UNIVERSITY OF BERN
CENTRE FOR DEVELOPMENT AND ENVIRONMENT AND
INSTITUTE OF GEOGRAPHY

DOCTORAL THESIS

Between Global Committees, National Policymaking and a Single Kitchen: Governing Food Systems Towards Sustainability in an Era of Multi-Stakeholderism

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Bern, Switzerland
2022

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Inauguraldissertation
der Philosophisch-naturwissenschaftlichen Fakultät
der Universität Bern

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Von der Philosophisch-naturwissenschaftlichen Fakultät angenommen.

Bern, 17 October 2022 Der Dekan: Prof. Dr. Marco Herwegh

Summary

Non-traditional actors - e.g., NGOs, social movements, transnational corporations (TNCs), private sector associations, research networks - have more strongly been involved in food system governance at different levels, from global, to national, and local. At the global level, part of the increased number of actors engaged in food governance translates into a rapid growth of multi-stakeholder partnerships (MSPs) as fashionable institutional arrangements to address several food systems' challenges. At national level, among other processes, there is a growing presence of private actors and civil society movements in jointly designing and implementing cooperation programmes alongside government bodies. And at local levels, non-traditional actors have also been, more constantly, engaging in food governance, such as in food policy councils, coalitions, committees, among others. One increasingly relevant actor – though still mostly out of sight for scholars – are restaurants, which are progressively influenced by and influential in a growing sustainable food systems agenda.

Some see the emergence of multi-stakeholderism as a more systematic collaboration between governments and other spheres of society, opening opportunities to decentralise decision-making. Others point out its potential risks, such as private capture of public interest, challenges to the legitimacy of governments as ultimate conflict balancers and decision-makers, and as fuel for the greenwashing of the food sector.

This thesis deals with the expanding presence of non-traditional actors in food system governance, aiming to find out how this impacts the dynamic relationships between actors at different levels. It investigates how the engagement of these actors can improve democratic governance by fostering greater deliberation. The core research question explores to what extent the growing importance of non-traditional actors in food system governance can decentralise decision-making, promote sustainability, and increase deliberation.

These issues are explored in three cases: an UN-based committee devoted to global food governance (multilateral), development cooperation policies between Brazil and Mozambique (national/bi-lateral), and the implementation of sustainability principles by restaurants (local).

The thesis was linked to two larger research programmes, the Sustainability Governance working programme of the Institute for Advanced Sustainability Studies (2014-2017) and the Sustainability Governance cluster of the Centre for Development and Environment/University of Bern (2015-2018).

Four scientific articles compose the main body of this thesis, being one as single author, two as main author and co-authored with colleagues, and one as second author. All papers are published in high-rank peer-reviewed journals. The first research output (Rosendahl, et al., 2015) brings a reflection on the positionality of researchers in transdisciplinary projects. The second (Zanella & Milhorance, 2015) addresses decentralization in development cooperation policies from government-centred programmes to stronger involvement of private sector and civil society. Using the case of the Committee on World Food Security, the third research output (Zanella, et al., 2018) questions to what extent and ways multi-stakeholder participation is improving the deliberative quality of processes and institutions of global governance. The fourth output (Zanella, 2020) aims at developing an empirical

method that restaurants can use to assess their practices for achieving sustainability, highlighting the role of this particular actor in influencing local food governance.

These articles employed a combination of qualitative methods and approaches, from cognitive approaches of public policy analysis to deliberative system frameworks. Autoethnographic methods were also employed, given the personal involvement of this author in businesses of the hospitality industry. In general, all methods and approaches were extensively influenced by the principles and practices of transdisciplinary research – a common feature of all research projects, which supported this thesis.

The results help answer to what extent the growing importance of non-traditional actors in food system governance can decentralise decision-making, promote sustainability, and increase deliberation.

First, looking at the global level, we found that the Committee on World Food Security proved to be an interesting example of how institutional reform can improve the deliberative quality of food governance by including and facilitating transmission of discourses. This was achieved by the Committee's high diversity of actor-representation, a regular mode of communication, and the capacity of participants to influence debates and decisiveness. Stronger focus on accountability and better understanding of how instrumental, structural, and discursive power is affected by the increased engagement of non-traditional actors, would make deliberative analysis even more useful for further research.

Second, looking at decentralisation of development cooperation at national levels, we found growing conflicts due to the larger involvement of non-traditional actors, particularly civil society actors and large farm associations and agribusiness corporations, with vested interests, conflictive worldviews, disparate political influence, power, and resources. This leads to the need of detailed analysis of the political economy of this development cooperation. In the case of this thesis – Brazil-Mozambique cooperation in agriculture – we found profound asymmetric distribution of resources among family and commercial farms. Commercially oriented actors were clearly dominating the allocation of resources (e.g., public funding, preferential credit, political access), which ultimately inhibited a more inclusive development cooperation agenda, focused on family-farming agriculture.

Third, looking at the local level and the engagement of restaurants in local food governance, we found that sources of information on food sustainability used by restaurant managers, chefs, and owners, are quite apart from those found in the scientific literature on food sustainability. This suggests that strengthening the analytical links between the macro-level of food system literature and micro-level of restaurant operations would be a valuable reference for emerging local food governance institutions, in which restaurants are becoming key actors, driving change towards sustainability.

Fourth, drawing strongly on transdisciplinary approaches, this thesis got deeply involved in developing unified principles-based methods of sustainable performance for restaurants that addresses the complexity of food system sustainability, drawing from my own experience in heading restaurants in Berlin, Germany, and in Brasília, Brazil.

Sustainable food principles – applicable for all levels, from global to local – is strongly linked with larger citizen participation in food governance: what has been increasingly labelled as democratic food governance. I conclude that this emerging concept of food democracy is in line with the theoretical foundations of deliberation, which see democracy less as voting mechanisms, and more focussed in exchanging opinions, judgements, values, discussions, argumentation, of being free to agree and disagree, and to change our own perceptions. It is time to bring this democratic and deliberative thinking to the way we govern food, be it in global committees, in Ministries or in your favourite restaurant next door.

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1. Introduction: Problem Statement and Study Context

The present thesis deals with the expanding presence of non-traditional actors - e.g., NGOs, social movements, transnational corporations (TNCs), private sector associations, research networks - in food system governance and how this impacts the dynamic relationships between actors in different levels. This trend is associated with a growing number of multi-stakeholder partnerships, platforms, cooperation, forums, etc., affecting decision-making in multilateral, national and local levels, and suggesting that food system governance entered an "era of multi-stakeholderism". While some see this more systematic collaboration between governments and other spheres of society as opening the door to decentralised decision-making and the emergence of more deliberate and sustainable agendas for food system governance, others are much more critical of this trend.

This thesis explores to what extent this trend of growing importance of non-traditional actors in food system governance can decentralise decision-making, promote sustainability, and increase deliberation, addressing these issues in cases at three different levels: an UN-based committee devoted to global food governance (multilateral), development cooperation policies between Brazil and Mozambique (national/bilateral), and the implementation of sustainability principles by restaurants (local).

The thesis begins with the problem statement and study contexts of the three cases (Chapter 1), followed by objectives and the specific research questions (Chapter 2). Chapter 3 presents a brief review of conceptual approaches and perspectives, while a note on methods, including the institutional background that supported the research, is presented in Chapter 4. Afterwards, main results (Chapter 5) from the four scientific articles composing this thesis are presented. Discussions and conclusions linking these main results are offered subsequently in the Chapter 6. Finally, the complete articles are reproduced as annexes.

Problem Statement

The growing importance of non-traditional actors in food system governance is not a new phenomenon, and analysis produced at different levels – global, national, local – have suggested distinctive dynamics. Non-traditional actors encompass public and private organisations that have been increasingly participating in global debates, such as nongovernmental organisations (NGOs), social movements, transnational corporations (TNCs), private sector associations, research networks, among others. The growing engagement of these actors is usually referred to as "non-traditional" in opposition to the traditional scholarship focused on Members-States (governments) and international organisations as the primal international actors – a "tradition" that began to be questioned in the early 90s (Weiss, et al., 2013). This has even led to coining the term "global governance" to explain this interlinked interactions between these actors (Rosenau, et al., 1992), though, in broad terms, emerging governance forms are more associated with hybrid types that combine governments with private and civil society actors than with complete shifts towards "pure" private or public forms of governance (Swyngedouw, 2005).

At the global level, part of the increased number of actors engaged in food governance translates into a rapid growth of multi-stakeholder partnerships (MSPs) as fashionable institutional arrangements to address several food systems' challenges (Martens, 2007; Van Huijstee, et al., 2007). At national level, the MSP trend is also observed, though much of engagement takes place outside formal institutional settings, in informal processes and institutions which channel political influence (Candel, 2014). Private sector and civil society for long have been interacting with government representatives in collaborations via political party activity, lobby groups, informal links between business associations and political representatives, and think-tanks or other institutions that articulate epistemic communities and political actors. Increasingly, these collaborations assume the label of multi-stakeholder partnerships, with a growing formal presence of private actors (farmer's associations, food industry councils, etc.) and civil society movements (social movements, NGOs, among others) in jointly designing and implementing cooperation programmes in agriculture, rural development, and environment alongside government bodies (Janus, et al., 2015). And at local levels, these "non-traditional actors" have also been more constantly engaging in food governance, in some cases leading to the building of institutions that organise public-business-civic engagements while also assuming different formats and terminologies, such as food policy councils, coalitions, committees, among others (Sonnino, 2016). One increasingly relevant actor – though still mostly out of sight for scholars – are restaurants, which are progressively influenced by and influential in a growing sustainable food systems agenda.

While some see the emergence of these new institutional settings as a more systematic collaboration between governments and other spheres of society (Leviten-Reid & Fairbairn, 2011; Bezanson & Isenman, 2012; Bulloch, et al., 2011) others point out to potential risks, such as private capture of public interest (Mahoney, et al., 2009), challenges to the legitimacy of governments as ultimate conflict balancers and decision-makers (McKeon, 2017), fuelling the greenwashing of the hospitality sector (Garden, 2019). To better position the research questions pertaining to these broader debates, the context of three specific situations explored in this thesis are briefly introduced.

Context 1 – Multi-stakeholder governance and the Committee on World Food Security (CFS)

In global food governance, a growing number of studies have been analysing the performance of multi-stakeholder partnerships (High-Level Panel of Experts on Food Security and Nutrition - HLPE, 2018; Andonova, 2010; Pattberg, et al., 2012; Beisheim & Liese, 2014) and their political implications for expanding participation, decentralisation, reducing exclusivity and enhancing accountability of global policymaking (Weiss & Wilkinson, 2014; Bexell, et al., 2010; Scholte, 2011). Scholars are divided between those that see potential in these initiatives for addressing long-known legitimacy problems in global governance (Ruggie, 2004; Nasiritousi, et al., 2016; Dingwerth, 2007), and those with diametrically opposing views (Anderson & Rieff, 2005; Strange, 1996).

For the proponents of these mechanisms, it is argued that MSPs can favour inclusion of non-state actors, thus counteracting the often-undemocratic nature and legitimacy deficit of international politics through addressing long-term institutional problems of access, transparency and responsiveness (Nasiritousi, et al., 2016). These mechanisms, the argument goes, change the composition of actors towards more democratic procedures of representation and decision-making than the nation state-based system (Dingwerth, 2007; Friedman, et al., 2005). Higher inclusion and

actor participation would also yield expert-driven decision-making (Haas, 1992) and improve problem-solving capacity in global governance processes by sharing information and expertise (Steffek, et al., 2007).

Critics challenge these expectations towards these mechanisms, maintaining that power asymmetries in MSP ultimately lead to as undemocratic, unrepresentative, and unaccountable decisions as other decision-making bodies. Much of critical theory highlights how MSPs should not be seen as "quick fixes" to underlying and structural problems of voice and representation (Anderson & Rieff, 2005; Dryzek, 2000; Swyngedouw, 2005). Part of the literature is dedicated to empirical analysis where performance, scope and effectiveness of these mechanisms are assessed, indicating a general tendency of limited effectiveness (Pattberg & Widerberg, 2016).

Recent research has applied the insights from MSP studies to the analysis of global committees and international forums (High-Level Panel of Experts on Food Security and Nutrition - HLPE, 2018). The intent is neither to fully embrace the promises of multi-stakeholder engagement, nor disregard these institutional changes, but rather explore more how certain specific characteristics facilitate or inhibit deliberation and the quality of democratic governance. Some of the specific conditions illuminated by these studies include the possibility that emergent critical discourses encounter public authority (Fraser, 2007); and that weaker actors that carry those discourses be able to influence decision-making, thus acquiring more than just the formal right to participate (Brem-Wilson, 2017).

In this regard, one prominent example is the Committee on World Food Security (CFS), particularly after its 2009 Reform which opened the Committee to more qualified participation of non-state actors. A growing literature analyses different facets of this reform, particularly the question of how increased participation of civil society and social movements improves inclusivity (Duncan, 2015; Brem-Wilson, 2015; Duncan, 2016; McKeon, 2017). Nevertheless, inclusivity is just one aspect of deliberation and the quality of democratic governance, and studies in this direction looking at the CFS case were still lacking.

Context 2 – Governance of development cooperation, the case of Brazil-Mozambique

Moving to the national level, it has been reported that private actors and civil society movements are increasingly involved in implementing development cooperation programmes in agriculture, rural development and environment (Mawdsley, et al., 2014). Most of this involvement, though, is not organised in formal multi-stakeholder partnerships, but in more informal institutional settings, where political economy dynamics play an important role (Warner & Sullivan, 2017). In these arrangements, groups of actors pertaining to different spheres of political influence organise their private interests in collaboration with public bodies, ultimately shaping programme design and implementation.

Research on public policy transfer has highlighted the role of policy frames of reference and policy beliefs in these spheres of political influence (Muller, 2011; Bozeman, 2000; Sabatier & Jenkins-Smith, 1993). These constraints shape the perception of interest by both public and private actors, therefore translating into different – sometimes contrasting – proposed solutions and action criteria to address problems. Similarly, as in the case of MSP, the expected decentralisation in decision-making assumed

in these more cooperative roles can, therefore, reproduce the same existing underlying asymmetries of power and access to decision-making.

One case that has been receiving scholarly attention is the reproduction of these internal asymmetries in Brazilian development cooperation policies (Scoones, et al., 2016; Cabral, et al., 2016; Maluf, et al., 2014; Amanor & Chichava, 2016). Literature has suggested that decentralisation in policy implementation reveals contradictions in Brazilian development cooperation, such as the reproduction of internal agrarian disputes, competing narratives, and unequal distribution of resources in shaping cooperation programmes (Cabral, 2015; Pierri, 2013). The case of Mozambique is of particular interest, being one of Brazil's largest partners in terms of technical cooperation. Literature has indicated a shared intent to reproduce "a Brazilian model" of rural development (Shankland & Gonçalves, 2016), though it has not yet properly examined how contradictions emerge and are reproduced in cooperation policies.

Brazilian agricultural policy for long has been characterised by a dual institutional setting, where two mainly opposing perspectives for rural development attend to the views and interests of actors orbiting these spheres of influence (Schneider, 2010). Until very recently[1], this institutional setting managed to accommodate opposing political forces, with their own channels of consultation and representation, evading direct and open political confrontation. Literature has addressed the emergence and limitations of this institutional arrangement (Delgado, 2009), but to date has not yet investigated how this institutional setting transposes from the national context to development cooperation programmes. It is assumed that part of the contradictions and limitations of these dual institutions interfere in the shaping of development cooperation policies with Mozambique, as already suggested by the early studies investigating these partnerships. To clarify how actors from the private sector and civil society engaged in these cooperation projects is yet an emerging area in the literature.

Context 3 – Local food governance and the engagement of restaurants

Moving to the local level, literature is vast in exploring different facets of how non-traditional actors more constantly engage in food governance. These forms varied from transdisciplinary collaboration between local governments and scientific organisations (Brown, et al., 2010), to public-private partnerships (Dunning, et al., 2015), to community-based partnerships (Coulson & Sonnino, 2019), among other formats. Some of these collaborations ultimately forged new institutional mechanisms such as food councils, local food committees or local food policy groups (Harper, et al., 2009).

But there is one actor who has been only marginally discussed in the literature: restaurants. Increasingly restaurants influence and are influenced by a growing food sustainability agenda, though scholarly attention to its implications is still scarce (Cavagnaro, 2013). Researchers have already pointed out that professionals from the restaurant industry are largely informed by diverse sources of knowledge (Jacobs & Klosse, 2016). Still, scientific literature on food sustainability plays an overly almost non-existent role in this process. Considering their importance in the food culture of the

[1] More specifically, since the democratic transitions in early 80s until the recent victory of neo/extreme-right in the national elections of 2017/2018.

contemporary age, it is striking to note how the debate on sustainability by restaurant owners, managers and chefs is still disconnected from the growing literature on food sustainability and governance. Research-led assessments of sustainable performance of restaurants still lack unified methods and simpler blueprints that can be managed at the level of restaurants (Legrand, et al., 2010; Rimmington, et al., 2006; Schulp, 2015).

To address this challenge, one prominent strategy is the adoption of sustainability principles. These would act as simple and practical guidelines informed by rich debates and literature on food sustainability, while still being able to capture and communicate in simple fashion complex sustainability dimensions. Restaurants have the possibility to translate general and broadly defined sustainability principles into food production practices, thus translating the complexities of sustainability definitions into day-to-day choices. They might also, through its potential of influencing food trends and trigger food debates, impact the behaviour of clients and other business partners, such as other restaurants. One of the frontiers in food sustainability research in restaurants lies exactly at how to link the macro sustainability concerns with micro kitchen practices.

The food governance dynamics here briefly described show that the “Era of Multi-stakeholderism” still brings relatively uncovered implications for those interested in advancing sustainability in all levels of analysis. To explore specific cases in detail allows us to depart from more general theoretical debates to advance our knowledge in three goals: to decentralise decision-making, to promote sustainability, and to increase deliberation in food governance.

The next section clarifies general and specific objectives for each of these cases, along with the methods and approaches used to address the research questions.

2. Objectives and Research Questions

This present section presents the main objective of the thesis, describing how it departed from aiming to understand general political dynamics related to "multi-stakeholderism" to the identification of specific research questions related to three cases. These cases compose the main research outputs produced by this thesis.

Objectives

This thesis aims to achieve a better understanding of three political dynamics, influenced by the growing diversity and presence of new actors in food system governance:

i) Changes in the deliberative quality of global food governance due to the growing presence and influence of multi-stakeholder platforms (global level);
ii) The decentralisation of decision-making in development cooperation policy, from government-centred programmes to programmes with stronger involvement of private sector and civil society (national/bilateral level);
iii) Strategies and limits of the involvement of restaurants in local food governance in terms of promoting more sustainable practices in the hospitality industry (local level).

These objectives belong to three different levels of analysis. The design and implementation of official development cooperation policies occurs mostly at the bilateral level, implying direct implications of two nations. Alternatively, the growing presence and influence of multi-stakeholder platforms relates more strongly to global-level political dynamics. And the efforts of restaurants affect (very) local food governance interactions.

Research questions

The three objectives introduced previously led to the formulation of the following specific research questions for each of the cases:

Case 1: Deliberation in multi-stakeholder participation: the case of the Committee on World Food Security (CFS)

- To which extent is the growing presence of MSP improving the deliberative quality of processes and institutions in global food governance?
- How did the recent reform of the Committee on World Food Security impact on the deliberative capacity of this system?
- Which elements of deliberation theory (transmission of discourses, accountability, representation) would be needed to take into consideration when assessing the quality of deliberation of the CFS?
- How can we assess the deliberative capacity of global food governance by applying deliberation theory and, therefore, build a heuristic framework applicable to other cases?

Case 2: Decentralizing development cooperation in rural development: the case of Brazil-Mozambique

- Which actors are involved in the design and implementation of the development cooperation policies between Brazil and Mozambique in rural issues? How does this differ from other cooperation policies with more centralised governance?
- How are the interests of these actors represented in the policy design and implementation? Which political economy dynamics can be identified in programmes support, financing, and execution?
- How does the dualistic structure of Brazilian agricultural policy shape the development cooperation between the two countries?
- Which actors are articulated in the spheres of influence of rural policy in Brazil, and how this unfolds in the design of development cooperation programmes with Mozambique?

Case 3: Restaurants and the promotion of sustainable practices in the hospitality industry: the case of sustainable food principles for restaurants

- Which methods and approaches are used by restaurants to assess sustainable practices in the hospitality industry? How are these related to norms, rules and institutions, designed in local food governance mechanisms?
- How do approaches used by restaurants relate to those developed by researchers, in particular, scientific literature addressing food sustainability?
- How can micro-level practices of restaurants be informed by sustainable principles derived from the conceptual lens of food sustainability?
- Does the definition of sustainable food principles facilitate the adoption of more sustainable practices by restaurants?
- Which principles represent the growing evidence on food sustainability literature? And how to translate these into micro-level kitchen practices?

3. Conceptual approaches and perspectives

The research design and the methods chosen in this thesis lead to the investigation of three cases and effects of multi-stakeholderism in the governance of food systems. This section presents conceptual approaches and perspectives observed in the literature surrounding those cases. It also introduces a methodological discussion on the role of researchers in transdisciplinary projects. Due to the centrality of this approach in the development and implementation of all methods used in this research, this discussion generated the first paper published under the framework of this thesis.

Researchers' positionality, objectivity, and subjectivity in transdisciplinary

Transdisciplinary can be understood as a process of knowledge co-production between scientific and non-scientific actors, where these collaborate in the definition of societal problems, the questions and methods that this collaboration aims to address (Hirsch Hadorn, et al., 2008; Hirsch Hadorn, et al., 2006). One of the important epistemic dimensions of transdisciplinary is its understanding of objectivity. Calling it "mode 2" of knowledge production and relying on these collaborations between "subjects" and "objects", transdisciplinary research often aims at producing "socially robust" rather than classical "scientifically objective" knowledge (Nowotny, 2003). A great deal of this socially robustness derives from the changing role researchers assume in these collaborations: from the locus of experts to the locus of discovers and/or facilitators. Knowledge generated in transdisciplinary research would still need to be salient and credible. But its quality would need to be measured not towards an abstract ideal of scientific objectivity, but in function of the socio-political quality as perceived by the various actors involved in the collaboration (Cash, et al., 2006).

This view over the qualities of transdisciplinary research is not consensual. The understanding on how to deal with the implied influence of the observer on the research object and how to deal with the values and social positions carried out by the researcher and other non-scientific stakeholders is still debatable (Harding, 1993; Voss, et al., 2006). Scholz (2017) tries to differentiate the various approaches scientific actors adopted in research collaborations with non-scientific peers, working as facilitators, activists, or catalysts. A common way for dealing with this epistemological challenge of situated knowledge production is to point to the fundamental aspect of reflexivity as an intrinsic component for the conceptual, epistemological and practical levels of transdisciplinary (Holland, 1999; Lang, et al., 2012). Reflexivity – understood as the capacity of researchers to reflect upon roles, power and control actors have over the research process – plays a primordial role in integrating the method-driven scientific process of knowledge co-production (Truffer, 2007). Ideally it should also point out to their own awareness of power and control as researchers over the object, even though generally political and power dimensions are not often explicitly discussed in transdisciplinary research.

One tradition that has been more concerned with the mutual influences of the observer on the observed is scientific feminism. In this literature, roles and influences of researchers on actors with whom they interact receive significant attention, frequently offering theoretical avenues to deal with

the “objectivity challenge” of transdisciplinary. One possibility is standpoint theory, as elaborated in feminist theorists such as Sandra Harding (Harding, 1995).

Harding and others have criticised the conventional conception of scientific objectivity as ‘weak objectivity’ (Harding, 1992; Voss & Kemp, 2007). And going further, they have argued that due to biases of individuals and shared biases of scientific communities, ‘weak objectivity’ is only able to provide partial and distorted answers. Standpoint theory acknowledges that all human thought arises in a particular social situation and can only be partial, so that knowledge claims are always socially situated. However, without subscribing neither to epistemological relativism nor to objectivity as understood by proponents of ‘neutral science’, Harding and others argued for a ‘strong objectivity’, which follows stronger standards for ‘good method’ in order to maximise objectivity.

To achieve this, scientists must reflect on their social situatedness in the social matrix and the implications that this has for their position, their perspectives, and their power. Moreover, transdisciplinary research must be able to clearly, reflectively and transparently communicate its standpoints, recognizing and accepting the limitations of their positionality in the social matrix when producing knowledge. Standpoint theory went even further and suggested to initiate research starting off from marginal lives; it is argued that such starting points offer more enlightening perspectives, because this allows seeing humans’ relationship without the biases that those immersed in a dominant group are unable to see. This means researchers taking their lives and perspectives which offer better initial angles for critical and reflexive investigation (Harding, 1992; Harding, 1995).

These reflections above offered an important basis for the positionality and behaviour of this author in all cases elaborated under the framework of this thesis.

Deliberation in multi-stakeholder participation

Literature analysing the proliferation of multi-stakeholder participation in global governance is vast and diverse (High-Level Panel of Experts on Food Security and Nutrition - HLPE, 2018; Andonova, 2010; Pattberg, et al., 2012; Beisheim & Liese, 2014; Weiss & Wilkinson, 2014; Bexell, et al., 2010; Scholte, 2011; Ruggie, 2004; Nasiritousi, et al., 2016; Dingwerth, 2007). The growing interest in multi-stakeholder participation in global policy making occurs in parallel with a “deliberative turn” in political sciences and democratic theory in the past two decades.

Among the many theorists that have been contributing to the renewal of the relevance of deliberation in political studies, Habermas and his Theory of Communicative Action deserves a centre stage (Habermas, 1985). According to him, actors switching from strategic to communicative action would not lean towards maximising their fixed preferences, as rational theory would predict, but rather towards seeking a common understanding of a given position. Consequently, this requires that actors are open to preference change if they encounter better arguments, a process that also depends on a series of pre-conditions. Risse has extended Habermas’ Communicative Action to the realm of international relations, using the concept of “argumentative rationality”, to define when actors do not completely reject the rational behaviour assumption, but also do not simply bargain for their fixed preferences (Risse, 2000).

This transposition to international relations opens the door to a series of questions on institutional designs to cope with complexities in everyday global politics (Hendriks, et al., 2007)]. One promising approach is the formulation of deliberative systems proposed by Dryzek (Dryzek, 2000; Dryzek, 2010; Dryzek & Stevenson, 2011), where three principles are substantiated for achieving deliberation: i) authenticity, ii) inclusiveness, and iii) consequentiality. Dryzek even offered an analytical framework to operationalize the analysis of a given system in attending these three principles. His framework is composed of six elements: (1) the existence of a public space, where a variety of discourses and wide ranging communications take place; (2) the presence of an empowered space, which differentiates itself from the former by being a space where authoritative decisions are made; (3) transmission, understood as how deliberations in the public space influence those in the empowered space; (4) accountability, meaning mechanisms whereby actors pertaining to the empowered space give an account and justify their decisions and actions; (5) meta-deliberation, which is the reflexive capacity of the system as a whole to deliberate with its organisation and reform if needed; and (6) decisiveness, understood as when the collective outcomes generated by the system cause consequences.

Dryzek's model formed the core of a heuristic framework used to study multi-stakeholder participation at the Committee on World Food Security.

Development cooperation and the engagement of civil society and private actors

There is an intense and dynamic debate around the role of new actors in development cooperation. The idea of a new "beyond-aid" format for development cooperation is a revolving issue in the literature on this topic (Gore, 2013). Most of the debate surrounding these different formats relates to the engagement of new actors in development cooperation. This includes the increasing role of private sector and civil society in development cooperation policy design and implementation – this latter group a loose composition of non-governmental organisations (NGOs), philanthropic foundations, and, to a lesser extent, social movements (Janus, et al., 2015). Thus, multi-stakeholderism is a definite feature of "beyond-aid" development cooperation.

Among the different facets of these new formats of development cooperation, one could look at financial and institutional dimensions. We observe a more complex and diverse architecture of norms, institutions, and organisations coupled with a reducing dependency of recipients countries on Official Development Assistance (ODA), being substituted by foreign direct investment (FDI), remittances and transfers from non-OECD members (i.e., South-South). This increasing complexity in terms of actors and flows would not be problematic if the views on development held by these actors would not be so disparate. As explained by Gore "all actors are acting in the name of 'development', of course. But 'development' is understood in many different ways, and development cooperation is affected accordingly" (Gore, 2013).

Therefore, a better understanding on how these different actors interact in these new formats of development cooperation would need to take into consideration not only the tangible dimensions (institutions involved, partners, flows, activities, etc.), but also the intangible imaginaries of development that these actors carry. Public policy analysis literature offers us some ways to investigate these, one possibility being the cognitive approach (Surel, 2000). This approach

emphasises the diversity of social and political mechanisms that recover the process of translating ideas "into action". It helps to illuminate the constraints of social structures and the degrees of freedom actors have when they implicitly or explicitly design their theories of change, i.e., mental models which assume a certain consequentiality of a change due to certain actions. Authors such as Muller (2011) and Sabatier and Jenkins (1993) apply the concepts of policy frames of reference and policy beliefs, to describe how political actors understand the political milieu under which their actions are embedded. They also highlight the intellectual and power dimensions that characterise the production of meaning in the making of public policies. So, it is referring to a cognitive representation of reality that these actors propose solutions and define criteria for action.

These concepts assisted the elaboration of the first case of this thesis, which investigated the decentralisation of development cooperation in rural development using the case of Brazil-Mozambique. It is important to note, however, that when applying these concepts, the analysis has to go beyond describing the imaginaries of development carried by the actors involved in cooperation. That is, the policy frame of reference is constrained by real world practicalities, which are generally located in the agenda setting, political prioritisation, allocation of resources, among other steps of policy design and implementation.

Restaurants in local food governance

The growing interest in the gastronomy world on issues related to sustainability has moved this topic from the margins of the industry to much more centre stage. This somehow mirrors evolving dynamics in society with its relationship with food, which raised the importance of restaurants in influencing food origins, social practices in the value chain, and integrity of food (Krystallis, et al., 2012; Micheletti & Stolle, 2012). There is an interesting debate on how far the involvement of restaurants as political actors is authentic in changing the various unsustainable practices that prevail in the global food industry, or if these are just one more marketing move typical of greenwashing (Vermeir & Verbeke, 2006; Van den Berg, 2016).

Supposing there are sincere concerns by some in the restaurant business with respect to their role of habit changers, one could expect that these concerned restaurateurs and/or chefs are somehow informed by what is being said about food sustainability in research circles. Apparently, this does not seem to be the case. The systemic overview used in food systems and food sustainability research might be useful for contextualization, but it is of little practical use when making day-to-day decisions on how to adopt more sustainable practices in kitchen operations. Ultimately, professionals from the restaurant industry are being informed by diverse sources of knowledge – i.e., exchange among peers, events, specialised media, etc. – but very little from the macro and systemic approach adopted by food sustainability researchers (Cavagnaro, 2013). Approaches linking the macro-lenses of food system sustainability with the micro-practices of operating kitchens are severely scarce (Higgins-Desbiolles, et al., 2019). And this is not helped by the fact that the rise of the term sustainability in gastronomy was marked by stylised and stereotypical concepts that do not do justice to its conceptual complexities (Hindley, 2015).

Some approaches tried to develop better-informed sustainability definitions and practical principles for restaurants, such as those applied in green certification schemes (Barneby & Mills, 2015) and in

research-led assessments of sustainable performance of restaurants (Legrand, et al., 2010; Rimmington, et al., 2006; Schulp, 2015). Others investigated the role of chefs as political actors, acknowledging their capacity to influence certain communities, from general audiences to specialised professionals, such as young chefs (Pereira, et al., 2019; Godoy, 2019). Problematizing this specific role of kitchen professionals, Zaneti (2017) suggests the term “embedded gastronomy”, defined as a cuisine consisting of short gastronomic value chains, with proximity between producers, chefs and clients, where unique ingredients with distinctive socio and gastronomic qualities are evidenced. She recalls, nevertheless, that stand alone, and isolated efforts have little capacity to change local food systems if these are not supported but an institutional network of policies that are aligned with the development of this gastronomic approach.

The case analysing the role of restaurants in local food governance tries to fill the gap identified in the literature by developing a framework that links the macro- and micro-levels of food sustainability, by describing principles and practices of sustainable practices adopted in two empirical cases.

4. Methods

This Chapter describes the main methods used in the thesis. It starts with a note on the institutional background, in particular two large research programmes which supported the research, given the influence of the methods and approaches used in these programmes to shape the methods applied in the research. It follows by a description of the research design as well as data collection and analytical frameworks used for elaborating the case studies that composed this thesis.

Institutional background

The research that led to this thesis was linked to two larger research programmes and received support from three specific projects. These are:

1. From 2014 to 2017: Sustainability Governance working programme of the Institute for Advanced Sustainability Studies (IASS).

   The Sustainability Governance programme of IASS aimed at advancing sustainability transformation through transdisciplinary research. This translated into a participatory research approach where researchers investigated drivers affecting change towards sustainability (research on transformations) while also directly being involved in policy processes (research in transformations). The assumption was that this was a necessary strategy to actively promote change (research for transformations). This influenced tremendously the research approach, methodological and theoretical insights, and objectivity standpoint adopted by this author. These are topics explored in the first scientific article under the framework of this thesis (Rosendahl, et al., 2015).

   More specifically, this thesis received support from two specific projects:

   a. Brazil Cooperation for Rural Development in Mozambique: scope, recent directions and new challenges", a partnership between IASS and the Center for International Forestry Research – CIFOR.

      As a general objective, this project analysed three major Brazilian-Mozambican cooperation projects in rural development, looking at how internal and external stakeholders influenced policy design and implementation. The political economy analysis of these policies highlighted important dynamics in the relationship between stakeholders that were explored in the second scientific article of this thesis (Zanella & Milhorance, 2015).

   b. Global Soil Forum/Global Soil Week: the flagship project of the Sustainability Governance programme of IASS consisted of building and operating a leading international multi-stakeholder platform for land governance and sustainable soil and land management. It brought together key actors from science, policy, civil society, development cooperation practitioners and other stakeholders in a diverse set of land and soil research projects and one periodical major global conference, the Global Soil Week.

This thesis benefited tremendously from the several discussions within the Global Soil Forum team (which this author was part of) on how to use multi-stakeholder approaches to decentralise decision-making and promote sustainability. These discussions influenced the general design of this thesis and are reflected in all four research articles. More specifically, the analysis of deliberation in multi-stakeholder partnerships – part of a collaboration between IASS and the CDE/UniBern, was the object of the third research article published under the framework of this thesis (Zanella, et al., 2018).

2. From 2015 to 2018: Sustainability Governance cluster of the CDE/UniBern. This research unit of CDE is composed of several interconnected research projects analysing how institutional changes between the global and local levels affect governance of natural resources.

