case studies Judi Wakhungu explained that crossing certain biophysical thresholds could have disastrous effects for humanity – yet interlinked planetary boundaries have already been overstepped. In “the African context” strategic focus on the smallholder farmers is key to sustained agricultural growth and enhancing food security – with a focus on agricultural knowledge, science, and technology to achieve specific development goals, livelihood and environmental outcomes rather than simply focusing on productivity. In certain examples the suggestion was to pay more attention to holistic integrated solutions and improve connections among education, research, and extension. For example, moving to problem-based learning and improve policy synergies – shifting to more localized multifunctional approaches catered to smallholders.

**Theme 2:**

**Global Development** – Robert Scholes, in a dynamic lecture, talked about “Beyond sustainability: resilience and transformation”. Touching on the safe operating space from Theme 1, Robert Scholes also went further to talk about the various different dynamics at play; the human human-biosphere interaction, what is a tipping point; can social-ecological collapse actually occur; and the “cup-and-ball” analogy.

“Integrate food security and sustainable agriculture into global and national policies. Significantly raise the level of global investment in sustainable agriculture and food systems in the next decade. Sustainably intensify agricultural production while reducing greenhouse gas emissions and other negative environmental impacts of agriculture. Assist populations and sectors that are most vulnerable to climate change and food insecurity. Reshape food access and consumption patterns to ensure basic nutritional needs are met and to foster healthy and sustainable eating habits worldwide. Reduce loss and waste in food systems,
targeting infrastructure, farming practices, processing, distribution and household habits. Create comprehensive, shared, integrated information systems that encompass human and ecological dimensions.”

A highlight of his lecture was a “pop quiz” to all the participants, challenging them to think about food security in a constrained world and the facts, best guesses, half-truths and myths that surround the topic. Such as:

- Is population growth causing a food crisis
- We can’t grow enough food for 9 billion
- Sustainable agriculture requires local organic farming
- Sustainable intensification is an oxymoron
- Animal proteins are always bad
- GMOs will save the day

Theme 3:
Transformation beyond sustainability – Karen O’Brien introduced a new word into our collective lexicons: “thrivability.” A central theme of her talk was the question of how do we deliberately transform systems. The deliberate transformation of systems requires broader perspectives which should reflect the hyper complex nature of current problems and deeper perspectives which account for issues such as power, values and beliefs.

“Thrivability is the act of thriving or prospering. It thus goes beyond simply surviving (ie by attaining a livelihood and using this to support in your necessities). Thrivability also envisions a vision of sustainability (using a abundant and sustainable way of living) within this act of prospering. Thrivability goes beyond sustainability by including social justice. It is not enough to find ways to sustain life and human life on the planet. Real thrivability means no one gets left behind in poverty, exposed unfairly to disaster, or suffers at the hand of corrupt governments. Fundamentally thrivability is visionary – it is about co-evolving a future we want rather than avoiding a future that terrifies us. It is about acting with enthusiasm toward an opportunity rather than away from catastrophe. It is about becoming a good ancestor.”

In outlining research challenges, Karen O’Brien asked participants to consider the question of what perspectives are missing from our current research. What are the implications for the solutions that current research paradigms support? And can we take in new perspectives, especially those that do not fit into our own paradigms? She outlined the three spheres of transformations; the personal sphere (including worldviews, beliefs and values), the political sphere encompassing systems and structures, and the practical sphere which includes technical solutions.

Module 1:
Transdisciplinarity – Stephen Zebiak and Jutta Roosen shared the stage on the topic of transdisciplinarity and how to cross different disciplines to create new knowledge, better understanding and new ideas.
“Transdisciplinary research is more than simply asking questions and using the answers as part of the research process. It is an ongoing process of finding the right questions and to search for answers together. It requires trust into the other person and that the other discipline is well conducted.”

Module 2:
Science Advice and Communication – a roundtable discussion with Judi Wakhungu and John Mugabe where they each outlined their collective experience in this field; their experiences in Kenya and at the African Centre for Technology Studies provided the background to how scientists interact with policy-makers, stakeholders, as well as journalists.

“I usually tell journalists to become experts in the field they are reporting on”

The discussions opened up and more of the young scientists shared their experiences on communicating their science to a variety of different audiences.

“The minister of Nigeria instructed me that I had to give the presentation in the local language. To which I replied that some of these scientific terms do not exist in the local language... In the end I did the presentation to the best of my ability and he thanked me in the end for bringing science and these foreign concepts to the people in a way that they can understand.”

Undoubtedly, the topic arose of social media use as a tool for scientists to not only disseminate their research but also as a networking means. The notion of blogging or using social media as an academic is a question more and more researchers ask themselves – with the trick being not to shy away from it. Judi Wakhungu herself is an avid twitter fan, as well as other young scientists. There are the noted academics out there that do social media well. Calestous Juma, former Director of ACTS, is one of note.
Interactive sessions

Theme 1 – Dynamic Planet: World Cafés – this workshopping tool is designed to get people to think creatively and share ideas openly in a non-threatening environment. Participants were divided into groups and each group sat at a round table with a large piece of paper, where they were challenged to draw pictures of possible food systems. After a fixed time, the groups (except for the host of the table) move around and comment on the various drawings. These pictures were then displayed, shared and discussed with the entire group.

