Food and Agriculture Organization of the United Nations

MINISTRY OF AGRICULTURE

Participant Handbook

Regional Symposium on Agroecology for Sustainable Agriculture and Food Systems For Europe and Central Asia

23-25 November 2016, Budapest, Hungary

MINISTÈRE DE L'AGRICULTURE, DE L'AGROALIMENTAIRE ET DE LA FORÊT

Contents

Agenda

Regional Symposium on Agroecology for Sustainable Agriculture and Food Systems in Europe and Central Asia
23-25 November 2016 - Budapest

Conference Organizers: Food and Agriculture Organization of the United Nations (FAO)

Hosted by: Government of Hungary

Sponsor: Government of France

Venue: Ministry of Agriculture of Hungary, Kossuth Lajos tér 11, 1055 Budapest

Updated agenda and background documents are being posted at:

http://www.fao.org/europe/events/detail-events/en/c/429132/

Symposium background

Agroecology is based on principles such as biomass recycling, circular system of food production, soil health and preservation, natural inputs (sun radiation, air, water and nutrients) optimization, loss minimization, conserve biological and genetic diversity and enforcement of biological interactions in agroecosystem components. It relies on a localised value chain, locally-available natural resources and knowledge, with a strong focus on participatory action research to achieve context-specific and socially-accepted innovations within farming systems. It is multi-disciplinary, drawing on agronomy, ecology, economy and social sciences and therefore developing agroecological programmes and policies requires a multistakeholder approach bringing together agriculture, environment and social perspectives. Agroecology can make an important contribution to the transition to more sustainable food systems. Its practices, research and policies have seen exponential growth worldwide in the last decade.

FAO organized an International Symposium on agroecology for Food Security and Nutrition in September 2014. This was followed by three regional symposia on Agroecology in 2015[1] and an international Symposium in China in August 2016. These symposia highlighted a broad range of best practices, policies and scientific innovation. It is proposed to convene a regional symposium in Europe and Central Asia in the end of November 2016.

These discussions have taken place in the context of FAO's Strategic Framework, in particular Strategic Programme 2: *Increase and improve provision of goods and services from agriculture, forestry and fisheries in a sustainable manner).*

[1] **Latin America and the Caribbean** - 24 to 26 June 2015, Brasilia, Brazil / **Sub Saharan Africa** – 5 to 6 November 2015, Dakar, Senegal /**Asia and the Pacific** – 24 to 26 November 2015, Bangkok, Thailand

Symposium Objectives

- Facilitate the exchange of knowledge and experiences among different stakeholders (food producer organizations, academics, private sector, European Union (EU) institutions and representatives from all European and Central Asian countries) on the potential contribution of agroecology to sustainable agriculture and food systems;
- Showcase existing practices and models of agroecology and provide a synthesis of the key elements related to agroecology;
- Identify and define potential entry points and areas of contribution of agroecology in public policies;
- Catalyze international collaboration to develop ways forward for strengthening agroecological practices and programs in the region.

Expected outcomes

- Knowledge shared on agroecology including practices, research, policies to contribute to the global development of agroecology;
- Recommendations for public policies and various stakeholders;
- Commitments of partners in specific projects and actions.

Members of the Advisory Panel of the agroecology Symposium

Name	Last name	Organization	Country
Eva	**Torremocha**	University Pablo de Olavide in Seville, International Federation of Organic Agriculture Movements (IFOAM)-Organics International	Spain
Rodion	**Sulyandziga**	Centre for Support of Indigenous Peoples of the North (CSIPN)	Russia
Jean-François	**Soussana**	Environnemental Division, Institut National de la Recherche Agronomique (INRA)	France
Ram C.	**Sharma**	International Center for Agricultural Research in the Dry Areas, CGIAR Program Facilitation Unit for Central Asia and the Caucasus	Uzbekistan
Reuben	**Sessa**	FAO Regional office for Europe and Central Asia	UN
Michel	**Pimbert**	Center for Agroecology water and resilience, Coventry University	England
Carsten	**Pedersen**	World Forum of Fishers People (WFFP)	Denmark
Lusine	**Nalbandyan**	Armenien Women for Health and Healthy Environment	Armenia
Jyoti	**Fernandes**	Farmer/Nyeleni Europe/ European Coordination Via Campesina (ECVC)	England
Ágnes	**Dús**	Ministry of Agriculture	Hungary
Rémi	**Cluset**	FAO Headquarters	UN
Stéphane	**Bellon**	Agroecology Europe/ Institut National de la Recherche Agronomique (INRA)	France

Day 1: Wednesday 23 November

Morning: 08.30 – 12.00 - Internal Civil Society Organisations meeting

Venue: Ministry of Agriculture of Hungary, Kossuth Lajos tér 11, 1055 Budapest / **Room 101/A**

For all participants:

Registration and Lunch **Venue: Ministry of Agriculture of Hungary, Kossuth Lajos tér 11, 1055 Budapest**	
Time	**Description**
11.00-13.30	**Registration of participants** (for participants who have not arrive yet: another registration on 24 November 8:00)
12.00-13.30	**Lunch- Restaurant on the 5th floor**

Afternoon: For all participants - field visit (in 2 groups)

Field visit (2 groups)		
Time	**Description Group 1**	**Description Group 2**
13.30-18.30	**Centre for Plant Diversity (Tápiószele)** *The Centre has a nation-wide responsibility for the technical co-ordination of all plant genetic resources collections. The Institute is also responsible for the development and maintenance of field crop and vegetable genetic resources collections, in addition to co-ordinating plant genetic resources activities in Hungary including participatory breeding programs.* **Program:** • Welcome with refreshments • Introduction about the Research Centre, presentation on its activities and programs • Guided visit through the centre including seed storages, laboratories and fields • Visit of the seed exhibition	**Centre of Farm Animal Gene Conservation (Gödöllő)** *The Institute is the national Centre for gene conservation of traditional Hungarian farm animal breeds. It plays a major role in the breeding, research, educational and rural development programs aiming the conservation of these breeds.* **Program:** • guided visit to all research centres (if the weather allows: visit to the poultry gene bank and mammal livestock farms) • Presentation of the research centre • Film about the gene rescue program in the Carpathian Basin • Presentation of the Szomor organic farm (film and discussion) • "Szomor" organic farm products presentation and degustation • Visit to apiary and museum

19.00	**Dinner buffet** **Venue: Ministry of Agriculture of Hungary, Kossuth Lajos tér 11, 1055 Budapest**

Day 2: Thursday 24 November

Registration	
Time	**Description**
08.00-08.45	**Registration of participants** (for participants who did not register at 23 November)

Moderator for the 2 days meeting: ***Dr Tanja Busse***

High Level Panel Session **Venue: Darányi Ignác Hall (ground floor)**	
Time	**Speakers**
08.45-09.45	***H.E. Sándor Fazekas*** **Minister of Agriculture, Hungary**
	H.E. José Graziano Da Silva **Director-General, FAO**
	H.E. Serge Tomasi **Ambassador, Permanent Representative of France to the UN Agencies for Food and Agriculture in Rome**
	Tassos Haniotis **Director, Economic Analysis, Perspectives and Evaluations, Communication, DG Agriculture and Rural Development, European Commission**
09.45-10.15	**Coffee Break**

Module 1: Concepts and challenges of agroecology

Objective: Giving a common understanding on agroecology and agricultural challenges to all participants

- *Showing the holistic approach of agroecology and presenting its key concepts*
- *Presenting the challenges farmers have to face in Europe and Central Asia linked with natural resources depletions, melting glaciers, losing valuable agrobiodiversity and pollinators and the impact on food security*
- *Addressing the challenge of European agriculture transition with high dependence on input and the strong role of input provider and Food Chain sector*
- *Discussing how agroecology can support in achieving some of the SDGs*

Time	Description	Speakers
10.15-11.15	**Introduction Speeches**	
	Agroecology as an opportunity to address the challenges of European and Central Asian food and agriculture	***Michel Pimbert*** (Coventry University, United Kingdom)
	Environmental (Biodiversity, water and soils, climate change) challenges to food security in Central Asia: agroecology as an answer	***Ram C Sharma*** (International Center for Agricultural Research in the Dry Areas (ICARDA), Uzbekistan)
	Farmers practising and transitioning to agroecology: motivation, imitative and expectations	***Jyoti Fernandez*** (Farmer Nyeleni Europe/ European Coordination Via Campesina (ECVC))
	Agroecological roots and routes	***Stephane Bellon*** (Institut national de la recherche agronomique (INRA)/ Agroecology Europe, France)
	FAO process on agroecology	***Caterina Batello*** (Food and Agriculture Organisation of the United Nations (FAO))
11.15-12.15	**Discussion and Synthesis**	
	Discussion and Synthesis	Moderator: ***Tanja Busse***
12.15 -13.30	**12.15-12.35 : Side event on LIBERATION by David Kleijn, Wageningen University, Netherlands:** project on building the evidence base for ecological intensification across a number of European countries **Lunch funded by LIBERATION**	

Module 2: Agroecological systems and practices

Objective: illustrating agroecological systems and the transition processes giving the floor to food producers and researchers

- *Showing the diversity of the region, of the food producers (including peasants but also fisherfolks, pastoralists, urban communities, indigenous peoples, youth, women organizations) and successful experiences*
- *Illustrating the biophysical, environmental, social and economic practices and principles of agroecology and context specific, system oriented*
- *Illustrating the sustainability of agro ecological systems regarding food provision, incomes, farmers' wellbeing, environment and climate change, employment, rural development*
- *Showing initial changes already being experienced, especially in the Central Asia agroecology, due to climate change and needed interventions*
- *Access rights in fisheries: bringing the international guidelines on securing sustainable small scale fisheries into play*

Time	Description	Speakers
13.30-14.00	**Introduction Speeches**	
	Agroecological practices supporting provision of goods and services in agriculture	***Alexander Wezel*** (Institut supérieur d'agriculture et d'agroalimentaire Rhône-Alpes (ISARA)/Agroecology Europe, Germany)
	Livestock and Agroecology: Forty research issues for the redesign of animal production systems in the 21st century	***Eliel Gonzalez Garcia*** (Institut national de la recherche agronomique (INRA), France)
14.00-14.40	**Agroecology in Action**	
	Testimony from a Food Producer from Tajikistan	***Mansur Asrorov*** (Tajikistan)
	Agroecological initiatives in Armenia	***Lusine Nalbandyan*** (Armenian Women for Health and Healthy Environment, Armenia)
	Testimony from a Food Producer from Hungary	***Zoltán Dezsény*** (Hungary)
	Fisheries and agroecology	***Natalia Laino*** (World Forum of Fishers People (WFFP), Spain)
14.40-15.30	**Discussion and Synthesis**	
	Discussion and Synthesis	Moderator: ***Tanja Busse***
15.30-16.00	**Break**	

Module 3: Research, innovation and knowledge sharing for agroecological transitions

Objective: Showing the innovative and transformative character of agroecology and its technical and socio economical aspects

- *Showing the innovations present in traditional systems with emphasis on indigenous people*
- *Showing the importance of social and economic innovations with emphasis on youth and women*
- *Providing key examples of technical innovations and the way they are spread*
- *Showing the diversity of learning processes and tools and their importance*
- *Illustrating the importance of context specific, system oriented and participatory approaches including farmers, advisers, scientists and other stakeholders in learning and co-innovation processes*
- *Providing successful examples of farmer led research and innovation networks*
- *Illustrating the sustainability of agroecological systems regarding food provision, incomes, farmers' wellbeing, environment and climate change, employment, rural development and adressing the multiple criteria to assessing performance of agriculture systems agroecology beyond productivity*

Time	Description	Speakers
16.00 -16.30	**Introduction Speeches**	
	Concepts of innovations, role of agronomic and socio-economic research and learning processes in agroecological transition	***Jean-François Soussana*** (Institut national de la recherche agronomique (INRA), France)
	Beyond productivity: multiple criteria for assessing performance of agriculture systems	***Karlheinz Knickel*** (Universidade de Évora / Instituto de Ciências Agrárias e Ambientais Mediterrânicas (ICAAM), Germany - Portugal)
16.40-17.30	**Agroecology in Action**	
	Participatory on-farm organic research network	***Dóra Drexler*** (Hungarian Research Institute of Organic Agriculture, Hungary)
	Participatory breeding programme and Gene bank activities to support agroecology	***Attila Kristó*** (Centre for Plant Diversity, Hungary)
	Evaluating Participatory Research for Sustainable Agriculture	***Anna Augustyn*** (Groupe de Bruges, Poland)
	Building Horizontal Networks for Agroecology Learning and Training in Europe	***Rupert Dunn*** (United Kingdom) and ***Colin Anderson*** (Coventry University, United Kingdom)
	Youth training and Agroecology Schools	***Alazne Intxauspe*** (EHNE-Bizkaia)
17.30-18.30	**Discussion and Synthesis**	
	Discussion and Synthesis	Discussion and Synthesis
19.30	**Gala dinner hosted by the Hungarian Government** **Venue: Pesti Vigadó (1051 Budapest, Vigadó tér 2)**	

Day 3: Friday 25 November

Module 4: Agroecology at the core of ecosystem services-ecological and social challenges		
Objectives: - *Highlighting practices, and providing specific examples showing the centrality of ecosystem services, below and above ground biodiversity, for agricultural sustainability and climate change adaptation* - *Highlighting the importance of ecosystem based design and adaptation for farmer resilience to environmental and economic shocks or new trends in relation with climate change* - *Providing example of agro-ecosystem based technologies for food security especially in fragile ecosystems* - *Showing the agroecology's inherent respect for complex, living structures as the center of productivity* - *Recalling the key issue of access to and sustainable use of natural resources such as land, water, seeds, livestock and fisheries*		
Time	**Description**	**Speakers**
8.30-9.00	**Introduction Speeches**	
	Development of Agroecological systems based on biodiversity and ecosystem services	***Alain Peeters*** (RHEA Research Centre/Agroecology Europe, Belgium)
	Access to land and natural resources as a basis for Indigenous Peoples livelihood and well being	***Rodion Sulyandziga*** (Centre for Support of Indigenous Peoples of the North, Russia)
9.00-9.40	**Agroecology in Action**	
	Soil health preservation, soil biodiversity and nutrients cycles	***Roberto Garcia Ruiz*** (Jaen University/Expert Group for Technical Advice on Organic Production (EGTOP), Spain)
	Using ecosystem services framework for climate change adaptation in agriculture	***Melike Kuş*** (The Nature Conservation Centre, Turkey)
	Agroecology in the context of Climate Change and water scarcity in the arid conditions of the Southern Aral Sea region	***Bakhitbay Aybergenov*** (Center for support of farmers and entrepreneurship, Uzbekistan)
	Renewing agricultural biodiversity: A central issue for agroecological transition	***Guy Kastler*** (Réseau Semences Paysannes, France)
09.40-10.45	**Discussion and Synthesis**	
	Discussion and Synthesis	Moderator: ***Tanja Busse***
10.45-11.15	**Coffee Break**	

Module 5: Valuing agroecology and sustainable food systems

Objectives:

- *Addressing the notion of sustainable food systems with reduced dependency on external markets*
- *Providing example of local marketing and trade of and small scale production*
- *Enabling forms of economic exchanges for agroecology, including solidarity economics and plural economies*
- *Providing examples of agroecological initiatives on local or global food systems and provision of food in urban area*
- *Discussing valuation frameworks (organic certification and Participatory Guarantee systems, congruence with agroecological principles)*
- *Discussion of reshaping the markets based on equal distribution of power, decision making and remuneration*

Time	Description	Speakers
11.15-11.45	**Introduction Speeches**	
	Agroecology and organic agriculture: dynamics and interfaces and evolutions in the certification	***Eva Torremocha*** (International Federation of Organic Agriculture Movements (IFOAM)-Oganics International, Spain-France)
	Institutional innovations supporting local markets for sustainable agriculture	***Allison Loconto*** (Food and Agriculture Organisation of the United Nations (FAO)/ Institut National de la Recherche Agronomique (INRA), France/Italy)
11.45-12.15	**Agroecology in Action**	
	Longo mai cooperatives, more than 40 years of experiences	***Heike Schiebeck*** (Longo Mai, Austria)
	Rural entrepreneurship on organic products	***Pavlos Georgiadis*** (Co-founder 'We Deliver Taste' and grower at Calypso Greece)
	Reshaping cooperative markets	***Zsófia Perényi*** (Association of Conscious Consumers (ACC), Hungary)
12.15-13.15	**Discussion and Synthesis**	
	Discussion and Synthesis	Moderator: ***Tanja Busse***
13.15-14.15	**Lunch**	

