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The Generative Potential of Tensions within Belgian Agroecology

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Abstract: Food crises and ecologization have given rise to a Belgian dynamic that does not behave according to the conventional tripod of agroecology: practitioners, social movement, and scientists. Instead of simply recounting the history of Belgian agroecology, the authors trace the history and dynamics in Belgium), a journey along six strands that weave themselves into a Belgian tapestry: Genetically modified crop commandos, a scientific paradigm shift, hybrid expertise opening the Northern route that intersects with a Southern political route, an original non-institutional dynamic in the French-speaking part of Belgium and an institutional initiative that led to a rift in Flanders. In the following section, we identify, emerging from those six strands, four tensions that create a space of innovations, namely, politically differentiated discourses, land access, fair price, and epistemic tensions. We discuss then the generative potential of the 4 tensions and describe the potential of reconfigurations generated by boundaries organizations, food justice and transdisciplinarity. We conclude that the concept of agroecology continues to have transformative potential in Belgium today. However, no one can predict the course of such a largely non-institutional dynamic.

Keywords: agroecology; transition; transdisciplinary; food justice; controversies; peasants

1. Introduction

Is agroecology, as they say in Belgium, ‘old wine in new bottles’? Is the current Belgian landscape significantly different from the one that has emerged around new alternatives, e.g., short supply chains, Community Support Agriculture boxes, farmers’ markets, and quality products and labels in the 1980s and 1990s? [1] Many of these initiatives arose on the regional scale by the *boerenmarkten* (farmers’ markets) in Flanders and the *Agriculture Savoureuse* federation in Wallonia at that time. The national context has since been transformed by the matter of alternatives [2] and a more recent transition. Two pervasive dynamics linking the local and the global have also helped to transform this national context, namely food health crises and resistance to the neo-productionist discourse.

The food crises that swept across Europe at the turn of this century hit Belgium particularly hard. These crises took place in the context of further industrialization and globalization of our food markets, where the link between consumption and production was being dissolved by lengthening and

increasing the specialization of agrifood value chains. Those crises spurred activities to reconstruct the link between production and consumption. The food crises proliferated in Belgium, starting from the hormone scandal (1985–1992) to mad cow disease (1996–1997 and thereafter), followed by the dioxin scandal (1999), which even brought down a government and brought the Greens to power, and then the bone meal scandal (2001) and foot-and-mouth disease epidemic (2002). From a sociological standpoint, these crises reveal the limits of our food system, especially when it comes to food safety. This is the context in which the matter of GMOs (genetically modified organisms) came to the fore.

The hunger riots that swept over major cities in Africa and South America in 2008 reactivated the agrifood issue of food sovereignty here in the North. Indeed, in 2007–2008, the shock linked to the skyrocketing prices of staple cereals (corn, rice, and wheat) prompted people to take to the streets in several countries of the South. Following those riots, the agri-food issue returned to the agendas of such major international institutions as the Food and Agriculture Organization (FAO) and World Bank. A neo-productionist discourse then reasserted itself in this context of political worry [3]. It was famously embodied by such transnational players as the “Big 6” agrochemical companies. This talk of intensification—“*grow more (food) with less (land)*”—advocated a new Green Revolution. The emphasis placed on an increase in productivity based on biotechnological innovation led to and stimulated a reaction on the part of those who defended the rationale of “*less (productivity) is more food*” [4]. This reaction ushered the agroecology model into the public debate, beginning mainly within the context of overseas development.

As Buttel [5] stresses, agroecology is both a criticism and a proposal that has been amplified on an unprecedented scale today in the face of the advent of the neo-productionist regime. However, this acceleration which—like a hybrid of science, civil society, and practices [6] is the fruit of both social movements and the work of minority researchers), cannot be understood if we reduce it to a simplistic, dualistic theory of opposition to a dominant system, as that ignores its diversity. Agroecology (or rather agroecological transitions) are “*a territory of dispute between institutionalism and social movements*” [7].

We do not simply trace the history of the movement. Instead, we aim to identify and understand how various players take up agroecology and make use of its various strands. Our hypothesis is that the “made in Belgium” agroecology tapestry woven from these threads is a new narrative [4,8] that generates a diversity of interpretations of the controversies raging in the forums in which these players participate. We have identified six strands developed in Section 3 below: the GMO crisis, the Belgian National Scientific Research Fund’s Interdisciplinary Research Group on Agroecology (GIRAF) scientist network, Olivier De Schutter, overseas development or cooperation NGOs, ‘peasant’ unions, the support network for peasant initiatives, new food frontiers, and Agroecology in Action. These interwoven strands shape the tapestry of Belgian agroecology. The uniqueness of our approach will then lie in identifying four generative tensions in this agroecological tapestry (Section 4). These tensions are the keys that unlock Belgian agroecology’s dynamism, that is, the keys that both generate its vitality and leave it open and unfinished. In Section 5 (Discussion), we talk about the potential of those generative tensions and in Section 6 (Conclusions) we take a short prospective look at the routes and the questions that agroecology in Belgium might face.

2. Materials and Methods

This article is based on three types of data: participatory observation, secondary data, and semi-structured interviews. The authors participated at varying levels in formal and informal groups that either had projects or were involved in discussions about agroecology. Researchers participated in the Belgian National Scientific Research Fund’s Interdisciplinary Research Group on Agroecology (GIRAF) (2009–2018), six Belgium Agroecology Meetings (BAM) since 2010, creation of various types of training (Agroecology and Transitions Certificate (2013– . . .), a Master’s program in Agroecology (2016– . . .), and the International Summer School in AgroEcology (ISSAE), various General Meetings of NGOs and the peasants’ trade union, the Flanders Research Institute for Agriculture, Fisheries and Food (ILVO)’s Agroecology Working Group, the New Food Frontier project, the Co-Create program of

the regional research programs of Innoviris and the participation in the emerging social movement “Agroecology In Action.” A certain number of the documents mentioned in the bibliography (gray literature, reports, and scientific articles) formed an important basis for writing this article. Finally, in order to validate the participatory observations and analyses, the authors supplemented their information by conducting eight semi-structured interviews with some key informants.

The collective of authors covers the three regions that comprise the federal Belgian State: Brussels-Capital, Flanders, and Wallonia. The authors’ experience is rooted in the social sciences (sociology, anthropology, and political science), but they also have proven experience in interdisciplinary practice, especially with agriculture. The first and last authors—Pierre M. Stassart and Joost Dessein—have been involved in alternative agri-food network studies for more than 15 years. They have thus had a prime observatory position and have sometimes also played a hands-on role in the institutionalization of organic agriculture, the GMO controversy, and the emergence of agroecology. Pierre M. Stassart is member of the board of GIRAF.

3. History and Dynamics of Agroecology in Belgium

This section presents the six strands behind the dynamics and contradictions of agroecology in Belgium. They are presented according to a chronology that takes us through the contributions of scientists, experts, small farmers’ movements and activist networks to culminate in a key public event, that of “*Agroecology in Action*”. We suggest that the history and dynamics of agroecology in Belgium should be entered through the transnational gate because the development of agroecology in the country is rooted in public opposition to GMOs as the crystallization of the neo-productionist paradigm.

3.1. Genetically Modified Organisms Challenging the Agricultural Model

The development of genetic engineering technology in the early 1980s did not lead to a smooth and straightforward introduction of GMOs in agricultural practices in the EU. In 1999, the *de facto* moratorium on new Genetically Modified (GM) crop approvals, based on the precautionary principle within the EU political environment, demarcated the decades-long troublesome position of GM. In their paper, “*When technology is more than instrumental: How ethical concerns in EU agriculture co-evolve with the development of GM crops*” Inghelbrecht et al. [9] argue that GM technology was a catalyst for growing resistance against key characteristics of the capitalist, neo-liberal agricultural system. They hold up examples such as the privatization of research, concentration of power in few large companies, and patenting of genetic material. The alignment of the gradual development of strong anti-GM frameworks and other events (e.g., mad cow disease, dioxin scandals and swine fever) questioned the conventional, industry-like farming systems. This coincided with other societal evolutions that have been characterized as an evolution from a sovereign position of science to a science that became subjected to public protest in a context of reflexive modernity; from a supportive Promethean policy discourse to reference to the precautionary policy; and from government to governance policy organization [10]. This resistance against the dominant agricultural regime, epitomized in the protest against growing GM crops, created a fertile breeding ground for alternative production systems, including agroecology (AE).