Theme 2 – Global Development: Dialogue walks – this workshopping tool is used to give participants time to reflect and improve their listening skills. Participants were asked to walk in pairs or threes to discuss the contents of what they had heard in the plenary talks and to think about research questions. This tool also allows participants to explore the surroundings of the
conference venue and to break the modes of thinking that are often generated in a “meeting room”.

Theme 3 – Transformation beyond sustainability: Speed dating – this workshopping tool is usually used at the beginning of a conference to get the participants to rapidly know and start interacting with each other. Five hosts were chosen and the participants were divided into groups of six. Each group sat with the hosts and brainstormed the questions, the conversation was free flowing and stimulating. The groups moved at 15 minute intervals and rotated through all the hosts. The intention is that by the end of the session they will feel comfortable with each other and be prepared to offer opinions on a topic even though they may not be very knowledgeable about that topic.

Question 1 (Karen O’Brien)
How does each participant’s research contribute to the goal of changing beliefs or transforming beliefs about the food system?

The participants highlighted what they regard as their main contributions, stressing for instance
• Their efforts at challenging prevailing notions and mainstream ideas about beliefs on food systems;
• addressing complexities and clarifying the connections and interdependences operating within food systems;
• demonstrating the need for systemic change and not only individual adaptation;
• providing the necessary information for adaptation, and developing citizen (participatory) research projects.

Question 2 (Steven Wilson)
What would you say to a journalist who would provoke you with a similar statement: “Technology and existing knowledge provide plenty of scope for feeding growing population; why worry about the social and environmental context?”

By and large, the participants rejected the false dichotomy suggested by the phrasing. They underscored that the problem was not only one of production, since there is enough food available to feed everybody, but rather one of the social and economic conditions of distribution of food. Most groups also insisted also on the multiplicity of technologies and solutions available, and
rejected the reductionist undertones of the question, to stress the importance of choice of technology. “Choice”, therefore, requires dissemination of information, participation of the populations concerned in the choice making and implementation, and an adequate investment policy.

**Question 3 (Steven Zebiak)**

Is it possible to experience the same pattern of linear transformation in natural world of science in the social world? Or: is transformation really possible in the anthropocene?

Although they all agreed that transformation was indeed possible, the participants were divided on how to achieve it. Three spheres of action for change were discussed which, without excluding one another, certainly imply different actors and logics of action:

- **International diplomacy and agreements between nations:** declaration on universal values regarding food and populations (e.g., feeding the world, water & information), and joint policy of investments in education and information;
- **Bottom-up approaches:** transformation as the result of a large diversity of local, transformative (distributed, participatory, practical, small-scale, polycentric) initiatives, the engagement of stakeholders is crucial and scientists should address their concerns in priority;
- **Need for new research:** transformation will be possible if new scientific approaches tackle the complexities and cross-scale interactions of human-nature relations, analyse the feedbacks of governance and bio-physical change with the food system, and enquiry historical dynamics of societies’ adaptation and collapse.

**Question 4 (Chantell Ilbury)**

How can we transform beyond sustainability? Or can we transform from Sustainability to Thrivability? Is sustainability the new competitiveness?

The conversations in the different groups reflected two main positions, which, again, without being opposed suggest nonetheless different concerns and priorities. Some participants criticized the short-term view of business competition as we know it, and insisted that cost minimization was in itself a threat to sustainability and thrivability. They also objected to the use of notions like “sustainability” (or “green growth”) which
often only confuse public debates. Some wonder if we should not rather oppose competition (focused on short-term benefits) and sustainability (which privileges long term benefits). A second group of participants insisted rather on the importance of developing new indicators and metrics for competition that would take “sustainability” (protection of soils, water resources, etc.) into account. One argument developed was that competition also means diversity. Whereas the first group criticized competition and cost minimization as threats to the environment, the second prioritized the creation of “collaborative competition,” which would involve the participation of all stakeholders in reaching sustainability.

Question 5 (Mary Scholes)
Is it acceptable to switch agriculture production in Indonesia to heavy imports of wheat?

A strong agreement emerged from the different conversations around two main ideas. First, research is needed to document the current state of agriculture and assess if there is room for crop substitution (e.g., rice replacing palm oil currently being grown?), for sustainable intensification, use of alternative crops and changes in diets. Secondly, they also agreed that the preferences of consumers and the interests of producers needed to be considered. The underlying values driving food choices being not primarily a “scientific” question, the process of decision had to be essentially social (participatory) and political (incentives and constraints). Scientists should inform but not drive.

Research Questions

Theme 1 – Dynamic Planet:
In discussing the theme of dynamic planet, participants and young scientists centered on 6 essential clusters of research questions. Questions focusing on trade, metrics, efficiency, farmers, institutions, and productions and consumptions.

Institutions

- Why do we have so much cheap junk food and not enough nutritious food?
• What institutions can be designed to ensure biodiversity conservation; cultural preservation and community resilience?

Production and consumption
• What are the mechanisms to harmonise sustainable production with sustainable consumption?
• Which are the mitigation measures to lower greenhouse gases and their relationship with diet?
• How can we develop and implement technology to improve food quality and reduce carbon emissions?
• How would information (carbon and water footprints) and pricing policy affect consumer decisions?

Trade
• What is the influence of trade on the food system?

Metrics
• What ecological, economic and social metrics do we need beyond GDP to achieve a sustainable food system?
• Who is going to measure greenhouse gas emissions and how to do it in a cost effective way?