   One project part of this unit which this thesis benefited from is: "Towards Food Sustainability: Reshaping the Coexistence of Different Food Systems in South America and Africa (FoodSAF)". It investigates the emerging concept of food sustainability, producing evidence on innovation strategies and policy options to improve sustainability of food systems at individual and aggregate levels. The approaches and tools designed to "operationalize" the concept of food sustainability contributed to the design of the fourth article published under this thesis (Zanella, 2020).

Research design

In line with the two larger research programmes and the three research projects that supported this research, one of the fundamental pillars of this thesis was the adoption of transdisciplinary methods and approaches, in all research activities. Transdisciplinary tries to limit or even eliminate the distance between subject and object (Lang, et al., 2012; Rist, et al., 2007). In specific terms for this thesis, this meant: i) to be personally engaged in policy processes and life experiences related to the research objects, and ii) to not seek an unachievable (pseudo)neutrality in these processes.

Following this decision, even before the selection of the cases, this author embarked in a methodological discussion that would lead to the publication of the first research article that composes this thesis (Rosendahl, et al., 2015). This would provide a substantiated methodological basis for the adoption of transdisciplinary approaches in later stages of this research. In other words, it provided a qualification of transdisciplinary for the other research pieces and a more precise standpoint to one of the most relevant discussions in the scientific debate: the positionality of researchers.

The findings of this article are further elaborated in this thesis, but in very broad terms, the article argues that better research is achieved when researchers clearly declare their positionality and evade from seeking impartial knowledge. This was particularly relevant for the thesis since the main research method – qualitative case studies – and data collection methods – interviews and participant observation – require an active and close-contact engagement of the researcher with the object. Therefore, this initial discussion with peers provided a sound-basis for personal engagement of this author with the policy processes considered in the three case studies.

Thus, in accordance with the Sustainability Governance programme of IASS and the programme of same title from the CDE/University of Bern, this author adopted a transdisciplinary approach and opted for qualitative case studies as the main research method to address the specific research questions. Following Flyvbjerg (2011), in qualitative case studies it is not appropriate to select typical cases (reference models or statistical representative cases) if the goal is to reach the greatest amount of information possible of a certain phenomenon. Typical cases do not necessarily carry the richest information available. Rather, it made better sense to select information-rich cases where the institutional support provided by the IASS and CDE/University of Bern research programmes provided an entry door to the researcher.

Data collection and analytical frameworks

A mix of qualitative research methods was applied in each case study. In general, this thesis required an in-depth literature review of each case, both in terms of theoretical perspectives, as well as background information. Literature suggested some approaches when designing the case study data collection and analysis (see *Analytical Frameworks* in Table 1). In all cases, this author benefited from substantial field work with interviews, participant observation and, in some cases, focus group discussions. Part of the field work was conducted in partnership with other researchers (mainly for case 1). Considering the dissimilarities between each case and the specificities of the research questions, each case used its own analytical framework, derived from the literature of the case in question.

The data collection and analytical frameworks used in each case are described in more details below in the table 1:

Table 1 – Case Studies: field work, data collection, interpretation, analytical frameworks, and paper writing

	Case 1 *Decentralizing Development Cooperation in Rural Development*	*Case 2* *Deliberation in MSP: the case of CFS*	*Case 3* *Food sustainability principles for restaurants*
Field work	1st: March 2013 in Mozambique 2nd: April to July 2013 in Brazil 3rd: March to October 2014 in Brazil	October 2015, October 2016, February 2016, and March 2016 All for one week each, and in Rome, Italy	May 2017 to February 2018 (at Hermann's Berlin) November 2018 to December 2019 (at Mesa pra Doze, Brasília)
Data collection methods	• Secondary literature • Semi-structured interviews with more than 200 informants: policymakers, private actors, civil society, and researchers • Participant observation in more than 10 workshops and working meetings	• Secondary literature • Semi-structured interviews with 20 informants: policymakers, private actors, civil society, and international organisations • Participant observation at 42nd and 43rd Plenary Sessions of the CFS, and at meetings of the Working Group on Sustainable Development Goals	• Secondary literature • Informal focus groups to discuss sustainability principles with kitchen teams • Participant self-observation and self-reflection
Analytical frameworks	Cognitive approach of public policy analysis, in particular the concepts of policy frame of reference (Muller, 2011) and policy beliefs (Sabatier & Jenkins-Smith, 1993).	Dryzek's deliberative system framework (Dryzek, 2000; 2010; Dryzek & Stevenson, 2011).	Autoethnography (Spry, 2018; Jones & Adams, 2016).
Paper Writing	Writing and review: late 2014 – December 2015. Published: January 2016	Writing and review: early 2017 – December 2017. Published: February 2018	Writing and review: December 2019 – February 2020. Published: July 2020

Source: author.

5. Main Results

The present thesis consists of four scientific articles, all of them published in high-rank peer-reviewed journals. Additionally, this author also published another peer-reviewed article, a book chapter, a translated version into Portuguese of one of the published articles in a peer-reviewed Brazilian journal and co-authored a major publication of the High-Level Panel of Experts on Food Security and Nutrition. The former four research pieces do not formally integrate the thesis, but are indirectly related to it, as they were written using data and analysis shared in the articles and belong to the large research programmes of IASS and CDE/UniBern in which this thesis was embedded. The full list of publications is reproduced below in Table 2:

Table 2 – Thesis' list of publications

Authors (year)	*Type*	*Title*	*Published at*
Part of the thesis			
J. Rosendahl, M. A. Zanella, S. Rist, J. Weigelt (2015)	Peer-reviewed article	Scientists' situated knowledge: strong objectivity in transdisciplinarity	Futures 65, 17-27
M. A. Zanella, C. Milhorance (2016)	Peer-reviewed article	Cerrado meets savannah, family farmers meet peasants: The political economy of Brazil's agricultural cooperation with Mozambique	Food Policy 58, 70-81
M. A. Zanella, A. Goetz, S. Rist, O. Schmidt, J. Weigelt (2018)	Peer-reviewed article	Deliberation in Multi-Stakeholder Participation: A Heuristic Framework Applied to the Committee on World Food Security	Sustainability 10 (2), 428
M. A. Zanella (2020)	Peer-reviewed article	On the Challenges of Making a Sustainable Kitchen: Experimenting with sustainable food principles for restaurants	Research in Hospitality Management 10 (1), 29-41
Additional research published by author			
Zanella et al. (2015)	Peer-reviewed article	Discussion: Food security and sustainable food systems: The role of soil	Int Soil and Water Cons Research (3) 2, 154-159
R. S. Mota & M. A. Zanella (2017)	Book chapter	A Arena Global da Segurança Alimentar e Nutricional: Iniciativas Políticas, Arquitetura Institucional e o Brasil na	Instituto de Pesquisa Econômica Aplicada – IPEA

		Nova Agenda de Desenvolvimento Sustentável	
M. A. Zanella, C. Milhorance (2017)	Peer-reviewed article	A Face Internacional de uma Disputa de Modelos Rurais: Entendendo a Economia Política da Cooperação Brasileira em Agricultura com Moçambique	Revista Nera 38, 255-279
High-Level Panel of Experts on Food Security and Nutrition – HLPE (2018)	Report	Multi-stakeholder partnerships to finance and improve food security and nutrition in the framework of the 2030 Agenda	Committee on World Food Security – CFS

For the four articles formally part of this thesis, the following roles were observed during the publication:

- In those articles where I am listed as the main author – (Zanella & Milhorance, 2015; Zanella, et al., 2018; Zanella, 2020) – I was responsible for developing the conceptual design, data collection, application of theory and analysis of empirical data, and most of manuscript writing;
- Milhorance – second author of article Zanella & Milhorance (2015) – contributed greatly with data collection and analysis of empirical data;
- Co-authors of article Zanella, et al. (2018) provided substantial contributions in terms of conceptual design and application of theory, and important contributions to manuscript writing;
- Even though being listed as second author in the article Rosendahl, et al. (2015), Rosendahl and I contributed in similar proportions to the conceptual design, data collection, application of theory and analysis of data. Other co-authors provided substantial contributions in terms of conceptual design and application of theory.

With respect to the additional research published by this author, the following roles were observed:

- In the article Zanella, et al. (2015), as main author, I was responsible for developing the conceptual design. All co-authors contributed substantially to analysis of data and manuscript writing;
- In the book chapter Mota & Zanella (2017), as second author, Mota was responsible for conceptual design, and application of theory. I provided contributions for data analysis and manuscript writing;
- In article Zanella & Milhorance (2017), being a translated and adapted version of article Zanella & Milhorance (2015) to Portuguese, similar roles were observed;
- In the HLPE report (2018), being one of the 5 main co-authors, I provided contributions in terms of conceptual design, data analysis and manuscript writing.

The next subsections offer a short overview of the four articles part of this thesis:

Article (1): Scientists' situated knowledge: Strong objectivity in transdisciplinarity

J. Rosendahl, M. A. Zanella, S. Rist, J. Weigelt (2015). Futures (65), 17-27,
https://doi.org/10.1016/j.futures.2014.10.011

Abstract: *Although transdisciplinary research has started addressing important epistemological challenges, as evidenced by the discussion about 'mode 2' knowledge production, its relation with postulations of 'scientific objectivity' is not yet well clarified. A common way of dealing with the epistemological challenge of situated knowledge production, as proposed by transdisciplinarity, is to point to the fundamental aspect of reflexivity. But reflexivity also includes being aware that power and control over the object is derived from the social position of researchers, an issue not often explicitly discussed in transdisciplinary research. Reflexivity thus represents an important but insufficient principle for guaranteeing appropriate levels of self-reflection within a process of knowledge coproduction. We therefore hypothesize that transdisciplinary research could greatly benefit from feminist scientific tradition, in particular the insights of standpoint theory and the concept of 'strong objectivity'. We analyse, and reflect upon, how a recent transdisciplinary research initiative – conducted together with civil society organizations in (CSOs) in six countries: Bangladesh, Bolivia, Brazil, Burkina Faso, Ecuador and India – has benefited from the use of 'strong objectivity'. We analyse how the social position of all stakeholders, including ourselves as the scientific actors in this initiative, influence the process and conditions of transdisciplinary knowledge co-production, and we discuss how power and control by scientists affects the process and conditions of interaction. Thereby we argue for the necessity of explicitly assuming sides in contested contexts for reaching objectivity in transdisciplinary research*.

The main goal of this paper was to build an argument for qualifying researcher's standpoints assumed by the governance groups of IASS and CDE/University of Bern in relation to policy processes. At the time of writing, a dynamic discussion on positionality of researchers in transdisciplinary processes was gaining traction. Political and power dimensions are not always discussed in transdisciplinary research literature, although questioning existing power structures and altering their status quo is a persistent strategy in much of social science and social ecology studies. The standard answer from transdisciplinary authors has been to point out the concept of reflexivity, for example, through taking awareness and integration of knowledge from different scientific and societal bodies of knowledge into the research process.

In our article, we went one step further arguing that reflexivity as defined to date is an important but insufficient principle for guaranteeing appropriate levels of self-reflection within a process of knowledge co-production. Beyond just integrating different sources of knowledge, reflexivity would involve being aware of power and control over research objects, which is ultimately derived from the social position of researchers (Harding, 1995). We adopted standpoint theory – advanced by feminist theorists (Voss, et al., 2006; Harding, 1993; Harding, 1992) – which criticizes the conventional conception of scientific objectivity and its corollary, the possibility of researcher neutrality. Standpoint theory acknowledges that all human thought arises in a particular social situation and can be only partial; knowledge is always socially situated. Without subscribing to relativism, these authors suggest what they referred to as "strong objectivity", that is, that scientists reflect and transparently declare their social situatedness and its impacts on their perspectives, power and control over research.

Our original contribution was the extension of these thoughts to transdisciplinary research and the discussion over influence in the research process. We discussed how power and control by scientists

affects the process and conditions of interaction in a transdisciplinary research initiative considering a project conducted by the IASS with seven civil society organisations from the South.

The intense discussion generated during the elaboration of this article was key to influence my epistemological position adopted throughout my PhD. Considering that all cases and empirical evidence collected in this thesis were part of broader transdisciplinary research initiatives, I was constantly reflecting on my role as an interested researcher, part subject and simultaneously part object. In general, I tried to adopt a "strong objectivity" positionality whenever possible, never evading nor hiding my own position and interests in the topics I engaged in.

Article (2): *Cerrado* meets savannah, family farmers meet peasants: The political economy of Brazil's agricultural cooperation with Mozambique

M. A. Zanella, C. Milhorance (2016). Food Policy (58), 70-81,
https://dx.doi.org/10.1016/j.foodpol.2015.12.006

Abstract: *Brazil's development cooperation policy with sub-Saharan Africa has intensified since the end of the 2000s, with Mozambique being the country's largest partner. This South–South Cooperation enterprise has shown intentions to share elements drawn from previous experiences of programmes implemented in Brazil, particularly in the rural sector. However, Brazilian agricultural policy is notorious for its dualistic structure, and dominant political strategy has been marked by the accommodation of two different – occasionally contradictory – agricultural policy agendas, reflecting how current political forces are organized. This article demonstrates how such a dualistic structure shapes Brazil's technical cooperation with Mozambique, pointing out that it is still unclear how far rural development perspectives rooted in the particularities of Brazilian agrarian dynamics would be useful for projects implemented in different rural contexts. We argue that, since Mozambican agricultural plans primarily emphasize a perspective that focuses on market-oriented agricultural modernization, a potential reform of the current cooperation policy toward more inclusive agenda, focused on family farming, faces political economy constraints. We conclude that the appropriation of a foreign project relies on the political economy dynamics of related contexts and power relations of involved stakeholders, an area that could deserve further attention from researchers investigating Brazil–Mozambique relations.*

The second paper of this thesis initiated the investigation on the influence of growing diversity and presence of new actors in food system governance. The main goal was to explore how the decentralisation of development cooperation would open possibilities for stronger engagement of civil society and the private sector in policy design and implementation. Thus, it aimed at exploring the research question at the national level. The case selected was the cooperation between Brazil and Mozambique in Rural Development, a decision that took into consideration both the applicability of the case and the practicality of linking this research with a larger research programme conducted by a partner institution of IASS, the Centre for International Forestry Research – CIFOR.

Important insights using political economy theory emerged while responding to the first two specific research questions of this case: i) *Which actors are involved in Brazilian – Mozambique Development Cooperation in rural issues? How does this differ from other more centralised cooperation policies*? ii) *How are the interests of these actors represented in the policy design and implementation (political economy)*? We found that the three main programmes implemented by the countries involved a

multiple and diverse constellation of actors, including business and farmer's associations, large Brazilian multinational companies such as Vale, the Brazilian Development Bank, technical assistance units of Ministries, national research agencies, multilateral agencies such as the World Food Programme and the UN Food and Agriculture Organization (FAO), among others. This large number of institutions involved did not find parallel in other cooperation programmes. This was largely associated with the intention of the two countries to decentralise cooperation policies and share its objectives with private sector and civil society, while also aiming to raise additional resources, including financial ones.

Nevertheless, the evidence collected shed light on growing conflicts due to this larger involvement of non-traditional actors, with vested interests, conflictive worldviews, disparate political influence, power, and resources. A full picture of the political economy of this development cooperation policy dynamics requires understanding these elements.

One of these conflicts explored in the article was how the dualistic feature of Brazilian rural policies – with one set of policies dedicated to promoting large-scale commercially-oriented agriculture, while another institutionally separated set dedicated to supporting smallholder, family-based farming – influenced the cooperation programmes. This responds to the other two specific research questions: iii) *How does the dualistic structure of Brazilian Agricultural Policy shapes Brazilian Mozambique Development Cooperation?* iv) *Which actors are articulated in the sphere of influence of rural policy in Brazil and how this unfolds within its programmes?*

We found that the coexistence of these two separate domains is an asymmetric one, with groups disputing political influence and financial resources, but with the commercially oriented actors clearly dominating the allocation of resources. Not only the large-scale agribusiness sector was more politically influential on the Brazilian side, but also Mozambican agricultural plans primarily emphasise a perspective that focuses on market-oriented agricultural modernization. This synergy inhibited a more inclusive development cooperation agenda, as a potential reform of the current cooperation policy focused on family farming faced serious political constraints.

We concluded that the appropriation of a foreign project relies on the political economy dynamics of related contexts and power relations of involved stakeholders, an area that could deserve further attention from researchers investigating Brazil–Mozambique relations.

Article (3): Deliberation in Multi-Stakeholder Participation: A Heuristic Framework Applied to the Committee on World Food Security

M. A. Zanella, A. Goetz, S. Rist, O. Schmidt, J. Weigelt (2018). Sustainability 10(2), 428, https://doi.org/10.3390/su10020428

Abstract: *Multi-stakeholder participation (MSP) has become a central feature in several institutions and processes of global governance. Those who promote them trust that these arrangements can advance the deliberative quality of international institutions, and thereby improve the democratic quality, legitimacy and effectiveness of both the institutional landscape, as well as decisions made within it. This paper employs a heuristic framework to analyze the deliberative quality of MSP. Specifically, it applies Dryzek's deliberative systems framework to the case of the Committee on World*

Food Security (CFS). The assessment shows that the CFS improves the deliberative quality of food security governance by including and facilitating the transmission of discourses from the public to the empowered spaces. However, the deliberative quality of CFS could be higher with stronger accountability mechanisms in place, more meta-deliberation and adoption of CFS outcomes at national and local levels. Reflecting on the limitations of using this heuristic framework to assess MSP, we conclude that the analysis would benefit from more explicit consideration of different forms of power that are part of the social relations between actors involved in such settings. By proposing this analytical approach, we expect to advance a heuristic framework for assessing deliberation in an international context of the growing importance of MSP in sustainability and global governance.

The third paper of this thesis brought the analysis to the global level. The growing presence and influence of multi-stakeholder platforms were assessed in terms of its capacity to change the deliberative quality of global food governance. The case selected was the Committee on World Food Security (CFS), not only because the research programmes supporting this thesis had an entry door in collaboration with actors involved at that Committee, but also because that case seemed particularly fit for analysis from the viewpoint of deliberative theory. Since its reform in 2009, the Committee has aspired to be a central global institution for policy debate on food security. The main feature of its reform was precisely the constitutions of mechanisms to facilitate participation of non-state actors in its negotiations. This has triggered a dynamic literature (Brem-Wilson, 2015; Duncan, 2015; Duncan, 2016; McKeon, 2017; Brem-Wilson, 2017) that this author considered important to engage with.

Our original contribution was the adaptation and application of a heuristic framework to assess deliberation based on Dryzek's formulation of deliberative systems (Dryzek, 2010). One of the interesting features of this framework is its applicability irrespective of the format of participation institutions, thus rendering possible the analysis of diverse political systems, from liberal democracies to single-party states, networks, systems based on traditional authorities, and – our interest – global governance institutions. For doing this, we operationalized concepts such as public spaces, empowered spaces, transmission, accountability, meta-deliberation and decisiveness, using the CFS case.

The paper generated important results that answers two of the specific research questions: i) *To which extent is the growing presence of MSP improving the deliberative quality of global food governance*? ii) *How did the recent reform of the CFS impact on the deliberative capacity of the systems*? We found that the CFS improves the deliberative quality of food security governance by including and facilitating the transmission of discourses from the public to the empowered spaces. Our analysis of the public space of food governance reveals discourses also found in the empowered spaces of the Committee, and transmission does occur due to a high diversity of representation, a regular mode of communication among CFS members and participants and the capacity of influencing debates. However, the deliberative quality of CFS could be higher with stronger accountability mechanisms in place, more meta-deliberation and adoption of CFS outcomes at national and local levels, which could ultimately increase its decisiveness.

In terms of advancing theory and answering the other two research questions, we found achievements and limitations in the usefulness of the tool to analyse deliberative quality in global governance. We asked: iii) *which elements of deliberation theory need to be taken into consideration*

when assessing the quality of deliberation at the CFS? iv) *How can we build a heuristic framework applicable to other MSP cases*? When applying Dryzek's deliberative system framework, we found that it is built on sound theoretical foundations while it also facilitates an overview analysis of analytical components that are generally treated separately in the literature, such as accountability and reflexive governance. Nevertheless, the framework could address power more explicitly, or more precisely how power influences each of its different elements. We also suggested supplementing the analysis with the concepts of instrumental, structural and discursive power (Clapp & Fuchs, 2009) to identify flaws in transmission, accountability and reflexivity. This would mean taking note of the material, symbolic and normative resources different actors control – a direction suggested for further research.

Article (4): On the Challenges of Making a Sustainable Kitchen: Experimenting with sustainable food principles for restaurants

M. A. Zanella (2020), Research in Hospitality Management, 10(1), 29-41,
https://doi.org/10.1080/22243534.2020.1790207

Abstract: *Concerns with the sustainability of food have moved from the margins of the gastronomy world to a much more central stage, mirroring a growing citizens' concern around food origins, carbon footprint and social practices within value chains. Evolving literature on food sustainability addresses many of these challenges, with macro and systemic approaches that have proved valuable in certain domains, such as food policy. However, professionals from the hospitality industry are still very underinformed on the methods adopted by researchers investigating food sustainability. This article tries to fill this gap by presenting an approach on how micro-level practices in restaurant kitchens can be informed by sustainable principles derived from the conceptual lens of food sustainability. It demonstrates the identification of principles and the definition of sustainable practices with two empirical cases: Hermann's restaurant in Berlin, and Mesa pra Doze gastronomic project, in Brasília. Comparing those two different experiences, similar and dissimilar challenges were found. Contrary to common thinking, the higher costs normally associated with sustainable sourcing were diluted by the higher margins and low weight of sustainable ingredients in the total operational costs. Access to these, in terms of time and availability, proved to be the real challenge, given their less developed distribution channels. Lastly, the high degree of freedom and meaningful deliberation which the kitchen team benefited from in both cases opened the possibility to more coherent and comprehensive definitions of sustainable principles and practices.*

This fourth article of this thesis brings the level of analysis closer to local governance processes. The literature discussing the growing diversity and presence of new actors in local food governance is vast, however very few pieces analyse the participation of one important actor of food systems: restaurants. The choice of this specific type of actor responded to two factors.

First, professionals from the food industry are constantly being informed by diverse sources of knowledge – from exchange among peers, to events and specialised media – but very little by the macro and systemic approach adopted in food system literature. In this sense, findings of this article responded to the specific questions of this case: i) *Which methods and approaches are used by restaurants to assess sustainability practices? How are these related to norms, rules and institutions designed in local food governance mechanisms?* ii) *How do approaches used by restaurants relate to those developed by researchers?* iii) *How can micro-level practices of restaurants be informed by sustainability principles derived from food sustainability?*

The article argues that sources of information on food sustainability used by restaurant managers, chefs, and owners are quite apart from those found in the scientific literature on food sustainability. It suggests that strengthening the analytical links between the macro-level of food system literature and micro-level of restaurant operations would prove valuable for emerging local food governance institutions where restaurants are becoming key actors driving change towards sustainability. And it suggests that one possibility for this would be the adoption of food sustainability principles as guidance for day-to-day operational decisions.

The second reason for restaurants as one important actor for focusing on local governance is of personal nature. Throughout the end of the elaboration of this thesis, this author got professionally involved in the restaurant business, initially as a voluntary and enthusiastic apprentice chef, but ultimately converting it into the core of my professional career. I had the chance of cooking in simple to high-cuisine award-winning establishments, I led kitchens as head chef and I even opened my own gastronomic project. In the more than 5-years that I have practised this double profession – part researcher, part chef – I collaborated with amazing individuals who try to make the restaurant business a driver for sustainable change – with all its challenges and limitations. With the spirit of transdisciplinary research deeply embodied in my mind, I conducted non-consecutive participatory observation on how food sustainability principles were driving business practices in the restaurant industry. Ultimately, I understood that my best contribution to the literature on multi-stakeholder governance and food sustainability would be an article that relies on autoethnography to bridge my own professional experience belonging to the two worlds of science and cooking. I believe that this positionality is quite rare and that it would be a unique opportunity to build up this into a research article that assesses how principles of sustainable food systems based on food governance literature could be rendered useful for driving change in restaurant practices.

Against this background, the final article also responded to the remaining two specific research questions: iv) *Does the definition of sustainable food principles facilitate the adoption of more sustainable practices by restaurants?* v) *Which principles represent the growing evidence on food sustainability literature? How to translate those?* Thus, it tried to fill a gap of unified methods of sustainable performance of restaurants that addresses the complexity of food system sustainability, while also keeping sufficiently manageable at the local governance levels. It is done by presenting and discussing evidence from two empirical cases where the links between macro (food system literature) and micro levels (local governance) were explored. The first case takes place in Berlin, Germany, where a new restaurant that I headed experimented with an internal exercise of adopting 10 self-constructed sustainable food principles. The second case takes place in Brasília, Brazil, where I founded a twice-a-week pop-up restaurant, where similar sustainable food principles strongly shaped the menus, restaurant operations, and its engagement with wider local food governance processes.

Therefore, this article provided a double contribution. One to the research community of food sustainability and gastronomy, demonstrating an empirical way of how the macro-level of food systems can be analytically linked with the more micro-level of restaurant operations through the development of sustainable food principles and practices at the micro (restaurant) level. Second, to the professionals of the restaurant industry, by discussing practical challenges that might be faced when pursuing similar goals in their operations.

6. Discussion and Outlook

The present thesis dealt with the expanding presence of non-traditional actors in food system governance, and how this impacts the dynamic relationships between actors in different levels. Its title "between global committees, national policymaking and a single kitchen" suggests three levels where the presence of non-traditional actors was investigated: an UN-based committee devoted to global food governance (multilateral), development cooperation policies between Brazil and Mozambique (national/bi-lateral), and the implementation of sustainability principles in professional kitchens (local).

Thus, these three situations were investigated to achieve a better understanding of specific political dynamics, influenced by the growing diversity and presence of new actors in food system governance, namely:

i. Changes in the deliberative quality of global food governance due to the growing presence and influence of multi-stakeholder platforms;
ii. The decentralisation of decision-making in development cooperation policy from government-centred programmes to programmes with stronger involvement of private sector and civil society;
iii. Strategies and limits of the involvement of restaurants in local food governance in terms of promoting more sustainable practices in the hospitality industry.

A combination of methods and approaches were applied to explore these issues. While the case of development cooperation took advantage of insights from cognitive approaches of public policy analysis, in particular the concepts of policy frame of reference (Muller, 2011) and policy beliefs (Sabatier & Jenkins-Smith, 1993), deliberative quality of multi-stakeholder platforms was assessed with the assistance of Dryzek's deliberative system framework (Dryzek, 2010). The strategies and limits of restaurants in promoting sustainable practices in local food governance were discussed in light of autoethnographic methods (Spry, 2018; Jones & Adams, 2016). In general, all methods and approaches were extensively influenced by the principles and practices of transdisciplinary research – a common feature of all research projects which supported this thesis.

Positionality of researchers in transdisciplinary projects

A reflection on the positionality of researchers in transdisciplinary projects, lead to the elaboration of the first research output. Responding to the debate on objectivity in transdisciplinary research, we concluded this first article arguing that "*standpoint theory provides an argument for not only making researchers' situatedness explicit, but also for choosing to address* [research] *… from marginal actors,* [allowing] *for a better understanding of the social order and the structures that constrain their expression…. Relating to the objectivity question and fulfilling the standards of 'strong objectivity' might generate less partial accounts of contested issues such as resource governance in future transdisciplinary studies.*". (Rosendahl, et al., 2015, p. 26).

As we indicated in the paper, our results indicate synergies between the argument for assuming "strong objectivity" and the quest for "reflexivity" in transdisciplinary research (Lang, et al., 2012). Our unique contribution was to address social positions and pre-existent values of scientists themselves, in a more explicit fashion. This contrasts with other researchers that suggested that scientists are able to perform the role of "epistemediators" (Wiek, et al., 2007) or bridge-makers, between the worlds of science and practice (Jahn, et al., 2012).

Another point worthy of discussion is our argument for assuming the perspective of marginal lives as starting points of research, as this could provide meaningful scientific problems and research agendas. Many authors have taken up this point further, after the publication of the article (Van der Hel, 2018; Seidl, 2015; Klenk & Meehan, 2015), even though, others have suggested that our "selective bias" risks excluding certain (legitimate) value systems, and therefore may render incomplete for facilitating sustainable transitions (Scholz, 2017), indicating that the debate on positionality, is far from being resolved.

MSPs and the deliberative quality of global food governance

Our research output responded to the question of to what extent and ways multi-stakeholder participation is improving the deliberative quality of processes and institutions of global governance. It concluded arguing that in the case of the Committee on World Food Security "*multi-stakeholder participation requires significant improvements to address deficits of accountability, meta-deliberation and decisiveness*" (Zanella, et al., 2018, p. 16).

Dryzek and colleagues themselves have applied the deliberative framework to understand the deliberative quality of global governance institutions (Dryzek & Stevenson, 2011; Dryzek, et al., 2019). Our results suggest that the CFS achieves high levels of transmission between public and empowered spaces, due to its high diversity of representation. This contrasts with Schouten et al. (2012), who analysed multi-stakeholder platforms, such as commodities roundtables. According to these authors, these MSP fall short of inclusiveness (of actors and discourses) – a criteria that the CFS does perform well in comparative terms. Nevertheless, low levels of consequentiality were also found in those MSPs, which leads us to suggest that further studies on the effective impact of MSPs in food governance are needed.

Additionally, our paper suggested that "*the concepts of instrumental, structural and discursive power* (Clapp & Fuchs, 2009) *can be used to assist the identification of flaws in transmission, accountability and reflexivity*". Further research was advised of "*taking note of the material, symbolic and normative resources that are part of relevant compulsory or institutional contexts and that play a role in the interaction of involved actors*" (Zanella, et al., 2018, p. 16).

Our assessment that deliberative theory could be complemented with more refined analysis of power asymmetries within MSP schemes; this was also suggested by an extensive review of MSPs in food governance elaborated by the High-Level Panel of Experts of the CFS (2018) and is part of early theoretical debates on deliberation (Shapiro, 1999). Still, studies that enthusiastically suggest stronger engagement of public and private actors in global governance e.g., (Abbott, 2012), seem to continually miss this crucial component of deliberative quality. Hendriks (2009) pointed in similar directions, suggesting other analytical pathways to explore, how power influences deliberation.

Though we note literature exploring these frontier issues (Curato, et al., 2017), studies at the global level are still scarce – reinforcing this suggested direction of future research.

Decentralisation in development cooperation

Addressing decentralisation and larger involvement of non-traditional actors in development cooperation, the second article of this thesis concluded that "*appropriation of a foreign project relies on the political economy dynamics of related contexts and power relations of involved stakeholders. Sharing policy experiences is, hence, a contested process in which all parties may seek to influence decisions and outcomes in their own terms*" (Zanella & Milhorance, 2015, p. 78).

Our unique contribution in applying political economy lenses to study the decentralisation and stronger involvement of private sector and civil society in development cooperation relates to not assuming decentralisation as inherently leading to more positive outcomes in terms of participation, and, ultimately, sustainability. Decentralisation is certainly not politically neutral, as it assumes a different distribution of power and resources which may or not may be more beneficial for inclusivity and, or sustainability. Studies that have investigated the cooperation between Brazil and Mozambique dedicated less attention to this distribution of resources (Fingermann, 2015) or have looked exclusively at the large-scale dimension of the cooperation portfolio (Nogueira & Ollinaho, 2013; Clements & Fernandes, 2013).

Those who also investigated the full spectrum of cooperation programmes between the two countries and investigated the dualistic structure of its portfolio – as in Cabral et al. (2016) – found results that reinforce our conclusions. More recently, Cabral et al. (2021) draws on the role of epic narratives and imaginaries of development to suggest how worldviews translate from intangible frames of reference to concrete cooperation policies. Similar to our results, a stronger emphasis on the sources of power and influence of civil society and private sector points that the focus on market-oriented modernization is in line with the role of mechanisation in the Mozambican modernization ideal (Cabral, 2022). This supports our conclusion that the unfolding of these programmes in the long run will require a better understanding of power distribution between actors involved in the decentralisation of cooperation policies.

Strategies and limits of the involvement of restaurants in local food governance

Finally, the fourth research output aimed at suggesting an empirical way for restaurants to assess their practices in terms of achieving sustainability, highlighting the role of this actor in influencing local food governance. In this sense, it suggested the adoption of principles as the instrument for linking the macro-levels of knowledge found in the literature of food sustainability with the micro-level and day-to-day practices of restaurant operations.

This idea of principles as "translation devices" finds correspondence in other schools of sustainability literature. Patton, for example, strongly advocates that developmental evaluation should be less focused on box-ticking log-frames, and much more about adopting principles as guides for social and institutional learning (Patton, 2017; Patton, 2016). In a similar fashion, the exercise of co-defining which principles to choose has parallels with what transdisciplinary research defines as target knowledge (Hirsch Hadorn, et al., 2006).

Thus, a novel contribution that helps fill a literature gap was the proposal of 10 principles that restaurants can adopt to work with sustainable food. The article further discusses how the deliberative process adopted in forging these principles impacted on their definitions.

The article concludes arguing that "*the relatively high degree of freedom* [kitchen] *team had opened the possibility for more coherent and comprehensive definitions of* [sustainability] *principles*". In other words, "*a context where kitchen staff are committed and enjoy space for free and authentic deliberation favours higher levels of sustainability*". This seems strongly "[a]*ligned with recent studies on the frontiers of food democracy* (Behringer & Feindt, 2019; Bornemann & Weiland, 2019) *… authentic deliberation and emancipation can assist our food systems in their transformation towards sustainability*" (Zanella, 2020, p. 11).

Conclusion and outlook

Even though each research output reached individual conclusions, in light of the specific questions that were identified to their context, the topics of deliberation and sustainability came across as important elements in all cases. This was more evident in the level of multi-stakeholder participation in global governance, considering that the framework used in this case was developed to directly address these issues.

But deliberation as a way to increase sustainability in food governance, also featured in the case of development cooperation policies between Brazil and Mozambique. In that situation, the different ideologies (worldviews) which framed the policy references of the actors that circled the cooperation policies were so disparate. that it was virtually impossible to achieve a minimal level of deliberation between those actors. In the end, the duality that shaped those cooperation policies, was a reflection of the incapacity of these actors to deliberate.

The consequence was that the sphere which had more resources and political influence, propagated their own vision of development and marginalised other options of cooperation policies that were more socially progressive. In this sense, development cooperation programmes were largely unsupportive of stronger involvement of family farming groups and policies in favour of the peasantry that forms the basis of the rural social landscape in Mozambique.

And as already described above, in the case of restaurants and local food governance, where we found space for free and authentic deliberation, these favoured higher levels of sustainability – a conclusion aligned with recent literature on food democracy.