The so-called “*potato war*”—the simultaneous organization of protests against a GM potato field trial and an organic and agroecological farming fair—was a catalyst for the further development of AE in Belgium. De Krom et al. [11] describe how this event of civil disobedience in 2011 was instigated by the non-institutionalized network, the *Field Liberation Movement*, and supported by a number of natural and social scientists, NGOs, politicians, and members of civil society. The antagonistic position of this constituency and an equally strong counter-movement by scientists led to relevant developments that significantly strengthened the development of AE. Leading scientists gave credibility to the anti-GMO and pro-AE movement by questioning the dominant role and position of natural scientists in societal debates on the future of agriculture; the potato war experience of civil disobedience inspired ReSAP

(Réseau de Soutien à l'Agriculture Paysanne), and inspirers of the anti-GMO constituency became leading figures in the Agroecology in Action movement (see Section 3.6 below).

Ironically, parallel to the agroecological break from the conventional paradigm, the success of this paradigm shift led certain Belgian biotechnology experts [12] and the younger wing of the Flemish green party *Groen* (<https://www.mo.be/opinie/hoog-tijd-om-agro-ecologie-n-ggos-ernstig-te-nemen>) to call for the inclusion of GMOs in the development of agroecology, albeit for different reasons.

3.2. The “Lock In” Concept as a Source of the Paradigm Shift in Scientific Circles

The GMO debate showed an ontological link between GMOs and technological innovation, whereas the public was more interested in the type of agriculture [13]. At the same time, cognitive lock-in was identified by other scholars to explain the conventionalization of organic livestock farming [14]. The conceptualization espoused by these authors had three commonalities: (i) They showed that these locked-in positions of institutions, agricultural research programs, and thinking in general were obstacles to the transformation of these systems towards greater sustainability by excluding agroecological innovations. Faced with these systemic blockages; they (ii) introduced the notions of transitions and sociotechnical trajectories [15], which was adopted from the field of actor-network theory and sustainability transition studies. Finally, (iii) this conceptual construction was used as a springboard to shift issues on sustainable agriculture and the need for transition from the public and political sphere to the academic arena, where they argued that an alternative research agenda (that of agroecology) had to be built.

Riding this research front, in 2009, a collective of eight Belgian researchers founded an interdisciplinary agroecology network called GIRAF within the Belgian National Scientific Research Fund (FNRS). The lock-in concept as applied to agriculture and food systems fanned out from this core group into the Belgian scientific community [16–19], international scientific circles [20,21], and civil society [18].

In order to clarify their ambitions and expand on strong foundations, the eight co-founders of GIRAF signed a joint position paper titled “*L’agroécologie: trajectoire et potentiel, pour une transition vers des systèmes alimentaires durables*” [22]. Besides a conventional review of the background of the issue and Altieri’s principles, the authors took a stand in favor of a method (methodological principles) that cut across disciplines and also looked at agroecology through the lens of socioeconomics and politics (socioeconomic & sociopolitical principles). In conclusion, they advocated a “minority” posture; one that allowed for the coexistence of agroecology, the alternative scheme with the dominant paradigm, thanks to a non-disqualifying set of arguments. Within this framework, GIRAF continues to expand. The original agricultural sciences–social sciences axis was broadened by the addition of ecologists, geographers, and researchers who called themselves in(ter)dependent. The ecology called for in the paper entered the group via the concept of ecosystem services. In 2018, GIRAF comprises of 30 senior and junior researchers focusing on agroecology in the North.

In its 2012 position paper, GIRAF proposed a set of methodological and socio-economic principles that endorse a more participatory and interdisciplinary approach to scientific inquiry. However, no strong commitment was made beyond espousing interdisciplinary practices. Since 2013, a country-wide ambition of transdisciplinarity has moved closer to operationalization. This arose due to the dynamics between civil society and some government agencies and a resulting re-interpretation of what science should do. For example, interdisciplinary conferences on sustainable development (2013 and 2015) followed the report on sustainable development commissioned by the Walloon Region’s Minister for Research [23]. However, we also observe both public and academic actors interested in agroecology actively lobbying for more participatory approaches, with governments reacting to this by providing minority funding for such endeavors.

The fallout of the New Food Frontier (see Section 3.5 below) led scientists and NGOs to formulate a new strategy for attaining a sustainability transition. Instead of looking to integrate all partners in a trajectory fully representative of the agro-food system, experiments were to be set up to learn from

and strengthen niche practices. In this vein, a learning platform, “*Leerplatform Agroecologie*”, was set up in 2014 to join Flemish researchers (ILVO, ULB, KUL, BBL, . . .) and the agroecological practice. Flemish researchers involved in the “*Leerplatform Agroecologie*” used the GIRAF note as an outline for agroecological research requirements. This ambition led to the drafting of a letter to the Flemish Minister of Agriculture (<https://www.wervel.be/lists/archive.php?x=200&listID=2&layoutID=11&pagerows=20&pagenum=1>), which insisted on the connectivity of ecological and social-economic issues and the importance of participatory, transdisciplinary and systemic research approaches. While AE remained a marginal topic for the Flemish Government, it did influence the research agenda. At ILVO (Flanders Research Institute for Agriculture, Fisheries and Food) AE research projects were funded, and transdisciplinarity and systems thinking (key principles of agroecological research) were installed at the center of ILVO’s research strategy.

In Flanders, the stakeholders involved within the *Leerplatform* did not agree on the end goals of agroecological research. In addition, some researchers felt ill-positioned to participate in these discussions due to the institutional boundaries imposed on them. Discussions regarding agenda-setting were then separated from actual research activities. The *Leerplatform* has been currently inactive for more than a year due to a mismatch between actors involved regarding expectations (scientific rigor, representativity, political impact), and focus (cognitive, technical, political economic). The recent initiative at ILVO to create a “Living Lab for Agroecology and Organic Farming” represents an ongoing willingness to engage with the concept of Agroecology by targeting existing research within an AE research agenda and by attracting new research opportunities that engage with key stakeholders and civil society.

The emergence of a Brussels-Capital regional policy for agroecological initiatives also led to increased participation (see Section 3.6). The years 2015 and 2016 were turning points where various Brussels official entities confirmed their investments in the issue of sustainable food. Indeed, within the Employment-Environment Alliance (2011–2015), the Brussels government proposed a “governance dynamic aimed at mobilizing and coordinating public entities, private players, and associations around concerted actions” (http://www.environnement.brussels/sites/default/files/user_files/rap_aee-alim_rapport2014_fr.pdf). “Sustainable food” was one such line of action. In the wake of this alliance, Innoviris (Brussels Institute for Research and Innovation) launched a call for participatory research-action projects (the “Co-create call”) with “*the development of sustainable food systems in the Brussels-Capital Region*” as the subject of the first call in 2015. This call was unique in that it encouraged cross-disciplinary projects that combined scientific and non-scientific expertise. It offered a backbone for the research part of the ‘Good Food Strategy’, a public policy launched and championed by the Brussels-Capital Region for a five-year period (2016–2020). The latter in turn placed food at the heart of urban dynamics, tackling the issue from all angles: economic, social, and environmental. This was thus an institutional and political re-appropriation of the subject of sustainable food systems in Brussels. Nevertheless, the modesty of Brussels’s current policies contrasts with the strong vision of agroecology defended by Agroecology in Action (AIA). Regardless, researchers have clearly become more involved with urban farmers, citizens, and other actors, often indirectly through the new options in event organization and facilitation. The latter include the certificate in agroecology and transition, which is held by a number of involved actors in AIA’s activities; the organic agriculture section of the Haute Ecole (University College) of Namur, whose students provided support for collective intelligence activities; and an evaluation survey carried out by ULiège-ULB’s Master’s in Agroecology students.