Efficiency
• How can we improve energy efficiency and improve waste reduction in the food system?
• How can we apply efficient use of renewable energy in food systems?
• Where can we make the biggest reductions in food waste?

Farmers
• How ready are farmers to adapt measures to lower GHG emissions?
• What mechanisms can promote consumer awareness on sustainable low carbon food systems?
• How to improve diets and climate resilience using improved or forgotten crops and farming techniques?
How do we define "efficiency" focusing on different levels (improved/inefficient) of the food system?

What are the impacts of transformation across scales and levels in the food system?

How do we improve multifunctionality of natural resources for a resilient, interconnected ecosystem?

What do we think the future of climate change will be and what does this mean for the food system?

Do we see climate change as a threat or an opportunity for innovation and adaptation?

Can we improve resilience to climate change because of new business models in the food system?
Theme 2 – Global Development:

- How to overcome the problems of food security and carbon emissions in irrigated salinated soils in Uzbekistan?
- How can food quality and geographical indication be used to promote more sustainable food?
- How can the public health victory of tobacco policy be used as a model for overcoming powerful corporate interests in food production?
- How can we make people see the links between individual consumption and global impacts?
- How to incorporate healthy diet into the process into the process to food security and environmental sustainability?
- How do future changes in growing season length in semi-arid regions affect rain-fed agriculture and how could farmers adapt?
- How to incorporate power dynamics into a cross-scale and cross-level analysis of the food system?
- What would new methods be? Actor network theory? Analysis through specific crops and identify power trends through interactions of actors... New metrics
- How do we integrate local knowledge about climate change and effectively transmit sustainable scientific information to farmers?
- Which are the factors and tools for efficient nutrient recycling strategies under different conditions?
Theme 3 – Transformations beyond sustainability:

Power political
- What are the drivers determining effective farming?
- How to incorporate power and inequalities in our analysis of food?
- What global trade rules and conventions are needed to promote local food production and distribution systems?

Practical
- How do we define effective farming at different levels?
- What are the enablers of transformations across scales and levels in the food system?
- How do we transform current practice to make food system THRIVABLE and safeguard the long-term future with resources we have?
- How to improve multi-functionality of national resources for resilience?
- How to harness the use of underutilized species in future foods?

Connections
- How do we involve future generations in agriculture?
- How to reconnect consumers to what and how they eat?
- How do we design participatory research that taps indigenous knowledge to enhance capacity to produce enough healthy food to meet wellbeing?

Information
- What international alarm systems can be put in place to prevent starvation during local food shortage?
- What tools can be used to better inform consumer decisions?
- How to increase awareness of natural resources?
- How to find culturally appropriate ways to empower communities to utilize natural resources in ways that increase community resilience?

The outlier question summed up what was becoming more and more apparent
How do we change the evaluation of junior scientists to encourage the research approach of Future Earth?
Networking

A major goal of this series of conferences was to bring scientists together to network – not only amongst themselves but with other actors that they do not usually encounter. A selection of participants got the chance to talk about and explain their research more fully, through a series of video interviews. A poster session allowed more time for detailed exchange of research topics. Along with this, “Food Futures” brought into the conversation some unique and different viewpoints on the notion of food.

Lars Charas, of the World Association of Chefs Societies and a former chef, gave a perspective on how chefs can be actors in food sustainability, what part they play, and what trends they are exposed to.

Georg Melzer, Rhonda Smith and Elaine Fitches (The Food and Environment Research Agency, UK), form part of a new collaborative research network, consisting of EU-funded projects investigating the use of insects within the food system – from human nutrition elements to animal feed. A notion that is entering the mainstream (as a latest UN FAO report will testify). Their short presentation and poster received challenging, interesting and stimulating questions and feedback.

Over dinner, guests were set a task – to come up with a sustainable menu that could be served at Villa Vigoni 50 years into the future. Inspiring participants to come up with a range of menus that really take into account the themes and discussions of the past few days.
As researchers in the early stages of their career, job security is the number one priority. Discussions were had on finding your next post-doc, finding and securing grants, and of course avoiding the entire “publish or perish” dichotomy that has invaded much of academia. The conference had a session on funding mechanisms from the DFG, Belmont Forum, and the ERC – highlighting the tools for the young scientists to turn their ideas into concrete research and going some way to raise their awareness of the different mechanisms and how to tailor their pitch and secure grants (the need to take the funders priorities into account).
Conclusions

The idea for this conference was to bring together scientists to network, and to see the next generation of leading scientists begin to build bridges between themselves – across institutions, disciplines, fields, topics, and ideas. In the end, the network formed would be only as strong as the science they form together. The ideas and questions formulated served as only the jumping off point for future collaborations.

Dynamic planet focuses on observing and understanding; projecting Earth and societal system trends, drivers and processes, and their interactions; and anticipating global thresholds. Within this sphere some research questions that emerged focused on production and consumption. The thread throughout was really about understanding the structure in place within the food system. From asking what the institutions that exist around food systems to identifying what the outside actors are which interact with the food system.