Deliberation, participation, and emancipation are important issues that are still beginning to be explored in the literature of food governance. Future research should focus on how these principles might benefit transformations towards sustainability, using recent advances in the theory of food democracy. Bornemann and Weiland (2019) suggest some broad questions that are at the frontier of this debate. First, a conceptual debate on the established approaches and understandings surrounding this term. Second, an empirical debate on which forms of food democracy have been experimented and with which results. And third, a practical-political debate, meaning strategies to promote food democracy as a way of governing food systems that can be more transformative, inclusive, and deliberative in forging pathways towards sustainability.

For me as author of this thesis, it becomes almost a corollary of this practical-political debate that researchers, willing to enter this arena, could be inspired by the transdisciplinary theory and practices that formed the methodological basis of this thesis. After all, far from being only a box of voting mechanisms, democracy is about sharing opinions, judgements, values, discussions, argumentation, of being free to agree and disagree, and to change our own perceptions. It is more than time to bring this to the way we govern food, be it in global committees, in Ministries or in your favourite restaurant next door.

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Annexes – Published Articles

Article (1)

J. Rosendahl, M. A. Zanella, S. Rist, J. Weigelt (2015). Scientists' situated knowledge: Strong objectivity in transdisciplinarity. Futures (65), 17-27.
https://doi.org/10.1016/j.futures.2014.10.011

Article (2)

M. A. Zanella, C. Milhorance (2016). Cerrado meets savannah, family farmers meet peasants: The political economy of Brazil's agricultural cooperation with Mozambique. Food Policy (58), 70-81.
https://dx.doi.org/10.1016/j.foodpol.2015.12.006

Article (3)

M. A. Zanella, A. Goetz, S. Rist, O. Schmidt, J. Weigelt (2018). Deliberation in Multi-Stakeholder Participation: A Heuristic Framework Applied to the Committee on World Food Security. Sustainability 10(2), 428.
https://doi.org/10.3390/su10020428

Article (4)

M. A. Zanella (2020). On the Challenges of Making a Sustainable Kitchen: Experimenting with sustainable food principles for restaurants. Research in Hospitality Management 10(1), 29-41.
https://doi.org/10.1080/22243534.2020.1790207

Article (1): J. Rosendahl, M. A. Zanella, S. Rist, J. Weigelt (2015)

Futures 65 (2015) 17–27

Contents lists available at ScienceDirect

Futures

journal homepage: www.elsevier.com/locate/futures

Scientists' situated knowledge: Strong objectivity in transdisciplinarity

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ARTICLE INFO

Article history:
Available online 4 November 2014

Keywords:
Transdisciplinarity
Objectivity
Sustainability science
Pro-poor
Resource
Governance

ABSTRACT

Although transdisciplinary research has started addressing important epistemological challenges, as evidenced by the discussion about 'mode 2' knowledge production, its relation with postulations of 'scientific objectivity' is not yet well clarified. A common way of dealing with the epistemological challenge of situated knowledge production, as proposed by transdisciplinarity, is to point to the fundamental aspect of reflexivity. But reflexivity also includes being aware that power and control over the object is derived from the social position of researchers, an issue not often explicitly discussed in transdisciplinary research. Reflexivity thus represents an important but insufficient principle for guaranteeing appropriate levels of self-reflection within a process of knowledge coproduction. We therefore hypothesize that transdisciplinary research could greatly benefit from feminist scientific tradition, in particular the insights of standpoint theory and the concept of 'strong objectivity'. We analyse, and reflect upon, how a recent transdisciplinary research initiative – conducted together with civil society organizations in (CSOs) in six countries: Bangladesh, Bolivia, Brazil, Burkina Faso, Ecuador and India – has benefited from the use of 'strong objectivity'. We analyse how the social position of all stakeholders, including ourselves as the scientific actors in this initiative, influence the process and conditions of transdisciplinary knowledge co-production, and we discuss how power and control by scientists affects the process and conditions of interaction. Thereby we argue for the necessity of explicitly assuming sides in contested contexts for reaching objectivity in transdisciplinary research.

1. Introduction

After more than 20 years of conceptual and practical development, transdisciplinary research has started addressing important epistemological challenges, taking advantage of action research (Stokols, 2006) and new science paradigms, such as post-normal science (Funtowicz & Ravetz, 1993; Gibbons et al., 1994). We understand transdisciplinarity as part of a process of knowledge co-production between scientific and non-scientific actors, involving the co-production of systems, target, and transformation knowledge (Hadorn et al., 2008; Hirsch Hadorn, Bradley, Pohl, Rist, & Wiesmann, 2006). At the beginning, the process of knowledge co-production concerns the identification of jointly defined societal problems, often

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http://dx.doi.org/10.1016/j.futures.2014.10.011
0016-3287/

related to specific issues of sustainable development (Schneider & Rist, 2013). The societal problem agreed upon serves as a common denominator for co-producing *system knowledge*, i.e., how the system works that produces the *problematique* under scrutiny. System knowledge is generally based on the integration of, and dialogue between, various scientific and non-scientific perspectives on the issue at hand. The integration of different perspectives – that might even include different epistemic foundations of knowledge (Aeberhard & Rist, 2009) – is a fundamental feature of transdisciplinary research. Typologies of different forms on integrating multiple perspectives are also used for distinguishing different types of transdisciplinary research (Mobjörk, 2010). The values underpinning the framing of 'what the problem is' are generally made explicit and serve as *target knowledge* that expresses a set of shared normative principles that define the values to which a solution of the problems should be attached. Finally, systems and target knowledge feed into *transformation knowledge*, which shows what type of collective action can be used for changing the system in view of the principles expressed in the form of target knowledge.

One way of approaching the epistemic dimension of transdisciplinarity is understanding it as 'mode 2' knowledge production. In opposition to classical, rather positivist forms of knowledge production (called 'mode 1'), transdisciplinary 'mode 2' knowledge production aims at producing 'socially robust' rather than classical 'scientifically objective' knowledge (Nowotny, 2000a). 'Mode 2' is open towards the following five aspects: multiple interactions between a larger number of experts and sites of expertise (i), different forms of knowledge and actors representing them (ii), science leaving the academic field and 'meeting the public' (iii), allowing it to speak back to science, peoples' interests, concerns and perspectives entering into science (iv) and, in some cases, providing essential data for every aspect of the research process (v) (Michael, 2000). Socially robust knowledge is often assessed by appreciating how the process of knowledge-coproduction within the specific social and political milieus in which it happens achieved to be salient, credible and legitimate (Cash, Borck, & Patt, 2006); the epistemic quality of research is measured not towards an abstract ideal of scientific objectivity, but in function of the socio-political quality as perceived by the various actors involved in transdisciplinary knowledge co-production.

Although 'mode 2' knowledge production represents important progress with regard to the formulation of basic epistemological principles, their conceptual and methodological operationalization into concrete activities of transdisciplinary knowledge co-production is not yet well clarified. A critical epistemological aspect of 'mode 2' knowledge co-production concerns its relation with postulations of 'scientific objectivity', i.e., understanding how to deal with the implied influence of the observer on the research object and how to deal with the values and social positions represented by the researcher and other non-scientific stakeholders (Harding, 1993; Voss, Bauknecht, & Kemp, 2006).

A quite common way for dealing with the epistemological challenge of situated knowledge production, as proposed by transdisciplinarity, is to point to the fundamental aspect of reflexivity as an intrinsic component for the conceptual and epistemological (Holland, 1999; Truffer, 2007), as well as for the practical levels of transdisciplinarity (Truffer, 2007). In the definition of transdisciplinarity offered by Lang et al. (2012) reflexivity plays a primordial role in integrating the method-driven scientific process of knowledge co-production that is '... aiming at the solution or transition of societal problems and concurrently of related scientific problems by differentiating and integrating knowledge from various scientific and societal bodies of knowledge'.

However, reflexivity also involves being aware that power and control over the object is derived from the social position of researchers, and politically dominant groups influencing scientific agendas – e.g., policy makers, funding agencies. Furthermore, there are less evident mechanisms that exert influences on science through defined institutional structures, research priorities and strategies, languages, narratives, and discourses (Harding, 1995).

Practically, political and power dimensions are often not explicitly discussed in transdisciplinary research, although this approach has been suggested as an avenue for generating transformative knowledge able to question existing power structures and alter the status quo (Rist, Chidambaranathan, Escobar, Wiesmann, & Zimmermann, 2007). Particularly when power asymmetries between stakeholders are evident in the research collaboration process, to implicitly neglect or to simply negate these might have important implications for the transformative potential of transdisciplinary science. Moreover, scientific actors, analogous to non-scientific ones, also hold a position in the social matrix, and subsequently a set of pre-existing ideas on how to address the issue at stake. If this condition is taken into account, the following questions emerge: How are the involved stakeholders positioned? What power is derived from that position? How do the different stakeholders try to influence knowledge co-production?

With regard to these specific questions on the effects of the mutual influences of the observer on the observed, reflexivity as proposed by transdisciplinarity represents an important but insufficient principle for guaranteeing appropriate levels of self-reflection within a process of knowledge co-production. We therefore hypothesize that transdisciplinary research could greatly benefit from feminist scientific tradition in which the roles and influences of researchers on actors with whom they interact receive significant attention. Feminist scientific traditions therefore provide theoretical and conceptual guidance for dealing with the 'objectivity challenge' of transdisciplinarity. Standpoint theory, as elaborated in feminist studies, provides one avenue for addressing the issue of political and hidden power dimensions within projects and practice of research. The point of divergent positions and their impact on the transdisciplinary or any other research process relates to the longstanding epistemological debates around 'objectivity' in science since the mid-19th century. The notion of scientific objectivity, both in social and natural sciences, has been criticized from a number of different perspectives, referring inter alia to subjective processes of object selection, to measurements, to shared beliefs within a given scientific community, and to the relativity of all perspectives. However, the idea of scientific neutrality and objectivity widely persists in society, and

notably in natural sciences. Accordingly, scientists might be perceived as neutral or objective observers having no stake or vested interests in their research objects. Referring to the social sciences, Max Weber argued that objectivity, in a narrow sense of the word (Harding, 1993), is an unreachable goal due to scientists' subjective interpretations of social action and social behaviour (Weber, 1949). Another milestone in the criticism of scientific objectivity in general was set by Thomas Kuhn, in his analysis of how the implicit social hierarchy of scientific paradigms influences whether or not contradictions to a paradigm are taken up (Kuhn, 1962). These points have been strongly echoed, leading to intense debates, such as various editions and varieties of the so-called dispute around a 'value-free' science in German-speaking social sciences (Topitsch & Albert, 1971) and the 'science wars' in the United States in the 1990s (Ashman & Barringer, 2005). In particular, critical theory and postmodernism have subscribed to criticism of objectivity (Sarup, 1993).

Standpoint theory is a more recent critical theory that is enlightening in this regard. Most prominently, feminist standpoint theorists such as Sandra Harding (Voss et al., 2006; Harding, 1992, 1995) have criticized the conventional conception of scientific objectivity as 'weak objectivity'. Due to biases of individuals and shared biases of scientific communities, 'weak objectivity' is only able to provide partial and distorted answers. Standpoint theory acknowledges that all human thought arises in a particular social situation and can only be partial, so that knowledge claims are always socially situated. One's social situation both enables and sets limits on what one can know.

Without subscribing neither to epistemological relativism nor to objectivity as understood by proponents of 'neutral science', Harding and others argued for a 'strong objectivity', which follows stronger standards for 'good method' in order to maximize objectivity. To achieve this, scientists have to reflect on their social situatedness in the social matrix and the implications that this has for their position, their perspectives, and their power.

Moreover, some positions in the social matrix are more fruitful for research than others. According to Harding and other feminist scholars, some social locations are more privileged in terms of exercising power and influencing scientific agendas. At the same time, this implies that those individuals and communities are unable to see the social mechanism leading to dominance and discrimination of ideas and people and thus are unable to see their own biases. Gender is understood as just one way of how discrimination and marginalization occur – along with race, class, ethnicity, among others – which lead to multiple and individual constellations of dominance and discrimination. The argument is that research starting off from marginal lives offers more enlightening perspectives because this allows seeing humans' relationship with each other and with the natural world without the biases that those immersed in a dominant group are unable to see. This means researchers taking their lives and perspectives which offer better initial angles for critical and reflexive investigation.

This does not call for naively assuming the viewpoints of those marginalized groups, but rather pursue a logic of discovery that uses the critical potential as a starting point, including several different and possibly conflicting marginal lives. Thereby, 'less false' (Harding) and more objective accounts of the world can be obtained.

Upon this background, this paper aims to explore the added value, potentials, and limitations resulting from bringing transdisciplinary knowledge co-production into dialogue with standpoint theory and the notion of 'strong objectivity'. For that purpose we analyse, and reflect upon, how the design of a project and process aiming at co-producing knowledge on pro-poor resource governance has benefited from the use of 'strong objectivity'. This paper analyses a recent transdisciplinary research initiative conducted by the Institute for Advanced Sustainability Studies (IASS) and the International Fund for Agricultural Development (IFAD), together with civil society organizations in (CSOs) in six countries: Bangladesh, Bolivia, Brazil, Burkina Faso, Ecuador and India. The research initiative focussed on the issue of 'Pro-Poor Resource Governance under Changing Climates' (ProPoorGov). It explicitly assumed a normative position towards resource governance. We understand pro-poor resource governance as governance systems that are not defined from the outside, but of which the contents are co-defined directly involving the poor actors in the decision-making processes. They therefore aim, by their nature and structure, at outcomes that are able to favour the poor (Johnson & Start, 2001; Borras & Franco, 2010).

In a first step (section two), we present how the key principles of transdisciplinary research were translated into the design, implementation, and practice of the process of knowledge co-production. In a second step we analyse and discuss how the social position of all stakeholders, including ourselves as the scientific actors in this initiative, influence the process and conditions of transdisciplinary knowledge co-production. We discuss how power and control by scientists affects the process and conditions of interaction. Thereby we argue for the necessity of explicitly assuming sides in contested contexts for reaching objectivity in transdisciplinary research. Future transdisciplinary research might increase its transformative potential if its validity is measured not towards 'mode 1' ideals of objectivity, but towards societal robustness, an increase of reflexivity, and communicative action to which transdisciplinarity is able to contribute.

2. Results: steps and challenges when implementing transdisciplinary research

In order to argue for attaching more importance to the objectivity question in transdisciplinary research, this section briefly presents evidence gathered in the practical application of the principles of transdisciplinarity in a particular research initiative, the ProPoorGov project. Several contributions to the literature on transdisciplinarity have pointed out the challenges of incorporating transdisciplinary principles in research design, implementation of activities, and evaluation (Brandt et al., 2013; Fazey et al., 2014; Lang et al., 2012; Wiek, Ness, Schweizer-Ries, Brand, & Farioli, 2012). We acknowledge that some recurrent challenges are largely explored in the academic debate – for instance the necessity of reaching broad acceptance on consistent frameworks, with accompanying common terminology. Thus, we focus on describing those practical challenges more directly related to the objectivity concern.

2.1. The research project 'Pro-Poor Resource Governance under Changing Climates'

2.1.1. Rationale and approach

After the 2008/09 food price crisis, land has re-emerged at the core of the rural development agenda (Cotula, Vermeulen, Leonard, & Keeley, 2010; Deininger et al., 2010), triggering a broader debate on resource governance (Palmer, Fricska, & Wehrmann, 2009), and, more precisely, what is and how to attain pro-poor governance (Borras & Franco, 2010; Zoomers, 2011). In many countries, a rich body of progressive land legislation already exists, which intends to make the livelihoods of resource users more food secure and less vulnerable, and contribute to sustainable resource use (RRI, 2012). However, the conditions in which rules are put into practice are severely affected by institutional constraints, such as government performance, information asymmetries, and power imbalances. As a result, it is not rare to find blatant gaps between formal legislation design and its implementation (Bardhan, 2000). In these situations, local civil society organizations (CSOs) that work for and with poor rural groups have been trying different strategies to cope with this disconnection. CSOs are placed in a favourable position when it comes to understanding the local context and background, which might be restricting or diverting the implementation of resource governance legislations addressing access, tenure, and transparency (Fraser, Dougill, Mabee, Reed, & McAlpine, 2006; Pokorny, Prabhu, McDougall, & Bauch, 2004). Even more importantly, by pursuing a local political agenda and actively engaging in political processes, CSOs have first-hand experience of power disputes. Thus, getting deeper insights into their strategies and building bridges between the grassroots level and policy arenas of different levels is highly useful with a view to improved pro-poor governance. A transdisciplinary research project on pro-poor governance of land and related resources was initiated by an international development organization and a research institute. This starting point entails an explicit normative positioning for pro-poor governance, and therefore engages with communities, CSOs, and other stakeholders. This was not a problem, but a necessary requirement for achieving 'strong objectivity'. In practical terms, this meant that all stakeholders – including the international organization and researchers – had to share a common goal and an agreed-upon set of values towards how resource governance should be transformed. This point was essential for linking to the question of objectivity and is further reflected upon in the discussion section.

2.1.2. Implementation

During the execution of the project, several challenges emerged. Before discussing two relevant examples, it is necessary to outline the implementation steps of the ProPoorGov project. Without questioning the usefulness of simplifying schemes–usually suggesting to distinguish between three phases of transdisciplinary research (Hirsch Hadorn et al., 2008; Lang et al., 2012) – the following section describes the conduction of the ProPoorGov project in seven steps: (i) identification of partner organizations, (ii) identification of cases, (iii) formulation of research questions and boundaries of the cases, (iv) choice of analytical frameworks, (v) data collection, (vi) elaboration of analysis (seven case studies and synthesis analysis), (vii) discussion and communication of results. Obviously, one can argue for clustering these steps, but keeping a finer distinction facilitates the understanding and analysis of the different roles that each step played during the implementation of the project.

Firstly, guidelines for the selection of partner organizations (phase i) were elaborated upon by the researchers in coordination with the respective contact person within the international organization responsible for their operations in the targeted countries: Bangladesh, Bolivia, Brazil, Burkina Faso, Ecuador, and India. Other contacts were also established with persons known from past research experiences. It was explained that the selection guidelines should serve as loose recommendations for exploring cases and partners in the context of a high degree of flexibility. After receiving a number of suggestions and consultations with potential partner researchers, a partnership was established. Table 1 presents the list of partners involved and a very brief description of each organization.

The second phase consisted of selecting the cases for study (phase ii). Rather than instructions, the guidelines served as locators of the specific selected case inside the wider topic of research, in this case, governance of natural resources. A similar procedure as with the identification of partners was taken. The research staff elaborated loose guidelines that were presented to, and discussed with, the CSOs. A very high degree of flexibility was communicated to CSOs; different possible cases were jointly discussed, transferring the ultimate decision to the local CSOs. In most cases, CSOs suggested only one option, while in others two or more were indicated. This deliberative mode of negotiating the cases allowed the advancement of the production of a shared and context-sensitive understanding of problems and potential solutions.

The formulation of the research questions that set the boundaries of the cases (phase iii) was a key activity in the research collaboration. Since this process requires a deeper dialogue on the different understandings around a given context, a twofold approach was taken. First, a pilot workshop with only two CSOs (Brazil and India) was organized, with participation of staff from a diverse set of institutions including the Food and Agriculture Organization (FAO), universities, and the German Development Cooperation Agency (GIZ), among others. The main purpose of this event was to experiment with how such a diverse group could reach consensual decisions on the boundaries of the two cases through jointly elaborating a set of research questions to be addressed in the case studies. Second, in the case of all other partners (Bangladesh, Burkina Faso, Bolivia and Ecuador), research staff visited the CSOs in their localities, participating in field visits and holding several rounds of dialogue with the respective organizations, in order to reach a consensus on the research questions.

In this initiative, analytical frameworks were selected (phase iv) in parallel with the elaboration of the research questions. The researchers suggested the use of two main analytical tools: (i) an adapted institutional change framework based on new institutionalism (Ensminger, 1992; Haller, 2010), complemented by elements of the (ii) sustainable livelihoods framework

Table 1
Project partners: civil society organizations.

	Name	Short description
Bangladesh	BRAC	BRAC is a development organization dedicated to alleviating poverty through empowering the poor. Founded in Bangladesh in 1972, BRAC activities now cover the whole county. Their programme includes agriculture and food security, microfinance, education, health, legal empowerment and social enterprises among other areas. More concretely, a case study has been carried out in collaboration with BRAC's research and evaluation division (RED), an independent research unit within the framework of the organization. The division has been playing an important role in designing BRAC's development interventions, monitoring progress, documenting achievements, and undertaking impact assessment studies. www.brac.net
Bolivia 1	Fundación Tierra	Fundación Tierra is a Bolivian non-governmental organization (NGO) dedicated to discussing ideas and developing proposals for the rural sustainable development of indigenous, native and peasant groups. With more than 20 years of experience, Fundación Tierra works through action research and aims to influence policy in Bolivia in favour of marginalized and excluded rural populations. It supports indigenous, native and peasant groups by building capacities in management, negotiation, participation and policy incidence. Fundación Tierra research areas include agrarian issues, food security, indigenous rights, democracy and local governance, and the applied action research methodologies favour strong involvement of communities at the local level. www.ftierra.org
Bolivia 2	CDE, Faculty of Agronomy/UMSA La Paz and Fundación PIAF-El Ceibo	The Centre for Development and Environment (CDE) is an interdisciplinary research centre of the University of Bern, Switzerland. CDE's overarching goal is to produce and share knowledge for sustainable development cooperation with partners in the global north and south. Under the scope of this research, CDE has collaborated with the Faculty of Agronomy of the Universidad Mayor de San Andrés (UMSA), situated in La Paz, and with Fundación PIAF-El Ceibo. www.cde.unibe.ch Fundación PIAF was created by the Central do Cooperatives El Ceibo as a non-profit organization serving the needs of cooperates and their families. One of its main activities consists of providing technical assistance and fostering knowledge sharing among cocoa producers of Alto Beni. The foundation is also responsible for monitoring compliance with organic agriculture standards, for providing micro-credit and for managing social support, such as health, education and retirement programmes. www.elceibo.org
Brazil	PATAC	PATAC (*Programa de Aplicação de Tecnologias Apropriadas às Comunidades*) is a civil society organization with over 40 years of history aimed towards the strengthening of family farming in semi-arid Brazil. In direct cooperation with local family farming organizations, PATAC promotes sustainable rural development in the State of Paraíba, the Brazilian Northeast, through the dissemination of agroecological practices and the use of participative and bottom-up processes. PATAC supports use of local and original biodiversity, adapted to the conditions of the environment, and supports small-scale, low cost technologies to conserve and store water, forage and native needs. PATAC's intervention methods favour reinforcement of local knowledge and community-driven sustainable development. http://patacparaiba.blogspot.de/p/patac.html
Burkina Faso	GRAF	GRAF (*Groupe de Recherche et d'Action sur le Foncier*) is a non-profit organization founded in 1999 and a member of LandNet West Africa. GRAF is a network of people interested in land issues such as conflicts and acquisitions, decentralization, and governance of natural resources. The organization focuses on research, capitalization, publication, and advocacy. GRAF aims at conducting research on land issues at the local level, involving all stakeholders in a genuine national debate on the political and legal options regarding land, and acknowledging and using local expertise. Striving for the diversification of perspectives, analyses, and proposals, GRAF gathers researchers, practitioners, and decision makers. In past years, GRAF has received significant attention and has been involved in governmental processes. www.graf-bf.org
Ecuador	SIPAE	SIPAE (*Sistema de Investigación de la Problemática Agraria en el Ecuador*) is a research network working on agrarian policies at the local and national level. It operates a platform for action-research development, fostering social dialogues, elaborating political proposals, and connecting scientific investigation with social movements dealing with rural and agrarian problems. SIPAE's mission includes the support of a socially and environmentally sustainable agriculture, in defence of food sovereignty and collective economic, social, cultural, and labour rights. It aims to contribute to different research efforts, articulating and complementing new knowledge in rural and agrarian topics. www.sipae.com
India	Seva Mandir	Seva Mandir is an Indian non-profit organization founded in 1968 that has been working for 40 years with the rural, predominantly tribal population in the Udaipur district of Southern Rajasthan. SevaMandir's work centres on efforts to strengthen the sense of collectivity and cooperation among communities with the goal of improving social equity and increasing resilience to climate change. The organization carries out activities in 626 villages and 56 urban settlements. Seva Mandir supports communities in the (re)establishment of common lands through negotiations that are often prolonged to free it from privatization and development and to protect the degraded lands and put equitable benefit sharing mechanisms in place. www.sevamandir.org

Source: Authors' field data and organizations' websites.

(Scoones, 1998; Solesbury, 2003). Substantial discussions took place between researchers and CSOs around the necessity, appropriateness, and feasibility of using these frameworks for guiding data collection and analysis. In the cases of Brazil and Bangladesh, CSOs opted to complement the research with other analytical tools derived from a theoretical basis that they were more familiar with. In the resting cases, in order to assure a higher level of comparability across cases, the frameworks

proposed by the researchers were used. Taking account of the resulting analytical diversity for the researchers generated additional requirements for all case studies, in order to assure that these commonalities could be explored in all case studies.

It was jointly decided that both researchers and CSOs participate in data collection (phase v). This was considered necessary for the researchers to develop a deeper understanding of the local *problematique*, and for CSOs it enabled the development of a more pluralistic view, enriched by the researchers, on the issues being studied together. Similarly to data collection, the elaboration of analysis (phase vi) was also designed as a joint exercise between researchers and the CSOs' staff. The teams engaged in substantial dialogues, and in an iterative process for the elaboration of two main products: individual reports for each case study, coordinated by the respective local CSOs, and a final report that addresses, compares and analyses all case studies, coordinated by the research staff. The results of the case studies are not further described here, but they are being documented (Rosendahl et al., 2015).

Communicating and discussing the case studies with a broader set of stakeholders (phase vii) were also key activities in the project. In some cases, such events were conducted even before the elaboration of any written materials, while in others reports and briefs were already prepared prior to the events. Essential points raised in those events were taken up in the final reports. In more precise terms, two main activities were aimed at generating this discussion, thus contributing to triggering social processes towards pro-poor resource governance. The first comprised local and/or national workshops, organized either in the capitals of the regions where the cases were located, or in the national capitals. In these workshops, a wider range of audience members took part: local administrative staff, political decision makers from different government levels, development practitioners, journalists, and representatives from other civil society organizations. These workshops served not only as opportunities for presenting and discussing results, but also as occasions for building bridges between CSOs and decision makers. The second activity consisted of a final workshop with the presence of all CSOs, the initiating organizations, besides other invited stakeholders.

Based on the CSOs assessments conducted in the final phase, they perceived several gains that led to their empowerment. First, the project provided them with financial resources that allowed them to document and analyse their experiences more than they usually are able to do; this allowed them to increase their knowledge base, which inter alia can serve for future advocacy work. Second, it also increased their visibility, for example by means of media coverage following the national workshops. Third, these workshops further contributed to an increased reputation perceived by political decision makers who, in several cases, mentioned that they found the study highly useful and acknowledged the role of CSOs in policy design. They acknowledged furthermore that this is contrary to their common perception of CSOs being merely disturbing organizations. Fourth, particularly during the concluding workshop, CSOs could establish links not only with the other involved organizations working on similar issues or in similar conditions, but also to decision makers of the international organization. Lastly, the project implied a capacity building element, as young researchers were often involved in the case studies. In sum, CSOs improved their access to decision making processes, and also achieved an increased standing in the eyes of local and national political decision makers and the international organization.

2.2. Challenges faced during implementation

As commented above, several challenges to transdisciplinary research have already been addressed in scientific discussions. However these challenges, directly related to the objectivity concern, have not been at the forefront of these contributions. Through exploring these sorts of challenges found during the implementation of the ProPoorGov project, important gaps in existing practices in transdisciplinarity might be revealed for further transdisciplinary endeavours.

Two challenges, general in nature and interrelated, emerged during the research process: the question of how much control over the process is ceded from researchers to CSOs, and the question of the influences of different pre-existing positions on the issue. The latter was associated with correspondent different expectations, which in some cases led to divergences on particular decisions about the research.

2.2.1. Researchers controlling the process versus joint leadership

First, mandated to carry out the research by, and in collaboration with, an international organization, the researchers were in the position of initiating the contacts and research activities and of coordinating the elaboration of several case studies. All phases of the research were indeed conducted jointly, i.e., in collaboration with the different partner organizations. However it implied a clear and non-ceded coordination role taken by the researchers. They were the people giving the allowed time, setting guidelines for case selections, and, together, indicating the core steps of the research processes. Yet this was combined with a high degree of flexibility in order to adjust the different schedules and work cultures, respond to any concerns, and negotiate as much as possible. This can be illustrated by the choice of analytical framework expected to allow for a common thread and a common denominator for subsequent synthesis analysis. The researchers chose an institutional change framework (Ensminger, 1992; Haller, 2010). However, it turned out that some organizations were not comfortable with such a general and abstract analytical framework, and did not see clearly how this would translate to their cases. In other cases, organizations deliberately adopted the framework. The researchers did not insist on using it. Instead, they decided to be more flexible and engage themselves with the cases without an elaborated framework, reducing the analytical tools to five thematic 'minimum requirements' covering key topics of land governance. Aiming to ensure a common analytical thread, the following points were addressed: (i) 'what are the current resource use patterns?', (ii) 'what are people's perceptions of the influence of resource use patterns on their livelihoods?', (iii) 'what is the

natural resource governance regime that underpins the observed resource use patterns?', (iv) 'what capacity do poor rural people have to adapt their livelihoods to changing environments (socio-economic and physical variations including climate)?', and (v) 'do these adaptation strategies include changes in resource governance or do they operate through different strategies?'. Thus, the decision on the framework was a negotiated one, in which room for manoeuvre was certainly allowed, but coordination was not ceded.

2.2.2. Differences in values and positions towards the issue

Second, in the course of the research, situations of incongruity between the respective civil society organization and the researchers occurred in some cases, regarding certain aspects of how to carry out the research. These were related to different pre-existing perceptions of the issue – pro-poor land governance – and the different positions of the respective CSO and the researchers. As an illustration of this point, one case study on community-based management of common land was jointly elaborated with a CSO in Rajasthan, India. They have been working with rural poor populations and lobbying for community-based management of common land for more than four decades, and wanted the study to be a documentation of successful cases that they could use afterwards for influencing local political decisions. Discussing the selection of villages for the case study, the researchers were opting for a balanced set of successful cases, unsuccessful cases, and cases in which no external intervention on community-based management of common land had been undertaken. This generated discussions and negotiations, and revealed different understandings about expectations and the nature, approach, and purpose of the case study.

Reflecting on these incidences, it becomes clear that they emerge from different positions and perspectives on the issue. CSOs obviously do take sides, but researchers too have their own values and positions that they implicitly or explicitly bring into the research.

Civil society organizations, on the one hand, openly take sides and have a clear-cut position on different issues, which they might justify on the basis of their vision of society, and its relation to the planet. It could be argued that one reason for this is that CSOs have stronger social and personal ties with the people directly affected by the problem, at least compared to researchers. Moreover, CSOs have a stronger and more direct interest in aligning the outcomes with their positions, given their high pressure to demonstrate to their funders and beneficiaries that their approach to tackling the problem is successful. Researchers, on the other hand, are often perceived as being neutral and objective actors following rational scientific criteria without having a stake in the issue. This, we argue, is generally wrong, and not only in cases in which they explicitly assume a normative position, such as in the described pro-poor project.

It is worth mentioning, however, that in this particular case the divergences were not fundamental in nature, as there was a common ground to strive for a transformation of land governance for the benefit of poor rural populations. Thus, CSOs and researchers started the transdisciplinary work from a common denominator, a normative standpoint. Against this backdrop, different expectations and ideas of the implementation were altogether of minor significance, albeit not irrelevant. This points to the general fact that each stakeholder in a transdisciplinary process, including the scientific one(s), has a specific position and standpoint that influences the process and outcomes, regardless of whether or not they are aware of them and make them explicit. This is a major point elaborated in the following section.

3. Discussion: control, objectivity, and normative positions in transdisciplinary research

The literature on transdisciplinarity has extensively discussed and acknowledged how different types of knowledge, held by different types of stakeholders, can be integrated in processes that ultimately lead to new co-generated knowledge, which is socially robust (Nowotny, 2000b) and has the potential for societal transformation. It seems that one of the main assumptions taken by the proponents of this approach is that the different stakeholders can indeed effectively collaborate, at best on equal footing, although stakeholders may have different values, and, more importantly, may have different influences over how the transdisciplinary process is conducted (Novy & Bernstein, 2009; Seidl et al., 2013; Stauffacher, Flüeler, Krütli, & Scholz, 2008). We argue that this assumption needs to be revisited, pointing to the following aspects: how transdisciplinarity projects are controlled, how researcher – in a setting in which all stakeholders naturally have different positions impacting on the research – position their values and opinions, and how transdisciplinary processes can be conducted when normative positions towards the issue are assumed and even benefit from this. We discuss these concerns in this section, using evidence from the ProPoorGov project described earlier. More precisely, we elaborate on the issues of: (i) coordination and control; (ii) criticism of scientific objectivity applied to transdisciplinarity; and (iii) the rationale for adopting a pro-poor approach in transdisciplinary research.

3.1. Coordination and control in transdisciplinary research processes

As described earlier, the ProPoorGov project was initiated between an international organization and a research institute, and included only at a later stage a broader set of stakeholders. The fact that transdisciplinary projects rarely emerge as joint initiatives of all stakeholders has already been explored by earlier academic contributions (Lang et al., 2012; Wiek, 2007; Wiek, Scheringer, Pohl, Hirsch Hadorn, & Valsangiacomo, 2007). Indeed, initiative is often taken by scientists alone, who become responsible for engaging other actors more deeply connected to the practicalities of the issue. Therefore, as the

literature states, one challenge in this regard is that researchers and practitioners can achieve unbalanced levels of ownership, which in turn can limit the transformative potential of transdisciplinary research.

In the case of the ProPoorGov project, an approach that favoured a balance between central coordination and flexibility was ultimately reached by the means of negotiations conducted throughout almost the entire process. As described, the researchers operated with broad criteria for case selection and analytical framing. Furthermore, they generally acted flexibly and placed strong emphasis on discussion, deliberation, and joint agreements. However, they retained control over the research process as a whole, giving timelines, for example, and indicating general activities. This fact of retaining the authority and having a leading and coordinating role may jeopardize the claim of transdisciplinary projects of collaborating on an equal footing (Novy & Bernstein, 2009; Seidl et al., 2013; Stauffacher et al., 2008). How equal can the collaboration really be in a situation in which a certain degree of authority is nevertheless evident? Joint leadership (Scholz, Lang, Wiek, Walter, & Stauffacher, 2006), i.e., coordination and control being ceded to stakeholders, has only partially been strived for in the project in question.