The pioneer works of GIRAF, despite equipping agroecology with the necessary tools to understand and support it, was not single-handedly responsible for the 2011 breakthrough of agroecology into the public domain. That breakthrough was the result of two dynamics—the legitimation of the concept and its national dissemination—as presented in the next two sections.

3.3. The Role of Hybrid Expertise and Catalysts for the Legitimization of Agroecology

From 2008 to 2014, the United Nations appointed Belgian professor Olivier De Schutter as Special Rapporteur on the Right to Food (the title of UN Special Rapporteur is given to people working within the framework of “special procedures”). This former Secretary-General (2004–2008) of the international Federation for Human Rights (FIDH) has an academic background and specializes in human rights. De Schutter [24] raised the matter of having access to food to the level of a human right. Beyond short- and medium-term solutions, he took up the forceful conclusions of the International Assessment of Agricultural Knowledge, Science and Technology for Development [25] to target small farmers, promote innovation among farmers, reinvest massively in agriculture, and take gender issues into account. De Schutter took another step forward in 2009 when he recommended supporting the right to food by means of a paradigm shift that would take alternative options such as conservation agriculture, agroecology, agroforestry, and the like into account. Although he initially situated the Green Revolution and its aftershocks diplomatically as “one of several models” [26], he soon claimed, when talking to the Human Rights Council in March 2011 that the agroecology model was the answer for the right to food [27]. If its scientific inspiration was initially fueled by the International Assessment of Agriculture Knowledge, Science and Technology for Development—IAASTD’s work, its head advisor, one of the initiators of GIRAF, had a key role in equipping the “agroecology model”.

Besides his academic credentials as a human rights specialist, his diplomacy combined with eloquence made his position very influential in political, legal and regulatory, and scientific forums (e.g., the United Nations Organization, Council of Human Rights, Columbia University, and Science Po Paris). His credibility was strengthened by his simultaneous work on the ground to combat exclusion. De Schutter was recognized as ‘an expert’ [28] as he helped to instigate and facilitate a paradigm shift for the entire food system. During and after his UN mandate, De Schutter became a source of inspiration for a number of organizations and individuals that aimed to promote agroecology as the vector of a societal and political project, taking social justice in both the South and the North into account.

Six months after De Schutter’s speech at the UN, and also referring to the GIRAF position paper “What is agroecology” (“*Qu’est-ce que l’agroécologie*”) [29], the Belgium NGO SOS FAIM was the first to take up the issue of agroecology in Belgium. Their publication (Défi Sud, November 2011, n°103) answers the question, “*Is agroecology a solution?*” by explicitly referring to de Schutter under the title, “*A solution for the food challenges*” (une solution aux défis de l’alimentation). This publication ignited a number of other organizations, such as Oxfam, to re-confirm their position that “*agroecology is a priority . . . [in order] to feed 9 billion human beings in 2050*”, and a credible response to neo-productionist models. An increasing number of organizations followed, both development NGOs working in the South (Entraide et Fraternité 2012, Oxfam 2014, etc.) and associations involved in agriculture and other fields in Belgium (Terre 2012, Nature et Progrès 2013, etc.) over the next two years.

The position of Olivier De Schutter and the dynamics in the French-speaking part of Belgium also triggered several Flemish NGOs and social movements. Organizations such as Group for fair and responsible farming (“*Wervel*”), which had already become acquainted with the concept of ecological intensification through their contacts with the French organization AFAHC (Association Française des haies et arbres champêtres) in 2009, now placed agroecology in the driver’s seat of systemic change. Important further drivers for Flemish dissemination of the model were contacts with the agroecological research of a Dutch-speaking professor in a French-speaking university in Brussels (ULB), the translated GIRAF text “*Qu’est-ce que l’agroécologie?*”, and the overall search for a new, more concrete concept in the transition to a more sustainable agro-food system (see Section 3.2).

These Flemish and French-speaking dynamics gained momentum and led to the organization of a series of events and the re-positioning of the organizations themselves. One notable event was the 2012 ‘The potential of agroecology: Reclaiming the food crisis’ event organized by the European Greens (Greens-EFA) with the support of GIRAF. Partly in reaction to this event, the large NGO *Vredeseilanden*

(VE), now named Rikolto, had an internal discussion on the transformative potential of AE with a strong emphasis on the necessity to remain “realistic” and be wary of the danger of

“monopoliz[ing] the concept of agroecology for direct producer-consumer links, economies based upon small and beautiful, and as such exclud[ing] modern markets, big scale distributors, retail, processing companies [and] economies of scale”. [30]

In December 2013, the organic sector organization Bioforum organized “*Agroecology: change from below*” with influential Argentinian scholar Pablo Titonell as a guest speaker. This event stressed the importance of integrating agroecological principles in research, farming practices, and policy. Here, internal discussions within Bioforum led to the decision to use agroecology as an overarching principle in which organic agriculture played an important, yet not exclusive part.

We argue that De Schutter legitimized agroecology, which was then relayed and activated by a “Northern route”. However, to fully grasp the engaged political coalition that formed around agroecology in Belgium, we must now describe and understand the “Southern route”.

3.4. The Southern Route of Agroecology Development

A Southern route intersected with the Northern route. It started in Latin America with the advent of leftist governments and Cuba’s agroecology “success story” (Rosset, Sosa et al. 2011), where *La Via Campesina* (LVC) first opened up to agroecology. This international federation of peasant trade unions (formed in 1996) took an official position in favor of agroecology. Their “Surin” Declaration, made one year after De Schutter’s speech at the UN, asserts that agroecology “*is the basis for achieving food sovereignty*”, forms “*an integral part of the global response to the main challenges and crises facing humankind*” and gives meaning “*to the struggle against the hegemonic model*” [31].

In Wallonia, the small-farmers’ action movement or *Mouvement d’Actions Paysannes* (MAP, running six teaching farms (EPI), offering training courses, and doing some extension work) took up the debate and position of LVC. *Mouvement d’Actions Paysannes* activities consist of jointly organizing an alternative parallel agricultural fair; it is a marginal small-farmers’ movement in terms of membership numbers. Nevertheless, thanks to its active core members who participate in LVC’s international meetings, MAP is an effective, legitimate relay for the activism of these struggles in the community of French-speaking associations and farmers. This includes participation in the “*peasant struggle day*” that we shall come back to in Section 3.6. Inspired by the European and international LVC meetings, MAP’s representatives stressed the indispensable links between agroecological practice and social transformation. They thus asserted that “... *if we want to build a sustainable agri-food system ... that means effecting far-reaching cultural change and the best way to take part in this social change is to draw up and enforce the rules ourselves ...*” [32]. This vision and commitment materialized in three Symposia for Small Farmers (SPAPs in French) that challenged the normative and bureaucratic approach of the Federal Agency for Food Chain Security (FAVV) in the Belgian health control scheme and promoted Participatory Guarantee Systems that rejected certification by a third independent party in favor of farmer and consumer auto-control.

3.5. Sustainable Development, Transition and the Clash with the Flemish Agrifood Sector

Apart from the above described influence by De Schutter and the international movements, the evolution and adoption of agroecology in Flanders also coincided with the Sustainable Development (SD) movement. It led to new alliances and breaking points within the “institutionalized” part of civil society. In 2010, the Flemish Council for Sustainable Development (VODO) (founded in 1993, see Section 3.6), which had brought together a series of actors and NGOs from very different backgrounds (labor unions, North-South, environment, women’s rights, peace movement, and farmers’ movement) under the banner of SD, ceased to exist. A remarkable last achievement of VODO was a jointly communicated vision text on the CAP reform together with the largest Flemish farmers’ organization *Boerenbond* (BB), which marked a notable breakthrough in a long-standing stalemate

between the traditional farmers' union and the NGO world (<https://www.bondbeterleefmilieu.be/artikel/samen-voor-een-krachtig-europees-gemeenschappelijk-landbouwbeleid>). After VODO, a group of NGO actors initiated *Transitienetwerk Middenveld* (TNM), a Flemish “transition network,” with a “food and agriculture working group”, which became a catalyst for the agroecology movement in Flanders. In contrast to VODO, which was strongly aligned with the 1992 United Nations Conference on Environment and Development (UNCED) Conference and Agenda 21, was the implementation of the Transition Governance and Transition Management discourse, TNM introduced a particular vocabulary and methodology related to ideas such as niche-regime dynamics and the so-called multi-level perspective (see Section 3.2).