Global Development as a Future Earth theme focuses on providing the knowledge for sustainable, secure and fair stewardship of food, water, health, energy, materials and other ecosystem services. Young scientists sought to pull out trends within the food system and the economy – both at a micro and macro level – looking for the links between individual actions, global trends and sustainability issues. An important issue of sustainability is climate change and greenhouse gases, to which the young scientists drew the links to the importance of local knowledge as a means of transmitting information to the farmers that grow crops.
Understanding and evaluating strategies for governing and managing the global environment across scales and sectors, and transformations to move towards a sustainable Future Earth. Transformation towards Sustainability is a forward looking theme. Young scientists looked beyond those parameters to consider what comes after and beyond sustainability. After, in terms of time (now and future generations), and linking connections and information across themes.

Young scientists discussed at length the current system of evaluation and ways of advancing for young scientists that favours narrow, individual research and how this differs from the type of interdisciplinary and integrated research that is needed to bring about transformation and address current challenges.

It is clear the ambition is there. Young scientists took the ideas and vision they formulated at the conference and have gone on to work together on the next stage – one where they will hope to foster their skills in transdisciplinarity and to create and submit projects to further their careers.

**Outcomes**

Participants took the initiative to continue the networking process even after the conference was over, finding common grounds to work together, setting up collaborations, and taking some of the research questions brainstormed at Food Futures further.

- Development of research question on under-utilized plant products for proposal
- Summer school for early career scientists on transdisciplinary methodologies
- Abstract submission to international conference on waste management based on food futures participation
- Refining of research question on African context for proposal
- Commentary submitted to the Journal of Agriculture, Food Systems and Community Development on future research priorities and highlighting differences with other research questions published
- Refining and adapting research questions to the case of olive growing in Spain for submission (How do future changes in growing season length in semi-arid regions affect rain-fed agriculture and how farmers could adapt? How do we integrate local knowledge
about climate change in our research and how do we effectively transmit sustainable scientific information to farmers?)

- Commentary submitted to the journal Biofuels on meeting the growing demand of food and bioenergy (Meeting the growing demand for food and bioenergy in the 21st century: synergies through efficient waste management, in which they argue for an integrative research perspective on food-energy systems under particular consideration of waste-related issues)
- Future fellowship submissions on comparative global perspectives

The organisers would like to thank Mary Scholes for bringing this unique conference to life with great enthusiasm and knowledge.

APPENDIX 1: Young scientist profiles
APPENDIX 2: The Programme
Participants

Mary Scholes, University of the Witwatersrand, Johannesburg, South Africa
Chantell Ilbury
Heide Hackmann, Executive Director, International Social Science Council
Steven Wilson, Executive Director, International Council for Science
Ingrid-Ute Leonhauser, Giessen University, Nutrition and Consumer Behaviour, Food and Nutrition Security and Evaluation Research
Jutta Roosen, Technische Universität München, Heads the department of Marketing and Consumer Research
John Mugabe, University of Pretoria, Science innovation and policy
Tara Garnett, Food Climate Research Network
Sandrine Paillard, Agence Nationale de la Recherche France
Judi Wakhungu, Executive Director of the African Centre for Technology Studies (ACTS) in Nairobi, Kenya
Robert Paul Köngs, Head of Scientific Affairs, German Research Foundation (DFG)
Stephen Zebiak, Director of the Climate Services Initiative at the Earth Institute at Columbia University, and Senior Research Scientist at the International Research Institute for Climate and Society (IRI)
Lars Charas, Feedinggood, World Association of Chefs Societies
Robert Scholes, Council for Scientific and Industrial Research (CSIR) in South Africa
Rebecca Muckelbauer, Berlin School of Public Health, Charité – University Medical Center Berlin, Germany
Fawzi Mahomoodally, Department of Health Sciences, Faculty of Science, University of Mauritius
Aline de Conti, University of Sao Paulo, Brazil and at the National Center for Toxicology research (NCTR), Food and Drug Administration (FDA)
Qiang Jiang, the Australian National University
Chijioke J. Evoh, Economic and Urban Policy Analysts (ECONUPA), an independent social science research organization in Yonkers, New York
Anton Vrieling, University of Twente, the Netherlands
Carmen Lozano, Department of Sociology II (Social Structure), Faculty of Political Science and Sociology, Universidad Nacional de Educación a Distancia, Spain
Timothy Karpouzoglou, Stockholm Resilience Centre, Sweden
Susanne Baldermann, Leibniz-Institute of Vegetables and Ornamental Crops and the Institute of Nutritional Science of the University of Potsdam, Germany
Laura Pereira, the Australian National University
Chijioke J. Evoh, Economic and Urban Policy Analysts (ECONUPA), an independent social science research organization in Yonkers, New York
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Timothy Karpouzoglou, Stockholm Resilience Centre, Sweden
Susanne Baldermann, Leibniz-Institute of Vegetables and Ornamental Crops and the Institute of Nutritional Science of the University of Potsdam, Germany
Laura Pereira, Sustainability Science Program Harvard Kennedy School of Government
Caroline Ummenhofer, Physical Oceanography Department at Woods Hole Oceanographic Institution, Woods Hole, USA
Julius Hagan, Department of Animal Science, University of Cape Coast
Botir Haitov, Plant Science department Tashkent State Agrarian University
Babalola Folaranmi, Centre for Environmental Economics and Policy in Africa (CEEPA), University of Pretoria, South Africa
Sheila Onzere, Community Food Systems Program at the University of Minnesota.
Pauline Chivenge, School of Agriculture, Earth and Environmental Sciences at the University of KwaZulu-Natal in South Africa
Wenjiao Shi, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences (IGSNRR, CAS)
Kimberly Nicholas, Lund University Centre for Sustainability Studies in Lund, Sweden.
Chibuike Udenigwe, Faculty of Agriculture at Dalhousie University, Canada
Mariko Fujisawa, African Climate and Development Initiative, University of Cape Town
Silke Bollmohr, University of Johannesburg, Centre for Aquatic Research
Ai Sigiura, Water-related Hazard Research Group at ICHARM (International Centre for Water Hazard and Risk Management), Tsukuba, Japan
Wilma Waterlander, National Institute for Health Innovation (NIHI) at the University of Auckland, New Zealand
Nathan Berg, Department of Economics, University of Otago, New Zealand
Sigrid Kusch, Highfield Campus, University of Southampton
Gabrielle Jenkin, Health Promotion and Policy Research Unit, Department of Public Health, University of Otago, Wellington
Matthew Smith, Distributed Computing and Security at the Leibniz University of Hannover
Atul Dogra, International Centre for Agricultural Research in the Dry Areas (ICARDA), New Delhi, India
Marta Rivera Ferre, University of Vic. Department of food and environment, Spain

