Agroecology Europe (www.agroecology-europe.org) is an association which aims to promote agroecology in the farming and food sector and in the wider society.

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Short summaries can be found on http://www.agroecology-europe.org/.

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**Session 1: Agroecology and Food Sovereignty**

Convenors: Janneke Bruil (Cultivate!), Sarah Schneider (Misereor), Stanka Becheva (Friends of the Earth)

The session highlights the connection between agroecology and food sovereignty and explores how the collaboration of researchers, farmers and social movements should be shaped to support agroecology for food sovereignty. Experiences of such collaborations in agroecology from Europe and Brazil were shared, emphasising the need to put farmers’ and local communities at the centre of this knowledge co-creation process.

**Session talks:**

- Lynne Davis (ECVC and goat farmer, England) – “Building agroecology for food sovereignty: the peasant movement’s perspective”
- Michel Pimbert (Coventry University, England) – “What role for researchers in supporting agroecology as a path to food sovereignty?”
- Jan Douwe van der Ploeg (Wageningen University, the Netherlands) – “Connecting Agroecology Europe with farmer and peasant networks”
- Paulo Petersen (AS-PTA, Brazil) – “Lessons from the agroecology movement in Brazil”

**Building agroecology for food sovereignty: the peasant movement’s perspective (Lynne Davis)**

In the UK, agroecology is generally advocated by new entrant farmers, who find diverse and creative ways to enter farming, are often politically motivated and have the desire to reconnect with nature. During international meetings such as the Nyeleni Forum in 2015 and 2016, peasant movements gathered together to define their own vision of agroecology. Agroecology, in those contexts, is used to propose a genuine alternative to the neoliberal approach and reach a global food sovereignty, in which the right of all people worldwide is respected to define their own food system in line with local traditions and cultures. Another point raised during the talk was about “clashes within the knowledge system”. Acknowledging that a variety of participatory research approaches have been developed, the speaker felt that the research on agroecology and the production of knowledge continues to be reserved to institutions. This creates deep inequal power dynamics within the production of knowledge, and this is particularly true of agroecology and peasant farming, that carries a burden of historical inferiority. Such power dynamics must be addressed in order to value the wisdom of farmers and to provide a representative image of agroecology.

**What role for researchers in supporting agroecology as a path to food sovereignty? (Michel Pimbert)**

This talk also addressed the issue of knowledge democracy. Solutions need to be found via more decentralized, bottom-up and participatory research approaches which involve farmers and citizens at all the stages of the knowledge creation process, from research agenda setting to knowledge validation. In order to develop such new inclusive research approaches successfully, some steps should be followed. First, mutual respect between the partners has to be established...
and researchers should be trained to develop participatory research skills. Secondly, farmers and citizens need to be rewarded to stimulate motivation and engagement. Lastly, research organizations have to become more flexible and responsive to new knowledge creation approaches which support agroecological innovations led by social activism and farming networks. Some structural problems within the field of research were also highlighted during the talk. For example, research on agroecology is very limited due to the very restricted budgets invested in it. Protection of researchers against abuses was also considered as problematic, since science is under threat of corruption and influence by corporations pursuing their own business interests.

**Connecting Agroecology Europe with farmer and peasant networks** (Jan Douwe van der Ploeg)

Here, the relationship between science and agroecological farming was considered with some new entry points. According to the speaker, agroecological farming initiatives are quite widespread throughout Europe. However, agricultural science still focus on large-scale, high-tech intensive agriculture and shows very little interest for practices that are not exclusively yield oriented. A second point raised was the threat for agroecology to be exclusively linked to poverty. This should be regarded a misconception since many studies suggest that agroecology is actually innovative, capable of employing more people in agriculture and leads to higher incomes. A virtuous example of cooperation between researchers and dairy farmers in the Netherlands was presented, where farmers, by improving cattle manure composition, were able to improve their soils and products, and generate benefits for the environment while increasing their production efficiency. This experience showed that a connection between science and agroecological farming is possible, even though some key points should be acknowledged beforehand. Researchers should be aware that agriculture is a “socio-technical system” where interactions and mutual transformation of people and nature continuously occurs. Thus, the social component is fundamental and must be included into agricultural sciences. In addition, such participatory methods should be translated into action researches guided (and initiated) by farmers and offer practical and directly applicable solutions to real problems experienced on-farm.

**Lessons from the agroecology movement in Brazil** (Paulo Petersen)

The history of agroecology over the last 40 years in Brazil was reported. Agroecology in Brazil is considered as a process linking practice, science and social movements, which has been growing within a hostile institutional environment. The motivations behind the rise of agroecological experiences in Brazil are environmental as well as social and economic factors. The actors involved are numerous and diverse, including women, farmers, consumers, distributors, youth organisations and agencies for local development. Agroecological knowledge is held by farmers, field schools, universities and research institutes. Institutions have not always favoured the development of agroecology in Brazil. However, after years of struggle and resistance, social movements are moving forward and finally succeeded to get support at the political level with favorable policies for agroecology. An example is the “Marcha das Margaridas” in 2011 where 70,000 women marched in the streets to support agroecology, and after which the Brazilian National Policy on Agroecology and Organic Production was created. This proves that strong social movement activism is crucial to achieving governmental support for agroecology.
Importantly, both political activism and academic research in agroecology must be anchored in social practice.

Discussion
In the last part of the session, panelists discussed the struggles of researchers trying to implement more inclusive and alternative research approaches, linking up to existing agroecology initiatives and practices. This was considered to be a very hard task for researchers due to an environment characterised by top-down approaches and high bureaucratisation. However, in the last 30 years, steps forward were made and transdisciplinary approaches within research are now gaining more recognition. The evolution of agroecology in Latin America and Europe was also discussed. Some speakers argued that the context in each continent makes it impossible for agroecology to develop in the same way. While in Brazil the political debate about agroecology is very sharp and rural movements are united under a strong oppositional force, in Europe, movements are scattered and often overlapping with organic agriculture. The construction of a worldwide movement connecting all agroecology experiences and movements was called for. The role of government in supporting agroecology was also emphasised. The division of governance bodies dealing separately with ecology, economy and social issues was considered unsuitable to reflect the multidimensional and holistic agroecological paradigm. A new type of territorial governance is needed that takes into account the many dimensions of agroecology and understands the agri-food system in a wider perspective.
Session 2: Co-evolution of organic agriculture and Agroecology

Convenors: Paola Migliorini (Agroecology Europe, UNISG, IFOAM AgriBioMediterraneo, Italy), Victor Gonzálvez (SEAE, Spain)

Session talks:

- Eric Gall (IFOAM EU, Belgium) - "The role of Agroecology for the future of the European organic movement"
- Susanne Padel (Organic Research Centre, England) - "Transitions to Agroecology Systems: Agroecology in the UK"
- John Hayden (The Farm Between, Vermont, USA) - "Perspective from 25 years of Practicing Agroecology"
- Paola Migliorini (Agroecology Europe, UNISG, IFOAM AgriBioMediterraneo, Italy) - "Convergence, divergence, and specificities between agroecology and organic agriculture in Italy"
- Karen Hoberg (SEAE, Spain) - "Agroecology in Spain"

The role of agroecology for the future of the European organic movement (Eric Gall)

Eric Gall works for IFOAM EU in Belgium. He started by pointing out that there are both benefits and inconveniences of organic regulations. For example, it offers recognition with trust in the market. However, it should be acknowledged that regulations focus on things which are easy to control (e.g. inputs), and are in the hands of policy makers and not of the organic movement. There is an end-product approach, disregarding the production process. However, it is important to notice that not all aspects can be or should be regulated (e.g. number of earthworms in a hectare?).

He pointed out that from a practice point of view there are similarities between organic agriculture and agroecology. For example, even though an organic farmer does not use synthetic fertilisers (s)he has to make sure the soil is still healthy. He also asserted that even though not all organic farmers practice agroecology, agroecology is nonetheless at the heart of organic farming practices.

He presented an overview of 'Organic 3.0: vision for the future' which aims to address challenges of 21st century (food security, sustainability of resources, biodiversity, etc.). Organic 1.0 was about founders and pioneers, Organic 2.0 about standards and regulations, Organic 3.0 will be about going beyond just covering market demand by moving toward better practices. It aims to foster a culture of innovation, widespread conversion and inclusiveness through building partnerships with other movements (e.g. Agroecology or Fair Trade).

Organic farming makes up only 6.5% of the overall EU surface (only 1% of agriculture on the global scale) so it is still a niche. Organic 3.0 aims to have more than 50% of EU agricultural surfaces as organic or agroecology (not necessarily certified) by 2030.

So far, organic standards have been achieved through minimum requirements and this is a limitation. Agroecology contributes a whole food system approach to organic farming, but organic farming is perhaps better able to be in control of its own movement.
Transitions to agroecological systems: agroecology in the UK (Susanne Padel)

Susanne Padel works for the Organic Research Centre in the UK. Her group researched agroecological transitions in the UK (“Tell us the story of your farm”) to answer the question of how do farmers make the transition from conventional to agroecological practices? She presented the ‘triggering change model’: First, getting started (biggest problem), second, having an active assessment (all farmers are concerned about long-term financial viability of the farm) and third implementation.

She pointed out that collaboration is also key, models do not explain why people change, and that sometimes the stages are there but not always in order. She also talked about the ‘efficiency, substitution and re-design’ model which sees some farmers making more than one transition. The research also showed that there is a learning and an unlearning process during a transition and that farmers want to judge their progress for themselves. To this end there is a need to develop accepted indicators for resource use and sustainability.

Responding to a question regarding the possibility of creating a network of model farmers, she replied that they can only go so far. There is a risk of institutional thinking and locking in. There is more need to help farmers go and spread the words. Psychological studies which look at what makes people creative, showed that change is mainly triggered by what farmers saw on the farm and being introduced to new ideas as main drivers of change. There is a great importance of exchange trips and a need to support farmers to help them make their examples more accessible through, for example, paying them for visits and symposiums. The farmers are not supposed to copy, they’re supposed to be inspired (same as researchers).

Perspective from 25 years of practicing agroecology (John Hayden)

John has been running ‘The Farm Between’, an organic fruit nursery in Jeffersonville (Vermont, USA), with his wife for 25 years. In 2011, two floods triggered a change of mindset, especially in relation to climate change and they decided to convert to agroecological practices to increase their resilience. Their guiding philosophy is based around creating a regenerative model, increasing biodiversity, the love of being immersed in nature and ‘small is beautiful’ (no infinite growth and enjoy the little things of farm work). They also work on pollinators C.A.R.E. (Conservation, Advocacy, Research, Education).

John described the USDA divergent evolution in terms of what organic is in the USA. There is ‘industrial organic’ which is motivated by stakeholder profits, has large lands and makes use of certified products for pesticides and herbicides. At the other end of the spectrum there is ‘agroecology-based organic’ which is biodiverse, provides ecological services, promotes the ‘triple bottom line’ with ecological, economic and social aspects taken into account. It sells to diverse markets and transforms products to add value.

He pointed out that organic does not always mean agroecological but that organic with agroecology can be prosperous and regenerative. He stated that there is a need to develop better models, to educate consumers, and for organic agriculture and agroecology to become so good as to make industrial agriculture inconsequential. In terms of scalability, he asserted that it is possible but we should stay away from the current corporate model. He is in favour of production by the masses rather than mass production with amplification (more farms) rather than going bigger and bigger.
Convergence, divergence, and specificities between agroecology and organic agriculture in Italy (Paola Migliorini)

Paola is Assistant Professor of Agronomy and Plant Production Systems at UNISG in Italy. She gave a brief overview of the evolution of ecological agriculture in Italy and pointed out that the co-evolution of the two movements is quite old (from 1990s). She presented the preliminary results of a study her group did where they investigated the convergence, divergence and specificity of agroecology and organic agriculture in Italy. They ran a survey asking for the definitions of agroecology and organic agriculture, how agroecology and organic agriculture are placed in relation to other approaches/methods of agriculture and food systems and what are the practices (from soil to table). The aim was to gather the perception of technicians, researchers, farmers, producers, activist, NGOs and consumers through face-to-face and online interviews with a structured questionnaire (27 questions) focusing on actual perception of agroecology and organic agriculture, comprehension, personal approach and future expectations.

For cropping systems, organic agriculture is perceived as clearer, more precise, more strict. The perception was that some practices are more present in the organic agriculture sector (crop rotation, organic input, biological control, certified organic seeds) while other are more associated with agroecology (no ploughing, intercropping, minimal use of external input, preservation of territories, functional biodiversity to production, ecological infrastructure, reduction of fossil fuel).

For animal production, more practices were associated with organic agriculture (organic feed, use of feed from the farm, no antibiotics, no growth hormones) while practices associated more with agroecology were the use of local breed and seasonal feed. In terms of recognition, organic agriculture is more easily identified by consumers whereas agroecology is geared more towards local markets and local processing.

They also asked people for their definition of organic agriculture and agroecology. For organic agriculture, respondents equated it to regulation, ecological sustainability and to a transition to agroecology. For agroecology, the definition was unclear for many. Some pointed to the social and political aspect, the system redesign approach, the ecology of the food system and the association to food sovereignty.

In terms of future expectations, for organic agriculture, there is a need to improve the agroecology approach, social aspects, support the transformation phase, shift from control to guarantee systems. For agroecology there is the need to have more precise practice, to be more concrete. Some asserted that there is no need for another label like organic agriculture and that it should include training and participatory research.

Paola concluded saying that the transition should drive the two movements, because the path is not obvious. She added that there is a need to understand how to help and how to drive, that biodynamic could be used as a model for both organic agriculture and agroecology, and that there is a strong convergence between the two approaches, thus it is desirable to work in synergy.

Agroecology in Spain (Karen Hoberg)

Karen Hoberg works for SEAE (Sociedad Española de Agricultura Ecológica) which was created in 1992 to give technical support to farmers. SEAE deals with both organic agriculture and agroecology in parallel as a way to achieve a transformative food system approach by integrating agroecology’s three fundamental principles (science, practice and movement). She started by pointing out that Spain is on the first position in Europe regarding organic certified
area and gave a brief overview of the background of agroecology in Spain. She described how in the early 2000s the agroecology term started to be used by the social rural movement. Agroecological practices can be understood as traditional management systems. She went over some of the work done by SEAE: Seeds & agro-biodiversity promotion, work on short supply chains (local and street markets), consumers associations, exchange activities, production of training materials (handbooks, magazines) and programmes, and international cooperation and networking. She described the main path of agroecology through the technical approach and the social aspects (eg. participatory research), while combining rural development strategies to agroecology practices.

She went on to describe the different aspects of agroecology in Spain: Higher and professional education, participatory guarantee systems, research, traditional seeds for organic agriculture, social movements, networking.

She spoke about how organic certification is more useful when selling to people who don’t know the farm or don’t have the time to ask questions about how the production is done. She described the necessity to adjust the certification processes (eg. participatory guarantee systems), that organic agriculture and agroecology should keep their own identity, social movement, etc. but that there is some convergence (scaling up, overcoming power, networks of initiative) and that they must coexist and combined where necessary. For example, agroecology is a concept that can be used by all farmers (as it is not protected).

Discussion

A question about going beyond the western world and into developing countries (particularly in Africa), and whether agroecology would be more beneficial than going organic was answered by saying that the principles of organic agriculture and agroecology are similar and organic agriculture can be relevant also for developing countries but it doesn’t necessarily need to be certified. For example, if one sells to local markets a certification is not needed as it is mostly relevant when you sell on longer supply chains. However, a participant also pointed out that certification can also be useful on local markets as it is a way for us as consumers to be sure that the principles that we expect from these practices are really met at the farm level. In that respect building trust is absolutely essential and for local markets there are other options that could be developed through, for example, a shift from 3rd party certification to guarantee systems (eg. PGS). So there is a necessity to adjust the certification processes where perhaps the idea is to go towards value chains and not just the threshold of certification. Someone proposed the idea of a more dynamic certification system where farms have to demonstrate how they improve their farm every year instead of simply fulfilling the minimum requirements. John Hayden stated that for their farm certification is a marketing strategy. He pointed out that many people assume that local products are organic and that is a frustration for them.

A couple of questions pertained to the impression that sometimes organic agriculture and agroecology are often in opposition ("organic agriculture is farming according to a recipe") and that there is even mistrust at time and that should be addressed.
Session 3: Development of agroecological practices
Convenor: Paolo Barberi, Agroecology Europe, Scuola Superiore Sant'Anna, Italy

Session talks:

- Srđan Šeremišić (University of Novi Sad, Serbia) – “Crop rotation nexus”
- Serena Magagnoli (University of Bologna, Italy) – “Influence of cover crop management techniques on soil ecosystem services”
- Chloé Salembier (INRA/ AgroParisTech, France) – “Outscaling innovative practices on farm: promising approaches to foster the design of agroecological farming systems”
- Antsa Rafenomanjato (Scuola Superiore Sant'Anna, Italy and CIRAD-SPAD, Madagascar) – “Malagasy farmers’ view on the use of Stylosanthes guianensis for weed management in no-till rain-fed rice cropping systems”
- F. Xavier Sans Serra (University of Barcelona, Spain) – “The role of agroecology in designing sustainable food systems: the experience of the periurban rural area of Gallecs (Barcelona, Catalonia)”

Crop rotation nexus (Srđan Šeremišić)

A historical overview shows that crop rotation has been used for a long time (e.g. in China since 3000 years). It is related to maintaining soil fertility, providing nutrients to crops, and facilitating the control of pests among others. In addition there are beneficial cumulative effects of crop rotations. These are usually not easy to distinguish from other effects such as climate. Are yields appropriate to measure crop rotations effects? It may take time to see the effects of crop rotations. What can we compare to? What are the contributions of specific crops or varieties? Hence designing crop rotations is complex and requires both experience and practical knowledge considering the farm and field scale and the annual and multi-annual effects. As crops exert most of their effects through the soil, a new approach is needed that relates crop rotation to soil properties, long term sustainability and ecosystem services in order to decouple outcomes to soil and crops. This approach could allow farmers to design specific “soil sustained systems” that embed into the local environment and meet the requirements of the farmers. However, there is no unique formula and it may take many years until a new equilibrium between plant, soil and management can be observed. This requires long-term experiments to better understand these crop rotation effects.

“Crop rotation is like composing a symphony where each musician must play his unique instrumental part to conceive melody”.

Influence of cover crop management techniques on soil ecosystem services (Serena Magagnoli)

Agroecological service crops (ASC) are cover crops, living mulches and catch crops with environmental functions that provide food and habitat for natural enemies and are thus used in conservation biological control. The impact of ASC (vetch and barley) and the termination technique (green mulch and roller crimper) on predation pressure in organic horticulture compared to a biodegradable film cover was studied. The activity density of arthropod groups was higher in ASC treatments than in synthetic biodegradable film cover. Roller crimper increased the frequency of predation on artificial caterpillars in the vetch-tomato rotation while
there were no differences found in the barley-zucchini rotation. Artificial caterpillars were shown to be a suitable standard method to determine predation by natural enemies. The ecological impact of the termination technique may depend on the type of cover crop used.