Based on the informal links within TNM and increasingly prevalent ideas on “transition,” a large governance process called the New Food Frontier (NFF) was set up between mid-2010 and mid-2012. The main goal of the NFF was to engage a group of relevant stakeholders in the construction of sustainability images that were to be disseminated to various organizations in the agro-food system. They even aimed to set up a permanent transition network as a new political space within the Flemish agricultural policy. The steering group of the NFF brought together an unusual coalition of political actors related to academia, traditional interest groups (BB, Fevia) as well as NGOs, but failed to succeed in the political representation of the different ideological positions on the desired future of the agro-food system (for a detailed analysis see Crivits et al. [33]). The NFF process collapsed, but the political space that claimed to represent sustainability governance was rebuilt via the so-called “Transformation Project”. That group was led by traditional interest groups related to the economic or “sectoral” classification of the agri-food system (agriculture, food process industry, retailers, supply input industry).

Nevertheless, some of the NGOs (involved in TNM and NFF) remained in the steering group of the Transformation Project. In the beginning of the project, two NGO members claimed to represent the whole NGO field on an issue-based logic (one actor representing “environment,” one actor representing “social issues”). This position soon became untenable; when “action labs” (experiments to understand how the system can change) framed sustainability solutions as largely technological and economic in nature, the NGO actors collectively decided to withdraw from the process and refused to put their name to any of the achievements of the sustainability project led by the economic actors. As one of the interviewed NGO members recalls, “At a certain moment, it became clear that the term AE was very difficult to use in that context. The retail representatives, for example, said that they did not want to be associated with the word AE.”

In 2014, the actors involved in TNM’s “food and agriculture group” began to utilize the concept of agroecology more actively as a flagship term to orientate their activities and mission statement. This resulted in a new institutionalization process and resulted in a new network, *Voedsel Anders*. This steadily growing group of NGO actors aims to make agroecology a key concept in attaining a sustainable agrifood system that emphasizes the importance of a food system “in which farmers and citizens have more voice” and which guarantees “fair . . . prices for farmers in all parts of the world and healthy food for everybody”, *Voedsel Anders* manifesto, 2014 [34]. This group also represents a large diversity of NGO actors.

3.6. De-Institutionalization and New Forms of Engagement around Access to Land

In the French-speaking part of Belgium, an informal dynamic arises that contrasts with the formal institutionalization process. In 2010, the small farmers' support network ReSAP arose outside institutional walls. It started from an open mailing list and had no legal status. It linked NGO and associations, citizens, and collectives that support small-scale farming. The 43 organizations that belong to ReSAP include 14 historical overseas development NGOs (SOS faim, Oxfam-Solidarité, le Centre National de Coopération au Développement (CNCD), . . .), two minority French speaking small farmers' trade unions—MAP and FUGEA (*Fédération Unie Groupements d'éleveurs et d'Agriculteurs*)—as well as new, often more urban associations that support small farmers and peasants. Two small

Flemish associations (*Wervel* and *Akkelei*), also joined. A range of new partners broadened the spectrum of political demands (such as the war on hunger as a part of human rights) and forms of action (including regular activist training and associations with an anarchistic bent). These more flexible and cross-cutting forms of activism contrasted with the former and well-established institutional way of working. What is more, their social, environmental, and food justice concerns also influenced the network's choices (see below). Indeed, the political claim 'access to land' gradually turned into ReSAP's main mobilizing theme and culminated in the organization of an International "Day for the Peasant Struggle" on April 17, 2014 (date of commemoration by LVC of the assassination of a group of landless peasants in Brazil, as an emblematic example of "peasants' struggles and resistance for food sovereignty and against the power of agribusiness multinationals"). ReSAP organized the symbolic occupation of lands that were judged to have been unjustly expropriated for "capitalist interests". Inspired by the civil disobedience of the GM potato war (see Section 3.1) ReSAP decided to occupy a meadowed area that was slated to become the building site for a new mega-prison on the edge of Brussels and they organized a festive potato-planting day on the site. Given the Belgian federal authorities' explicit refusal to allow the potato planting and despite the strong reluctance of some of their member institutions, ReSAP's potato planters chose to take the road to action. The planters partaking thus did so in their own names, fully aware of the possible consequences. To grasp the impact of this decision, one must remember the deeply pragmatic and consensual nature of Belgian society. Virtually all practices of civic action within the food system, with the notable exception of the GM Potato war and the International Day for the Peasant Struggle, are steeped in such a culture. The action was a success. The crowd of young activists of various stripes, collaboration of a few peasants and market gardeners, participation of 70 organizations garnered wide media coverage. This act of peaceful disobedience has thus been repeated annually. Access to land as a "common resource" became the emblematic issue of ReSAP. Today, ReSAP's Internet site SAP is indistinguishable from the bilingual (Flemish and French) peasant struggle site (www.luttepaysanne.be), which mixes urban agriculture and peasant struggle, the world of associations, and citizens' movements.

Besides this focus on land, a hard-to-pin-down way of being and doing took shape in ReSAP. This consisted of organic, non-hierarchical ways [35] of making decision and actions, where the experience and energy of commitment counted as much as competence. This agile way of practicing collective intelligence was in striking contrast to the more hierarchical and institutional forms of overseas development NGOs. It ran through a new generation of associations, and among them especially those linked to the transition movement, but also GIRAF's researchers. This judicious combination of commitment, competence, and confidence outside institutions became the fuel that powered AIA.

The first AIA event on December 9 and 10, 2016 was the fruit of the know-how of a certain number of associations and NGOs as well as the individual commitments of some of GIRAF's scientists (for a detailed analysis see Hermesse et al. [36]). The first characteristic is the fact that it was an "event" with a "before" and an "after" [37]. The activities that took place marked the participants in three ways: by their magnitude (800 participants) and diverse audiences; by their federating, enthusiastic, organic organization (with little hierarchization); and by the connections that were established between different movements (agroecology and food solidarity).

The aim of creating an alliance between a movement to combat poverty and vulnerability and a movement to recognize agroecological practices was one of the strong points of the event. It was incarnated by the presence of not only the spokesman of the Walloon Anti-poverty Network (Christine Mahy) and Olivier de Schutter on its panel of experts, but also representatives of Belgium's two major health insurance funds. Through these people and institutions, the tension revolving around the matter of fair prices for quality food or "food justice" was the explicit subject of debate. On the one hand, it was argued, food was "too cheap" to enable small farmers—especially market gardeners—to earn decent livings from working the land, but on the other hand, the right to quality food, i.e., food that was healthy, fresh, and in season, required affordable prices for everyone. How could decent incomes for farmers be reconciled with affordable good-quality food for consumers?

The framing of the event led to the predominant presence of urban and peri-urban agricultural projects. The format of the event favored an activist, alternative, urban audience. Consequently, AIA gave priority to radical agricultural initiatives (urban agriculture, “peasant tastes”, etc.), rather than to those in transition within the regime (conservation agriculture, feed autonomy, organic conversion, etc.). Challenged about its ability to anchor its movement in rural areas and the expertise of the family farmers who put agroecological principles into practice without boasting about it, AIA drew up a program for 2018 of decentralized participation in events that linked more to agricultural professions in the French-speaking part of Belgium. We hypothesize a significant impact of these developments. The years 2015 and 2016 were indeed turning points during which various Brussels official entities confirmed their investments in the issue of sustainable food. Within the Employment-Environment Alliance (2011 to 2015) the Brussels government proposed a “*governance dynamic aimed at mobilizing and coordinating public entities, private players, and associations around concerted actions.*” “Sustainable food” was one such line of action.