Georg Melzer, Rhonda Smith and Elaine Fitches (The Food and Environment Research Agency, UK), PROteINSECT, Enabling the exploitation of Insects as a Sustainable Source of Protein for Animal Feed and Human Nutrition.

Organising Team:
Alexander Hansen, German Research Foundation
Johannes Mengel, International Council for Science
Mathieu Denis, International Social Science Council
Anne-Sophie Stevance, International Council for Science
Maureen Brennan, International Council for Science
Charles Ebikeme, International Social Science Council
| **Aline de Conti**  
Dr. Aline de Conti is a Pharmacist and Ph.D in Nutritional Sciences. Her post-doctoral has been developed at the University of Sao Paulo, Brazil and at the National Center for Toxicology research (NCTR), Food and Drug Administration (FDA), U.S. Research interests are at the prevention of chronic diet-related diseases, bioactive food components and genetic and epigenetic inter-individual differences in the diet responses and susceptibility to diseases development. |
|---|
| **Wenjiao Shi**  
Dr. Wenjiao Shi is a geographer specializing in land use change, climate change, agriculture, soil and geographic information science and technology. She holds a doctorate in Cartography and Geographic Information Systems from the Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences (IGSNRR, CAS), and has been an assistant professor in IGSNRR, CAS since 2009. Her interests include interactions of climate change, land use change and agriculture system, and she focuses on the contributions of climate change and human activities to food security. |
| **Fola Babalola**  
Fola Babalola obtained his PhD (Forest Economics) at the University of Ibadan, Nigeria. He is an academic staff in the Department of Forest Resources Management, University of Ilorin, Nigeria and currently a postdoctoral fellow at the Centre for Environmental Economics and Policy in Africa (CEEP), University of Pretoria, South Africa. Fola has conducted a number of researches on biodiversity conservation, sustainable management of forest resources, agroforestry, forest economics and policy, community forestry, and socio-economic contributions of forest resources to rural economy. His research findings have featured in local and international peer reviewed journals and conference proceedings. Fola has also authored a book titled “Nigerian Forestry and National Development” and contributed to other book chapters. He has been awarded a number of research grants and fellowships including Netherlands Fellowship Programme - NUFFIC; International Foundation for Science (IFS), Sweden; International Tropical Timber Organisation Postgraduate Fellowship; Africa Academy of Science, Junior Scientists’ Fellowship; among other.
scholarships and sponsorships. He belongs to professional organizations in his disciples and is a Board Member of African Section of Society for Conservation Biology (SCB). His current research focuses on the potentials and contributions of non-timber forest products in meeting future food demands and related food challenges.

<table>
<thead>
<tr>
<th><strong>Julius Hagan</strong></th>
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<tbody>
<tr>
<td>Dr. Julius Hagan is a young and dynamic Lecturer and Poultry Breeder whose specialty is chicken breeding. I am into developing of new breeds of chicken that are adaptable to the hot and humid environments through the use of heat-tolerant genes. I had my BSc. Degree in Agriculture at the University of Cape Coast, Ghana in 2003 and continued with a PhD in Poultry Breeding and Genetics in 2010 at the Kwame Nkrumah University of Science and Technology, Ghana. I am now employed as a Lecturer at the Department of Animal Science, University of Cape Coast. I teach Animal Breeding and Genetics and Monogastric Production.</td>
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<tr>
<th><strong>Timos Karpouzoglou</strong></th>
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<tr>
<td>Timos Karpouzoglou is a post doctoral researcher at the Stockholm Resilience Centre in Stockholm. He is trained as a natural scientist with increasing social science expertise and fieldwork experience in South Asia and Sub-Saharan Africa. His research draws upon a wide range of literatures including Science and Technology Studies (STS), resilience, policy analysis, and development studies. Timos focuses on understanding complex dynamic systems with an applied angle. His particular fields of interest include water resource management, rain-fed agricultural systems, pro-poor innovation, urban and peri-urban sustainability.</td>
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<tr>
<th><strong>Anton Vrieling</strong></th>
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<tr>
<td>Anton Vrieling received two M.Sc. degrees in 2001 (tropical land use, and geo-information science) and a Ph.D. degree in 2007 from Wageningen University, The Netherlands. His PhD was on the mapping of soil erosion from satellite data. Afterwards he worked two years at the Joint Research Centre, Ispra, Italy, on satellite-based monitoring for food security assessment. Since 2009, he has been an Assistant Professor at the University of Twente, The Netherlands. His research concentrates on the analysis of spatial changes, often making use of multi-temporal remote sensing data. This includes applications related to the domains of agriculture, forestry, vegetation phenology, and demography.</td>
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<tr>
<td>Name</td>
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<tr>
<td>Susanne Baldermann</td>
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<tr>
<td>Gabrielle Jenkin</td>
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<tr>
<td>Botir Haitov</td>
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</tbody>
</table>
**Laura Pereira**
Laura Pereira is a Giorgio Ruffolo post-doctoral fellow in the Sustainability Science Program at the Harvard Kennedy School of Government. She was born in South Africa where she finished her BSc degree in Zoology, Ecology and Law at Wits University before moving across to Oxford University where she completed her MSc and DPhil degrees in Geography and Environmental Science. Laura is passionate about resolving the sustainable development conundrum by looking at the role of innovation in the food system using socio-ecological systems theory.