Outscaling innovative practices on farm: promising approaches to foster the design of agroecological farming systems (Chloé Salembier)

How and why do agronomists outscale farmers innovative practices? Agronomists expect a promising technique for agroecology (by looking for farmers who put these into practice), to open innovation fields poorly explored by R&D (by looking for farmers who explored these innovation fields, e.g. self-construction equipment), to illustrate the operational implementation of known techniques on farm (by looking for farmers who put in practice innovative techniques known by agronomists) and to get references on transitions toward innovative practices (by co-designing with farmers). Relying on their exchanges with farmers, agronomists outscale innovative practices and produce resources to support the design in other farms (e.g. testimonies, recipes and generic agronomic logics, each comprising a different hybridization of farmers - agronomist knowledge). At which conditions and how does it enrich design processes? To outscale practices and build resources for others, agronomists analyse, transform, translate, organise farmer's knowledge. Agronomists hybridize their knowledge with farmer's knowledge to explore new techniques, to assess performance, to produce generic knowledge for action and to illustrate theoretical knowledge in diverse production situations among others. There are differences on how and why farmers want to change practices and diverse ways of applying the same technique.

Malagasy farmers’ view on the use of *Stylosanthes guianensis* for weed management in no-till rain-fed rice cropping systems (Antsa Rafenomanjato)

About 70% of the population in Madagascar are farmers. They exploit less than 1.5 ha on average. Rice is the staple food and most cultivated crop. With the lowlands saturated, farmers extended to the uplands where they encountered lower soil fertility and problems with pests and diseases. Under these circumstances an innovative cropping system based on *Stylosanthes guianensis* was introduced. Stylosanthes is a perennial legume managed as living mulch that has been proven to enhance soil fertility. Rice is sown directly after roller crimping Stylosanthes without previous tillage. *Striga asiatica* is the most problematic weed in the area. Weeding is mainly done by hand with peak workloads at the beginning of the rainy season. Farmers perceived that the no-till system with Stylosanthes cover reduced total weed abundance by 50%, particularly Striga, and produced about 50% additional rice grain yield. The limits of the system are the harder work during the sowing, the potential competition on crops by Stylosanthes regrowth and the required time for the system to establish (3-4 years).

The role of agroecology in designing sustainable food systems: the experience of the peri-urban rural area of Gallecs (Barcelona, Catalonia) (F. Xavier Sans Serra)
An agroecological transition is a complex process that must be articulated at different scales (plot/farm, municipality, region, society) and in several dimensions of sustainability (agronomic-technical, ecological, economic, social and cultural).

Gallecs is a peri-urban rural area. In 2005 half of its area (750 ha) became protected and classified as non-building land. This initiated an agricultural model being developed that is based on traditional farming and harmonizes economic and environmental sustainability. The proximity of a consumer market (local market), the increasing responsiveness of consumers toward quality and food safety, social demand for new activities like leisure, environmental education and agrotourism are opportunities that are present in Gallecs. However, social and town-planning pressure puts the continuity of the activities and the traditional agricultural economies at risk. A new agricultural model has been developed in a participatory process with different stakeholders. The area converted to organic farming has increased from 60 ha in 2005 to more than 200 ha in 2017. On 20 pilot fields, the agroecological transition is monitored. Recovering local and traditional crop varieties, crop rotations (e.g. with alfalfa every 4-6 years to reduce tillage and control weeds), field margins, soil fertility as well as economic profitability, incorporating young people into the area, establishing local organic food fairs and organic food shops and participatory research (since 2011) have been aimed for. After 11 years the Gallecs project can be defined as an agroecological lighthouse that should be used as a model to scaling up the agricultural areas managed under the principles of agroecology.

Discussion

Several questions of interest were addressed to the key speakers asking for more details on the methods and local conditions. One question that came up aimed at the underlying reasons why Gallecs is called an agroecological region instead of an organic region although they are certified organic. The main reason was stated to be the inclusion of more aspects than only agriculture but also social aspects when referring to an agroecological region. It was also discussed what would be the agroecological principles present throughout all talks. A clarification was also needed for the term outscaling. It may have to be further defined to avoid confusion. In the stated context it is the generic knowledge that can be useful for other farmers and that needs to be explored to understand how it works.
Session 4: Making the transition
Convenor: Alain Peeters (Agroecology Europe, RHEA, Belgium)

Session talks:

- Marco Bertaglia (European Commission) - “A “research-embedded-in-action” framework to foster agroecology”
- Xavier Poux (Legouvé, France) - “Ten Years For Agroecology (TYFA) – a scenario exercise exploring the feasibility of an agroecological Europe”
- Vincent Delobel (Fermes Novatrices, Belgium) - “Farming novelities: our way forward”
- Marjolein Visser (Université Libre de Bruxelles, Belgium) - “Can we avoid extractivism while doing research in agroecology? A critical view on co-optation and institutionalisation of agroecology”
- Carine Herbin (Institut Français de la Vigne et du Vin, France) - “Guide for agroecology in viticulture, a tool for the sector”

A “research-embedded-in-action” framework to foster agroecology (Marco Bertaglia)

Marco Bertaglia works with the European Commission’s Joint Research Centre in order to help inform EU policy. As someone that works with connecting science and policy, he believes that we need a revolution in agriculture, not just a change in cosmetics. Agroecology doesn’t just shift priorities in the existing system, but rather calls for a whole system redesign. Part of this redesign would be including everybody in land-use decision, so that the community actually affected by these decisions is able to provide input for the process. In order to achieve this structural change towards agroecology, we must conduct action-research. Part of this would mean getting more farmers to engage with the research being done on their lands. Currently 91% of farmers do not participate in the research being done in their fields—how can we get them to take a more active approach? In addition, we need to involve more people from in and outside agriculture in the process—a transition to agroecology would not be isolated to one part of the population. It’s also important to that we collect the data throughout this process, we don’t want to miss the data train, as it is integral to showing, with rigorous scientific process, the benefits of agroecology. The framework we can use to achieve this change is a steering group that generates business plans, farmer’s involvement, and legal framework, combined with a catalyst that instigates change.

Ten Years For Agroecology (TYFA) – a scenario exercise exploring the feasibility of an agroecological Europe (Xavier Poux)

Xavier Poux works with TYFA, a project that explores how Europe can shift to agroecology by 2025. TYFA was born out of an understanding among researchers and other stakeholders that currently Europe’s agricultural system is not sustainable in the medium term. By developing a radical (yet plausible, coherent, and scientifically-sound) scenario for agroecological transition, TYFA plans to trigger public debate about our current state of agriculture, and thus force a plan for agriculture onto the policy stage. The main points that TYFA focuses on are the loss of biodiversity, using Europe as a unit of analysis, and agroecology as a combination of organic agriculture and high value nature farming. By generating discussion around these topics, TYFA
hopes to deconstruct the productivist narrative around European agriculture, and get at the question, what is today's European farming really about?

The early findings of TYFA show that there needs to be a radical land use change, more diversified cropping systems, livestock-crop integration, and more extensive permanent grassland area. Furthermore, there needs to be a change in the EU consumer’s diet, one that does limit the need of industrialized livestock production. In this model, there is still room for the export of products. With this change, there also needs to be a consistent, alternative narrative to the “we do better” of precision farming and sustainable agriculture. But in order to begin this process, there needs to be a trigger, a radical policy debate for transition. For example, what if we banned pesticides? How would that shape European agriculture going forward?

**Farming novelties: our way forward** *(Vincent Delobel)*

Vincent Delobel works on his family's goat dairy farm in Belgium, and his and his family's story is a living testament to ability of agroecology to transform the land and the community. The farm used to be an intensive dairy cow operation, but had to continually adapt and convert to stay viable. They switched from conventional to organic, and then from cows to goats. But it was only by incorporating the value-added products of cheese production, as well as opening up the farm to educational groups, that the farm was able to stay viable. The conventional narrative in agriculture is that you either must get bigger, and adapt with the aid of technological packages from industries, but the Delobel farm proves that you can think outside the system. To Vincent, this process of rejecting the industrial agriculture narrative is a re-peasantization, which means, above all, a reclamation of autonomy.

The Delobels rejected the external pressure, and instead learned to listen to themselves, to their land, and to their consumers. After listening, they experiment, for example they now host potluck dinners with farmers' colleagues to avoid the isolation that is common in farming. However, this experimentation does come with risk and extra management, but it is necessary in order to adapt. They also share their experiences on the farm, both with their network but also with the educational groups that come to the farm. The Delobel farm is part of the Réseau de Fermes Novatrices, a network of farms and farmers who strive towards more sustainable and responsible farming practices. This network is premised on the fact that change comes from the bottom, and can be driven by the autonomy of the peasant movement. This belief doesn't just affect the farmers, but it affects everyone. Without peasants, we would all be subject to the industrial agriculture, and there would be no free citizenry.

**Can we avoid extractivism while doing research in agroecology? A critical view on co-optation and institutionalisation of agroecology** *(Marjolein Visser)*

Marjolein Visser is an agroecology researcher and university professor who spoke about how currently agroecology is a contested area. It has its origins in the peasant struggle against extractivist agriculture based on non-renewable resources, and is deeply rooted in autonomy, reclaimed ecology, and social identity. However, she warned now that agroecology is in danger of being co-opted. If co-opted, agroecology will be institutionalized (which is paradoxical in its nature to agroecology), largely emptied from its sense, which will suppress the creation of new ideas and instead only allow for a subset of the original ideas, stabilize new networks and thus solidify new power relations, limit new opportunities, and give no thought to the redistribution of benefits, thus allowing the benefits to remain in the hands of a few.
By researching about agroecology, we run the danger of perpetuating extractivist agriculture, and thus emptying it from its quintessence and becoming complicit in its co-optation. Despite agroecology's purported social component, there is still the danger of the dispossession of voiceless peasants, the appropriation of resources, the erasure of history, the ignoring of socio-material context, the stripping of political content, all this while not upending the paradigm of exploitative industrial agriculture.

To fight against this, we as researchers must force ourselves to be less comfortable, and continue to ask ourselves the hard questions: Who decides on content and focus of research? Which knowledges/experiences count? Who benefits? Who learns? What does the research generate/make disappear? What and where to (or to not) publish? Above all, we must ensure that our research contributes to societal change. To do this, we must navigate the tensions and contradictions inherent in agroecological research. We can achieve this by incorporating reflexivity as a baseline, understanding agroecology as an inherently socio-technical question, not to lose sight of social justice, be aware of extractive research practices, and above all be aware of the cooptation of agroecology.

Guide for agroecology in viticulture, a tool for the sector
(Carine Herbin)

Carine Herbin works for Institut Français de la Vigne et du Vin, which has created a practice guide for bringing agroecology to viticulture in France. As of 2014, French legislation has strongly encouraged the adoption of agroecology into French wine-making. Specifically, agroecology in viticulture can conserve and develop biodiversity, control and reduce fertilization, reduce the use of pesticides and instead develop biological pest controls, strive towards better water management, and use plant material that is more adapted to low-input conditions. The adoption of agroecology entails in priority: cover crops in and around vineyard plots; prohibiting chemical weeding on the entire surface of the vineyard plots; improving the efficiency of spraying equipment; reduction of quantities of plant protection products; limitation of mineral nitrogen fertilisation, maintenance of stone walls, terraces, hedges, trees, groves, etc.; and respect of the original morphological sequence of soils.

To help viticulturists moving towards agroecology a guide has been published online, along with interactive tools, available at www.vignevin.com. These online tools help wine producers with both the strategy and the educational components of switching to agroecology. Carine’s work is an example of how the transition to agroecology can be taken from theory to practice, and can be made widely accessible to growers of all regions in order to help facilitate the transition to agroecological practices.

Discussion

After the impulse talks, the room was opened up for a question and answer discussion. Some participants saw the institutionalization of agroecology not as co-optation, but a sign that agroecology is winning the battle of ideas, though still some worried that it would merely be an institutionalization similar to that of organic agriculture, and thus not the paradigm shift that many are calling for. Indeed, conventional agriculture is already co-opting many of the terms from agroecology, such as food sovereignty, and green-washing their language. On the topic of language, some thought that agroecology already had too technical a lexicon, and that it would behoove us to keep the language accessible for all. Other participants asserted that, while reflexivity is no doubt important, what matters is what's happening on the ground, and that there is science behind these ideas to prove that it works. Furthermore, many agreed that agroecology will not be able to move forward without a change in political economy, and without proponents of agroecology playing a more active role in politics. Some called for radical
measures, others think we should be more measured in order to stay credible. This goes for the social process as well - many agreed that the broader society must also be part of this transition. With so many perspectives and experts in different areas brought together, it was challenging to close such an important and fruitful session, but almost everyone agreed that more lively discussions like this would be to the benefit of the agroecological transition.
**Workshop 1: Structural Change or Land grabbing: the rapid transformation of the agrarian family farm system in Europe and the role of agroecology**

Convenors: Stephanie Domptail (University of Giessen, Germany) Bernd Müller (Farmer and University of Giessen, Germany), Daniel Mühlleitner (Friends of the Earth, BUND, Germany)

The workshop started with the brief introduction to the 3 aspects about the land restructuration process which would be discussed during the workshop. These were the consequences of land restructuration, the effect of restructuration on the agroecology practices and movement and the possible effect of the agroecological practices and movements on the process of land restructuration. Participants were asked to group around the topic of their greatest concern and to share briefly their reasons for choosing this topic. This allowed participants to get acquainted with one another and determine the content of the working group more precisely.

In a second time, the talks delivered during the workshop aimed to assess the phenomenon of land grabbing and land restructuration in Europe with a special focus on the German case. Social, environmental and economic impacts of land distribution changes are considered. Land grabbing is presented as a politicized perception of land restructuration. We explored the role of agroecology as a way to justify the struggle for land and as a way to bring a political and social dimension into the land restructuration phenomenon.

**Impulse talks:**

- Daniel Mühlleitner (BUND, Germany) – “Key facts and figures about land restructuration in Western Germany”
- Bernd Müller (University of Giessen, Germany) – “Land restructuration and its impacts on subsistence economy and the farmer-environment relationship”
- Stephanie Domptail (University of Giessen, Germany) – “Land restructuration or land grabbing: Towards a working concept of land grabbing for western Germany”
- Bernd Müller (Farmer, University of Giessen, Germany) – “Where agroecology comes in: the case of the Bündnis Junge Landwirtschaft e.V in Brandenburg, Germany”

**Key facts and figures about land restructuration in Western Germany** (Daniel Mühlleitner)

The talk gave an overview on facts and figures of farmland distribution in Germany and provides data regarding employment, land and leasehold prices and the average size of farms. The distribution of farms in Germany is characterized by large farms (over 80 ha) mainly concentrated in the eastern part and small-medium farms (between 20 and 50 ha) in the southwestern part. Trends observed in the last 20 years are doubling prices both for leasehold and farmland, a decrease of 60% in the number of farms, 20% less people employed in the farming sector and an increase in the average size of farms.
Land restructuration and its impacts on subsistence economy and the farmer-environment relationship (Bernd Müller)

During the second talk, the concept of “subsistence economy” was introduced, which calls for self-sufficiency of communities and reciprocity as a way to work together in order to preserve the social inter-linkages embedded in the local food system. The question raised was whether new land users coming from outside the region care about maintaining these social inter-linkages that are deeply rooted in local farming or if they would rather threaten the human-nature relationship connecting farmers with the territory by structurally changing the original agricultural system of production.

An additional concept brought in the debate by the talk was the good stewardship, that is, the feeling of responsibility for the land that may drive farmers to adopt environmentally friendly practices.

Land restructuration or land grabbing: Towards a working concept of land grabbing for western Germany (Stephanie Domptail)

The concepts of “land grabbing” and “land restructuration” were discussed. The terms might be seen as substitutes, however it is not clear whether all land restructuration actions also constitute a land grabbing. In order to understand what makes a land grab, the presentation showed early results of a comparative analysis of various texts defining land grabbing. The term “land grabbing” can carry multiple meanings according to the institutions or groups referring to it and, so far, no consensus has been reached on its definition in Europe. In documents issued by economist researchers or the state, land grabbing is described through its structural aspects mainly: prices, farm size, tenure, legality of transaction. Many economists consider the phenomenon with a market approach, thus leaving out other aspects such as fairness of the transactions and changes in the production system. Land deals affect farmland distribution in the country but also modify power structures among stakeholders employed in the agricultural sector. In documents issued by other groups such as the opposition party the Green and NGOs, political aspects and production process aspects are mentioned as well: the right to access land in order to produce food, and especially a better food as compared to the production systems of the parties monopolizing the land. Agroecology can help fueling the concept of land grabbing with political and social meanings, thus addressing the wider spectrum of consequences of this phenomenon in Europe.

Where agroecology comes in: the case of the Bündnis Junge Landwirtschaft e.V in Brandenburg, Germany (Bernd Müller)

From 1991 onward the sale of many eastern German farmland units previously under the control of the Soviet Union began. The land deals mainly favored the highest bids and no clear agricultural scope was set as a criterion for attributing the land. In 2010, because of strong activism, a new law was introduced which demands that at least 20% of the farmland sold should be used to develop sustainable agriculture. This victory was also due to a group of young farmers called Bündnis Junge Landwirtschaft active in politics and promoting innovative approaches to agriculture which soon raised the consensus of many consumers in the Brandenburg area.
Discussion

During the discussion, participants were asked to form groups around the three topics presented initially and to answer the following questions:

- How can agroecology affect the problem of land restructuration?
- How does land restructuration affect agroecology?
- How does land restructuration affect social and ecological aspects within the landscape?

There was a general agreement on the negative impacts of land grabbing on social and ecological aspects such as employment change, more dependency on inputs, loss of biodiversity, abandonment of farming and reduced population in villages due to urbanization. In the opinion of some participants, the link between agroecology and land grabbing was not fully developed and a bridge between research and civil communities engaged in those thematic was called for.

It was concluded that agroecology could indeed play a role in solving the land grabbing problem and provide the criteria for a fairer attribution of farmland to stakeholders, which aim to develop agroecological practices and respect the social system embedded in the territory.
Workshop 2: Exploring agroecology principles
Convenor: Francois Delvaux (CIDSE, Belgium)

All five key speakers gave an impulse talk to introduce their topic. Following this short introduction participants were split into 5 groups to discuss with one key speaker each the respective topic at a ‘table’.

Impulse talks:

- Pedro Guzmán (Red Nacional de Agricultura Familiar, Colombia) – “Agroecology as a way of bringing social justice”
- Lynne Davis (La Via Campesina, UK) – “Agroecology’s potential for women’s empowerment”
- Judith Hitchman (Urgenci - the international CSA network, France) – “Economic viability of agroecology”
- Michel Pimbert (Coventry University, UK) – “Climate resilience and agroecology”
- Krishnakar Kummari (MIJARC, Belgium) – “Youth, agriculture and rural areas”

Agroecology as a way of bringing social justice (Pedro Guzmán)

How can agroecology become an opportunity for communities to discuss not only food production but also the environment and social problems? Agroecology may present an opportunity that allows us to change paradigms by addressing gender equity, preservation of seeds and traditional knowledge. With the current violence in Colombia against peasants and indigenous people who claim their rights on land, it will be discussed if agroecology can bring social justice.

Michael O’Brien (Trócaire), led this table with Pedro Guzmán from the Red Nacional de Agricultura Familiar, Colombia.

