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Defining agroecology: Exploring the circulation of knowledge in FAO's Global Dialogue¹

ALLISON LOCONTO^{2,3*} AND EVE FOUILLEUX^{2,4}

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Abstract. This article traces how ‘agroecology’ is co-produced as a global socio-technical object. The site of co-production, the Global Dialogue on Agroecology, was convened by the Food and Agriculture Organization of the United Nations (FAO) in different cities around the world between 2014 and 2018 (Rome 2014; Brasilia, Dakar, Bangkok 2015; La Paz, Kunming, Budapest 2016; Rome 2018). We analyze these ‘expert’ symposia and regional meetings by exploring how knowledge about agroecology circulates and frames the terms of debate. Our analysis is based on an ethnography carried out by the first author since 2013 and participant observations by both authors in the Global Dialogue. We focus on three key processes that contribute to the stabilization of a global agroecology: 1) the work carried out to define ‘agroecology’, 2) actors’ interests and strategies that are revealed through the politics of circulation, and 3) the emergence of the ‘evidence based’ logic within this dialogue and the ‘experts’ who are legitimized. We argue that the version of ‘agroecology’ that was stabilized through the Global Dialogue is one that has been highly influenced by civil society actors, even though they were not recognized as ‘experts’ in the process. We conclude with reflections upon the politics of ‘agroecological’ knowledge and what this means for the institutionalization of agroecology.

Keywords: Agroecology, evidence, knowledge, institutionalization, co-production

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Introduction

In a room filled with more than 700 people – the largest audience ever for a technical meeting convened by the Food and Agriculture Organization of the United Nations (FAO) – the Director General (DG) of the FAO opened the Second International Symposium on Agroecology on 3 April 2018 saying:

“During the First International Symposium in 2014, I said we were opening a window in the cathedral of the Green Revolution and bringing the agroecology perspective to the heart of the debate on food and agriculture[’s] future.”²

These words are striking for two reasons. First, since its creation in 1945, the FAO has held the mandate of being a neutral knowledge broker in aiding member nations to eliminate hunger and achieve food security. Yet despite this role as a neutral broker, the type of knowledge that was held sacred within the marble halls of the building that was once the Italian Ministry for Colonial Affairs was one based in the science and politics of the green revolution (Cornilleau and Joly, 2014). As envisioned by Norman Borlaug and colleagues in the Consultative Group for International Agricultural Research (CGIAR), the green revolution introduced hybrid seeds, synthetic fertilizer, agrochemical applications and mechanization. This ‘standardized package’ (Fujimura, 1992) developed by private agribusinesses made large-scale monocultures a reality in many regions of the world. Because of its success in the rapid increase of yields in post-war Europe and the US, and specifically in Mexico and India in the 1960s/70s, this productivist approach was heralded as the solution to global hunger and food security (Fouilleux et al., 2017). Indeed, it has been the cornerstone of the last 50 years of technical advice provided to member countries by the FAO. As a neutral broker, FAO transferred this knowledge from the CGIAR system and Western Universities in a top-down way to developing countries with the help of the World Bank and private foundations like Ford, Rockefeller, and Gates (Cornilleau and Joly, 2014). While there have been fissures in the marble walls of this cathedral – specifically the critique of the inefficacy of these global institutions (IAASTD, 2008) - the fact that FAO DG could make such a statement attests to a significant discursive shift that has occurred in global agricultural politics.

Second, agroecology is presented as a perspective that is needed in the global debate about the future of food and agriculture. According to the pioneer authors on the topic, the use and practice of agroecology is as old as the notion of agriculture itself (Altieri et al., 1999). Historically, agroecology was constructed in specific spaces of professional, political and scientific knowledge. These can be characterized as an ‘agricultural practitioners’ space (farmers, extensionists, food system actors), spaces of scientific research (agronomy, biology, ecology, entomology, social sciences) and social movement spaces that are critical of the industrialization of agriculture (Wezel et al., 2009; Abreu et al., 2009; Lamine and Abreu, 2009; Tomivh et al., 2011; Francis et al., 2003). Based on these empirics, agroecology was coined by Wezel et al. (2009) as science, practice and social movement. Sometimes this phrase is misunderstood as science, practice *or* social movement and thus actors mobilize it to defend disparate political positions. However, this tripartite

² FAO. (2018). *A statement by FAO Director-General José Graziano da Silva*. [online] Available at: <http://www.fao.org/director-general/my-statements/detail/en/c/1113703/> [Accessed 03 Apr. 2018].

perspective was meant to explain the interdependencies of knowledge, politics and practice fundamental to a holistic ecological approach to food systems (Francis et al., 2003). This diversified knowledges approach stands in direct contrast to the 'standardized package' of the green revolution and is used as a justification for food system transformation (Gliessman, 2018).

The knowledge used to justify action is fundamental to the future of global food and agriculture because it directly shapes and conditions the policies and actions taken. This article thus analyzes the current global politics around the definition of agroecology. Our core problematic is the co-production of a global agroecology that seeks to be at once a form of resistance and a legitimate, transformative policy. We chose to locate our analysis on the FAO as it is the main global space where agriculture and food security are discussed. More specifically, we explore the FAO's Global Dialogue on agroecology that took place between 2014 and 2018. We analyze the convergences and divergences between actors, their discourses and their material positioning as the concept of agroecology – in the form of a socio-technical object – circulates through time and space. Our question is the following: *how does knowledge circulate and frame the terms of a global debate on agroecology that is simultaneously political and technical?*

This article proceeds in three sections. First, we present our analytical framework and method. Second, we describe each of the international and regional meetings according to this framework, highlighting: who the actors were, the type of knowledge that was privileged and the material means through which the event was politically legitimated. Third, we discuss these results by highlighting how a global agroecology object has stabilized through: 1) the work carried out to define 'agroecology', 2) actors' interests and strategies that are revealed through the meetings, and 3) the emergence of the 'evidence based' logic within this dialogue and the 'experts' who are legitimized. We argue that the version of agroecology that has stabilized through the Global Dialogue is one that has been highly influenced by civil society actors, even though they were not initially recognized as the 'experts' on the topic. We conclude with reflections on institutionalization through knowledge politics.

Tracing the Coproduction and Stabilization of Knowledge

The idiom of co-production (Jasanoff, 2004) is adapted to our analysis for two reasons. First, scientific and political epistemologies are constantly used in FAO technical meetings and day-to-day work (Fouilleux, 2009; Ilcan and Phillips, 2003). As a result, any form of stabilized knowledge to emerge is necessarily co-produced in the constitutive sense intended by Jasanoff (2004). Second, the civil society actors in the Global Dialogue use the term 'co-production' to refer to how agroecological knowledge and practices are co-produced through farmer engagement with other farmers and researchers (Delgado Ramos, 2015). Thus, the idiom of co-production offers an appropriate frame for analyzing this process that is simultaneously epistemic, normative and ontological in its attempt to constitute global knowledge about agroecology.

Analytically, we use actor-network theory (ANT), science, technology and innovation (STI) mixed with public policy analysis, and the sociology of infrastructures to explain the process of definition, stabilization and legitimation of knowledge within spaces of interaction. We draw on ANT as a method of inquiry, whereby we trace the divisions and distinctions that are the effects – the material and discursive outcomes – of interactions between actors (human and non-human) (Latour, 1987). From STI policy, we adopt the notion of space to delineate where we can find these actors. Rip et al. (2012: 2) argue that "spaces emerge and/or are intentionally created to address

articulation of possibilities and reduction of indeterminacies” (p. 2). In public policy analysis, these spaces are referred to as fora, where much of the negotiation over the meanings and problem-solving possibilities takes place (Fouilleux and Jobert, 2017). In these fora, the actors develop specific political activities and work (e.g., negotiations over definitions, meanings, values, strategies of legitimation) and a variety of forms of ‘evidence’ is produced. These can be scientific evidence, professional and practitioners’ evidence, ‘the business case’, citizens’ evidence, etc. These processes are highly dependent on the institutional configurations and contexts. This production of evidence is then used – or not – in the policy-setting processes that take place in global policy arenas (Fouilleux, 2019).