**Carmen Lozano**
I am a lecturer in Rural Sociology in the Faculty of Political Science and Sociology, Universidad Nacional de Educación a Distancia (Spain). I obtained a European Ph.D. in Social Anthropology in the University of Seville with a thesis about Organic Agriculture, Territorial Development and Natural Protected Areas. My current research studies the factors that are promoting the opacity of food system; the perception that different agents of the agri-food chain have about the food system and about the strategies of (in)visibilization of this system, and analyses the consequences of these perceptions in the construction of food as a public problem and in the development of food citizenship.

**Sheila Onzere**
Sheila Onzere's research and work focuses on institutional change within food systems in the US, as well as, in eastern and southern Africa. She holds a PhD from Iowa State University with a particular focus on social change and food systems. She has received a fellowship from the Leadership Enhancement in Agriculture Program and has worked as a program coordinator for the Master of Sustainable Development Practice Program at the University of Florida. Currently, she is employed within the Community Food Systems Program at the University of Minnesota.
Chijioke J Evoh
Chijioke completed his PhD in Public and Urban Policy at the Milano School of Management and Public Policy, the New School University, New York. He is the director of research at the Economic and Urban Policy Analysts (ECONUPA), an independent social science research organization in Yonkers, New York. His scholarship connects various complementary issues in urban policy and sustainability, information technologies in urban development, environmental policy, educational leadership and public policy analysis.

Pauline Chivenge
I joined the School of Agriculture, Earth and Environmental Sciences at the University of KwaZulu-Natal in South Africa in March 2012 as a lecturer. After obtaining a PhD in Soils and Biogeochemistry from the University of California, Davis in 2008, I worked at the same university as a Postdoctoral Researcher. In 2010, I joined the Department of Agronomy at Purdue University as a Postdoctoral Researcher. Much of my research focuses on enhancing carbon sequestration and biogeochemical nutrient cycling in agroecosystems for improved ecosystem functioning, enhanced food crop production and poverty alleviation in the developing world. I am a Zimbabwean national.

Fawzi Mahomoodally
Fawzi holds a first class BSc(Hons) Biology with Environmental Sciences and secured his PhD from the University of Mauritius and TWAS-accredited H.E.J Research Institute of Chemistry and Dr. Panjwani Center for Molecular Medicines and Drug Research, Karachi, Pakistan. He has recently been nominated as the TWAS-ROSSA young Affiliates (2012-2016), member of the Global Young Academy (2013-2016) and recipient of the young promising scientist from Mauritius to attend the TWAS/BVA.NXT Biovision 2012 Egypt. Fawzi has published more than 40 original research papers in ISSN and impact factor journals and also edited 7 book chapters and 3 academic books. Fawzi core research has been geared mainly towards documenting the traditional knowledge pertaining to the use of medicinal herbs and food plants from Mauritius in a view to convey accurate scientific data back to the local people and the scientific community. Also one of Fawzi's main interests is to develop standard extracts of locally available indigenous bio-products geared towards novel applications of traditional underutilised food plants having significant therapeutic and nutritional properties in an endeavour to address future food security issues and global sustainability.
Caroline Ummenhofer
Caroline Ummenhofer received a Joint Honors B.Sc. in Marine Biology and Physical Oceanography from the University of Wales, Bangor, UK, and a PhD in climate science at the University of New South Wales (UNSW), Sydney, Australia. She was a Postdoctoral Fellow at the ARC Centre of Excellence for Mathematics and Statistics of Complex Systems, held a Vice-Chancellor Postdoctoral Fellowship at UNSW, and was a Visiting Fellow with CSIRO Marine and Atmospheric Research in Hobart. Since 2012, she is an Assistant Scientist in the Physical Oceanography Department at Woods Hole Oceanographic Institution, Woods Hole, USA. Her research interests mainly focus on interannual to decadal climate variability, the hydrological cycle, monsoon dynamics, ocean-atmosphere interactions, droughts, extratropical climate, hydroclimate paleo reconstructions of the last millennium, and the effect of climate variability and change on agriculture.