(See also http://www.cidse.org/articles/just-food/food-and-climate/exploring-agroecology-principles-highlights-and-ways-forward.html)

The quality of diets, the threat of land grab, the health of the natural environment are amongst the challenges many communities are faced with today. Their food and nutrition security is interconnected with the respect for their land rights, healthy soils, and waterways. Discussions on how to counter threats such as those presented by extractive industries and megaprojects support thinking on how to protect territory in all its dimensions, social, cultural, environmental and economic.

Agroecology represents a holistic response to these challenges. Representing a way of life as opposed to a production focused system, discussants considering its potential to strengthen relationships within and between communities. The potential of agroecology to provide sustainable livelihoods as a way of consolidating peace was identified as an important attribute in post-conflict contexts like Colombia.

The identification of opportunities to influence public policies that support the promotion of agroecology is key. Alongside political engagement, the development of a critical mass through alliance building with like-minded civil society organizations - including interested consumer, media and faith leaders - was identified as an important strategy for promoting an agroecological policy transition.
Agroecology as a tool to empower women (Lynne Davis)

Can we use agroecology as a political tool to start fundamentally exploring the imbalances of the power structures and the challenges and risks included when stepping in, especially in other cultures? We live in a deeply patriarchal world with power imbalances. It is the woman's job to take on the majority of the emotional labour. Migrant workers often live in horrendous conditions. There is no revolution without feminism. It will be discussed if agroecology can serve as a tool for women's empowerment.

Katelijne Suetens (Broederlijk Delen) led the table discussion with Lynne Davis from La Via Campesina.

On one of the tables of the CIDSE workshop on principles of agroecology, we discussed the central issue of gender equality. Actually, not gender. The common reaction around the table to our initial presentation was that we should use the term -feminism-. In order to avoid limiting ourselves to technical issues and forgetting the political and social aspects: There is no agroecology without feminism! It is a message, a warning, expressed several times and in different ways and related to the different themes of these past three days: do not limit agroecology to a technical practice! Above all, it is a matter of achieving social justice.

But back to gender, or rather, feminism and agroecology. We learned that during the construction of agroecology these past decades, it was rather patriarchal in nature itself! It started as a struggle of male farmers, fighting to reassert their rights over land but with little attention for the rights of female farmers. Agroecology today should actively strive to bring equity. And this will not happen by itself. Agroecology does create opportunities for women to increase their economic autonomy and, to some extent, influence power relations, especially within the household. Agroecology can delink all farmers, men and women, from corporate power, but it will not automatically deconstruct the male dominance of societies worldwide. In agriculture, this is more important still because the so-called modern agriculture of the Green Revolution has wiped aside for decades the traditional agricultural knowledge, often held by women. In Africa, people still remember many agroecological practices, they are not new to them, they have the practical knowledge to implement them. However, tradition is proving to be a huge hindrance to actually implementing agroecology.

While searching for answers, the participants at the table emphasized that every struggle for social justice, be it feminism or equality or other, will always lead to conflict. Fierce resistance will be met and people will inevitably suffer. But it is important not to stand in isolation. Feminist men should be identified to participate in the struggle together with women. The agroecological movement aims to change the system as a whole and should therefore always go hand-in-hand with feminism. The particular potential for transformation was illustrated with the example that conferences, university courses, among other spaces that focus on agroecology attract a majority of women and young people. This in contrast with studies, seminars, conferences on conventional agriculture that tend to be dominated by (older) men. There is therefore much to hope for in this path.

Economic viability of agroecology (Judith Hitchman)

A personal story about a trip island-hopping in Cape Verde to explore the local food system introduced this topic. The national food plan of Cape Verde uses imported potatoes rather than local potatoes because they are cheaper, it uses imported chicken rather than fish from local waters, although fish has been part of the traditional local diet. This example shows that there is
a need for agroecological indicators to assess the viability of an agricultural system rather than utilizing the indicators of the dominant neoliberal system.

Sarah Schneider (Misereor) led the table discussion with Judith Hitchman from Urgenci. In the discussion about the economic dimension of agroecology the relevance of building territorial food systems was stressed out. By using local resources and providing food on local markets, agroecology has the potential to boost local economies. There are different forms of building local food systems. Strategies to market agroecological produce are diverse, including farmer markets, food coops, CSA, etc.

One participant mentioned his experience of a region in Spain, where there was local food production but no local consumption. Consequently, there was a lack of trust and relationship. On the one hand, this is a political issue as it shows what kind of consumption is promoted and which is not. There is a clear need to build policies that support local markets, such as for example public procurements for sustainably sourced food in school canteens. On the other hand, it is an issue of building awareness, to get organized and get people involved. One strategy in this particular case could be for example to build consumer groups with local people. When we want to rebuild territorial food systems we also have to rethink our consumption patterns so they fit with the local conditions.

Agroecology also contributes to economies by providing employment opportunities in rural and peri-urban areas. The objective of agroecology is to provide decent work that respects human rights and provide a decent income for farmers. (Technical) innovations such as tools and machines that fit for agroecological farming and can be used for diversified, small-structured farming can make work easier.

Regarding economic viability, it is important to stress out that agroecology has no externalities, as it produces no waste and has no negative health impacts. But to understand the full potential of agroecology, you need to look at values beyond money. Other factors, that play a crucial role in supporting agroecology, are the time used to support local food systems and the involvement in concrete actions.

Climate resilience and agroecology (Michel Pimbert)

The initial focus of agroecology was to design sustainable agriculture. Now it is not just about farming anymore but about the ecology of the whole food system. Each link in this food system has to be addressed in order to reduce carbon footprints. In France 30% of the greenhouse gases are caused by the food system. In the following discussion we will distinguish between agroecology and climate smart agriculture to identify possible coalitions of interest. Agriculture needs to be re-embedded in nature i.a. through biological diversification (poly cropping, intercropping, agro-silvo pasture systems etc). This is essential to adapt to climate change but also to mitigate climate change e.g. through carbon sequestration. In addition it has to be identified what can be done to bring consumption closer to production? For this purpose we need to address alternative food systems. We also need to integrate energy, water and waste management into the food system in order to shift to more circular systems. Waste should be a resource and input for farming. How can we change production processes and policies to achieve a more carbon resilient food system? What can be done to change the structure of the entire chain of production, distribution, consumption and waste management? It is the task and strength of agroecology to address these issues.
Rose Hogan (Trocaire) led the table discussion with Michel Pimbert from Coventry University, UK.

Contributions from close to 25 farmers, permaculture designers, ecologists, students and academics made for forward-thinking thoughts on how to give agroecology the attention it truly deserves. This, not only for greater resilience to climate change impacts but also for reform of the whole food system which currently contributes simultaneously to both hunger and obesity and is causing large-scale removal of smallholders from the land.

It is important to start counting the social, economic, cultural and environmental contributions of agriculture so that the true value of agroecology becomes visible. Therefore it is important to lobby for independent research and to demand that agricultural research counts the negative external costs of the large-scale high carbon-input dominant systems to health, the integrity of the natural environment and agro-biodiversity.

This independent research also needs to give attention to re-designing farms and agricultural landscapes applying ecological principles. Only 2% of agricultural research globally is spent on non-conventional farming! Doing this together with farmers, pastoralists, beekeepers and other producers in a newly ‘respectful’ / ‘decent’ way where the farmer leads and owns the knowledge is the only meaningful way forward.

But practice is what really needs the investment. Lobbyists should be demanding government support to those who are ready to take initiatives to change the way food is grown, preserved, transported, marketed and consumed. Grown as if nature is an ally, preserved as if the consumer matters, transported as if clean air and climate matter and consumed as if every ounce of energy and care expended to put it on the plate matters. Local initiatives are sprouting up all over the world, not least led by Latin American countries some decades ago. Examples from Turkey, Kenya, France and Spain were mentioned with excitement and enthusiasm.

Where to take this enthusiasm? How to get that government support? According to Michel Pimbert, the most effective and nimble governments are the local ones such as the municipalities. There are examples of good public procurement policies for school and hospital meals, of food waste reduction and of climate change measures being taken by local governments from Italy to California. Local initiatives with local governments are less overwhelming, more accessible and tangible than distant national, regional or international governance mechanisms. So let’s divert some of the lobbying energy currently being expended on international processes to more concrete local level initiatives! Every effort towards adopting agroecology will eventually add up, or stretch out, over the landscape as the case may be.

Youth, agriculture and rural areas (Krishnakar Kummari)

Not only the farmer is responsible for the agricultural system but also the people who consume food in this world, hence everyone, is responsible for our agricultural system. We will discuss the huge challenges and realities in the global world and the different actions to strengthen agroecology especially in rural areas. What are the realities in the rural areas? How can we support the youth to make the food system of tomorrow more sustainable through agroecology?

Vincent Melis (Entraide & Fraternité) led the table discussion with Krishnakar Kummari from MIJARC World.

The issue of youth in rural areas is a global issue. We see more and more people emigrating from rural areas due to high levels of unemployment and the impression that there are more and better living conditions in cities. The impact of this situation is a lack of dynamism in rural areas, and the lack of local opportunities pushes this situation into a vicious circle. Without the presence of youth or farmers in rural areas, it
becomes easier for big landowners or corporations to buy or acquire more land. In turn, this makes it harder for either young farmers or small-scale farmers to have access to land due to low financial capacities.

Moreover, technical or technological responses or “solutions”, such as GMO seeds, are pushing farmers to suicide. It is not the technology itself that kills, but the costs it represents. Agro-industrial companies sell an ideal yield that is not necessarily fit for the type of land. Farmers are indebted and have no possibilities to pay back the loans they acquire. Tragically, many of them commit suicide, as they find no other solution. The fact that the global policies and advertising are in favor of this agro-industrial model, farmers tend to believe that it is the solution. It is forgotten how this model needs externalities to be able to exist.

However, not everything is negative. Examples of changes happen when community-based approaches are used. The fact that there are little or inexistent rural or urban policies in favor of youth, shows the importance of facilitating the emergence of youth and women organizations. There is also a need to change the hegemonic vision in education and specifically in agricultural approaches. Systems in Brazil like the ‘alternated weeks’ (one week in school, one week at home) should be promoted to keep the connection with the rural realities.

In relation to the rural youth, there is a need to “make farming great again” or how to “make farming cool”. Farming holds an essential role allowing us to feed ourselves and therefore also to share moments with friends, to build social bonds. Showing and explaining how crucial this profession is an important step to strengthen the relation of rural youth to their backgrounds. Changing the dominant narrative is essential. In the words of Krishnakar Kummari, President of MIJARC World, “Agriculture is our past, present, and future”. To allow it to remain as an important cultural legacy, we need to encourage people to connect, communicate and support each other, especially within peasant communities and increasingly between rural and urban communities and youth.

Discussions and conclusions on the five topics presented by the key speakers

1. **Agroecology as a way of bringing social justice**

One of the main message was agroecology is a way to connect people and organizations to support each other and exchange knowledge. It may strengthen relationships, build bridges and exchange experiences. It was also discussed how to connect rural and urban populations. With an increasing number of the urban population interested in connecting with rural areas and understanding the importance of farming, agroecology is not only about farmers but also includes consumers and the whole food system with its various stakeholders. From a political point of view, it is important to support farmers in order to enable them to make the agroecological transition.

Agroecology has become a growing movement in Colombia. Although there is no nationally organized peasant movement, there are several smaller movements that have been joining the cause to develop agroecological practices. However there are issues that are perceived to be even more important than the implementation of agroecological practices at the moment, e.g. land grabbing. Agroecology is also seen as an opportunity in the peace process to integrate former Guerrillas returning to the land.

2. **Agroecology as a tool to empower women**

Examples of how agroecology may empower women were presented by one of the participants. Agroecology itself has a certain feminist attraction. This can be seen in schools, universities and conferences where agricultural science is dominated by men, whereas in agroecology there are
more women. One of the first remarks was that we should not limit ourselves talking about gender but instead talk about the political concept of feminism. There was the observation that the emergence of agroecology in the last decades has been dominated by men, both in research and in farmers movements. It is time to change this within the movement. Industrial agriculture has swept aside the traditional knowledge held by women. Women and their knowledge should regain their place in agriculture. There are countries with a huge barrier between agroecology and feminism. This is the case where tradition is not allowing that women’s traditional knowledge is really implemented. A general finding was that feminism is always going to be a struggle. A solution may be including feminist men in order to fight the unjust power relations together rather than in isolation. However only agroecology will definitely not solve the problem but we have to actively break the unjust power relations in patriarchal society.

3. Economic viability of agroecology
Building territorial food systems without negative externalities is important for creating a more sustainable food system. Territorial food systems are diverse, e.g. farmers markets, food cooperatives, community supported agriculture, producer shops, community gardens, box schemes etc. Certainly there always needs to be a balance between meeting people’s economic, ecological and social needs. Furthermore a decent income for farmers must be ensured. There were cases reported where there is local production but no local consumption. This may be due to a lack of trust and relationships but it is also a political issue. What kind of consumption is promoted? There is a need for policy to support local markets and raise awareness. The consumer group must be created to make local production feasible. However having territorial food systems in cities is a challenge. The preservation of prime agricultural land is therefore crucial for enabling food production within and around cities and subsequently connecting smallholder farmers to markets. The strength of agroecology is to provide employment in rural areas with a human rights focus and innovations that fit agroecological farming. The level of dissemination of alternative food systems is therefore important to support rural areas with agroecological agriculture. Agroecology is not only about how to grow food, but it is about how to reorganize our food system. Furthermore it is also important to rethink our consumption patterns to fit with territorial food systems.

4. Climate resilience and agroecology
Examples were collected where agroecology is successfully put into practice. One example are pastoralists in Kenya who connect historical and new knowledge discovering innovations this way. It was mentioned that women are more affected by climate change because, for instance, they have to carry the water for longer distances. Another example is from Turkey where they managed to rapidly increase organic matter content by composting and agroforestry practices. But there are also challenges and negative examples. We have been talking about a shift from a meat-based to a vegetable-based diet for many years but it was difficult to find a vegetarian dish at the buffet the evening before. Who is going to be a leading example if not we ourselves? To make change happen, who can be our allies? Nature was mentioned as a very important ally. We have to learn to coexist with nature rather than fight it. Another promising ally are municipalities because they may be faster in putting things into practice than national governments.

5. Youth, agriculture and rural areas
Unemployment in youth and migration to cities are global issues. The general feeling is that rural living does not provide a decent life. Urban life seems more interesting and attractive.
When people want to go back land access is a problem and presents a financial risk. Educated People from urban areas are not prepared but have too high and idealistic expectations of what can be done in reality resulting from disconnectedness from rural living. The general image people have of agriculture is low. Advertising can be a key opportunity "to make agriculture cool again" showing that farming is an important job in the world that satisfies the basic need of humans, to eat, and through sharing a meal creating social bonds. In education the conventional system is mostly the only system that is taught and it lacks a holistic vision. In Brazil there are schools where they alternate one week at school and one week back in their families so students will not disconnect from rural realities. An interesting perspective is having a basic income for the service provided by agroecological farming which is not only about the food but also the preservation of nature. "Agriculture is past, present and future. It is important to connect, to communicate and to support the movement of agroecology."
Workshop 3: How transition to agroecology questions knowledge production and learning dynamics

Convenors: Hélène Brives (ISARA-Lyon, France), Daniele Magda (INRA, France), Julien Blanc (MNHN, France)

Impulse talks:

- Erin Silva (University of Wisconsin, Madison, USA) - "Fostering Transitioning: A Model of Facilitating Agroecological Practice Adoption in the US"
- Juliette Anglade (INRA, Mirecourt, France) - "A social experiment on an experimental farm station: exchanging and sharing knowledge and experiences to support the agroecological transition toward more autonomous farming systems"
- Anne-Claire Kubala (Fédération Régionale des CUMA, France) - "Innovation in groups: production and transfer of knowledge"

Fostering Transitioning: A Model of Facilitating Agroecological Practice Adoption in the US (Erin Silva)

Historically, the US extension service has operated as a top-down, one-way knowledge dissemination service. Researchers would use science to create prescriptive practices that would be brought to farmers, who were then responsible for implementing the practices. Additionally, there are private consultants that advise specific products, but both of these methods result in what is essentially a recipe for farming. While they have made it easier to convey information to farmers on a large scale, these methods have also precluded the need for experts in the field and enforced the one-size-fits-all paradigm of modern industrial agriculture. However, more recently there have been initiatives to introduce agroecological farming practices to the US, as well as recognition that the vehicle for knowledge-sharing is as important as the knowledge itself.

The Organic Grain Resource and Information Network (OGRAIN) is an initiative in the Midwest of the US that aims to assist farmers in transitioning to organic grain production. Though organic and agroecological are not synonyms, in some areas, such as weed management, their practices have much overlap. OGRAIN turns the current extension service paradigm on its head by putting the farmers at the center of the process. The founders of OGRAIN understood that farmers learn better from other farmers, and that farmers and researchers need to have regular and meaningful interaction in order to maximize the benefits of the partnership.

OGRAIN hosts a winter conference in which farmers are paid to speak, as well as compensated for their travel expenses, both of which bring parity to the importance of researcher- and farmer-generated knowledge. The conference also has a lunch during which the farmers can network. OGRAIN organizes farmer/mentor pairs, as well as hosts a summer field school for on-farm learning. One component of OGRAIN that has been particularly successful is a listserv (essentially a large email group), which allows farmers to communicate, as well as supplies data for researchers in order to study the knowledge-sharing process.

Aside from the hands-on components of OGRAIN, it has also provided an identity for organic, which has helped build community and provides a kind of status. This identity has been found to be particularly helpful for risk-averse farmers, who may need the network more than early
adopters. With OGRAIN, the researcher community are participatory partners. Erin’s role on the listserv is guide the conversation, when needed, and provide a scientific basis to discussions. In this way, OGRAIN is helping farmers help farmers in the organic transition practice.

A social experiment on an experimental farm station: exchanging and sharing knowledge and experiences to support the agro-ecological transition toward more autonomous farming systems (Juliette Anglade)

A 240 hectare mixed crop and livestock experimental farm station (in Mirecourt, Vosges region, France) is undergoing agroecological transition process. The INRA research institute is interested in studying the knowledge- and experience-sharing among the agents on the farm, because it is a place where farming and disciplinary science meet. The farm hosts over 1000 visitors a year, from engineering and agricultural technical schools, and has about 30 days a year of exchange. Juliette and her team study the knowledge and experience sharing that occurs on those days of exchange, with particular focus on the place of technicians in this process.

The type of farming, and thus the knowledge production on this farm, has changed over time. It used to be an intensive animal and vegetable production farm, where the type of knowledge generated was reductionist and mainly concerned with optimization. Now, under the agroecological transition, the farm is evaluated with a systemic approach, and is concerned with adapting to the environment, instead of optimizing it. Instead of taking two hours in a classroom to learn about the farm, the practitioners and engineers are immersed on the farm for one to four days during the farm’s exchange days.