Module 6: Transformative policies and processes

Objectives:

- *Discussing how to create an enabling environment for agroecology transitions*
- *Presenting examples of existing public policies on agroecology*
- *Discussion methodological and institutional innovations for inclusive citizen participation in policy making for agroecology and sustainable food systems, including ex ante economical, environmental and social assessment*
- *Discussion of the role of ecosystem services in public policy with the focus on enabling policy and institutions related to agro-ecosystems in Central Asia*
- *Discussing how agroecology can support in achieving some of the SDGs*
- *Highlighting the positive and negative effects of public policies on agroecological transitions and propositions action to support countries in their policies*
- *Discussion of the different approaches towards agroecology – scaling up or scaling out Deciding the way to move forward for public policies*

Time	Description	Speakers
14.15-14.45	**Introduction Speeches**	
	Public policies and Food systems: From uniformity to diversity: a paradigm shift to diversified agroecological systems	***Hans Herren*** (International Panel of Experts on Sustainable Food Systems (IPES)/Millenium Institute, Switserland)
	Reflexive governance for environmentally sustainable food security policies	***Jessica Duncan*** (Wageningen University, Canada)
14.45-15.25	**Agroecology in Action**	
	Building the Agroecology Framework and Land rights for Peasants in Eastern Europe and Central Asia	***Ramona Duminiciou*** (European Coordination Via Campesina (ECVC), Romania)
	The French Agroecology Law: elaboration and lessons learned	***Pierre Schwartz*** (French Government, France)
	Transition scenarios to agroecology in Europe	***Xavier Poux*** (AScA/Institut de recherche sur les politiques, l'Institut du développement durable et des relations internationales (IDDRI), France)
	How the European Common Agricultural Policy can accompany an agroecological transition?	***Samuel Feret*** (ARC2020, France)
15.25-16.30	**Discussion and Synthesis**	
	Discussion and Synthesis	Moderator: ***Tanja Busse***
16.30-16.45	**Break**	

Closing session and recommendations	
Time	**Description**
16.45-17.45	**Recommendations**
	Recommendations for Sustainable Agriculture and Food Systems in Europe and Central Asia
17.45-18.00	**Closing remarks**
	Cristina Amaral **FAO Deputy Regional Representative for Europe and Central Asia**
	Representative of the Hungarian Ministry of Agriculture

Map of participants

Bios and abstracts

Module 1: Concepts and challenges of agroecology

Name: Michel Pimbert
Organization: Centre for Agroecology, Water and Resilience, Coventry University, United Kingdom

Michel Pimbert is Professor of Agroecology and Food Politics at Coventry University and the Director of the Centre for Agroecology, Water and Resilience in the UK. An agricultural ecologist by training, he previously worked at the UK-based International Institute for Environment and Development (IIED), the International Crops Research Institute for the Semi Arid Tropics (ICRISAT) in India, the University François Rabelais de Tours in France, and the World Wide Fund for Nature in Switzerland. He has also done policy research for the UN Food and Agriculture Organisation (FAO), the United Nations Research Institute for Social Development (UNRISD), The World Conservation Union (IUCN).

Professor Pimbert has been a Board member of several international organisations working on food sovereignty, sustainable agriculture, environmental conservation, and human rights. His research interests include agroecology and food sovereignty; the political ecology of biodiversity and natural resource management; participatory action research methodologies; and deliberative democratic processes. He is currently a member of the High Level Panel of Experts on Food Security and Nutrition (HLPE) of the Committee on World Food Security (CFS) at the UN Food and Agriculture Organisation.

Abstract: Agroecology as an opportunity to address the challenges of European and Central Asian food and agriculture

Agroecology, which was barely recognized or promoted within official circles only five years ago, has become more centre stage in policy discourses on food and farming. For example, the European Union's Standing Committee on Agricultural Research in its third Foresight Report calls for research to create 'radically new farming systems' that must 'differ in significant respects from current mainstream production systems' (EU SCAR, 2012). High priority should be given to approaches that 'integrate historical knowledge and agroecological principles'. At the heart of agro-ecology is the idea that agro-ecosystems should mimic the biodiversity levels and functioning of natural ecosystems. Such agricultural mimics, like their natural models, can be productive, pest resistant, nutrient conserving, and resilient to climate change.

An emerging consensus defines 'agroecology' as a science as well as a set of practices and a social movement. For policy and practical purposes, a distinction needs to be made between agroecological solutions based on incremental changes *versus* more transformative changes in food and agricultural systems.

The author will briefly presents some critical reflections on how, - and under what conditions -, 'agroecology' can offer opportunities to address the challenges of food and agriculture in Europe and Central Asia. The paper focuses on the potential of agroecological solutions to address the following structural challenges in particular:

i) The erosion of farmers' income and livelihoods, increasing poverty, and rural exodus. The term 'farmer' is used here to include crop growers, livestock farmers, indigenous peoples, pastoralists, fishers, and market gardeners in rural and urban/peri-urban areas.

ii) The need to reduce the carbon and ecological footprints of linear and increasingly globalised agri-food systems to keep within safe planetary limits, enhance the capacity for resilience to change, and meet public health objectives.

iii) Policies and institutional priorities that undermine sustainable food and agriculture, - including inequitable access and control over productive resources (land, seeds….), agricultural subsidies, and priorities for food and agricultural research.

In closing, the author summarises the potential contributions which agroecology can make to achieving several of the Sustainable Development Goals (SDGs) in Europe and Central Asia.

Name: Ram C Sharma
Organization: International Center for Agricultural Research in the Dry Areas (ICARDA), Uzbekistan

Ram Sharma is Principal Scientist and Regional Coordinator for Central Asia and the Caucasus (CAC) at the International Center for Agricultural Research in the Dry Areas (ICARDA) in Tashkent, Uzbekistan. He is also Head of the CGIAR Program Facilitation Unit for the CAC region. Prior to joining ICARDA, he was a Professor of Plant Breeding at the Tribhuvan University in the Institute of Agriculture and Animal Sciences (now University of Agriculture and Forestry) in Nepal. Prof. Sharma also worked as a visiting scientist at the International Rice Research Institute in the Philippines and International Maize and Wheat Improvement Center in Mexico. He obtained his M.S. and Ph.D. degrees in Crop Science from Ohio State University and Oklahoma State University, respectively, in the USA. He has over 30 years of experiences in agricultural research and education covering diverse fields of crop improvement, agronomy, plant pathology, crop physiology, biometrics and biotechnology. He has been working in Central Asia since 2008. He coordinates extensive collaborative work of ICARDA with the national research and academic institutions both in public and private sectors. His research collaborations in the CAC region have identified 12 improved winter wheat varieties that combine high yield, improved quality and tolerance to biotic and abiotic stresses. In particular the new wheat varieties with resistance to stripe rust, a devastating fungal disease threatening food security in the region, eliminate or minimize the application of fungicide, save production coast, and protect environment and human health.

Abstract: Environmental challenges to food security in Central Asia: agroecology as an answer

Water scarcity, irrigation induced salinity, increasing land degradation and climate variability causing extreme events of heat, drought, and frost and pest epidemics pose significant threats in achieving food and nutrition security in Central Asia. Land degradation adversely affects soil fertility and crop yields. It reduces biodiversity resulting in declining crop and livestock productivity, escalates production and rehabilitation costs, reduces farm incomes, livelihoods of the people and ultimately threatens food security. Hence land degradation and climate change perspectives provide a strong case for action to address the key threat to food security in the region. Sustainable management of natural resources through enabling policy are key to address these environmental challenges. Solutions to some of the challenges could be achieved over short period whereas others might need log-term, intra-regional and inter-regional strategy and efforts. Agroecological practices could offer a sustainable solution to a number of these challenges to improve food security in the region. The major interventions using agroecology as a solution include integrated natural resource management using indigenous knowledge and innovations, sustainable intensification of the farming systems, scaling up and scaling out climate relevant agricultural knowledge, and enabling policy.

Name: Jyoti Fernandes
Organization: Agroecological farmer, Nyeleny Europe, European Coordination Via Campesina

Jyoti Fernandes is an agrecological smallholder farmer based in Dorset, UK. She produces, with her family, cows milk, which is made into cheese, pork, lamb, apples, plums, soft fruits, tomatoes, and other vegetables which are all sold through an on farm catering business and at local markets. The farm is part of a local smallholders cooperative that shares collective processing facilities and markets the products of the members' smallholdings collectively. She is the chair of the Landworkers' Alliance in the UK (part of the European Coordination of Via Campesina) and on the coordinating committee for ECVC. Her current work with Landworkers' Alliance is researching a Post-Brexit alternative agricultural subsidy regime for the UK that promotes agroecological farming and localised food systems.Her work with Via Campesina includes being a part of the facilitation committee to enable civil society to engage with the work of FAO and to promote Agroecology Training Networks.

Testimony: Farmers practicing and transitioning to agroecology: motivation, initiative and expectations

Civil Society represents the people who practice agroecology, the people who work embedded in the intricate webs of the ecosystems of our fields, forests, waters and communities to sustain life.

We believe everyone has the right to healthy affordable food produced using agroecological systems and that governments should recognise this right by enabling us- the food providers and consumers- to control the means for us to produce and distribute healthy food. Our Right to Food should not be governed by market economics and governments should never hand primary responsibility for food security to the private sector.

As farmers and fisher folk, producing food is our daily work. We know how agroecological systems work and the best ways to develop the practices to scale our agroecological models of farming out. What is important to recognise is that our role in keeping agroecology alive and developing it has been the pioneering one. We are the ones who should now be entrusted with bringing it forward as the dominant model of agriculture. The green revolution - the high yielding plant varieties developed- had a role in boosting the production of food worldwide. But now the detrimental impacts of that push towards industrialized agriculture are being felt across Europe. There is a lot of food produced as commodities, but much of that food- the produced by the industrial food chain- has cause the depletion of our soils, pollution in our waters and increased in animal production and associated methane emissions to an unsustainable level. We have more "food" now but there are still nearly 800 million hungry people in the world along with 1.9 billion people suffering from obesity. With industrial agriculture we are basically producing far too much arable, for too much meat and too much junk food. Now is the time for agroecology to become the dominant form agriculture for our future food security. In the further scaling out- and note I say scaling out, not scaling up- of agroecology we should be the ones to lead the way with the support of governments and the technical support of the FAO.

We can end hunger and be the backbone of food security in Europe. We can have food security and keep our soils, water and ecosystems healthy. We can protect the rich varieties of local foods so important to our cultural identity. We can make sure people of all income levels can have a diverse and nutritious diet.

I am a farmer and I love good food, but these views and ideas are not just coming from me. Our civil society views come from a huge effort to bring together the voices of citizens interested in democratically-based food systems that provide health and livelihood to small-scale, family farmers, rural communities; as well as environmental benefits. My organisation, La Via Campesina, is a part of the IPC, which is a coalition bringing together farmers, fisherfolk, indigenous people, agricultural workers, consumers and NGO's. The views we represent have been debated and consolidated and refined by our

social movements across Europe and consolidated by the over 500 delegates involved in the Nyeleni process representing the views of thousands of organisation representing millions across Europe. We just held our forum for food sovereignty in Cluj , Romania bringing together delegations who had been selected through national processes to represent the views of civil society in those countries. We came together to develop joint action plans and to speak with a unified voice so that we can make food sovereignty in Europe a reality.

In Cluj we agreed that we supported the Nyeleni Declaration on Agroecology outlining the civil society's view on Agroecology, which was created in February, 2015 by representatives of producers' organizations and social movements who met in Sélingue, Mali. This is our definition of agroecology.

Across Europe grassroots food producers combine the strength of a long history of traditional knowledge with the innovative spirit of new entrants incorporating the traditional knowledge and skills of the world's farming communities with cutting edge producer led ecological, agronomic, economic, and sociological innovations. Innovations that keep the resources we need to produce food in our hands and for the common good.

We are coming up with ways to survive in an unhelpful political context and to keep food production about the values that sustain us as human beings. But the only way forward is to create helpful public policies (including legal and institutional frameworks) to promote Agroecology.

The European CAP subsidy payments now are not directed towards smaller farms and agroecology. The CAP need to be relinked to healthy food production with targeted programmes to support agroecological production and much more work needs to be done to promote short supply chains and localized markets, so we can retain mixed farming systems and our connections to our communities.

Over the coming days many of from civil society us will present our grassroots experiences. Listen to our work, learn from what we are doing, draw on our knowledge and work with us to create better policy initiatives and joint work plans. We can all work together- decision makers, researchers, campaigners, consumers, workers and food producers to protect our right to food for generations to come.

Name: Stephane Bellon
Organization: Institut national de la recherche agronomique (INRA)/Agroecology Europe, France

Stephane Bellon is an agronomist by training, based in Avignon Inra-Paca (Ecodevelopment Unit) and attached to the SAD (Sciences for Action and Development) division, where he contributes to its programme on Agroecology for Action. He was in charge of the Inra programme on Organic Farming research until 2013. He also represents Inra in the Era-Net Core Organic governing board.

He co-authored various books and papers related with the development of organic or integrated productions, and agroecology. He participated in launching the ISSAE (International Summer School in Agrocology) project in 2010, while contributing to "mapping" agroecology at international and national levels. He is also President of the new association Agroecology Europe and associated editor for the journal "Agroecology for Sustainable Food Systems".

Abstract: Agroecological roots and routes

While acknowledging the intercultural origin of agroecology, this presentation focusses on the contributions of pioneer European scholars who contributed to the development of agroecology in the past century. Five of them can be identified as significant contributors: Girolamo Azzi, Basil M. Bensin, Karl H.W. Klages, Juan S. Papadakis, and Wolfgang Tischler. Some of these authors refer to crop and agricultural ecology (Azzi, 1928; Papadakis, 1938), with a global vision of soil and climate conditions likely to affect yields or agricultural production as a whole. This enabled drawing worldwide maps of

soils, climates and and crops distribution. Attention was paid to the adaptation of crops to their environment, e.g. based on "meteorological equivalent" method described by Azzi for wheat. Papadakis (1931) contested this method, arguing that the biological effects of rainfall or temperature patterns can widely differ. He also suggested a biological classification of environmental factors, where the same "biotypes" exhibit similar development patterns. To study such biotypes, comparative trials were made in a wide range of ecological conditions to study the influence of various factors (including cropping methods as an ecological factor) on the relative yields of varieties. Complementary work on experimental stations would enable isolating the influence of specific factors. Bensin (1930) likely made the first use of the term agroecology, as part of a proposal to the then International Institute of Agriculture in Rome (where G. Azzi was also active in the 20's, in the commission of agricultural meteorology and ecology). Reflecting on the role of experimental work, he draw an agroecologically based agenda for agriculture, taking into account the economic factors, and the relation between the plant and its environment, including cultivation. He proposed to designate the local variety types as "chorotypes" (from the greek *chora*= region), and to consider adaptations to environmental changes. He also related agroecology with other sciences and domains. Likewise, connections with geography and integration of social dimensions were also emphasized by Klages (1928). Later on, the German zoologist Tischler (1965) emphasized the biotic dimension that was missing in previous works, and further elaborated the need to understand interactions within an agroecosystem as well as the impact of agricultural management on environmental components. Interestingly all these authors had a high mobility, working in different countries and speaking various languages, also co-citing some of the other authors. Such an academic universe only forms part of the roots of agroecology, whose dynamics is more complex and also framed by social, economic and cultural dimensions. A genealogic approach should also be related with the dynamics of other disciplines, of ecologically-based agricultures and societal expectations. Since such expectations and situations differ among countries, this program should also be implemented at regional level. This is among the opened routes for the new association Agroecology Europe.

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Name: Caterina Batello

Organization: Food and Agriculture Organisation of the United Nations (FAO)

Caterina Batello is Senior Officer and Team leader of the Ecosystem Management team of the FAO's Agricultural Plant Production and Protection Division. She has also worked on agroecology to promote food security, sustainable livelihoods and cropping systems. She is an expert in grassland management and ecosystem services including legume management for soil fertility enhancement, crop-livestock systems management to close soil fertility gap, climate change adaptation of agro-pastoral system including improved land and soil management practices, restoration of degraded vegetation, and silvo-agro-pastoral practices.