Certainly, there are different degrees of engagement and of ceding control. Brandt et al. (2013), referring to Krütli, Stauffacher, Flüeler, and Scholz (2010), for example, distinguish between four types of practitioners' engagement in transdisciplinary research, characterized by different intensities of their involvement. Namely, they cite (i) information, (ii) consultation, (iii) 'collaboration', and (iv) empowerment. Collaboration is defined as participants having a 'notable influence on the outcome', and empowerment as the case in which the authority to decide is given to practitioners. In addition, regarding the degree of involvement, interaction between, and authority transferred to actors, Mobjörk (2010) suggests a qualitative difference between consulting and participatory transdisciplinarity. The participatory type would be achieved if actors could effectively engage in equal terms, actively contributing to knowledge co-generation and mutual learning.

Generally agreeing to the existence of gradual differences of involvement between the extremes pointed out by these authors, we further argue that instead of only one notion, different levels of empowerment can be achieved without necessarily devolving full authority in the process. Even more importantly, we argue that initiating and controlling the research implies assuming a powerful position and thereby produces power asymmetries that might potentially prevent an equal footing. This is a relevant consideration often only marginally taken into account in transdisciplinary research literature.

As mentioned in Section 2.1.2, access to decision-making processes was improved for civil society organizations in the frame of the ProPoorGov project. They also achieved greater recognition as meaningful contributors in the eyes of local and national policy makers and international organizations. Empowerment, in this sense, was achieved, even though decisive authority was not fully devolved, challenging classifications that disregard the different ways of achieving empowerment.

The second point in addressing the issue of ceding control in a transdisciplinary project goes beyond scholarly categorizations of practitioners' involvement, and questions the claim of being able to collaborate on an 'equal footing'. In the vast majority of transdisciplinary projects, researchers are the people who retain control over the basic phases of the process. The simple claim to work on an equal footing, based on an equal involvement in the process, we argue, negates and disguises this control and associated power with coordination roles. Different stakeholders necessarily bring their pre-existing power to the transdisciplinary process, creating a situation of power asymmetry. It could be argued that the transdisciplinary process, through its rules and procedures, tries to level the playing ground. Yet it is an open empirical question as to what extent the power asymmetries can effectively be attenuated during the process. The simple fact of engaging different stakeholders under certain conditions alone falls short of addressing power imbalances, and taken alone does not lead to the claimed 'equal footing'. Clearly, as a catchword and claim, 'equal footing' represents an ideal-typical construct that is certainly not completely achievable. In order to realistically engage with stakeholders – possibly striving for a normatively declared aim of altering the status quo – one has to acknowledge the existing power asymmetries instead of disguising them. This is of particular importance when it comes to how researchers position themselves in transdisciplinary research. We argue that no actor can ever be neutral, and therefore they need to be transparent and explicit about their positions, values, and judgements. This point is further elaborated in the following section.

3.2. Criticism of scientific objectivity applied to transdisciplinarity

When arguing against the excessively restricted notion of objectivity defended by those claiming a 'neutral science' conception of objectivity (Harding, 1992, p. 577–578), Harding suggests a couple of strategies in order to identify the hidden social assumptions that restrict scientific objectivity. She mentions these assumptions '... tend to be shared by observers designated as legitimate ones, and thus are significantly collective... values and interests, and ... tend to structure the institutions and conceptual schemes of disciplines'. By adopting strong objectivity, researchers would not negate the existence of these assumptions, quite the contract, they would reflect on how these influence and restrict the 'identification and conceptualisation of scientific problems and the formation of hypotheses'. Thus, by identifying and reflecting on these social assumptions, strong objectivity would assist on distinguishing 'those values and interests that block the production of less partial and distorted accounts of nature and social relations... and those... that provide resources for it'.

In our understanding, there are clear correspondences between these arguments and the concept of reflexivity as proposed in transdisciplinarity (Lang et al., 2012). As commented before, both reflectivity and strong objectivity draw our attention to the fact that these social assumptions are related to social positions and their derived power. Thus, one of the implications of acknowledging and critically reflecting on these assumptions that frame and constrain the formulation of

research problems, hypotheses and methods is that, then, these should not be set a priori in the research phase. Instead, as a proposed procedure, transdisciplinarity invites researchers to jointly co-define the *problematique* in collaboration with the objects of knowledge, such as non-scientific stakeholders. Moreover, applied to transdisciplinary projects, strong objectivity and reflexivity[1] 'forces' scientists not to consider themselves as subjects of knowledge – i.e., external and disconnected observers of a given object of study – but also as objects of knowledge – scientists as real stakeholders, i.e., having a stake in the issue.

This calls for explicitly not attempting to do a 'God trick' (Harding), i.e., claiming neutrality and 'weak objectivity'. Instead, it asks for an explicit and transparent self-positioning, more precisely for outlining the locatedness and the positions of the involved subjects of knowledge, in particular of the scientific stakeholders. It is somehow striking that although claiming a reconfiguration of the role of scientists in research processes as 'epistemediators' (Wiek, 2007) or bridge makers between the worlds of science and practice (Jahn, Bergmann, & Keil, 2012), transdisciplinary literature has rarely been addressing how social positions and pre-existent values of scientists themselves might influence the direction of the co-generation process. In the next part of the discussion section, we explore how the values and positions of the researchers involved in the ProPoorGov project indeed influenced the normative decision of approaching land governance with a pro-poor orientation.

3.3. Adopting a pro-poor approach in transdisciplinarity: a rationale

As indicated by standpoint theory, 'taking sides' when studying a given issue is unavoidable, given the social positions and pre-existing values held by stakeholders, including scientific ones. This certainly also applies to transdisciplinary research. However, instead of seeing it as a hindrance, we argue that transparently assuming a pro-poor position related to resource governance should be seen as an asset in transdisciplinary projects. We argue that research committed with 'strong objectivity' could objectively contribute more realistic elements to pro-poor governance than research based on neutral but 'weak objectivity'.

Standpoint theory not only provides a strong argument for making explicit researchers' situatedness and positions when addressing a given object of study; it also provides an epistemological argument for choosing to address resource governance through a pro-poor approach. Consideration of the perspectives of marginal actors allows for a better understanding of social order and of the different structures that constrain the expression of their perspectives, and which impede their concerns from being considered in decision taking. Standpoint theory argues that one's social situation enables and sets limits on what one can know. Critically unexamined dominant positions are more limiting than others as they are unable to generate the most critical questions. Therefore, research shall take marginal lives as a starting point for examining human relations with each other and with the natural world. Researchers will thereby be able to produce less partial and distorted understandings. In this sense, marginal lives provide meaningful scientific problems and research agendas.

Certainly, assuming positions in transdisciplinary research has its implications. One worth mentioning relates to which stakeholders are invited to participate and collaborate in the joint exercise. In the case of the ProPoorGov project, as already described in the previous sections, the researchers and international organizations deliberatively chose to invite only organizations working with and for poor rural groups. It could be argued that this selection does not represent a comprehensive set of actors that could have a stake in the governance of resources. This argument is valid in the sense that transdisciplinary research profits from diversity and plurality of perspectives and groups involved in the process. Nevertheless, this does not imply that transdisciplinary collaboration should try to achieve a proportional representation of the 'real world' when selecting stakeholders. Evidently, in the case of ProPoorGov project, the private sector, investors, local governments and others groups have primarily not been approached by the researchers and thus have participated much less in the process than actors who were known to be outspoken proponents of pro-poor approaches.

This biased selection was a deliberate decision. We argue that it represents an understanding of a problem-oriented composition of stakeholders for a research process, based on a 'strong objectivity' approach. Our aim was not a fully and comprehensive deliberative process including all potential stakeholders, but rather a transdisciplinary exploration of several cases of resource governance, starting off from marginal lives but including a variety of perspectives. The perspectives of marginalized groups are structurally underrepresented in governance processes and it is a well-known problem of transdisciplinary processes that disadvantaged stakeholders do not have the resources – time, money, professional assistance, in some cases proficiency in English, among others constraints – to participate and often are intimidated to speak up in such settings (Innes & Booher, 2010).

The ProPoorGov project aimed at jointly documenting and analysing cases of importance to marginalized groups and resource governance in general, specifically emphasizing their perspective, yet not naively assuming the positions of those collaborating CSOs or marginalized groups but exposing and balancing it with other views. A broader deliberative process with a more comprehensive set of stakeholders was not within the scope of the project, as this would have requested substantially more time and funds. Nevertheless, points of view and perspectives were very diverse even within the "pro-poor" frame adopted, certainly enriching the transdisciplinary collaboration and its goals of co-producing knowledge. This reflected the different missions and scale the participating organizations had, for instance the differences between

[1] Reflexivity as conceptualized by Bourdieu is an epistemological precondition for sociological science. (Bourdieu, 2000) P. Bourdieu, Pascalian meditations, Stanford University Press, Palo Alto, 2000.

international and more local organizations, or between CSOs more focused in policy advocacy and others focused on supporting smallholder farmers in field activities. Furthermore, in most cases, the research provided a trigger and starting point for more comprehensive discussions with other stakeholders within regional and national levels, in the sense that research results were used by the collaborating CSOs in other debates and negotiations or taken up by relevant government authorities. In this sense, transdisciplinarity based on 'strong objectivity' rather aims at strengthening the silences or marginalized voices in the governance process.

Finally, it is important to stress that opting to transparently assume a normative position does not signify blind agreement with all positions brought to the transdisciplinary dialogue; in fact, the reality is quite the contrary. An important component of transdisciplinarity refers to the instigation of self-reflection for all stakeholders, which in turn can generate mutual learning processes. In the ProPoorGov project this required intensive dialogue and negotiation over contested issues and positions. By being transparent and not hiding behind the neutrality label, scientists avoid simply reproducing statements. It is through these intense dialogues and occasions triggering self-reflexivity that actors are susceptible to reconsider their values and opinions, mutual learning takes place, and new knowledge is co-generated. As indicated by Bird referring to Weber (Harding, 1993), there *always* exist value judgements in science. Reaching objectivity requires not only making these transparent and accessible, but also necessitates submitting those judgements to an open and rational debate. We understand that this holds true for transdisciplinary research as much as it does for other scientific approaches.

4. Conclusion

The analysis and design of the implementation of the transdisciplinary research project 'Pro-Poor Resource Governance under Changing Climates' revealed two important challenges. First, the question of how much control is ceded in a transdisciplinary process was found to be crucial in the sense that it affects the power balance between the stakeholders. Second, disagreements between researchers and civil society organizations occurred in relation to specific aspects of how to carry out the research. Although scientific and non-scientific actors shared a common goal and a given set of values towards how resource governance should be transformed, these slight divergences clearly represented different perspectives on the issue.

Contrasting with other transdisciplinary projects described in the literature, the complete devolution of authority to practitioners in the process was never strived for. We argued that initiating and controlling the process implied assuming a powerful position, and thus generated asymmetries that might potentially prevent an equal footing. Nevertheless, it was argued that the empowerment of civil society organizations has been achieved without fully ceding authority. This was only possible using an approach that favoured a balance between central coordination and flexibility, under which negotiations were conducted throughout the entire process. The question of control and its implications for power balances in the process have only marginally been touched upon in the transdisciplinary literature. The fact of engaging different stakeholders alone falls short of addressing power imbalances, and does not lead to a claim of equal footing.

This is of particular importance when it comes to how researchers position themselves in such collaborations. It was argued that epistemological debates around scientific objectivity could provide a number of insights as to how to deal with the different positions. Standpoint theory shows that everybody has a specific social situatedness that both enables and limits what one can know. Feminist authors in particular have called for a 'strong objectivity' that requires the explicit and transparent positioning of oneself: this also holds true for scientists. Furthermore, standpoint theory provides an argument for not only making researchers' situatedness explicit, but also for choosing to address resource governance from a pro-poor approach. Starting research from marginal actors allows for a better understanding of the social order and the structures that constrain their expression.

Given the potential for societal transformation usually associated with the transdisciplinary approach, power dimensions associated with researchers' control and standpoints, surprisingly, have rarely been explicitly discussed in transdisciplinary literature. Relating to the objectivity question and fulfilling the standards of 'strong objectivity' might generate less partial accounts of contested issues such as resource governance in future transdisciplinary studies.

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Article (2): M. A. Zanella, C. Milhorance (2016)

Food Policy 58 (2016) 70–81

Contents lists available at ScienceDirect

Food Policy

journal homepage: www.elsevier.com/locate/foodpol

Cerrado meets savannah, family farmers meet peasants: The political economy of Brazil's agricultural cooperation with Mozambique

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ARTICLE INFO

Article history:
Received 26 January 2015
Received in revised form 4 December 2015
Accepted 11 December 2015
Available online 4 January 2016

Keywords:
Agricultural policy
Development cooperation
Brazil
Mozambique
Political economy
ProSAVANA

ABSTRACT

Brazil's development cooperation policy with sub-Saharan Africa has intensified since the end of the 2000s, with Mozambique being the country's largest partner. This South–South Cooperation enterprise has shown intentions to share elements drawn from previous experiences of programmes implemented in Brazil, particularly in the rural sector. However, Brazilian agricultural policy is notorious for its dualistic structure, and dominant political strategy has been marked by the accommodation of two different – occasionally contradictory – agricultural policy agendas, reflecting how current political forces are organized. This article demonstrates how such a dualistic structure shapes Brazil's technical cooperation with Mozambique, pointing out that it is still unclear how far rural development perspectives rooted in the particularities of Brazilian agrarian dynamics would be useful for projects implemented in different rural contexts. We argue that, since Mozambican agricultural plans primarily emphasize a perspective that focuses on market-oriented agricultural modernization, a potential reform of the current cooperation policy toward more inclusive agenda, focused on family farming, faces political economy constraints. We conclude that the appropriation of a foreign project relies on the political economy dynamics of related contexts and power relations of involved stakeholders, an area that could deserve further attention from researchers investigating Brazil–Mozambique relations.

Introduction

Brazilian agricultural policy is notorious for its dualistic institutional structure. Two ministries – one primarily dedicated to promoting large-scale commercially-oriented agriculture (Ministry for Agriculture, Livestock and Food Supply – MAPA), and the other to supporting smallholder, family-based farming (Ministry for Agrarian Development – MDA) – coexist and dispute political influence and financial resources. Different civil society organizations and private sector representatives react to this political environment by engaging with their preferred ministries (Delgado, 2009; Schneider, 2010). However, dialogue between these two poles of civil society or between the ministries is almost nonexistent. Dominant political strategy has been marked by the accommodation of these different – often contradictory – agricultural policy agendas, reflecting how current political forces are organized. A major point of discussion has been about how peasants are integrated within the modern capitalistic agricultural system, and what the state's response should be in this process (Bernstein, 2009). As highlighted in recent studies, the dualistic structure of agricultural policy is shaping Brazil's South–South development cooperation (Cabral and Shankland, 2013; Pierri, 2013). However, it has been suggested that the pursuit of these policies based on two partially-opposing views might contribute to a replication, on the external level, of Brazil's internal contradictions (Cabral et al., 2013).

Mozambique, Brazil's largest partner in its policy in Africa, occupies a prominent position in this context. Through technical cooperation projects, both countries have shown an intent to share elements of the "Brazilian model" of rural development (Chichava et al., 2013; Scoones et al., 2013). Cooperation between the two countries has intensified since the end of the 2000s, particularly after the launch of a flagship programme, inspired by the modernization of the Brazilian agribusiness sector, ProSAVANA. A more recent analysis, however, indicates a slowdown in the pace and ambition of this ambition, as well as the programmes being inspired by policies targeting the heterogeneous family farming

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sector. Many of the frames of reference and instruments behind these initiatives are drawn from previous experiences of programmes implemented in Brazil. This fits one of the underlying ideas of the South–South Cooperation, as argued by Leite et al. (2013a). They state that the similar development challenges faced by southern countries place them in a position to share policy solutions to other southern countries.

This article therefore seeks to discuss how Brazil's political economy is shaping the country's development cooperation policy, and how its rural policies have been received and selected by Mozambican policymakers. It draws particularly on the analysis of intertwining rural and foreign policies in Brazil, although it also touches upon the main features of the Mozambican context, since both are necessary to explain how the cooperation between these countries unfolds. The article then clarifies that, as key programmes in implementation by the two countries assume policy beliefs based on different perspectives of rural development, they tend to mirror the dualism of Brazilian agricultural policy. It argues that Mozambique's agricultural plans primarily emphasize a perspective that focuses on market-oriented agricultural modernization. This constrains a potential reform of the current cooperation policy toward a more inclusive agenda for family farming, an orientation that is currently being advocated by some stakeholders in both countries.

The data and analysis used in this paper are based on secondary literature and semi-structured interviews conducted by the authors in Brazil from April to July 2013 and in Mozambique on March 2013 and from March to October 2014. More than 200 policymakers, private actors, representatives of civil society and researchers were interviewed in Brasília and in Maputo, Nampula and Tete provinces in the Mozambique's Northern region. These can be summarized in Table 1 and further details are provided in the Appendix A of this paper.

Following the introduction, in the second section the paper goes on to discuss how the dualistic structure of Brazilian agricultural policy evolved historically. Subsequently, third section explores how this division influences the shape of current Brazilian international cooperation policy in agriculture, illustrated through Mozambique's case. It briefly describes the theories of change implicit in some of the most important cooperation projects, and how these are strongly influenced by the rural development narratives referred to in second section. Fourth section describes some distinctive features of Mozambican political economy context in the agricultural sector. It is worth noting that the paper is particularly interested in the basis of Brazil–Mozambique relations in the rural sector, but it also provides elements to discuss some of the potential challenges for the concept of reproducing experiences grounded in Brazilian agrarian history, context and political configuration.

Table 1
Key informant interviews and meetings in 2013 and 2014.

Key informant group	Country/Number of Interviews		
	Brazil	Mozambique	Other
Events[a] (workshops, working meetings and conferences)	2	10	1 (USA)
Researchers/Academics	6	6	10 (Germany, Japan, USA, UK, South Africa)
Government officials (national and local)	41	43	
Private actors and foundations	11	11	
International Organisations/ Cooperation institutions	9	27	10 (Italy)
NGOs (advocacy and technical support)	11	27	
Farmers/Peasant Associations		22	

[a] Refers to place of location of conference.

Political economy of Brazil's agricultural sector: shaping public policies' dualism

Brazil is one of the few countries in the world where two agriculture ministries with equal hierarchical status coexist in the federal administration. This arrangement is not accidental. It is rooted in the country's history of agrarian dynamics and politics, and it finds references in how the current rural development debate is structured at the international level (Navarro, 2014; Schneider, 2010). This section explains how this dualistic political structure was shaped in Brazil, introducing some of its elements and commenting on how this arrangement has accommodated opposing political forces in the ruling Labour Party's coalition government (PT).

International debate on rural development perspectives

It is not rare to find rural development being framed from two major opposing perspectives. Internationally – even though nuances and diversity abound between the two poles – discourses and narratives often make reference to, on one hand, strategies based on large-scale capitalized and mechanized agriculture with a large share of external inputs, high dependence on hired labor and greater international market integration; and on the other hand based on small-scale family farming units, more autonomous in relation to external inputs, capital and markets.

The roots of this dual division can be traced to earlier debates on development and agricultural growth represented in the Development Studies literature (Buch-Hansen and Lauridsen, 2012; Ellis and Biggs, 2001). For example, Bernstein (2009) recently recovered the validity of the relatively old "Lenin versus Chayanov" debate in agrarian studies about the role of peasantry in modern capitalistic agriculture, and how this shaped current thinking on rural development. Although relatively stylized – indeed, from a food system perspective, global agriculture does not lack examples of integration and coexistence between smallholder production systems and large-scale industrial agriculture in various ways – this duality has been reiterated in ongoing international debates regarding sustainability, equity, development, climate change and food security, to name a few (HLPE, 2013; IFAD and UNEP, 2013).

In terms of broader development perspectives, the large-scale view is often associated with economically liberal and modernization discourses, which support the necessity of attracting foreign investment and restricting state interventions in the market, besides other measures for increasing economic efficiency, in order to foster agricultural growth (Collier, 2008; Collier and Dercon, 2013). The origin of the term *agribusiness* in the American school (Davis and Goldberg, 1957) – later taken up by Brazilian academics and policymakers – follows this neoclassical economic tradition, under which agribusiness would represent the conjunction of subsystems (inputs, production, processing, distribution) operating in the market environment through trade relations.

Both secondary literature and interviews with key policymakers and scientists in Brazil have revealed how the agribusiness perspective forms an important frame of reference used within Brazilian academic and policy circles to justify an agrarian development trajectory based on agricultural modernization. The globalization project that prioritized market competition over state interventions represented in the neoliberal discourse was an important factor driving the reform of agricultural interventions in the late 1980s and 1990s (Chaddad and Jank, 2006). This occurred in succession to a previous period where Brazilian

agricultural policy was essentially driven by state interventions, in line with modernization theories assumed by Brazil's military regime (Santana et al., 2014). Interviews with representatives of the Ministry of Agriculture (MAPA) confirmed that key elements of these liberal narratives still find space in the current political discourse, despite the 2007–2008 financial crisis, which challenged the neoliberal paradigm. This can be partially explained by an export-oriented profile of the country's policies for the agribusiness sector.

Two observations are of importance in this regard. One refers to the fact that the liberalization paradigm was more influential in reforming agricultural trade, food pricing policies and rural public extension than other domains of state intervention, such as public research and infrastructure (Santana et al., 2014). The second observation is that mainstream discourses[1] on agricultural development have indeed been updated in Brazil in recent years, incorporating some concerns with distributive and environmental consequences of liberal agricultural policy (Garcia and Vieira Filho, 2014). The extent to which these additional concerns incorporated challenges to the market-oriented view of agriculture policy in the mainstream discourse remains an open question.

The family farming perspective, on the other hand, is normally linked to more endogenous development strategies, often pointing to greater state involvement in market development – such as those proposed by developmental state and *developmentalism* theories – focusing less on economic efficiency and assuming broader concerns with benefit distribution and social welfare (Dorward et al., 2005; Xiaoyun et al., 2012). Kay (2006, p. 455) argues that those following this perspective see "poverty as caused and reproduced by the unequal distribution of resources and power", and therefore that addressing these inequalities would ultimately require strong involvement of a progressive state.

In Brazil's case, earlier efforts to advance political agendas based on the smallholder development perspective have been found even in the post-Second World War period; for instance, with the structuralistic studies of Celso Furtado (Furtado, 1969) or the left-inspired *Peasant Leagues* (Stedile, 2006). These efforts started gathering sufficient political momentum to challenge the mainstream after redemocratization, particularly through greater civil society involvement in politics.

Given the importance of regional dynamics in the Brazilian political system, one can identify different movements in the macro-regions of the country struggling to push for smallholder-oriented agricultural policy in respective local contexts. In the northeast, for instance, church-based organizations, family farmer representatives and NGOs working with the rural poor started coordinating their activities in networks that would later form the Semiarid Network – ASA (da Silva, 2006). Similar efforts took place in the Amazon region – where environmental issues also played a decisive role in shaping political action – and to a lesser extent in the Cerrado region.

However, it was perhaps in the Center-South regions that a more structured movement advocating for an agricultural agenda centered on the smallholder reached more politically relevant results. Partially influenced by European studies on the multifunctionality of agriculture and emerging alternative rural development perspectives (van der Ploeg et al., 2000), a strong family farming movement started shaping the agricultural policy agenda from at least the late 1980s, demanding "specific public policies for family farming" (Schneider et al., 2004). Owing primarily to civil society pressure than government initiative, agricultural policy gradually began incorporating elements of these social demands, initially through instituting a preferential credit policy (Favareto, 2006). This would later lead to the creation of a separate bureaucracy to deal with this new set of targeted policies, a process described in more detail in the following subsection.

Accommodating opposing political forces

As commented earlier, pressure from civil society, in particular from rural union movements of Center South Brazil, started to influence certain aspects of agricultural policy after redemocratization. Among other demands, two were frequent during this period of political mobilization: agrarian reform and special treatment for smallholder family farmers (Favareto, 2006). As in the case of many other countries, political mobilization was inflated by major structural transformations that took place in Brazil's rural areas with the liberalization of agricultural markets in the late 1980s and early 1990s, as many small-scale farmers were going through severe economic difficulties caused by higher market competition (Schneider et al., 2004).

In this context, one of the earlier responses that the government had envisioned was the design of a preferential credit policy for smallholders in 1994, which would later constitute the *Programa Nacional de Fortalecimento da Agricultura Familiar* (National Program for Strengthening of Family Farming), widely known by its acronym PRONAF. Interviewed policymakers who were involved in giving this reform shape to Brazilian agricultural policy targeting smallholders give consensus that this credit policy became the main policy framework for supporting the sector until this date. Although initially designed for small farms with a certain asset base, it was gradually pushed by the mobilization of social movements for supporting a larger number of marginal farmers.

During agrarian reform struggles, also in the mid-1990s, clashes between police forces and the landless that resulted in several deaths[2] forced the government to take action on land issues. The *Ministério Extraordinário de Política Fundiária* (Extraordinary Ministry for Land Issues) was created in 1996. In 1999, this ministry was converted into the *Ministério de Desenvolvimento Agrário* (Ministry of Agrarian Development – MDA), which incorporated the *Instituto Nacional de Colonização e Reforma Agrária* (National Institute for Colonization and Agrarian Reform – INCRA), the PRONAF, and other family farming policies previously operated under the Secretary of Rural Development at the Ministry of Agriculture (MAPA). In other words, throughout the 1990s, family farming policy reached a much higher degree of institutionalization, culminating in having its own bureaucratic body.

After the 2002 elections, won by the left-oriented PT, many rural movements saw an opportunity to further strengthen the family farming agenda within the increasingly diverse agricultural policy landscape, according to some civil society organizations interviewed. Some, however, with high expectations with the first left-oriented electoral victory after redemocratization, declared enormous frustration over the relative prudence of the first administration of President Lula da Silva (2003–2007) in conserving and supporting an agribusiness-oriented agenda (Sabourin, 2007b).

Besides economic reasons, we argue there are good political considerations in the defense of Lula's rather conservative position in maintaining strong support for agribusiness. Multipartisanship within the complex Brazilian presidential system means that even when power swings from one side to the other – from left to right, or vice versa – the winning party will most likely be required to establish a coalition government with the amorphous and

[1] Mainstream discourses are referred here as those reproduced by the Ministry of Agriculture (MAPA), the private and political representatives of the agribusiness sectors and the epistemic community that gravitates around this sector. For a good representation of these discourses, the readings of *Revista de Política Agrícola* (http://www.agricultura.gov.br/politica-agricola/publicacoes/revista-de-politica-agricola) and *Agroanalysis* (http://www.agroanalysis.com.br/) are recommended.

[2] Two fatidic episodes are the massacres of Corumbiara (August 1995, ten people killed) and El Dorado dos Carajás (April 1996, 19 people killed).

ideological-neutral center Brazilian Democratic Movement Party – PMDB – and other satellite groups. The "governability", i.e., the capacity of controlling majority at both the Chambers of Deputies and the Senate and therefore the capacity to approve laws, lies heavily on this alliance.

Since PMDB and other minor parties of similar profiles have on its cadres several conservative agricultural leaders aligned with the mainstream view on agricultural development, the PT alliance, with the center, results in a rather paradoxical balanced outcome. On the one hand, PT conserves the informal right of appointing the Minister of Agrarian Development and the political space of operating an agricultural agenda focused on smallholder family farming. On the other hand, PMDB – with the support of a more cross-party conservative agricultural political group called *Bancada Ruralista* – receives the right of appointing the Minister of Agriculture and, therefore, the political space for operating an agricultural agenda focused on agribusiness development. Recently appointed Minister of Agriculture, Kátia Abreu, was one of the leaders of this conservative political group and former president of the strong sector's national confederation. This attests to the influence of agribusinesses' private interests in shaping public policies in Brazil. Certainly, some competition between these two political forces is evident, for instance, at the discourse level[3] or during negotiations of the ministry's policy budgets.[4]

Additionally, we argue that, more than being competition, this coexistence represents the accommodation of rather opposing political forces and contradictory agricultural policy agendas. Both ministries have created and institutionalized dialogue channels with their main stakeholders, which are independent from each other. The MAPA's Sectorial Agribusiness Chambers have for many years assembled government and private sector representatives in order to discuss specific policies for the agribusiness sector. They have constituted a favorable institutional environment for the participation of value chains-organized stakeholders in the formulation and implementation of agricultural public policies (Takagi, 2004). Later, the MDA created the *Conselho Nacional de Desenvolvimento Rural Sustentável* (National Council for Sustainable Rural Development – CONDRAF), building on the experience of municipal councils for rural development and as a body composed by government and civil society members. In 2008, the council established the basis for a participatory process of conferences starting at the municipal level (Pierri, 2013).

This controversy has contaminated the debate over a policy adapted to the diversity of peasant and family farmers in Brazil, according to several authors and Ministry Officers in Brazil (Sabourin, 2007a). This view often simplifies the Brazilian family farming sector, drawing upon the model observed only in southern provinces, and does not take into account the different contexts in terms of structures, capacities, and access to rural markets, credit and innovation. It also tends to underestimate the fragility and intensity of fluctuations in agricultural value chains, simultaneously ignoring the peasants' heritage and their capacity for adaptation to diversified demands.

Moreover, self-consumption and non-monetary distribution have been identified as key to the increase in food security (Sabourin, 2007a; Tonneau and Sabourin, 2009). In this context, the tendency to emphasize a homogeneous family farming sector would paradoxically support the opposing – neoliberal – perspective, which proposes basically social and paternalistic responses through programmes of poverty combat. It is worth noting that, on the one hand, the institutionalization of a dual agricultural model limits the perfecting of public policies for smallholders, not taking their full diversity into account. On the other, it has also constituted a political channel for those producers that have been historically marginalized in governmental policy (Navarro, 2010).

Domestic struggles and foreign policy decisions: which policy frames for Brazil's agricultural cooperation?

In a context of growing interest from developing countries in the experiences of emerging economies, Brazil seems particularly attractive for those willing to leverage their rural sectors, as policy-makers from governments and the development cooperation sector have indicated in interviews. Among others, transfer of research and technologies for tropical agriculture and policy instruments addressing food insecurity by connecting smallholders to markets are an important part of the Brazilian portfolio of cooperation projects with African and Latin American countries (CAISAN, 2013; IPEA, 2013; IPEA and ABC, 2010). This cooperation does not occur in a political vacuum. Therefore, in order to shed light on this context, this section discusses some of the most important cooperation projects developed by Brazil and Mozambique in agriculture: ProSAVANA, More Food International and PAA Africa.

In order to connect the theoretical and political conceptualizations with programme design and implementation, this section relies on public policy analysis literature, particularly the cognitive approach. Such an approach emphasizes the diversity of social and political mechanisms that recover the process of putting ideas "into action". This is basically a theory of change that takes into account both constraints of social structures and the degrees of freedom of the actors. Hence, drawing upon the concept of policy frame of reference and policy beliefs, authors such as Muller (2011) and Sabatier and Jenkins-Smith (1993) highlight intellectual and power dimensions that characterize the production of meaning in the making of public policies. Finally, it is by "referring" to a cognitive representation of reality that the stakeholders propose solutions and define criteria for action.

Establishing Brazil–Mozambique exchange portfolio

Brazil's development cooperation generally lacks a clearly structured centralized strategy (Leite et al., 2013b; Milani, 2014). The Brazilian Cooperation Agency (ABC) assumes a coordination and management role, and provides some strategic orientation. However, a series of constraints restricts ABC from taking the lead in designing comprehensive strategies, including its lower political profile in Brazilian public bureaucracy, subsidiary hierarchy,[5] financial restrictions and restrictions on procurements abroad.[6] This

[3] Many conservative rural leaders insist on the argument that MDA should cease to exist, mentioning potential economic inefficiencies in financing two parallel bureaucracies. It can be highlighted, however, that the economic argument is an instrumental one, which tries to hide the real interests in incorporating the MDA into MAPA, which is to gain political control over its policies.

[4] The Agricultural and Livestock Plan (PAP), operated by MAPA, totalled R$ 136.1 billion (approximately USD 70 billion), for the agricultural year 2013/2014. The Agricultural Plan for Family Farming (*Plano Safra*), operated by MDA, totalled R$ 39 billion (USD 17.6 billion), for the same period. Both budgets have evolved at higher rates than agricultural growth in recent years, with *Plano Safra* growing considerably faster than its counterpart. For the agricultural year 2003/2004, *Plano Safra* amounted to approximately 20% of PAP 2003/2004. Ten years later, this proportion has risen to 28% (MAPA, 2013; MDA, 2003, 2013).

[5] ABC is located between the third and fourth levels of federal bureaucracy. It is a section belonging to one of the nine subsecretaries within the Secretary General of the Ministry of Foreign Affairs (MRE).

[6] Brazilian legislation does not authorize government bodies to operate procurement abroad for projects without formal approval of the congress and on a case-per-case basis. Embassies abroad are obviously allowed, but cannot implement projects from other government bodies. Therefore, for many cooperation projects, Brazil transfers resources to UN agencies with a presence in the country (mostly FAO and UNDP), which in turn implement projects in partnership with Brazil (Leite et al., 2014).

has resulted in different government agencies operating cooperation programmes following their respective lines of reasoning, whenever requested in the demand-driven process of cooperation supply.

Given the dualism of the agricultural policy landscape described before, it seems reasonable to infer that cooperation programmes in agriculture are strongly biased by the development perspectives assumed by the two different political groups mentioned previously. As stated by Pierri (2013, p. 72), "while Brazil's dominant discourse at the level of UN Rome-based agencies (...) and in plurilateral initiatives such as G20 revolves around the 'family farming for food security' motto, the country's technological and research capacity for large-scale capitalist agriculture is made available whenever requested in bilateral or trilateral arrangement, whether for biofuels or food crop production, particularly in Africa".

A more detailed look at the most important cooperation projects sheds some light on this debate. In terms of scale and number of institutions involved, three programmes outstand:

i. ProSAVANA, in implementation since 2010: a triangular cooperation between Japan, Mozambique and Brazil aimed at developing agricultural research capacity and the economic development of Nacala corridor, in the northern region of Mozambique.
ii. More Food International – Mozambique, in implementation since 2011 (MFI-Moz): a bilateral programme which combines preferential credit for the import of Brazilian agricultural machinery, coupled with technical assistance in design-targeted policies for family farming.
iii. Purchase from Africans for Africa – Mozambique, in implementation since 2012 (PAA Africa): a multilateral programme involving Brazil, Mozambique, the World Food Programme (WFP) and the UN Food and Agriculture Organization (FAO), which intends to promote local food purchase from smallholders for institutional markets, particularly school feeding.