During these farm visits, the participants go through 4 steps that are repeated throughout the day: sensory immersion, testimonies from technicians, appropriation, and presentations. Sensory immersion was first in order to build a common ground to share perceptions of activities. Actions are very much guided by sensory understanding, but there was no room for sharing this information because traditionally knowledge-sharing was written facts and figures. The second step is listening to testimonies from the technicians, in the form of photos, stories, or in any way they want to speak for themselves. The third step is appropriation, in which the participants gather in small groups after interacting with the farm agents and create conversation maps and reflect on the interaction. The last step is presentation of their experiences during the day. By deliberately planning the participants’ experiences, Juliette and her team found that the participants gained a holistic and systemic understanding of the farm exchange that is necessary to produce and share knowledge needed to act in the complex agroecological systems.

Innovation in groups: production and transfer of knowledge (Anne-Claire Kubala)

Anne-Claire Kubala works with CUMA (Coopératives d’Utilisation de Matériel Agricole), which is an agricultural cooperative that facilitates networking, educational events, and equipment-sharing among farmers. There are over 12,000 CUMA in France, which provides an opportunity to study how innovation in agriculture can occur in a group, as well as how to best produce and transfer knowledge among farmers. In this way, CUMA is supporting agroecology among French farmers.

In one CUMA, called the Four Seasons CUMA, in the Rhône area, there are 40 mixed crop and livestock farmers who share farming equipment. Among the 40 farmers, there are 17 that have
created an “innovation group” in which they observe problems on the farm and generate solutions to those problems. This smaller group can take risks and produce knowledge, which they then bring to the rest of the group. For example, if the farmers can access information from websites, as well as support from advisors and scientists, they are able to adapt solutions to their farms, and then show the process and results to the rest of the farmers. For example, some members wanted to buy a direct seeder, and so they were able to experiment with this seeder and then show the others. This solution allows for risk-sharing, and accommodates farmers with different risk tolerances.

Discussion

After the three impulse talks, the room was split into groups of 5-6 people to discuss the talks. Each group was given a pad of paper to write ideas that could later be posted on the wall under one of following three categories: 1) The role of intermediary actors, 2) ways of sharing and capitalizing experiential knowledge, 3) interactions between different kinds of knowledge, particularly with regards to farmers as actors. Afterward, everyone came together and each group shared a few key insights from their discussions. Some highlights were how the initiatives presented put farmers at the center of the process, how local politics could help promote agroecology, how technicians should be present in more spaces, and what competencies are needed to be an intermediary actor for agroecology. The closing remarks emphasized the need to continue these kinds of discussions and reflect on all the different ways to promote knowledge sharing.
Workshop 4: Permaculture Design vs. Design in Agroecology. Same, same but different?

Convenors: Immo Fiebrig (Coventry University, UK), Maria Vela (Ecoherencia, Spain)

This workshop comparing agroecology and permaculture is less about finding opposition and difference between the two concepts but more about reflecting on the potential synergies and on where forces can be joined for their future.

Permaculture is a system of agricultural and social design principles developed in the 70’s by pioneer Bill Mollison. Its goal is to design sustainable, self-sufficient systems that go beyond the limitations of certified organic agriculture. Etymologically, permaculture means "Permanent Agriculture", namely an agriculture that is sustainable on a long term basis. Thus, permaculture is proposed to be different by design compared to agroecology and organic agriculture. We can exemplify five dimensions in permaculture design. The first two refer to the flat space, e.g. agricultural crop land, the third one is vertical (from root zone to treetop, fourth is time (e. g. seasons, generations) and the final one is the dimension of relationship between all living organisms, be it human or not.

The principles of permaculture are represented on a "flower" and are:

- Building; tools & technology
- Education & culture
- Health & spiritual well-being
- Finances & economics
- Land tenure & community governance
- Land & nature stewardship

Immo Fiebrig gathered the contribution of numerous prominent permaculturists through interview: Graham Bell, Rosemary Morrow, Tomas Remiarz, Maddy Harland, Starhawk and Jay Abrahams. The questions asked were intended to carve out the synergies between agroecology and permaculture.

It came out that permaculture is more about a systems design that supports interactions and the creation of diverse niches that are multidimensional and oriented towards producing a yield, but not only towards agronomic productivity. Permaculture is based on continuous action learning. Finally, the strength of permaculture also lies in its ethics and principles.

For these five permaculturists, permaculture seems to be more of a grassroots movement based on practises, whereas agroecology is based more on a top-down approach, theoretical, scientific and institutionalized.

Discussion

Permaculture and agroecology: what synergies can be created?

The vocabulary and the importance of word were discussed in depth during this workshop. The definitions of permaculture and agroecology are numerous and the relationships between the two as well: Is permaculture one aspect under the bigger "umbrella" of agroecology and is agroecology more focused on agronomic productivity whereas permaculture deals more with people and nature relationships? People tend to defend their own "brand" and thus the debate on the difference between both is useless as there is no perfect answer, neither for permaculture nor for agroecology. Discussing the terminology and differences between both concepts would fragment the alternative to conventional intensive agriculture, whereas representatives of both
should work together. Answers have to be adapted to the local conditions, context and goals of the stakeholders.

The origin of both, permaculture and agroecology, was also discussed at length. For most participants during the discussion, agroecology developed within academic institutions whereas permaculture spread through practice. One of the main challenges with permaculture is that its practical origin has made scientific literature, academic education and research infrastructure as well as sources beyond popular literature quite scarce. There is a need to institutionalize permaculture and push it as a research topic. But this “scientific” permaculture would have to acknowledge the “traditional” and practical permaculture alike. Agroecology can also have a practical origin. In the global South, agroecology movements come from bottom-up initiatives. Conversely, there, permaculture is more of a top-down pattern, where Europeans come and visit to convert farmers to it, even if some agricultural systems are already sustainable and agroecological.

The difference between agroecology and permaculture may come from a difference in scale. In the discussion it was highlighted that permaculture is more focused on the design of the system within the farm itself and its self-sufficiency whilst providing food for the local community. Agroecology in turn includes a focus on the system beyond the farm, on the food system in its entirety. The difference lies as well in who these systems are meant for. While agroecology caters more for redesigning existing commercial farming systems to make them more sustainable; it tends to target established farmers. Permaculture on the other hand is more about designing systems from scratch for the newly settled farmers.

Some doubt was emitted about the viability of permaculture projects. Some participants perceived that a lot of permaculture projects failed. For one person the success of this kind of projects is linked to secondary economic activities such as yoga lessons, permaculture teaching or bed & breakfast provision. The permaculturists present in the audience replied that there is no way for permaculture to fail because it is a continuous learning process. They seemed not to consider the economic side as a factor of failure in such project. For many participants, proving that permaculture provides efficient and viable agricultural systems showing examples of “independent” successful projects and scientific proof of its efficiency are needed to bring more people into permaculture, whether it is farmers, farmers-to-be or consumers.

The discussion was summarized during wrap-up. It was highlighted that:

- Permaculture is a tool for farming systems design for citizens with a mainly non-farming background. Agroecology is a tool to re-design farming systems for farmers.
- Agroecology and permaculture can and should work together. Agroecology can bring the quantitative analysis (for economic viability, models and numbers), and permaculture can bring the qualitative analysis, the ethics, the spirituality and inspiration.

It is frustrating to have two terms that splits-up a movement that could be stronger and move forward through collaboration.
Workshop 5: Agrobiodiversity to support agroecology

Convenor: Anna-Camilla Moonen (Scuola Superiore Sant'Anna, Italy)

Impulse talks:

- Sibylle Stöckli (FiBL, Switzerland) – "An innovative approach to enhance biodiversity on farmland: A credit point system"
- Constanze Buhk (University of Koblenz-Landau, Germany) – "Traditional water meadows – a perfect management option to combine ecological and economical values"
- Karin Pirhofer Walzl (Freie Universität Berlin, Germany) – "Bacteria and fungi in agricultural landscapes: almost invisible but the engine of plant production"
- Florine Degruze (Freie Universität Berlin, Germany) – "Agroecosystem diversification: Digging deeper"
- Simone Marini (Scuola Superiore Sant'Anna, Italy) – "A participatory approach between researchers, farmers and beekeepers to define a common point of view about semi-natural habitat and agro-ecosystem service"
- Yaron Ziv (Ben-Gurion University, Israel) – "Crop diversity and rotation may increase reptile biodiversity in an agroecosystem"
- Tommaso Gaifami (University of Florence, Italy) – "Weeds and field margins: the other side of the coin"

An innovative approach to enhance biodiversity on farmland: A credit point system (Sibylle Stöckli)

The impact of agri-environmental schemes on biodiversity is marginal when payments are automatically provided for predefined actions that farmers are supposed to perform on-farm. It would therefore be necessary to quantify the efforts farmers make to enhance biodiversity based on motivation and self-initiative.

In order to convert the action-based systems to a result-based system, a credit point system was developed to help farmers with the assessment of biodiversity favouring measures on their land. There are multiple factors (farm settings, farm characteristics, in-field options and habitat management) that affect biodiversity on farms and that can be influenced by farmers. It has been demonstrated that the scores significantly correlate with species richness and density (e.g. butterflies and flowers). This shows that farmers can substantially increase biodiversity on their lands, especially by habitat management and in-field management. The credit point system therefore is a suitable tool for fast and efficient assessment of farm-scale biodiversity and it is adequate for use in large scale agri-environmental schemes. An extension service tailored to specific farm conditions is essential to support interested farmers.

Traditional water meadows – a perfect management option to combine ecological and economical values (Constanze Buhk)

The traditional irrigation system of water-meadows and its impact on biodiversity was presented. In this type of grassland management, the meadows are irrigated through ditches that are connected to a river and opened 2-3 times a year, when water is needed for 2-3 days to...
saturate the soil in depth. But with the intensification of grassland management, nitrogen fertilization usually increases. With around 50-100 kg N/ha/yr biodiversity is observed to decrease significantly. It could be shown that irrigated meadows achieve higher yields of hay with less nitrogen input than non-irrigated meadows and have a positive impact on biodiversity by providing niches with a gradient of moisture and nutrients within and around the ditches. In addition, the ditches are landscape elements that many people enjoy looking at not only due to their aesthetic value, but also because it noticeably increased species diversity and represents a traditional way to irrigate.

**Bacteria and fungi in agricultural landscapes: almost invisible but the engine of plant production (Karin Pirhofer)**

The influence of a heterogeneous landscape regarding soil biota (bacteria and fungi), soil characteristics, grain yield and wheat biomass in comparison to a homogeneous landscape was examined. While grain yields decrease in a heterogeneous landscape, wheat biomass, soil moisture and soil organic carbon are positively influenced in a heterogeneous landscape. However no effects on soil bacteria and fungi could be observed. But natural landscape elements (like hedgerows) may be reservoirs for soil fungi and nutrients with potential benefits for agriculture. Further studies are necessary to investigate how agriculture benefits from bacterial and fungal diversity and how important landscape heterogeneity is for microbial diversity and ecosystem services.

**Agroecosystem diversification: Digging deeper (Florine Degrune)**

The presented study aims at understanding the interrelation between aboveground and belowground biodiversity and was conducted in 5 European countries. An important issue was where to collect the data. On the one hand, there are experiments under highly controlled field conditions that are well-documented but rather reductionist to other environmental conditions. On the other hand, experiments can also be conducted under real-field conditions. This holistic approach comprises all environmental influences but unfortunately is rather poorly-documented. Thus the question arises whether the advantages of both types of field experiments can be combined.

**A participatory approach between researchers, farmers and beekeepers to define a common point of view about semi-natural habitat and agro-ecosystem service (Simone Marini)**

Wild and honey bees in semi-natural habitats provide ecosystem services through sunflower pollination. They are the main pollinators for sunflowers (more than 95% of sunflower pollination). The presented project brings together beekeepers, farmers and researchers to exchange views on semi-natural habitats and ecosystem services through interviews, field days and workshops. Farmers learn that bees perform an ecosystem service to them, beekeepers learn the farmers’ production constraints and researchers learn how deep the communication gap among stakeholders is. A participative approach is therefore fundamental.
Crop diversity and rotation may increase reptile biodiversity in an agroecosystem (Yaron Ziv)

The Southern Judea lowlands with semi-arid Mediterranean climate represent a typical agroecological landscape. Very high biodiversity levels can be found on isolated patches located within the agricultural matrix. The study aims at determining the movement dynamics from natural patches to different crops and vice versa. Movement is crucial for long-term ecological persistence and stability. It was shown that reptiles show different movement dynamics in different agricultural crops as their movement ability depends on the agroecosystem configuration (e.g. the physiognomy of wheat versus legume fields). This has significant consequences for conservation activities in agroecological landscapes (e.g. through the change of physiognomy through time due to crop rotation). Designing a dynamic agroecosystem configuration by a mixture of agricultural fields based on both the agricultural and biodiversity needs is crucial.

Weeds and field margins: the other side of the coin (Tommaso Gaifami)

How can we quantify ecosystem services by weeds and spontaneous plants in field margins? A conceptual model was presented that quantifies ecosystem services of functional traits of plants. E.g. the regulation of erosion as an ecosystem service can be determined by the root architecture, the canopy width and the drought tolerance of a plant. Depending on the potential to reduce erosion through these traits, a plant scores differently. For instance, a fibrous root scores higher than a tap root. The model can be used to compare agricultural systems and practices and potentially, in an adjusted version, as a tool for farmers.

Discussion

Most presentations show how changing farming practices can increase levels of biodiversity on the farm. By studying species traits, one can identify the services that species can provide and therefore support farm management techniques that focus on conserving and promoting these species. There are two types of agrobiodiversity: (1) Agrobiodiversity that provides direct services to the farmers’ production systems and for which farmers do not need to receive compensations. It contributes to ecosystem services and is therefore closely connected to agroecology. (2) Agrobiodiversity that serves society at large and that society may expect farmers to conserve. Compensating farmers for the provisioning of these services would be fair. The group also debated on whether there exists enough scientific evidence that biodiversity enhances ecosystem services. The need of practical evidence that is able to convince farmers to implement biodiversity measures rather than theoretical statistics was highlighted. From a farmer’s point of view, the interaction with research is interesting because farmers can formulate the relevant research questions to their problem or issue and researchers can find the answer. It would be good to create participatory platforms where farmers/stakeholders and researchers meet and work together. Allocating subsidies depending on result/product-oriented measures represents a challenge because constant monitoring would be necessary. The group agreed on the necessity of improved dialogue between farmers, conservation biologist or agroecologists and other stakeholders to share information and to provide useful insights. Spaces must be created for that interaction to happen.
**Workshop 6: Participatory Action Research for Agroecology Territories**

Convenors: Claire Heinisch, Jean-François Vian, Perrine Vandenbroucke, Joséphine Peigné (ISARA-Lyon, France)

Research about agroecology can be considered as a collective and integrative process. Participatory action research is a methodology aiming to use stakeholders’ needs as research aims, and to bring answers that can be implemented by them to change their systems. “Agroecology territory” is a concept developed by a team of researchers of ISARA-Lyon. To define if a territory can be qualified as agroecological it has to fulfil three characteristics: conservation of biodiversity and natural resources, adaptation of agricultural practices and development of local food system. These actions have also to be embedded in networks of stakeholders.

In this workshop, three examples of participatory action research for agroecology territories, in France, in Belgium and in Italy, were presented.

**Impulse talks:**

- Perrine Vandenbroucke, Hélène Brives, Marion Casagrande, Camille Clément, Claire Heinisch, Joséphine Peigné, Jean-François Vian (ISARA-Lyon) – "Towards agroecology territory: the challenge of enrolling multiple stakeholders in participatory action research (TERRAE project)"
- Mary Guillaume (Gembloux, Belgium) – "Co-designing a decision-support tool with farmers as the basis for collective action and participatory approach"
- Marzia Ranaldo, Paolo Bàrberi & Stefano Carlesi (Scuola Superiore Sant’Anna, Italy) – "Agroecological Innovations for Resilience and Sustainability of Alpine Livestock Farming Systems (INVERSION)"

**Towards agroecology territory: the challenge of enrolling multiple stakeholders in participatory action research (TERRAE project) (Perrine Vandenbroucke, Hélène Brives, Marion Casagrande, Camille Clément, Claire Heinisch, Joséphine Peigné, Jean-François Vian)**

This project is led by a team of researchers of ISARA-Lyon and is focused on and built in partnership with 3 territories of the Rhône-Alpes Region: Roannais, Pilat, Boucle du Rhône en Dauphiné. These territories were chosen because of the initiative of local stakeholders such as natural parks or agricultural teams. This is a long-term project conducted between 2013 and 2018. The approach is multidisciplinary, with researchers in agronomy, social sciences and ecology. The researchers went to the stakeholders of these regions and asked them what challenges they faced in transition towards sustainable agricultural and food systems. Many actors and researchers felt involved in the process as citizens. But this issue of transition towards agroecology territory was not operational for action, thus three shared issues has been defined at second step: soil fertility, food system organization and governance, and inhabitants’ roles. Those shared issues functioned as entry points to bring new stakeholders that did not feel concern at first stage to agroecological issues. Nevertheless the different groups of experts for
each of those shared issues kept links with the transversal issue, and this contributes to foster crossed knowledge.

**Co-designing a decision-support tool with farmers as the basis for collective action and participatory approach** *(Mary Guillaume)*

The research aim was first to do an economic assessment of a network of organic farms in the Walloon region of Belgium, with a participatory and system approach. The problem was to keep the farmers involved in such participatory methods, because it is time consuming for them and they do not have necessarily have outcomes. There is a difference between the long-term perspective of scientist and the short-term need of results for farmers. Her goal was to provide a win-win process with concrete and immediate outcomes for the farmers. So the research ended to be the development of a tool named “TresoGest”, a user-friendly financial management tool for farms. The win-win aspect lays in the fact that this tool is useful for farmers, and it allows the researcher to collect qualitative data from farms. The outcome of this participatory action research is completely different than the first orientation. The difficulty is now to diffuse the tool and to turn this research into a scientific document to satisfy her hierarchy and the donors, even if she considers the tool in itself as a deliverable.

**Agroecological Innovations for Resilience and Sustainability of Alpine Livestock Farming Systems (INVERSION)** *(Marzia Ranaldo, Paolo Bàrberi & Stefano Carlesi)*

In animal production, issues such as intensification of dairy farming, replacement of pasture by monoculture, land abandonment, low economic suitability and high animal density have led a group of dairy farmers of the Adige Valley (in Trentino Alto Adige region) to request the support of the Scuola Superiore di Sant’Anna to change their system. This is a project that is in its starting process. Their main difficulties were the loss of identity in their work and the economic uncertainty. For the participatory approach, not much effort was needed to motivate the farmers, but the research had to cool down the ambition of farmers. The involved stakeholders are six farms, three intensive ones, and three extensive, two research bodies and an eco-museum. Now, the main conflicts are generational, inside the farms, and with the feed sellers, that could lose a market with the growing independence of these farms. The priorities of this project are the co-definition of agroecological practices and goals, and to co-evaluation and adaptive adjustment of practices with iterative indicators.

**Discussion**

The convenors of the workshop proposed 3 questions to be answered:

- Which PAR tools and methods can be implemented to foster agroecological transition in territories? How long is needed for such research?
- What difficulties do stakeholders face to understand each other and to work together?
- What do such processes produce? How to valorize the results either for researchers, advisors, farmers, citizens, etc.? How to generalize and evaluate the results?