Abstract: FAO process on agroecology

Recognizing the role that Agroecology can play in food security and nutrition in the framework of Sustainable Food and Agriculture, FAO organized the International Symposium on Agroecology for Food Security and Nutrition in Rome in September 2014. Following this International symposium, FAO has taken the initiative of convening multi-stakeholder Symposia at the regional level.

- Latin America and the Caribbean Seminar, June 2015 and Brasilia, Brazil; September 2016 Bolivia;
- Asia and the Pacific Seminar, November 2015, Bangkok, Thailand; and Kunming China August 2016;
- Sub-Saharan Africa Seminar, November 2015, Dakar, Senegal.

These regional symposia focused on disseminating the key messages from the global symposium, collection and exchange of science, practices and successful cases of applying agroecology at the local level, and identifying needs for policy, capacity development and enabling environment for the promotion and application of agroecology and provided a set of recommendations.

Following the request of Members, the recommendations of the regional seminars held in 2015 were submitted to the FAO governing bodies. They provided guidance for FAO to continue its work on agroecological transitions at the regional levels and strengthen the normative and science and evidence-based work on agroecology. Following the recommendations from Regional symposia and in the framework of its Strategic Program, FAO is currently implementing field projects and training activities linking agroecological practices and climate change resilience in sub Saharan Africa, building soil health curricula for farmer field schools in South East Asia, supporting national governments in formulating or strengthening public policies in Latin America and China, developing knowledge and sharing information tools and working with organizations and partners for the development of agroecological programs and initiatives.

Recommendations from Europe and Central Asia are highly expected to strengthen FAO work and reinforce collaboration among Regions.

Side event

Name: David Kleijn

Organization: Wageningen University

David Kleijn studied plant breeding at Wageningen University and subsequently did his PhD on the diversity of arable field boundary vegetation at that same University. After a range of postdoc positions in Wageningen, Nijmegen and Fribourg University (CH), he returned to Wageningen to work at Alterra Research Institute. In 2015 he became chair holder of the Plant Ecology and Nature Conservation group at Wageningen University. Most of his research deals with the interplay between farming and biodiversity. Currently, much of his research focuses on the agronomic and economic contribution wild species make to agriculture, focusing on pollinators and natural enemies. He is coordinator of the 7th Framework Programme LIBERATION project.

Abstract: Side event on LIBERATION project

The Liberation project links farmland biodiversity to ecosystem services for effective ecological intensification. Its main goal is to provide the evidence base for using natural species and processes to produce more agricultural products with less inputs. The project is a collaboration between twelve research groups from seven European countries and runs until February 2017 (http://www.fp7liberation.eu/home).

Module 2: Agroecological systems and practices

Name: Alexander Wezel
Organization: Institut supérieur d'agriculture et d'agroalimentaire Rhône-Alpes (ISARA) /Agroecology Europe, France

Alexander Wezel is an agroecologist and landscape ecologist, which dealt in the beginning of his career with various topics related to land use and resource conservation in the Tropics and Subtropics. In the last 10 years his research is focussed on analysing world-wide interpretations and definitions of agroecology and agroecological practices, as well as on different topics dealing with agroecosystems analysis and management. He particularly deals with the issues management of biodiversity, water quality, ecological corridors, and conservation biological control.

Alexander Wezel works since 2006 for ISARA Lyon, France. Before, he was engaged at the Universities of Hohenheim and Greifswald in Germany. He also carried out consultancies and different expertise in Germany, Belgium, The Netherlands, Slovenia and Italy, and for the Food and Agriculture Organisation (FAO) in Rome, Italy.

He is associate editor of one international journal and a book series. In addition, he is reviewer for 20 different scientific journals. Moreover he is the coordinator of an international master course in Agroecology.

Abstract: Agroecological practices supporting provision of goods and services in agriculture

Agricultural production should provide sufficient food for the world's population while being economically beneficial for farmers, environmentally friendly, and socially acceptable. In addition, the basic food commodities should also be available at affordable prices for low-income people without impairing the quality. The foundations of this agriculture are the different practices farmers apply for crop and livestock production. Here agroecological practices play a crucial role as they try to valorise in the best way possible ecological processes and ecosystem services by integrating them as fundamental elements in the development of agricultural practices in different farming systems. Many agroecological practices already exist around the world, and are applied to different degrees in different regions and under various climatic conditions.

This talk will show the large diversity of agroecological practices: A focus will be on agroecological practices for diversification of cropping systems with the aim to enhance ecosystem services and reduce external inputs. The potential use of these agroecological practices for future agriculture will be also evaluated, but also which challenges this might bring to farmers for the adaptation or redesign of their cropping and farming systems.

Name: Eliel Gonzalez Garcia

Organization: Institut national de la recherche agronomique (INRA), France

Eliel González García (PhD., H.D.R.), 47 years old, is a senior researcher at the Institute of National Agronomic Researches (INRA) in France. Nutritionist and specialist in the development and evaluation of sustainable animal production systems, Eliel has a career basically developed in tropics but also in Mediterranean and Temperate conditions. He has a long experience in leading research and development projects funded by several international organisations (e.g., FAO or International Foundation for Science, IFS). Currently he is official reviewer for international recognized journals like the Journal of Animal Science, Journal of Dairy Science, Tropical Animal Health and Production or Animal. During the last years he has been executing research activities in adaptive capacities, in the evaluation of tropical resources for substituting importation of cereals and oleaginous, enhancing fibre digestion efficiency, or studying the relationships between gastrointestinal parasitism, feed intake and nutrient digestibility in ruminants. In 2005, he received an award by the Universitat de Illes Balears (UIB) and Conselleria d'Immigració i Cooperació, Govern de les Illes Balears (Spain), due to his activity in international cooperation for

research and development in agriculture. In 2012 he obtained the Habilitation à Diriger les Recherches (HDR), essential title in the French researcher environment for academic research and higher education staff. Passionate for agroecology, in his 25 years of career Eliel has published more than 50 papers in national and international peer-reviewed journals. Further details about his career and scientific production are available at the following sites: https://www.researchgate.net/profile/Eliel_Gonzalez-Garcia2/contributions orcid.org/0000-0001-9232-1941; ResearcherID: A-2944-2016

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Abstract: Livestock and Agroecology: redesigning animal production systems in the 21st century

In the current complex globalized world, marked by deep economic and financial crises, civil conflicts, massive human movements, negative and unpredicted effects of climate change, extinction of natural species, loss of biodiversity, ecosystems and agricultural lands, and the decline of the "fossil energy era", the human being assist to challenges as never before. In a finite planet, at the same time that we assist to exceptional technological progresses, the polarization of richness and poverty paradoxically continues to rise and the increase of global population is followed by an exponential increase in food demands. The world is more hunger than ever and the planet already said *basta* due to its evident limits in the natural resource base. In this context, we must take party when deciding our best options for the future and, for the agricultural sector development (highly concerned with the global food security goals) there is a large consensus that future trends must seriously consider current worries issues in terms of economic pertinence, environment conservation and societal exigencies. The agroecology provides a pertinent framework for fulfilling those objectives. By taking into account viewpoints coming from the large range of stakeholders implied in the food chain the agroecological thinking consider the human being in the centre of the system and put forward knowledge, traditions and iterative, dynamics feedbacks, rather than relying on dependencies from technological packages and external inputs like in the green revolution era. However, whereas is strongly judged and criticized, the animal sector has been largely ignored in the agroecological debate, despite its strong presence and role in the rural landscapes,. The emphasis has been done in the agricultural sector. Therefore, trying to contribute to fill this gap, a multidisciplinary team at INRA (France) carried out a deep and conscientious work looking for ***i***) defining and establishing the main principles on which animal production systems (APS) would have to focus for achieving the required agroecological transition (Dumont *et al*., 2013) and ***ii***) proposing priority research issues deserving further attention by the animal science community (Dumont *et al*., 2014). That work was based on a) sounds literature reviews for updating the current state of the art and b) fruitful outputs coming from several brainstorming and feedbacks sessions in interaction with the scientific community. Thus, five principles were proposed based on keywords like connecting and integrate, recycle, be autonomous, be clean and protect and defend natural and cultural richness. The 5 principles calls for **1**) adopting an integrated management of animal health; **2**) decreasing external inputs by relying on a better

understanding and valuing of natural processes; **3**) decreasing negative environmental impacts and pollution due to APS activities by optimizing metabolic functioning of farming systems; **4**) enhancing the APS diversity for increasing system resilience; and **5**) preserving biodiversity by adapting adequate farm management practices. Those principles are not restrictive and may be combined in a range of APS situations and species (from monogastrics to ruminants and fish). Furthermore our position is that agroecological approaches must not be divorced from valuing technological advances. Biotechnology and techniques developed with the livestock precision farming approach may and should be considered for increasing efficiency in the processes, for example. For that, in a second step, a research agenda was proposed considering system components (animals, herds, feed resources and housing…). A revisited way for designing future APS using agroecological principles and bases is discussed. Systems must be evaluated in a different way and should imperatively consider the economic, environmental and social issues. Finally, the scaling up of successful farm practices and APS must take into account modern rules and methods, social and ethical issues as well as a more active implication of public actions and decision makings. Among the research issues an emphasis is made in animal adaptation and farming system design research questions. The requirement for another kind of interpretation of the factors affecting and determining a sustainable and productive functioning of APS is largely discussed with the important role of an interdisciplinary research perspective.

***Eliel González-García**, Laurence Fortun-Lamothe, Magali Jouven, Davi Savietto, Marielle Thomas, Jean-Yves Dourmad, Christian Ducrot, Muriel Tichit and Bertrand Dumont*

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(*For a better comprehension and further details, the reader are advised to check the following scientific publications*)

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Name: Mansur Asrorov
Organization: ‘Asrori’ Farm, Tajikistan

Asrorov Mansurkhon is working with his father and he is a young farmer from Tajikistan in Central Asia. He has been working since 2008, 8 years. He graduated from the Polytechnic Institute of Tajik Technical University (PITTU) in economic and management. Today as a master student he is working in the farm and improving his level of degree. In 2015 he published an article in the second International scientific conference in Khujand, Tajikistan. It was about premises of Food cluster organization.

Testimony from a food producer from Tajikistan

Nowadays Tajikistan is agro-industrial country. After becoming independent for the fully functioning all structure was spend a lot of efforts. In 1998 was a few producers in the food sector. Most of the products were imported from different countries in our shops. In course of time by government supports and making conditions for small and medium businesses and establish an investment climate was opened many factories based on different types of ownership. Now Tajikistan has free economic zones (FEZ), which provide benefits for entrepreneurs to develop food produce and other sectors and become a competitive in market.

Tajikistan occupies an area of over 143.1 square kilometers. 93 percent of it are mountains. Agro-sector in Tajikistan grows day by day and high number of the population are employed in this sector. Most of fruits and vegetables grow in Tajikistan so some of them have even exported. Tajikistan is in the list of leaders on the fruit processing and export. Also, good quality of cotton grows in this country and their customers are processing factories Niku Khujand - textile mill and Carrera Jeans – Italian factory (Short video).

The food industry not standing still also. This industry consist of small and medium factories, which works with foreign equipment and produce dairy, meat and non-alcoholic products by using domestic raw materials. The products of these companies focused on the domestic market and has certificate of quality.

Asrorov Manon – Today Director of "Asrori" Farm, began mushroom production in 1983 (photo from archive). As a medical student, he used the only resource at his disposal – a dark, moist basement and researched mushroom production, built his own equipment and began producing and selling mushrooms. When the war broke out in Tajikistan in 1992, he was forced to leave his growing business and move to Leninabad, where he was unable to restart due to financial losses he had stuffered. In 1996 with TACIS experts working in Tajikistan to improve the fruit and vegetable sector. TACIS project gave finance aid to start in Leninabad mushroom farming.

In 1998 Asrorov Manon – my father registered "Asrori Farm" and the main focus was mushroom farming (Agaricus bisporus). After that we got credit to develop the farm and installation of equipment, imported from Russia and Northern Ireland by TACIS project and procurement of materials associated with the start of growing of mushrooms. On the industrial level of farming came in 2003 use of local materials except spawn. Farm provided two kinds of mushrooms to our market, fresh and canned mushrooms had government certificate of quality (photo from archive). To be well produce farm we consulted with experts of mushroom farming from USA and EU by the program Farmer to Farmer. We were getting from one ton compost 230-250 kg fresh mushroom that made us happy. Consultations improved our knowledge and gave experience. Our customers were supermarkets, restaurants and cafés of Sogd region and our capital-Dushanbe also.

At the end of 2014, to assess the results of the head of farm, was decided to temporarily stop production of mushrooms due to the fact that the price of raw materials for the growing became high. Than we started learning implementation of hydroponic method of growing vegetables and flowers. We refocused the farm to study and research of the hydroponic method of growing vegetables and flowers. Research carried out during the year, and it has shown that it is capital-intensive, suited to the climatic conditions of Tajikistan and effective method. I had experiment at home condition, which gave positive results and a lot of practice knowledge. For the formation of capital-money, we have decided the following strategy - to make foliar and root fertilizer, which is used in hydroponics growing method and sell them to farmers. Until the first half 2016 we were giving for demonstration to farmers our product in order that they get effect from it. After getting a good results they started using our products because of it minimize their expenses for growing agricultural crops and it keeps land soft, not polluted. Recently, our farm started to cooperate with banks to provide to farmers with available targeted loans with a good condition for the purchase of our product.

Today farm has a lot of experience, knowledge on mushroom farming (Agaricus bisporus) and some practices of growing agricultural crops in hydroponics system.

This all we couldn't achieve without government support and law conditions which provide sustainable development of the agricultural sector.

Name: Lusine Nalbandayn
Organization: Armenian Women for Health and Healthy Environment, Armenia

Lusine Nalbandyan- is an agro-ecologist. Since 2006 till now is working for "Armenian Women for Health and Health Environment" /AWHHE/ NGO as an agro-ecologist. She is coordinating multidirectional projects aimed at rural development, nature protection, biodiversity conservation, sustainable, organic agriculture, organic fertilizer (bio humus) production, rural community development, agro-eco-truism, pesticides and Persistent Organic Pollutants (POPs) risk reduction. She is a board member and one of the founders of "Rural Sustainable Development" Agricultural Foundation and board member of "Pesticide Action Network Europe"/PAN EUROPE/. In 2011 she has established "ORWACO" which is an Armenia- Norwegian joint venture. She is a managing director at ORWACO CJSC, which is producing organically certified organic fertilizers. She is engaged in production of different agricultural crops and herbs as a consultant for private sector. Lusine graduate Armenian Agricultural Academy with a BSc in Agro-ecology and MSc in Agro-ecology in Armenian State Agrarian University. She is currently a PhD candidate on Agro-ecology /finishing stage/.

Abstract: Agroecological initiatives in Armenia

The intensification of agriculture, especially the use of high amounts of mineral fertilizers and pesticides, the disregard of environmental laws and other unsustainable economic activities almost in all regions of Armenia have resulted in the increase of environmental strain, risk areas and ecological emergency situations.

The current ecological situation in Armenia demands creation of ecologically sustainable agroecosystems with high productivity capacities and abilities to improve the environment.

In recent years there has been a multiplication of agroecological initiatives and approaches in Armenia, in particular the number and diversity of organic producers has increased. Organic agriculture is considered to be a sustainable approach for agroecological practices. Agriculture is a major source for employment in Armenia and contributes to almost 20% of its GDP. The country has high potential for organic agricultural production, which is believed to contribute significantly to improve rural livelihoods in a sustainable manner in the future. "Organic agriculture development is a priority defined in the Sustainable Agriculture Development Strategy of the Ministry of Agriculture of the Republic of Armenia. Organic farming is considered an excellent business opportunity for farmers and investors involved in agriculture and food production. An organic law has been in force since 2009. The basis for the law is the Codex Alimentarius organic guidelines and the EU organic regulation. The scope of the law is broad and therefore requires further by-laws. However, stakeholders agreed that national legislation should be revised according to international developments and have requested that a National Organic Agriculture Plan be prepared.

As an example of agroecological approaches, 3 initiatives are described below.