ProSAVANA's agribusiness frame of reference

In the past two years, ProSAVANA has been subject to outstanding interest among several stakeholders, including many researchers (Ekman and Macamo, 2014; Ferreira, 2012; Fingermann, 2014; Funada Classen, 2013a,b; Jaiantilal, 2013; Nogueira, 2013; Nogueira and Ollinaho, 2013; Schlesinger, 2013). It has also come under the critical scrutiny of local and international civil society organizations (ADECRU, 2014; Justiça Ambiental, 2012, 2013a,b; Paiva, 2013; UNAC, 2012, 2013; UNAC et al., 2013). A comprehensive analysis of this programme, including the reasons and issues that generate the enormous controversy around it, is out of the scope of this paper. However, in order to analyze how rural development theoretical conceptualizations influence programme design, it is important to revisit some elements of ProSAVANA's frame of reference.

First, it has to be acknowledged that ProSAVANA was initially inspired by Prodecer, a Japan-supported programme implemented in Brazil's *Cerrado* region from the 1970s. Prodecer is claimed to be an important driving factor in *Cerrado's* agricultural transformation (Funada Classen, 2013a). Prodecer invested heavily on transferring technologies for large-scale soybean-based agriculture, with the aim of supplying Japanese demand, in a development model that is still today a reference on agribusiness-oriented agriculture.

Certainly, as already pointed out by Ekman and Macamo (2014), to affirm that ProSAVANA is inspired by Prodecer differs from ProSAVANA being termed a reproduction, as some have claimed. Mozambique's specific conditions – for instance a much higher population density and a peasant-based economy in most of the programme's target zone – force a necessary adaptation of ProSAVANA's initial ideas – a point that has been repeatedly stressed by many interviewed programme managers involved in ProSAVANA. Nevertheless, it does shed some light on the programme officials' initial vision, particularly on its emphasis on "modern techniques and increased capital investments" as well as on the necessity of targeting "market-oriented agricultural/rural/regional development with a competitive edge" – as literally stated in the first agreement signed between the three parties (JICA et al., 2009, ANNEX 1, pp. 1–2).

In response to severe criticism from the civil society regarding ProSAVANA's intentions – drawing particularly on the negative impacts of the *Cerrado* development – policymakers gradually abandoned this narrative of similarity between the two programmes. Official discourse on the programme changed substantially, with a marked reorientation to avoid the initial emphasis on large-scale farmland investments toward emphasis on middle and small size investments, integrating smallholder farmers in diverse types of out growers schemes (Mosca, 2014).

Nevertheless, as it can be clearly identified in several pieces of evidence – ProSAVANA's Concept Note, interview of officials, public statements, alignment with Mozambican Strategic Plan for Agricultural Development – PEDSA (MINAG, 2010), among others – two key elements form the core of ProSAVANA's theory of change, on both its initial and more recent conceptualization: (i) a clear market orientation as the main force of transforming the currently peasant-based economy into a "modern" economy; (ii) the necessity of incorporating agricultural technology to rapidly increase productivity and assist this structural transformation.

Although the reorientation of ProSAVANA is questionable,[7] with its "new" conceptualization, greater attention is dedicated to exploring how smallholder farmers can be part of this structural transformation. Current proposals rely on different schemes of contract farming and cluster-based agricultural growth, raising some important concerns for smallholder autonomy and protagonism of their development trajectories, as some authors have been suggesting (Nogueira, 2013). The market orientation of the programme also clearly locates the roles of the private and public sectors, as stated in a recent article published by one of the stakeholders: "public investments by national government and international donor agencies seek to realize a suitable investment climate for farmers and private companies" (Tawa et al., 2014, p. 4).

MFI-PAA Africa's family farming frame of reference

Unlike ProSAVANA, MFI-Moz and PAA Africa have so far received much less attention from researchers. This does not inhibit a contextualization of their implicit rural development frames of reference: the origins of the two programmes reveal a great deal about the development trajectories that they intend to support. Differently to the ProSAVANA case – where stakeholders have been quite cautious in stating that the programme is not a simple reproduction of a previous Brazilian experience – Brazil's experience in fighting hunger and poverty has a direct impact on shaping the narrative of MFI-Moz and PAA Africa. Officials from both countries consistently reaffirmed the "Brazilian inspiration" in giving shape to these programmes during the interviews.

MFI-Moz represents, to a great extent, an international extension of a nationwide programme initiated as a response by MDA to the 2007/2008 food price crisis. It carries the same name and operates through similar instruments, such as the provision of

[7] Mosca (2014), for example, argues that the reorientation of ProSAVANA, if confirmed, would represent changing very different views on how development is conceptualized. Since the programme is being implemented by the same political actors to have designed its initial conception, there would be few reasons to believe in this reorientation.

machinery at below-market interest rates. Obviously, important reconfigurations took place when designing its international dimension. For example, instead of financing the machinery directly to the farmers through a bank agency, as in the case of the national version, Brazil signs a preferential credit line with Mozambique, which is used for the acquisition of Brazilian machineries. MFI officials and stakeholders in the Brazilian Ministry of Trade and the Brazilian Ministry of Agrarian Development, for instance, refer to it as an extension of the national programme and highlight its interest for promoting the country's machinery sector and trade relations with African countries.

The same can be affirmed for PAA Africa. Food purchasing policies targeting family farming were initiated in 2004 and, given the recognized success, became important cases for potential experience-sharing (Chmielewska and Souza, 2010). As with MFI-Moz, reconfigurations are evident when the programmes are adapted to Mozambique's context. Still, PAA Africa assumes that the programme is intended to adapt a Brazilian experience, which was demanded and implemented by political actors aligned with the family farming narrative and the Mozambique's Ministry of Agriculture.

In terms of policy frames, MFI-Moz does not deny modernization strategies for increasing the productivity of small-scale farmers (Leite, 2014). Indeed, preferential credit for machinery acquisition could also fit a more agribusiness-oriented development perspective. However, two aspects are claimed to distinguish the programme from this perspective. First, the scale: only machinery adapted for small-scale use is being financed under the programme.[8] Second is the coupling of the credit instrument with technical assistance for the design of targeted policies for family farming. Many interviews have indicated that this component of MFI-Moz has so far received much lower prioritization than the exports of machinery, from the Mozambican side as well as from Brazilian policymakers. How far the financial dimension suppresses the technical assistance dimension of the programme seems to be a relevant question in better positioning the programme within broader development discourses.

The PAA Africa frame of reference is relatively clearer to locate within development discourses. PAA Africa in Mozambique represents an example of a home-grown school feeding approach – HGSF (IPC-IG, 2012), which draws from the notions of "structured demand" or "demand-assisted" agricultural growth. The rationale behind the programme suggests that smallholder farmers cannot engage in fair market integration because of structural market failures in input, transportation and technology/knowledge systems (Nehring and McKay, 2013; Sonnino et al., forthcoming, 2014). As Sumberg and Sabates-Wheeler (2010, p. 2) describe, these programmes work "by 'structuring' demand in a way that makes it easier, less risky and more profitable for small-scale farmers to engage with markets, and by providing an array of complementary services (training, credit, access to technology)". As state interventions are used to integrate small-scale farmers into markets in facilitated terms, the focus on public support for the establishment of a smallholder-based rural development agenda is well defined.

Summarized information about the main cooperation initiatives in Mozambique are provided in the figure (Fig. 1).

Brazilian rural experiences travel the Atlantic

The previous sections have elaborated the characteristics of the current dualism in Brazil's agricultural policy and how this dualism has shaped development cooperation partnerships between Brazil and Mozambique. It was observed that one of the features of this cooperation is the role of different perspectives on rural development strategies in influencing programme design, which are grounded on Brazil's political economy and domestic dynamics.

If policy design is enriched by imaginaries on how development processes should occur, policy implementation is constrained by real world practicalities. Putting these imaginaries into practice correspond to the public policy frames of reference, as already stated. For a better understanding of the reception of these initiatives by Mozambican policymakers, it is important to shed light on the agenda setting process, identifying where political priority is being allocated, and on the stages of project design and initial implementation.

Aiming at this, fourth section initially discusses how the "successes" usually portrayed by Brazilian policymakers in their cooperation efforts have to be taken with caution, in particular because these discourses justify much of the interest in reproducing rural development experiences grounded in Brazilian agrarian history and political context in a very diverse social setting as that found in Mozambique. After briefly describing the core lines of Mozambican agricultural policy, we then argue that the potential of sharing the Brazilian experience depends most on Mozambique's political dynamics and not on its domestic conditions or capabilities. We conclude that the promotion of a more socially inclusive agenda in Mozambique is constrained by the government's emphasis on agricultural modernization, which does not sufficiently address the challenge of integrating the peasantry into the market without generating further exclusion. This argument is novel in the growing literature on Brazil–Mozambique cooperation in the sense that it connects the critique of the politics of policy-sharing with domestic political dynamics in both countries in the contested area of agrarian transition.

Relativizing narratives of success

At the outset, an in-depth understanding of the limits and challenges of the Brazilian rural policies would be useful in sharing and implementing some of the policy instruments developed in the country. Starting with the case of the agribusiness model, the enormous environmental and social impact caused by the expansion of the agricultural frontier in the 1970s to the mid-2000s in Brazil is relatively well documented (Bianchini, 2005; Canuto, 2004; Mueller, 1992; Teixeira, 2005). Social exclusion, rural–urban migration and land concentration in certain areas of the country are another set of negative consequences normally associated with the formation of the modern agribusiness sector (Canuto, 2004). The critical views are vast, originating from myriad perspectives including from actors situated outside formal academia, such as social movements and other civil society organizations. The debate as to whether the economic development generated with the growth of the agribusiness sector compensates its social and environmental impacts will certainly continue for many years to come.

The main responses to address the negative impacts of agribusiness development lately refer to codes of conduct, directives and principles of responsible investments based on the corporate social responsibility frameworks that should "tame" rural investments. However, according to Boche (2015), rural investments have become a media subject, often politically and ideologically anchored and reflecting strong opposing stances. Arguments range from the benefits provided by foreign direct investment in land through the creation of jobs, technology transfer and infrastructure development to the threat to poor peasants' livelihoods, based on a contemporary revival of neo-colonialism.

Caution also needs to be applied when accepting complete successes in the case of family farming policies. Given the immense heterogeneity, the terminology "family farming sector" itself

[8] There are important implications from the fact that small-scale in Brazil might signify large-scale in other agrarian contexts, such as in Mozambique. So far, these questions have not been sufficiently addressed.

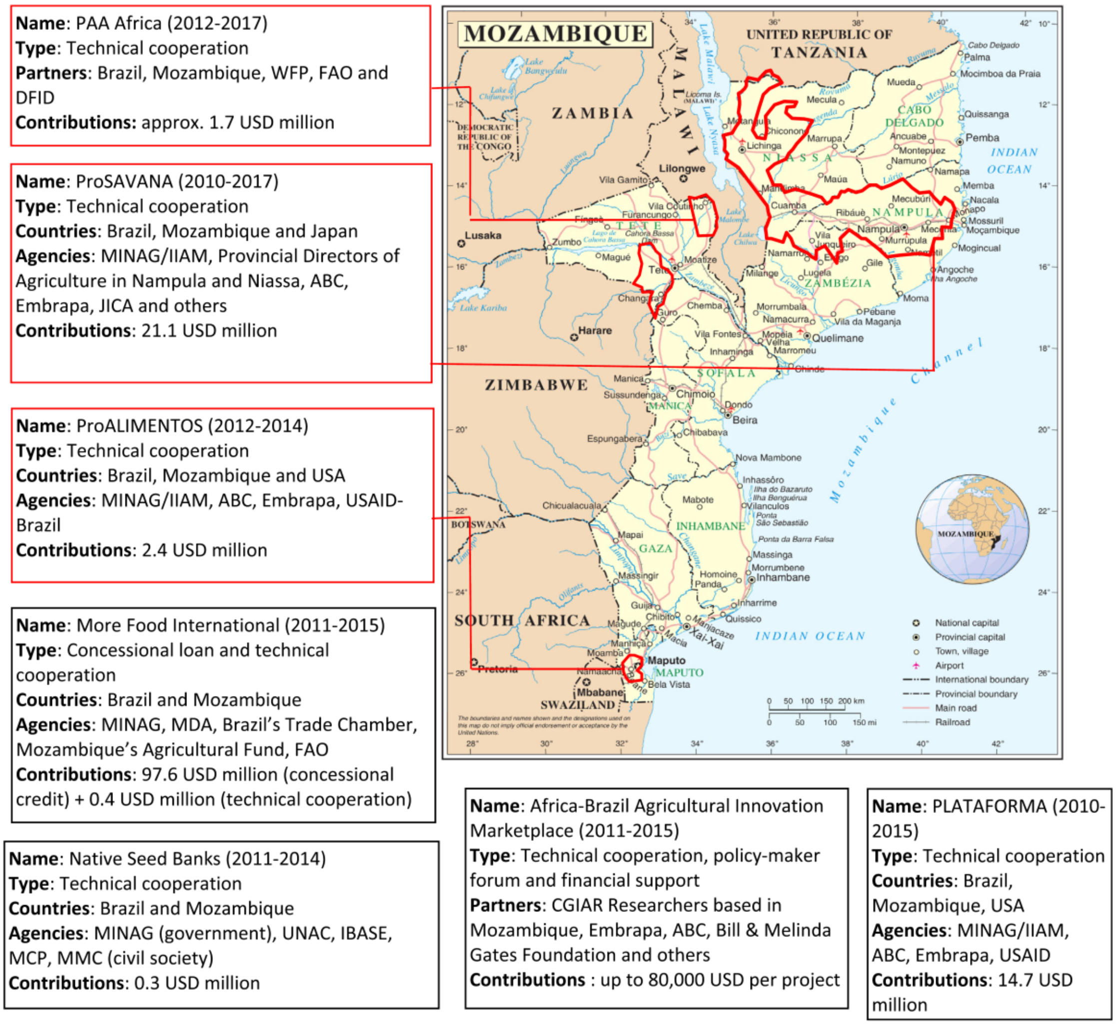

Fig. 1. Main cooperation projects between Brazil and Mozambique for rural development[1,2]. *Notes:* [1]Only ProSAVANA, PAA Africa and ProALIMENTOS have a geographical area of implementation, others are implemented through government institutions located in Maputo City. [2]Contributions include non-financial resources. *Sources:* Adapted from Chichava et al. (2013), Fingermann (2014), Leite et al. (2013a), websites of Africa-Market Place, Department for International Development of the United Kingdom (DFID-UK), PAA Africa, and interviews made by the authors.

denotes much more political connotation than sociological correspondence, some have argued (Navarro and Pedroso, 2011). Indeed, despite three generations of rural development policies in Brazil (Schneider, 2010), a vast number of smallholder farmers remain unassisted by the public policies that could support development trajectories (Nehring and McKay, 2013). Favareto (2013) speaks of three categories of family farming: a consolidated, an intermediate and a peripheral family farming. The last category denotes those families that generate hardly any income from farming and which are strongly dependent on social support policies.

Transforming subsistence farmers into modern and commercial ones: Mozambican agricultural policy motto

Crossing the Atlantic, it is useful to shed light on key elements of Mozambican agricultural policy. It is out of the scope of this article to explain the political economy and the institutional formation of the Mozambican context with the same depth as with the Brazilian case. However, a comprehensive understanding of the limitations faced by the Brazilian Cooperation when entering Mozambican politics will naturally have to explore in more detail the different actors and constituencies shaping its agricultural policy.

This point is revisited in the conclusion, when suggesting areas for further scholarly attention. However, for composing our argument it is necessary to contextualize a regular motto found in most of the interviews conducted with Mozambican policymakers working in the agricultural sector: the narrative of turning the low productive subsistence peasant farmer into a "modern" small entrepreneur. This motto certainly does not belong only to the Mozambican context, but rather forms the backbone of mainstream development discourses as *the* pathway for agricultural growth and poverty reduction (The World Bank, 2007). It was also present in the narratives of Brazil's modernization process since

the 1960s. Authors following a critical stance have challenged this perspective as one adopting a single and unique development pathway. They have also proposed alternatives, such as those gravitating around the concept of food sovereignty (Edelman et al., 2014) or those trying to identify ideologies and shades of family farming policy within Mozambique (Mosca, 2015). Still it is undeniable that the modernization perspective dominates several layers of agricultural policy, including Mozambique's policy circles.

Interviews have in fact confirmed that, in Mozambique, the narrative of converting peasants to small entrepreneurs has been the dominant discourse in Mozambican government circles, in contrast to alternative ones. Policy frameworks recently adopted by government officials corroborate this finding.[9] They are expected to create space for a more active private sector in both production and service provision, with a focus on the large-scale use of animal traction, adoption of technical packages and promotion of mechanization. Public investments for areas with high agricultural potential are given priority; hence, deeper institutional changes and allocation of resources to family farming initiatives would require an adjustment to policymakers' preferences. Interviews with Mozambican civil society also indicated that alternative framings proposed by organizations associated with the food sovereignty movement have so far been located outside of the official sphere, remaining influential only in social movement and civil society circles. Interviews with the Mozambican policymakers indeed suggested that there are internal divisions within government officials, but these only concern the role that should be given for promoting large-scale land-based investment to support the official modernization strategy. While certain public officers have located this type of investment as a catalyst necessary to trigger agricultural growth, others are more concerned with the potential negative impacts of this strategy.

One could think of different reasons why this is observed. We put forward two potential explanations, one linking the external influence on internal political dynamics, another related to internal political elite dynamics. The first would suggest that mainstream development discourse is channelled through traditional development cooperation, finding fertile ground in "donor-darling" Mozambique. This trend followed structural adjustment programmes of the 1990s and the recent liberalization of the agricultural sector, and could be identified by the nature of rural development projects being implemented with support from the World Bank, United States Agency for International Development and other northern donors.

Instead, we follow previous authors and suggest an alternative explanation that dedicates more attention to the internal political elite dynamics. Do Rosário described how recent agricultural political economy in Mozambique assumed nuances of an electoral populism, characterized by "rent distribution by the governing elite to a narrow 'selectorate'" (Rosário, 2012). Similarly, Castel-Branco highlights that Mozambique's current accumulation pattern relies on the promotion of investments through the alliance of rent-seeking administrative elites and foreign capital. This strategy is also pursued as a means of reducing foreign aid dependence (Castel-Branco, 2008). Furthermore, the implementation of "development corridors" has been followed not only by Mozambique, but by most Southern African countries aiming at attracting foreign investments. This approach combines development of infrastructures, fiscal incentives and priority cash crops as a means of facilitating the private sector, integrating regional markets and promoting economic growth from a territorial perspective.

Assuming this position, it is logical to conclude that governing elites would be quite receptive to foreign investments on agricultural intensification and value chains, since those could potentially couple a genuine development discourse with the potential for securing political or even economic benefit.

At this stage, we finally argue that both possible explanations are not necessarily contradictory, but might, rather, reinforce each other.

Policy sharing as a matter of politics

As already stated by Castel-Branco (2008), the concept of "ownership" has become key in the international aid. It has been linked to the effectiveness of policy-based aid in supporting development and has been referred to as a determinant of the appropriateness and legitimacy of policy choices. This concept is also useful for discussing the impacts of experience sharing in terms of public policies. The author suggests that ownership is a contested process in which all parties seek ownership (in the form of seeking to influence decisions and outcomes) on their own terms. In our case study, it depends on the dynamics of a contested political economy process of rural development in Mozambique. This also includes domestic government renunciation of expected ownership for specific reforms. As clarified by the author, "who can say that the government is not owning and leading its own agenda only because it differs from what donors or other agencies believe the government should be doing?" (Castel-Branco (2008, p. 45).

In this context, understanding the potentials and limits of sharing Brazil's experiences with Mozambique implies a better understanding of domestic political economy in both countries, and the place of rural development frames of reference in their political system. Specifically in the case of Brazil, rural development trajectories were built based on a number of social and political specificities that at first sight are rarely found in the Mozambican context. Wolford and Nehring (2015) have argued in similar terms when criticizing "the attempt to replicate Brazil's successes in agro-industrial commodity production" through ProSAVANA. We extend this argument to consider how nationally specific relationships also apply to the other spectrum of the development cooperation portfolio – that is, those policies targeting family farmers.

The case of PAA, for instance, built on intensive cooperation between state agents with an active and dynamic civil society (Chmielewska and Souza, 2010). These organizations have managed to surpass their roles as merely watchdogs, significantly influencing policy design and implementation. Their interaction with state agents was possible due to the institution of participative consultative bodies within the administration, such as the *Conselho Nacional de Segurança Alimentar e Nutricional* (National Council for Food and Nutritional Security – CONSEA) (Müller, 2007).

In Mozambique, the relationship between civil society and government has been rather conflictive in the past few years, as the mobilization contesting ProSAVANA indicates. Besides, the civil society organizations speaking on behalf of the rural poor are largely urban-based movements with a low representative base and high dependence on northern aid resources, with notable exceptions. Interviews clearly revealed that the configuration of civil society and government relationships evidently assume different

[9] As an illustration, the Mozambican Strategic Plan for Agricultural Development – PEDSA (MINAG, 2010) leaves no room for doubt. Its first paragraph states: "The Green Revolution (Strategy) signalled the government's reaffirmation of this priority, establishing a directive for the transformation of an essentially subsistence agriculture into commercial agriculture". Two of the guiding principles are: "Poverty reduction through suitable approaches that promote economic growth and reduce vulnerability", "Increase work productivity and income and reduce the proportion of families dependent on subsistence agriculture" and "(the creation of) a solid entrepreneurial base (private, cooperative and other) able to attract private investment, contributing to a dynamic commercial climate based on agents with the capacity to intervene and create efficiencies in the value chain". One does not have to dig deeper to find similar references.

configurations between Mozambique and Brazil. It does not mean that building food security in Mozambique depends on the same dynamics (or conditions) that are found in Brazil. One of the first conclusions regarding this subject is that building such a complex system depends on time and deep exchanges, so that the process gradually accommodates existing political forces and integrates local conditions. Furthermore, transnational civil society partnerships may be effective in strengthening homologous stakeholders in domestic debate and in exchanging some of the lessons learned from their historical struggles.

Returning to the case of strategies for agribusiness development, some historical factors were also key to support the expansion of commercial agriculture and the agricultural frontier to the Brazilian central savannahs. This process required not only the adaptation of technologies and consistent public support, but also the existence of vast tracts of sparsely populated land occupied by migrant farmers that were expelled by land concentration in southern Brazil (Kohlhepp and Blumenschein, 2000). Additionally, Rada (2013) highlighted that the transformation of Brazilian *Cerrado* is highly dependent on external inputs that have to reach production areas with low relative prices, otherwise the competitiveness of the region is substantially reduced.

In the case of Mozambique, the image of the "emergent" farmers with a certain level of knowledge of modern agricultural technology and ready to take risk is practically nonexistent, at least when seen in comparative terms with farmers that drove *Cerrado* transformation.[10] Sparsely populated land exists in some parts of ProSAVANA's target area, but land proves to be a subject of conflict issue in Mozambican politics, complicated by the mobilization against ProSAVANA (Radio Moçambique, 2012). Furthermore, all inputs, from fertilizers to machinery, have to be brought from distant regions – sometimes imported from neighboring countries – making their relative prices too high to achieve competitiveness in agricultural production.

Constraints in advancing a socially inclusive agenda

Interviews with Mozambican policymakers indicate that the large-scale commercially-oriented dimension of the Brazil–Mozambique agricultural cooperation has been receiving far more political attention than the smallholder dimension. As an indication, ProSAVANA is the biggest trilateral cooperation programme in the entire portfolio of ABC programmes (Nogueira and Ollinaho, 2013).

In the case of Brazil, ProSAVANA has triggered attention from a number of agribusiness investors, who saw opportunities for entering Mozambique's land and agricultural market (Nishimori, 2012). These investments have so far faced difficulty in materializing, but they did act as support for the programme by leveraging its political importance, particularly during its initial phase. However, the establishment of foreign agricultural investments in countries such as Mozambique depends on a strong institutional framework and public support. Moreover, Mozambique has not been completely integrated in global supply chains, but depending on the government's plans for the rural sector (PEDSA, PNISA, etc.) and investor's interests in the country, this could soon be possible (Boche, 2015).

However, as previously noted, the emphasis of Mozambican agricultural policy framework in value chain development also has implications on the other programmes focused on smallholder farmers. This can also be identified in the design of MFI-Moz in Mozambique, where interviews clarify that the main interest in participating in the programme lies in acquiring the machinery at preferential prices: that is, technical support for designing comprehensive policy packages and building an emancipative food security system that places smallholder family farmers at the center of policy formulation are clearly a supplementary initiative. Finally, family farmers have been considered a subject of social policies and expenses, and not as actors of agricultural policies or growth.

In sum, both the a pivotal role assigned for foreign investments as the key vector of agrarian change, and as commented by Mosca (2014), and the exclusive focus of this policy on the very few "emergent farmers" demonstrates the lack of coherent answers to major development questions. In particular, the concern how the vast majority of Mozambican peasantry will, in effect, be engaged in this rural transformation.

Conclusion

This paper has introduced some of the challenges faced by Brazilian and Mozambican policymakers in the cooperation of the agricultural sector. It has explored how different perspectives of rural development are reproduced in the current political configuration of the agricultural policy agenda in Brazil, and has described how these different perspectives of rural development shape the cooperation policy between the two countries. Departing from an analysis of how Brazilian political economy in agriculture influences bilateral development cooperation, the article has indicated some constraints for reforming this current cooperation policy toward a greater emphasis on the more inclusive development agenda of family farming policy.

Analysis of the cooperation projects showed some common challenges for reproducing relative policy successes from one sociopolitical context to another. Drawing upon the policy transfer and international cooperation literature, we have argued that appropriation of a foreign project relies on the political economy dynamics of related contexts and power relations of involved stakeholders. Sharing policy experiences is, hence, a contested process in which all parties may seek to influence decisions and outcomes in their own terms.

Incorporation of these contextual and political economy elements in the analysis of cooperation policy could serve to advance the current knowledge on Brazil–Mozambique development cooperation. In an aim to reform this policy toward a more socially inclusive rural development agenda, some topics for further attention that emerge are: (i) to understand more deeply why Mozambican government officials are currently opting, almost exclusively, for a clear market-oriented, private sector-driven development trajectory; (ii) to locate, with more precision, how – and if – the peasant farming sector of Mozambique can be dynamically integrated in this market-oriented strategy without losing autonomy or even assuming a protagonist role in policy design and implementation; and (iii) considering the adverse political context in Mozambique, to identify and jointly elaborate pragmatic choices that can be implemented by stakeholders supporting the family farming agenda.

[10] Smart and Hanlon (2014) recently estimated as 68,000 the number of small and medium commercial farmers in Mozambique, defined as those farmers producing primarily for the market and with a crop income five times higher the median annual family cash income (only MT 3400 or approximately USD 113/family/year). But the immense majority of these farmers have an extremely low asset base, cultivating from 1 to 4 ha of land with manual labour. So far, these very few Mozambican emergent farmers – fewer than 2% of the total number of Mozambican farmers – achieved this position by engaging in different contract farming modalities with strong support of the international public sector, as the case of maize growers in Tete, soybean growers in Nampula, and poultry farmers in Niassa, Nampula and Manica. Needless to say, these farmers hardly resemble the well-capitalized farmer entrepreneurs usually associated with *Cerrado* transformation.

Acknowledgements

This research is supported by the project "The changing face of South–South agricultural cooperation and investment flows: implications for governance", conducted by the Institute for Advanced Sustainability Studies (IASS) and the Centre for International Forestry Research (CIFOR). It has also benefited from the academic and financial support of the French *Agricultural* Research *Centre* for International Development (CIRAD) and from technical support of the Food and Agriculture Organization in Mozambique (FAO Mozambique). The authors are grateful to these organisations and to *Stiftung fiat panis* and *Conseil Régional Ile-de-France*, which provided additional financial support for field work in Mozambique. All views, opinions and mistakes herein remain solely to the authors.

Appendix A

See Table 2.

Table 2
Interviews: main topic addressed and expressed positions.

Topic	Position	Expressed in interviews with
Rural development perspectives in Brazilian agricultural policy (Sections '*International* debate on rural development perspectives' and '*Accommodating* opposing political forces')	Focus on agricultural modernization achieved through neoliberal policies: State supports rural public goods, such as research, institutional capacity and infrastructure, creating the conditions for private sector to flourish and lead agricultural development	MAPA, sections of Embrapa, ABC, all private investors and consulting firms
	Development strategies supported by greater state involvement with focus on smallholders: State not only supports rural public goods, but actively engages in organizing agricultural markets, targeting public policies to protect and support small farmers	MDA, section of MRE responsible for PAA (CG-Fome), vast majority of civil society in Brazil
ProSAVANA's theory of change (Section '*ProSAVANA's* agribusiness frame of *reference*')	Clear market orientation, transformation of peasant-based economy into a "modern" economy, focus on incorporating technology to rapidly increase productivity	Mozambican government officials (national and local levels): MINAG, IIAM, National and provincial rural extension directions Brazilian International Cooperation: MAPA, Embrapa, ABC Japanese International Cooperation: JICA *Endorsed by the critique of:* UNAC, ORAM, PPOSC-N, ADECRU, AAJC and other Mozambican civil society organizations
MFI-Moz and PAA Africa theory of change (Section '*MFI-PAA Africa's* family farming frame of *reference*')	Both "inspired" in Brazil's programs to fight hunger and poverty. PAA Africa typical case of home-grown school feeding. MFI-Moz does not deny modernization, but finances only small-scale machinery and couples financial with technical assistance	Brazilian government officials: CG-Fome/MRE, MDA Organizations based in Mozambique: WFP, FAO Mozambican government officials: SDAE, MINAG, and many local farmers associations participating in PAA Africa in Tete Province (Angónia, Changara and Cahora Bassa)
Addressing negative impacts of agribusiness development (Section '*Relativizing narratives of success*')	Codes of conduct, directives and principles of responsible investments based on corporate social responsibility should "tame" rural investment	JICA, MINAG, Agricultural provincial directors, Embrapa
Rural development perspectives in Mozambican agricultural policy (Section 'Transforming subsistence farmers into modern and commercial ones: Mozambican agricultural policy motto')	Backbone of Mozambican policy follows agricultural modernization: The narrative of turning the low productive subsistence peasant farmers into a "modern" small entrepreneur, fitting ProSAVANA's theory of change	Mozambican government officials: MINAG, Agricultural provincial directors, Investment Promotion Centre (CPI), International institutions: CLUSA, USAID
	Alternative framings associated with the food sovereignty movement remain substantially marginal in the official agricultural policy	*Endorsed by the critique of:* UNAC, ORAM, Forum Terra, PPOSC-N, ADECRU and other Mozambican civil society organizations as well as research institutions such as OMR
Civil Society – Government relationships in Mozambique (Section '*Policy* sharing as a matter of p*olitics*')	The relationship between civil society and government has been rather conflictive in the past few years. Many civil society organizations are not considered "legitimate" by government officials, because they are urban-based movements with low representative base and high dependence on northern aid resources	MINAG, Agricultural provincial directors
Focus of Brazil–Mozambique development cooperation (Section 'Constraints in advancing a socially inclusive agenda')	Large-scale commercially-oriented dimension of the Brazil–Mozambique cooperation has been dominating the agenda, obfuscating programs oriented toward the smallholder sector	UNAC, ORAM, Forum Terra, PPOSC-N, ADECRU and other Mozambican civil society organizations
	Main interest from Mozambique policy-makers in the MFI-Moz lies in acquiring the machinery at preferential prices. The technical assistance dimension is supplementary	MINAG, provincial and district agricultural institutions

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Article (3): M. A. Zanella, A. Goetz, S. Rist, O. Schmidt, J. Weigelt (2018)

sustainability

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Deliberation in Multi-Stakeholder Participation: A Heuristic Framework Applied to the Committee on World Food Security

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Received: 11 December 2017; Accepted: 1 February 2018; Published: 7 February 2018

Abstract: Multi-stakeholder participation (MSP) has become a central feature in several institutions and processes of global governance. Those who promote them trust that these arrangements can advance the deliberative quality of international institutions, and thereby improve the democratic quality, legitimacy and effectiveness of both the institutional landscape, as well as decisions made within it. This paper employs a heuristic framework to analyze the deliberative quality of MSP. Specifically, it applies Dryzek's deliberative systems framework to the case of the Committee on World Food Security (CFS). The assessment shows that the CFS improves the deliberative quality of food security governance by including and facilitating the transmission of discourses from the public to the empowered spaces. However, the deliberative quality of CFS could be higher with stronger accountability mechanisms in place, more meta-deliberation and adoption of CFS outcomes at national and local levels. Reflecting on the limitations of using this heuristic framework to assess MSP, we conclude that the analysis would benefit from more explicit consideration of different forms of power that are part of the social relations between actors involved in such settings. By proposing this analytical approach, we expect to advance a heuristic framework for assessing deliberation in an international context of the growing importance of MSP in sustainability and global governance.

Keywords: deliberation; multi-stakeholder; participation; food security; sustainable development; global governance

1. Introduction

The proliferation of multi-stakeholder participation (MSP) is one of the most significant and studied changes in global governance of the past three decades. Such arrangements have been analyzed in a wide variety of areas assuming distinct terminologies, such as multi-stakeholder partnerships, platforms, networks, processes and approaches [1,2]. Despite their differences, these initiatives aim to integrate a variety of actors in collective decision-making, usually categorized under labels along the spectrum of public/governments, private sector organizations and civil society. Empirical studies have focused on the performance of these initiatives [3–5], while others have discussed their political implications in relation to their potential to expand participation, reduce the exclusive nature of the international system and provide for enhanced accountability of global policy-making [6–8]. Proponents argue that, ideally, such MSP arrangements represent forms of deliberative democracy at the international level that could contribute to overcoming the international systems' undemocratic

decision-making and related problems of legitimacy [9–11], while others have criticized the very same potential of MSP from different angles [12,13].

A growing body of empirical work analyzes such arrangements in terms of processes, outputs or discourses [4,14], putting principles such as inclusion, transparency and accountability at the center of analysis. However, there is still much to be explored around the nuances and deliberative qualities of such MSP arrangements, including their ambiguities and dynamics.

This raises the question: how to analyze the extent and ways MSP is improving the deliberative quality of processes and institutions of global governance? The reasoning behind this question is to neither fully embrace, nor disregard MSP, but rather explore more deeply the specifics of these arrangements, with the aim of contributing to a heuristic framework of how MSP contributes to the deliberative quality of the international system.

To address this question, we apply Dryzek's deliberative system framework [15–17] to one United Nations' Committee where multi-stakeholder participation features prominently: The Committee on World Food Security (CFS). The case of the CFS seems particularly fitting for analysis from the viewpoint of deliberative theory. Since it was reformed in 2009, the Committee has aspired to be a central global institution for policy debate on food security.