From the sociology of infrastructures, we use the concepts of circulation of knowledge and standardized objects to understand the stabilization of networks (Callon, 1991; Bowker and Star, 1999). We pay attention to the dynamics of who the actors are in the space that we are studying in order to understand the power dynamics and legitimation of their place in the network. Star (1991: 43) reminds us that “a stabilized network is only stable for some, and that is for those who are members of the community of practice who form/use/maintain it” (p. 43). Thus, beyond the actors, we analyze how and why knowledge about agroecology enters and circulates into a common space and then stabilizes. Circulation “entails transformation and change, which are constitutive of mobility, also accounting for the necessity of partial moorings and immobility (explicit, codified knowledge) for further development of knowledge” (Pellegrino, 2012: 168). In sum, we focus on the Global Dialogue as a forum where standardized knowledge from a variety of other fora (different scientific disciplines and societies, civil society, private sector, diplomacy) circulates. The boundaries of the forum give meaning to the actors’ arguments and feeds into the power struggles that fuel the stabilization dynamics of actor-networks.

The data used in this article was collected through an ethnographic study (cf. Goldman, 2005) of the FAO Global Dialogue by the first author between 2013-2018. This ethnography included participation in and observation of internal and public meetings related to the Global Dialogue. Discussions and interviews with organizers and participants in these meetings were used to confirm observations and the interpretation of events. Only public information has been reported in this study. To complement and triangulate this data, both authors also conducted participant observations in international agroecology events, interviewed key informants (15) and analyzed official documents. The official participant and presenter lists were classified following a set of actor categories originally created by FAO but modified by the authors to better reflect the organizational statutes of the actors. These were: producer organizations, private sector, United Nations or Intergovernmental organizations, civil society (NGOs), government, and scientific. For the purposes of this article, La Via Campesina was classified as a civil society organization (and not as a producer organization) given their lead position in the civil society mechanism of the Committee on World Food Security (CFS).

The Global Dialogue: Bringing Regional Knowledge to a Global Forum

We position our analysis of the Global Dialogue within the context of a shift in discursive power in global agricultural politics that has occurred within and outside of FAO. Beginning with an ‘unauthorized’ food sovereignty protest by La Via Campesina inside the FAO building at the 1996

World Food Summit and the subsequent creation of the Global Forum on Agricultural Research and Innovation (GFAR), private and civic voices began to question the dominance of the government-led process for agricultural development. Following the 2008 food crisis, the CFS was reformed to allow different voices and forms of knowledge into the global debates. The creation of private sector and civil society mechanisms within the CFS changed the way knowledge entered the global agricultural policy debates (Duncan, 2015; McKeon, 2014), although it did not fundamentally change the power relations shaping those debates (Fouilleux et al., 2017 ; Fouilleux, 2019).

Amid these reforms – and a process of internal “cultural change” undertaken within FAO that promoted some institutional entrepreneurs to the management team – a new DG of FAO came into office in 2012. Dr. José Graziano da Silva was known for his commitment to social protection, having implemented Brazil’s Zero Hunger policy when he was President Lula’s Minister of food security. He was also known for reform, decentralization and member countries’ political priorities, which he demonstrated as the Assistant-DG for the Latin American and Caribbean Region of the FAO. While first refusing to address the issue of agroecology,³ the International Year of Family Farming in 2014 created a political opportunity for FAO to introduce the theme of agroecology in an official event and day-to-day work. In September 2014, the FAO thus organized the first Symposium on Agroecology in Rome, which opened a series of regional and national ‘expert’ meetings, the “Global Dialogue on Agroecology”, which took place in each main world region (Brasilia, Dakar, Bangkok 2015; La Paz, Kunming, Budapest 2016; Tunis, 2017).⁴ The process culminated in the 2nd International Symposium in Rome in April 2018, concretizing the opening of the window in the cathedral.

A small number of civil servants within FAO headquarters (HQ), who had a history of pushing alternative visions of agricultural development within the organization, were key in this decision. They seized the opportunity to legitimize and scale up their previous work (e.g., payments for ecosystem services, family farming, organic, integrated pest management, and the Sustainability Assessment of Food and Agriculture (SAFA) program). Throughout the process, the agroecology team was key in supporting and organizing the Global Dialogue. But the political opportunity for agroecology did not appear only by change or through the efforts of the administrative elite (Kingdon, 1984). It was also the result of political positions taken by some member states of the organization. In 2013, France offered to finance an international Symposium as part of its framework negotiations with FAO for the 2013-2014 biennium. An offer very much in line with French internal politics at that time.⁵ Additional material resources came from the governments of

³ Interview with an ex-member of the management team, Plovdiv, Bulgaria, June 2018

⁴ Organized by the Cairo office, with HQ support, the Tunis 2017 meeting was small. Interviewees reported a limited number of government and FAO projects on the topic in the region and weak civil society mobilization. No mention was made about available science. No official report was produced and it is generally excluded from FAO presentations on the Global Dialogue (cf. FAO, 2018b) For these reasons, and the fact that we did not attend, we have not included it in our analysis.

⁵ French Agriculture Minister Stephane Le Foll launched a national plan for agroecology on 18 December 2012 and in 2014 added an international plan focused on the FAO. alim’agri. (2014) *Chantier n° 6 - Promouvoir et diffuser le projet agro-écologique à l’international*. [online] Available at: <https://agriculture.gouv.fr/le-plan-daction-global-pour-lagro-ecologie> [Accessed 28 June 2019]

Brazil and Switzerland.⁶ The latter's Ambassador was particularly vocal about the importance of agroecology as an approach to be promoted for family farmers in FAO's Committee on Agriculture (COAG)⁷ meeting in October 2014. This intergovernmental support for agroecology was reinforced in 2015 with the creation of an informal diplomatic group called the 'Friends of Agroecology'. Initially including the permanent representatives from Brazil, France, and Switzerland, it expanded to include China, Côte d'Ivoire, Hungary, Japan, Senegal, and Venezuela. A main stake for them was to institutionalize agroecology as an FAO area of work, which meant getting a COAG agreement in 2016, despite intense opposition by other states, such as Argentina and the United States.

With such a landscape in mind, we now turn to how agroecology was debated throughout the Global Dialogue process. In the following sub-sections, we use our three analytical entry points – actors, material resources, discourses/definitions – to describe chronologically how each regional meeting contributed to the stabilization of a global agroecological knowledge object.

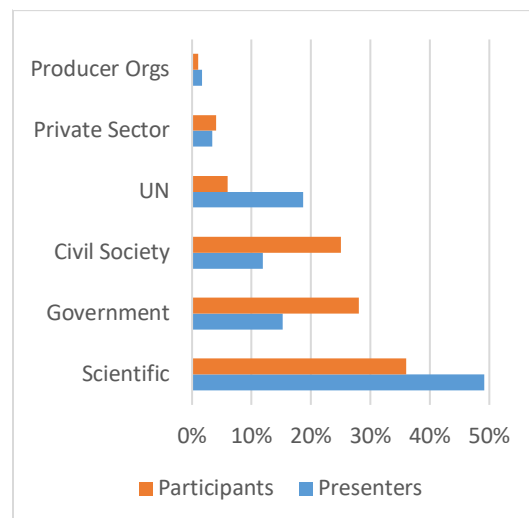
Experts vs. Publics in Rome, Italy: 18-19 September 2014

The plan for the first Symposium agenda, which was to become the norm for the organization of each of the subsequent regional meetings, was focused on a mix of different types of sessions. These include: *high-level panels*, with: (i) political statements by the Agricultural Ministers of France, Senegal, Algeria, Costa Rica, Japan, Brazil and the European Union; (ii) *plenary sessions* where keynote speakers set the tone for discussion; and (iii) *parallel sessions* that focused on the 'scientific knowledge' about ecological approaches, ecosystem synergies and people and economies. There was also one session on 'agroecology in practice' that featured experiences from countries mostly in the Global South. As is evident in Figure 1, almost 50 percent of the presentations were made by members of the Scientific community (primarily ecologists and agronomists).