The first initiative is the promotion of sustainable agriculture with agroecological approaches by the "Armenian Women for Health and Healthy Environment" (AWHHE) NGO. For more than 10 years NGO has been actively promoting non chemical agriculture in different regions of Armenia with huge raising awareness campaigns and practical implementation on the fields of "Alternatives to Pesticides" and organic fertilization. More than 5000 farmers were trained and more than 100 experimental fields and orchards were established which are now practicing agroecological farming methods and approaches.

The other initiative is the "ORWACO" CJSC which is a "Green Field Company". ORWACO was established in 2011. It is an Armenian - Norwegian joint venture which is dealing with conversion of industrial organic waste into useful and environmentally friendly products such as organic fertilizers, soil additives, etc.

The goal of the company is to close the environmental loop and promote non waste production, where the waste products from one production are a raw material for the other production. In a short period of time ORWACO CJSC has become the leading industrial producer of vermicompost /biohumus/ and 3 other organic fertilizers in Armenia. Now all "ORWACO" products are organically certified and allowed to be used in organic farming. This fact provides an extra opportunity for development of organic farming in Armenia.

There is another nice initiative which is called "NAIRIAN". "NAIRIAN" addresses rapidly growing demand in high quality natural/organic beauty products and authentic essential oils by utilizing Armenia's unique natural resources. The company was founded in 2011 and over four years of R&D have passed prior to launch. The Nairian brand for public consumption was launched in October 2015.

Over 60 products to care for skin, hair, personal hygiene, etc were developed. "NAIRIAN" is rapidly becoming the keystone brand for premium natural cosmetics in Armenia. They make the bulk of their product ingredients themselves from plant materials, cultivated or wild-harvested locally in the Armenian highlands.

These companies are promoting nature preservation by pursuing sustainable agriculture practices, while working towards bringing the companies' environmental impacts and carbon footprints to an absolute minimum.

Module 3: Research, innovation and knowledge sharing for agroecological transition

Name: Jean-François Soussana
Organization: Institut national de la recherche agronomique (INRA), France

Since 2010, Dr. Jean-Francois Soussana is Scientific Director for environment at INRA, Paris, France. He obtained his PhD in plant physiology at USTL Montpellier in 1986 after an engineer degree in agronomy. After becoming a senior scientist he led a research lab on grassland ecosystems and global change. Since 1998, Dr. Soussana is member of the Working Group II of IPCC and was Lead Author for the 3rd, 4th and 5th Assessment Reports and shared with all IPCC authors the Nobel Prize for Peace in 2007. He contributes to scientific expertise for FAO (e.g. State of Food and Agriculture, 2016). He has coordinated national and European (EC FP5 and FP7) research projects on climate change and agriculture. He co-chairs the Integrative Research Group of the Global Research Alliance on agricultural greenhouse gases (46 countries) and the Steering Council of AgMIP, an international modeling program on climate change impacts on agriculture. Dr. Soussana has led the sectorial committee on ecosystems and sustainable development of the French research agency (ANR) and the scientific advisory board of the joint programing of research by 21 European countries on agriculture, food security and climate change (FACCE JPI). He coordinates the research strategy of INRA on agroecology. He is also a member of the Scientific and Technical Committee of the Lima-Paris initiative "4 per 1000. Soils for Food Security and Climate" which has been signed during the climate negotiations of COP21. Dr. Soussana has published close to 150 refereed research papers in international journals, cited 7,000 times, as well as two books and a dozen of book chapters. He has developed novel experimental and mathematical modelling approaches to the impacts of global change on agriculture, soils, biodiversity, carbon and nitrogen cycles and greenhouse gas emissions.

Abstract: Concepts of innovations, role of agronomic and socio-economic research and learning processes in agroecological transition

To ensure global food and nutritional security, several targets should be reached simultaneously: sustainably increasing production without expanding agricultural land, increasing resilience to climatic hazards while reducing GHG emissions intensity, providing nutritious food and enhancing a stable access to food for all. Moreover, this will need to be achieved in the face of increased demands from other sectors for land, bioenergy and water. In this context, two paradigms are confronted. Sustainable intensification (SI) has been defined as the process of delivering more safe nutritious food per unit of input resource, whilst allowing the current generation to meet its needs without compromising the ability of future generations to meet their own needs. 'Producing more with less' or eco-efficiency, that is the maximization of agricultural products per unit of inputs or natural resources, is usually obtained in highly specialized production systems through a gradual substitution of inputs by knowledge (e.g. precision farming). Agroecology is an alternative paradigm which is based on increased use of biodiversity, of integrated production systems and of diversified landscapes. It is also close to the 'Save and Grow' paradigm (FAO, 2011) which addresses the crop production dimension of sustainable food management through an ecosystem approach that draws on nature's contributions to crop growth, such as soil organic matter, water flow regulation, pollination and bio-control of insect pests and diseases. In Europe, there are multiple options that may considerably vary among agro-ecological zones and according to the social, economic and human dimensions of farming systems. Such options include: i) the intensification of extensive systems by raising production outputs through an increased use of biodiversity, landscape management (including agroforestry) and recoupling of nutrients and carbon cycles, ii) transitions to organic production systems and iii) transformation of intensive systems by encouraging farmers to reduce fertilizers and pesticides use, especially through the diversification of cropping systems and through crop-

livestock integration. Transitions towards agroecology in Europe require an open innovation strategy that takes advantage of the knowledge developed by farmers and integrates their advances within multi-disciplinary and participatory approach that reconnect agricultural sciences, ecology and social sciences.

Name: Karlheinz Knickel
Organization: Universidade de Evora / Instituto de Ciências Agrárias e Ambientais Mediterrânicas (ICAAM), Germany / Portugal

Karlheinz Knickel is an Independent Analyst and Consultant, as well as Research Coordinator at Instituto de Ciencias Agrarias e Ambientais Mediterranicas (ICAAM) at Universidade de Évora, Portugal, Visiting Research Professor at the Centre for Rural Research (CRR) Trondheim, Norway, and Research Associate at the Institute for Rural Development Research (IfLS) Frankfurt/M, Germany.

Karlheinz has an agricultural, environmental and economics background and more than twenty-five years of experience in the area of sustainable development of agriculture and rural areas. His experience comprises applied research, policy analysis and evaluation for the Food and Agriculture Organization (FAO), the European Commission and government agencies. The projects he is involved in tend to be transdisciplinary, international, comparative and policy-oriented. From 2008 to 2011, he was Senior Economist in the New Zealand Ministry for the Environment.

Karlheinz has a particular interest in the establishment of effective research-policy-practice linkages in his work and the translation of scientific concepts into practical solutions. He coordinated the FP7 project 'INSIGHT – Strengthening innovation processes for growth and development in agriculture and rural areas', the ERA-Net project 'RETHINK - Rethinking the links between farm modernisation, rural development and resilience in a world of increasing demands and finite resources', is a co-author of the European Parliament study 'Sustainable competitiveness and innovation in EU agriculture' and currently is the scientific coordinator of the Horizon 2020 project 'SALSA – Small farms, small food businesses and sustainable food and nutrition security', http://www.salsa.uevora.pt/en/.

Abstract: Beyond productivity: multiple criteria for assessing the performance of agricultural systems

In the face of the environmental impact of intensive agricultural systems, climate change and societal demands for the provision of rural amenities (or public goods), it is becoming increasingly clear that a systemic change in agricultural and food systems is needed. Intensive agricultural production systems are not resilient as they depend excessively on external inputs (energy, nutrients, finance, etc.) and have a low buffer capacity. Highly specialised farming and production systems tend to be for the same reasons – that is due to their dependence on external production inputs and a most often high level of capital investment and debt – often heavily affected by changes in market prices. The farm financial crises in countries like Denmark, thought to have a strong and competitive agricultural industry, provide a vivid illustration of this point. Very clearly, the (farm) performance parameters and measures of success advocated in the past have lost much of their credentials. The good thing is that the orientations and decision-making of smarter farmers always tended to go beyond common micro-economic parameters anyway. Indicative of the fact that a reorientation is taking place is the ongoing work of the European Commission's EIP-Agri Focus Group on 'Benchmarking of Farm Productivity and Sustainability Performance'.

In my presentation, I will argue that there is much to be learned from farmers' strategies and decision-making: Smart farmers have a particular interest in efficiently using the resources available to them and they tend to combine their own location-specific experiential knowledge with other forms of knowledge and information. The diversity of farm development trajectories that can be observed in practice should

therefore be recognized as an asset and a source of inspiration – all of these strategies make sense in one way or another.

Central to my presentation is a brief discussion of some key issues with respect to performance parameters. I will distinguish between conventional economic criteria, (new) measures of resource use efficiency and socio-economic benchmarks. Based on this, I argue that perspective matters more than anything else when elaborating more meaningful performance measures. The important societal question of social, economic and territorial cohesion illustrates this point very nicely. An example is the concentration of production in some 'successful' regions or on some farms which is directly linked to the marginalisation of other regions and farms.

Probably the most critical dimension in terms of different perspectives is the time dimension, with shorter term business goals and longer-term economic sustainability outlooks often having very different implications. But also related to the spatial dimension, it matters tremendously whether focus is on field, farm or community, landscape or watershed level. The concentration of intensive indoor livestock farms in a water catchment, for example, can lead to massive pollution problems even if each individual farm is meeting legally binding good practice standards. However, the most problematic inconsistency today is the one between an individual business perspective and the social or societal dimension. More and more we must recognise that the sum of businesses maximising their individual benefits does not at all guarantee progress and well-being for rural communities or in a societal or whole economy perspective.

I conclude that we need much more work on these different perspectives and how they can be reconciled before we can arrive at a meaningful new set of performance parameters. More integrative, systems-based, multi-perspectival, participatory and reflexive forms of performance assessment need to be elaborated and practice-tested. The most obvious starting point for agricultural (knowledge) institutions and each individual researcher is to recognise the intrinsic value of farmer's strategies and decision-making – also as a source of inspiration. Farmer's particular interest in efficiently using the resources available to them, and their location-specific experiential knowledge are of particular value in today's increasingly resource-constrained and uncertain world. In particular in central and eastern European countries, it is also important not to overlook the enormous number of smaller farms with their very distinct socio-economic realities, strategies and needs.

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Name: Drexler Dóra

Organization: Hungarian Research Institute of Organic Agriculture, Hungary

Dr. Drexler Dóra graduated from Budapest Corvinus University in 2004 with a degree in landscape architecture. She then completed her doctorate in the Department of Landscape Ecology from Munich Technical University. 2010-2011 she worked at the Swiss Research Institute of Organic Agriculture (FiBL). In 2011 she took part in the founding of ÖMKi, Hungarian Research Institute of Organic Agriculture, of which she became the director in June 2011. She works together with her 10 colleagues on research and development of sustainable agriculture in Hungary. She is the vice-president of the IFOAM Technology and Innovation Platform (TIPI), and a member of the IFOAM Innovation Committee. She is also a member of the Rural Development Program monitoring commission and the Hungarian National Rural Network Consultancy. In 2015 she was awarded the Sárközy Péter Memorial prize.

Abstract: Participatory on-farm organic research network

ÖMKi launched its participatory on-farm research program in 2012. Through our on-farm research, we are establishing a network of organic farms carrying out agricultural experiments in Hungary. These experiments are performed in lifelike conditions on actual working farms in conjunction with the farmers' defined production goals. We work together with the farmers to decide on the subject of the experiments. In the execution of the experiments there are no – as there cannot be – strictly controlled environmental conditions. We are instead testing in the dynamic, everyday farming conditions how the given varieties, cultivation technologies or seed mixtures perform under organic circumstances. In this way the participating farmers receive direct feedback about their own growing area and cultivation techniques. At the same time, as we have a number of participating farms in each experimental area the results give a

holistic picture of the tested organic growing practices, and we can identify the most suitable solutions in different agro-ecological scenarios.

Cooperation is at the heart of our on-farm research: selecting, implementing, evaluating and discussing the results of the experiments creates strong bonds between the farmers, with their multiple decades of experience, and the program's participating experts, researchers, and breeders. The seasonal meetings, outdoor events, tastings and success-measuring workshops within the agricultural spheres also provide community building opportunities. Dialogues carried out between the participants makes expert information more accessible, and synergy results from mutually shared experiences and know-how transfer, as every participant can learn to do things that would otherwise be impossible or very difficult without the others.

Organic on-farm research is carried out on more than 120 farms annually under ÖMKi coordination. The on-farm network extends across organic arable cropping, to horticulture, viticulture, and apiaries. The on-farm network perfectly complies with the principles of the EU multi-actor approach. Our networks could join the H2020 research programs, for example to the DIVERSIFOOD project promoting diversity in agriculture, and also to the EIP AGRI OK-Net Arable thematic network collecting best practices for organic arable crop production.

Name: Attila Kristó

Organization: Centre for Plant Diversity

Attila Kristó is an agricultural engineer. Presently he works as Head of the Horticultural Department of Centre for Plant Diversity, Hungary, Tápiószele. Dealing with medium- and long-term conservation of plant landraces and ecotypes. He also involved in working group activities of European Cooperative Programme for Plant Genetic Resources (ECPGR).

Abstract: Participatory breeding programme and Gene bank activities to support agroecology

The sustainable agroecology is unthinkable without to preserve the agrobiodiversity of the cultivated flora. For that reason plant genebanks were established all over the world in previous years, one of them is the Centre for Plant Diversity (CPD) at Tápiószele, Hungary. The institute works in close collaboration with farmers through participatory breeding programs.

The most important obligation of the CPD is the implementation of national genebank tasks for field crops and vegetables. In respect to this the Institute accomplishes a fully comprehensive genebank activity, since its tasks cover the development of the national genebank collections, and the characterisation and evaluation of their accessions. Its activities cover the medium- and long-term conservation of seed samples in cold storage rooms and by using meristem cultures in the case of vegetatively propagated crops. Also the multiplication and regeneration of accessions in order to at obtain sufficient quantities of high quality seeds for medium- and long-term conservation, evaluation and distribution. Isoclimatic regeneration of Hungarian landraces, ecotypes and populations on their places of origin (in situ, on-farm and home garden multiplication), characterization and evaluation of plant genetic resource (PGR) collections according to internationally accepted descriptor lists. Documentation of passport and evaluation data for the PGR collections. Also the distribution of seed samples to users together with relevant information. Nationwide responsibility for the technical coordination of Hungarian PGR activities and participation in the ECP/GR and other international and national programmes.

Name: Anna Augustyn

Organization: Groupe de Bruges, Poland

Since 2015 Anna Maria Augustyn has been co-chairing Groupe de Bruges, an international think-tank dedicated to researching and advocating agroecological practices. She has an academic background in applied social sciences, systems thinking and multidimensional research methods. As a researcher and consultant, for over 10 years she has been working at the local, domestic and international levels, e.g. with the LEADER Local Action Groups, bridging the gaps between agricultural researchers and practitioners, and building capacities of rural networks (European Network for Rural Development). She is also an experienced advisor and evaluator with the European Commission, collaborates with the Future Earth researchers network, and regularly contributes to various strategic agendas such as the UN SDGs. Currently, her main focus is on impact evaluation of the EU-funded agricultural research, human dimensions of natural resources management, and sustainability decision support systems. She is a co-editor of the forthcoming book 'Agroecological Transitions: Changes and Breakthroughs in the Making' (Wageningen University), which looks at the agroecology from the systems thinking perspective.

Abstract: Evaluating Participatory Research for Sustainable Agriculture

With a growing pressure on sustainability, agricultural research has turned to searching for adequate methodologies in responding to the major environmental, social and economic challenges. In these undertakings, researchers, farmers, rural communities and other actors have been increasingly seeking collaboration towards designing and testing innovative solutions to improve sustainability of agrarian systems.

The initiatives, typically using participatory, action and learning oriented methodologies are manifested in various ways. These can be for instance bottom-up actions oriented on sustainability and agro-ecological transitions, where the intention of researchers is typically to help vulnerable communities to increase their adaptive capacities and resilience. Another example, are research projects and networks established in more formal settings such as the EU Horizon 2020 programme. The latter has particularly made use of the s.c. multi-actor approach, which means bringing together diverse actors to foster innovation for sustainable agriculture.

The participatory, networked and interactive character of such projects offers also an alternative perspective vis a vis established scientific regimes. With a stronger emphasis on social innovation, knowledge flow and interactions between people or organisations, its key outputs are often different from those that are typically accounted for in evaluation of scientific performance (e.g. those based on the journal impact factor or patents). As the long-lasting impacts of the research in such a form may require considerable time to be observed, the promises of these participatory approaches are still to be met. This presentation will try to make an attempt to capture emerging ideas on how to evaluate them.