In conclusion, AIA did not only generate movement and enthusiasm, but also confirmed a non-institutional way of operating, put words to the unspoken issue of social justice, and revealed the emergence of a Brussels Region territorial dynamic around a subject that is compatible with a broad version of agroecology, i.e., encompassing sustainable food production and consumption.

4. The Cross-Pollination of Agroecological Tensions

We chose six strands to follow the dynamics of agroecology in Belgium because the fabric that they weave lead, according to our analysis, to a series of major tensions. Of these, we have singled out four major axes of tension or disagreement. These four tensions exert a pull on certain points of interlacing of the eight strands, such as between AIA and the Flemish scientific community. Dipping into the sociology of controversy [38], we have chosen the term “tension” because we hypothesize that these disagreements are productive. While they may create tears in the fabric, they can also open up spaces for reconfiguration and broader coalitions.

4.1. The Political Positioning of Agroecology

As the concept of agroecology gained ground, the initiators of agroecology in Belgium saw their initial intuition become a disputed, but productive territory. Analyses of the various political stances taken around agroecology and the tensions that they have generated in Brazil [39] and France [8], for example, have also shown their productive potential. We hypothesize that three stances can be seen in Belgium: those of Radical (Agro)Ecology, Strong Ecological Modernization, and Narrow Ecological Modernization.

A first position is related to a discourse of Radical (Agro)Ecology (RE)-taking a clear oppositional position between an untenable neo-liberal system of economic growth, which can only be resolved through political action and structural social change, towards a social and ecological system based on an alternative political model based in turn on collectivist citizenship and social transformation. This discourse, espoused by some of the scientists within GIRAF, ties in with the dominant discourse of AIA. It is associated with a politics of defiance towards regime actors, political disobedience, and grassroots activism. It is a critical discourse that disqualifies “*the other forms of agroecology*”, which “*perpetuate some of the principles that peasant agroecology contests: the ongoing concentration of land . . . seed patenting or technoscience-based and top-down solutions . . .*”. RE has also taken a critical position towards contemporary agricultural sciences, which are seen as unwittingly reproducing the system, and thus also complicit in the contemporary environmental and social devastation. It therefore looks favorably towards less “*extractivist*” [40] and more engaged researcher and advisor practices towards farmers. Its activism, however, is at loggerheads with the standards of scientific rigor that are laid out in calls for research project calls from national funding agencies or in the mainly mono-disciplinary academic arenas. Radical agroecology in Belgium is a lively place, home to a wild variety of movements, groups and thinkers and not without inner disputes itself. Yet within RE, civil society actors drawn to the

concept of agroecology have taken up a particular strain of green radicalism, strongly inspired if not identical to the discourse of Latin American rural movements and the Nyeleni Declaration. The manifests of both AIA and *Voedsel Anders* clearly build on the Nyeleni Declarations in Mali (2007, <https://nyeleni.org/spip.php?article290>) and in Austria (2011). It is a radicalism which Martinez Alier [41] has coined the “*Environmentalism of the poor*”, which highlights the oppression of local communities and farmers by global institutions, the ingenuity of small-scale farmers, and the potential of traditional farming practices to feed a growing population. It is this discourse around which the broad coalition from ReSAP has coalesced, a mixture of anti-capitalist positions that inspires and fuels the “*repeasantisation*” dynamic and puts the matter of access to and the depletion of resources such as land and oil on the agenda.

A more moderate position called “Strong Ecological Modernization (SEM)” considers agroecology as a series of intrusive changes within the capitalist and productionist structure of the contemporary agro-food system. This discourse tends to point towards specific evolutions of the system, such as globalization, industrialization, lack of democratic oversight and top-down science. It does not root these problems in the specific material-social relations of capitalism, nor in modern subjectivity. Here, we can speak of a reformist position [42,43]. This discourse states that a restructuring of the capitalist political economy is needed along more environmentally sound lines. That is argued to be possible and is not believed to require an altogether different kind of political economic system [3]. Their program defends a “*radical move towards a new type of regionally embedded agri-food eco-economy. This is one that includes rethinking market mechanisms and organizations in an altered institutional context and is interwoven with active farmers and consumers’ participation.*” Here too the traditional mono-disciplinary and top-down approach in agricultural sciences is called into question (see Section 4.4). The politics is one of engaging with regime actors to change minds and create beneficial change within the conventional farming community, while also giving voice and advocating for support to niche actors, as they are seen as indispensable in making the transition. Their breaking point with the next position is the necessity to overcome various lock-ins within the conventional food system.

A third position within this continuum of political positions is a version of “Narrow Ecological Modernization (NEM)” [44]. NEM treats the issues of hunger and environmental degradation in technical terms, and seeks a managerial structure to retool capitalist industry. Agroecology within this discourse is to be considered alongside concepts such CRISPR-CAS technology, Big Data, and Precision Agriculture, which are all touted as solutions to world hunger, malnutrition and environmental problems. Agroecology within this discourse is characterized as one of the interesting technical solutions in which one can improve production by making smart use of ecological interactions. Agroecology thus becomes indistinguishable from neo-productivist sustainable intensification discourse and the ‘feed the world’ paradigm. Alternative food networks are considered “nurseries” (https://www.kuleuven.be/metaforum/docs/pdf/wg_33_n.pdf) for technological innovation but are and will remain marginal (the case of short supply chains), and the existing regime structures are considered prevalent in achieving a desirable agri-food system. This discourse does, however, acknowledge that to speed up the implementation of these innovations, changes in markets, policy, and a rethinking of scientific knowledge creation and dissemination may be required.

These three political stances of agroecology had different fates in the hands of the actors publicly involved in agroecology in Flanders and Wallonia (the French-speaking part of Belgium).

In Flanders, a wide rift opened up between Strong Ecological Modernization and Narrow Ecological Modernization during the large governance process, called NFF, that was set up between mid-2010 and mid-2012. We already highlighted in Section 3.5 the decisive role that *Vredeseilanden* had in the NGO community. However, this NFF process collapsed due to a lack of a shared vision, especially along this SEM/NEM fault line. The traditional interest group of agri-food “sectoral” stakeholders took the lead in claiming the political space of sustainability governance, which was at the heart of the negotiations that co-determined the desired orientation and political means for a desired agri-food system, thereby creating a tension with the nascent agroecological movement that

was striving for the same political means. As we saw, there was a group of mostly institutionalized civil society actors related to the Flemish SD and *Transitienetwerk Middenveld* (TNM) that began actively to use agroecology as a flagship concept. In 2014, this resulted in the new network *Voedsel Anders*, a steadily growing group of NGO actors that aims to make agroecology a key concept. Key actors in this group, such as the organic sector organization *Bioforum*, went on to join Agroecology in Action. Within this group, disagreements between the positions of RE and SEM emerged, specifically related to the issue of whether desired change can or can never be achieved by working together with so-called “regime actors”. The NGO *Vredeseilanden* (VE), for instance, seeks to engage with powerful actors in the value chain, whereas other organisations (*Wervel*, *Voedselteams*, . . .) have a bottom-up approach seeking to promote short-chain marketing and CSA initiatives.

On the French-speaking side, we see no such major rift between organizations involved in the shaping of agroecology, despite tensions between RE and SEM within GIRAF (see Section 4.3). We see two possible reasons for this: First, the agricultural models used in Wallonia are more diversified, which mitigates the polarization between industrial agricultural and small farmers. Second, the actors in GIRAF and AIA are not involved in an institutional exercise on the scale of the NFF. Nevertheless, some parties sometimes within and at other times outside GIRAF have wondered about the ability of AIA GIRAF and other organizations shaping agroecology to achieve a short-term impact. As such, the rift in Wallonia is more one between SEM and NEM, a position defended in particular by the majority farmers’ union *Fédération Wallonne de l’Agriculture*, along the fault lines of various lock-ins. It is implicit but particularly tense when it comes to the environmental issues affecting human health (meat and pesticides, for example), as well as matters of social justice (see Section 4.3) and the rules governing access to land ownership (see next section).