Such exchanges resulted in a certain definition of agroecology, first collectively debated and then approved in both public and private preparatory sessions. Despite a visible influence of the tripartite narrative in such a definition, agroecological systems are defined primarily as knowledge intensive and science-based:

Agroecology is the science of applying ecological concepts and principles to the design and management of sustainable food systems. It focuses on the interactions between plants, animals, humans and the environment. Agroecological practices

Figure 1: Participants in Rome, 2014



NB: Participants (n=377), Presenters (n=59)

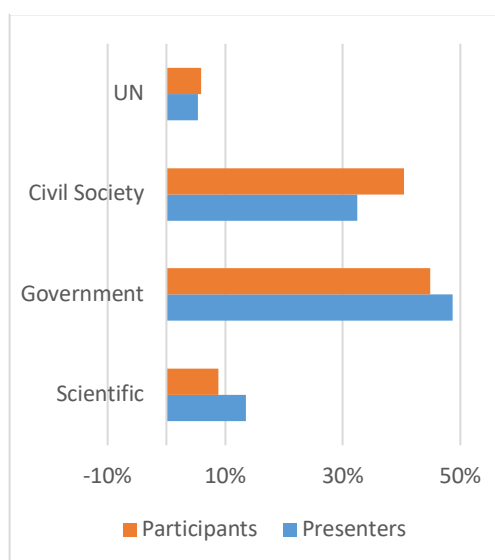
⁶ Money was also mobilized from FAO's portion of the Global Environmental Facility Global Pollinator Project.

⁷ COAG is FAO's governing body for its work on agriculture

work in harmony with these interactions, applying innovative solutions that harness and conserve biodiversity. Agroecology is practiced in all corners of the world, with the traditional and local knowledge of family farmers at its core. Through an integrative approach, agroecology is a realm where science, practice and social movements converge to seek a transition to sustainable food systems, built upon the foundations of equity, participation and justice. (FAO, 2015: 426, authors' emphasis)

With this definition in hand, the agroecology team, diplomatically backed by the Friends of Agroecology, worked within the FAO institutional processes to secure an authorization from COAG to carry out a series of Regional Symposia on this 'new' area of interest for FAO.

Figure 2: Participants in Brasilia, 2015



NB: Participants (n=136), Presenters (n=37)

A closed State/civil society dialogue in Brasilia, Brazil 24-26 June 2015

The first Regional Seminar for Agroecology in Latin America and the Caribbean was organized and financed by Brazil,⁸ the Community of Latin American and Caribbean States (CELAC), the Specialized Meeting on Family Farming of the Southern Common Market (REAF MERCOSUR) and the Alianza para la Soberanía Alimentaria de la Población en Latinoamérica. This invitation-only meeting was tightly controlled by the government of Brazil and the agroecology team in Rome had little control over the program or invitees. Most participants were representatives of governments in 14 countries and civil society, with very few scientists and UN officials and no private sector nor producer organizations (Figure 2). The civil society organizations were mainly made up of members of La Via Campesina and their national chapters, indigenous organizations and other organizations whose members are peasants. The few present scientists were members of the Latin American Scientific Society of Agroecology (SOCLA), an organization historically very close to social movements. The FAO DG sent a video message and there were few high-level speeches.

The content of the meeting reflected this political approach as the sessions were set up as Round Table discussions between the social movement activists and public-policy makers. This close and direct dialogue between civil society and policy makers produced a strong claim of ownership over the agroecology concept based in social movement politics and family farming practices:

Agroecology in the region has been carried out in practice for decades; by social movements of small-holder farmers, rural groups, traditional communities,

⁸ The country of origin of the FAO DG and first country with an explicit policy dedicated to agroecology. FAOLEX. (1991) Brazil: Law No. 8.171 on agricultural policy. [online] Available at : <http://www.fao.org/faolex/results/details/en/c/LEX-FAOC012389/> [Accessed 28 June 2019]

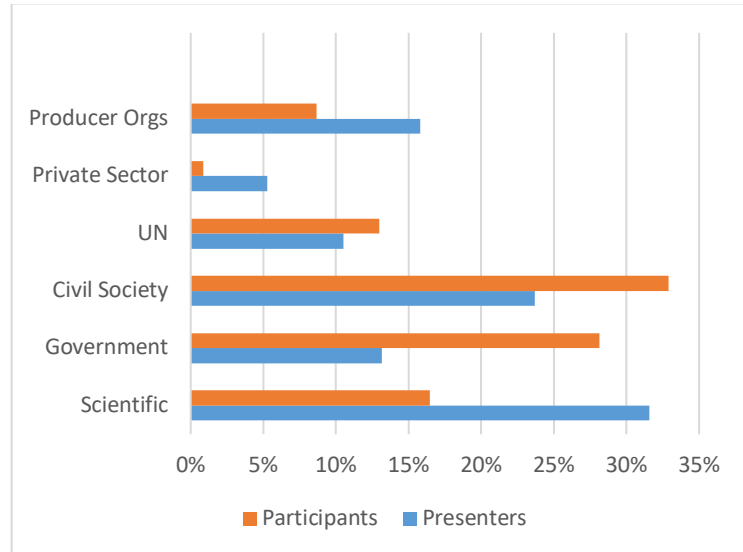
indigenous peoples, artisanal fisher folk, herders, and gatherers. It has a strong scientific base and is increasingly receiving support from governments through new public policies. The practices and elements of agroecology ensure food security and sovereignty, as well as strengthen family farming. (FAO, 2016a: 6, authors' emphasis)

This definition was unique to the region. Although they had been very critical of the 2014 Symposium in Rome, the SOCLA scientists lauded this strong definition of agroecology as a holistic approach to social change.⁹

Figure 3: Participants in Dakar, 2015

Distributed participation, but civil society mobilization in Dakar, Senegal 5-6 November 2015

In Dakar, the Regional Meeting on Agroecology was financed by France and Senegal and organized in close collaboration with FAO HQ. The largest regional event, counting over 200 participants, it had a greater distribution of actors. But scientists (mostly agronomists) dominated the presentations and civil society was strong (Figure 3).



NB: Participants (n=231), Presenters (n=38)

The greater number of presentations by the private sector, producers and youth shifted the conversation to the questions of gender and the uneasy relationship between agroecology and markets. We trace this to the continental organic movement, which is dominated by the East African export-focused delegations.

The core controversy in this meeting revolved around climate-smart agriculture (CSA), which has been denounced by civil society as 'greenwashing' by agribusiness (Alexander, 2019). This controversy emerged because of an informal lunchtime discussion that FAO put on the agenda to review a report prepared by CIRAD (the French Center for International Cooperation in Agriculture for Development). This report compared CSA and agroecology, with the conclusion that CSA was simply a policy instrument to direct funding for agriculture, but that agroecology can easily be considered 'climate-smart'. This provoked vivid reactions and critics among participants. The fallout was a scathing letter published by SOCLA denouncing the dominance of Northern science, announcing their boycott of future regional seminars and demanding a revision of the report. In response, the division responsible for the report requested internal comments and a revision and eventually refused any publication of the report, which subsequently found its way into a scientific note (Saj et al., 2017).

The strong mobilization of civil society in this meeting was the result of a proactive strategy that La Via Campesina and its affiliates in the food sovereignty movement developed as a reaction

⁹ Interviews with key informants, Dakar, 2016.

to the science-dominated program of the 2014 Symposium. In February 2015, these groups met in Nyeleni, Mali from 24-27 February 2015 to produce a declaration on Agroecology.¹⁰ This declaration strongly insisted on the origin of agroecology as a small-scale peasant agriculture that is learnt through collective processes that ensure food sovereignty. They declared: “Our Agroecology includes successful practices and production, involves farmer-to-farmer and territorial processes, training schools, and we have developed sophisticated theoretical, technical and political constructions” (Nyeleni, 2015). In Dakar, the civil society delegates held a small ceremony in the main plenary hall following one of the official sessions. During this ceremony, the Nyeleni declaration was read and civil society representatives pledged allegiance to this definition of agroecology.

In sum, the heated debates between participants from civil society and presenters from scientific institutions dominated over the contributions from governments in Dakar, despite their strong presence both in the agenda and in the audience. The long definition that was co-produced reflects this contentious process as it is all encompassing:

*Agroecology, stressing **adaptation of agriculture to natural conditions and cycles, as well as to local needs** – has been carried out by African farmers and pastoralists for millennia. Thus, while often not explicitly termed “Agroecology”, many actors and initiatives exist within sub-Saharan Africa that build on agroecological principles. Agroecology’s holistic approach - incorporating the **traditional knowledge** and skills of the world’s farming communities with **cutting edge ecological, agronomic, economic, and sociological research**, has the potential to support strong, democratically-based food systems that provide health and livelihood to small-scale, **family farmers**, rural communities; as well as environmental benefits. During this meeting, agroecological initiatives and practices have been recognized as achieving sustainable agriculture and development while reducing **rural poverty, hunger and malnutrition and increasing climate resilience of agriculture**. Agroecology also provides perspectives for **rural youths** and can help slow the **rural exodus** currently occurring in sub-Saharan Africa. (FAO, 2016b: 4, authors' emphasis)*

A classic multi-stakeholder consultation in Bangkok, Thailand 24-26 November 2015

In Bangkok, a Multi-Stakeholder Consultation on Agroecology in Asia & the Pacific was organized by FAO’s Regional Office in collaboration with FAO HQ in Rome. Financing came from FAO and the Global Alliance for the Future of Food¹¹, with plenaries and parallel scientific sessions. Government representatives were barely present, and the conversation was dominated by civil society (Figure 4). The FAO DG sent a video message.