Chibuike Udenigwe
Dr. Chibuike Udenigwe is an Assistant Professor in the Faculty of Agriculture at Dalhousie University, Canada. His research program is focused on developing innovative applications of agri-food bioproducts especially in promoting human health. Currently, his research group is studying the mechanisms and prospects of bioactive peptides derived from animal-based food proteins with the intent of enhancing value of the products and reuse of underutilized agri-food biomaterials. Dr. Udenigwe has published several papers in peer-reviewed journals and received various awards for his work including a 2012 International Union of Food Science and Technology (IUFoST) Young Scientist Award.

Rebecca Muckelbauer
Rebecca Muckelbauer studied nutrition science in Germany and Spain. During her doctoral thesis on overweight prevention through the promotion of water consumption, she started to focus on public health. Currently she is a post-doc researcher at the Berlin School of Public Health continuing her research on improving health on population level through dietary interventions. As a coordinator of the masters program MSc in Epidemiology her methodological focus is on epidemiological methods and research designs.
| **Qiang Jiang** | Qiang Jiang has been a PostDoc at The Australian National University since 2012. His current research topic is global water and food security. His thesis is about water management in the Murray–Darling Basin. Qiang has an interdisciplinary background with a Bachelor of Economics from Guangxi University, Master of Business Information Systems from the University of Wollongong, and three years' work experience with the Land and Water division of CSIRO. |
| **Marta Rivera Ferre** | I obtained a PhD in Agrometeorology at the University of Tokyo, Japan in 2012. There I worked with apple farmers to reveal their adaptation actions to climate change. Meanwhile I worked on climate change impact and adaptation projects at FAO in Rome for a year. In August 2012, I moved to Cape Town, South Africa to begin a postdoc researching the role of climate information and its effects on farmers’ decision making process. My current interest is how scientists can contribute to food security in southern Africa. |
| **Mariko Fujisawa** | I obtained a PhD in Agrometeorology at the University of Tokyo, Japan in 2012. There I worked with apple farmers to reveal their adaptation actions to climate change. Meanwhile I worked on climate change impact and adaptation projects at FAO in Rome for a year. In August 2012, I moved to Cape Town, South Africa to begin a postdoc researching the role of climate information and its effects on farmers’ decision making process. My current interest is how scientists can contribute to food security in southern Africa. |
| **Atul Dogra**  
Atul Dogra, born and raised in the rural areas of Himachal Pradesh, India; has completed his Ph.D in Agricultural Economics from India in 2009. Thereafter, joined National Centre for Agricultural Economics and Policy Research, ICAR, New Delhi, India for two years; where, he was involved in the assessment of crop insurance schemes, validating risk assessment models in Indian agriculture and coordinating with ICAR institutes, State Agricultural Universities and private organizations. Presently, he is working with the International Centre for Agricultural Research in the Dry Areas (ICARDA). He is conceptualizing, supervising and leading the socio-economic component of the South Asian pulse farmers in India, Nepal, Bangladesh, & Afghanistan and coordinating ICARDA with ICAR and NARS partners. He is an active member of Young Professionals’ Platform on Agricultural Research for Development (YPARD) and also been nominated as young scientist for CGIAR Science Forum 2011 & TWAS/BVA.NXT Bio vision 2012 Egypt. Some of his key interests are agricultural development in rural areas and impact assessment studies. His hobbies are playing hockey and cricket. |

| **Kimberly Nicholas**  
Kimberly Nicholas is an Assistant Professor of Sustainability Science at the Lund University Centre for Sustainability Studies in Lund, Sweden. Kim’s research motivation is to understand what human changes to the Earth’s climate and land surface will mean for the future of the ecosystems on which we depend, and how we can better balance human needs with sustaining the planet’s life support systems. She uses observational, experimental, modeling and synthesis approaches to study how climate variability and change affect crop development, yields and quality, especially in the wine industry; climate adaptation and food security; land use, biodiversity, and ecosystem services; and the theory, practice, and pedagogy of sustainability science. Her interest in agriculture is rooted in five generations of family farming in her native Sonoma, California. She holds a PhD in the Interdisciplinary Program in Environment and Resources from Stanford University and an MS in Viticulture (Horticulture and Agronomy) from the University of California, Davis. |
<table>
<thead>
<tr>
<th>Name</th>
<th>Title and Contributions</th>
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<tbody>
<tr>
<td>Wilma Waterlander</td>
<td>Dr. Wilma Waterlander is a post-doctoral research fellow at the University of Auckland, New Zealand. She works within the National Institute for Health Innovation and her projects evolve around the topic of population health nutrition. Wilma did her PhD in Health Sciences at the VU University Amsterdam. Her PhD work focused on the feasibility and effectiveness of food pricing strategies to stimulate healthy eating (for example subsidies on fruits and vegetables). Wilma her expertise is on economic aspects of food choice, food politics and the economic food environment. This year (May – July), Wilma will be working for 2 months on a project examining optimal taxes for a healthy and sustainable diet at the Department of Public Health at the University of Oxford.</td>
</tr>
<tr>
<td>Sigrid Kusch</td>
<td>Waste Management and Bioenergy – considering that up to 50% of globally produced food is not consumed and that both food and bioenergy are closely linked through land use, the two main topics of Sigrid Kusch address most pressing issues of future development. While avoiding waste to happen is a key challenge, unavoidable organic residues represent a valuable resource for generation of energy and fertilizer. Sigrid Kusch's main academic research is based in Germany, in addition as visiting researcher at the University of Southampton she is involved in the complex topic of valorisation of food waste through the EU project Valorgas (<a href="http://www.valorgas.soton.ac.uk">www.valorgas.soton.ac.uk</a>)</td>
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<tr>
<td>Silke Bollmohr</td>
<td>Dr Silke Bollmohr received her PhD in Environmental Sciences (Aquatic Ecotoxicology of Pesticides). She currently works as a PostDoc at the Centre for Aquatic Research at University of Johannesburg, South Africa. Her multidisciplinary research focuses on the effect of pesticide use (and other unsustainable practice) in small scale and large scale agriculture on relevant ecosystem services in developing countries. Most relevant ecosystem services for the research project are cultural services and natural resources. Moreover she takes part in the promotion of sustainable agricultural practices like permaculture and agro-ecology.</td>
</tr>
</tbody>
</table>
Ai Sugiura