4.2. From Access to the Land to Boundary Organization

Access to land is a highly sensitive issue in densely populated and urbanized Belgium. The available agricultural acreage has remained relatively stable (down 1.5% in 30 years) [45], but competition between farms has increased steadily, with unequal conditions of access to bank loans. Even more than the price of land, the opaqueness of the transactions creates problems. In this context of market pressure and opaque transactions, two-thirds of the country’s farmed land is rented. As the 1929 law on farm leases protects tenant farmers, the owners can recover their property only if they farm it themselves. Today, many land owners feel that the lease has become too rigid when it comes to the term and price of the rental. They are trying to recover their property.

Some landowners [46] also want to have their tenants adopt agroecological practice, to increase the natural value of the farmer practices. They are confronted with a second rigidity of the farm lease, namely that the tenant is free to farm as s/he wishes. The landowners must thus attempt to recover their property to farm it themselves, possibly by subcontracting the actual farm work. This creates tension with small tenant farmers or newcomers to the rural area who have farm projects but are thwarted in their attempts to find land. Yet, a large number of them would also like to develop agroecological practices, even projects, in a “new-peasantization or repeasantization” movement [47]. So, the competition between a back-to-the-land repeasantization movement and the movement to recover one’s assets (recovery of land holdings by the owners) generate sharp tensions that revolves around access to the land. These competing dynamics when it comes to access to the land paradoxically often shares a common intention: developing agroecological practices.

Against this backdrop of real-estate market pressure and agroecologization, 13 organizations belonging to ReSAP founded *Terre-en-vue* (“Land in Sight”). The association’s initial position was close to that of Radical Agroecology discourse, namely:

“ . . . small farms are disappearing . . . 2000 hectares of land are taken out of agriculture because of sprawling settlement patterns, infrastructure, industry, and recreational uses. As a result, we see speculation, the concentration of farm land, pollution due to pesticides, and exaggerated mechanization that depletes the soil. The financialization and capitalization

of agriculture make it dependent on mass distribution . . . land prices are skyrocketing and the quality of the land is declining”. [48]

Here the future of access to the land is linked to the quality of the land, which they propose to turn into a common resource. Inspired by the French and Flemish models, *Landgenoten* (a cooperative for the purpose of linking new farmers searching for land with land owners as well as getting its members to purchase land for public use), the Belgian association “Land in Sight” was founded in the fall of 2011.

“Land in Sight” has become a multipurpose organization as it is now part of an international movement, supports local experimental projects and facilitates a multi-stakeholder platform. All of this is backed up by a complex legal structure formed by a non-profit association, a citizens’ fund-raising cooperative, a foundation and local groups with projects. It forged links with urban, peasants and consumer partners (e.g., “*Association pour le Maintien de l’Agriculture Paysanne*” (AMAP) and CSA type organizations) that shared its vision and helped to create a European network of similar initiatives in France, Germany and Flanders. Land in Sight also became an experimentation and proposal-making collective. It experimented for example with the law principle of an “environmental lien” that attaches agroecological practices, such as restoring a certain percentage of humus to the soil, biodiversity, etc., to long-term leases (in law, a lien is the obligation that the owner of a plot of land has to do (or not do) something for the benefit of another plot of land. This concept goes back to Roman law). Such innovations have helped to erode the rigidity of the farm lease that defends the guild-like interests of the majority union in the name of the principle of farming freedom. Currently, Wallonia’s regional Minister of Agriculture (with no equivalent in Flanders, where private property is apparently still holy), gave Land in Sight (which he finances) a brief to create an original institutional discussion form on “*setting up government regulatory tools for the agricultural real-estate market.*” This gave rise to the Agricultural Land Platform, including a certain number of ReSAP member organizations. The platform driven by Land in Sight depolarized the debate on farm lease that had arisen between farmers and landowners. Paradoxically, it also introduced a third point of view, that of the platform, which supported the re-peasantization of the sector (<http://www.pfsa.be/spip.php?article1176>).

Like *Landgenoten* in Flanders, Land in Sight plays a role that its members call “intermediation”. It puts people (small farmers or “peasants”) with projects in touch with landowners like a “social housing agency” does on the housing market and, thanks to the platform proposals, tense negotiations between unions and landowners are turned into discussions and dialogue. The association’s intermediation to connect reasonable prices, the security of tenancy or ownership, and the agroecological model, aim to “create” new farmers for innovative projects. The oppositions generated by the political claim of access to land and the bolted door created by the Belgian farm lease context create tensions between expectations of re-peasantization and agroecological asset management by larger landholders. At the same time, these oppositions have generated new forms of intermediation and boundary work within and around organizations such as Land in Sight. This form of boundary organization, see Parker et al. [49,50] develops abilities to manage diverging and sometimes contradictory requests from associations, private individuals, public entities, and their members. In this way, they step out of a bilateral approach (landowners–farmers) to encompass the whole complexity of agroecologization of land access. Their positions on the boundary between RAE and SEM are a source of both inspiration and tension for all their members. This boundary position is put to work through intermediation work that includes monitoring and following up expectations, producing intermediary documents for specific audiences, ensuring the fair redistribution of profits [51], linking variable time frames, and benevolence towards diverging and even partially opposing policy stances.

4.3. From Fair Price to Food Justice

The land issue refers back to a much-broader issue in French-speaking circles—that of social justice, and social justice in the food system in particular, and more broadly to food justice. This concerns both (i) farmers’ incomes/welfare and (ii) access to affordable good food for low-income and

vulnerable populations. These two concerns constrain and create tension within the agroecological food systems model.

The issue of giving low-income families, school children, nursing homes, and other vulnerable groups access to quality food (i.e., food that is fresh, in season, not processed, and even partly organic) has come to the fore since Belgium's two major French-speaking mutual health insurance societies have joined the AIA movement. The informal commitment with these two pillars of the Belgian health system is in line with AIA's general de-institutionalized approach. Issue formation took various paths: that of the experiences and thinking of the Walloon Anti-poverty Network and its spokesperson, Christine Mahy, who was remarkably persuasive when she took the stand at AIA 2016; that of the "living labs" tested by Innoviris's Co-create projects (Solenprim & FalCoop), which explore innovative schemes likely to increase lasting and sustainable freedom of choice and range of food habits of underprivileged segments of the population; and, finally, Olivier De Schutter's reflections and publication on the approach.

How, then, is it possible to reconcile affordable prices for all with the small farmer's need for a decent income? This question is exemplified (but not exclusively) by the new generation of small-scale market gardeners, i.e., rural newcomers or "*neo-peasants*" for whom market gardening is a natural way to enter the sector. The tensions in this "farm basket" sector concerns a contradiction. The RE discourse encourages re-peasantization, notably through the creation of new farms. This discourse is relayed by many group purchasing schemes (GACs) but also by the experimental platforms that are cropping up all over to give these neo-peasants the chance to test their projects. On the other hand, scientific studies—in line with the SEM discourse—have shown that the new market gardeners' incomes are too low to break even (a mean of 8 euros/h of labor), and are performed under strenuous (socially unsustainable) working conditions (see e.g., Dumont [52]).

Many actors have attempted to make this tension a subject of debate. Some actors (such as the collective of organic producers) have tackled issues of governance and power balance within the value chain from the 'fair trade' producer's perspective [53]. Other, more academic, actors have started to discuss the complex relations that exist between earnings from one's labor, the quality of working conditions, and income and conditions in the case of direct sales [52]. From the point of view of the farmer practices, it is striking to note that producers cannot rise above current prices in some cooperative-type alternative places of sale (low-marketing margin). This raises the question of the measures to be put in place to meet the excess cost of these agroecological products (organic, fresh, seasonal, local) to allow access to the low-income populations: must the consumers pay variable prices (depending on their wages, for example) to enable lower-income consumers access these foods (an approach currently carried out by some purchasing groups)? Is it up to the state to subsidize access to healthy, ecological and local production? Or must the entire system undergo a transformation?