This consultation relied upon scientific knowledge coming mostly from agronomy and entomology to discuss a variety of practices that have long been tested and used in Asia,

¹⁰ This meeting had been planned before the FAO Symposium, but civil society actors took advantage of this event to consolidate their political position (Giraldo and Rosset, 2018).

¹¹ A network of philanthropic foundations working together to transform the global food system and promote agroecology.

particularly integrated pest management and systems of rice intensification. There was a strong focus from civil society – mainly NGOs – on training farmers in these agroecological techniques that are used extensively in the region.

Rather than a focus on peasant traditions, as was the case in Africa and Latin America, the Bangkok meeting included numerous debates about the negative effects of the green revolution and explicitly addressed the need to ‘transition’ to more sustainable systems. The definition they developed recognizes, just as the Dakar definition does, that agroecology is not a word developed in the region. However, they do recognize it in their practices related to nature conservation:

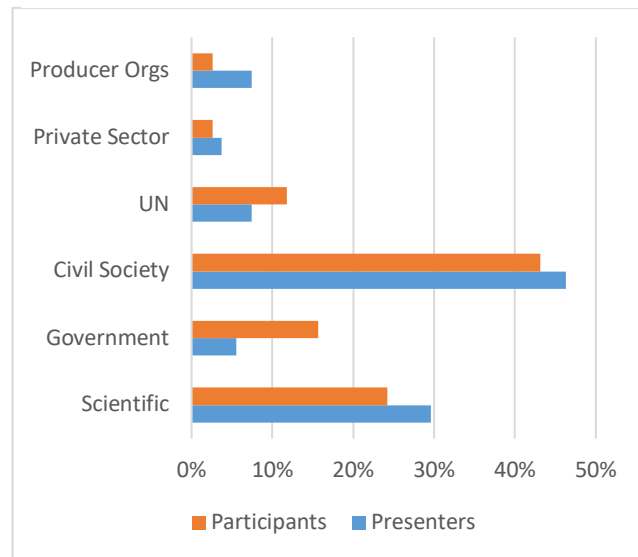
*Agroecology, which is based on the **adaptation of agriculture to local conditions, natural cycles and needs**, is not new to the Asia – Pacific region and **has been practiced** by Asian small-scale food producers across the region, including peasants, fisherfolk, pastoralists, urban communities, indigenous peoples, women’s organizations, youth and others, are nourishing and maintaining communities through agroecology. Although they do not systematically use the term agroecology explicitly, many actors and initiatives throughout Asia and the Pacific are based on agroecological principles, which include the **protection of natural habitats**. There are many ecological zones and societal diversity within this region resulting in unique agroecological approaches. (FAO, 2016c: 45, authors' emphasis)*

A scientific meeting in Kunming, Yunnan, China, 28 August - 1 September 2016

In addition to the three original regional seminars, the Government of China wanted to hold its own International Symposium on Agroecology as part of its commitment to the ‘Friends of Agroecology’ group. This event was sponsored by China, France and the Chinese Academy of Agricultural Sciences (CAAS). FAO HQ was highly involved in developing the agenda, but CAAS controlled the decisions over panelists and invited participants.

This Symposium resulted in a highly scientific event, with most presentations and participants coming from research and academia (Figure 5). The format followed the standard format with a video message by the FAO DG. The Assistant-DG for Agriculture, who was part of the Chinese agricultural science community, opened the event with the Yunnan Province Governor. But, in contrast to the previous conferences, there were little to no political speeches. Instead, there was a strong focus on the state of the art in biological and environmental sciences and high-tech approaches to nature and biodiversity conservation and landscape restoration. The main result

Figure 4: Participants in Bangkok, 2015



NB: Participants (n=153), Presenters (n=54)

expected from this event was the publication not just of proceedings, but also of a special issue of a scientific journal.

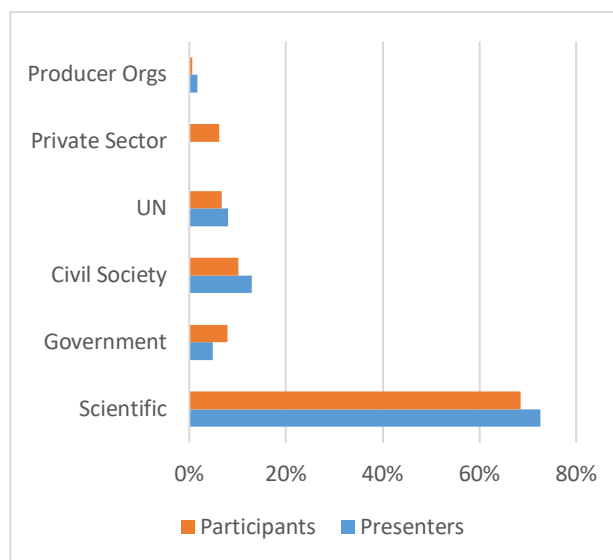
The preparation of recommendations from this event was an all-night process, where language was carefully chosen so to stay in line with both Chinese and FAO political positions. The final text¹² is quite different from the other definitions in that it adopts concepts – like ‘ecological civilization’ – that speak to theories of ecological modernization (Mol, 1997):

*China is a large agricultural country with a very large rural population. The country has rich agricultural resources and a long history of farming traditions; therefore, agroecology is not a new concept in China. Traditionally, farms in China have developed ecologically based farming systems, for instance intercropping and rotation systems, organic fertilization systems, and Rice-Fish integrated systems. Land degradation, soil erosion, grassland degradation, deforestation, water shortages and significant deterioration in water quality standards are imposing severe threats to **natural resources and biodiversity** in the country, for which technical capacities in combating these changes need to be further improved. Agroecology is seen as a key component of China's concept of “**ecological civilization**”, a set of wide-ranging reforms, detailed in a 2015 plan, to reconcile environmental sustainability with economic development. Agroecology advocates **innovative solutions** to the 21st century challenges, and a holistic and systematic approach towards achieving the SDGs [Sustainable Development Goals] in the face of climate change, to build **sustainable food systems** that produce more with less environmental, economic and social costs, with a particular focus of benefiting **family farmers**. (FAO, 2017a: 1, authors' emphasis)*

A political event in La Paz, Bolivia, 28 September 2016

As a follow-up to the Brasilia event, the government of Bolivia requested FAO to assist in organizing a workshop in 2016 so to further elaborate a specific political position on agroecology in the region. Financed by the government of Bolivia along with the CELAC, REAF Mercosur and la Alianza para la Soberanía Alimentaria de la Población en Latinoamérica, this workshop was a small invitation only event.

Figure 5: Participants in Kunming, 2016

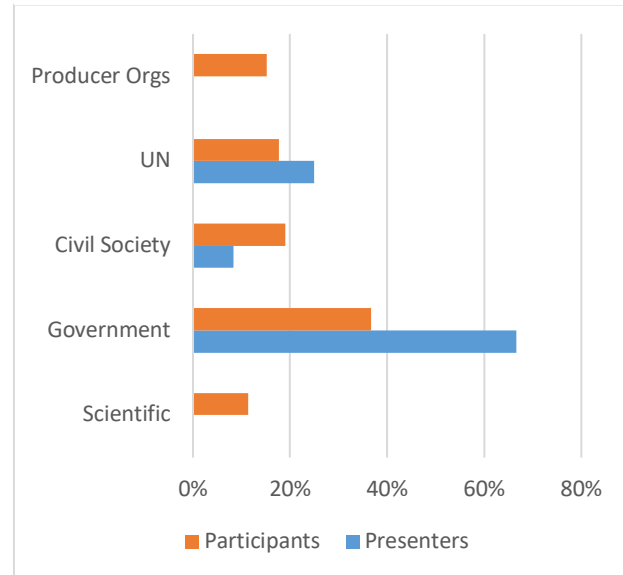


NB: Participants (n=178), Presenters (n=62)

¹² An edited version of this text appears in FAO 2017b.