I was born in France from Japanese parents, I studied in France, Belgium, Spain and the UK. I am an agricultural engineer (from the Royal Faculty of Agronomy in Gembloux, Belgium), hydrologist (from Universite Pierre et Marie Curie Paris 6, France) and water sanitation/water reuse expert (through my PhD obtained at Cranfield university in the UK) and work now in ICHARM (International Centre for Water Hazard and Risk Management under the auspices of UNESCO) in Tsukuba on flood modeling and flood risk assessments. I am a water specialist and more focused on the "production" aspects of food matters (water allocation for production and water-related disaster risk reduction) and I believe trans-disciplinary approach is essential in this field. I am very enthusiastic about the outcomes of this conference which I expect to provide me with a global approach of food futures matters.
<table>
<thead>
<tr>
<th>Time</th>
<th>MON 15th</th>
<th>TUE 16th</th>
<th>WED 17th</th>
<th>THUR 18th</th>
<th>FRI 19th</th>
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<tbody>
<tr>
<td>Morning Session 1</td>
<td>9h15 - 10h30</td>
<td>Arrival</td>
<td><strong>Opening Keynote</strong> (Chantell Ilbury)</td>
<td><strong>Theme 2</strong> Global Development speaker to introduce the theme and to pose provocative scenarios (Robert Scholes)</td>
<td><strong>Defining Research Questions Wrapup</strong> Mary Scholes</td>
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<tr>
<td>Break</td>
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<tr>
<td>Morning Session 2</td>
<td>11h00 - 12h30</td>
<td>Arrival</td>
<td><strong>Keynote</strong> Introduction to Future Earth (Steven Wilson and Heide Hackmann)</td>
<td><strong>Theme 1</strong> Dynamic planet – big picture dynamics at play in future agriculture/food issues and a video of the safe spaces concept (Judi Wakhungu)</td>
<td><strong>Closing Keynote</strong> Stephen Zebiak</td>
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<td>Lunch</td>
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<tr>
<td>Afternoon Session 1</td>
<td>14h00 - 15h30</td>
<td>Arrival</td>
<td><strong>Theme 3</strong> Transformation beyond sustainability (Karen O’Brien)</td>
<td><strong>Theme 1</strong> Future Food and Carbon Footprint: World café exercise with a task emerging out of the session after lunch – eg have materials for the participants to build possible future food systems with the lowest C footprint (Tara Garnett and Ingrid-Ute Leonhauser)</td>
<td><strong>Theme 2</strong> Defining Research Questions, in small groups by possible subthemes (Anne-Sophie Stevance and Robert Scholes)</td>
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<tr>
<td>Time</td>
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</table>
| Afternoon Session 2  
16h00 - 17h30 | Arrival  
Theme 3  
Transformation pathways towards Sustainability. Speed dating exercise: transformation pathways towards sustainability (Tara Garnett and John Mugabe) |
| 17h30 - 18h30 | Funding Systems (DFG, ERC and Belmont Forum)  
Poster session  
(including short presentation from PROteINSECT research group)  
Module 2  
Science advice and communication visioning exercise on tested interventions and key integrated projects which bridge societal sectors (Judi Wakhungu and John Mugabe) |
| Dinner  
19h30 – 21h30 | Reception/Opening  
Evening Discussion  
Food Workshop (Lars Charas)  
Food and Sustainability  
FREE EVENING |

NETWORKING CONFERENCE ON INTEGRATED SCIENCE – **FOOD FUTURES** – FINAL PROGRAMME (April 2013)
Reception/Opening:
Robert Paul Konigs: short address
Representative from Villa Vigoni: brief comments and history of the Villa
Mary Scholes: official welcoming

Opening Keynote 1:
Chantell Ilbury

Future Earth Keynote 2:
Steven Wilson & Heide Hackmann

The three theme keynote speakers (Judi Wakhngu, Karen O’Brien and Robert Scholes) will give the overview talks as well as be involved in the research question sessions

Funding Systems:
Robert Paul Konigs – DFG
Sandrine Paillard – Belmont Forum
Annette Doll-Sellen – ERC

Evening Discussion:
(tbc)

Food Workshop – Lars Charas:
Food and Sustainability

Module 1: Transdisciplinarity – Jutta Roosen and Stephen Zebiak

Defining Research Questions:
Groups return to discuss the questions they came up with in a general overall summation plenary.

Module 2: Science advice and communication – Judi Wakhungu and John Mugabe

Closing Keynote:
(Stephen Zebiak)