This last question leads us today to state that the fair price questions may hide a more political problem: that of "food justice" [54]. Food activist and academics define food justice as the response to the food insecurity, arisen from the inaccessibility of healthy food. Their central concern is about the injustices inherent in our food and social systems as the main causes of food insecurity. The very definition of food justice therefore requires major systemic changes to achieve food security. We mentioned earlier that the social dynamic around ReSAP was born from the history of the food sovereignty platform. We may hypothesize that the move from food sovereignty toward food justice or at least a new articulation between food sovereignty and food justice should be taken seriously. AIA explicitly challenged the scientific community to explore possible ways to solve these specific fruitful problems (tensions) of contradiction and rearticulation.

4.4. *Transdisciplinarity and Developments in the Research Community*

From the beginning (Altieri), agroecology has aspired to be transdisciplinary. This stemmed from the great Latin American tradition in which it was rooted [55]. Yet, the road towards this new scientific horizon is not straightforward. Confusion around the concepts of transdisciplinary and participatory

action research (PAR) persists amongst the different researchers in the field of agroecology, leading to tensions and in some cases conflicts.

Indeed, the political tension described in Section 4.1 above has also left its mark on the development of agroecology within the scientific community. First, controversies arose from what we can call the “normative background”. All political positions described in Section 4.1 propose that science opens up, but this leads to different understandings of what transdisciplinary research entails. Within a NEM approach the role of the scientist is to provide technical solutions in accordance to stakeholder needs, mainly via the traditional ‘objectivist’ scientific method; the discourse acknowledges that implementation of certain promising innovations can be sped up by participatory approaches that in some cases generate better-fit solutions. For instance, a highly participatory, deliberative, impact-oriented multi-stakeholder research project can easily be imagined, which aims for the implementation of various climate-smart technologies. Such research approaches are criticized for only providing end-of-pipe solutions, and for refusing to take into account the institutional rootedness of issues such as hunger and climate change (http://m.standaard.be/cnt/dmf20170119_02684854). In stark contrast, the RE perspective departs from a PAR approach, orienting transdisciplinary research towards a strategy of empowerment and emancipation of oppressed groups, and an explicit refusal to let dominant institutions dictate the terms of the debate. Taking a middle position, an SEM approach would want to ‘keep all partners at the table’ and suggest a more pluralistic approach to these matters, while at the same time seeking to deconstruct the monodisciplinary-specific scientific discourse of those who defend a technology-centered approach in order to re-direct science investments to translate often isolated cases of good practice into the mainstream agri-food chain.

Great tensions can be seen in the scientific community between the different political positions they take. In that sense, we see both cross-qualification and cross-disqualification operations within the scientific agroecological community. Proponents of transdisciplinarity disqualify those who stick to one branch or interdisciplinarity for their non-systemic even “extractive” approaches limited to “mining” information from the field. These criticisms are then often countered by (natural) scientists who disqualify some transdisciplinary approaches (PAR) altogether for being ‘unscientific’ on epistemic grounds. This reveals that different attitudes towards transdisciplinary research are also connected with what constitutes scientific knowledge, which then also affects the role and agency of knowledge production within the agroecological field. At this point, science becomes political and the need for deliberative mediation becomes clear, as the agency implied in one type of methodology does not necessarily generate “scientific” results for another, thereby discrediting specific transdisciplinary approaches.

The lack of clear statements on the epistemological and political perspectives involved sometimes generates heated arguments between scientists in the field of agroecology. The Bec Hellouin Organic Farming (BHOF) controversy illustrates this situation (for detailed analyses see Dendoncker et al. [56]). BHOF was an emblematic example of permaculture and micro-market gardening models. Media coverage aimed at the French-speaking public at large was wide and successful, but the results of the permaculture model themselves gave rise to contradictory, even opposite, interpretations. In our opinion, the controversial interpretation actually stemmed from the different ways that the actors built knowledge and gave value to BHOF’s results and their transferability. The status of the results was at stake. The argument concerned not only the robustness of the data (time spent, volume produce, acreages and types of activity taken into account, etc.) and their interpretation (statistical treatment), but also the significance, scope, and transferability of the results. In this specific case, two epistemologically opposite logics faced off: the epistemology of possession and the epistemology of practice [57]. A range of papers critical of the Bec Hellouin experience are situated within the logic of possession without explicitly mentioning it. They attempt to evaluate the BHOF experience and its scientificity by assuming that its outcomes are codifiable and transferable, hence potentially disconnected from action—the BHOF project—without losing their meaning. This epistemology tends to pit empirical knowledge against scientific knowledge. Conversely, the epistemology of practice accepts and assumes

that knowledge production and action are intrinsically linked. This epistemology is in line with that of American pragmatists, who state that knowledge is not abstract data isolated from the rest of the world. The epistemology of practice asks the following question: What can any experience teach us? Ignoring this distinction between the epistemology of possession and epistemology of practice generates controversies between scientists. Clarification of this epistemological difference (in the present case, the status of the BHOE experience and the scope of the results) would also help outside actors to understand how they could transfer the results to other contexts.

Popa et al. [58] observed in several transdisciplinary studies that underestimating deep thought-about differences in normative backgrounds and the assumptions of the collaborative process has made it harder to observe transformational or social learning for partner actors. In our opinion, the relationships between different transdisciplinary or even interdisciplinary research projects are more problematic. As Wickson et al. [59] note, the aim is not to reach consensus, but rather to explain the differences in views to make them available, discussable, and negotiable. The GIRAF paper about BHOE generates dialogue between the epistemology of possession and pragmatic epistemology. The aim is not to circumscribe “the truth” but rather to give meaning to transdisciplinary collective action, which then allows transformation to take place.

5. Discussion

Social transformation processes are often referred to using singular words such as “transition,” “degrowth,” “revolution,” “collapse,” etc. This also applies to agroecology. Nevertheless, agroecology generates a space created by the to-and-fro of criticism and proposals. This must be seen in the plural. This initial assertion makes it possible to set out the polysemous and polyphonic dimensions of agroecology. Where Wezel et al. instituted “ors” around the mythical tripod of agroecology as a social movement, practices, and science (in the singular), we place “ands” that enable us to follow the subtle crisscrossing that gave rise to agroecology.

The above-mentioned tripod remains relevant to explain the rift on the Flemish side, but it can even become counterproductive. The weaving of the six strands proposed in this article shows that while actors from different institutional environments have indeed engaged with the concept of agroecology, the hybridization of these three “legs” is what produced the Belgian dynamic. Social, scientific, and practical engagement are not systematically dissociable (see the lock-in, De Schutter’s role, etc.). Certain actors thus take a somewhat crafty approach to the three legs of this tripod in the course of their engagements, whether they are research scientists, activists, or practitioners. While this characterization of agroecology may have descriptive validity, as NGOs, farmers, and scientists all grapple with the concept, it may legitimate the idea that scientists must “do” science, farmers must “do” farming, and movements must “do” mobilization. This finding has been made in other countries, such as Brazil.

Yet the epistemological, political positioning of discourse and the social class tensions that we have identified do not run along these lines. In reality, we see that different collaborations are formed and break within and between the three pillars of this supposed agroecological tripod. To conclude this point, it would seem that it is indeed possible to overcome institutional barriers and the integration of different knowledge systems may be well served by abandoning this idea, to support the transdisciplinary endeavors already taken up by the actors today. Section 3 makes use of this posture to describe the intricate interaction between the six strands that interweave from the French-speaking southern part of Belgium towards the Flemish-speaking northern part and back through Brussels.

To conclude the necessary move from the tripod to transdisciplinarity, some people, in the name of historical reconstruction, might be tempted to give Belgian academics the status of prime movers of the agroecology paradigm shift in Belgium. Our more-subtle analysis shows that this definitely is not the case. While some scientists and emblematic figures such as Olivier De Schutter have helped to reinforce AE foundations in Belgium, the success of AE success in Belgium is the result of the interlacing and tensions that has generated the convergence of various interests: those of scientists,

NGOs, and activist networks. This convergence was possible despite the tensions because it was subtended by the ability to engage in dialogue, tinker, and reach a consensus.