Figure 6 demonstrates the strong reliance on government presentations in the opening and closing sessions, while the World Café and open space discussions that made up the majority of the day enabled brainstorming and consensus on a series of recommendations. Those recommendations were subsequently brought to the 3rd Ministerial Meeting on Family Farming of CELAC and were integrated into their 2017 plan of action.¹³ This direct policy outcome was facilitated through the invitation of civil society partners and academics from the economic and political sciences. Their definition did not change much from the Brasilia definition. Food security became food and nutritional sovereignty and sustainable management of natural resources and ecosystems was added, in line with other CELAC policy priorities.

Figure 6: Participants in La Paz, 2016



NB: Participants (n=79), Presenters (n=12)

*In Latin America and the Caribbean, **agroecology has for decades been a way of life** for many farmers, peasants, artisanal fisherfolk, pastoralists, gatherers, indigenous peoples, Afro-descendants and traditional peoples and communities. Agroecology has been promoted and claimed by **social movements** as a model of agriculture that is harmonious and respectful of the environment, biodiversity and ecosystems, socially, environmentally and economically sustainable. **The academy has provided it with a scientific basis**, and in recent years, it has been assumed by some governments with the generation of **public policies that promote it** and that visualize its important contribution to **food and nutritional sovereignty and security** and to the **sustainable management of natural resources and ecosystems**. (FAO, 2018c: 4, authors' translation and emphasis)*

An apolitical event for European science in Budapest, Hungary, 23-25 November 2016

The fourth Regional Symposium on Agroecology was held in Hungary with funding from Hungary and France. This meeting required significant work from FAO HQ team, in collaboration with the Regional office in Budapest, due to political tensions over the idea of FAO convening a technical (yet highly political) event for the European region.¹⁴ Therefore, the geographic region was expanded to include Europe and Central Asia and the government presentations were limited

¹³ CELAC. (2018). *Ministerial Declaration Of Celac On Family Farming And Rural Development* [online] Available at: <https://celac.rree.gob.sv/documento-oficial/action-plan-of-the-ad-hoc-working-group-on-family-farming-and-rural-development-of-the-celac-2018/> [Accessed 28 June 2019]

¹⁴ Informal interviews with members of the scientific and organizing committees, Rome and Budapest, 2016.

compared to those of the scientists and civil society (Figure 7). Indeed, while representatives of member countries were signed up for the event, most of them were absent, leaving their reserved seats available. Thus, there was a running joke during the meeting where the moderator kept trying to call on government representatives and all of the people sitting in their seats were either from civil society or academia.

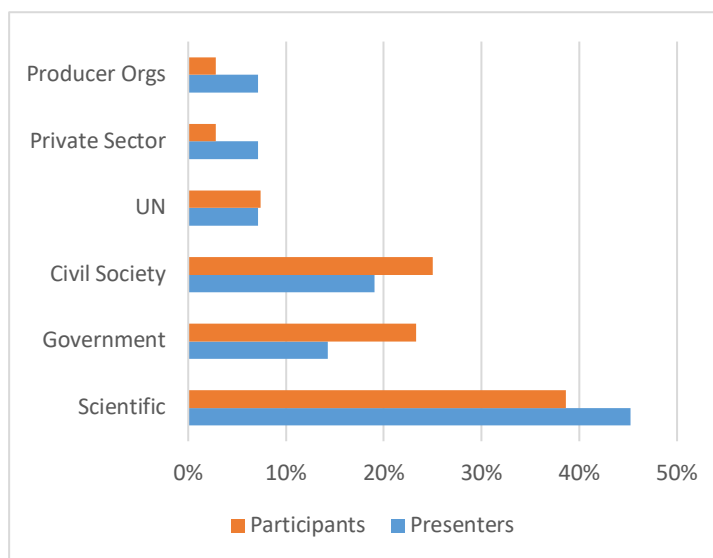
Nonetheless, the FAO DG, the Hungarian Minister of Agriculture and a representative from the Directorate General for Agriculture and Rural Development of European

Commission (DG-Agri) were there to open and close the event. The French and Swiss Ambassadors to FAO participated throughout the three days. The agenda was dominated by scientific presentations based in ecology, biology, agronomy and social sciences. These presentations were mixed with practice examples from economic actors and innovators in the standard FAO format. Nonetheless, the plenaries were reserved for institutional and diplomatic actors.

In this event, the civil society participation was mediated through a strategy of definitional integrity. In every presentation from civil society, the speaker repeated a phrase from the Nyeleni declaration so to ensure that this definition was included in the final report. Some academics – mainly social scientists, did the same. This practice was not witnessed in any of the other meetings of the Global Dialogue. Nonetheless, the definition that was agreed upon remains rather technical and science-oriented:

Agroecology is based on principles such as biomass recycling, circular system of food production, soil health and preservation, natural inputs (sun radiation, air, water and nutrients) optimization, loss minimization, conserve biological and genetic diversity and enforcement of biological interactions in agroecosystem components. It relies on a localized value chain, locally-available natural resources and knowledge, with a strong focus on participatory action research to achieve context-specific and socially-accepted innovations within farming systems. It is multi-disciplinary, drawing on agronomy, ecology, economy and social sciences and therefore developing agroecological programs and policies requires a multi-stakeholder approach bringing together agriculture, environment and social perspectives. Agroecology can make an important contribution to the transition to more sustainable food systems. Its practices, research and policies have seen exponential growth worldwide in the last decade. (FAO, 2017b: 61, authors' emphasis)

Figure 7: Participants in Budapest, 2016



NB: Participants (n=176), Presenters (n=42)

In this meeting, the tension between organic and agroecology was discussed various times, notably due to an active participation of IFOAM Europe. The report by FAO concludes that: “Organic agriculture is largely rooted in agroecological approaches, both in principles and actual practices, and most of the organic farmers respond to an ecological mission as part of their social undertaking. We recommend that Agroecology and organic farming are considered in their synergies and co-evolution.”¹⁵

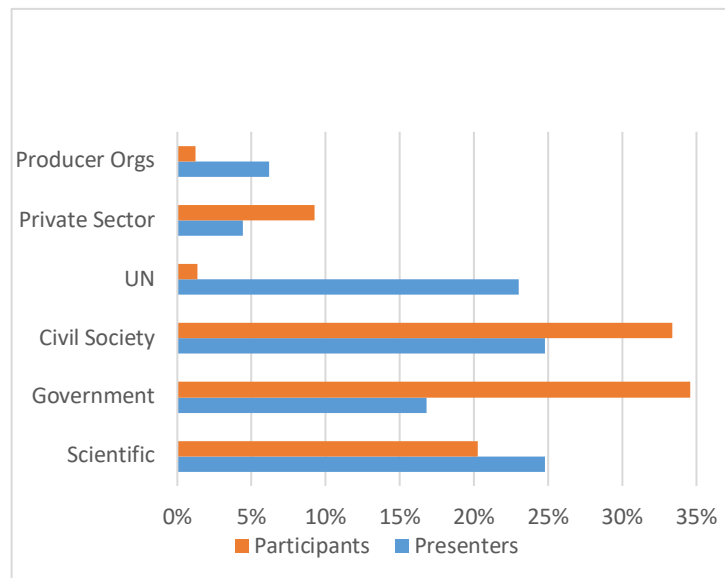
Closing the dialogue in Rome, Italy, 3-5 April 2018

The last meeting of the Global Dialogue on Agroecology began the day after Easter Monday in Rome, 2018 and was the result of significant technical and political work. At least 20 people at HQ were working non-stop on organizing the event since the beginning of the year. A hierarchy of decisions over the content of the agenda, which went through more than 80 versions, was put into place with high level authorization required before the final agenda was published at 5PM on the Friday before the holiday weekend.

All this work, however, did result in a greater balance between scientific and civil society presentations, which was almost on par with presentations from FAO and the other UN organizations (Figure 8). Compared to the first meeting in Rome, the presence of the private sector increased considerably, as a result not just of the convenience of the location for the lobby groups or the inclusion of an innovation fair, but also a significant effort by FAO to increase their presence in the program. The larger number of private sector participants also shows that they realized the importance of this meeting in the framework of global debate on the future of agricultural policy.¹⁶ Producer organizations were also there, but only a few self-financed. In the invitation of the scientific presentations, FAO attempted to maintain geographic balance. Given the tense relations with SOCLA following the Dakar meeting, they were originally not included in the program. However, an official letter denouncing FAO’s omission of their foundational role in agroecology worked to include the current president of SOCLA. This large turnout points to the importance that actors placed on this particular event in the stabilization of global agroecology knowledge.