Data were collected through: (i) participant observation at the 42nd and the 43rd Plenary Sessions of the CFS (October 2015 and October 2016) and at the Second and Third meetings of the Open-Ended Working Group on the Sustainable Development Goals (February 2016 and March 2016); this included several different events that ran in parallel with the official agenda; (ii) 20 semi-structured interviews with key informants (6 with government representatives, 6 with civil society, 6 with private sector, 2 with international organizations; see Appendix B for more information); (iii) numerous informal exchanges between the authors and participants of those meetings.

Our findings show that CFS's deliberative quality is mixed. On the one hand, the CFS improves the deliberative capacity of food security governance by including and facilitating the transmission of a wide representation of discourses from the public to the empowered spaces. At the same time, the deliberative process suffers from poor performance in the areas of accountability and meta-deliberation and limits the capacity for CFS's outcomes to achieve high adoption at national and local levels. The growing body of literature analyzing the CFS suggests that the lack of deliberative quality in the areas of accountability and meta-deliberation relate back to power asymmetries [18]. Therefore, we argue, the use of Dryzek's heuristic framework of a deliberative system would benefit from more explicit consideration of the different forms of power that play a central part in the social relations between the actors involved [19]. One promising possibility would be to explicitly investigate how power asymmetries influence transmission, accountability and decisiveness. By proposing this analytical exercise, we expect to advance a heuristic framework for assessing deliberation in MSP that could be useful in the context of the growing importance of this instrument in sustainable development and global governance.

The paper proceeds as follows. Section 2 reviews the literature on MSP and deliberative theory and introduces the analytical categories of Dryzek's deliberative system framework. Section 3 applies this framework to CFS. The paper concludes with a synthesis of heuristic and empirical observations (Section 4).

2. MSP and Deliberation: Towards a Heuristic Framework

The consolidation of multi-stakeholder participation in global policy-making occurs in parallel with a "deliberative turn" in political sciences and democratic theory in the past two decades. This section briefly reviews this literature and then introduces Dryzek's deliberative systems framework and the value of using it for assessing MSP.

2.1. MSP: From Experimental Trend to Mainstream

In global environmental governance, the emergence of MSP as a fundamental approach to intergovernmental policy-making can be traced to the UN Earth Summit, held in Rio in 1992 (Eco 1992). In this period, MSP approaches had already provided a major tool for fostering rural development at subnational to local levels, linked to approaches covered under Participatory Rural Appraisal (PRA) [20], where stakeholder platforms were conceived as a tool for rooting governmental policy-making more coherently to the visions, expectations and needs of "the people".

Eco 1992 brought these experiments to the global stage, particularly through the recognition of NGOs by the UN Economic and Social Council (ECOSOC) [21]. This trend became firmly established at the World Summit on Sustainable Development (WSSD) in 2002 in Johannesburg; Rio+20 in 2012; and the recent negotiations of the Sustainable Development Goals. In the latter, MSP features prominently as one of the key approaches for internally governing the implementation of the 2030 Agenda.

The debate on the nature of MSP covers empirical, as well as theoretical aspects. One thread of debate concerns the degree to which MSP in practice leads to measurable outcomes assigned to it by the promoters of such governance instruments, for example, if global environmental standards or voluntary guidelines for business generated by arrangements with MSP are in effect being used by the actors that participated in their construction [3]. Empirical studies have examined the types, scopes and effectiveness of policies developed through MSP. The general tendency indicates limited effectiveness, as demonstrated by Pattberg et al. [14], who analyzed 340 initiatives with MSP related to the implementation of the WSSD.

As a starting point, efforts to theorize global governance co-emerged with the increased importance of non-state actors in global politics since the 1990s. Proponents of including non-state actors in international organization and global governance tend to argue that (potentially) this constitutes a change that could be useful to counteract structural flaws in existing settings of international governance and multilateral institutions [9]. It is argued that the inclusion of non-state actors might counteract the often undemocratic nature and legitimacy deficit of international politics, addressing long-term institutional problems of access, transparency and responsiveness [10]. The inclusion of non-state actors, so the argument goes, addresses these legitimacy issues by changing the composition of actors towards more democratic procedures of representation and decision-making than the nation state-based system. In this view, this would ultimately lead to a higher degree of accountability by responsible actors and organizations [11,22]. Other proponents of multi-stakeholder participation in institutions and processes of global governance emphasize that non-state actor participation can also yield expert-driven decision-making as a source of input and outcome legitimacy [23] and improve problem-solving capacity in global governance processes by sharing information and expertise [24].

Critical theorists have come to challenge the comparatively liberal arguments presented above. They maintain that multi-stakeholder participation constitutes a form of liberalization that is not inherently a quick fix for democratizing global governance [12,25]; on the contrary, the undemocratic, unrepresentative and unaccountable features of existing international organizations offer little prospect for this [26]. Critical assessments perceive MSP in global governance as a highly ambiguous development, dubiously concealing asymmetric dependencies [13], inhibiting civil society critical contributions, as in "NGO contract fever" [27], or in social movement co-optation [28]. Other critical studies have elaborated on specific conditions needed in MSP to fulfil its potential to improve the deliberative quality of global governance. These would include the possibility that emergent critical discourses encounter public authority [29]; and that weaker actors that carry those discourses be able to influence decision-making, thus acquiring more than just the formal right to participate [30]. Other critiques contest the potential of MSP to reshape citizen and state relations, even under ideal conditions, implying that marginalized groups have no agency in contemporary processes of global governance [31].

2.2. Deliberation Theory in a Nutshell

The literature above remains inconclusive on whether and to what degree the recent rise of multi-stakeholder participation contributes to improving the deliberative quality of global governance. For our following assessment, it is important to be aware of the framings and critiques voiced in political theory described in the previous section and to consider case-specific analysis of MSP. Deliberation theory offers elements to identify whether MSP enables progress toward this ideal by providing concepts for a sound and theoretically-robust analysis that goes beyond solely assessing outcomes.

With antecedents dating back to Greek philosophy, deliberative theory has been considered throughout the past few decades in quite different fields of scientific inquiry [32]. In some situations, its broad and diverse use led to stretching, imprecision and confusion of the concept. A theory of deliberation is explored in Habermas' the Theory of Communicative Action [33], in which he defined a "behaviour oriented towards reaching a common understanding". According to Habermas, actors switching from strategic to communicative action would not lean towards maximizing their fixed preferences, as rational theory would predict, but rather towards seeking a common understanding of a given position. Consequently, this requires that actors are open to preference change if they encounter better arguments, a process that also depends on a series of pre-conditions.

When applying Habermas to international relations, Risse [34] uses the concept of "argumentative rationality", to define when actors do not completely reject the rational behavior assumption, but also do not simply bargain for their fixed preferences. This behavior would also contrast with rule-guided behavior employed by social constructivism, which argues that human agency only exists embedded (or constrained by) in structural conditions formed around the social environment, such as culture and institutions.

An increasing number of authors have since taken Habermas' initial theoretical postulations closer to the real-world situation of everyday politics [35,36]. These efforts included addressing the existence of diversity and pluralism, socio-economic inequalities and power asymmetries that hinder access to voice discourses and difficulties in creating large-scale deliberation [37]. Moreover, questions on institutional designs to cope with such complexities became central to deliberative democracy studies in the past few years [38]. In a world of evident power asymmetries, some of the conditions for deliberation are difficult to achieve, particularly those that require equal opportunities to voice discourses.

2.3. Dryzek's Deliberation System Framework

The core of our heuristic framework to study MSP builds on Dryzek's formulation of a deliberative system, which substantiates three principles for achieving deliberation: authenticity, inclusiveness and consequentiality [15,17]:

(a) To be authentic, deliberation ought to: (i) be able to induce reflection upon preferences in a noncoercive fashion; (ii) involve communicating in terms that those who do not share one's point of view can find meaningful and accept.

(b) To be inclusive, deliberation requires the opportunity and ability of all affected actors (or their representatives) to participate.

(c) To be consequential, deliberation must somehow make a difference when it comes to determining or influencing collective outcomes. Such outcomes might include laws and other explicit and codified public policy decisions, international treaties, the more informal outcomes reached by governance networks or even cultural change.

This formulation tries to address several issues raised in the literature on deliberation theory, such as whether deliberation needs to lead to consensus [39]. Dryzek responds that "the purpose of deliberation is not to secure consensus. Instead, the key goal of deliberation is to produce meta-consensus that structures continued disputes" [15]. Another critique refers to communication

formats that do not follow the standards of reasoned argumentation, such as rhetoric and storytelling [40]. Evidence suggests that, by focusing mostly on reasoning, deliberation "privilege[s] dominant groups" and might suppress minority views [15,32]. The discussion on the role of rhetoric is remarkable in this regard. Rhetoric can play an important role when employed by marginalized persons who do not necessarily possess the skills of rational argumentation. There are also cases in which powerful rhetoric helped bring issues that were not usually meaningfully represented to the center of a political system [41]. However, the issue is not as simple as just accepting or disregarding any type of rhetoric, since history frequently reminds us how rhetoric can be a powerful tool for creating social division, fueling conflict and violence; and thus, the opposite of deliberation.

For operationalizing deliberative systems, Dryzek [15] also offers an analytical framework (Figure 1) that we use in our subsequent case study of deliberation in the CFS. The framework includes six elements to assess if a given system attends to the principles of authenticity, inclusiveness and consequentiality: (1) the existence of a public space, where a variety of discourses and wide-ranging communications take place, ideally with few barriers and legal restrictions; (2) the presence of an empowered space, which differentiates itself from the former by being a space where authoritative decisions are made; (3) transmission, understood as how deliberations in the public space influence those in the empowered space; (4) accountability, meaning mechanisms whereby actors pertaining to the empowered space give an account and justify their decisions and actions; (5) meta-deliberation, which is the reflexive capacity of the system as a whole to deliberate with its organization and reform if needed; and (6) decisiveness, understood as when the collective outcomes generated by the system cause consequences.

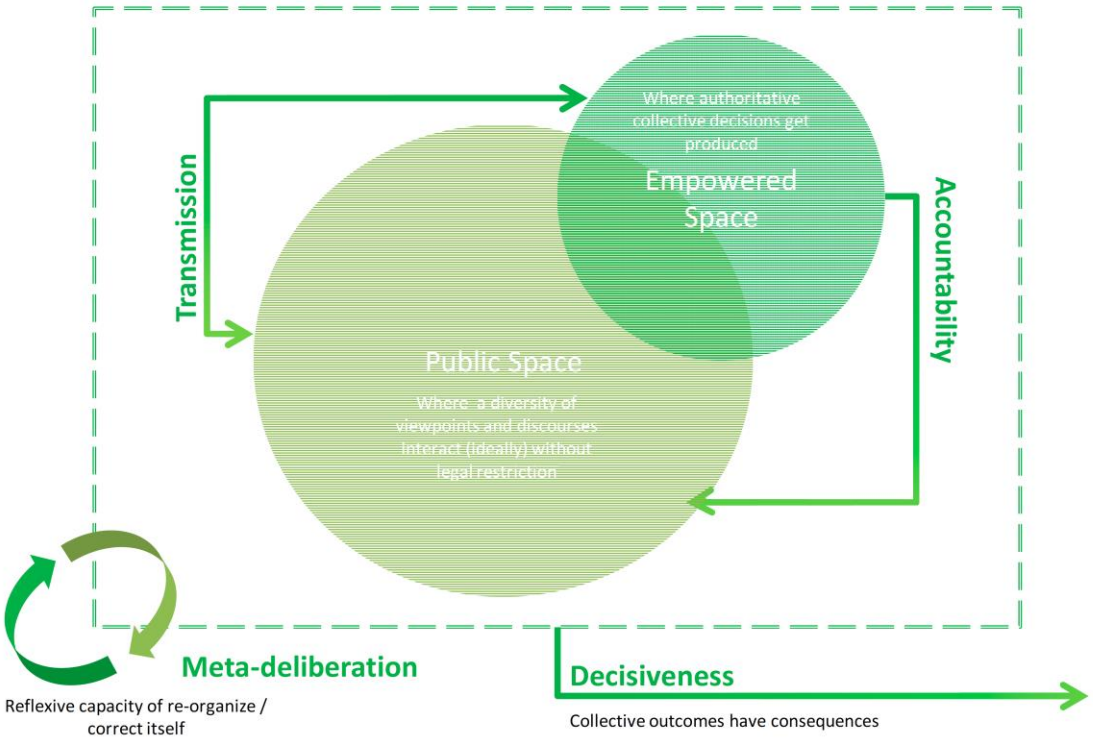

Figure 1. The deliberative system. Source: Dryzek [15]; Dryzek and Stevenson [17]. Designed by the authors.

The framework does not conceptualize democracy from the perspective of the existence of particular institutions. This allows the researcher to apply the deliberation system framework to diverse political systems, from liberal democracies to single-party states, networks, and systems based

on traditional authorities. In our application of Dryzek's framework to study the deliberative quality of MSP at the CFS, we follow [42–44], who applied the theory of deliberative systems to the analysis of global governance institutions.

Specifically, the application of Dryzek's framework identifies four major flaws associated with governance initiatives based on multi-stakeholder participation: (i) that processes claiming to apply MSP generally fail to include all distinct groups and perspectives on the issue at stake; (ii) that MSP arrangements usually create unaccountable decision-making structures, especially on platforms without well-designed representation and participation rules, compared with other decision-making fora with more structured procedures for accountability reports; (iii) that MSP is often accompanied by un-reflexive decision-making structures, understood as the capacity of the system to identify problems in the decision-making process and formulating corrective strategies; and (iv) that most platforms based on MSP do not take into consideration the different forms of power in public participation, which is however a decisive component of the social relations of the actors involved.

Assessment of how participatory and inclusive MSP depends on the quality of the public and empowered spaces and the facilities permitting transmission between the two. That is, all discourses presented in the public space must also be able to infiltrate the empowered space. The most straightforward procedure consists of identifying and characterizing the different discourses that permeate the two spaces. This can be supplemented by analyzing the potential convergences, tensions and conflicts between them. Stakeholder mapping, where stakeholders are positioned according to their attachment of a particular discourse, can also provide orientation in assessing transmission.

As described previously, accountability is a crucial measure of whether the system is performing deliberatively. Accountability can be assessed by identifying formal and informal obligations between representatives and constituencies, as well as between higher and lower hierarchical bodies within organizations. These could include obligations towards information sharing, reporting and justification, among others, and should necessarily lead to an assessment of the level of transparency involved in these obligations, an essential element of accountability.

Within the deliberative framework, reflexivity correlates mostly with the elements of meta-deliberation. In other words, a deliberative system offers regular opportunities for its participants to analyze and discuss corrections in the decision-making procedures. Assessments of meta-deliberation could start by a time-scale analysis of the constitution and major decisions of a MSP. In particular, one should look for moments where participants receded from deciding on the issue itself and re-discussed the rules of engagement, for example, by reforming MSP governance rules. One could also investigate whether new feedback mechanisms were built into the reformed decision-making process.

Finally, while the conceptualization of power in MSP is challenging [45], ignoring such an issue is inappropriate for treating MSP through an analytical lens, as power affects the capacity to effectively articulate, participate, represent, to hold accountable, among other factors. Clapp and Fuchs [46] speak of three dimensions of power to analyze influence of powerful actors; in their case, corporates influencing global food governance: (i) instrumental; (ii) structural; and (iii) discursive power. While instrumental represents the direct influence achieved through political campaigning or lobby, structural power represents more indirect ways under which political options for certain actors are limited by more powerful ones even before bargaining starts, for example, by determining agenda-setting. Finally, discursive power is related to how the adoption of framings and world views of certain actors influence the formation of interests of other actors.

The deliberation system framework does not treat power asymmetries directly as one of its elements (as in the case of transmission, accountability and reflexivity), but it offers some ways of identifying them. One reason why power asymmetries are so central is because they can be the source of flaws in the three issues discussed above. That is, participants who lack the requisite capacities for addressing audiences and use the international technocratic language that permeates global negotiations might face constraints in organizing, voicing, and expressing their discourses,

thus inhibiting truly inclusive MSP. Relating this to Clapp and Fuchs' framework, the language that dominates negotiations would be an expression of the discursive and instrumental power. Furthermore, powerful representatives might not feel obliged to give an account of their actions, even to their constituencies. Furthermore, powerful participants might face disincentives to engage in reforming MSP rules, due to the risk of diminishing their capacity to influence decisions, thus reducing reflexivity. These two—denial of account and refuse of reform—would constitute expressions of structural power since they represent what should and what should not be part of the agenda. Additionally, even in systems with high levels of transmission, accountability and meta-deliberation, resolutions are not necessarily decisive; that is, the system might be jointly generating agreements that are not actually applied.

3. Results and Discussion: Deliberation and the Committee on World Food Security

To explore the applicability of deliberative theory to the assessment of MSP, we analyze evidence from the CFS. After a reform in 2009, which opened the Committee to more qualified participation of non-state actors, the CFS has tried to position itself as the "first and foremost inclusive platform" for addressing food governance globally. With almost a decade since this reform, this statement may sound over-enthusiastic, since the Committee suffers from well-known limitations in becoming the authoritative forum for global decision-making in an institutional landscape of global food governance that is characterized by institutional fragmentation [47] and dominated by immense power asymmetries among actors [18]. Still, without a doubt, the CFS's reform did reposition the Committee in a much more prominent role in global food governance [48].

Part of this growing recognition of CFS and claimed legitimacy follows the arguments of those promoting MSP as a way to improve deliberation and democratic choice in global governance. According to this line of reasoning, advancing MSP in global governance improves representation and contributes to expanded participation, inclusion and enhanced accountability. In fact, a vivid debate has ensued around these issues in the context of MSP at CFS [49].

Brem-Wilson [30] analyzed the engagement of a particular constituency, the global peasant movement and its most emblematic organization, La Vía Campesina (LVC), at the CFS, arguing that this encounter represents the case of a nascent transnational public sphere [29]. In his analysis, LVC acts as an organized movement that articulates discourses and actions from affected publics within an institutionalized center of global decision-making; the CFS. However, the building of this transnational public sphere is not an automatic process, stresses the author, rather dependent on the fulfilment of certain requisites that translate the formal participation rights of affected publics into effective participation [30,50]. This reasoning that deliberation at CFS should imply more than the formality of being represented is also in line with the idea of meaningful participation, where consultations must be used to "guide and inform outcomes, and are not simply used to legitimize outcomes" ([51], p. 150).

The conditions that allow expanded representation to translate into greater inclusivity at CFS has also been questioned by McKeon [52], building on the differentiation between "multi-actor" and "multistakeholderism". According to the author, while the first concept recognizes the different interests, roles, responsibilities and power resources of the parties, the former disregards those, for example, by diluting the distinction between "right-holders" (citizens, in the case of CFS, those affected by food insecurity) and "duty-bearers" (states) in international law within MSP arrangements. Recently, the Committee itself commissioned a study to its science-policy interface, the High-Level Panel of Experts (HLPE), about "Multistakeholder Partnerships to Finance and Improve Food Security and Nutrition in the Framework of the 2030 Agenda". The background reasoning behind this request is related to the different understandings of how the CFS should position itself currently and in the future based on distinct interpretations of its 2009 reform blueprint [49], as well as on its political capacity to assume centrality in the disputed and fragmented arena of global food governance.

Aiming to contribute to this debate, it seems valid to explore the applicability of deliberative theory in analyzing MSP using the case of the CFS. We start by characterizing actors and discourses at both the public and empowered spaces and cross analyzing the transmission between those. Then, we proceed by assessing accountability, meta-deliberation and decisiveness. Details on the mix-method package used to operationalize Dryzek's deliberative system framework is provided in Appendix A.

3.1. Characterization of Public and Empowered Spaces

One major step in characterizing public spaces starts by describing discourses that key actors reproduce. Comprehensive discourse analysis is beyond the scope of this article, considering its data intensity and length. While a complete discourse analysis can assist in illuminating factors that inhibit the transmission of discourses between public and empowered spaces, it offers less insights into the participation dynamics within MSP arrangements identified as key in the CFS-related literature. We prefer to present a simpler stylized content analysis based on analytical dichotomies of major discourses on food security, focusing on two dimensions that permeate numerous CFS debates: (i) food systems types; (ii) roles of states and market. Further, we support this with complementary analysis that refines the other essential elements of Dryzek's framework: accountability, meta-deliberation and decisiveness.

To construct these analytical dichotomies, we reviewed key literature that employed similar approaches [53–55] and coded and clustered content from the participant observations at Plenary Sessions and Open-Ended Working Groups mentioned in the Introduction, including official interventions, statements and web pages of all interviewed representatives and other key stakeholders. This provided enough elements for positioning actors active at the CFS within the range defined by the extremes of analytical dichotomies

Considering the above, food security discourses can be categorized according to two dimensions as shown in Figure 2.

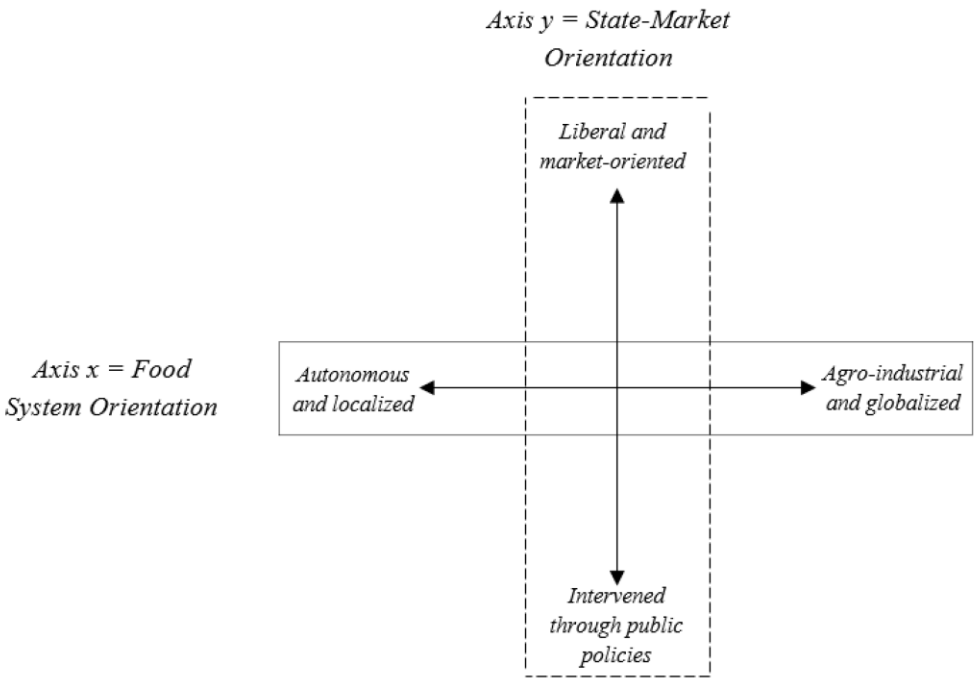

Figure 2. Two dimensions for categorizing food security discourses. Source: authors.

1. Food system (axis x) refers to the distinct types of food systems that actors defend as the most appropriate to achieve food security. The extremes are:

Autonomous and localized: food systems composed of smaller production units, relatively autonomous in terms of labor and inputs. Whenever possible, input markets, processing and distribution are organized in short-circuits, but maintaining lower inputs usage and reduced food transportation. Consumers are generally close to production and processing stages, both in physical, as well as sociological terms, meaning consumers are interested in knowing food origins, their production sites and the actors participating in the food system. In terms of sustainability, agroecological agriculture [56] has been increasingly identified with this food system perspective, as it shares focus on autonomy, reduced inputs' use and fair relationships between actors across food systems;

Agro-industrial and globalized food systems represent vertically- and horizontally-integrated production systems, generally organized in larger production units. In these systems, economic efficiency tries to be optimized through industrial processes for standardized production. Labor is mostly hired, and inputs are mostly acquired in the market. Consumers can be close, but can also be located several thousand kilometers from production and processing sites, due to the lower transportation costs and lower preference from consumers on local food origins.

2. State-market orientation (axis y) refers to actor's opinions on the role of states and markets in organizing food systems. The extremes are:

   The liberal and market-led orientation considers the private-sector as the driver of agricultural growth and, ultimately, agricultural development. State intervention is relevant, but should be oriented toward facilitating private investments in economically-efficient agricultural activities. This can take the form of regulating (or de-regulating) labor and land markets, facilitating transactions, for example, by ensuring property rights, juridical security and lowering transaction costs. In this perspective, food security can be achieved by pursuing trade-oriented strategies, if trade is conducted with less barriers and more emphasis on economies of scale;

   The intervened through public policies orientation does not disregard the importance of market forces in organizing agricultural production, processing and distribution. Nevertheless, it considers that markets constantly fail in their allocation role and that public policies are vital for orienting food systems. In this sense, the state, as the operator of public policies jointly negotiating with broader societal constituencies, continues to assume a regulatory role in similar terms as the liberal and market-led orientation, but assumes more active roles. These include: (i) providing rural public goods; (ii) protecting local production from international competition; (iii) supporting smallholder farmers with extensions, inputs and credit; (iv) protecting marginal farmers from land and resource expropriation; (v) reducing land concentration by agrarian reforms, among others. Trade can be an engine for complementing food security, but only if it "governed", meaning when it does not come into contradiction or when it is used to support other government policies.

With this content analysis of food security discourses, it is possible to position certain actors that are active at the CFS along a matrix of the two dimensions, as shown in Figure 3.

In the context of the CFS, the empowered space is the Committee itself. A detailed contextualization of this UN body and its important 2009 reform has been covered in recent literature [48,50,57]. The institutional structure of CFS is similar to other UN committees: a plenary, where members discuss and make decisions; a bureau or chair, who sometimes represents the committee and propose decisions; and a secretariat, which facilitates the process. The Committee also counts the technical and scientific expertise supported by a body for scientific advice: the High Level Panel of Experts on Food Security and Nutrition (HLPE). There are however some important institutional innovations for understanding discursive representation and consequently the deliberative capacity of the Committee.

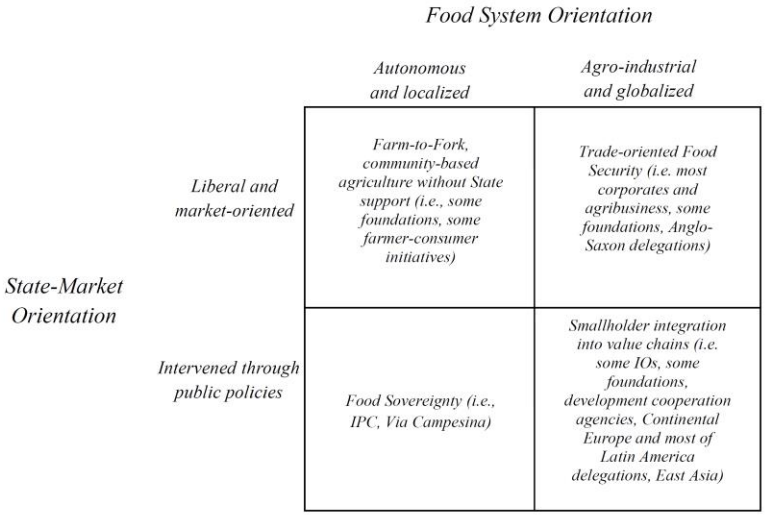

Figure 3. Characterization of the public space of food security. Source: authors.

Its 2009 reform brought about two of these institutional innovations. The first is the active participation of non-state actors such as civil society, the peasant movement, the private sector, philanthropies, etc. (In its 2009 reform, the Committee was opened to participants of five categories of organizations: (i) UN agencies and bodies with specific mandates in the area of food security and nutrition; (ii) civil society and non-governmental organizations and their networks; (iii) international agricultural research systems; (iv) international and regional financial institutions; and (v) private sector associations and private philanthropic foundations ([58], p. 6)). Non-state actors hold rights such as to intervene in plenaries, submit documents and contribute to intersessional activities. In principle, the only right that remains solely in the hands of the CFS members-states is the right to vote on final decisions. The second innovation is the facilitation of the participation of non-state actors in two autonomous and self-organized bodies, the Civil Society Mechanism (CSM), along with the Private Sector Mechanism (PSM).

The attendance during plenary meetings confirms this representation of a wide composition of actors. As an illustration, the CFS's 42nd plenary (October 2015) was attended by 133 member-states; 6 states that were non-members of the Committee; 12 UN agencies; 98 civil society and non-governmental organizations, the vast majority of those through the CSM; 3 international agricultural research systems; 2 international financial institutions; 71 private sector associations and private philanthropic foundations, also the vast majority of those through the PSM; besides 42 observers and organizations not pertaining to the formal categories above.

In sum, the public space of food governance reveals discourses that can be broadly characterized as four categories, while in terms of formal representation, the empowered space of the CFS shows the substantial diversity of actors. The next sub-section looks at the transmission between those two spaces.

3.2. Transmission

Transmission refers to the processes through which discourses of the public space influence deliberation at the empowered space. This can be assessed by looking at three factors: (i) discourse representation: whether all discourses found in the public space are also found in the empowered space; (ii) if actors show signs of ideal deliberative procedure, meaning whether communication suggests truthfulness, respect and mutual justification without coercion and/or threats; and (iii) ability of actors to effectively participate and influence decisions. Discourse representation is a direct factor to consider when assessing transition since it can clearly show if the empowered space is closed to important

discourse on the topic from the public sphere. This is key since actors that dominate the empowered space can be reluctant or resistant to considering more radical discourses. Truthfulness, respect and mutual justification in the empowered spaces are signs that actors are open to preference change, instead of just bargaining about their preferences derived from their discourses. Thus, it is logical to expect that transmission is higher if both discourse representation and signs of communicative action are present. However, this is not sufficient, since there might be cases where despite the two previous factors, certain actors are not able to engage and influence outcomes. In line with the insights of the transnational public sphere [30] and meaningful participation [51], the ability to influence decisions must also be assessed when evaluating transmission.

Looking at the case of the CFS, an assessment of the first factor is relatively straightforward. The CFS is widely regarded by its inclusivity, at least when compared to other global forums addressing food security. The observed high and diverse attendance of the plenary already suggests that this factor of transmission is relatively well achieved. Indeed, at the CFS, we find actors and positions that are clearly articulated with the discourse of autonomous and localized food systems, such as those actors that frame their interventions along the lines of the food sovereignty movement. We also find actors that can be clearly positioned at the other extreme, such as international financial institutions, actors from the private sector and delegates from countries with a strong neoliberal orientation.

Regarding the second factor, the clear majority of interviewees have strongly agreed with the statement that the atmosphere of the Committee is dominated by some sort of gentlemen' code, which praises a high level of respect and truthfulness. This was affirmed even by organizations that defend opposite positions in several issues. Justification of positions is also pursued in many cases, said most of the interviewees, although not always. There were situations in which delegations were stuck in their reservations and did not attempt to justify these to the other participants, although this seems to be rather the exception than the rule.

The third factor is more challenging to assess. Brem-Wilson [50] differentiates right to participate from substantive participation when analyzing the representation of peasant organizations at the CFS, thus focusing on the process. Another possibility is to consider one important CFS output and verify if it contains elements of the different discourses that characterize the public space, thus focusing on the outcomes. It is important to recognize the limitations of adopting just the second option, nevertheless. An exclusive focus on outcomes illuminates very little about the nuances of representation (who carries which discourse) and the actual degree of broad inclusivity. For example, the elite character, the professionalization and the technocratic communication found in intergovernmental negotiations such as the CFS can restrict the effective participation of grassroots constituencies that are to be the main beneficiaries and, thus, the legitimate carriers of food sovereignty discourses [30,57]. Thus, for more precisely evaluated transmission, the focus on assessing discourse success in influencing outcomes complements the other two factors of discourse representation and signs of ideal deliberative communication.

For these two aspects, we looked at the CFS policy recommendations on Connecting Smallholders to Markets [59], considering that the production of this output was negotiated with energetic engagement by CFS actors [30]. Regarding process, this engagement resulted in intense and high-quality policy debate, able to expand its initial restrictive and dominant framing of investing in smallholder agriculture that considered only the links to agro-industrial value chains. The process was opened after pressure and engagement of actors' sharing views more associated with the autonomous and localized discourse and with the intervened through public policies discourse, leading to the organization of institutionalized forms of debate, such as the High-Level Forum on Connecting Smallholders to Markets [59,60]. A similar result is found when looking at the output. The policy recommendation contains a rather balanced view on the scale of food systems and on the role of states and markets in organizing these systems, an outcome that is particularly relevant considering that this is a topic where a liberal and market-oriented view tends to dominate, as in the case of discussions on this topic at the World Trade Organization (WTO), for example. It is important to highlight that this

level of transmission was only achieved because participants identified the subject of smallholders and markets as one of high importance and consequently engaged and discussed extensively the issue within the CFS. This suggests engagement as one important condition for ensuring high levels of transmission, a point that could be further explored by analyzing other cases.

To summarize, transmission does seem to occur at rather unusual levels for a UN body, due to both the high diversity of representation, a regular mode of communication among CFS members and participants and the capacity of influencing debates. The achievement of relatively good levels of transmission is a positive achievement for the CFS in terms of its deliberative activity.

3.3. Accountability

Following Fuchs et al. [61], we assessed accountability in terms of internal accountability (when representatives must give an account and be held responsible to their constituencies) and external accountability (when organizations should give an account to a broader range of affected stakeholders). Results were generated mostly through interviews, with questions focusing on formal and informal obligations towards their constituencies and between higher and lower hierarchical bodies.

Since the 2009 reform institutionalized the direct participation of publics affected by food insecurity within the Committee, external accountability can therefore be understood in two ways: (i) either as the CFS as a whole giving an account of their actions to external publics, for example when an external body is awarded the authority to evaluate the Committee's performance, (ii) or as state actors giving an account of their actions to non-state actors represented in the CFS. The latter understanding of external accountability is in line with the vision brought by the 2009 reform, which adopted the right to food-based language [58,62] that strives for the accountability of duty-bearers (primarily national governments) towards rights-holders (citizens affected by food insecurity). In 2004, the Food and Agriculture Organization of the United Nations (FAO) adopted the Voluntary Guidelines to support the progressive realization of the right to food in the context of national food security [62]. In its vision approved in the 2009 Reform, the CFS adopts this instrument affirming that it "will strive for a world free from hunger where countries implement the voluntary guidelines for the progressive realization of the right to adequate food in the context of national food security" ([58], p. 2).

Regarding internal accountability, the picture is mixed. Interviews have suggested that this type of accountability varies widely according to which organization is in question. Large representative democracies and many non-liberal democratic states have mechanisms for requiring delegates (mostly diplomats) to regularly report their activities to their capitals. Smaller states interviewed were revealed to not have those institutions, though in the end, this depends heavily on the capacities of the diplomatic corps, including the representative herself/himself. One can easily see that many small delegations have difficulties in following all the work streams of the Committee, which also implies difficulties in giving an account of their actions to constituencies.