Name: Rupert Dunn and Colin Anderson

Organization: Farmer, United Kingdom and Coventry University, United Kingdom

Rupert lives in West Wales and is the founder of Torth y Tir, which means 'loaf of the Land'. We are creating a community-supported, peasant bakery, based on the 'boulangere paysanne' model in France. We are growing heritage wheat using agroecological methods, and plan to create a wood-fired bakery to make hand-made, sourdough bread. We also make pizzas locally and run educational courses teaching the principles of agroecology through the field to loaf journey. www.torthytir.co.uk . He is also a member of the Agroecology Learning and Training Network and has previously worked with the Federation of City Farms & Community Gardens, supporting

community growing enterprises as well as being a founder member of the UK CSA network & the EU CSA Network.

Colin Anderson is a researcher at the Centre for Agroecology, Water and Resilience at Coventry University and co-leads the working group "People's Knowledge" (www.peoplesknowledge.org) which focuses on supporting transdisciplinary and participatory approaches to research, learning and action. His research focuses on strengthening networks for agroecology, food sovereignty and social justice; working to co-produce knowledge on adult learning, horizontal approaches to innovation, participatory democracy and knowledge mobilization. Most of this work involves close partnership with farmers, citizens and civil society organizations as co-enquirers including his ongoing contribution as a co-convener of the Agroecology Learning and Training Network.

Abstract: Building Horizontal Networks for Agroecology Learning and Training in Europe

Learning, education and knowledge sharing are central process that can support the expansion of the practical and political aspects of agroecology, the autonomy of food producers and the pursuit of a more just and sustainable food system in Europe. The European Agroecology Learning and Training Network (EALTN) is taking forward the Declaration of the International Forum on Agroecology, written in Nyeleni, Mali in February 2015, which states:

'Our diverse forms of smallholder food production based on agroecology generate local knowledge, promote social justice, nurture identity and culture and strengthen the economic viability of rural areas. As smallholders we defend our dignity when we choose to produce in an agroecological way'

The EALTN is in an early stage of development and is focusing on supporting local, regional, national and European networks for training and learning. This presentation will share the early outcomes of the network from interviews with over 20 learning initiatives from across Europe and from a meeting of over 150 food producers at the European Forum for Food Sovereignty in Cluj Napoca, Romania from 26-30th October.

The EALTN has recently established a steering group and a number of thematic working groups including:

- Appropriate technologies and techniques
- Political training
- Research
- Pedagogies (methodologies and theories for learning)
- Community Supported Agriculture
- Agroecology Schools
- Seeds
- Global network

The establishment of EALTN is a significant step forward in consolidating, amplifying and scaling up agroecology in Europe by focusing on farmer-to-farmer exchange, horizontal learning and bottom up forms innovation. EATLN further focuses on bringing farmers into a dialogue of knowledges with others including for example: researchers, urban people, engineers, software developers and policy-makers. Indeed, those active in the steering group and thematic working groups include people from a broad geographical, demographic and skills base, including food producers, institutions, NGO's and anyone who is part of the movement for food sovereignty.

It is essential that institutions and policies for agroecology in Europe work to enable these bottom-up networks – the emergence of this network provides a vehicle through which to channel resources to support work all over Europe. It is this bottom-up approach that will allow institutions to support the vision of agroecology developed through the practices and knowledge of food producers and their organisations and ensure a more just and sustainable food system in Europe. The EALTN is now looking

at funding opportunities to develop the network's capacity, strategy and development of horizontal, grassroots learning & training. The interim secretariat of the network is the European Coordination of La Via Campesina supported by the Centre for Agroecology, Water & Resilience (CAWR) at Coventry University.

Module 4: Agroecology at the core of ecosystem services- ecological and social challenges

Name: Alain Peeters
Organization: RHEA Research Centre/Agroecology Europe, Belgium

Alain Peeters is an agronomist and an agro-ecologist (Master (1979) and PhD (1989) in Agricultural Engineering) trained at the University of Louvain (UCL, Belgium). He has an extensive theoretical and ground knowledge in general agronomy and ecology in temperate and tropical areas. He has 35 years of experience in agricultural and environmental research as well as environmental protection and management.

After the beginning of his career of agronomist in Africa for the European Commission, he became Professor at the University of Louvain (1990-2007) where he was Head of the Grassland and Arable Crop Ecology Department. He wrote several books of international significance. He is the author of many 'invited papers' at European and international scientific meetings as well as about 450 papers published in scientific journals.

He is Director of the RHEA Research Centre. He is Secretary of 'Agroecology Europe', the European association on Agroecology, Coordinator of the FAO/CIHEAM network on pasture and fodder crops in Europe, North Africa and the Middle East. He is Representative of West Europe and member of the Steering Committee of the European Grassland Federation (EGF). He was representative of West Europe in the World Association of Grassland scientists (IGC) (1997-2005).

Abstract: Development of agroecological systems based on biodiversity and ecosystem services

This talk is based on an action research programme that aims at developing in a holistic way agroecological systems in commercial farms in North-West Europe (Belgium and France). The strategies and techniques described in the talk are thus implemented in real conditions.

The ecological strategy of these agroecological systems consists in replacing fossil fuels by ecosystem services provided by biodiversity. Inputs that require large amounts of fossil fuel for their production such as inorganic nitrogen fertilizers, pesticides, and imported animal feed are totally replaced and machine fuels partly. This is achieved by investing in biodiversity at all levels from soil to landscape and even in production types and people involved in large and micro-farms and working together in a collaborative way. The system relies on local resources, for instance on the endogenous soil fertility, and not on massive use of commercial inputs. The system is intensive but not in input use; it is intensive in observations, thinking and knowledge.

Soil fertility

Soil biodiversity is first enhanced by stopping soil life destruction by inversion tillage and power harrows. Then soil life is fed by temporary grasslands, biomax (complex mixture of soil cover used as intercrop), permanent soil cover, crop residues and FYM. This induces a fast development of soil micro-organisms and earthworm populations. Diversification and enhancement of soil micro-organisms populations contribute to improve soil structure and to form a fertile and disease suppressive soil. Legume-based

temporary grasslands and biomax increase carbon storage in soils and fix nitrogen that is partly available for the other crops.

Pest and disease control

During the transition phase towards agroecological system, the ecological network is developed or reinforced by dividing existing plots into narrower plots split by thin herbaceous strips. These strips are designed for increasing populations of natural enemies of crop pests. There are three types of herbaceous strips, each type is designed for one or several natural enemy. Plots of the same crop are as distant as possible from each other. This fragmentation of the agricultural area increases biodiversity at landscape scale and reduces pest and disease damages. The ecological network is completed by species-rich hedges, isolated trees, small woodlands, ponds, etc. Disease and pest occurrence is also reduced by the choice of resistant species and cultivars, long and diverse crop rotations, and measures for creating a disease suppressive soil.

Weed control

Weeds are controlled by a combination of means among which temporary grasslands and biomax are the most important. Some crops are directly sown in biomax mulch that prevents weed establishment. Weed control is completed by superficial soil works when necessary. Aggressive cultivars and crop species are also preferred.

Nitrogen availabilty

Nitrogen is provided by a large and systematic use of annual and perennial legumes. Legume-based temporary grasslands, legume-based intercrops, and pulses are spread in the crop rotation in such a way that a non-legume crop follows a legume-based crop. The necessary use of temporary grasslands and their associated forage productions makes the presence of livestock almost indispensable in the system. This again increases biodiversity.

Fuel consumption

Fuel consumption by agricultural machines is significantly decreased by the reduction of soil work, including by the abandonment of inversion tillage that requires a lot of energy.

Climate change

Compared to conventional systems, the ecological strategy of agroecological systems makes the system more resilient to climate change and mitigates climate change by reducing GHG emissions and by storing carbon in soils and vegetation.

This ecological strategy cannot be isolated from the economic and social strategies. The economic strategy consists in reducing as much as possible investments and variable costs and in increasing selling prices by targeting high quality products sold in short and local marketing chains, by product processing whenever possible, and by a smart diversification of activities. The system does not look for maximum yields but for good income. Compared to conventional systems, this induces similar or higher income, and makes the system more resilient to price volatility on the world market. It produces also higher farmers' and farmer family welfare.

The social strategy consists in recreating jobs in the agricultural sector by providing opportunities to young farmers to establish within large farms on micro-farms for the development of labour-intensive

productions that are highly profitable on a surface basis. These micro-farms and the large farms are part of a collaborative and circular economy where partners adopt a proactive cooperation approach for diverse activities including product marketing. This collaboration takes place in a win-win partnership. In large farms, workload associated to cropping activities is reduced compared to conventional systems. Short marketing chains, for instance by selling products in the farm itself, creates the conditions for a re-connexion of citizens, adults and children, to producers, nature and the 'nourishing soil'.

The efficiency of these three strategies is assessed by the follow-up of indicators recorded in scientific studies. Ecosystem services provided by biodiversity are sufficiently efficient for inducing for instance an income of about 1,500 euros per ha which is higher than the average income of arable farms in the same regions. Finally, a training programme is implemented for the dissemination of the system.

Name: Rodion Sulyandziga

Organization: Centre for Support of Indigenous Peoples of the North, Russia

Rodion Sulyandziga is an Udege ("Forest People"), one of the small-numbered indigenous peoples from the Far East of the Russian Federation. Their total population is 1587.
Since 2001 Rodion is a Director of the Center for support of indigenous peoples of the North\Russian Indigenous Training Center (CSIPN/RITC) with Consultative status of ECOSOC.
2003-2013 Rodion was a Board member of the Arctic Council Indigenous Peoples' Secretariat (IPS) based in Denmark. 2011-2013 he was acting Chair of IPS Board.

Rodion has Ph.D. (Institute of Sociology of the Russian Academy of Science, Moscow, 2005). Since 2013 he is actively involved into FAO activity regarding the food security of indigenous peoples and access to land and natural resources based on international law and FPIC principle.

Abstract: Indigenous people and the right to land

These two interrelated problems have a long history in Russia with frequently changing nature of relations between the state and the Aborigines as well as their inhabited land. Over the past 300 years the state policies in relation to indigenous people, have experienced several ideological fluctuations - from the policy of non-interference and the preservation of the traditional Aboriginal way of life to the attempts of a full integration and modernization of their lifestyle.

The most significant change made to the traditional way of life and the system of traditional environmental management was inflicted in the sixties, when the government pursued a policy of resettlement of residents of small settlements to large ones. These forced relocations began to destroy the historically shaped and ecologically balanced settlement structure and indigenous peoples' environmental management systems. These relocations brought about changes in other aspects, such as life in large settlements as national minorities, mass separation of children from their parents to be placed in boarding schools and reduction of economic land and opportunities to engage in traditional activities, which have resulted in the spiritual and economic crisis of indigenous people. Since the seventies, the relocation caused mass unemployment, alcoholism, family break ups and destruction of traditional culture. These events first led to the decrease in population growth, and then reduction of the indigenous population.

It happened to be that the key natural resources are in the territories of residence and economic activity of the indigenous people of the North, Siberia and Far East Russia. This means that in the coming decades, even centuries, our country's economy will grow at the expense of industrial development of mineral resources on the lands of our countrymen. This will lead to an inevitable clash of two civilizations, different mentalities, often incompatible views in relation to the outside world. On the one hand, the

traditional rules and regulations formed and established for thousands of years, with its economic activities, and on the other hand, the technological impact on the lands of the first people occupying these territories. It is impossible to solve this problem without the right of these people to participate in matters affecting the right of our people to land and natural resources.

Name: Roberto Garcia-Ruiz

Organization: University of Jaén, Spain

Dr. Roberto Garcia-Ruiz is a full professor and researcher at the Ecology Section of the Experimental Faculty of the University of Jaén (Spain). He teaches various subjects related to ecology at the Environmental Science degree and also in some masters related to organic farming and sustainable agroecosystems. His research focuses on the effects of the various and diverse human activities on the biogeochemical cycles of carbon, nitrogen and phosphorus in terrestrial and aquatic ecosystems. Currently main focus are on the role of specific management practices on soil ecology and soil biogeochemical functioning of agroecosytems in general, and on organic production in particular. His current projects deal with the assessment of environmentally-friendly management practices on nutrient cycling and soil organic carbon sequestration. He also is a permanent member of the EGTOP group.

Abstract: Soil health preservation, soil biodiversity and nutrients cycles

Soil health is essential to provide a continued capacity of soil to function as a vital living ecosystem that sustains plants production. Feedback processes among soil resources, environmental conditions and functional types of organisms are key for the preservation of soil health and soil biodiversity, and for the maintenance of sustainable natural ecosystems. A major scientific challenge is to provide science-based recommendations, adapted to local knowledge, to design cropping systems with a set of these feedback processes resembling ecological principles of sustainability. Agroecology aims to re-establish these regulatory processes, which not only operate at local (farm) but also at the landscape scale, to enhance and preserve soil health and biodiversity without compromising yield. In addition, agroecology management practices are designed to retain nutrients within the agroecosystems and to enhance the temporal and spatial synchrony between nutrient supply and crop demand for nutrients. This presentation will illustrate how organic matter, crop diversity and the implementation of landscape elements are crucial to tight nutrient cycling and to enhance soil biodiversity, biological interactions and soil health, which are essential to provide agroecosystem resistance and resilience. Different examples will be selected to show the importance of the organic matter, together with other agroecological management practices, on proving soil health and to retain nutrients. The presentation will open the debate on how this knowledge can be integrated into agricultural practices.

Name: Melike Kuş

Organization: Nature Conservation Centre, Turkey

Melike Kuş is Land and Water Programme Officer in Nature Conservation Centre, Turkey. She studied City and Regional Planning and holds an M.Sc. in Environmental Monitoring and Assessment from University of Southampton, UK. She develops climate change adaptation projects and coordinates various projects in agricultural sector in different agroecosystems in the country. She is also a PhD candidate in Earth System Sciences and does research on climate change vulnerability in agriculture and coping methods of farmers with the climatic changes and extremes. Ms Kuş has been working intensively with the farmers and local authorities on site and aims at mediating between demands of scientific findings regarding climate change and constraints of socioeconomic and cultural structure in the agricultural sector.

Melike Kuş is Land and Water Programme Officer in Nature Conservation Centre, Turkey. She studied City and Regional Planning and holds an M.Sc. in Environmental Monitoring and Assessment from

University of Southampton, UK. She develops climate change adaptation projects and coordinates various projects in agricultural sector in different agroecosystems in the country. She is also a PhD candidate in Earth System Sciences and does research on climate change vulnerability in agriculture and coping methods of farmers with the climatic changes and extremes. Ms Kuş has been working intensively with the farmers and local authorities on site and aims at mediating between demands of scientific findings regarding climate change and constraints of socioeconomic and cultural structure in the agricultural sector.

Abstract: Using ecosystem services framework for climate change adaptation in agriculture

Agriculture, which is one of the primary sectors related with natural resource use, is highly sensitive to the climatic changes and extremes, as the success of production is mainly dependent on convenient environmental conditions during growing and harvesting periods. Nature Conservation Centre (DKM) develops ecosystem services approaches to climate change adaptation in Turkey. The projects include onsite implementations such as direct seeding, wind breakers, nature friendly manure, drip irrigation and night irrigation. In order to better understand the impacts of these implementations on the biodiversity, monitoring programs covering plants, birds, small mammals and butterflies are developed. Farmer-to-farmer learning mechanisms and dissemination tools are also developed and put into practice through the projects.

The ecosystem services approach provides a holistic attitude to implementations of climate related responses and serves as a framework for defining the policies. Conserving and improving the ecosystem services used by agricultural sector (such as erosion control, pollination, pest control etc.) will enhance the adaptive capacity of agricultural production to predicted changes in climate. With this perspective, methodologies are developed towards mapping ecosystem services and determining those that are vulnerable in the face of climate change. Furthermore, on the ground implementation recommendations are developed for enhancing and restoring the ecosystem services providing benefits to agriculture and for reducing their vulnerability to climate change. Throughout these activities, DKM works closely with farmers, academicians and governmental institutions in order to bring innovative and adaptive solutions to challenges faced by the social-ecological and economical dynamics in agricultural production schemes.