A point of discussion in the 2018 meeting revolved around the institutional status to be given to the conclusions of the meeting. At the last-minute, the FAO DG proposed in his opening speech

Figure 8: Participants in Rome, 2018



NB: Participants (n=746), Presenters (n=113)

¹⁵ FAO. (2018). *Report on the Regional Symposium on agroecology for Europe and Central Asia* [online] Available at: <http://www.fao.org/3/a-i7604e.pdf> [Accessed 20 May 2018]

¹⁶ Interviews with key informants, Rome April 2018.

that the “Symposium should produce a Declaration.”¹⁷ The organizing team and the scientific committee had not prepared to develop a declaration but rather a simple ‘Chair’s Summary’. Throughout the plenary, member government representatives protested this proposal on procedural grounds. They argued that for them to be able to sign such a declaration, they needed to consult their capitals, which was impossible within the timeline of the Symposium. In the end, the Chair also protested and removed the declaration style language from the summary.

In preparation for this final event of the Global Dialogue, FAO published all its reports from the regional symposia and they consolidated the varying definitions into an overarching framework called the “10 elements of Agroecology”, as follows:

*Agroecology focuses on the interactions between crops, livestock, forestry, aquaculture, people and the environment – managing these interactions according to the locally-specific context, while addressing global challenges. FAO’s framework on agroecology identifies 10 elements shared by different agroecological approaches.*¹⁸

All divisions of FAO provided heavy comments on the 10 elements and the DG provided handwritten comments, demonstrating the level of attention that was paid by the organization to its definitional mission. This mission was seen as fundamental to the capacity of FAO to implement its ‘scaling up initiative’, which was conceived as the means to institutionalize agroecology within the organization and to engage its member country governments in implementing agroecology in their national agricultural policies. Indeed, in the Chair’s summary, agroecology was not redefined. Rather it was explained in terms of the institutions that are needed for agroecology to:

“ensure transformative change towards sustainable agriculture and food systems based”.

The document notably insists on the need to include:

“all actors in food and farming systems in all continents, from small-scale farmers and their families to the networks of conscientious consumers”.

It also claims that:

“Reintroducing diversity on farms, strengthening local food systems, valuing traditional knowledge, ensuring equity and access to land and economic resources, and respecting the multiple food cultures around the world are core components of agroecology” (FAO, 2018a: 1).

This document, that draws upon the 10 elements, makes the first mention of consumers and food cultures in its definition of agroecology.

¹⁷ FAO. (2018). *A statement by FAO Director-General José Graziano da Silva*. [online] Available at: <http://www.fao.org/director-general/my-statements/detail/en/c/1113703/> [Accessed 03 Apr. 2018].

¹⁸ These 10 elements are: efficiency; diversity; synergies; balance/regulation; recycling; co-creation of knowledge; human and social value; circular economy; culture and food traditions; land and natural resources governance. FAO. (2018). *The 10 Elements of Agroecology* [online] Available at: <http://www.fao.org/3/I9037EN/i9037en.pdf> [Accessed 27 June 2019]

The Politics of Circulation

The empirical data presented in the previous section offers insights into three dimensions of the politics of circulation and the stabilization of knowledge. First, we see a hybridization of knowledge as it is coproduced. Second, we observe a clear challenge to the tripartite narrative of agroecology. Third, the stabilization agroecology within the FAO has re-focused debate towards the ‘data’ imperative that dominates discourse within the UN institutions (Independent Expert Advisory Group Secretariat, 2014). We explore each of these dimensions in turn.

The coproduction and hybridization of knowledges within the Global Dialogue

Descriptive analysis of evolving definitions is not sufficient, instead there is an entwined relationship between the ontics, epistemes and politics of the global agroecology object that has been co-produced. The Global Dialogue is a techno-political space where interests and identities are defended by actors through their discursive and material positioning and via coalition strategies. Through the identification of the discrepancies between who was chosen to present, who participated and the stabilized definition that they agreed to, we can see epistemic selectivity, but also clear ontological politics (Mol, 1999). Indeed, despite the efforts of the organizers to populate the dais with scientists (mostly ecologists and agronomists), the civil society message of agroecology as an alternative way of knowing food production came through clearly. A key voice from civil society admitted following the Rome 2018 Symposium that “*we feel a lot of our language was adopted*”. However, he cautioned vigilance claiming, “*we are not naïve, there is a lot at stake with the final definition of agroecology, and unlike what happened with sustainable development we will resist the co-optation of our concept.*” As the Dialogue progressed, actors in the different regions consolidated their political stances in their interventions, particularly to avoid such a co-optation. These interventions were supported through alliances that developed within the scientific, civil society, policy and even private sector networks who were meeting each other in between the FAO events. The introduction of the Nyeleni text first in Dakar and then directly into the Budapest discourse is a clear example of this, but not unique.

The organic movement, for example, was working within their networks throughout this same time to consolidate their position that agroecology is simply the basic principle of organic agriculture (Fouilleux and Loconto, 2017). The idea was to counter La Via Campesina, who held the legitimate, representative voice on agroecology within FAO’s partnership mechanism. La Via Campesina had actually rejected Organic as a co-opted version of agroecology, due to their standards, certification devices and market presence.¹⁹ The alliances forged by IFOAM with FAO throughout this period, including the participation of key agroecology staff in the Organic World Congress in India in 2017, ensured that they held a more legitimate position on the agroecology dais.

The scientific actors also consolidated their networks into new configurations to stabilize their expertise on agroecology. During this period a dedicated European association called Agroecology Europe and a North American network organized by the Union of Concerned Scientists were formed. The different ‘letters from scientists’ that were released throughout the Global Dialogue pushed for more progressive and interdisciplinary understandings of agroecology, while also claiming epistemic authority over the agroecology narrative. The Chinese Academy of

¹⁹ Interviews with IFOAM and La Via Campesina in Budapest, November 2016, and Rome, April 2018.

Agricultural Sciences also made a material statement about the type of knowledge circulating in the Global Dialogue when they withdrew the publication of the proceedings in *The Journal of Integrative Agriculture* as they felt that the papers did not meet their requirement of scientific rigor.²⁰ The North American Network began discussions with the FAO agroecology team in the attempt to organize a North American Symposium. However, FAO was not able to sell this idea to its member states and donors. As was the case with the EU politics behind the organization of the Budapest conference, the US Department of Agriculture did not see a mandate for FAO in influencing their own domestic policy debates and were willing only to support a final Symposium in Rome.²¹

Similarly, several administrative and political actors were able to place themselves in positions of authority within FAO's governing bodies, in order either to ensure that the results from the Global Dialogue were not lost. First, some member states have followed their diplomatic strategy of influence. The informal network of the Friends of Agroecology expanded, counting 16 member countries at the time of the Rome 2018 symposium; each with concrete national actions planned. As a result, they were able to counter the opposition of reluctant states within COAG (e.g., Australia, Canada, New Zealand, USA) and push the notion of agroecology through the formal programme planning process of FAO. Specifically, in 2016 following the completion of the Regional Symposia, the agroecology team received authorization from COAG to work on agroecology within the organization's normative program on Agricultural Innovation Systems. The Budget and Finance Committee of FAO also approved two new regular program posts in Agroecology and Ecosystems. Since 2018 there is an officer working on agroecology in each regional office. Despite this undeniable institutionalization of agroecology that is occurring within the FAO, it is important to underline that this is not the only policy supported by the organization. In parallel to the recognition of the program stream on agroecology, a workstream on biotechnology²² has been developing within the same division of the FAO. Moreover, the recent election of the Chinese Vice-Minister of Agriculture to the post of FAO DG means that the future of this work stream within FAO is not clear. Indeed, there is constant competition and value conflicts at stake within the organization and the role of neutral knowledge broker remains ambiguous (Fouilleux, 2009).

Agroecology as a Socio-Political Compromise

The tripartite narrative of agroecology described above was the *a priori* framing used by the FAO to organize the Global Dialogue, thanks in part to a background paper they commissioned (Wezel et al., 2015). The effect is apparent in each symposium agenda where parallel sessions are organized into 'scientific, practice or socio-economic' sessions. It is also materialized in the organization of content on the FAO webpage²³ and is reflected in the visual presentations of the FAO's 10 elements of Agroecology. As we have described, actors representing the three

²⁰ Communication between the proceedings' editor and the first author, Rome, May 2017.