The collective discussion pointed out an important challenge of PAR which is to break down the barriers between “experts” and “non-experts”. It is crucial to have a posture of shared
knowledge, since researchers and stakeholders are both engaged in research and experimentation. Two ways of doing PAR were pointed out: on the one hand framed approaches based on the corpus of participatory sciences, and on the other hand more inductive approaches in which researchers, farmers and other stakeholders share and build together without a formal theoretical framework. In the second case it is much more difficult to fulfill the requirements of scientific production. Moreover, it raises questions about the role of researchers: is it their role to be in mediation among people, to (re)connect local networks, create collective dynamics etc.? If so, how can this role be recognized?

Furthermore, one must be experienced to conduct efficient participatory approach, and to master the different degrees of participation.

The participants also highlighted the need for simple tools that farmers can appropriate themselves and that value farmers’ knowledge, and farmers’ capacity to solve themselves their problems. In that respect, user-friendly and easy methods can be shared with farmers, and somehow make farmers become scientists. For example a participant explained that he gave soil chromatography tools to some farmers and taught them how to use them. The learning does not have to be exogenous, farmers field schools can be established, where farmers can share their experiences and learn from each other.

The workshop raised the questions of funding and evaluation processes of research: PAR projects require flexibility from the donors (to adjust methods and objectives) and the valorization of all different outcomes (not only scientific papers but also shared knowledge with farmers, tools designed etc.). In that respect, the evaluation criteria of researchers should be adapted in order to better take into account involvement in PAR, in production of tools, in building of shared knowledge, in popularizing science and results etc.

Finally, regarding final products of PAR and their diffusion, an important question is: who do the results, the data, the tools, etc. which are produced collectively, belong to?
Workshop 7: Public policies for agroecology and the CAP

Convenors: Stanka Becheva (Friends of the Earth Europe), Stéphane Parmentier (Oxfam Europe)

Impulse talks:
- Hanny Van Geel (European Coordination La Via Campesina, UK) - "Social movements assessment of public policies needed to support agroecology"
- Paolo Petersen (AS-PTA, Brazil) - "Lessons learned to overcome key obstacles for political change"
- Pedro Guzman (Red Nacional de Agricultura Familiar, Colombia) and Melinda Kassai (Pro-Cserehat Association, Hungary) - "Reactions"

Social movements assessment of public policies needed to support agroecology (Hanny Van Geel)

What public policies that support Agroecology do we need in the EU?
Currently the European Agricultural Policies support mainly an agro-industrial model. This is shown by the effects of the current policies. In 2011, in the EU, 80% of the financing went to 20% of the farmers. Richer western countries are favored (44% farms receive 80% of the subsidies) and poorer eastern countries, which have 56% of the farms receive only 20% of the subsidies. The highest amounts go to large farms, which results in a dramatic land concentration - 1/3 farms were lost during the same time. Industries and retailer get rich with public money while farmers' incomes collapse and farmers disappear. This also has a negative impact on farmers outside the EU and marginalizes waged workers, migrants, women, and youth in rural areas.

2015: LVC defined peasant agroecology and the policies needed, at their conference in Mali in a declaration. The propositions can be found on https://viacampesina.org/en/declaration-of-the-international-forum-for-agroecology/ Peasant agroecology needs policies that are territorial and holistic in their approach to social, economic and natural resources issues. The policies need to secure access to land and resources and ensure an inclusive and accountable approach to the stewardship of resources, food production, public procurement policies, urban and rural infrastructure, and urban planning. The policies should promote decentralized and truly democratized planning processes in conjunction with relevant local governments and authorities. They should also promote appropriate health and sanitation regulations that also fit small-scale food producers and processors who practice agroecology These policies need to integrate the health and nutrition aspects of agroecology and of traditional medicines. Policies have to ensure customary rights to the commons and seed policies that guarantee the collective rights of peasants’ and indigenous peoples to use, exchange, breed, select and sell their own seeds. The policies need to attract and support young people to join agroecological food production through strengthening access to land and natural resources, ensuring fair income, knowledge exchange and transmission. They should also support urban and peri-urban agroecological production Furthermore ensure pastoralists’ access to pastures, sources of water and health, education and veterinary services based on and compatible with traditional practice. Ensure the rights of fishing communities and protect the rights of communities that practice
wild capture, hunting and gathering. Guarantee the right to a dignified life for rural workers, including true agrarian reform, and agroecology training.

**Lessons learned to overcome key obstacles for political change** (Paolo Petersen)

How to use examples of Brazil for Europe?

80's: end of dictatorship in Brazil, workers and farmers are organizing again and fighting for recognition (Rural Workers movement Resumption). There is only one general policy for agriculture, they want the recognition of family farmers which have a different relation to nature and market. 1990s: the first generation of policies for family farming were developed, with a productivist approach (weakening of family farming). Between 1996 and 2006, the minority of the richest levels of family farming became richer. People leave (de-activation of family farming). Lula wants to end hunger, a new generation of more agroecological policies for food security is developed: diversification, multi functionality, etc. (strengthening of family farming).

Since Lula (2003), national policies on agroecology were implemented. It's a niche of innovation in a hostile institutional environment.

Intensification in family farms, with autonomy as an objective, can take several paths and co-exist:

- Agroecologically
- Modernisation
- Traditional

Case study: how to use public funds to promote family farming? In a Borborema (Brazil), traditional agriculture is intensified through agroecology and modernization, both at the same time in this same territory. Agroecology allows to build local markets, new institutional arrangement, etc. The same farmers were reinforced by institutions to build their own institutions at farms, territory level. Interaction between rural development policies (state), intervention from civil society, and initiatives of farmer communities.

**Reactions** (Pedro Guzman and Melinda Kassai)

**Pedro Guzmán:** In Colombia, 6:6 million hectare were dispossessed because of the violence. 7 million hectare are crops (permanent or transitory), mainly on an industrial and agrochemical regime. 70% of the food produced comes from family farming. Inequality of land in Colombia: 1% of the people (landlords) have 81% of the land. Today, the conflict with FARC has ended but there are still violence against rural communities, persecution against social protests of indigenous peoples and peasants, and the peace process has not decreased the governmental violence and repression towards social movements.

What is officially done about advocacy on agroecology:

- Organic farming regulation (2006/2016) - only for certified products
- Seed regulation (resolution 970-3168/2015) - prohibits farmers to exchange seeds
- Food Security Policy - regulates food and nutrition in Colombia

There is a bilateral agreement with the EU on organic trade, which only recognize organic certified production, it didn't include any reference to agroecology that must be anchored in local production and regional food systems.

Regional processes on Family Farming and agroecology are supported by the government but they only exist on documents and agreements but there is no any advance seeking implementation:
- Agroecological Peasant Family Farming (CAN 2011) = regional discussion with Andean Community countries on how to promote agroecology. Not implemented by governments, no outcome.
- Regulation of Ecological Agricultural Production (CAN 2012) = no attention from the government, they decide to negotiate directly to the UE, and the discussion about agroecology was dismiss.
- Ministerial Meetings on Family Farming (CELAC 2014-present) = including discussions about agroecology as a means to avoid climate change. Still not becoming a real policy.

Advocacy action from the RENAF:
- Promote AE
- Improve social and solidarity economy
- Develop participative guarantee systems (PGS)
- Guarantee local seed and protection of biodiversity
- Improve right to nutritious food
- Protect local cultures
- promote conscious consumption and solidarity

As advocacy from RENAF a documented was produced with the participation of the Ministry of Agriculture, several governmental agencies, FAO and IICA to ask for the recognition and the promotion of Family farming, including the promotion of AE. This document is ready for ministry approval also a law proposed was written (30th of august 2017). But they have very little chance to be considered this year due the priority of the laws needed to implement the peace process.

Melinda Kassai:
- Important to investigate how to create a wider context of public policy for AE;
- Mobilising NGOs across Europe and especially also from eastern and central Europe (who are not very present in those discussions) in order to strengthen the movement would be very important too.
- The discussion goes on research and increasing production in general, but not so much about the increasing the scale of agroecological production and supporting small scale traditional and community farms
- Knowledge is not spread enough yet, it doesn't reach all layers of society. If AE remains marginal, it will remain limited and history told us that everything that remained marginalized for too long finally disappears.
- In Hungary NGOs work with local decision makers, develop trainings for them to teach AE. Such work with local decision makers should be a priority across Europe, since it allows local decision makers and small communities to have a decisive role to implement sustainable and agroeclolgical practices.
- Diversification is becoming important. The "movement" component of AE has to be strengthened, and policies can be created by movements!

Discussion
The European commission communicates with Civil Society in Civil Dialogue Groups, is LVC represented there? LVC Europe has seats in some Civil Dialogue Groups, but it is difficult for peasants to always follow this. They don't always have the time to travel and be there (the time spent is not covered). Furthermore the majority of seats and debates are dominated by more mainstream actors, so it is a difficult space to achieve results for change. This is the difficulty for
a grassroot movement to work and for peasants from Europe bring positions forward in Brussels. There is a need for older and more direct ways to do democracy. AE is about a system change, the solidarity policies are also important and without them, agroecology will only stand on one foot. Solidarity economy and AE are both social movements, just as feminism. They are lenses to understand the reality, they need to work together just like in Brazil. We need to govern the markets, stop being governed by them. Need to understand how to cross ministries: AE is holistic and the lock-in is partly caused by the fact that it is very hard to deal with a rigidified system and its many rules from many ministries. Urban food policies are a good example, they tend to be more open to innovative systems (example of Spain where the farming sector and cities have joined efforts for an urban food policy).
Workshop 8: Digital and technological revolution in the agricultural sector: Fitting in the Agroecological approach?

Convenor: Vassileios Gkisakis (Agroecologiki SP, Greece)

The goal of this workshop was to discuss if digital solutions have a place in agroecology, and if so, what role do they play? Recently there has been an influx of new tech into agriculture, in the form of cloud computing, drones, precision farming, and more. But many of these new farming technology companies own the data that is collected, which can leave farmers vulnerable to exploitation by Big Ag. Are the above mentioned compatible with agroecology, which is regarded to emphasise independent experimentation rather than dependence on high-tech equipment from external suppliers with a high degree of dependency on support services? Is this an innovation in agriculture, or is it the same regressive “solution”, only under the guise of new technology? What about alternative innovation, where farmers take back the autonomy of their solutions? In this workshop, three presenters from along the spectrum of this debate contribute their perspectives.

Impulse talks:
- Nicolas Sinoir (Pôle InPACT National, France) - « De la souveraineté technologique des paysans : réflexions et perspectives »
- Mariateresa Lazzaro (Scuola Superiore Sant'Anna, Pisa, Italy) - "Digitalized soil health self-assessment: a SPADE-TEST app from the collaboration with farmers from Italy and Greece"
- Livia Ortolani (Rete Semi Rurali, Italy) - “Managing Crop varieties data: an app for on farm data collection”

De la souveraineté technologique des paysans: réflexions et perspectives (Nicolas Sinoir)

Nicolas is a coordinator for L’Atelier Paysan, which is a collective for and by farmers that facilitates the development of farmer-driven technology. L’Atelier Paysan is premised on the fact that farmers are already innovators, and they innovate collectively. They help farmers design and build the tools specific to their needs, and then publish all designs in open source on the internet—they are a toolbox of farmer-driven technology. In this way, L’Atelier Paysan broadens the “genetic diversity pool” of technology solutions. In the farmer technology ecosystem, these tools and plans themselves are like landraces, which are now essentially a symbol for agroecology as they reject the top-down one-size fits all approach that has characterized much of modern agricultural. Instead, they evolve and adapt, and thus enable the autonomy of farmers in crafting their own solutions to their specific problems.

Nicolas does not believe high-tech has a place in agroecology, and what we need instead is “more brains, less servers.” That is to say, enough of over-investment in farming solutions, instead we should foster alternative innovation, which promotes autonomy and resilience in order to find local solutions and adapt to the changing landscape. Digital agriculture can make farmers prisoners of their machines, as they are designed so that they cannot be repaired, and then rely on after-selling services, thus trapping the farmer. Alternative innovation, such as L'Atelier
Paysan, instead gives farmers skills and the unfettered ability to adapt to their circumstances. Spread tools, don’t confiscate them.

Digitalized soil health self-assessment: a SPADE-TEST app from the collaboration with farmers from Italy and Greece (Mariateresa Lazzaro)

Mariateresa presented Capsella, a spade test app that walks the farmers through the process of evaluating and measuring soil health. Capsella is an example of how digital solutions can be farmer-focused. Though the data is sent to researchers, it is not kept from the farmers. Instead, it takes digital solutions out of the black box of prescriptive farming, and lets farmers collect and reflect on the data and decide how best to proceed. The farmer can choose whether or not the data is published online.

Capsella was created with participatory development, and thus began from the real challenges of stakeholders. The developers utilized rich pictures and discussion about emerging issues and priorities, and how to foster trust and communication in the design process. Great care was taken with data management with regards to property, publication, and sharing. The data infrastructure was almost the most important part—who should own the data? Should it be public and private? Everyone agreed that the data should not be left to be exploited by the big corporations.

While Capsella is a way for farmers to be able to collect the data, they still need the knowledge to know what to do with the information. Another part of the participatory process was clarifying what can and cannot be addressed by digital solutions. But Capsella is a step forward in the challenging process of finding technological solutions that can be constructed with farmers in order to fit the community’s needs.

Managing Crop varieties data: an app for on farm data collection (Livia Ortolani)

Livia works with Rete Semi Rurali—the Italian Farmers’ Seeds Network—that works to promote agricultural biodiversity by supporting farmers with organic and sustainable farming practices, and was a partner in creating the Capsella app. Rete Semi Rurali believes there can be synergies between technology companies and agroecology. Apps, such as Capsella, can help improve data management and reduce errors for the farmers. At the same time, it can provide data for research—something that can be hard to come by for researchers in agroecology. What is imperative is that these tools are co-designed with the farmers, with a user-centered approach. In this way, it is filling the needs of the farmers, without imposing unnecessary restrictions and requirements on them. In this way, Digital innovation can fit in agroecology if it design with farmers, allows for autonomy, and promotes knowledge exchange, but it must be driven by agroecological development.

Discussion

Following the presentations, there was a question and answer session for clarification on the presentations, followed by a general discussion accompanied by a word map drawn on the board. In particular, there was a lively discussion of whether or not a robot weeding machine would be considered an agroecological approach to farming. Some participants wondered whether rejecting technology that makes farmers lives easier will prevent agroecology from gaining popularity among farmers. Others asserted that the problem is not to know how to
weed, but that there are weeds in the first place. If there are weeds, there needs to be a holistic understanding of why, and the whole system needs to be rethought. Simply buying a weeding machine only puts a bandaid on the problem. Furthermore, for the same cost of a weeding machine, one could instead make structural changes to the farm that help to prevent weeds. Still, other participants countered that it’s easy to sit back and say “do your ecology” to the farmers, but what is needed is more empathy with the challenges of being a farmer.

Others argued that digitalization democratizes knowledge in farming, and reiterated that, provided these technology tools are created with an agroecological approach, they can support agroecological practices. Furthermore, these tools allow for useful connections that would be impossible with traditional networks. For example, with the changing climate, farmers may need to learn adaptation strategies not from their neighbors, who are also encountering these new problems, but from farmers hundreds of kilometers away, in an entirely different climatic zone. Technology allows for this transfer of knowledge that can ultimately better serve the farmer. The broad range of thoughts and opinions on this matter underscores the importance of continuing to discuss these matters as more and more technology is applied to the agricultural sector.
Workshop 9: Agroecological issues of organic cropping systems: importance of long term field experiments

Convenors: Marion Casagrande (ITAB, France), Daniele Antichi (University of Pisa, Italy), Cesare Pacini (University of Firenze, Italy), Stefano Canali (CREA, Italy)

Impulse talks:

- Paola Migliorini (Agroecology Europe, UNISG, IFOAM AgriBioMediterraneo, Italy) - "Co-evolution of agroecology and organic agriculture through long term experiment design and development"
- Marion Casagrande (ITAB, France) - "Stakeholder inclusion in long term experiments"
- Daniele Antichi (University of Pisa, Italy) - "Decision making rules and system redesign in long term experiments"
- Stefano Canali (CREA, Italy) - "Fundraising, project opportunities and network for long term experiments"
  Cesare Pacini (University of Florence, Italy) - "What are the characteristics of a LTE to be designed according to agroecological principles"

The convenors are part of RetiBio (Italy) and RotAB (France) networks which both work on long term experiments (LTEs) in organic farming. They have been sharing experiences on management, fund raising and stakeholder involvement.

Co-evolution of agroecology and organic agriculture through long term experiment design and development (Paola Migliorini)

Paola described how the agroecology approach allows for the complexity of the system to be more open as it takes into account the Ecology of the whole food system. She discussed how long term experiments (LTEs) should try to include and answer food system approach (eg. relationship with consumers, effect of food on body, ...). LTEs are one of the ways to detect clear effect while taking a holistic, but still scientific, approach. She went on to describe how they are crucial to get societal answers and a holistic view. LTEs must not only take knowledge from researchers, but exchange with farmers and other stakeholders is key.

Stakeholder inclusion in long term experiments (Marion Casagrande)

Marion described the need for a shared analysis of the situation as stakeholders share the same problems/dissatisfaction with the researchers. She described how this could be achieved through co-design of new cropping systems which favours coupled innovation (improvement of the system on different aspects), opportunity for stakeholder to take ownership in experiments and have a place for exchange and discussion. She also stressed the importance of improved communication as academic papers do not always reach stakeholders. There is a need to share the same language, final objectives and to involve farmers as it can help disseminate
information. To this end, she proposed combining LTEs with trials on satellite farms as it is an opportunity to have locally-tailored systems with tests and demonstrations. However, such scheme represents an additional budget which is not easy to come by.

**Decision making rules and system redesign in long term experiments** (Daniele Antichi)

Daniele discussed the timeframe of LTEs and how there is no set timeframe as it differs by context. He distinguished between two approaches (but noted that there is a lot degree of variation between the two) in defining factors, treatments and management of the experiment. The first - fixed - occurs when the experimenter fixes everything. For example, applying same factors each year no matter what changes (e.g. socio-technical) occur in the system or in a broader context. This allows to test stability and adaptability of the system over a changing environment or milieu but the decision making system is far from farmers’ way of thinking. The second - iterative - is more systemic as the system can be redesigned periodically to get closer to the final objective of the experiment. This method allows for fine tuning with stakeholders and a decision making process that is similar to farmers’. It offers the opportunity for system optimization, self-learning (very important for innovative management systems with poor background), economic viability and flexibility. On the downside, the iterative method can make it difficult to publish and interpret results. Daniele pointed out that for the iterative method, fixing precise decision making rules when applying a change in the protocol would be the only way to preserve the scientific soundness of the LTEs. He noted that there is not a unique way of thinking and that both approaches are valuable depending on the context and, above all, on the objective of the trial. He discussed the LTEs agroecology by asking questions around which approach should be chosen, how to build solid decision making rules, what would be the best reference and how often does the reference need to be revised.