Name: Bakhitbay Aybergenov

Organization: Center for support of farmers and entrepreneurship, Uzbekistan

Bakhitbay Aybergenov is a researcher. Areas of his research are Conservation Agriculture and Forest protection. He graduated the Plant Protection faculty of the Tashkent Agricultural Institute in 1990. He worked in research projects to determine the assortment of trees for shelter belts in the conditions of Karakalpakstan, to study the biological and ecological features of the leafroller (Gypsonoma euphraticana.Ams.) in tugai forest cenoses of Karakalpakstan.

He has been working since 2005 on the study, adaptation and implementation of Conservation Agriculture in the arid conditions of the Southern Aral Sea region - Karakalpakstan. He developed recommendations for the use of Conservation Agriculture in the conditions of Karakalpakstan. He also determined the economic feasibility of the use of zero tillage for some cultures, as wheat, barley, mung bean, sorghum, etc.

Abstract: Agroecology in the context of Climate Change and water scarcity in the arid conditions of the Southern Aral Sea region

Climate of Karakalpakstan is sharp continental, dry, with high temperatures at summer (maximum 45° C) and cold at winter (minimum 33°) precipitation is very small about 100 mm per year, evaporation is 600-

900 mm. Water scarcity is one of the consequences of climate change and now became the main social-economic and ecologic problem. According to Kurbanbaev E. from Uzbek research Institute of irrigation water scarcity is one of the actual problem and in dry years, water availability is only 16 percent of consumed by during the flood years. In recent years, the people in the Republic of Karakalpakstan are periodically subjected to great difficulties in connection with frequent water scarcity in the river Amu Darya. The principal activities of the rural population of the Southern Aral Sea region - Karakalpakstan are irrigated agriculture and livestock.

The main problems of agriculture in Karakalpakstan are soil salinity (more than 95% of the land affected by salinization), decrease of organic matter in soil, low biological activity due to the excessive desiccation of soils, deforestation. There is a tendency to increase the area of strongly saline and medium saline lands and reduction weakly saline lands. Only in the last 20 years, bonitet of soils in cultivated areas of Karakalpakstan decreased by 5 points, and it shows that currently used in farming in Karakalpakstan agricultural technologies in many ways do not provide the rational use of natural resources, the expanded reproduction of soil productivity and ecological balance in agroecosystems, as a result will inevitably lead to instability of farming in this extremely arid region. Conservation Agriculture and Agroforestry could solve these problems, because the stubble and straw (plant residues) enriches the soil with organic matter, prevents excessive drying of the soil, reducing the seasonal accumulation of salts, smooths out fluctuations of temperature, eliminates soil erosion and deflation. Our research has shown that mulching reduces the seasonal accumulation of salts in 1.5-3 times, retains soil moisture more at 2.5-3.2 percent, increases the biological activity of the soil. Plant residues will reduce irrigation water consumption by 15-25% due to the reduction of salt accumulation and evaporation of soil moisture.

Module 5: Valuing agroecology and sustainable food systems

Name: Eva Torremocha
Organization: International Federation of Organic Agriculture Movements (IFOAM)-Oganics International, Spain-France

Eva Torremocha is agronomist, master and, currently, PhD in Agroecology at the Pablo de Olavide University (Seville, Spain). She first worked in several conventional farms and, then, quickly moved to organic sector, working on rural development projects in Andalusia. She took part of the agroecological project led by Andalusian government from 2004 to 2007. She has run a consultancy on agroecology and is specialized in cooperation and participation tools and strategies for organic farmers and consumers, such as Community Supported Agriculture and Participatory Guarantee Systems. She teaches at several masters and coordinates the Spanish participation at the European Master on Agriculture and Climate Change.

Currently she is involved in research on agroecology and public policies and works as project manager at Malaga University (Spain)

She is IFOAM Organics International Vice-president, and she is a PGS IFOAM Committee member. She is also a founder member of the Agroecology Europe Platform and board member of the organization.

Abstract: Agroecology and organic agriculture: dynamics and interfaces and evolutions in the certification

During 70's, the initial non yet so called "organic" associations defined norms for producing healthy food for a healthy planet. As a consequence, they had to establish procedures to guarantee their correct implementation. Organic certification was born, and by the way, the organic sector. Its limits were defined by those rules and it was aiming at being clearly differentiated from the conventional agriculture. But, promoted by and rooted in the globalization and the privatization waves during 90's and the first decade of the XXIth century, the organic sector left apart (partly) some of its principles (such as justice and care) to be driven by regulations (publics and private) and their certifications (public or private) and the huge global market. In some cases, it became a business -as usual- suffering from conventionalisation because reproducing the same schemes (reduccionism), strategies (maximum profit focussing on economic dimension) and results (energetically dependent systems, and unfair balances in a social dimension) than the conventional and industrialised agriculture. That's what IFOAM-Organics International names the Organic 1.0 (pioneers) and Organic 2.0 (conventionalisation) stages.

Nowadays, around half a century later, always according to IFOAM-OI proposal, we would be in the Organic 3.0 period, that is the one in which the paradigm of complexity is adopted widening the scope of the sector to the food system and embracing diversity of stakeholders, schemes, challenges, strategies, etc, but always keeping the Organic production principles as a basis, a gathering umbrella for all this variety.

As a matter of facts, Organic Agriculture and Agroecology are currently struggling to find their place in the institutional arena. Are they different? Which connexion have they? are frequently asked questions. Answers will change depending on what and how each of them is considered to be and by whom and where. And the range of understandings and perceptions is wide for both: Organic agriculture balances between a professional & economic sector and a principle driven attitude, and Agroecology stands in between an applied science and a social movement.

It is thus quite challenging, for the whole organic[2] sector, to answer the aforementioned FAQs. And it probably worth it having a look into the tools they work with for finding some clues for building the answer.

Indeed, how one and the other approaches certification can help highlighting the relation in between both. Organic agriculture (here considered as the Organic sector responsible for the Organic 2.0 period) as relied on third part certification rules for guaranteeing that production systems were meeting the organic requirements while agroecology is setting out some systems based on participation schemes such as Participative Guarantee Systems. The table below summarises the differences in the approach to certification for each proposal.

Table 1: comparison between PGS and Third part certification mechanisms

	PGS /agroecology	**3rd part / organic agriculture**
Vision on procedure	Shared and built in common by the members	Accepted / imposed by regulation
Scale of definition of the norm	Local	Regional / national
Knowledge	Scientific + empiric	Scientific
Procedure	Horizontal	Vertical
Principle	Trust	Distrust
Process	Reciprocal learning / mutual exchange	Passive role for operator
Decision makers	Group: farmers, technicians , consumers & 3rd parts included	Certification body (public or private)
Stakeholders participation	Essential	Forbidden
Steps	3: visit / analyses of production process / decision	3: visit / analyses of production process / decision
Structures	2/3 or more: group visit / commission / ethical group at local + higher levels. Always composed by diversity of stakeholders that never participate in more than one structure	2: inspector (individual) / internal commission (several)
Objectivity	Multisubjectivities at each level & independence for each level as a way to avoid conflicts of interests	Independence and relying on a single person for the 1st step
Certification impact	Access to market + creation of markets	Access to markets, access to grants (where they exist)
Paradigm	Systemic, complexity	Reductionist, linearity

With such a brief and simplified summary it appears quite clearly how many differences exist regarding certification approaches in organic agriculture and agroecology, but we do not have to forget that both are also sharing crucial principles such as ecology, fairness, care and health. Definitively, interfaces and

[2] Despite all efforts done by French government, Agroecology existed before their year 0, and it is based on an organic management of food production.

dynamics exist between Agroecology and Organic Agriculture, and they are provoking some tensions in their struggle for gaining their place in the institutional arena. But more than a matter of definition and semantics specific to the sector, it looks like a deeper and largely expanded problematic that is the tension in between more conservative approaches that prefers to keep balances unchanged and more progressive strategies that pushes for changes towards, in this case, a wider paradigm that is better aligned to nature rules based on complexity.

Agriculture, because it is based on Nature, should be at the front line and leading this paradigm change at institutional level. Agroecology is showing and opening the path to the future and it's essential to adopt it without modifying its principles so to really address social and environmental threatens that the earth and its population is facing. Organic Agriculture has played a significant role and still have room for improving its impact and performance. In the era of diversity, no option should be considered as the unique one, rather the opposite, having a multiplicity of options will allow to choose the best one for each biophysical and sociocultural context, at a precise moment, for a certain period. That's the richness of complexity. Thus and paraphrasing M. Altieri and E. Holt-Gimenez[3]: "Agroecology does have a pivotal role to play in the future of our food systems. If agroecology is co-opted by reformist trends in the Green Revolution, the countermovement will be weakened, the corporate food regime will likely be strengthened, and substantive reforms to our food systems will be highly unlikely. (…)Whether one recognizes the politics of agroecology—or tries to hide it—it is precisely these politics that will determine our agricultural future".

Name: Allison Loconto
Organization: Food and Agriculture Organisation of the United Nations (FAO)/ Institut National de la Recherche Agronomique (INRA), France

Allison Loconto is a Research Officer at the National Institute for Agricultural Research (INRA), based in the Interdisciplinary Laboratory for Science, Innovation and Society (LISIS), where she is the co-leader of the research area on: Transitions, emergences, and transformations. Dr. Loconto holds a PhD in Sociology from Michigan State University, a MA in International Affairs and Development from American University in Washington, DC and was a Fulbright Fellow to Tanzania in 2009-2010. She is currently the President of the Research Committee on the Sociology of Agriculture and Food (RC40) of the International Sociological Association (ISA). Her research is focused on the governance of transitions to sustainable agriculture with a specific focus on standards, institutional innovations and questions of responsibility. She has recently completed an EU FP7 project on the Governance of Responsible Research and Innovation and is currently working on the following research projects: an interdisciplinary approach (among sociologists, economists, and ecologists) to understanding land use models as instruments of knowledge and of governance (Governing Food Security through Land Use Models); Institutionalisations of Agroecologies (in France, Argentina and Brazil), where the focus is on the circulation of agrocological knowledge in international arenas and the standards systems that govern the practices of agroecology at the local level; Intermediating Transitions to Sustainable Food Systems (in Colombia, Kenya, Tanzania), where the focus is on the intermediation activities (knowledge, consumption, governance and infrastructural) involved in transitioning towards sustainable food systems. Since 2013, she has been collaborating with FAO on a participatory study of innovations that link sustainable practices with markets. Carried out in collaboration with innovators in 14 countries across Africa, Asia and Latin America, the project team analyzed how the reorganization of relationships between actors in local food systems and the local revision of rules for sustainable agriculture have been able to incentivize not only the adoption of sustainable practices by farmers, but also the creation of local markets for sustainably produced products in developing countries.

[3] "Can agroecology survive withouth being coopted in the Global North" 2016

Abstract: Institutional innovations supporting local markets for sustainable agriculture

As Agroecology emerges on national and global agendas, there is a need to understand the institutional changes that are accompanying public, private and civil society efforts to create agroecology-based food systems. Institutional innovations are new rules and forms of interaction. They help redefine sustainable practices for the local level and bring together food systems actors that have not traditionally worked together. Since 2013 INRA and FAO have been carrying out participatory action research study on innovations that link sustainable practices with markets. Carried out in collaboration with innovators in 14 countries across Africa, Asia and Latin America, we analyzed how the reorganization of relationships between actors in local food systems and the local revision of rules for sustainable agriculture have been able to incentivize not only the adoption of sustainable practices by farmers, but also the creation of local markets for sustainably produced products in developing countries. These innovations are classified into three types: participatory guarantee systems – innovations in certification; multi-actor innovation platforms – innovations in knowledge creation; and community-supported agriculture – innovations in community investment. Each innovation kicks off processes of change in a local food system by mobilizing knowledge, resources, legitimacy, entrepreneurial skills and strategy, and creating spaces for exchange in different ways. Throughout years of continuous experimentation with aspects of these local systems – and by shifting roles and responsibilities between actors in the systems – these innovators have gained significant ground in creating new rules for sustainable production and consumption of food around the world. Among numerous insights gain through this process, there are four key take home messages: 1) A wide range of actors in developing countries are inventing new forms of interaction and organization (called institutional innovations) to supply local markets with sustainable agricultural products; 2) Social and institutional innovations are as essential as technological innovations in transitions to sustainable food systems, and they require policy support; 3) Even when innovations are led by private actors, partnerships with public actors and civil society have an important role in creating linkages between farmers and markets; 4) Autonomy, reciprocity and the recognition of the diverse types of knowledge that are fostered through institutional innovations all create incentives for the adoption of sustainable practices.

Name: Heike Schiebeck

Organization: Longo Mai, Austria

Heike Schiebeck, born in Bremen (Germany) in 1959; living since 1978 on a collective mountain farm in the very south of Austria. The farm belongs to a European wide Cooperative movement called 'Longo mai'. She is a master and teacher of bee-keeping.

In 1995 co-founder of the farmers association 'Coppla Kaša' where 52 farms of the village are organized for transforming their farm products and selling it locally and directly to the consumers.

In 2001 degree of geographer;

2003-2012 board member of OeBV- Via Campesina Austria and member of the international Commission on Biodiversity of La Via Campesina (LVC);

Since 2009 campaign for seed sovereignty; Participation in the Nyé leni Forum 2007 in Mali, 2011 in Krms and 2016 in Cluj (Romania) and various mobilisations of LVC.

Abstract: Longo mai cooperatives, more than 40 years of experiences

Farmers cooperations and Longo maï cooperatives as a bottom up approach in agroecology.

Name: Pavlos Georgiadis

Organization: Co-founder We Deliver Taste and grower at Calypso, Greece

Pavlos Georgiadis is an ethnobiologist, agri-food author and film maker. Born and raised in Alexandroupolis, Greece, he has lived in eleven countries in Europe, Asia and America working on research projects for biodiversity conservation, sustainable development and rural extension. He is an active social entrepreneur in the agroecological sector, having created the single varietal extra virgin olive oil Calypso and the consultancy company 'We Deliver Taste'. With a focus on participatory design of resilient agrifood systems and food policy, he is consulting major R&I projects in Greece and the EU. He is the leader of 'Slow Food Thrace' in Greece and coordinator of the 'Climate Tracker' Europe Hub. Pavlos is a University of Edinburgh graduate with a BSc/(Hons) in Plant Science and an MSc in Biodiversity & Taxonomy of Plants. He holds a second MSc on Environmental Protection & Agricultural Food Production from the University of Hohenheim-Stuttgart, and is currently a PhD candidate on Social Sciences in Agriculture.

Abstract: Rural Entrepreneurship on organic products

Many voices around the world recognise that the mainstream extractive agrifood system is no longer viable to ensure the future of the planet and humanity. Hunger, obesity, non-communicable diseases, waste, processed food, ignorance, exclusion and inequality are all on the menu of today's food system. The dominant claim to keep producing more food to feed the world is only making these problems bigger. Meanwhile, issues such as the right to food, food sovereignty, soil regeneration, ecosystem restoration, climate adaptation, social inclusion, pleasure, flavour, cultural recognition and urban-rural connections are starting to be discussed more and more in our societies. From seed to stomach -and back to the land- the world is experiencing a new public awareness and excellent opportunities for the development of market solutions, products and services investing in food knowledge. With the sharing economy and open technologies catalysing this transition, a whole new scenario for the food economy is emerging. This is enriched by new business models around the areas of organic agriculture, supply chains, sustainable public procurement, transparency and market education.

Name: Zsófia Perényi

Organization: Co-founder We Deliver Taste and grower at Calypso, Greece

Zsófia Perényi works for the Hungarian Association of Conscious Consumers since 2008. She is the Vice-president of the organisation and is in charge of projects on Community Supported Agriculture with the background of Agricultural Engineer in Environmental Management. She is responsible for the communication of the organisation on social media surfaces and coordinates the volunteers of ACC.

She is an experienced trainer. Since 2011 more than 700 producers and consumers has participated on ACC's community supported agriculture focused trainings. At the moment Zsófia coordinates the international Be part of CSA! educational project which is funded by the Erasmus+ programme. The aim of the international cooperation is the development a modular training programme on Community Supported Agriculture with supporting educational tools. More information: http://urgenci.net/actions__trashed/be-part-of-csa/.

Zsófia is actively involved to the international CSA network. She is Urgenci's international training and education officer and also member of the Kernel which is the coordination group of the European CSA network.