²¹ Informal interview with US government representative, San José, February 2019.

²² FAO. (2015). *Biotechnology* [online] Available at: <http://www.fao.org/biotechnology/en/> [Accessed 27 June 2017]

²³ FAO. (2015). *Agroecology Knowledge Hub* [online] Available at: <http://www.fao.org/agroecology/knowledge/science/en/> [Accessed 26 February 2019].

constituencies of the tripartite narrative were present throughout the Global Dialogue. The dominance of one actor type over another co-produced definitions of agroecology that changed from meeting to meeting. For example, Rome 2014 and Kunming were highly science focused, while La Paz and Brasilia favored social movement and government motivated political discussions. The Bangkok, Budapest and Rome 2018 Symposia used more practice-based cases to ground the political and scientific debates in practical achievements, with a specific focus on innovation in Rome.

However, as Rivera-Ferre (2018) argues, classifying agroecology into a tripartite narrative refers to superficial separations and makes us lose certain elements of the picture. For example, the Dakar definition of agroecology clearly refers to a lifestyle and livelihood, which is not captured in this narrative. In addition, the lack of a consumer or market statement in the definition reflects the absence of private sector voices, which sometimes was intentional. The politics of how framing one element as more science (the knowledge for the farm), another as more practice (the management of the farm) and a third as more of a social movement (the politics of the farmer) may lead to favoring some policies over others. This tripartite vision, which is mostly mobilized by agronomists and ecologists, clearly separates science from practices and from politics, which is far from the reality of how science and society interact (Gieryn, 1995). It also implicitly supposes a unified science, ignoring the boundaries and conflicts that exist within the scientific sphere itself. As underlined by academics during the 2018 Symposia, not all science has been considered equally in the tripartite narrative:

“We have to learn from history. Sociology and political science were not in agroecology, and the food sovereignty shows that it is needed. We really need to include social sciences in the field of agroecology.”

This type of claim was made repeatedly by social scientists and was echoed by civil society requesting that:

“Political dynamics must be included in the approach; not only a scientific approach looking at techniques”.

Another artificial boundary created through the tripartite narrative is between science and practice. As we have shown, both scientists and civil society activists pressed to erase such a boundary as it reinforces the idea that the knowledge needed for agroecology is of a scientific kind:

“we need participatory approaches of science”

“farmers as researchers”

“DG-Agri recently proposed a revival of extension services. But we saw during these last two days that this may work differently for agroecology than what these services were doing when they were at their high in the 1990s. Which kind of actors can we mobilize for extension? Who will train the trainers?”

As our empirical data illustrates, this blurring of the boundaries of the tripartite narrative is needed if we are to understand the co-production of knowledge within the Global Dialogue, how

different types of evidence were mobilized to stabilize a definition of agroecology that has far reaching influence.

Evidence and Institutionalization of Agroecology

A recurring theme within the dialogue was the need for more evidence to convince policy makers.²⁴ This occurred despite the dominance of scientists presenting valid evidence in these meetings. Thus in Budapest, the well known scientist and agroecology activist Hans Herren declared in his presentation, in exasperation, that there are more than 30 years of scientific evidence that agroecology is a more sustainable form of agriculture and that it also performs competitively well according to a wide range of indicators.

This contradiction poses a serious question about whose evidence (or knowledge) the institutional actors feel is lacking. Ecological evidence is well documented and agronomy is not that far behind in the evidence it has found with experiments of individual practices (cf. Ollivier, 2015; IAASTD, 2008; IPES-Food, 2016). We may link this request for evidence back to the politics of the debate and to what form this agroecological object has taken. The dominance of civil society and the international policy priority of partnerships should logically lead to a valorisation of these 'civic' forms of knowledge. However, while the definitions continuously cited traditional knowledge, old practices and farmers' knowledge, the embodiment of these concepts in a principle of 'co-creation of knowledge' found in FAO's 10 elements points to the institutional discomfort with accepting these forms of knowledge without scientific or political knowledge attached.

Thus, as a follow-up to the Global Dialogue and in response to a request from the 25th Session of COAG,²⁵ FAO began developing a 'global knowledge product' on agroecology within the organization's strategic objective on sustainable agriculture. This work has been FAO's solution to this institutional discomfort and supposed lack of evidence. In 2018, as the core administrative elite who had been driving this program within FAO were preparing to leave the organization,²⁶ they put together a group of internal and external experts from academia and civil society to carry on this work. The objective is to determine two types of evaluation: 1) critical criteria that describes the characteristics of an agroecological production system and is based on FAO's 10 elements; and 2) impact that links system criteria to the SDGs. This work is led by the FAO agroecology team and the livestock policy group within HQ and again relies mainly upon stabilized knowledge in agronomic, ecologic and economic sciences. The two sociologists and the civil society representatives on the committee have also introduced a social perspective on power and organizational change that raises the issue of the governance of agroecology. This two-fold evaluation tool will be tested on farms and at landscape (territorial) levels in India, Mexico and Senegal. As members of the 'Friends of Agroecology', they are also some of the key countries that proved the validity of the green revolution. As an additional sign of stabilization of a global definition of agroecology through the Global Dialogue, some private actors developed their own

²⁴ Specific recommendations on this are found in each regional report.

²⁵ FAO. (2016) *COAG/2016/REP (Para. 25)* [online] Available at: <http://www.fao.org/3/a-mr949e.pdf> [Accessed 27 June 2019]

²⁶ Due to expired consultant contracts, retirement or positions in other departments.

tools, based on FAO's 10 principles, to evaluate agroecology.²⁷ In this way, the transition to agroecology as the means to a sustainable future will be measured in the coming years. This push towards gathering new evidence outside of the space of a forum is significant. It means that the struggles over whose knowledge counts in global agroecology is closely tied to who can bring policy-relevant evidence back into the policy discussion.

Conclusion

This article sought to understand how knowledge circulates and how a global notion of agroecology stabilized through an FAO-led series of international symposia. We show that the result of the Global Dialogue is that agroecology has no fixed definition but is constantly co-produced through political processes of knowledge- and policy-making. In these processes scientific, civil society, administrative and political actors interact within spaces of dialogue that are shaped by organizational, institutional and political priorities, and legitimation strategies at different scales. Despite FAO's initial natural sciences-based framing of agroecology as a tripartite narrative – science, practice and social movement - the process created a space for civil society to imbue the concept with political and institutional imperatives to see “agroecology as a transition process”, which was a framing acceptable to member states. This was concretized through the claim by social scientists to be better represented in the debate and by civil society to increase the recognition of traditional and farmer knowledge in the debate. The larger question that was not answered by the Global Dialogue was: a transition to what?

References

- ABREU LS, LAMINE C and BELLON S. (2009) Trajetórias da agroecologia no Brasil : entre movimentos sociais, redes científicas e políticas públicas. . *PROC. VI CONGRESSO BRASILEIRO DE AGROECOLOGIA ; II CONGRESSO LATINOAMERICANO DE AGROECOLOGIA*. 9-12 NOV. 2009, CURITIBA, PARANA, BRASIL.
- ALEXANDER S. (2019) How Does the Meaning of Climate-Smart Agriculture Differ Among Stakeholders. *Future of Food: Journal on Food, Agriculture and Society* 7: 21-30.
- ALTIERI MA, HECHT S, LIEBMAN M, et al. (1999) *Agroecología: Bases científicas para una agricultura sustentable*: Nordan-Comunidad.
- BOWKER GC and STAR SL. (1999) *Sorting things out: classification and its consequences*, Cambridge, MA: MIT Press.
- CALLON M. (1991) Techno-economic networks and irreversibility. In: Law J (ed) *A Sociology of Monsters: essays on power, technology and domination*. London: Routledge, 132-163.
- CORNILLEAU L and JOLY P-B. (2014) 5. La révolution verte, un instrument de gouvernement de la « faim dans le monde ». Une histoire de la recherche agricole internationale. *Le gouvernement des technosciences*. Paris: La Découverte, 171-201.
- DELGADO RAMOS GC. (2015) Coproducción de conocimiento, fractura metabólica y transiciones hacia territorialidades socio-ecológicas justas y resilientes. *Polis (Santiago)* 14: 85-96.
- DUNCAN J. (2015) *Global food security governance : civil society engagement in the reformed Committee on World Food Security*, Abingdon, Oxon ; New York: Routledge.
- FAO. (2015) *Agroecology for Food Security and Nutrition Proceedings of the FAO International Symposium 18-19 September 2014, Rome, Italy*, Rome: Food and Agriculture Organization of the United Nations.