**Fundraising, project opportunities and network for long term experiments** (Stefano Canali)

Stefano talked about how funding originate mainly from public funding, but also private companies/organizations. They can be provided by a range of funding research bodies/agencies (European, national, regional). In terms of funding framework, he stated that research projects need long-term outcomes, that university/research institutions running LTEs have to cover funding gaps and that rarely specific projects or programmes are set up to sustain LTEs themselves. With regards to funding opportunities, LTEs can foster funding attraction capacities and research teams managing LTEs multiply the opportunities to be selected/included in research project consortia. He also proposed that national and international funding agencies should prioritise having specific funding programs to promote and to guarantee LTEs. These funding programs should focus on filling the funding gaps, identifying emerging needs, supporting innovative LTE experiences, and promoting networking among ongoing experiments.

**What are the characteristics of a LTE to be designed according to agroecological principles** (Cesare Pacini)

Cesare proposed that LTEs should aim to apply ecological concepts themselves based on structural properties of agroecosystems. One question to ask first however is which are the
principles that back up agroecology and which ones back up organic agriculture. He discussed the tools to design the main characteristics of LTEs and how they should be taking into account diversity (different components and processes present in the system), coherence (numbers and strengths of the connections and flows among components and processes within the system) and connectedness (connections with components outside the agroecosystem).

Discussion
Following the presentations, there was a question and answer session, followed by a general discussion. In particular, there was a discussion on the degree of freedom that should be allowed or not to re-adjust components in LTEs. It was pointed out that it does not only depend on having a clear hypothesis at the beginning as things might change along the way.
Someone talked about how the approach around organic agriculture experiments has changed, that there has been an evolution from first, is it possible, to second, what is the best way and then third, what is the contribution to society challenges (e.g. how to respond to climate change)?
Some argued that perhaps LTE could be used as an early warning system. Others discussed how important it is for LTEs to have institutional commitment and not only commitment from a single researcher. The example of the «SITES» (Swedish Infrastructure for Terrestrial Ecosystem Science) initiative in Sweden was mentioned. There was also a proposition for having LTEs directly on farms rather than at research stations but although it could be less costly in the short term, it could be riskier in the long term (e.g. retirement of farmer).
LTEs should be able to deal with unexpected results and technology advancements. LTEs also need to go beyond simply talking to stakeholders and start actively engaging in participatory approaches to solve societal challenges (not only farmer’s challenges as they might be mainly focused on technical and/or economic issues, not necessarily considering the other pillar of sustainability of the agroecosystems (i.e. social and/or environmental).
During the workshop, thanks to a questionnaire provided to the participants, in addition to the Italian and French LTEs, 4 other European LTEs were identified and located on a map (Sweden, Denmark, Serbia and Austria). This could be the starting point for implementing a LTE network at (at least) European level. Other European organic LTEs willing to join this starting network are encouraged to contact Marion Casagrande (marion.casagrande@itab.asso.fr).
Workshop 10: Becoming an agroecologist through phenomenon based and action oriented education: Making the transition

Convenor: Geir Lieblein (Norwegian University of Life Sciences)

A new approach in education that is phenomenon based and action oriented was presented. It comprises learning, phenomenology and systems thinking. An ontological re-reversal is needed to get back to the world as we experience it. The farm is greater than its conceptual theory. In order to induce this transition, the main focus has to be shifted from teachers to students. It is about supporting learning rather than teaching. This also means a shift towards action (doing agroecology), giving theory (knowing agroecology) a supporting function. As such, theory is no longer in the center of the educational activities. Such an approach will support the transition from agroecology to agroecologists within the education system. The goal is to create an overlap between universities and society in order to create a dialogue space for observation, participation, visioning and reflection. However various challenges are linked with making this shift.

Discussion

In 5-6 persons groups, the following two questions were discussed and results were collected to be shared with the plenum.

(1) What are the key challenges for you/ your unit if you were to introduce/ further develop this approach?

(2) How can we deal with these challenges?

The main challenges mentioned could be divided into challenges faced by teachers and those faced by students when introducing the phenomenon based and action oriented approach in education. Teachers were mostly concerned with levelling the difference in student backgrounds, losing control of the content, the shift from a lecturing role toward a facilitating role requiring facilitation skills that are not easy to obtain, the hierarchical distance becoming smaller, the willingness to use alternative methods, the logistical challenges of visiting a farm with a large group of students for hands-on experiences, the possible lack of academic acknowledgement of this knowledge and the locally based nature of agroecology in an international context. Students identified challenges in shifting from a passive to an active role, accepting uncertainty or incomplete knowledge, trusting his/her own competence to gain knowledge, accepting being part of the learning process and taking responsibility of it. Both teachers and students felt challenged by stepping out of their comfort zone. A general challenge is related to tradition and beliefs at universities regarding knowledge and learning. These challenges can be dealt with by tapping the potential of peer-learning, creating space for exchange between teachers and/or students, adapting evaluation procedures, encouraging learning and practicing facilitation at conferences and defining personal learning goals related to the interest and ambition of each student.
**Workshop 11: Agroforestry and agroecology**

Convenors: María Rosa Mosquera-Losada (University of Santiago de Compostela), Anastasia Pantera (TEI Stereas Elladas, Greece), Nuria Ferreiro-Dominguez (University of Santiago de Compostela)

**Impulse talks:**

- María Rosa Mosquera-Losada (University of Santiago de Compostela, Spain) - “Agroforestry as a tool for eco-intensification”
- Antoine Marzio (Divaporc, France) - “The future of agro-forestry local breeds pig farming in Region Auvergne Rhône-Alpes”
- Pierre Costet (Valrhona, France) - “Cacao Forest: Innovating together for the sustainable cocoa of the future”
- Sara Burbi (Coventry University, UK) - “Transition to agroforestry: current challenges and opportunities for the adoption of agroforestry as a carbon sequestration strategy”
- Anastasia Pantera (TEI Stereas Elladas, Greece) - “High Value Tree Agroforestry Systems in Europe: from tradition to modern environmental and socio-economic needs”
- Rodrigo Olave (Agri-Food and Biosciences Institute, UK) - “The potential of agroecology and silvopasture to enhance the resilience of grassland systems in the island of Ireland”

**Agroforestry as a tool for eco-intensification (Rosa Mosquera-Losada)**

Agroforestry is the deliberately integration of a woody component (trees/shrubs) and an agricultural product from the lower storey. There are five agroforestry practices that can be implemented at plot level: (1) silvopastoralism, (2) silvavable, (3) hedgerows and riparian buffer strips, (4) forest farming and (5) homegardens with a woody component. Silopastoralism is the most important one that is only present in the 10 percent of the potential European area.

Agroforestry is the best tool to eco-intensify agricultural systems, by increasing the use of resources both at above and below ground level, while mitigating and adapting the systems to climate change. More sunlight is used by the system than in “only trees” or “only crops” systems and biomass is increased by 40% per hectare as a mean within a range between 20 and 80% if adequate species are selected. The woody component also increase biodiversity, take up nutrients from lower soil layers and reduce leaching, while they avoid soil erosion and protect water sources from contamination. Nevertheless, interviews with farmers showed that agroforestry was not clearly defined yet and that there was a need for more technique and knowledge provision. The EU commission defines it as a system with two layers which can have many different designs, and many regulations and policies already highlight agroforestry as a valuable land-use system. Still, EU agroforestry strategies for education and implementation are needed (e.g. the ones already existing in France). In Europe, the most common agroforestry system is silvopastoralism, and it remains very small in most of the European rural landscape. EURAF (the European Agroforestry Association) was created in 2010 to spread agroforestry in Europe and it provides a network to help farmers implement agroforestry mainly through two projects AGFORWARD and AFINET.
The future of agroforestry local breeds pig farming in Region Auvergne Rhône-Alpes (Antoine Marzio)

DIVAPORC is an association that reallocates profitable livestock on rural areas, to produce premium pigs from ancient rustic breeds that are suitable for outdoor life. This small scale farming practice uses an extensive open-air production (10-30 pigs per ha) where pigs are integrated with trees and slaughtered after 9-18 months. The main goal is to create new economic activities with quality products in the area of Auvergne Rhône-Alpes. The three objectives are:

- to create a multiplication section station of slowly growing local breeds in order to provide for breeders, along with a technical assistance for them to proceed the reproduction process more efficiently than in the past
- prospect the rural authorities providing forest areas on grasslands for new stockbreeders to install
- to experiment new economic models to build local partnerships around the breed (certification, etc.)

Europe is hosting 50% of pig breeds, they have to be protected with agroecology and agroforestry and native breeds fit these systems perfectly. As the Portuguese example shows, pig grazing can reduce forest fire risks and chestnut fruits can be used for the final fattening of the pig, which can then be sold as premium meat on the Japanese market.

Cacao Forest: Innovating together for the sustainable cocoa of the future (Pierre Costet)

The Cacao Forest project involves many stakeholders that focus on how to implement agroforestry in tropical regions, but they hope to become a benchmark for future European projects. They design cocoa farms to look like forests and to contain many local fruit varieties. In Dominical Republic, were the first project was launched, many old male farmers live on small plots (<5ha) that can produce up to 460Kg/ha of coca with very little income. The young generation is leaving the traditional cocoa market, which is replaced by monocultures of clones without shade, sprayed with pesticides and developed by huge exogenous investors. The yields there are up to 6 times higher compared to traditional systems. The Cacao Forest project aims for ecological intensification with a multi-stakeholder approach. The three steps of the project are:

1) Analyse the cocoa culture in 3 regions of Dominican Republic, working with the farmers on the ideal model that they would like to see implemented
2) Finding market opportunities which consist on working on the value chain
3) Planting pilot parcels and following them for 5 years

Transition to agroforestry: current challenges and opportunities for the adoption of agroforestry as a carbon sequestration strategy (Sara Burbi)

The benefits of agroforestry are the ecosystem services, among which the carbon sequestration on the long term. The challenge is to deal with complexity and the need for long-term data. It is an economic challenge, and legislations need to be more adapted to gain the trust of farmers. For them, risk management is important as they deal with a lot of uncertainty. Integrating traditional knowledge to science is important, e.g. by using the soil-health indicators that were
asked by them. This knowledge transfer allows for the application of more carbon-sequestering practices at any scale, and to help farmers understand that they don’t always require big redesign. Better evidence on economic and environmental benefits is needed to support policy changes.

High Value Tree Agroforestry Systems in Europe: from tradition to modern environmental and socio-economic needs (Anastasia Pantera)

AGFORWARD works innovative agroforestry practices in many regions of Europe, trying to assess their benefits, study existing and propose new agroforestry systems. The results are promising, and scientific evidence is allowing to support traditional and modern systems. Often, they advise to add animals (e.g. sheep) to tree crops (e.g. walnut or olive trees), in order to intensify the system and to link the biomas production and soil clearance with animal product production. They also integrated crops (e.g. wheat or chickpeas) in existing olive or orange-tree cultivars in Greece, which was very successful. The science helps to give efficient advices on the best combination adapted to each region. All these examples show how ecosystem services can be very helpful for commercial farms, and intensify the production by using free space for new crops or animals.

The potential of agroecology and silvopasture to enhance the resilience of grassland systems in the island of Ireland (Rodrigo Olave)

In Ireland, a 25 year research project showed that silvopasture was enhancing the resilience of grassland systems, which are very dominant in the region. Trees increase the number of possible grazing days in a year and the livestock can be kept outside for longer. Trees provide a safety net against heavy rain episodes and increase carbon sequestration. Irish agriculture is mainly intensive, with policies that support growth and intensification. But this project made it possible for policies to adapt and to start subsidizing farmers using agroforestry.

Discussion

In Italy, agroforestry is not recognised (policy gap), but a recent regulation is now recognising trees that produce feed for animals as part of agroforestry systems. The most important conclusion is that there is a need of (1) a clear definition of agroforestry and their practices at European level, (2) more targeted policies, (3) research to adapt locally the main agroforestry principles, (4) inclusion of agroforestry in the education system, and (5) creating networks to help share and spread the information.
Workshop 12: Transdisciplinary approaches to sustainable agrifood systems

Convenor: Claire Lamine (INRA, France) and Pedro Lopez-Merino (INRA, France)

Impulse talks:

- Martina Tuscano (INRA, France) – “Urban community gardens to achieve social justice”
- Terena Peres (UNB Brazil – INRA France) – “Food and agroecology policies in Brazil”
- Louis Renier (University of Lyon, France) – “Permaculture in urban garden in Lyon”
- Pedro Lopez-Merino (INRA, France) – “An exploratory assessment tool to evaluate the environmental, health, social and territorial impact of our plate”
- Dounia Besson (City of Lyon, France) - “The local committee for sustainable food in Lyon”

Urban community gardens to achieve social justice (Martina Tuscano)

Les Aubiers is a district of the city of Bordeaux inhabited by immigrants and marginalized people with a high unemployment rate. In this context, in 1993 a citizen association supported the establishment of family gardens with the aim of providing a means for self-subsistence to people living in the area and also foster their social inclusion. The experience was on one hand very positive since it gave the opportunity to people to produce their own vegetables and being more economically self-sufficient. On the other hand, the process of attributing the gardens’ plots based on social income criteria, widened even more the gap between the citizens of Bordeaux and the marginalized class living in the “les Aubiers” district. The research study on the Bordeaux family gardens suggests that it is necessary to analyse the inter-linkages between different actors and include the issue of social justice in order to foresee the consequences that a certain structural change can have on a food system.

Food and agroecology policies in Brazil (Terena Peres)

The development of the Brazilian national School Feeding Programme was presented. The program began in the early 50s and was initially a food aid campaign supported by foodstuff provided by the US to combat hunger and malnutrition in the country. The program is entirely funded through the National Fund for Development of Education (FNDE). During the 90s the execution of the program was decentralized, leaving to municipalities and educational institutions great flexibility for managing the funds and helping to simplify bureaucratic procedures. In 2009, a new regulation provided that at least 30% of the food for school meals should be sourced from local farmers. In 2010, the introduction of the “Right to Adequate Food” into the Brazilian Constitution strengthened the link between health, environment and nutrition since it calls for food that is nutritious, healthy and produced in a sustainable way. After more than 50 years of implementation, the program still faces some challenges for reaching the 30% quota due to the limited availability of local food and the still insufficient development of organic farming. Nevertheless, this case represents a successful example of how governments and public
policy can support the development of local and sustainable agriculture and foster a change within the food system.

Permaculture in urban garden in Lyon (Louis Renier)

In this talk a research conducted by a group of students of the master in Sociology and Anthropology applied to local development of the University Lumière Lyon 2 was presented. The study was requested by “Le Passe jardins”, a federation of 150 urban garden initiatives in the city of Lyon.

The federation as well as the municipality of Lyon aim to investigate whether those 150 gardens managed with permaculture practices could lead to a re-localization of food production within the city area. In order to answer this question 20 gardens were visited, and interviews were carried out with 70 members of the gardens.

The results show that the urban gardens mainly serve as creating a connection between city dwellers and nature. The activity of gardening is rarely understood as food production, but find instead its end purpose in education and learning about ecology while growing food crops.

An exploratory assessment tool to evaluate the environmental, health, social and territorial impact of our plate (Pedro Lopez-Merino)

The creation of an “assessment tool” to evaluate the social, environmental and individual impact of consumers’ food choices was proposed. The tool would serve a wide range of stakeholders such as consumers, NGOs, policy makers, public procurement, enterprises and would foster a reflection on the consumption patterns that shape our food system. The time horizon of the project is two years, starting from 2018. The project will be developed following a participatory approach including qualitative and quantitative research methods.

The local committee for sustainable food in Lyon (Dounia Besson)

Lyon is a city of 500000 inhabitants, 1.5 million when the whole metropolitan area is counted. It has a history of shared gardens that started developing in the 90s. The first one was created in a popular neighborhood, close to a social center, which shows that the social component was present from the start. In 2012, European experts spotted Lyon for its dynamic around shared garden: today, there are 46 in the city, with more than 2000 volunteer gardeners, calls for projects, dedicated land, etc. The same year, Lyon was the only city in France to participate to the European program “Sustainable food in urban communities”. This allowed to organise and structure stakeholders around the issue of sustainable food, and one of the 50 concrete actions of this program was to set up a local committee for sustainable food for Lyon (in 2015). The objective was also to see the emergence of commun projects and to foster urban gardening and sustainable food in a time of political austerity with national and regional entities that stop dedicating funds to these issues. Most of the actions supported by the committee have a strong social component and focus on the poorer areas in Lyon.

Discussion

During the discussion the participants were asked to form groups and join each presenter for asking questions on the previously delivered talks. The main outcomes from the discussion were
summarized at the end, the participants agreed on the need to carry out participatory research projects that involve all the actors of the food system in order to understand the complex interdependencies among them and foresee changes in the system. The support of governments and policy makers was also seen as fundamental for fostering the development of agroecology and sustainable agriculture that can serve citizens living in the city area. Social justice was considered as an important dimension to be considered to achieve a fairer food system and agroecology with its multidisciplinary approach is able to address this aspect.
Workshop 13: Building the narrative and making the case for Agroecology

Convenor: Janneke Bruil (Cultivate!, the Netherlands)

There is now scientific evidence that the industrial model for agriculture causes major issues and that agroecological methods work. But the narrative promoting conventional agriculture because “we need to feed the world” and “conventional agriculture is essential to increasing the productivity” remains very strong. This workshop explored why the communication about agroecology is not (convincing) enough to make it mainstream, and made a start to think about an alternative narrative and other ways to communicate about agroecology.

Impulse talks:

- Stanka Becheva (Friends of the Earth Europe, Belgium) – “Elements for a narrative on agroecology discussed at the 2016 European Forum on Food Sovereignty and Agroecology”
- Margriet Goris (University of Viçosa, Brazil and Wageningen University, The Netherlands) – “Building an agroecological peasant identity through the use of video in Brazil”

Elements for a narrative on agroecology discussed at the 2016 European Forum on Food Sovereignty and Agroecology (Stanka Becheva)

In 2016, 500 people, from different horizons (researchers, farmers, activists...), gathered for the European Forum on Food Sovereignty and agroecology. At the end, three objectives were defined: 1) public policies supporting agroecology, 2) farmers movements, and 3) a strong narrative. The dominant narrative is now that organic Agriculture and agroecology cannot feed the world, whereas conventional agriculture can. This narrative is supported by advertisement and “trolling” campaigns on social networks, making the message more important than the truth. The challenge is to “enter” people’s houses, to go to the street, and to disseminate another narrative about agroecology, because agroecology is about more than just feeding the world. Building and communicating a stronger narrative is even more important when we consider that arguments and research about agroecology are being misused or even “hijacked” by corporations, also known as greenwashing. An important challenge is to adapt messages to the targeted audience, according to their cultures or their places in the food system, in order to communicate as effectively as possible.

Building an agroecological peasant identity through the use of video in Brazil (Margriet Goris)

A major message in this talk was that the narrative for agroecology will not be established by just “saying”, but even more so by “doing” and “showing”. This talk presented how a new narrative on peasant agroecology is being built through various emancipatory practices in Brazil: 1) education practices, 2) movement building practices, and 3) practices in community art.
- Education practices to promote the reappearance of the Brazilian countryside are creating critical place-based narratives.

- Movement building practices of young peasants mainly evolve around bringing across agroecological messages at cultural and sports events in communities. For example, in some communities pastors were involved to make the case for agroecology, or agroecological issues were discussed before and after football games.