A similar pattern was found when it comes to the civil society and private sector organizations. While the two mechanisms, CSM and PSM, facilitate accountability as formal and institutionalized groups, individually, only the larger and more resource-rich organizations were sufficiently organized to report back to their constituencies. It is still an open question whether what is reported effectively creates a real responsibility of the representative vis-à-vis the group that put her/him in the position. Some interviewees informed us that since the CFS is not a priority on their organizations' agenda, it does not really create enough weight and responsibility for their representation.

External accountability is clearly a missing element of CFS deliberative capacity. Already by its status as a UN body that does not produce mandatory legislation of international character—such as conventions and treaties—CFS would by default have few reasons to be clearly held accountable by an external monitoring body. Since 2012, the CFS yearly reports to the UN Economic and Social Council (ECOSOC) preparing a document with "Main decisions and policy recommendations of

the Committee on World Food Security", which updates CFS activities and outputs. None of the interviewees have referred to this reporting as one of relevance to the building of CFS accountability. Furthermore, many interviews have suggested that this is also not a goal that members want to struggle with. On the other hand, many interviewees indicated that the fact that the CFS produces non-binding guidelines was as a strong point since this allows members and participants to interact in a freer and more open manner. A weak accountability is also found regarding state actors (duty-bearers) giving accounts of their actions to non-state actors represented in the CFS. Even though some state delegations organize periodical preparatory meetings with civil society and private sector actors from their nations, these are rarely institutionalized, and the practice is not the norm for most member-states. In other words, it is up to the discretion and interests of national governments to organize those consultations, which also opens up the possibility of instrumentalization.

Elements of external accountability can also be found in CFS's 2017 Evaluation Report, which covers the 2009–2016 periods [63]. Interviews identified (and the Evaluation Report confirmed) that there are different views on how far the Committee should engage in monitoring the application of its policy instruments at a national level. In general lines, civil society representatives tend to support a much stronger monitoring role for the CFS or, at least, stronger monitoring mechanisms conducted by national governments using CFS outputs, while national governments are those more reluctant to this. Even governments that were actively engaged in drafting key CFS policy instruments declared in interviews to be much less convinced of monitoring exercises that could create embarrassment and thus potentially fragilize their negotiation positions within the Committee.

The first monitoring exercise of the Committee took place recently at its 2016 Plenary, when members and participants discussed the application of the Voluntary Guidelines on the Responsible Governance of Tenure (VGGTs), a major instrument produced by the CFS. Still, such periodical stocktaking exercises are seen by many—above all by civil society and international organizations' representatives—as a profoundly weak accountability mechanism, with little significant impact on actions by participants. Its voluntary nature also offers little reason for expecting higher levels of accountability.

In sum, the CFS presents mixed results in terms of internal accountability and weak external accountability, which poses this as a factor to be better developed for those interested in increasing its deliberative capacity.

3.4. Meta-Deliberation

Arguably, the 2009 CFS Reform represents the first moments of meta-deliberation. Amid the world food crisis of 2007–2008, CFS members reformed its institutional structure and engagement rules, creating a much more relevant and dynamic committee. Reflexive capacity to understand how the food governance system is organized was necessary, and that made way for more structural changes to be approved by the Committee [48]. When questioned whether this meta-deliberation capacity remains as high as before, interviewees indicated three factors eroding CFS's meta-deliberative capacity.

The first factor was a lower political priority attached to food security issues driven by a substantial reduction of global food prices since the 2011 peaks. This important exogenous factor is used to drive member states to constantly reconsider the CFS role and operations. Even though food price volatility remains high, many interviewees—including those with Rome-based agency officers and current diplomatic representation of countries that were active in the reform process—have indicated that the political pressure derived from the global food crisis of 2009–2012 does not influence the work of the Committee as before. The "political urgency" of food security deviates the potential CFS members, and participants have to embark on a reflexive exercise on the institutional architecture of global food governance as a whole.

Second, we identify a growing misalignment among members and participants with respect to the directions the CFS should take in the long run. Reticence for supporting CFS activities is sustained by some actors, which also reflects the constant difficulties in securing funding for CFS

operations. Delegations that played a very significant role in supporting and advancing the 2009 reform and an ambitious CFS agenda also show signs of misalignment. The EU, for example, which has been one of the leaders in post-reform initiatives, showed signs of internal struggle, while Latin America countries (another group that pioneered CFS reform) showed divided signs as to whether the Committee should address controversial issues or if it should try to put into practice what has already been agreed. Civil society continued to push for a stronger CFS, but is increasingly frustrated that some countries are unwilling to adopt a rights-based approach and instead redirect focus and time to re-negotiating rights-based language in every negotiation that is opened. This growing misalignment indicating an erosion of CFS's reflexivity is related to the difficulties actors have in engaging in meta-debates, such as one that would discuss the diverging opinions on the direction of food systems and global food governance [64].

Third, the issue of how to better represent farmers, a major constituency of any food debate, remains unresolved or, at least, sub-optimal according to all farmer groups interviewed. The authors conducted interviews with representatives of farmers groups participants in the Civil Society Mechanism (CSM), from both developed and developing countries, in the Private Sector Mechanism (PSM), from developing countries, as well as representatives from the World Farmers Organization (WFO) from developed countries. The issue was also raised by three government representatives and the Secretariat of the PSM that were interviewed. Farmers' representation is complex, divided between different organizations, some aligning with the CSM and others following the PSM, and others as independent participants. Even within both mechanisms, farmer's organizations revealed feeling uncomfortable in automatically aligning with these groups. The option of having some sort of independent farmers' seat at the Bureau as a mechanism is a revolving and persistent item, also identified in the Evaluation Report. Proposed solutions have so far found very little support. Even though they are a relevant constituency in food governance, it is up for debate if the issue of farmers' representation signifies an institutional concern requiring a Committee-wise solution rather than one based on the self-organization of farmer bodies themselves. It suggests, however, that possibilities for institutional reform in terms of representation rules are reduced in comparison with previous years and the 2009 Reform.

In sum, results lead us to believe that meta-deliberation at the CFS does exist, but it has been relatively eroded, thus inhibiting its larger deliberative capacity.

3.5. Decisiveness

Decisiveness is a key factor for assessing CFS's deliberative capacity. Its status as an inter-governmental body producing voluntary instruments implies that CFS's outcomes will only have consequences if actors have ownership and use them. The Committee identified this challenge and initiated monitoring processes to assess the implementation of its most relevant products. To more precisely analyze its decisiveness, we complemented interview results with findings from three processes conducted by the Committee to evaluate its own performance: (i) the CFS Effectiveness Survey of 2015 [65]; (ii) a Global Thematic Event on the application of the VGGTs at its 2016 Plenary [66]; and (iii) the 2017 Evaluation Report [63]. One general remark made in most interviews is that CFS products are relatively new and that their potential consequences will require more time to unfold, implying that results discussed here should be taken as preliminary.

One of the nine criteria used by the CFS Effectiveness Survey of 2015 was CFS influence, defined as the "extent to which CFS is positively influencing policy processes and enhancement at regional and national levels through the delivery and promotion of its main outputs" ([65], p. 7). When questioned about actual influence, 28–35% of respondents gave high ratings, 19–26% medium ratings and 26–34% low ratings on a five-point Likert-scale, depending on the CFS product in question. These results contrast with much higher values for potential helpfulness, with 59–65% high, 15–19% medium and 9–15% low ratings. This suggests that CFS products do have some influence, though not enough yet to fulfil the expectations that participants themselves associated with them.

Looking at a more specific case, the implementation of VGGTs that were widely discussed in a special event during the 43rd Session of the CFS, the Committee concluded that many awareness-raising and capacity-development activities are being organized to facilitate VGGT implementation. Interview results corroborate this finding, indicating that the VGGTs are being anchored in many regional frameworks and national development strategies, though it is difficult to assess the real impact of these legal reforms in land tenure dynamics at the local level. In fact, most constraints and challenges identified relate to reforming policy and legal framework, as well as operationalizing its implementation.

Consequentiality can be understood not only in terms of impact from policy instruments produced by CFS, but also if the CFS is fulfilling its expected roles assigned during its 2009 Reform process, a point examined at the 2017 Evaluation. On its 2009 reform, the CFS established six roles that would be sought in two phases: (i) coordination at global level (Phase 1); (ii) policy convergence (Phase 1); (iii) support and advice to countries (phase 1); (iv) coordination at national and regional levels (Phase 2); (v) promote accountability and share best practices at all levels (Phase 2) and develop a Global Strategic Framework for food security and nutrition (Phase 2) ([58], pp. 2–3). The 2017 Evaluation assessed each of these six roles. As a general note, the report concluded that the Committee performs well on enhancing global coordination and that "[t]here is an uptake of main policy convergence products (VGGT), but it is too early as yet to assess the impact" ([63], p. vii). Nevertheless, less positive performance was found in other roles such as the provision of support and advice to countries, coordination at national and regional levels and the promotion of accountability, which, in line with the previous sub-section, remains low at the level of sharing best practice.

The current analysis of CFS's decisiveness has limitations considering that many of CFS's instruments that could have consequences are relatively new and their usage and impacts are still unfolding. Still, interviews and CFS's own reports suggest that the Committee has the potential to reach higher levels of decisiveness, in particular due to key instruments that receive more acknowledgements and recognition, such as the VGGTs.

In sum, results from the case study indicate that CFS includes a wide representation of food security discourses, institutionalized representations and facilitating mechanisms. This diversity of representation, aligned with deliberative modes of communication and influence, facilitates transmission, which seems to occur at unusually high levels for a UN body. Relatively strong levels of transmission are, therefore, a positive achievement of CFS in increasing deliberative capacity in food governance. This could be better developed if accountability were stronger, since we found mixed results of internal accountability and a weak external accountability mechanism. Furthermore, while meta-deliberation was found, so were signs of erosion in the reflexive capacity of the Committee. The analysis of decisiveness was limited due to the time spam of major CFS policy instruments. There are clear indications that CFS's outcomes do have the potential to influence food dynamics at national and local levels, but the real impact of these instruments is still unfolding.

4. Conclusions

Multi-stakeholder participation has become a widespread feature of current approaches to global governance. The recently adopted 2030 Agenda for Sustainable Development underlines this trend, stating that its follow-up processes should be "... open, inclusive, participatory and transparent for all people and will support reporting by all relevant stakeholders" [67]. Given the prominence of this governance instrument, this paper explores the usefulness of a heuristic framework for better understanding the degree to which MSP contributes to making global governance more deliberative.

We therefore used the heuristic framework of Dryzek's deliberation theory applied to the Committee on World Food Security (CFS), an intergovernmental body where participation of different stakeholders features prominently. The framework considers that deliberative systems are characterized by the core principles of authenticity, inclusiveness and consequentiality. It suggests that these principles can be operationalized by characterizing the deliberative system in question,

its public and empowered spaces and the levels of transmission, accountability, meta-deliberation and decisiveness. This comprehensive approach complements recent academic efforts in better understanding the structures and patterns of global food and sustainability governance from a systemic point of view [68].

In our assessment of the CFS case, we find achievements and limitations in the usefulness of this tool to analyze under which conditions the current MSP favors greater deliberation and more democratic decision making in global food governance. The framework clearly facilitates an overview analysis of the deliberative system, theoretically linking analytical elements that are generally treated separately in the literature, such as accountability and reflexive governance. Being built on a sound theoretical foundation rooted in the deliberation theory, the analysis goes beyond more comparative and empirical studies that only evaluate outcome performance. Indeed, it clearly links elements of MSP process (transmission) and outcomes (decisiveness), to comprehensively assess deliberation.

In terms of limitations, our assessment of CFS's deliberative system would benefit from addressing power more explicitly, or more precisely how power influences each of one of the different elements of the deliberative system framework. Some elements for this analysis were suggested, e.g., identifying how power asymmetries shape criteria for selecting representatives, funding and rules of engagement. Thus, growing power asymmetries between participants can bring democratic decision-making into question, since this can hinder transmission of discourses, real accountability and the consequentiality of MSP decisions. In this regard, our content analysis of discourses was helpful in categorizing the different discourses that permeate the public and the empowered spaces, but it did not provide elements to precisely define the dominant discourses and those with more restricted access to decision-making. In this aspect, a full discourse analysis could bring more empirical evidence to how discourses are transmitting, also illuminating power dynamics.

There are also other avenues to investigate how power influences the different components of Dryzek's framework. As mentioned when the framework was introduced, the concepts of instrumental, structural and discursive power [46] can be used to assist the identification of flaws in transmission, accountability and reflexivity. Furthermore, Burnet and Duvall [19] present a useful entry point for further conceptual development. Understanding power as social relations, their theoretical work shows that power can be compulsory or institutional in the form of structural circumstances and "through more diffuse constitutive relations to produce the situated social capacities of actors" ([19], p. 48). In the assessment of the deliberative quality of MSP arrangements, this would mean taking note of the material, symbolic and normative resources that are part of relevant compulsory or institutional contexts and that play a role in the interaction of involved actors. Future research on MSP could point in these directions.

Finally, the case shows that MSP requires significant improvements to address deficits of accountability, meta-deliberation and decisiveness if such processes are to live up to the expectations associated with them. By proposing this analytical exercise, we expect to advance a heuristic framework useful for assessing deliberation in MSP that could be helpful in the context of the growing importance of this instrument in sustainable development and global governance.

Acknowledgments: This research was supported by: (i) the project "Forum on Renewable Resources and the Sustainable Development Goals", conducted by the Institute for Advanced Sustainability Studies (IASS), with support from the German Federal Ministry of Food and Agriculture (BMEL) and the Fachagentur Nachwachsende Rohstoffe e.V. (FNR), and (ii) the Swiss Programme for Research on Global Issues for Development (r4d programme), funded by the Swiss Agency for Development and Cooperation and the Swiss National Science Foundation [Grant number 400540_152033].

Author Contributions: M.A. Zanella, A. Goetz, S. Rist and O. Schmidt reviewed the theory and developed the analytical framework. M.A. Zanella collected and analyzed the data for the case study. J. Weigelt reviewed the paper and contributed to the conclusion. M.A. Zanella, A. Goetz and S. Rist wrote the paper.

Conflicts of Interest: The authors declare no conflict of interest. The founding sponsors had no role in the design of the study; in the collection, analyses or interpretation of data; in the writing of the manuscript; nor in the decision to publish the results.

Appendix A

Table A1. Mix-Method Package used to Operationalize Dryzek's Deliberative System Framework. CFS, Committee on World Food Security; VGGTs, Voluntary Guidelines on the Responsible Governance of Tenure.

Procedure	Objective(s)	Method(s)	Comment(s)
1. Characterization of public and empowered spaces	a. To identify main actors (stakeholders) participating in both domains	• Stakeholder analysis	Characterization of discourses in the public space: literature review, coding and clustering content from webpages, interventions, declarations, and statements
	b. To identify and characterize their associated discourses	• Content analysis of discourses	Characterization of discourses in the empowered space: content analysis, coding and clustering interventions from meetings of the CFS
	c. To analyze the convergences, tensions and conflicts that might exist between different discourses		
2. Analysis of the modes of communication among actors within the empowered space	d. To identify elements of communicative action within CFS negotiations	• Participant observation • Semi-structured interviews	Principles of ideal deliberative procedures: communication with truthfulness, respect, and mutual justification without coercion/threats
3. Comparison between actor participation and discourse representation between the public and empowered spaces	e. To assess effective participation	• Content analysis of participant observation	Transmission: (i) discourse representation; (ii) signs of ideal deliberative procedure; and (iii) ability of actors to effectively participate and influence decisions
	f. To assess **transmission** of discourses between the public and empowered spaces	• Semi-structured interviews	
4. Accountability assessment	g. To assess:	• Participant observation	Interview questions related to formal and informal obligations towards their constituencies and between higher and lower hierarchical bodies
	(i) Internal **accountability**: representatives give an account and are held responsible to their constituencies	• Semi-structured interviews	
	(ii) External **accountability**: organizations give an account to a broader range of affected stakeholders		
5. Meta-deliberation assessment	h. To investigate whether there are regular occasions of reflexivity	• Participant observation • Semi-structured interviews	Interview questions related to (i) progress and failures since the reform; (ii) new feedback mechanisms built into the reformed decision-making process
6. Analysis of decisiveness	i. To assess if and how decisions made by CFS are being implemented at lower levels (regional, national, and local)	• Literature review	Literature review: (i) CFS Effectiveness Survey of 2015; (ii) 2017 Evaluation Report
		• Semi-structured interviews	Interview questions related to use of CFS' outputs by different stakeholder groups
		• Participant observation at the Global Thematic Event on the application of the VGGTs	

Appendix B

Table A2. Additional Information on Semi-Structured Interviews. CSM, Civil Society Mechanism; PSM, Private Sector Mechanism; HLPE, High Level Panel of Experts on Food Security and Nutrition

Group	Number of Interviews	Comments
Government North	4	Three high-level diplomats based in Rome from active and delegations generally supportive of CFS (one was chair of a CFS Open-Ended Working Group); one mid-level Ministry representative from a government less supportive to CFS that was involved in the negotiations of CFS' VGGTs and RAI.
Government South	2	One very experienced Rome-based diplomat from government supportive of CFS, also chair of an Open-Ended Working Group and one diplomat that was formerly extensively involved in CFS 2009 reform.
Civil Society North	4	One senior policy advisor from a major international NGO; one senior policy advisor from a northern philanthropic NGO; one representative of a global peasant organization; one head of a civil organization more directly involved in the recent debate about the relationship between CFS and the 2030 Agenda for Sustainable Development. All participants of the CSM and active in the CFS for at least 4 years.
Civil Society South	2	Two activists well-known in CFS circles: One is a former HLPE member and was directly involved in VGGTs and RAI negotiations and the other was a major contributor to the CSM in the negotiations on Connecting Smallholders to Markets.
Private Sector North	5	Three participants of the PSM: One director for governmental relations of a major global corporation in the retail sector; one senior advisor for a global association in the inputs sector; and PSM Secretary. Additionally, the Secretary-general of WFO; and one program officer of a major foundation funder of CFS. These participants informed to get involved in the CFS in the past 2 years.
Private Sector South	1	One representative of a medium-size farmers' co-operative, participant of the PSM for the first time.
International Organization North	1	Agribusiness adviser of a global financial institution who follows CFS negotiations since 2009.
International Organization South	1	Head of a Regional FAO Bureau, formerly involved in the 2009 reform.

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Article (4): M. A. Zanella (2020)

Research in Hospitality Management 2020, 10(1): 29–41
https://doi.org/10.1080/22243534.2020.1790207

RHM
2020
Research in
Hospitality
Management

On the challenges of making a sustainable kitchen: experimenting with sustainable food principles for restaurants

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ABSTRACT: Concerns with the sustainability of food have moved from the margins of the gastronomy world to a much more central stage, mirroring a growing concern by citizens around food origins, carbon footprint and social practices in value chains. Evolving literature on food sustainability addresses many of these challenges, with macro and systemic approaches that have proved valuable in certain domains, such as food policy. However, professionals from the hospitality industry are still very under-informed on the methods adopted by researchers investigating food sustainability. This article tries to fill this gap by presenting an approach on how micro-level practices in restaurant kitchens can be informed by sustainable principles derived from the conceptual lens of food sustainability. It demonstrates the identification of principles and the definition of sustainable practices with two empirical cases: Hermann's restaurant in Berlin, and Mesa pra Doze gastronomic project, in Brasília. Comparing those two different experiences, similar and dissimilar challenges were found. Contrary to common thinking, the higher costs normally associated with sustainable sourcing were diluted by the higher margins and low weight of sustainable ingredients in the total operational costs. Access to these, in terms of time and availability, proved to be the real challenge, given their less developed distribution channels. Lastly, the high degree of freedom and meaningful deliberation which the kitchen team benefited from, in both cases opened the possibility to more coherent and comprehensive definitions of sustainable principles and practices.

KEYWORDS: food sustainability, food systems, sustainable kitchen, sustainable gastronomy

Introduction

There is a growing interest in the gastronomy world on issues related to sustainability. More and more chefs, sommeliers, gastronomes, restaurant owners, managers, food journalists, and many other professionals in the hospitality industry deal directly with themes such as food sourcing, food miles, fairness, energy and water conservation, and waste reduction, among others. These topics have moved from the margins of this industry to much more centre stage and the evidence of this is considerable. To name a few examples, one can notice world-leading restaurants became famous for their focus on certain aspects of food sustainability: Noma and the New Nordic Cuisine movement certainly may come to mind for many readers; a growing number of lists and awards to business and professionals that take the lead in this area, such as the Sustainable Restaurant Award of the World's 50 Best List; and sustainability featuring prominently in the agenda of many food festivals, symposiums, and seminars — from MAD in Copenhagen, to Madrid Fusión in Madrid, and Mistura, in Lima.

The interest in sustainability in gastronomy mirrors evolving dynamics in society with its relationship with food. Citizens are also more and more concerned about food origins, carbon footprint, social practices in the value chain and integrity of their food (Krystallis, Grunert, de Barcellos, Perrea, & Verbeke, 2012; Micheletti & Stolle, 2012). How far these concerns will change the various unsustainable practices that still prevail in the global food industry is an open question (Vermeir & Verbeke, 2006; Van den Berg, 2016). Still, to anyone in the food industry, sustainability cannot be ignored anymore.

Unquestionably, food sustainability is not being ignored by researchers, considering the growing scientific literature on the subject approaching the very same previously mentioned issues. A great part of this research adopts systemic lenses to investigate the sustainability of the food industry (Ericksen, 2008; Colonna, Fournier, & Touzard, 2013). That is, borrowing the concept of food systems, certain authors investigate how the different parts of this system perform better or worse when it comes to certain sustainability criteria (Ericksen et al., 2010; Marsden & Morley, 2014).

This macro and systemic approach adopted by researchers has proved valuable in certain domains. Food policy, for example, must necessarily generate wide impacts on food production and consumption practices to be successful, thus the systemic approach is vital. To be informed by good research adopting this perspective is potentially very useful for policymakers.

On the other hand, chefs, managers and other professionals in the restaurant industry tend to carry a much more micro-level focus in their business practices. For them, the systemic overview might be useful for contextualisation, but it is of little practical

use when making decisions on how to operate their kitchens or how to adopt more sustainable procedures in their operations. In other words, professionals from this industry are being informed by diverse sources of knowledge — from exchange among peers, to events and specialised media — but very little by the macro and systemic approach adopted by researchers investigating food sustainability (Cavagnaro, 2013). This is worsened by the scarcity of approaches linking the macro-lenses of food system sustainability with the micro-practices of operating kitchens, in particular by how assessments so far show a very limited comprehensive understanding of sustainability (Higgins-Desbiolles, Moskwa, & Wijesinghe, 2019).

Hindley (2015) shows how the rise of this term in gastronomy was marked by stylised and stereotypical conceptions that do not do justice to the increasing conceptual complexities surrounding sustainability. There have been efforts to address these intricacies through the development of better-informed definitions and practical principles, such as approaches used by green certification schemes (Barneby & Mills, 2015), and research-led assessments of sustainable performance of restaurants (Rimmington, Carlton Smith, & Hawkins, 2006; Legrand, Sloan, Simons-Kaufmann, & Fleischer, 2010; Schulp, 2015). Still, the lack of unified methods and the complexity of this challenge calls for simpler blueprints that are sufficiently manageable at the level of individual restaurants. In other words, methods that facilitate self-construction of simple guidelines, so these can be rightly informed by sound science and able to capture the environmental, social and economic dimensions of sustainability (Cavagnaro, 2015).

This article tries to fill the gap already identified in the literature (Jacobs & Klosse, 2016) by presenting and discussing evidence from two empirical cases where this link between macro- and micro-levels of food sustainability were explored. The first case takes place in a major global cosmopolitan city — Berlin, Germany — where a new restaurant experimented with an internal exercise of adopting ten self-constructed sustainable food principles. I was the first head chef of this restaurant. I tried to organise kitchen procedures based on these ten principles, drawing strongly from the literature on food sustainability. The second case takes place in Brasília, the regional centre and capital of Brazil. Inspired by the challenges found in Berlin, in Brasília I operated a smaller 12-seat twice-a-week pop-up restaurant, where similar sustainable food principles strongly shaped the menus and the restaurant operations.

Comparing those two different experiences, similar and dissimilar challenges were found, which are worth documenting and discussing within the wider scientific and gastronomic communities. Thus, this article aims to provide a double contribution. Firstly, one to the research community of food science and gastronomy, by demonstrating an empirical way in which the macro-level of food systems can be analytically linked with the more micro-level of restaurant operations through the development of sustainable food principles and practices at the micro (restaurant) level. Secondly, to the professionals of the restaurant industry, by discussing practical challenges that might be faced when pursuing similar goals in their operations.

Almost completely based on self-experience, my positionality in this article is clear. It is not my intention to provide comprehensive overviews of how food sustainability in restaurants can or should be achieved. It is rather the results of self-reflection and discussions with peers — mostly social scientists and chefs — on how to bridge the two worlds, by chance, two worlds that pertain simultaneously to my career. Moreover, all sources of data are based on my non-consecutive participatory self-observation over the past three years. More specifically in two situations: i) when I led the kitchen of Hermann's Eatery Berlin[1] as the first executive chef (May 2017 to February 2018); and ii) when I headed the pop-up diner restaurant Mesa pra Doze[2] (November 2018 to December 2019). Numerous exchanges with kitchen peers, managers and recurrent clients of these two business complement the sources of data. This approach of relying on observation and self-reflection as sources of data is very much in line with anthropological autoethnographic studies (Jones, Adams, & Ellis, 2016; Spry, 2018) as well as transdisciplinary studies (Hadorn et al., 2008; Lang et al., 2012) which try to limit or even eliminate the distance between subject and object. In transdisciplinarity, more specifically, authors suggest that better research is achieved when researchers clearly declare their positionality and desist from seeking impartial knowledge (Rosendahl, Zanella, Rist, & Weigelt, 2015).

The article is structured as follows: after this introduction, the next section reviews the debate on food system sustainability. This step is useful for approaching the current status of literature on the subject, and for contextualising the schools of thought that influenced the approach for adopting principles of food sustainability. These principles are presented in the following section, which links the thinking on food sustainability at the macro-systemic level to kitchen operations, briefly describing their scientific basis. The results and discussion section presents the main challenges found when these principles were put into practice when opening Hermann's Berlin and Mesa pra Doze in Brasília. The focus of this section is to highlight similar challenges that might be faced by others in trying similar approaches in cosmopolitan cities. Finally, the conclusion discusses some of the implications for chefs, professionals in the food industry, and researchers.

Reviewing the debate: What does food system sustainability mean?

Food system sustainability is an emerging concept that links the main ideas of *sustainability* with the concept of *food systems*. Food systems, in turn, are in line with the evolution of yet another relevant and always evolving concept: *food security*.

The use of the term food security, while initially conceptualised as mostly a single dimension of food supply, gradually evolved to reflect policy thinking throughout the twentieth century by incorporating other dimensions and concerns (Maletta, 2014). This evolution culminated in the widely used definition consolidated by the 1996 World Food Summit: "Food security exists when all people, at all times, have physical, and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life" (Food and Agriculture Organisation of the United Nations — FAO, 2006). Thus, by the beginning of the current century, it became commonly accepted to apply the term when considering four dimensions: availability, access, utilisation and stability. Reflecting growing analytical complexity, the four dimensions of food security do justice to the many aspects relevant to policy. It also relates directly to many traditional disciplines addressing

food: from agronomy to economics, nutrition and health, to environmental studies.

More recent literature has explored the connection between the concept of food security with system perspectives (Ericksen et al., 2010; Colonna, Fournier, & Touzard, 2013). System studies investigate the interdependence between levels and scales, for example, the effect of the global phenomena of food price volatility coupled with a local-scale problem of monopolistic behaviour of food distributors in a certain area. It also addresses short and long terms, for instance, the trend of growing urban population — long term — interacting with a local economic recession. And it can also point to cross-sectoral trade-offs — for example, the frequently mentioned trade-off of immediate food production increase versus long-term decreasing natural capacity of the environment in delivering ecosystem services (Misselhorn et al., 2012).

Studies that applied systemic thinking to food security analysis were particularly concerned with understanding how food security outcomes are produced by the interaction of the different parts of systems. Therefore, the term *food system* began to be applied in reference to the different actors, processes and institutions that interacted and shaped how food is grown, produced, processed, transported, and consumed. Under this analysis, special concern is given to how certain effects (internal or exogenous to the system) influence actors' interactions and generate outcomes. Additionally, one of the main implications of understanding food security as outcomes of food system interactions is the increasing complexity and non-linearity of outcomes (International Panel of Experts on Sustainable Food Systems — IPES FOOD, 2015). In other words, when one assumes that food security derives from an uncountable number of multiple interactions between actors operating at different levels and scales, outcomes become too complex to be foreseen, modelled and/or analysed (Foran et al., 2014).

In terms of empirical studies, authors propose different categorisations when describing food systems. Colonna, Fournier, and Touzard (2013) suggest the *co-existence* of diverse food systems, which can be classified according to certain typologies: "local", "regional", "agri-industrial", or "differentiated quality", for example. The main contribution of this approach is to recognise overlaps between different food systems. Using an example from the restaurant industry, a certain actor — a restaurant — might acquire part of its inputs from a global/industrialised food system, while other inputs might be bought from a local/artisanal one. Interactions between these different food systems might generate complex outcomes in terms of income generation, distribution, social and environmental impacts, among others (International Fund for Agriculture Development — IFAD, 2013).

Analysis of food system outcomes have not been limited to the descriptive performance of systems, but frequently have been linked to political economy approaches. Normative rules provided by right-to-food approaches (Golay, 2010) or analysis on inequality and poverty impacts (Swinnen, 2007) can assist us in analysing food system outcomes. The debate on food system performance has also been linked to concepts such as environmental integrity and socio-ecological resilience (FAO, 2013; Tendall et al., 2015). Finally, food system *governance* has been another addition to this canon (Marsden, 2011; Candel, 2014), presenting evidence on how decision-making processes in food systems shape its outcomes, contributing to ongoing food debates such as those around food sovereignty (Sage, 2014) and food democracy (Renting, Schermer, & Rossi, 2012).

The integration of all these different approaches into the analysis of food system outcomes has been calling for an umbrella concept that: i) encompasses the complexities of systems; and ii) adopts normative principles to which food system outcomes can be measured and the overall performance of food systems can be compared. This is where the frontier of *food sustainability* is currently found. Several initiatives have been exploring approaches that contribute to the building up of the food sustainability concept. These efforts to conceptualise food sustainability show one important similarity: the definition and adoption of principles as normative rules to which food systems can be compared in terms of sustainability performance. Some useful examples are presented in Table 1.

As can be easily noticed, these different approaches carry some similarities and overlaps. They are not necessarily analogous and comparable, considering that they mark a departure from different epistemic origins and are organised for different purposes. Still, some dimensions of food sustainability are noticeably equally presented in all mentioned examples.

One of the most important differences of these approaches is their level of analysis, that is, how far they can be rendered applicable to specific cases, such as one particular food system. When operationalising food sustainability at this level, Jacobi et al. (2018) derive indicators to assess specific dimensions of the concept of resilience, therefore demonstrating how a more general and macro concept can be rendered applicable at a territorial level. The operationalisation of food sustainability principles into measurable indicators and composed indexes is also one approach tested by food system researchers (Allen, Prosperi, Cogill, Padilla, & Peri, 2019; Augstburger, Käser, & Rist, 2019). These efforts suggest that general food sustainability principles must be deconstructed into more specific elements in order to be applicable.

This leads us to the question initially asked by this article: how can one render useful principles of food sustainability constructed at the macro-level to the micro-level of day-to-day kitchen practices? The next section investigates the challenge of linking those two levels by suggesting one approach that adopts principles and derives practices that can be assessed by restaurant managers, owners or employees.

From systems to kitchens: principles for a sustainable kitchen

The previous section reviewed the emergence of food sustainability concepts and how this currently influences research and policy endeavours that seek to contrast and compare the performance of different food systems. Inspired by this theoretical background, this section presents one approach that links the macro-level of systems with the micro-level of a single restaurant. The main intention behind this exercise is to build up a tool that: i) is theoretically grounded in the literature about food sustainability; ii) is applicable at the restaurant level; and iii) allows the identification of restaurants' own contribution to more sustainable food systems. Through this exercise, it is expected that professionals from the hospitality industry can rely on a comprehensive set of principles that are coherently and theoretically connected, reducing the risks associated with fragmented and intuitional knowledge.

TABLE 1: Examples of food sustainability conceptualisation

Source	Principles	Used as
Research programme "Towards Food Sustainability" – Centre for Development and Environment, University of Bern (CDE, 2015)	i) food security ii) the right to food and other related human rights iii) reduction of poverty and inequality iv) environmental integrity v) socio-ecological resilience	A method to comprehensively compare the performance of co-existing food systems across different regions and scales
Chaudhary, Gustafson, & Mathys (2018)	i) food nutrient adequacy ii) ecosystem stability iii) affordability and availability iv) sociocultural well-being v) resilience vi) food safety vii) waste and loss reduction	Principles for assessing global food systems performance
Research programme "Urban-Driven Innovations for Sustainable Food Systems" (URBAL, 2017)	i) food security ii) nutrition iii) governance iv) economic v) environmental vi) social	A participatory methodology for practitioners and policymakers in the identification of innovation pathways and their evolution towards sustainable food systems
Global Alliance for the Future of Food (2019)	i) renewability (integrity of natural and social resources) ii) diversity iii) healthfulness (health and well-being of people, society and nature) iv) resilience (adaptive capacity) v) equity (sustainable and just livelihoods) vi) interconnectedness (interdependence while in transition) vii) inclusiveness (in decision-making and governance)	Principles reflecting values shared by members of the Alliance, which shape the work of the organisation

The approach consists mainly of two simple procedures: i) the identification of sustainable food principles that could normatively guide re-orientation and innovation of food practices at restaurant level — thus adopting principles in a similar fashion to those presented in the second section, but at a more applicable scale and contextualisation for restaurants; and ii) the choice of sustainable kitchen practices that organise the principles into actions, also at a restaurant level.

Sustainable kitchens: Ten principles

To arrive at a final list of principles and the choice of practices, an iterative and informal process was developed, drawing strongly from participatory approaches. Initially, I worked on a draft, which was subsequently complemented and adjusted after several consultations, interactions and informal discussions with the wider restaurant team. The goal was to use the available scientific literature as a guide for discussion and to jointly construct a "target knowledge", that is a commonly agreed understanding of the "need for change, desired goals and better practices" (Pohl & Hadorn, 2007, p. 9). In that sense, the final list of principles represents both information and values that are informed by literature, as well as a jointly constructed vision shared by the team in a particular kitchen.