Abstract: Reshaping cooperative markets

Hungary as a Central and Eastern European country has special resources. Traditional peasant agriculture is still existing, the knowledge of agroecology could be find in rural areas. Moreover, many of the city people has connections with small-scale producers through family relations. Nonetheless, typical negative

tendencies could be also found: small-scale farmers are aging, young people move to cities whilst the spread of large supermarket chains is strong.

Agroecology is a systematic approach, cooperation of producers and consumers is key for the spread of the concept. The aim of the Hungarian Association of Conscious Consumers (ACC) is to make consumers aware of the environmental, social, and ethical aspects of their consumption and to help them to make ethical choices. Education is an important tool for achieving this aim: more than 700 producers and consumers has participated on ACC's community supported agriculture focused trainings since 2011. Thanks to that, the concept of CSA became known in Hungary and now more than 20 CSA farms link city consumers to small-scale organic (peasant) farmers.

Agroecology is key approach for the international CSA network, URGENCI too. The European Declaration of CSA places agroecology in a prominent position, agroecology is a key value of the CSA networks through Europe. We should strengthen the cooperation between networks and find out how the concept of agroecology and CSA could support each other.

Module 6: Transformative policies and processes

Name: Hans Herren

Organization: International Panel of Experts on Sustainable Food Systems (IPES – Food) and Millenium Institute, Switzerland and USA

Hans R. Herren's main research and development interests and achievements are in holistic, integrated and sustainable agriculture and food systems. He managed agriculture and bio-science research organizations and now active at the policy development level. President and CEO (2005) of the Millennium Institute USA; Chief Executive and Director General, 1994 – 2004 International Centre of Insect Physiology and Ecology Kenya; Director Biological Control Program and Director Plant Health Management Division 1979 to 1994 International Institute of Tropical Agriculture Nigeria; Coordinator of the Agriculture chapter of the UNEP Green Economy Report , 2011 and of the UNEP Report on the Ecological Bases of Food Security, 2012; Co-Chair of the International Assessment of Agricultural Science and Technology for Development (IAASTD), 2003-2009. Laureate of Right Livelihood Award 2013, World Food Prize 1995, Tyler Prize for Environmental Achievement 2003 and Foreign Associate US National Academy of Sciences 1999, Member Third World Academy of Sciences 2005

Abstract: Public policies and Food systems: from uniformity to diversity: a paradigm shift from industrial agriculture to diversified agroecological systems

Input-intensive crop monocultures and industrial-scale feedlots must be consigned to the past in order to put global food systems onto sustainable footing, according to the world's foremost experts on food security, agro-ecosystems and nutrition (IAASTD 2009). The solution is to diversify agriculture and reorient it around ecological practices, covering all there sustainable development dimensions (Social, environmental and economic), whether the starting point is highly-industrialized agriculture or subsistence farming in the world's poorest countries. Main finding of the IPES-Food report 2016 : From Uniformity to Diversity:

• Food and farming systems have succeeded in supplying large volumes of foods to global markets, but are generating negative outcomes on multiple fronts: wide- spread degradation of land, water and ecosystems; high GHG emissions; biodiversity losses; persistent hunger and micro-nutrient deficiencies alongside the rapid rise of obesity and diet-related diseases; and livelihood stresses for farmers around the world.

• Many of these problems are linked specifically to 'industrial agriculture': the input-intensive crop monocultures and industrial-scale feedlots that now dominate farming landscapes. The uniformity at the heart of these systems, and their reliance on chemical fertilizers, pesticides and preventive use of antibiotics, leads systematically to negative outcomes and vulnerabilities.

• Industrial agriculture and the 'industrial food systems' that have developed around it are locked in place by a series of vicious cycles. For example, the way food systems are currently structured allows value to accrue to a limited number of actors, reinforcing their economic and political power, and thus their ability to influence the governance of food systems.

•Tweaking practices can improve some of the specific outcomes of industrial agriculture, but will not provide long-term solutions to the multiple problems it generates.

•What is required is a fundamentally different model of agriculture based on diversifying farms and farming landscapes, replacing chemical inputs, optimizing biodiversity and stimulating interactions between different species, as part of holistic strategies to build long-term fertility, healthy agro-ecosystems and secure livelihoods, i.e. 'diversified agroecological systems'.

•There is growing evidence that these systems keep carbon in the ground, support bio- diversity, rebuild

soil fertility and sustain yields over time, providing a basis for secure farm livelihoods.

•Data shows that these systems can compete with industrial agriculture in terms of total outputs, performing particularly strongly under environmental stress, and delivering production increases in the places where additional food is desperately needed. Diversified agroecological systems can also pave the way for diverse diets and improved health.

•Change is already happening. Industrial food systems are being challenged on multiple fronts, from new forms of cooperation and knowledge-creation to the development of new market relationships that bypass conventional retail circuits.

• Political incentives must be shifted in order for these alternatives to emerge beyond the margins. A series of modest steps can collectively shift the center of gravity in food systems.

Source: IPES-Food report 2016 : From Uniformity to Diversity

Name: Jessica Duncan

Organization: Wageningen University, Canada

Jessica Duncan is Assistant Professor in Rural Sociology at Wageningen University (The Netherlands). She holds a PhD in Food Policy from City University London. Her research areas include: food policy; food security; global governance; environmental policy; and participation. She is interested in understanding the practices associated with non-state actors participation in policy making processes, and analysing how the resulting policies are shaped, implemented, challenged and resisted, always with a view on the implications for societal transformation.

She works as an associate editor for the journal Food Security, co-convener of the Food Policy and Governance Research Network of the European Consortium for Political Research, and advisor and researcher with Traditional Cultures Project (USA). Jessica's most recent book is Global Food Security Governance: Civil society engagement in the reformed Committee on World Food Security (Routledge 2015). When not working she is likely to be reading, riding her bike, climbing rocks, tweeting @foodgovernance or blogging at www.foodgovernance.com.

Abstract: Reflexive governance for environmentally sustainable food security policies

Achieving food security and environmental sustainability necessitates structural changes to the practices, rules, and institutions currently organizing food provisioning.[1] While governance plays a key role in empowering or disempowering structural transformations,[2] few governance processes have proven capable of meaningfully addressing the complexity of contemporary social-ecological problems across the science-policy-participation interface.[3] Given this, it is not surprising that intergovernmentally derived policy recommendations and norms have, on the whole, failed to meaningfully address or integrate the connected goals of 'food security' and 'environmental sustainability'.

In the face of increasingly complex sustainable development challenges, there have been increasing proposals for the development of more reflexive governance processes.[4] Reflexive governance processes acknowledge multiple perspectives, expectations, power dynamics, and strategies. They reject quests for a single framing of the problem, a single prognosis of consequences, and a single way forward.[5]

The United Nations Committee on World Food Security (CFS) presents an example of an international policy forum where reflexive governance practices have been implemented. A review of the mechanisms, processes, practices, and outcomes of the CFS sheds light on the potential of reflexive governance processes for advancing sustainable food security policies and in turn pathways for reconciling food security and environmental sustainability.

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Name: Pierre Schwartz

Organization: Government of France

Pierre SCHWARTZ, agronomist of the National Institute of Agronomy "Paris-Grignon", senior engineer for bridges, waters and forests. Diploma (DEA) from the University of "Paris Panthéon Sorbonne" in Economics of Environment and Spatial Analysis.

After starting his career as National Service Volunteer at the European Commission Delegation in TOGO (1990-1992), where he was responsible for the rural development programs financed by the European Development Fund, he joined the county level at the agriculture and forestry State office in Creuse, where he was head of the rural space and forestry department (1992-1996). He learned the basics of rural development by implementing many tools and programs in one of the most rural counties of France: forestry development, land development, rural tourism, support for handicrafts and trade in rural areas, implementation of the Rural Development Program co-financed by the EAGGF, participation in the LEADER Creuse Local Action Group. He then began a career focused on regional and rural development in France (two positions of European desk officer within the prefecture of "Limousin" region from 1996 to 1999 and "Pays de la Loire" region from 2003 to 2009) and in Europe (pre- Accession adviser between 1999 and 2003, first in Romania and then in Hungary for the management of European funds for rural development). He was been appointed counselor for agricultural affairs at the economic service of the French Embassy in Romania from September 2009 to May 2012. From August 2012 to May 2015, he came back to France as Head of Rural Development and Horses department (44 officers), and was particularly in charge of the EARDF Managing authority for the French Rural Development program 2007-2013 as well as the preparation of the rural development 2014-2020 programming period (in close relationship with Regional authorities in the framework of the decentralization). Since May 2015 with the creation of the General Directorate for the Economical and Environmental Performance of Enterprises, he became Head of the Environmental Performance and Territorial Development Department (61 officers). He was also appointed as «Agroecology Project" manager since June 2016. In this position, he is in charge of the animation of teams responsible for environmental performance and territorial development: climate change and biodiversity; water, soil and circular economy; agricultural land management; agricultural development and chambers of agriculture; territorial actions and services to local and regional authorities, particularly the National Rural Network.

Abstract: The French Agroecology Law: elaboration and lessons learned

After a short presentation of the key principles of agroecology, the presentation will show the aim of the project and its origin: the objective is that a majority of French farmers will adopt agroecology practices by 2025. It was launched in December 2012 by the Minister of Agriculture, Food industry and Forestry, and different steps leaded to an actions plan which was built with main stakeholders and shared with all sectors.

In October 2014, a law for the future of Agriculture, Food and Forestry was adopted. It created a French definition of agroecology and described the aim of public policies: they have to promote and to ensure the implementation of agroecological systems.

A short presentation of the action plan will be made with some example of first accomplishments, in particular, with some focus on the voluntary groups of farmers aimed to share knowledge and practices on agroecology (group of economical and environmental interests – GIEE). Other plans contribute to the agroecological transition in farms; for examples, the "Ecophyto 2" plan focused on the reduction of pesticides or the "Ambition bio" plan devoted to the development of organic agriculture.

To conclude, the presentation will remind that the agroecological transition needs the involvement of all stakeholders. It is a medium term goal with already achieved outputs and results. It uses different tools, not only public. It is based on innovations in agronomy but also in organization, modification of public policies and a new role for research and development.

Name: Xavier Poux

Organization: AScA/Institut de recherche sur les politiques, l'Institut du développement durable et des relations internationales (IDDRI), France

For 25 years, Xavier Poux (PhD in rural economy) has been working in AScA, a consultancy and research company based in Paris. He has been studying public and collective decision making in the fields of agricultural development, food systems and environmental management in France and Europe, with special interest in biodiversity and landscape management. He works for the design and implementation of a better agri-environmental policy, based on results, encompassing different levels of analysis. Specialised in future research (multi-actors scenarios exercises), he is a fellow researcher at Iddri (Institute for Sustainable Development and International Relations).

Abstract: Transition scenarios to agroecology in Europe

Current agricultural development in Europe leads to shortcomings in both environmental, social and economic dimensions. Agroecology is one of the most credible option in order to consistently address the challenges in a comprehensive way. Transition towards agroecology involves a future oriented thinking, encompassing both a plausible and desirable image of what could be food systems based on agroecology and possible pathway(s) from a paradoxically locked-in and unsustainable present situation. In this perspective, TYFA project (Ten Years For Agroecology) has been involving IDDRI — a think tank involved in sustainable development policies —, European NGOs and researchers about the methodological and political challenges arising, when specifically addressing the issues at stake at the European level (EU 27).

The communication will present the findings and outlooks from this 3 years old initiative, assuming that a consistent scenario approach can contribute to a transformative agenda towards Agroecology. TYFA has been supported by Fondation pour le Progrès de l'Homme (FPH).

Name: Samuel Féret

Organization: ARC2020, France

Samuel Féret works as executive coordinator of ARC2020 (Agricultural and Rural Convention) since April 2013, a French NGO focused on analysing and promoting better food and farming policies in the European Union. Samuel Féret worked for CFSI (French Committee for International Solidarity) during two years (2014-2016) to coordinate a project on innovations within the framework of the International Year of Family Farming and to set up a multi-

stakeholder platform with research (CIRAD). Prior to joining CFSI, Samuel Féret served as coordinator of a French platform of farmers' organizations and civil society CSOs (WWF, Confédération Paysanne, Nicolas Hulot Foundation, etc.) to influence the negotiations of the CAP reform after 2013 in France. Samuel Féret has extensive experience in agricultural and rural development as well as in farming policies design and assessment in France (feasability of cross compliance under the CAP post 2003, French ministry of environment, 1999) and in Europe (Study on Mapping and analysis of CAP reform implementation, Ecorys, 2016). He has a MSc in Sociology, Innovation and Risk and a degree in Farm Holding Management. Samuel Féret has been a teacher trainer for future agricultural and rural development officers between 1998 and 2006 in France. He is also an expert for the European Commission for the evaluation of research projects as well as for philantropic foundations. He's the author of a dozen articles and several books on sustainable agriculture, CAP and family farming.

Abstract: How the European Common Agricultural Policy can accompany an agroecological transition?

The European Common Agricultural Policy reformed in 2013 offers a menu and various ingredients that may feed an agroecological transition in various territories and sectors towards 2020. Indeed, a range of policy drivers may potentially influence the adoption and outscaling of agroecological approaches/practices across the EU : 1) the new direct payments regulation including a "greening" component, with its emphasis on crop diversification, protection of permanent grassland and the maintenance of ecological focus ereas; 2) the new rural development programmes that frame agri-environment and climate measures, support to agroforestry and organic farming; 3) as a cross-sectoral policy instrument, the European Innovation Partnership for agricultural productivity and sustainability (EIP-Agri), supported through both the H-2020 calls and the RDPs, provides a mechanism for bringing together operational groups, focus groups and thematic networks farmers, advisers, researchers and other businesses in order to develop new research and innovation initiatives. In addition to the CAP, the H-2020 research and innovation working programme have includes a number of calls with agroecological approaches and multi-actor and participatory focus.

Whether those drivers may accompany an agroecology-oriented agenda, socio-economic sections of the CAP must not be forgotten either : fairer distribution of basic payments among farmers, and division of added-value along the food chain. However, as the CAP became an "à la carte" menu, implementation of agroecology-oriented schemes rely on national and regional choices, which do not take all opportunities to give a real impetus for agroecology. Some cases illustrate the huge diversity of situations across countries and regions. In that respect, the EU could an initiative that explicitly address the challenge of such agroecological transition in Europe.