- Finally, community art practices (more specifically producing short videos) are used to question mainstream culture and attitudes towards farming and food systems, either by producing new content (portraying a strong farmer woman with decision making power) or by reproducing existing ones. Research made clear that using their own media allows communities to do storytelling for transformative knowledge.

Discussion

In the discussion, the question of the goal of agroecology was highlighted: should agroecology be presented as another system or as a fix to the existing one? This has important implications. For example, the fact that “cheap food is not cheap at all” in the current system has to be highlighted to divert people away from the mainstream food system.

Participants agreed that storytelling is key for communicating a new narrative for agroecology, for different audiences. Using attractive stories can help to reach the public. The means of communication can be numerous, including activism and awareness raising art. Sci-Fi books and films also often depict in convincing ways what could be our future and this strategy could be used to point out the irrationality of the current system. Moreover, pop-culture can be “hacked”, and it would be useful to make allies in the artistic world.

Finally, the participants listed together the key audiences that agroecology needs to reach. The highlighted ones were: kids and parents, peasants (also non agroecological ones), politicians, journalists, investors and sponsors, consumers (also the ones buying in supermarkets), but also chefs and school canteens chefs, food science and agronomy students, and young farmers.

At the end of the workshop, from this list, five groups were formed to create a story for one of these audiences, which was then performed to the rest of the group. Sometimes the word ‘agroecology’ was not even mentioned. This exercise made clear that it is important to use concrete terms that people can relate to and to connect to elements that matter to them. A new narrative should provide these elements, but words and emphasis depend on the specifics of your audience.
Workshop 14: Development of small scale agroecological entrepreneurship
Convenor: Vasileios Gkisakis (Agroecologiki SP, Greece)

Impulse talks:
- Katalin Rethy (Hungary) - “Food startups with an agroecological twist in Hungary”
- Cori Keene and Cristina Gil Ruiz (IAEAN) - “Consultancy of the International Agroecology Action Network”

Food startups with an agroecological twist in Hungary (Katalin Rethy)

Katalin spoke about agroecology in Hungary. She discussed how the organic sector in Hungary is hard to break into, not really based on agroecological practices, and mentioned issues with land-grabbing.

She described how food startups were started by professionals educated abroad, under the umbrella of fair/sustainable/etc. These startups support small-scale, diversified agricultural systems, shorten food supply chains, and address environmental/social issues. In Hungary, it is largely a niche around Budapest, or touristic hotspots, but not in rural areas.

She presented ‘Haziko’ (Little House) which was created by the same people who made the first ruin bar in Budapest. It started as a bistro and catering company, but using organic was too restrictive so it began to source from nearby farms. They implemented their own quality control. It is a case of demand going after/seeking out/inventing the supply.

She spoke about the Magosvolgy Farm which is a CSA style operation (there has been a boom in CSA systems around Budapest) with a diversified production and contributes to local job creation. She finally presented her startup: 'Szezon Kert' which is a small-scale vegetables, edible flowers and herbs farm delivering to homes and selling to restaurants with interested chefs (who understand the trial and error of development, get special products from farm). She highlighted the issue that the land is leased and thus inhibits growth and investment on the long term. They participate in research and education, work with bloggers to help create recipes with new taste and new textures. She discussed the large and uncharted economic potential of these initiatives even though there are few examples in Hungary. She estimates that it takes 3 to 5 years prior to reaching economic viability.

She concluded by stating it’s fine to take ideas from other places but it always has to be applied in the context of your own national reality.

Consultancy of the International Agroecology Action Network (Cori Keene and Cristina Gil Ruiz)

Cori and Cristina created the International Agroecology Action Network (IAEAN) because, apart from Via Campesina, there was no network for agroecology. They created a website and though they did not do any marketing, people just found the website, showing that there is a real demand for information on agroecology. They were contracted by Colorado State University to create an online education programme for called ‘Agroecology for sustainable communities and community-based food systems’.
They described how they had to work through the challenges of working remotely with people, how to do consulting as agroecologists, finding funding, appropriate legal status and time. They found opportunities in participatory engagement and capacity-building.

Discussion

The discussion started with the question of how can small-scale agroecology entrepreneurship support global change and transition. There is a need to determine what agroecology entrepreneurship means because there is a tendency for agroecology to only be linked to the production of food, there is a missing link to upper parts of the food chain. There is a need to include the food processors, right now there is a schism between disempowered farmers and big industry players. Agroecology can leave the field and farm and go to the landscape and food system level, so it can encompass entrepreneurship.

As a farmer who wants to start a small scale farm, there are three main problems: Access to land, tools and markets. To the question of how to help small-scale farmers, incubators were mentioned as a potential way to access land and funds (eg. specifically for young farmers (Europe 2020).

This was followed by a question on the potential links to social enterprise/entrepreneurship and how it fits into an agroecology framework so that entrepreneurship is not just about profit, but also good for society. There can be an overlap between the two but no merging. Examples of short supply chain and understanding of local economy were mentioned.

There was a question about how, if you cannot attend a conference like this, do you find about the latest opportunities? Here internet platforms could be an avenue to explore.

To the question of how can small-scale agroecology support global change and transitions, combating isolation and creating networks were mentioned as well as “capturing” agroecologists who might not fit specifically into a job to prevent them from leaving the field and to allow them to create a job that best suits them. It is also important to show that there is another way, to grow and inspire, allowing others to see what it could be—sharing understanding and sowing awareness. It was also mentioned that education should leave space for entrepreneurship as students are not trained to create and need to be supported.
**Workshop 15: Perennial Grains**

Convenors: Erik Steen Jensen (SLU, Sweden), Christophe David (ISARA-Lyon, France)

**Impulse talks:**
- Christophe David (ISARA-Lyon, France) - “Perennial grains: A good alternative for Agroecology?”
- Linda-Maria Mårtensson (SLU, Sweden) - “The ecology of perennial grains: First results with intermediate wheatgrass (Kernza) in sole and intercrop”
- Valentine Debray – “Perspectives on perennial grain crop differ between organic and conventional farmers” (Les Jardins de Lucie, France)
- Olivier Duchêne (ISARA-Lyon, France) - “The Perennial Grain Project”

**Perennial grains: A good alternative for Agroecology?** (Christophe David)

Projection of the video “Why Farming Is Broken (And Always Has Been)” (https://www.youtube.com/watch?v=UkMzJrbCRdQ) introducing definition, challenges and interest of perennial grains.

The challenge of perennial grains is to use them in Europe for crop diversification, dual-use of cereal for forage and grains and ecosystem services they offer (e.g. protecting soil, improving biodiversity, controlling weed population,..). Therefore, there is a need to produce new (or more) types of food that can value them. Perennial grains could be an option for Future of Agroecology only if it contributes to agroecological principles (Nicholls, Altiere, Vazquez, 2017) as enhancing recycling and diversity in time and space, minimising use of energy and inputs and enhancing biological interactions and synergies for plant protection and performance.

**The ecology of perennial grains: First results with intermediate wheatgrass (Kernza) in sole and intercrop** (Linda-Maria Mårtensson)

In Sweden, SLU has been working with the perennial crop Kernza and kernza-alfalfa intercrop to evaluate interest of polyculture on a long term perspective. The SITE long-term experiment is already opened to all researchers for new knowledge. The potential benefits of 5-10 year perennial cereals are: reduced tillage frequency in a cropping system (soil conservation), extensive below ground biomass (long roots), vegetation cover all year round, diversified crop rotation and N fixation (if intercropped with legumes). The first results show an increased yield after the implementation of the perennial system, and a microbial biomass and soil life increase. Very few weeds were found, even no chemical protection has been applied.

**Perspectives on perennial grain crop differ between organic and conventional farmers** (Valentine Debray)

Presentation of a study coordinated by Cornell University and ISARA Lyon to evaluate farmer’s interest in perennial crops, and to identify opportunities and challenges associated with the adoption of such crops. Overall, respondents (407 farmers, organic and conventional, from the US and France) represented a wide range of farm sizes and organic and conventional farming
systems across the US and France. The results of this online survey showed that 58% of them were interested in growing perennial grains, 39% said they would need more information on perennial grains. The main motivations are to increase the farm productivity, to enhance the soil health and to decrease the fertilizer use. The perceived limitations are economic (decrease in yields, seed prices) and related to the pest issue. The perceived opportunities are the possibility to value crops and to restore degraded land. More conventional than organic farmers reported that profitability and reducing input use were main motivations whereas more organic farmers reported that reducing labor requirements, diversifying crop production, and grazing as forage were main motivations. Barriers to adoption also varied by farm type with more organic than conventional farmers concerned about pest problems, difficulty harvesting, and low grain quality. This research is actually submitted to international review. This research can be used to guide and accelerate future perennial grain research and development.

The Perennial Grain Project (Olivier Duchêne)

Olivier presented on new agronomic research on the most promising lines (e.g. Kernza® Thinopyrum intermedium line, 4 perennial wheat and 2 perennial rye) of perennial grains. Ten on-farm trials and micro-plot experiments are already implemented in France and Belgium to judge Kernza® ([www.landinstitute.org](http://www.landinstitute.org)) plant growth, ecosystem services and the influence of management practices on various agronomic, soil and climatic conditions. Influence of nitrogen resource availability, legume intercropping, mowing and grains harvest practices will be specially observed. On the long run, the purpose is to define appropriate perennial grain line and field management under continental climates.

Discussion

Whereas annual grain spend a great part of their energy to reproduction, perennial grains allocate a substantial proportion of energy for perenniality to regrowth and subsequent winter revival. Consequently, perennial grain, produce about 1 metric ton per/ha, which is 4 to 8 times lower than organic or conventional annual wheat production. Nevertheless, dual-use of perennial cereal, for grain and forage and ecosystem services could guarantee additional value.

Workshop activity: The group was split in several sub-groups to discuss about the potential and relevance of perennial grains. Two questions had to be answered in each group:

- How do we see perennial grain crops? Are they in harmony with the agroecological principles?
- Which research would be important for implementing perennial grains in agroecological systems?

Most groups agreed on the fact that the practice of perennial grain fitted most agroecological principles when ecosystem services could be preserved or improved. Development of perennial grains could provide more options under diverse and generally more marginal conditions. The agroecological properties should be evaluated at the farming system level when monoculture of perennial grain could limit their interest. For instance, systems which include perennial crops should offer farmers greater flexibility and diversity of enterprise, including livestock. Perennial grains could also offer new ways of ecological protection for weed, pest and disease, and more biodiversity due to habitat and the rooting system. The main issues raised were related to the fact that a system containing two crops (perennial grain and forage legume) instead of one is not so much more diverse, and that going from a monoculture to a intercrop/polyculture is not enough to enhance the system’s immunity. The potential conflicts between production vs
ecosystem services were discussed when greater stability of income and more resilience are required.

The research identified as important were studies about semi-perennial grains, the introduction of legume crops for auxiliaries insects and nitrogen fixation, the allelopathy effect (service or disservice?), and harvest issues of the mixing crops. There is a need to think about how and where perennials would be more relevant, about the risk of new perennial varieties to become invasive, and for longer-term research. The economic value combining different products and ecosystem services is questionable but not only on marginal land. Increasing grain production is important, but the added value may be greatest in terms of dual-purpose crops and the co-benefits of perennials for ecosystem services. Perennial grain would have greatest economic feasibility if it had dual-purpose attributes by providing additional forage post-harvest and early in the growing season. Breeding progress could be critical if direct value from grain yield will be the only issue.
Workshop 16: Making the transition
Convenor: Paola Migliorini (Agroecology Europe, UNISG, IFOAM AgriBioMediterraneo, Italy)

Impulse talks:

- Jacques Faux (Wasmes-Audemetz-Briffoeil, Belgium) - “Feed autonomy enables the transition of mixed farms to agroecology: economic impact and associated ecosystemic services in a Limousin cattle and poultry farm in Belgium”
- Les Levidow (Open University, Milton Keynes) (UK) - “Sustainable Intensification: Agroecological appropriation or contestation?”
- Jens Dauber (Thünen Institute of Biodiversity, Braunschweig, Germany) - “Can combined food/non-food cropping systems facilitate transitions to agroecological systems in Europe?”
- Rose Hogan (Trocaire, Ireland) - “Greater diversity and higher incomes found on study of agroecological farms in Western Guatemala”
- Anshuman Das (Welthungerhilfe, India) - “Involving farmers in measuring impact of agroecological farming systems”

Feed autonomy enables the transition of mixed farms to agroecology: economic impact and associated ecosystemic services in a Limousin cattle and poultry farm in Belgium (Jacques Faux)

Jacques Faux is a cattle farmer in Belgium who, after changing the feed practices in his operation, inadvertently discovered that he was practicing agroecology. After evaluating the protein needs of his animals, as well as the economics of various feed sources, he decided to shift to feed autonomy in his operation. Increasing feed autonomy was not only beneficial to his animals, but also added ecosystem services to his farm. Not only quality of the meat increased, but there was more carbon returned to the soil in the grassland, as well as less nitrogen in the chicken manure. Through this process, he found that it was possible to produce feed ratios that performed both technically and economically well on his farm. Additionally, producing meat in an agroecological manner can help to improve the social acceptance of meat, as well as being an example for other farmers that it is possible to produce meat in an ecologically responsible way.

Sustainable Intensification: Agroecological appropriation or contestation? (Les Levidow)

Les Levidow is an agroecological researcher who discussed the tensions between sustainable intensification and agroecology, in particular how this tension plays out in policy agendas in Europe. Sustainable intensification has been welcomed in some agroecology circles, because it recognizes the contributions of agroecological methods. However, these methods have often been decoupled from their broader social context, and thus agroecology has been subordinated to a different political and economic agenda. While sustainable intensification does incorporate parts of agroecology, it also embraces genetically-modified crops, which are an anathema to the principles of agroecology.
The latest regime of neo-productivism is still market-driven, but incorporates an understanding of environmental impacts. In this way, sustainable intensification can be incorporated into a neo-productivist agenda that co-opts agroecological methods. Because sustainable intensification is a flexible framework, it warrants careful analysis, as it can be and has been used to justify more intensive production methods in the service of industrial agriculture. In fact, sustainable intensification often equates productivity with yield, exactly in the way of industrial agriculture. Some European reports have fallen victim to this folly, purporting to support sustainable intensification in a way that merely follows in the footsteps of intensive industrial agriculture. This is made possible, partially, in just looking at or argue with the output/input ratio, but not giving nuance to how this productivity is being achieved. Furthermore, it does not account for ecosystem services in the way that agroecology does, and thus is simply re-legitimizing agroindustrial production. Instead of asking what to sustain, the question has shifted to: how to intensify? In planning an agroecological transition, it’s important to remember that there will always be competing agendas, especially ones that aim to reinforce the status quo of industrial agriculture. A truly transformative agroecological agenda will have to distinguish among those trajectories in order not to get co-opted into the service of business-as-usual.

Can combined food/non-food cropping systems facilitate transitions to agroecological systems in Europe? (Jens Dauber)

Jens Dauber is a biodiversity and bioenergy researcher who presented on land-use for food and non-food crops. While making an agroecological transition, we should also be asking: on what types of land? Different types of land are suitable for different purposes, and these should be taken into account. A rough outline of the spectrum of suitability reaches from productive agricultural land, economically marginal land, unsuitable low grade land, and natural land (i.e. protected and thus cannot be farmed.) Moving along this gradient, yield levels range from high to low, while biodiversity ranges from low to high, with food crops being farmed on the most productive land, followed by grassland, and then followed by abandoned low grade land. Within this framework of land-use, there is room to for strategic incorporation of non-food crops in a way that does reduce food production. If we integrate food and non-food cropping systems, can it help biodiversity? Can it in fact create synergies between the two, thus improving food production? Perhaps the non-food crops could fulfill a double-function: provisioning and regulating ecosystem services. While exploring these options, it’s important to evaluate which system would work best for which kind of land, as well as what constraints have to be overcome for such a transition. But by opening the discussion, we can incorporate food and non-food cropping systems into the larger picture of an agroecological transition.

Greater diversity and higher incomes found in a study of agroecological farms in Western Guatemala (Rose Hogan)

Rose Hogan is an agroecological researcher in Ireland. While there have been discussions about sustainable intensification in global policy, there is little research to show what happens on a local level. But in order to receive funding for agroecological initiatives, there needs to be scientific evidence for its success first. In order to address this data gap, Rose and her team studied the effect of agroecology on nutrition and resilience in western Guatemala, which is an area particularly affected by high levels of malnutrition. The researchers were interested in economic, environmental, social, and cultural impacts in particular. They studied 10 farms that had switched to completely to agroecological practices, and 10 “conventional” farms (though
many of these farms had incorporated some agroecological practices already into their systems.) While it was a small sample, and they were able to study the farms for only two seasons due to funding constraints, they nevertheless discovered significant differences between the agroecological and conventional farmers. The agroecological farming families consumed less junk food, had yields that were about the same, had better socialization among the community, and allowed for better opportunities for schooling for the children. All in all, this study indicates that agroecology can indeed make rural farms more resilient, and hopefully it will inspire more data and research to aid in the transition to agroecology.

Involving farmers in measuring impact of agroecological farming systems (Anshuman Das)

Anshuman Das is an agroecology researcher from India who presented on different indicators that can be used by farmers to assess agroecological farming systems. As there is an agreement among agroecologists that we need to move away from the yield-centric approach to farming, it must be replaced with new measures that are more appropriate for an agroecological context. Additionally, these measures should not just serve the researcher, but the farmer as well, in order to foster a participatory approach to evaluation. Examples of indicators that Anshuman has explored are: group cooperative activities, water loss, number of subsystems, inter subsystems resource flow, the number and type of biodigestors, the diversity of crop and crop sequences, the participation in farmer field schools, the amount of food that must be purchased at the market, the number of external farm inputs, and the income from selling products. Anshuman would work with farmers who would score themselves, and then compile these scores into a web diagram in order to get a visual representation of their farm. Even more important than the web diagram according to Anshuman, was the discussion afterward that these diagrams encouraged. The question to follow up now is how can we best bring this paradigm shift into judging, assessing, understanding an agroecological farm?