This approach was implemented in more detail in the first case — Hermann's Eatery Berlin — as this business had a more standardised restaurant structure and a much larger staff. The second case was slightly simpler. Departing from the accumulated experience at Hermann's, I, as chef and owner of Mesa pra Doze, adapted the principles and practices designed at Hermann's to the specificities of the new business in Brasília. The differences between those two cases in terms of challenges while using the principles and practices in motion is explored in the discussion section of this article.

Even though these principles and practices are the result of a participatory and iterative process and are grounded in literature, limitations to this approach must be highlighted. First, the principles are not complete nor comprehensive answers to how to achieve sustainability in kitchen operations. They focus on certain aspects of kitchen operations, such as sourcing, and therefore might overlook other relevant dimensions (e.g. labour issues, residue treatments, and other issues which the team was less familiar with). Moreover, they are solely focused on the operations part of the regular domain of a kitchen chef, therefore anything related to service (front-of-house) and administration is out of the scope of this exercise. One must note, however, that it was not the intention of all involved in this exercise to design a comprehensive list of principles that would deal with every single aspect of food sustainability and kitchens. Other restaurants and teams might have a different view on the issues and would certainly adopt different principles if a similar exercise were to be conducted.

Against this background, the ten principles for food sustainability are:

- Embrace **diversity and seasonality** as the basis for food sustainability;
- Cook **real food**: minimal processing, and prioritising wholesome, fresh and nutritious products;
- Prioritise **local**, but do not close borders;
- Prefer **organic** and/or agro-ecological food; labels are important, but what really matters is how food is produced;
- Adopt a **vegetable-oriented diet**, but keep in mind that many food systems require animals for achieving sustainability;

- Favour **small producers**: their personal efforts pay off in quality, while income stays in the local economy and the benefits will be more fairly shared across the food system;
- Reduce **waste** to a minimum: reduce, reuse, recycle. Be efficient and adopt a nose-to-tail approach to cooking;
- Be **innovative**, but do not always reinvent the wheel; in many situations, being innovative means returning to our roots and **traditions**;
- Consider that the food industry needs **fixing**, but we are addicted to it. Radical solutions inspire but do not always lead us to a needed gradual transformative change; and
- Change recipes, techniques, ingredients: never sacrifice **taste**.

To demonstrate that the principles presented above are grounded in theoretical and/or empirical evidence found in the food systems' literature and practice, Table 2 briefly outlines some of the factual bases that underpin each principle.

From principles to practices

Going further with this exercise of identifying principles that are applicable by restaurants, kitchen practices are also identified. In many cases, kitchens are organised around certain procedures, protocols, and practices. While some of these refer closely to day-to-day routines that chefs follow, others can provide a certain frame of reference to the employees in which directions and ranges they can make their decisions; for example, decisions on which ingredients to buy, quantities, and from whom. In the case of this exercise, these practices represent more pragmatic operational choices which translate the previously mentioned principles in kitchen operations. Table 3 presents those.

The identification of principles and practices is just one initial step for shaping kitchen organisation and procedures towards sustainability. It is expected that many challenges will be found whenever these are put into action. The next section discusses some of the challenges I found when these principles and practices were tested in the two cases under discussion: Hermann's Eatery in Berlin, and Mesa pra Doze in Brasília.

Results and discussion: challenges found when implementing principles and practices

Before presenting the main challenges, it is necessary to provide context for the two empirical cases explored in this article, as the business format brings important implications in terms of facilitating or challenging the choice and execution of certain sustainable practices.

Hermann's Eatery in Berlin

Hermann's Berlin is a daytime café and restaurant located in Rosenthaler Platz, a central and hip district in ultra-cosmopolitan Berlin. The place is generally open from morning to afternoon (approximately 09:00 to 17:00), serving items that are normally offered in cafés (sandwiches, soups, salads, cakes, etc.), but also offering lunch specials and brunches during the weekends. Hermann's can sit 70 customers — which can be considered a medium-size restaurant (or a large café) for Berlin standards — even though many clients consume mostly coffee items or use the space as a work area.

To define the type of food served at Hermann's was very challenging in the beginning — when I was invited to lead the kitchen — so, to present the origins of the restaurant might be useful for contextualisation.

Hermann's was opened in early 2017 as an initiative supported by the family-owned German multinational giant Bahlsen. For a long time, the company had been exploring new business areas where potential was envisioned, as a long-term strategy of diversification from the core business of cookies, sweets and pastries. Bahlsen therefore decided to create Hermann's as an exploratory laboratory to test new ideas, ingredients and processes with Berlin clients. The business was organised into two parts: i) a support B2B consultancy (called Platform) that linked small innovative start-ups with the big players of the food industry; and ii) the restaurant, where clients could be received, recipes could be tested, and events could be held. Thus, both the Platform and the restaurant were set up as a unique, independent, self-managed subsidiary of the Bahlsen Group. With the motto "looking for the future of food", Hermann's was established with the mission of being innovative, bold, exploratory and risky, with a well-funded budget and a very comfortable timeline to create positive operational returns.

Though this part of the concept was indeed clear, imprecise guidance on how exactly the vision would translate into food offerings created several challenges in forging a clear concept and menu. On one hand, there was substantial freedom to test and suggest many diverse recipes, but on the other hand clients (and even the team) had difficulties in understanding what the restaurant really offered in terms of cuisine.

This imprecision is linked with the design of the ten principles presented in the previous section. Hired as the head chef and facing this imprecise definition, I took the initiative to start discussing with peers some guidance for the kitchen team. Thus, I started drafting and discussing principles that should guide the "future of food", drawing strongly on the understanding that the future of food is sustainable food.

In line with the general manager — who was responsible for all other aspects of the business, from the front-of-house management to budget and human resources — and with the experimental character of the firm, a great level of freedom was offered to the chef. Nevertheless, it was also made clear from the beginning that no expectations should be created in terms of using the principles for communicating with clients, nor that the principles would influence the Platform part of the business. In other words, everything directly related to kitchen organisation was under my influence — and therefore could be guided by the principles — but those should be considered as internal orientations only and not really part of the business concept.

Over time and through more internal discussions, Hermann's food concept slowly started to take shape. Today, the restaurant uses the following to describe its food concept to clients.

> *In our mission to make food not only delicious but also truly nourishing, we draw inspiration from cultures around the world, and strive to deepen our knowledge with every bite.*
> *Our food is free from refined sugars and flours and full of goodness. We bake, cook, smoke, cure and ferment all of our ingredients in-house.*
> *Whether local or global, we only work with suppliers that share our vision and values in shaping a good future of food.*
> *We are proud to support them in the food we serve. We're exploring gut health, prebiotics and probiotics, fermentation and fibre to restore our inner ecosystem. We want to see a food system that is more circular with*

TABLE 2: Principles of food sustainability applicable to sustainable kitchens and their factual bases

	Principle	Basis
1.	Diversity and seasonality	Diversity is the main factor driving resilience. Diverse food systems react better to shocks and adapt to long-term changes. Non-diverse food systems and their inability to withstand shocks were reasons for many famines (Fraser, Mabee, & Figge, 2005). Seasonal produce means using the existing natural base/landscape and not going against them. Seasonal products tend to use less inputs (e.g., energy, greenhouse gases) (Van Hauwermeiren, Coene, Engelen, & Mathijs, 2007) and taste better.
2.	Real food	High consumption of ultra-processed foodstuffs (refined sugars, refined wheat, etc.) are indicated as one of the main reasons for malnutrition or obesity (under consumption of micronutrients and overconsumption of calories) worldwide (rich and emergent countries) (Monteiro, Moubarac, Cannon, Ng, & Popkin, 2013; Canella et al., 2014) Besides being more tasty (or naturally tasty, in opposition to food with added chemical flavour components), real food (minimal processing and/or home-processed, fresh) retains more vitamins and minerals present in the food that we need for a healthy life, thus it is more nutritious.
3.	Local food	Local production is strongly linked with seasonality and quality. Many local foodstuffs are produced by small farmers who trade in alternative/preferential markets, with a higher share of profits for producers across the different actors of the value chain (Van der Ploeg, Jingzhong, & Schneider, 2012). Local production can have smaller CO^2 footprints, although this is very much dependent on how food is transported (dry goods transported in bulk [cargo ships], for example). One option would be to exclude goods transported by aeroplane, which has a much higher carbon footprint (Mundler & Rumpus, 2012). Also, many smaller and poorer farmers elsewhere depend on international markets for their livelihoods (e.g., coffee, cocoa, tropical fruits, etc.), one more reason for not closing borders (Burnett & Murphy, 2014).
4.	Organic	There are hundreds of reasons why organic products are better for our planet and for our bodies. As organic products become more established in the food market and the mainstream, less effort is needed to communicate their advantages (Crinnion, 2010). Agro-ecological food is a more general term that does not require third-part certification (label) as a proof of bio-production. Certification is costly and it can be a major barrier for farmers in developing nations. Besides focusing on the reduction of input use, agro-ecological food focuses on the diversity of crops, ancient varieties, and traditional vegetables and breeds, thus helping to sustain our planet's biodiversity (Gliessman, 2014).
5.	Vegetable-oriented diet	Less consumption of meat is strongly linked to both reduced environmental pressure (planet) and better nutrition (health) (Godfray et al., 2018). Complete absence of meat (vegetarianism) or animal protein in the diet (veganism) is a personal option by many, but there is less evidence and more controversy for its environmental and nutritional benefits (Baroni, Cenci, Tettamanti, & Berati, 2007; Hallström, Carlsson-Kanyama, & Börjesson, 2015; Rosi et al., 2017). Many sustainable agricultural systems require animals for nutrient recycling (e.g., compost substituting industrial fertilisers in integrated production systems), for controlling wild stocks (e.g., sustainable fisheries), or for increasing production efficiency (e.g., natural grazing in large areas) (Wanapat, Cherdthong, Phesatcha, & Kang, 2015).
6.	Small producers	In the quest for scale and efficiency, many food systems gradually evolve to exclude small farmers as sources of food. Small family farmers might have lower economics of scale, but they have higher economies of scope, implying that they tend to focus more on details that lead to high-quality produce. Besides, small family farmers tend to have more diverse and seasonal production systems (Principle 1) (Nayak, 2018). Favouring small production also keeps more income in the local economy, and it allows family farmers to capture a higher share of profits that are distributed across the value chain, thus it is an ethical decision to support them (Hebinck, Schneider, & van der Ploeg, 2014).
7.	Waste	Approximately US$ 1 trillion is lost per year due to food waste. Food waste is an economic, ethical and environmental issue (Gustavsson, Cederberg, Sonesson, & Van Otterdijk, 2011). Reduce, reuse and recycle are three mantras for any kitchen aiming to increase its sustainability performance. This is also linked to developing recipes that use produce in its totally – a nose-to-tail approach (e.g., less fancy cuts of meat, use of bones and carcasses for stock, vegetable skins for broth, re-use of oils for dressing, etc.).
8.	Innovations and traditions	For transforming our food systems, we will need to constantly innovate. But there is more and more evidence that many of the solutions we need will be found in the notebooks of our grandmothers and in our traditions, rather than in fancy laboratories. As in times of less abundance, families used to follow pretty closely the principles that we are setting for our kitchen (diversity, seasonality, local, waste reduction, etc.) (Altieri, 2004).
9.	Fixing food systems	To say that the food industry is broken is no longer a radical statement, but many critics of the food industry do not accept that our post-modern urban society is addicted to the vast benefits that food industrialisation brought us (convenience, abundance – to name just two things that our society is unlikely to renounce). Like any addiction, simply cutting its intake from one evening to the next morning will likely fail. Additionally, a large number of people do not accept that our societies are addicted to the food industry, which calls for gradual transformations. Alternative radical options are inspiring examples but have proved successful only on a small and marginal scale. There are many examples of "small revolutions" in the food system: food hubs, community-supported agriculture (CSA), agro-ecological transitions, progressive food policy, among others (Baker, Gemmill-Herren, & Leippert, 2019).
10.	Taste	Never sacrifice taste, because first and foremost, food must be delicious.

TABLE 3: Practices of food sustainability applicable to sustainable kitchens

	Principle	Practices
1.	Diversity and seasonality	1.1 Design the menu first by considering the best ingredients available in that particular season in that area, and later thinking of specific recipes
2.	Real food	2.1 Avoid buying processed ingredients. Strongly avoid buying ultra-processed ingredients
		2.2 Make your own flavour bases (stocks, sauces, preserved vegetables, jams, etc.)
		2.3 Whenever possible, opt for wholesome flours, sugars, and unrefined ingredients
3.	Local food	3.1 Buy first from local and personally known producers, second from distributors, and only third from major retailers
		3.2 When buying from retailers, communicate with them about your buy-local policy
4.	Organic	4.1 Buy first from local and personally known organic producers
		4.2 Only buy non-organic when organic produce is unavailable or significantly more expensive (more than a certain rate or price, for example)
		4.3 Only require labelling if buying from distributors and retailers
5.	Vegetable-based diet	5.1 Use animal protein mostly to season vegetables
		5.2 When serving animal protein as a main dish, serve smaller portions and larger vegetable garnishes
		5.3 Culture, cure and ferment animal protein to increase its nutritional availability, and its flavour potential (thus contributing as a seasoning agent, rather than a sole ingredient)
		5.4 Do not adopt a fully vegetarian or vegan diet without reflection, as those can be as unsustainable as a regular diet if not complemented by other sourcing principles
6.	Small producers	6.1 Buy first from local and personally known small producers
		6.2 When buying from retailers, communicate with them about your policy of buying from small producers
7.	Waste	7.1 Seek a "zero-waste" policy when using vegetables and animals. Be creative and look for recipes for using skins, bones, leftovers, etc.
		7.2 Before throwing anything out, consider dehydrating, fermenting, preserving, etc.
		7.3 Monitor waste production, water disposal, and energy consumption
		7.4 Always give preference to "leftover" over "prime" cuts, "non-conventional cuts and animals" to "highly valued animals"
8.	Innovation and traditions	8.1 Use traditional cookbooks as main sources of information and recipes
		8.2 First research cooking traditions when using preserving techniques
		8.3 Critically reflect on the "newest trend" before adopting it
9.	Fixing food systems	9.1 Do not be ideological, since flexibility is important, and change is gradual
		9.2 Listen to your clients needs and wishes before posing an argument
10.	Taste	10.1 If a recipe follows all other nine principles, but does not taste good, do not add it to the menu

> *reintegrated by-products and rediscovered ancient ingredients.*
> *We believe this will lead us to more diversity, less waste and higher nutritional profiles. We believe that to be truly sustainable you must also be accessible, approachable and affordable, but without forgetting the true value of food (Hermann's, 2020).*

Challenges when implementing sustainable food principles at Hermann's

Diverse challenges, achievements and limitations were found when implementing the ten sustainable food principles at Hermann's. The discussion below reflects some of those in the period I headed the kitchen (May 2017 to February 2018).

Principle (1) — diversity and seasonality, practically a mantra of good food accepted by most chefs — was achieved well, but not without certain pitfalls along the way. While the practices associated with this principle call for designing the menu by first thinking of the best ingredients available during a particular season, there was resistance both in management and from certain clientele not to include ingredients and preparations that are easier to sell, while definitely not seasonal. For example, tomatoes, aubergines, zucchinis, strawberries, cherries and other summer fruits and vegetables are grown in greenhouses in the Netherlands or Spain during the harsh northern European winter. This was even more challenging considering the focus on healthy soups and salads, as part of the food offering. The way to address this challenge was to increase focus on winter vegetables and preserving techniques, such as fermentation, pickling, and dried and canned preparations. In the end, this was made relatively easy due to the growing interest in Berlin for local and seasonal food and the consequent effort of major retailers in finding local winter vegetables to distribute to restaurants in the city.

Principle (2) — real food — calls for avoiding processed ingredients, practically banning ultra-processed foods, and a focus on self-made flavour bases and wholesome flours, sugars, and unrefined ingredients. This was achieved well at Hermann's. Not only was this identified as one of the goals of the restaurant and the food concept right from the start of the business, but there was also a clear alignment between the chef's willingness to experiment and the vision that the leadership had for the restaurant. Thus, ultra-processed foods were very rarely part of any preparations, and processed foods were used with caution. The kitchen even experimented with completely banning refined sugar and flours, which in turn required a lot of adaptation and turned into a long, but worthwhile learning curve. One word of caution: to prepare our own flavour bases was only possible because the company had resources for covering the additional labour costs involved in making things in-house. For most food preparations, these costs were significantly higher than using ready-made products, in some cases doubling or more the total operational costs for a dish. Certainly, not all restaurants are in the same favourable position to implement this.

Principles (3), (4) and (6) — preferably buy local food, organic and from small producers — were very challenging to implement, and in the end, were only partially achieved. In

terms of organic sourcing, gradually the proportion of organic produce was increased when more commercial contacts were formed with producers and distributors. Thus, at the beginning of the operation, standard retailers offering organics were preferred. This was not necessarily due to price differences. In fact, the price of these quality-differential ingredients was rarely more than 20% higher than standard ones. Since the cost of ingredients was between 15–18% of the total operating costs of the restaurant, the margins were more than sufficient to pay more for local, organic ingredients from small producers.

The main problems therefore were not pricing, but inconsistent availability and distribution difficulties. Standard retailers had an important competitive advantage in terms of order timing and delivery. They could guarantee to deliver 90% of their portfolio at restaurant doors by 09:00 at the latest, even if one placed the order at 23:59 the previous day. Retailers working with local and organic products were far from being able to offer that. And since the team was small and opening hours were during the daytime, it was virtually impossible to dedicate someone from the kitchen team as responsible for direct purchasing (a strategy that many restaurants follow), as labour was needed in the kitchen from the early hours. In a city where labour is costly, very few hours could be dedicated by the kitchen team to purchasing.

The solution to partially achieve these principles was the following: Specific recurrent ingredients such as flours, dry goods and dairy were purchased directly from producers or small retailers. Other non-recurrent ingredients were purchased from major retailers, but clearly informed and communicated around the restaurant's preferences. Eventually, we noticed that they increased their own portfolio of these goods, as they could also monetise on the higher margins offered by these ingredients. After implementing these solutions, 80–90% of all dry goods and 40–60% of fresh produce purchased were either organic, local and/or from small producers.

Principle (5) — vegetable-based diet — refers to reduced use of animal protein, mostly in smaller portions or as flavour agents to vegetables, and to a reflective adoption of full vegetarian and/or vegan diets. This principle was very well achieved, as it had been one of the key elements of the food concept and menus since the restaurant opened. It was decided early on that the food offering should be composed of diverse vegetarian, vegan and restrictive diets (low gluten, no lactose, no fructose, etc.), even though the restaurant should not follow one or other diet restrictively. The team achieved several successful experiments with light dishes where animal protein was not the star, but rather acted as a flavouring ingredient for vegetables.

Initially, the main concern was that the clientele would not be able to understand the concept, but this quickly proved to be unfounded. Traditional German cuisine is very much centred in the triad of meat-carbohydrate-vegetable and to twist this was well understood and supported by consumers. This was obviously easier in the cosmopolitan atmosphere of Berlin and the restaurant's location, where classical cooking has a reduced presence in favour of more internationally oriented restaurants.

Principle (7) — seek zero-waste — suggested creative uses of leftovers, including experimenting with dehydration, fermentation and preservations, as well as a monitored and controlled production of waste. There was little achievement in terms of this principle, despite the efforts by the kitchen team to tackle this challenge. Comparable to other more conventional restaurants where I have worked before, the waste produced was relatively small. However, it was still a long way from a zero-waste policy because, irrespective of the many different strategies tried, many kinds of waste were still being generated.

There was very little waste in terms of prepared food. Due to good kitchen management, much of the food left was consumed by the team as staff meals. We also experimented with many different techniques to re-use parts that would normally go in the bin. Thus, the organic waste generated was also reasonably small and conditioned in adequate organic marked bins that converted them into compost — also due to the very good German policy on waste treatment.

Nevertheless, there was an impressive amount of recyclable and non-recyclable non-organic waste, from boxes, plastic, cartons and the like. With time, the team gradually managed to reduce part of this waste, either changing brands, increasing recyclable separation or buying more in bulk and discussing other options with suppliers. Still, the restaurant was far from achieving minimal waste generation.

With an effort to achieve this principle, I even studied restaurants that claimed to have achieved zero-waste.[3] They tend to share certain characteristics, such as a rotating menu structure, direct purchases with producers and more thoughtful recycling strategies. This somehow assisted in some solutions. One final comment on the issue is that the move to increase organic ingredients in the offerings did not improve waste generation, as many organic brands contained the same packing policy as standard ones.

Principles (8) innovation and traditions, (9) fixing food systems, and (10) do not sacrifice taste — represent values and approaches to how food system change can occur. Principle 8 calls for efforts in researching cooking traditions as a source of information and recipes, as well as a critical reflection on "newest trends" before adopting them. This principle was not achieved. Right from the start, there was a clear misalignment of expectations between the kitchen team and the general business strategy of the company. Hermann's was a family-owned multinational willing to follow the newest trend to be well-positioned in the food market. It was not in their interest therefore or they did not want to use their resources on critically assessing these trends vis-à-vis the other sustainability principles. The different motivations created noise, but very little interest in researching cooking traditions, and early on I realised that to push for this principle without support from the upper levels would not be fruitful.

Principle (9) calls for flexibility and listening to client's needs and wishes, before posing catechism arguments. This was very well achieved. It was shared by both the team and management levels that the food system transformation would be gradual and would accumulate from a growing network of small, specific changes and that this critical mass is created by interactions. This reflected more gradual improvements on many sustainability aspects of the kitchen, as demonstrated in the previous paragraphs. This benefited greatly from suggestions given by the team, clients and partners. Additionally, regular events were organised with a wider community of people interested in the subject in Berlin, which brought new insights that were frequently tested at Hermann's.

Finally, the last Principle (10) called for keeping taste as a pillar for food to achieve its many social roles. It is an indirect response to many food industry strategies that sacrifice

taste and general food quality for longer shelf-life, and lower production and distribution costs, etc. This principle was relatively well achieved. It was one of the main ideas agreed in the food concept — to be proud of what was offered — as well as one of the main plans for establishing a regular clientele. On some occasions, the internal pressure of constantly changing the menu as a commercial strategy and the need to use fancy innovative ingredients that represented the latest food trends challenged the kitchen in delivering this principle. But high ratings and reviews on food items and a growing clientele proved that this challenge was achieved.

Mesa pra Doze pop-up restaurant in Brasília

As in the previous section, before moving into the discussion of challenges, the case of Mesa pra Doze is contextualised. Mesa pra Doze is a twice-a-week pop-up restaurant in the Asa Norte neighbourhood of central Brasília. It differs from a normal restaurant that has its own premises, and the project works through a collaboration between the chef and a café called Antonieta, which opens daily from 09:00 to 21:00, from Monday to Saturday. On Fridays and Saturdays, the café closes its operations earlier, at 19:00, and the team of Mesa pra Doze set up their stations and re-open the space at 20:00 to run dinner under this brand.

The dinners are composed of between five to seven course, fixed tasting menus and offered to a maximum of 12 to 13 seats only (thus the name Doze, 12 in Portuguese). I set up this business after some years of experience and training in fine dining restaurants around Europe and Latin America. Inspired by other places where seasonal, local and organic food is offered in tasting menus for a limited number of people, I decided to organise a small, mobile gastronomic project where complete freedom of expression was possible. The project size was also kept very small number due to the limited investment available. Additionally, one of the main goals of Mesa pra Doze has always been to experiment with how far sustainable principles could inform the kitchen operation and menu offerings. Thus, it was supposed that this would be more easily achievable at a small scale first.

At the time that the project was being conceptualised (the second half of 2018), I had already worked with the ten principles for a sustainable kitchen at Hermann's. Therefore, one of the initial tasks when designing Mesa pra Doze's food concept was to adapt those principles into three main issues: i) the context, narratives and terminologies of Brasília in terms of food sustainability; ii) the scale of a 12-seat pop-up restaurant; and iii) a language that would be easy to communicate and could be used in marketing pieces. When adapting those to this context, Mesa pra Doze adopted seven principles for a sustainable kitchen (Table 4).

As can be easily noticed when comparing these with the ten principles at Hermann's, some aspects were merged, while others were adapted to the context. As previously mentioned, the formulation of the principles and practices at Mesa pra Doze was less a group exercise and more a self-reflection on how to adapt the principles to a much smaller-scale pop-up restaurant in a different regional context. On the one hand, the degree of freedom to select principles and practices was higher, favouring higher levels of coherence, a better fit to the local context of the city, and bolder, more straightforward ideas. On the other hand, as there was no direct consultation or a dialogue with peers for their adaptation, it is even more difficult to assess how far these principles could be adapted and applicable in other kitchens. With these in mind, the next section reflects on the challenges found when putting these seven principles into action.

Challenges when implementing sustainable food principles at Mesa pra Doze

Principle (1) — zero waste — calls for adopting a nose-to-tail and root-to-leaves approach, where by-products of cooking are valued and re-used, and prime cuts and leftovers are innovatively explored. As in the case of Hermann's, the issue of waste management was one of the most challenging and difficult to achieve. A lot of effort was put into making this principle operational at the scale of Mesa pra Doze, and yet, it was only partially achieved.

On the one hand, a nose-to-tail/root-to-leaves approach informed much of the cooking style adopted in the project in fact. Bones, skins, fat, roots, etc. were consistently used in recipes. Complete freedom to create and experiment facilitated this process, as I could adapt and change recipes accordingly. This process was also supported by the blind menu structure of Mesa pra Doze, where the use of by-products could be experimented with, with almost no limitations due to potential client refusal. Thus, I had the opportunity to test and use techniques to re-use by-products in a way that gave Mesa pra

TABLE 4: Principles of food sustainability adopted by Mesa pra Doze

	Principle	Description
1.	Zero waste	Adopt a nose-to-tail/root-to-leaves approach Value and re-use by-products produced when cooking
2.	Non-conventional food plants	Use native, foraged plants and non-conventional food substantially Rescue traditions and regional cuisines
3.	Agro-ecology	Cook and serve food without poison (agrochemicals) Prefer organics, bio-dynamics and agroforestry produce
4.	Seasonality	Respect the time of nature Source key seasonal produce
5.	Farm-to-table	Forge relationships with family farmers, cooperatives and associations Search local suppliers and distributors, from the city and surroundings
6.	Brazilian socio-biodiversity	Use ingredients from the local biome, that is, *Cerrado* (Brazilian savannah) substantially Showcase typical ingredients from Brazilian socio-biodiversity
7.	Sustainable diets	Offer a vegetable-oriented cuisine, where animal protein is used mostly to season and not as main ingredients on a plate Only cook real food

Doze a growing reputation in certain gastronomy circles in Brasília. I was invited to organise workshops and events focusing exclusively on these techniques. Additionally, it was a project where the exact number of portions was known in advance (24—28 pax/week), and so, with time and experience, the team managed to produce almost exact quantities for serving with virtually no food left over.

Still, even with all this effort, it was not possible to achieve a zero-waste status. Firstly, some organic waste will always be generated. Restaurants that are experimenting with a zero-waste policy normally compost this waste in bins that can process a certain amount of prepared waste in 24 to 48 hours. Others sign partnerships with companies dealing with compost, as is the case with many restaurants in Brasília. The fact that Mesa pra Doze was relatively small in this case, worked against this principle, as it was not possible to find a company that would receive such a minimal amount of organic waste.

Nevertheless, the really key challenge was that there was still a lot of non-organic waste being produced. With such a small project, I made efforts to handle fresh produce directly from farmers without disposable plastics or cartons. However, all dry goods (flours, grains, spices) were bought in small portions, usually in packages of 1kg, half-kilo, 2kg, etc. and recycling these materials was very limited. There are disposal areas where garbage is selected and treated by cooperatives, but this required me to transport this garbage independently with my own car, using time and storage space that was not available in most situations.

Principles (2), (3), (4) and (5) — non-conventional food plants, agro-ecology, seasonality, and farm-to-table — were successfully achieved. These principles suggest using native and foraging food plants substantially, as well as rescuing traditions and regional cuisines. They also call for buying seasonal, organic, biodynamic and agroforestry produce, which is more easily achieved when relationships with family farmers and cooperatives are forged. Two main reasons contributed to achieving these principles: i) the principles fit very accurately with the format of Mesa pra Doze; and ii) there is dynamic growth in seasonal and agro-ecological supply in Brasília.

In terms of format, to open only twice a week provided enough time for me to dedicate to sourcing, researching and selection of high-quality ingredients, at prices that in many cases were not more costly than those found at retailers and supermarkets. I was the one responsible for purchasing and for designing the constantly changing menu, so it was simple to adapt according to seasons and to what was available at the time. Discussion with other chef colleagues in Brasília revealed an agreement that this model is very difficult to reproduce on a large scale, due to the unreliable availability of ingredients and the standard structure of fixed menus.

Concerning the growth in supply, it is evident by the mushrooming number of small farmers' markets focused on organic produce in the city. These are connected with a dynamic network of community-supported agriculture (CSA) projects and similar initiatives, supported by the high GDP per capita of Brasília, which is well above the national average. Since 2015, once a week, the largest wholesale marketplace — the public-owned CEASA — has held a family farmers-only market in one of its warehouses, alongside a standard farmers' market that is visited by thousands of people. Facilitated by this supportive environment, Mesa pra Doze gradually cultivated very good relationships with certain family farmers, which resulted in a supportive synergy between the project and these networks.

Principle (6) — Brazilian socio-biodiversity — calls for substantially using typical ingredients from national biomes, in the case of Brasília, the *Cerrado* [a tropical savanna/dry-forest habitat that covers most of central Brazil], while also acquiring ingredients from other biomes produced by traditional communities with sustainable extraction regimes. This principle was well achieved, but certainly not without considerable effort. In terms of demand, there is a growing interest for these products, clearly noted in discussions with several clients. City dwellers are increasingly curious about foraging, with many linking these typical ingredients with past memories of home, as these ingredients became scarcer to find due to the industrialisation and homogenisation of food systems.

In terms of costs, the price of these ingredients is fair, as it fits the concepts of Mesa pra Doze and, when acquired through organised fair-trade-like cooperatives, the money spent on acquiring them goes directly to those populations that depend on sustainably harvesting these resources.

The major challenges are availability and regularity of supply. With notable exceptions, the value chain for Brazilian socio-biodiversity products is extremely disorganised, with large-scale informality, dubious intermediaries, and severe logistical problems in terms of correct conditioning, transport and processing. Some family farmers and traditional populations' cooperatives have been working for many years at organising this value chain, in many situations very successfully. But this is still more the exception than the norm for these products, and it was surprising how the enormous gastronomic potential of Brazilian socio-biodiversity is still vastly unexplored. Mesa pra Doze used these as much as possible, but still suffered from difficulties in planning.

The final principle (7) — sustainable diets — suggests a vegetable-oriented cuisine, where animal protein is used mostly to season and rarely as main ingredients in a dish, besides the concern in cooking only real food, minimally processed food and nothing ultra-processed. This principle was very well achieved. As in the case of Hermann's, the initial concern was whether clients would take the chance of moving out of their comfort zone — considering that this approach is substantially different from the usual carnivorous offerings of Brasília's food scene.

In fact, the vegetable-oriented menus of Mesa pra Doze were very well received by the clientele. There is a notable growing trend in health and conscious eating that is also linked with the networks of family market fairs and CSA. For years, Brasília's centre has had several restaurants serving "natural food" — a category that generally denotes more healthy options and food rich in leafy greens, fibres and light animal protein. This category is even noted in many of the city's food guides. Nevertheless, these restaurants tend to focus on lunch service only. Mesa pra Doze was the first to focus on a complete dining experience that targeted this specific niche, being completely flexible to accommodate any dietary requirements and preferences.

Conclusion: What are the implications for chefs and food researchers?

How can restaurants assess their practices in terms of achieving sustainability inside their kitchens? This article explored one analytical possibility by using principles informed by the evolving

literature on sustainable food systems. Two cases discussed the challenges of putting these principles into practice: the restaurant-café Hermann's in Berlin, and the Mesa pra Doze gastronomic project in Brasília.

The cases have shown that some principles were much more easily achieved than others and that these differed from one case to the other, according to the specificities of the business and the area it is located. For example, at Hermann's, challenges were found in ensuring a complete seasonal menu, and in sourcing ingredients directly from small suppliers. At Mesa pra Doze, on the other hand, this was much more easily achieved, due to both its scale and the format of a business that offered much more available time for researching and sourcing ingredients. In both cases, to achieve zero waste was extremely challenging, in particular due to packaging.

By showing one approach to assess sustainable practices conducted by restaurants, this article provided a double contribution. For the research community of food science and gastronomy, it demonstrated an empirical way of linking the levels of food system analysis (macro) with the more micro-level of restaurants or businesses in general. The design of principles can provide guidance to kitchen teams to follow certain practices aligned with the concept of food sustainability. The key point here is not to suggest that studies necessarily use the same principles adopted in this article, as they certainly have to be adapted to the context. Instead, it shows that the principles chosen must be grounded in the scientific literature of food sustainability, reducing the risk of choosing incoherent principles by chance or ones that only fit marketing purposes. In the future, similar exercises could demonstrate more clearly how one single action adopted by a restaurant contributes to a wider societal goal of food system change.

The second contribution relates to professionals in the hospitality industry, by discussing challenges that might be faced when pursuing similar goals in their operations. The experience of Hermann's and Mesa pra Doze provided some useful lessons. The challenge of scale was evident in how it was easier for Mesa pra Doze to achieve more coherent sourcing, by buying sustainable produce directly from suppliers and producers. It was also apparent in both cases that the higher costs associated with sustainable produce are not necessarily a challenge per se. In many cases, organic/small-scale and local ingredients were not more expensive than standard ones. And in the cases that they were, the higher margins and low weight of these ingredients in the total operational costs diluted their costs. The greatest challenge was in the time required to access those ingredients, since their distribution channels are underdeveloped compared to more conventional food chains. For actors working to support sustainable food systems, this carries an important implication: how to pay a fair price to agricultural producers while improving the accessibility of their products with more efficient distribution channels?

Finally, the cases suggest that the relatively high degree of freedom the kitchen team had opened the possibility for more coherent and comprehensive definitions of principles and practices. In other words, a meaningful discussion on how to achieve sustainability in restaurants was not only made possible, but supported by a great deal of deliberation by Hermann's management while the restaurant was defining its food concept. In the case of Mesa pra Doze, I enjoyed complete autonomy in defining the menu. Freedom from constraints — be it financial, conceptual or marketing-related, for example — in a context where kitchen staff are committed and enjoy space for free and authentic deliberation favours higher levels of sustainability. Aligned with recent studies on the frontiers of food democracy (Behringer & Feindt, 2019; Bornemann & Weiland, 2019), authentic deliberation and emancipation can assist our food systems in their transformation towards sustainability.

Notes

1. www.hermanns.com/hermanns-eatery/
2. www.mesapradoze.com
3. The most famous being Silo, now based in London, UK

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