List of participants

	Prefix	First Name	Last Name	Company	Address-Country
1	Mr	Despoisse	Adrien	Nyitott kert alapitvány	Hungary
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3	Mr	Boris	Akimov	Farmers' Cooperative LavkaLavka	Russian Federation
4	Mr	Jonas	Almendrala	Szent István University	Hungary
5	Ms	Cristina	Amaral	FAO	Hungary
6	Mr	Colin	Anderson	Centre for Agroecology, Water and Resilience, Coventry University	United Kingdom
7	Mr	Mansurkhon	Asrorov	"Asrori" Farm	Tajikistan
8	Ms	Anna Maria	Augustyn	Groupe de Bruges	Hungary
9	Mr	Bakhitbay	Aybergenov	Karakalpak branch of the Center for support to farmers and enterpreneurship, Uzbekistan	Uzbekistan
10	Mr	Bálint	Balázs	Environmental Social Science Research Group	Hungary
11	Miss	Lili	Balogh	Agrofutura	Hungary
12	Mr	Péter	Bartha	Ministry of Agriculture of Hungary	Hungary
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14	Mrs	Caterina	Batello	FAO	Italy
15	Mrs	Margit	Batthyány-Schmidt	Union of Hungarian Women	Hungary
16	Ms	Stanka	Becheva	Friends of the Earth Europe	Belgium
17	Mrs	Györgyi	Bela	ESSRG	Hungary
18	Mr	Fahro	Belko	Ministry of Foreign Trade and Economic Relation BiH	Bosnia and Herzegovina
19	Mr	Stéphane	Bellon	INRA / AE EU	France
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23	Dr	Sébastien	Boillat	Institute of Geography, University of Bern	Switzerland
24	Mr	Guilherme	Brady	FAO	Italy
25	Mrs	Phily	Brooijmans	Van Dis -Brooijmans organic farming	Netherlands
26	Ms	Tanja	Busse	Moderator	Germany
27	Miss	Vera	Bychkova	Rossorgo RosNIISK FGBNU	Russian Federation
28	Mrs	Lidija	Chadikovska	Ministry of Agriculture, Forestry and Water Economy, Macedonia	Macedonia, The Former Yugoslav Republic of
29	Dr	Michael	Chappell	Centre for Agroecology, Water and Resilience, Coventry University	United Kingdom
30	Mr	Rémi	Cluset	FAO	Italy
31	Mr	Luca	Colombo	FIRAB	Italy
32	Mr	Mauro	Conti	IPC	Italy
33	Mrs	Maria Laura	Da Rocha	Permanent representation of Brazil to FAO	Italy
34	Dr	Simona	D'Amico	DISAAA - UNIPI	Italy
35	Ms	Raluca	Dan	Eco Ruralis	Romania
36	Mr	Martin	Danilovič	NAFC - Agroecology Research Institute	Slovakia

37	Ms	Clotilde	De Montpellier	Department of Geography, University of Namur	Belgium
38	Mr	Andras	Deak Bardos	Golden Tender Ltd.	Hungary
39	Mr	François	Devaux	CIDSE	Belgium
40	Mr	Zoltán	Dezsény	MagosVölgy Ökológiai Gazdaság, ÖMKi	Hungary
41	Dr	Dóra	Drexler	ÖMKi	Hungary
42	Ms	Ramona Ioana	Duminiciou	European Coordination Via Campesina (ECVC)	Romania
43	Dr	Jessica	Duncan	Wageningen University	Netherlands
44	Mr	Rupert	Dunn	Torth y Tir	United Kingdom
45	Ms	Ágnes	Dús	Ministry of Agriculture, Hungary	Hungary
46	Miss	Lilla	Egri	Ministry of Agriculture, Hungary	Hungary
47	Dr	Zoltán	Elek	MTA-ELTE-MTM, Ecology Research Group	Hungary
48	Mr	Ronnie	Eunson	Shetland Livestock Marketing Group	United Kingdom
49	Mr	Stark	Fabien	Agreenium	France
50	Mr	Sándor	Fazekas	Ministry of Agriculture, Hungary	Hungary
51	Mr	Samuel	Feret	Agricultural and Rural Convention	France
52	Ms	Jyoti Anne	Fernandes	Nyeleni Europe	United Kingdom
53	Mr	Gábor	Figeczky	IFOAM - Organics International	Germany
54	Dr	Eve	Fouilleux	CNRS / CIRAD	France
55	Mr	Eric	Fournier	French Embassy	Hungary
56	Mr	Eric	Gall	IFOAM EU	Belgium
57	Dr	Roberto	Garcia Ruiz	University of Jaén	Sweden
58	Ms	Orsolya	Géczi	Agrobiodiversity expert, Hungary	Hungary
59	Mr	Pavlos	Georgiadis	We Deliver Taste	Greece
60	Mr	Eliel	González García	INRA	France
61	Mr	José	Graziano da Silva	FAO	Italy
62	Ms	Gabriella	Gruner	Ministry of Agriculture of Hungary	Hungary
63	Ms	Fatma	Güngör	Ministry of Forestry and Water Affairs, Turkey	Turkey
64	Ms	Linda	Haas	FAO	Hungary
	Mr	Tassos	Haniotis	European Commission	Belgium
65	Dr	Laurent	Hazard	INRA-SAD	France
66	Mr	Jan	Hecl	NAFC - Agroecology research institute	Slovakia
67	Dr	Hans	Herren	Millennium Institute	United States of America
68	Mrs	Alazne	Intxauspe	Ehne-Bizkaia	Spain
69	Mr	Mahesh	Jampani	United Nations University (UNU-FLORES)	Germany
70	Ms	Janja	Jevšnik	Ministry of Agriculture, Forestry and Food, Slovenia	Slovenia
71	Ms	Amina	Kadyrzhanova	FAO	Hungary
72	Mr	Zoltán	Kálmán	Permanent Representation of Hungary to the UN Food and Agriculture Agencies in Rome	Hungary
73	Ms	Melinda	Kassai	Butterfly Development	Hungary
74	Mr	Guy	Kastler	Réseau Semences Paysannes	France
75	Mr	Nurzhan	Kaztay	The Committee of Forestry and Wildlife, Kazakhstan	Kazakhstan
76	Ms	Kitti	Kenéz	French Embassy, Economic Section	France
77	Prof	Jozsef	Kiss	Szent Istvan University	Hungary
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80	Mr	Yevgeniy	Klimov	Kazakhstan federation of organic agriculture movements - KAZFOAM	Kazakhstan
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81	Ms	Anna	Korzenszky	FAO HQ CSO Team	Hungary
82	Mr	Attila	Králl	Agri Kulti Ltd.	Hungary
83	Mr	Attila	Kristó	Centre for Plant Diversity	Hungary
84	Mrs	Sanja	Krnić Bastać	Ministry of Agriculture, Croatia	Croatia
85	Miss	Melike	Kus	Nature Conservation Centre	Turkey
86	Mrs	Natalia	Laino Lojo	World Forum of Fishers People (WFFP)	Spain
87	Ms	Evelin	Lantos	Ministtry of Agriculture	Hungary
88	Ms	Katarina	Lazovic	Szent István University	Montenegro
89	Dr	Philippe	Lemanceau	INRA	France
90	Dr	Les	Levidow	Open University	United Kingdom
91	Ms	Larissa	Lima Costa	Permanent representation of Brazil to FAO	Italy
92	Dr	Allison	Loconto	INRA/ FAO	Italy
93	Mr	Feliu	López-i-Gelats	University of Vic-Central University of Catalonia	Spain
94	Miss	Dorsaf	Maayoufi	SZIU	Hungary
95	Dr	Iain	MacKinnon	Centre for Agroecology, Water and Resilience, Coventry University	United Kingdom
96	Prof	Akos	Máthé	West Hungarian University	Hungary
97	Ms	Barbara	Medved-Cvikl	Ministry of Agriculture, Forestry and Food, Slovenia	Slovenia
98	Ms	Mónika Alíz	Mészáros	Union of Hungarian Women Association	Hungary
99	Dr	Paola	Migliorini	University of Gastronomic Science	Italy
100	Mr	Stefano	Mori	Centro Internazionale Crocevia	Italy
101	Mr	Nurmamat	Mullakeldiev	Ministry of agriculture, food industry and melioration of Kyrgyz Republic	Kyrgyzstan
102	Mr	Aksel	Naerstad	The Development Fund / More and Better Network	Norway
103	Mrs	Lusine	Nalbandyan	AWHHE NGO	Armenia
104	Mr	Makibwe	Nelson	Poverty Eradication Through Agriculture Organization (PETA)	Uganda
105	Dr	Thieu	Ngoc Lan Phuong	Research Centre for Farm Animal Gene Conservation (HáGK)	Hungary
106	Mr	Arman	Nurbolov	Farmer, Kyrgyzstan	Kyrgyzstan
107	Mrs	Ayse Asli	Ocal	La Via Campesina	Italy
108	Ms	Elisabeth	Olsen	Lancaster University	Faroe Islands
109	Ms	Meerim	Osmonalieva	Szent István University	Kyrgyzstan
110	Mr	Mehmet	Öztiryaki	Ministry of Food Agriculture and Livestock, Turkey	Turkey
111	Mr	Stéphane	Parmentier	Oxfam-Solidarity	Belgium
112	Mrs	Danijela	Pavicevic	Ama center	Serbia
113	Prof	Alain	Peeters	RHEA	Belgium
114	Ms	Zsófia	Perényi	Association of Conscious Consumers	Hungary
115	Mr	Tibor	Petró	Agrofutura	Hungary
116	Ms	Nikolina	Petrovic	Szent István University	Serbia
117	Prof	Michel	Pimbert	Centre for Agroecology Water and Resilience, Coventry University	United Kingdom
118	Miss	Lea	Plantek	FAO REU	Hungary

119	Dr	Xavier	Poux	ASCA-IDDRI	France
120	Mr	Jean-Marc	Puppi	French Embassy	France
121	Ms	Ildikó	Pusztai	French Embassy	Hungary
122	Mr	François	Pythoud	Permanent Representation of Switzerland to FAO, IFAD, WFP in Rome	Italy
123	Dr	Diana	Quiroz	ILEIA - Centre for learning on sustainable agriculture	Netherlands
124	Dr	Kamolidin	Qurbonov	Ministry of Agriculture, Republic of Tajikistan	Tajikistan
125	Mr	Vladimir	Rakhmanin	FAO	Hungary
126	Mr	Vladimir	Randacek	Czech Embassy in Budapest	Czech Republic
127	Ms	Katalin	Rethy	Butterfly Development	Hungary
128	Dr	Marta Guadalupe	Rivera-Ferre	University of Vic-Central University of Catalonia	Spain
129	Mr	Kivumbi	Ronald	Giving Children Hope Initiative	Uganda
130	Dr	Adanella	Rossi	University of Pisa	Italy
131	Mr	Abel	Saladze	Traditional Fishermen's Association	Georgia
132	Ms	Ágnes	Sarkadi	Ministry of Agriculture, Hungary	Hungary
133	Dr	Davi	Savietto	INRA	France
134	Mrs	Heike	Schiebeck	Longo mai, Via Campesina Austria	Austria
135	Mr	Pierre	Schwartz	Ministry of Agriculture, Food and Forestry, France	France
136	Dr	Srdjan	Šeremešić	University of Novi Sad, Faculty of Agriculture	Serbia
137	Mr	Reuben	Sessa	FAO REU	Hungary
138	Mr	Viacheslav	Shadrin	Yakut Association of North Indigenous Peoples	Russian Federation
139	Mr	Fisnik	Shaqiri	Szent Istvan University	Kosovo
140	Prof	Ram	Sharma	ICARDA	Uzbekistan
141	Ms	Elene	Shatberashvili	ELKANA	Georgia
142	Miss	Anna	Shkineva	UzGIP	Uzbekistan
143	Dr	Rakhmon	Shukurov	Independent Consultant	Tajikistan
144	Mr	Festim	Shytaj	Ministry of Agriculture, Rural Development and Water Administration, Albania	Albania
145	Ms	Kristine	Sirma	Ministry of Agriculture, Latvia	Latvia
146	Mr	Jean-François	Soussana	INRA	France
147	Mrs	Marcela	Stahi	Ministry of Agriculture and Food Industry, Republic of Moldova	Republic of Moldova
148	Mr	Goran	Stavrik	FAO REU	Hungary
149	Mr	Rodion	Sulyandziga	CSIPN	Russian Federation
150	Mrs	Elisabeth	Süßenbacher	Federal Ministry of Agriculture, Forestry, Environment and Water Management, Austria	Austria
151	Mr	Stanisław	Świtek	Poznan University of Life Sciences	Poland
152	Mrs	Fruzsina	Szeder	Biokontroll Hungária Nonprofit Kft.	Hungary
153	Mr	Ferenc	Szépe	Ministry of Agriculture, Hungary	Hungary
154	Mr	Alfred	Szilágyi	Hungarian Permaculture Association	Hungary
155	Dr	Viktoria	Takacs	Poznan University of Life Sciences	Poland
156	Mr	Gergely	Takács	Ministry of Agriculture, Hungary	Hungary
157	Dr	Marja-Liisa	Tapio-Bistrom	Ministry of Agriculture and Forestry, Finland	Finland
158	Miss	Tülay	Tay	Ministry of Food Agriculture and Livestock, Turkey	Turkey
159	Mr	Serge	Tomasi	French Foreign Affairs Ministry	Italy
160	Ms	Eva	Torremocha	IFOAM - Organics International / Agroecology Europe	Spain

161	Ms	Katalin	Tóth	Ministry of Agriculture of Hungary	Hungary
162	Mr	Nikola	Trendov	Szent Istvan University	Hungary
163	Mr	Igor	Troshanski	Ministry of Agriculture, Forestry and Water Economy, Macedonia	Macedonia, The Former Yugoslav Republic of
164	Dr	Gocha	Tsereteli	Scientific-Research Center of Agriculture	Hungary
165	Dr	Jozef	Turok	Forest Europe	Slovakia
166	Mr	Klaas Pieter	Van der Veen	Permanent Representation of the Netherlands in Rome	Italy
167	Miss	Renee	Van Dis	FAO	Italy
168	Mr	Govert	Van Dis	Van Dis Brooijmans Organic farming	Netherlands
169	Ms	Yahor	Vetlou	Szent István University	Belarus
170	Dr	Andrea	Vityi	University of West Hungary; European Agroforestry Federation	Hungary
171	Mr	Samuel	Vogel	Federal Office for Agriculture, Switzerland	Switzerland
172	Ms	Chandalin	Vongvilay	Szent István University	Hungary
173	Dr	Alexander	Wezel	ISARA-Lyon	France
174	Mrs	Johanna	Wider	Federal Office for Agriculture and Food, Germany	Germany
175	Mr	Andrei	Zaneuski	Ministry of Agriculture and Food, Republic of Belarus	Belarus
176	Mr	Martin	Zouhar	Agrikulti internship	Hungary

Logistical information

VENUE

The Regional Symposium on Agroecology for Europe and Central Asia will be held in the Conference Room of the Ministry of Agriculture of Hungary (1055 Budapest, Kossuth Lajos tér 11).

23rd November at 13:30 hours (Based on your selection, indicated on Registration online site) there will be a field visit for the following 2 places:

Option 1: Centre for Plant Diversity (Tápiószele) – guided visit through the Centre: seed storages, laboratories and fields. Presentation on the activities of the Centre including the participatory breeding programme.

Option 2: Research Centre of Farm Animal Gene Conservation in (Gödöllő) - guided visit to all research centres and farms (small and large traditional breeds, apiary etc.), presentation of "Szomor" organic farm. Detailed introduction about the Centre in English at*: http://www.geneconservation.hu/*

Busses will start at 13:30 from the *side* of Ministry of Agriculture building (please see address below).

ADDRESSES

Venue: Ministry of Agriculture of Hungary (1055 Budapest, Alkotmány utca 1.)

WORKING LANGUAGES AND WEBSTREAM

Simultaneous interpretation will be provided in English, Spanish, French and Russian; the sessions will be webstreamed. The session documentation will be available in English.

TRANSPORTATION BETWEEN THE LISZT FERENC INTERNATIONAL AIRPORT AND THE HOTEL

The *Liszt Ferenc* International Airport (previously called "Budapest Ferihegy International Airport") is located 16 kilometres east-southeast of the centre of Budapest, accessible by the Üllői road.

Depending on the traffic it takes approximately 30-45 minutes to reach the hotel from the airport. Participants are expected to arrange their own transport between the airport and the hotel. The airport is serviced by the Airport Minibus Service and Public Taxis.

Airport Minibus Service (AirportShuttle-Minibusz): The service takes passengers directly to the hotel but takes several passengers at a time, so may take longer than a taxi as other passengers may get dropped off before you. However passengers traveling with you will all be going to the same district. You can buy your tickets at the numerous Airport Minibus Service booths around the airport including in the baggage claim hall and just outside security doors in the Arrival Hall. A single ticket costs 4000 Forint (13 Euro or 15 USD) and a return ticket is 8000 Forint (Euro 26 or USD 300). You can check the company's website for more details: https://www.minibud.hu/en

Public Transportation:

Bus Nr. 200E commutes between Terminal 2 and the Kőbánya-Kispest metro terminal (metro line M3), via the Ferihegy train station (trains to the Nyugati railway station in Budapest). From the Kőbánya-Kispest metro terminal, passengers can take the M3 metro towards Újpest Központ to reach the city centre (Approx. journey time: 1 hour)

Public Taxi:

Public Taxis are available just outside of airport arrivals terminals. Cost is approximately 25 to 30 EUR (28 to 34 USD) (7840 to 9400 Forint) per trip, depending on traffic.

CURRENCY AND FOREIGN EXCHANGE SERVICES

The Hungarian currency is Hungarian forint (HUF). Current exchange rate is currently approximately Euro 1.00 = USD 1.12 = Ft 307.

All major credit cards are readily accepted in Hungary. Exchange facilities are available at the Airport, at the banks and at the exchange counters in many locations in Budapest.

Please note that the Exchange facilities and ATM/Bankomat at the Airport's Arrivals Hall often don't have the best exchange rates and can have higher charges, please be careful of how much you are being charged and what exchange rate is being applied.

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Meeting notes