Discussion

After the impulse talks, the floor was opened up for a question and answer session. One participant wanted to know why, if agroecology systems work so well, they are not adopted more broadly? The presenters cited that the dominant paradigm holds powerful sway, and is accompanied by advertising being pushed by multinational companies. Anshuman believes there is too much jargon in agroecology already. Some farmers may already be implementing these practices, but they are not using academic language to describe it. Rose believes that focusing on agroecology’s contribution to adapt or mitigate climate change can be an effective way to convince people who fund research to support agroecological research. Another participant felt that encouraging land use for biofuels and livestock had no place in agroecology, as it reinforces the current commodity-driven paradigm of industrial agriculture. The presenters responded that some land is only suitable for livestock production, and encouraging more agroecological production like Jacques’ cattle is beneficial to consumers and producers alike. Others stressed that we should keep our options open and understand how to approach the question strategically. It is clear that it’s important to keep asking these questions, and to have a variety of examples of how farms can make the transition to agroecology.
Workshop 17: Legumes in European cropping systems for climate change adaptation

Convenor: Ralf Bloch (Leibniz Centre for Agricultural Landscape Research, ZALF, Germany)

Impulse talks:

- Johann Bachinger (Leibniz Centre for Agricultural Landscape Research, ZALF, Germany) - "Novel Approaches for Legume Cropping Systems under Climate Change"
- Ralf Bloch (Leibniz Centre for Agricultural Landscape Research, ZALF, Germany) - "Exploring Soybean Cropping Systems as a Climate Change Adaptation Strategy"
- Fernando Pellegrini (Scuola Superiore Sant'Anna, Pisa, Italy) - "The use of Participatory Learning and Action methodologies for Agroecology: conducting research on living mulches in central Italy"

Novel Approaches for Legume Cropping Systems under Climate Change (Johann Bachinger)

Johann opened the workshop by explaining that legumes can be used as a mitigation strategy as they can increase soil organic matter and lower NO$_2$ emissions. They have the advantages of providing a range of ecosystem services and have a high potential to improve agroecology resilience, however their main weaknesses are yield instability and a lack of knowledge on production (e.g. weeds management). Regional effects should always be considered. He presented research done in a very dry part of Germany. The forecast for legumes yield was 0,5t for the first cut, 2t for the second cut, then very low for the fourth and fifth cut. Johann then presented an organic crop rotation planner tool developed by the Leibniz Centre for Agricultural Landscape Research (ZALF): ROTOR 3.0. The tool provides simple estimations on C$_{org}$, N, P and K balance as well as an assessment on weed infestation risks. It allows also to simulate the effect of climate change which can have significant effect on the rotation. The tool can be found here: http://www.zalf.de/en/forschung_lehre/software_downloads/Pages/default.aspx

Exploring Soybean Cropping Systems as a Climate Change Adaptation Strategy (Ralf Bloch)

Ralf presented how the EU project climate CAFE approached the climate change adaptation issue by asking farmers how to adapt and the value of adaptation measures. The most important measures from the farmer's point of view which are reducing tillage, using cover crops and new crops especially grain legumes (very important for organic farming). He detailed some characteristics of one of the proposals from farmers which was soybean cultivation: the need for high temperature, the water restriction, which is a problem in some region, the good price on market (for now) and the seed predation by birds, which can be a problem. He also presented how winter rye with early sowing date can be used for weed suppression but only at flowering. A late crimping (not cutting) date at flowering state can be used to deposite the rye to the soil surface as mulch. However, there is a need for no-till seeding technology and an issue with irrigation needed for soybean.
The use of Participatory Learning and Action methodologies for Agroecology: conducting research on living mulches in central Italy (Fernando Pellegrini)

Fernando studied living mulches in Central Italy with Participatory Learning and Action approach, and a Soft Systems Methodology. His research questions were “How do we implement legumes in our current farming system?” and “how do we get the benefits that legumes can bring?” He set up trials according to farmers preference to test a special type of intercropping: clover living mulch on wheat crop which were sown together with the clover incorporated into the soil. There was one intercropping treatment and two control treatments. They ran wheat evaluation (experiential evaluation rather than hard science) during field days for two years in a row (with meetings in between). The evaluation done by farmers with the simple question of “how much do you like it”? Farmers had no preference for one treatment over the other and this was confirmed by taking samples and doing lab analysis which showed that there was no statistical difference between the treatments. Thus there was a good match between what they were able to experientially evaluate and what was actually there. With regards to weeds evaluation, farmers preferred one of the control treatments because they thought they were less weedy. After taking samples and doing lab analysis, it turned out they preferred the most weedy treatment, so there was a mismatch between perception and reality.

Fernando pointed that farmers brought technical solutions to the problem (eg. they wanted to sow ten days earlier to incorporate the clover earlier and fully) and also proposed research topics such as earlier flowering time for clover.

Fernando also discussed the concept of ‘adaptive management’ which means to manage a system by adapting to changes and shocks. Farmers do it in their everyday lives (eg. changing crops depending on changing conditions, or using last minute solution such as harrowing twice because the glyphosate did not work or selling the crops as animal feed instead of human consumption). He stated that added complexity reduces adaptive management, and that it is sometimes very hard to take the step of implementing climate change mitigation measures, however adaptive management could be a way to encourage them to use legumes on the field.

He pointed out that sometimes information is lacking, the need to have capacity for learning and planning, and the need for the right socio-political environment in order to foster innovations. There are conditions that prevent techniques to spread and risk taking for innovation (eg. low price for wheat). Knowledge is not always most important with interpersonal communication between farmers being key as well as interdisciplinary research.

He also presented some ideas for next cycle of experiment such permanent intercropping of clover and finding ways to sell clover seeds instead of incorporation into soil.

Discussion

The discussion aimed at providing highlights and key results of the workshop. The two main highlights were that legumes provide many benefits for climate change adaptation/mitigation but implementing legume crops means increasing complexity of cropping systems and specific knowledge is needed. Furthermore increasing complexity of cropping systems limits adaptive management which is strongly needed for climate change adaptation.

Some proposed actions were discussed such as the need for iterative research with interdisciplinary exchange, for breeding legumes with higher adaptive capacity, and the need to work on the following research question: Does a higher complexity of cropping system lead to a higher stability (resilience) and how to help farmers deal with more complex legume-supported cropping systems.
Workshop 18: Rural-Urban linkages in Agroecology
Convenor: Stanka Becheva (Friends of the Earth Europe, Belgium)

Bringing consumers and producers closer together is a major goal to advance the agroecological transition and build healthy food systems. The linkages between rural areas - of agricultural production, and urban areas - where more and more people live have to be strengthened. But how do we engage urban people in agroecology? The network of Friends of the Earth Europe is engaged in different actions to connect farmers and consumers and recently developed a publication titled “Eating from the farm”. The three impulse talks depicted two examples of implemented strategies to bring consumers closer to their food.

Impulse talks:
- Judith Hitchman (Urgenci: the international network for community supported agriculture, France) – “Consumers as co-producers: The role of urban citizens in advancing agroecology through collaboration with farmers”
- Mamen Cuéllar-Padilla (University of Cordoba, Department of Social Sciences and Humanities) – “The role of cities to ensure better rural-urban linkages”
- Janneke Bruil (Cultivate!, the Netherlands) – “The experience of Ecuador: 250.000 families who want to eat healthy agroecological food”

Consumers as co-producers: the role of urban citizens in advancing agroecology through collaboration with farmers (Judith Hitchman)

Urgenci is a social movement bringing together Community Supported Agriculture (CSA) initiatives. The goals of CSA are to provide food sovereignty to its participants and to create an economy based on solidarity, thanks to a participatory and democratic approach to food production. It is thus entirely embedded in the agroecology “umbrella”. The goal is also to counter the neo-liberal paradigm of agriculture with bottom-up initiatives being part of a larger grassroot movement. This system finds its origin in Japan, with a word meaning “food with a face”. The 4 principles of CSA are: locally produced food, direct contact between farmer and consumer, shared risk and benefit among all parts and contractualized partnerships. In CSA, consumers are called “co-producers” because they are more involved than random consumers. CSA provides many services such as re-education on food and farming, local economy building, decommodifying food, breaking from industrial food and agri-food chain and protection against land grabbing and land abandonment. CSA can be farmer-led or consumer-led. The contractualization for this partnership can take many forms, depending on the frequency of payment by the consumer, or to the amount of work they put in the system. There is no system adaptable everywhere and CSAs do not suit all consumers.

Urban local policies have a role to play to support CSA. The Milan Pact 2015 (MUFPP) described a bunch of actions to develop local agroecological food networks: development of “social food” in public restaurants, food aid programs, involvement of local shops promotion, education and sensibilisation, and urban agriculture (that produces food not only as a hobby) promotion. One of the main recommendations is the creation of local food councils, with participatory approaches. The main issues to the development of such programs are the logistic limitations of
municipalities, the limitations due to local policies and the difficult dialogue between urban and rural areas. “Are cities going to decide how rural regions will produce?” is an important question to answer, and a landscape scale approach is needed.

The role of cities to ensure better rural-urban linkages (Mamen Cuéllar-Padilla)

Cities are moving towards Food Sovereignty in an explicit way since the Milan Summit, where one hundred of cities signed the Urban Food Policy Pact, in October 2015. So municipalities are fostering public policies related to:

a. public food procurement – hospitals, schools and public buildings, canteens, public events catering, between others.

b. food aid programs oriented to people in social exclusion risky situations.

c. Direct relations between local food stores and local producers.

d. Inclusion of Urban agriculture and food production areas in urban planning.

An important role of municipalities in the promotion of local food systems is offering public infrastructures, areas and buildings at the disposal of local food initiatives, social movements and local producers, in order to facilitate the development of such experiences.

The third important role of cities is being the revision of public regulations, that are normally not adapted to this kind of local and small initiatives, and orienting them to facilitate and promote local food systems.

Before municipalities started to shift towards food sovereignty approaches, urban and rururban social movements had walked a long path. Actually, related to the Urban Food Policy Pact, local food councils have been formed. In them, social movements related to food sovereignty, food production, distribution and consumption jointly with municipal technicians are designing the city project they want to achieve through the signing of the Milan Pact.

Despite their importance and the changes already generated in the short life of the Milan Pact, many questions should be addressed. The power of cities to decide how the rural must be, in order to answer to their needs, can reproduce the traditional subjugation of rural areas. Inequal power relations are easily generated in these contexts. Do cities not have anything to learn from rural areas? Do cities have anything to change in their way of eating and feeding people, adapting to local conditions? Do we want to leave in the hands of unsustainable areas and ways of life, such as cities and urbans, the definition of what sustainable food and local food systems must be? What role for rural areas? What spaces of dialogue?

The experience of Ecuador: 250.000 families who want to eat healthy agroecological food (Janneke Bruil)

This campaign started in 2015 in Ecuador to strengthen local food systems and create new markets for agroecology. It was an initiative of two national movements: the Agroecological Collective and the Movement for a Solidary Economy, and was titled “Qué rico es comer sano y de nuestra tierra” (or “how delicious is it to eat healthy food from our land”). Self-organised groups throughout the country are engaging thousands of families in agroecology by activating their senses and emotions related to food, and their desire to be healthy and to know where their food comes from. Through sensorial activities at markets, games, creative online communications, a radio program, farm visits and cooking workshops, people are attracted to agroecological food. The campaign also organises politically oriented activities such as debates
and discussion fora. As a result, the campaign has built new relationships around food that collapse dichotomies between rich and poor, black and white, urban and rural, and producer and consumer. The self-organisation model of this campaign is its biggest strength but perhaps also one of its greatest weaknesses, as it makes it difficult to coordinate focused, strategic actions, and already there are signs of co-optation of its slogans, symbols and strategies by the national government.

Discussion

The discussion highlighted the importance of understanding the political context in these initiatives, and of problematizing some of that. The cooptation of the grassroots movements is a major issue in this context. Other contributions focused on the use of words in agroecology, especially “peasant” and “citizen”. The word “peasant” can be considered as pejorative, but it can also refer to a way of life and a style of farming, whereas “farmer” sometimes only refers to a job. The meaning of the word peasant can be promoted to initiate a peasant movement and to help re-peasantization. Others remarked that the word “citizen” excludes those who do not have legal citizenship. Using “people” is more inclusive. Finally, the discussion evolved around how to use the right words so that “people” feel more personally involved and invested in agroecology.
Workshop 19: Young agroecologists: trajectories and professionalisation

Organizer: International Agroecology Action Network (IAEAN)

The workshop was organized by the consultancy group IAEAN, a network of previous students of agroecology now involved in international companies, institutes, grassroots movements and universities working on issues related to sustainable agriculture and rural development. During the talks the working experience of each speaker was presented, with a special focus on the expertise connected with their agroecological background which made them successful in pursuing their career path and other skills that should be included to complete the professional profile of “Young Agroecologists”.

Impulse talks:

- Carlo Bettineli (comun’Orto, Italy)
- Maaike Happel (Technical University of Denmark, Kgs Lyngby, Denmark)
- Sébastien Roumegous (Collectif Agroécologie, France)
- Raphael Paut (INRA, France)
- Florian Delespesse (Froidefontaine / Réseau des GASAP, Belgium)

Carlo Bettineli (comun’Orto, Italy)

The first speaker presented a project of urban community gardens that started in 2016 in Rovereto, Italy. Initially created as a garden to integrate refugees in the community, the project evolved and now hosts several activities such as permaculture courses, educational workshops for schools, promotion of critical consumption and additionally the garden is used as a hub for social movements in the region. The challenges faced by the project leader are mainly the lack of professional work due to the high dependence on volunteers as well as finding an agreement among the members on issues such as workshops’ topics and activities to be carried out.

Maaike Happel (Technical University of Denmark, Kgs Lyngby, Denmark)

The second speaker is involved in a research project at the Technical University of Denmark called “SusValueWaste”. The project aims to analyze the value chain of a number of industries based in Scandinavian countries to address the potential sustainable exploitation of organic waste and by-products. Some typical skills obtained from her agroecological study background were considered as very beneficial for working on such a interdisciplinary-oriented project. Especially having a holistic and broader view of the whole food system was essential for the mapping of value chains and conducting qualitative research methods. Thus, the main message conveyed by the speaker was that, although the profile of “agroecologist” can include a very diverse group of skills which are never specific to one single field of expertise, such curriculum can form individuals that are prepared for dealing with more complex systems where a more holistic and system scale approach is needed.
Sébastien Roumegous (Collectif Agroécologie, France)

The third speaker presented the case of the “Collectif pour le développement de l’Agroécologie”, a French association whose objective is to provide training to farmers and support them in their transition to agroecology and adoption of sustainable agricultural practices. Among the abilities mostly needed by farmers to transition to agroecology and develop their activity, entrepreneurial and business skills were mentioned. Farmers are such entrepreneurs and in order to succeed in their business they need to understand and adapt to the economic system they are operating in. The academia and study programmes related to agroecology, although touching a very diverse range of topics, often do not focus enough on entrepreneurial training.

Raphael Paut (INRA, France)

The fourth speaker described his career path as researcher, being first involved in a rural development agency fostering agroforestry systems in water catchment areas and then employed as researcher at an institute for organic agriculture. During his current PhD position at the French National Institute of Agronomic Research (INRA) he is focusing again on the study of agroforestry systems. The skills acquired during his studies on Agroecology have proved to be very useful in his career. However, the agroecological holistic approach acquired during his studies was difficult to implement in research. The speaker argue that research still focuses on single topics and rarely permit the integration of an holistic view on the subject.

Florian Delespessse (Froidefontaine/Réseau des GASAP, Belgium)

During this talk two initiatives from Belgium were presented: “La Ferme de Froidefontaine” and “Le Réseau de GASAP”. La Ferme de Froidefontaine is a 40ha farm where space is offered to agricultural entrepreneurs to develop their businesses. Le Réseau de GASAP is a network of Belgian CSAs and in this context the speaker is involved in research action projects focusing on participatory approaches, animation, logistics and supply chains. The main challenges faced when progressing in his career concerned the lack of entrepreneurial skills needed to set up his business and the insecurity when dealing with logistics at the beginning. Most of those abilities were said to be achieved on field and were rarely taught during his previous studies on agroecology at university. Thus, an integration of such fundamental skills into the agroecology study curriculum was called for.

Margriet Goris (Universidade Federal de Viçosa, Brazil)

The last speaker is a PhD student working on an action research project on strategies, emancipatory practices and challenges of young agroecologists in Brazil. Most of the agroecologists in Brazil come from peasant families and consequently build upon their background to merge it with agroecological innovations and expertise which question the traditional agroecological knowledge. The challenges faced by young agroecologists were described. Some struggles such as access to land can also be found in the European context. Another issue mentioned was the farm succession determined by gender, which can marginalise women from farming. Generally, activism and social movements were seen as pivotal for achieving reforms and policies oriented towards agroecology and sustainable farming in the Brazilian context.
Discussion

In the final part of the workshop a new proposal by the IAEAN group was presented. The group wishes to implement a social online platform called “The Hive” as a space for exchange and networking among young agroecologists where all projects on agroecology could be mapped. The participants were asked to give their suggestions and opinions regarding the scope that such platform could serve and the challenges for its implementation. It was generally agreed that the creation of such a platform would foster the exchange of information and experiences among agroecologists and thus could function as collective intelligence. Job vacancies and collaboration opportunities on agroecological projects could also be tracked using the platform. The challenges mentioned mostly concerned the need for web development skills, the source of funding and the criteria applied to permit the access to the platform.

Key Highlights of workshop

- **Highlight 1**: Young agroecologists experience many new opportunities related to globalization however also contend with new challenges in navigating labor markets. Young agroecologists often perform multiple jobs concurrently and engage with multiple sectors.
- **Highlight 2**: Major challenges include job insecurity and temporary contracts, difficulty to mobilize a holistic approach within institutions, isolation from like-minded colleagues, and access to farmland.
- **Highlight 3**: Potential employers are often unaware of agroecology. There is a need to increase the visibility of the role and contribution of agroecologists in diverse professional sectors and throughout society to increase awareness of the valuable work that agroecologists can offer;
- **Highlight 4**: Application of a holistic approach is difficult to mobilize in work and academic publication because participatory approaches and researcher-farmer relationships are not sufficiently valorized;
- **Highlight 5**: Key learnings from youth agroecologist movements in Brazil: youth have reinvigorated new topics and debates on the AE agenda (e.g. gender). Rather than through lobbying, social movements have been the most pivotal in achieving changes in Brazilian public policies in land reform. Independent schools allow youth to learn new action skills ranging from urban garden management to writing policy drafts to affect change and innovative new forms of action.
- **Highlight 6**: It is possible to create new livelihood pathways but we need to invest time in becoming independent (e.g. learning practical skills, unlearning societal stereotypes about linear careers, practicing circular economy).

Key Actions

- **Action 1**: Increase academic agroecology education addressing: practical economic and management skills (e.g. business, logistics, strategic planning, participatory group facilitation, social organizing). These skills are imperative for sustainability and self-sufficiency to thrive within diverse jobs and socioeconomic contexts.
- **Action 2**: Increase youth mentorship and internship opportunities: create inter-generational meeting points to facilitate convergence, co-creation, and knowledge transfer while sharing experiential-based knowledge.
- **Action 3**: Advocate and campaign for awareness about agroecology in civil society and institutions;
- **Action 4**: Create and support development of social movements and network(s);
• **Action 5:** Youth would benefit from a platform to help identify agroecology-related job opportunities and internships. Creation of networks that allow knowledge to be built and shared (including experiential knowledge from local to international and cross-regional) would be positive to grow and develop projects. Creation of a multi-platform with guidelines about entrepreneurship/ongoing projects/and jobs (in the style of LinkedIn including people, skills, projects, locations, interests, etc.), would provide blueprints about becoming an entrepreneur, connection with others, and help avoid professional isolation.

**'Feed the Hive' Project Proposal**
Feed the Hive is an agroecology social media platform concept developed from the notion that we are all busy bees and we can share our knowledge/experience in the agroecology 'hive'. The online platform is developed with the intention to: 1) build community; 2) share AE projects around the world; 3) facilitate knowledge sharing on specific themes/topics; 4) keep in touch with people and meet new people with similar research/project interests; 5) advise and support each other in our work. Key questions regarding this project from the workshop include: small or open network?; student only or farmers, professionals, NGOs, enterprises...?; age restriction or open and inclusive? Launch the network necessitates acquisition of funding (crowdfunding? Erasmus?), facilitators, and participatory co-development.