What is the productivity of those tensions? In Section 4, we identify four potential generative tensions that create an emerging space of innovations, namely, politically differentiated discourse, boundary organization, food justice, and transdisciplinarity.

1. The frictional relationship among the six strands generate a potential transformative space for differentiated discourse about agroecology (Section 4.1). What is their transformative potential? To address this question, we start with the failure of the New Food Frontier initiative and then we look at the consequences for the de-institutionalised context that was created by the French-speaking actors. The New Food Frontier was an institutional initiative that tried to build a broad regional alliance of three discourses, namely, RE, SEM and NEM. The political tensions within this large coalition inspired by Transition Management (TM) theories exploded. The advocates of RA wanted to politicize the debate and thus dissociated themselves publicly from those who were aligned with both the SEM and NEM messages. The peasant support network ReSAP and GIRAF took a completely different tack on the French-speaking side of the discussion. Their initial choice was to distance themselves very clearly from the actors touting the NEM discourse outside any institutional banner.

With regard to their impact on public policies, those actors of agroecology have failed so far to include this concept in government action. Major investments to support the organic sector have been made in Wallonia, as has been done in Flanders, without truly innovating in the forms of government action used (top-down policies for the most part). The picture is not so bleak, given the original public policies waged by the Brussels region. However, they do not yet affect the powerful Flemish and Walloon ministries of agriculture. Seen from this standpoint, the Belgian case, including its non-institutional characteristics, is the exact opposite of the French case [7]. We can, moreover, wonder if ReSAP and “Agroecology in Action” will not have to deal with the consequences of refusing to become institutions in the more distant future.

However, the generative potential of connecting the RE and SEM discourse has not yet explored an important dimension of its potential. The matter of the relations/tension between organic agriculture and new dynamics around agroecology has not been brought up and remains, in a way, a blind spot in the debate. Of course, the Flemish federation of organic players, *Bioforum*, has gotten on board the Agroecology in Action movement to withstand the industrialization of organic agriculture. Nevertheless, on the French-speaking side, precisely where agroecological dynamics are gaining magnitude, these dynamics have not been taken seriously. Behind this silence, we can hear the legitimate need of organic agriculture to be recognized as an agroecological prototype and, reciprocally, the desire of the actors of agroecology to distance themselves from a standardized form of organic agriculture resulting from the pressure for standardization that is exerted by the major players of the agri-food sector.

To conclude our discussion of this first generative tension, one cannot help but notice that actors have switched discourse depending on the context, as they judge one strategy to be better than another. For example, an SEM discourse may seem more likely to accomplish something (such as in the case of interactions with regime actors in an institutionalized environment) or an RE discourse may be seen as a more visionary rhetoric that builds movements and, one may add, membership. We may conclude from this that if there are more opportunities to get things done within the system, SEM discourses will come to dominate the AE discourse, whereas AE à la LVC will pop up if such opportunities are sparse. Yet, one may not discount the efforts of various organizations and individuals to (de-)politicize the concept of agroecology, which affects the potential for institutionalization.

2. Taking the land access issue that paradoxically emerged between land owners and new peasants around their shared dreams of agroecology projects, we have followed the transformation of an association, *Terre en Vue* (Land in Sight), which turned within RE into a boundary organization. This type of hybrid organization builds bridges between various interest groups, sciences and policy makers. It has proven to be capable of connecting up different political positions regarding agroecology as well as different types of public and private actors. All of this took place with respect to an issue that was an agroecological blind spot a few years earlier: access to land. As a boundary organization, Land in Sight has developed skills to fulfill three functions: to allow different (and even opposing) agroecological models to coexist, to organize mediation around the reform of the agricultural lease, and to produce boundary objects such as reports for the Ministry of Agriculture and an ambassador training model. We see other forums with potential to become similar boundary organizations. For example, GIRAF has safeguarded its relative informality and defines itself cautiously as an interdisciplinary scientific society. The specific degree programs such as the certificate program in agroecology and transition, which combines and interconnects academics with very different positions, ranging from Strong Ecological Modernization to Radical Agroecologization, could in this case be considered a boundary academic program. In addition, these two forums could feed another potentially transformative reconfiguration, the one revolving around transdisciplinarity (Point 4).
3. The tensions that exist around fair prices raise the acute question of the relationship between production and consumption. This questioning leads us to state that the notions of fair prices and food justice revolve around a central political economic paradox of commodity production, where producers and consumers have to meet each other in the co-dependent yet antagonistic relation of buyers and sellers. Behind this opposition in the current discussion lies the potential for a subtle distinction that is taking shape, at least on the French-speaking side. Some parties speak of food sovereignty whereas others build their projects around food justice without using this term explicitly. Food activists, NGOs, and academics define food justice as the response to the food insecurity that arises from the inaccessibility of healthy food. They build their project with public institutions and actors in the health and social integration sectors. Food democracy and transparency are at the heart of their political commitment. Their central concern is the injustice inherent in our food and social systems as the main causes of food insecurity. They thus challenge the scientific community to explore possible ways to alleviate or overcome this antagonism. Food justice shifts the political project of food sovereignty promoted by the historical founders of ReSAP and Agroecology in Action, the anticapitalistic project that revolves around peasant rights, their access to resources, their relationship with the land, their knowledge, and their right to choose their own food.
4. Clear and legitimate ambitions have been announced in Belgium about transdisciplinarity. Fragile institutional appropriations do exist, in which the Brussels-Capital region could play a leading role. Agroecology has an important task to carry out within sustainability studies and transition platforms and movements. However, one must have the means to carry out one's ambitions. For the farmers and citizens involved in agroecological transition, schemes must be tested that enable them to increase their autonomy, especially when it comes to decision-making. Science needs less specialized interdisciplinary researchers who can complement strict specialists and are able to make connections and practice transdisciplinarity in the field. They must have or acquire other skills, e.g., competencies that are not always taught in universities but rather by various types of training programs such as the academic certificate in agroecology and transition. There is also a need to innovate when it comes to guiding inter- and transdisciplinary doctoral studies. Finally, both the actors on the ground and the scientists must be given the opportunity to develop transdisciplinary practices in the field such as already performed by GIRAF [36,56] and UCL's Leuven Platform Transition platform (in France).

6. Conclusions

Now the question of the current impact of and prospects for this mobilization around agroecology arises, something that certain Flemish NGOs and research groups have distanced themselves from. As we have seen, key actors or network members that strive to play bridging roles between a discourse of more radical change and one of affirmation of the conventional system fail to have significant impact. Instead, their action often results in a de facto separation between key institutional proponents and a lack of deliberation (or desired effectuation) on middle-ground positions that propose “agroecological change within the system.”

From a social science standpoint, our analysis reveals that the greatest impact is created by the reconfigurations that agroecology ushers in on three levels: boundary organizations, food justice, and transdisciplinarity. In our view, these are the key factors on which agroecology depends in the intermediate and long run. This raises three questions:

- The generative potential of these epistemic tensions: Would this potential revealed by the debates about transdisciplinary and participatory research be expressed more fully if the three axes of discourse, knowledge generation, and transdisciplinarity were better connected?
- The scale of analysis: This paper was commissioned to make a national proposal for Belgium. Our work was not easy. Would a comparative analysis on the regional scale be more appropriate?
- The link with practice—a largely ignored dimension: What is the impact of this dynamic and these tensions on actual practices? One of the limitations of our analysis is not explicitly having covered the relations between the actors engaged in agroecological messaging and family farmers, who are historically attached to the image of the individual farmer. Some of these farmers are effectively implementing agroecological principles, including those working in the dominant system.

We end by repeating our very first question in this paper. Is agroecology in fact “old wine in new bottles?” We believe that this concept continues to have transformative potential in Belgium today. However, no one can predict the course that a largely non-institutional dynamic will take when it comes in contact with public policies, which is where we are today.

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