²⁷ Biovision. (2019). *Criteria Tool*. [online] Available at: <https://www.agroecology-pool.org/methodology/> [Accessed 29 June 2019]

- FAO. (2016a) Outcomes of the Regional Meeting on Agroecology in Latin America and the Caribbean. *FAO REGIONAL CONFERENCE FOR FOR LATIN AMERICA AND THE CARIBBEAN. Thirty-fourth Session*. Mexico City (Mexico), 29 February - 3 March 2016: Food and Agriculture Organization of the United Nations.
- FAO. (2016b) Outcomes of the Regional Meeting on Agroecology in sub-Saharan Africa. *FAO REGIONAL CONFERENCE FOR AFRICA. Twenty-ninth Session*. Abidjan, Côte d'Ivoire, 4-8 April 2016: Food and Agriculture Organization of the United Nations.
- FAO. (2016c) Report on the Multi-Stakeholder Consultation on Agroecology in Asia and the Pacific. FAO, Bangkok, 24-26 November 2015. Rome: Food and Agriculture Organization of the United Nations.
- FAO. (2017a) Report of the international symposium on agroecology in China. Kunming, Yunnan, China, 29-31 August 2016. Rome: Food and Agriculture Organization of the United Nations.
- FAO. (2017b) Report of the regional symposium on agroecology for sustainable agriculture and food systems for Europe and Central Asia. Budapest, Hungary, 23-25 November 2016. Rome: Food and Agriculture Organization of the United Nations.
- FAO. (2018a) 2nd International Symposium on Agroecology: Scaling-up Agroecology to contribute to the Sustainable Development Goals. 3 - 5 April 2018, Rome. Chair's Summary. Rome: Food and Agriculture Organization of the United Nations.
- FAO. (2018b) Catalysing dialogue and cooperation to scale up agroecology: Outcomes of the fao regional seminars on agroecology. Summary. Rome: Food and Agriculture Organization of the United Nations.
- FAO. (2018c) II Seminario regional sobre agroecología en América Latina y el Caribe. La Paz - Bolivia, 27 y 28 de septiembre de 2016. Rome: Food and Agriculture Organization of the United Nations.
- FOUILLEUX E. (2009) À propos de crises mondiales... Quel rôle de la FAO dans les débats internationaux sur les politiques agricoles et alimentaires ? *Revue française de science politique* 59: 757-782.
- FOUILLEUX E. (2019) Building marketisation. Competition, synergies and repartition of tasks in the diffusion of policy ideas in the global agri-food policy field. In: Dolowitz D, Hadjisky M and Normand R (eds) *Micro-Politics in International Organizations: Shaping Governance in an Era of Globalization*. Edward Elgar Publishing.
- FOUILLEUX E, BRICAS N and ALPHA A. (2017) 'Feeding 9 billion people': global food security debates and the productionist trap. *Journal of European Public Policy* 24: 1658-1677.
- FOUILLEUX E and JOBERT B. (2017) Le cheminement des controverses dans la globalisation néo-libérale. Pour une approche agonistique des politiques publiques. *Gouvernement et action publique* 3: 9-36.
- FOUILLEUX E and LOCONTO A. (2017) Voluntary standards, certification, and accreditation in the global organic agriculture field: a tripartite model of techno-politics. *Agriculture and Human Values* 34: 1-14.
- FRANCIS C, LIEBLEIN G, GLIESSMAN S, et al. (2003) Agroecology: The Ecology of Food Systems. *Journal of Sustainable Agriculture* 22: 99-118.
- FUJIMURA JH. (1992) Crafting science: standardized packages, boundary objects, and 'translation'. In: Pickering A (ed) *Science as Practice and Culture*. Chicago, IL: University of Chicago Press, 168-211.
- GIERYN TF. (1995) Boundaries of Science. In: Jasanoff S, Markle GE, Petersen JC, et al. (eds) *Handbook of Science and Technology Studies*. London: SAGE, 393-443.
- GLIESSMAN S. (2018) Defining Agroecology. *Agroecology and Sustainable Food Systems* 42: 599-600.
- GOLDMAN M. (2005) *Imperial Nature: The World Bank and Struggles for Social Justice in the Age of Globalization*. New Haven, CT: Yale University Press.
- IAASTD. (2008) Agriculture at a Crossroads: International assessment of agricultural knowledge, science and technology for development (IAASTD) : global report. In: McIntyre BD, Herren HR, Wakhungu J, et al. (eds). Washington, DC: FAO, GEF, UNDP, UNEP, UNESCO, the World Bank and WHO.
- ILCAN S and PHILLIPS L. (2003) Making Food Count: Expert Knowledge and Global Technologies of Government*. *Canadian Review of Sociology/Revue canadienne de sociologie* 40: 441-461.
- Independent Expert Advisory Group Secretariat. (2014) A World that Counts. Mobilising the Data Revolution for Sustainable Development. Report prepared at the request of the United Nations Secretary-General, by the Independent Expert Advisory Group on a Data Revolution for Sustainable Development. New York: United Nations.
- IPES-Food. (2016) From uniformity to diversity: A paradigm shift from industrial agriculture to diversified agroecological systems. In: Frison EA (ed). Brussels: d.
- JASANOFF S. (2004) States of knowledge: the co-production of science and social order. *International library of sociology*. London and New York: Routledge, xii, 317 p.
- KINGDON JW. (1984) *Agendas, alternatives, and public policies*. Boston: Little, Brown.

- LAMINE C and ABREU LS. (2009) Compared trajectories of agro-ecology in Brazil and France: The role of scientists and social movements. *XXIII ESRS CONGRESS: "RE-INVENTING THE RURAL BETWEEN THE SOCIAL AND THE NATURAL*. VAASA, FINLAND.
- LATOUR B. (1987) *Science in Action: How to Follow Scientists and Engineers through Society*, Milton Keynes, England: Open University Press.
- MCKEON N. (2014) *Food Security Governance: Empowering Communities, Regulating Corporations*: Taylor & Francis.
- MOL A. (1997) Ecological modernization: Industrial transformations and environmental reform. In: Redclift M and Woodgate G (eds) *International handbook of environmental sociology*. London, England: Elgar, 138-149.
- Mol A. (1999) Ontological Politics. A Word and Some Questions. *The Sociological Review* 47: 74-89.
- NYELENI. (2015) Declaration of the International Forum for Agroecology, Nyéléni, Mali: 27 February 2015. *Development* 58: 163-168.
- OLLIVIER G. (2015) Les communautés scientifiques de la transition agroécologique. Paris: Institut National de la Recherche Agronomique, 156 p.
- PELLEGRINO G. (2012) Beyond an IT-driven Knowledge Society: Knowledge Management as Intertwined Sociotechnical Circulation. *European Review* 20: 164-172.
- RIP A, JOLY P-B, DEMORTAIN D, et al. (2012) *Emerging Spaces and Governance. A position paper for EU-SPRI*. Available at: http://www.euspri-forum.eu/key_missions/exploratory_initiatives.doc/.
- RIVERA-FERRE MG. (2018) The resignification process of Agroecology: Competing narratives from governments, civil society and intergovernmental organizations. *Agroecology and Sustainable Food Systems* 42: 666-685.
- SAJ S, TORQUEBIAU E, HAINZELIN E, et al. (2017) The way forward: An agroecological perspective for Climate-Smart Agriculture. *Agriculture, Ecosystems and Environment* 250: 20-24.
- STAR SL. (1991) Power, technology and the phenomenology of conventions: on being allergic to onions. In: Law J (ed) *A Sociology of monsters : essays on power, technology, and domination*. London: Routledge, 26-56.
- TOMIVH, T P, BRODT S, FERRIS H, et al. (2011) Agroecology: A Review from a Global-Change Perspective *Annual Review of Environment and Resources* 36: 193-222.
- WEZEL A, BELLON S, DORE T, et al. (2009) Agroecology as a science, a movement and a practice. A review. *Agronomy for Sustainable Development* 29: 503-515.
- WEZEL A, SOBOKSA G, MCCLELLAND S, et al. (2015) The blurred boundaries of ecological, sustainable, and agroecological intensification: a review. *Agronomy for Sustainable Development* 35: 1283-1295.