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Assembling Rice Production Systems across Burkina Faso and Uruguay

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ABSTRACT: *In this paper, we introduce the rice production systems in Burkina Faso and Uruguay and analyze them as two divergent instantiations of global-local entanglements. We trace how global-local entanglements come into being and how seemingly similar practices of entangling result in contrasting configurations. Our empirical material shows how local understandings and concerns, as well as practices of enacting them, are constantly ordered to produce a fit between globalized and situated relations. In the case of the Uruguayan rice sector, these efforts constitute a harmonized, depoliticized web of relations, which prompt for particular kinds of doings and reflections to become unquestioned and preclude others. In Burkina Faso, in turn, comparable efforts and tools do not result in a hegemonic frame of reference but rather amplify divergences and contradictions between different understandings and activities revolving around rice production. Studying these two different orderings of fits between global forms and situated relations sheds light on de-/stabilizations of food systems and the ongoing work they require. Such a processual and comparative perspective allows for a multiplication of stories on global-local entangling. Thus, it goes beyond reproducing clear-cut categorizations and escapes dichotomies, such as the one of market integration and market failure.*

KEYWORDS: *Rice, global-local entanglement, food production systems, agri-food markets, Burkina Faso, Uruguay*

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Introduction

I am standing among a group of rice farmers, advisors and workers from an international organization amidst 3,300 hectares of irrigable rice fields in Bagré, Burkina Faso. It is mid-September; the rainy season is about to end. All fields are green by now. These fields, I am told, are the outcome of year-long efforts by the government of Burkina Faso, international donor organizations, a world-wide web of rice research and expertise and obviously the farmers. And the work continues as more land is being converted. Burkina needs to become more independent of an increasingly unpredictable global rice market, I am told over and over again. ›We have land, we have water and we have the know-how. How come we import rice from Asia?‹ one of the

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zone managers says. ›With the continuous support of our partners the rice will suffice for our country.‹ (Field notes 13.9.2017, JH)

Two of the top executive managers of a major rice-milling and -exporting company and I get out of the pickup truck in which an agricultural advisor drove us to this rice farm. We stop right on an unsealed pathway in between two rice plots. Right behind us, a bus stops as well. In the bus, there is a government delegation from a country in the Middle East, as well as representatives of a Central European trading agency. They all came to visit the company to renegotiate some of the conditions of the long-term trade relationship. Today they want to assess the overall growing and milling arrangements in this particular region of Uruguay. Part of this scheduled ›customer audit,‹ as a manager called it, is the visit at a farm. It's raining and it's still sowing season, so the soil looks bare and muddy. While some of the international guests immediately return to the bus, the few ones with umbrellas gather around the agricultural advisor. Sopping wet within a few seconds, he bends down and digs out a tiny rice seedling to show the visitors. It's very important to make a good impression, I've been told by everyone ahead of this event. After all, the rice exported by the company to that very country in the Middle East was at times worth several million USD a year. (Field notes 13.10.2017, RL)

These two short field notes are taken from two independent research projects in distant countries: Burkina Faso and Uruguay. Both stories shed light on different facets of global-local connections that characterize contemporary food systems. In this paper, we discuss these two cases as instantiations of two different modes of enacting global-local entanglements. By bringing together and juxtaposing the rice production systems of Burkina Faso and Uruguay, we trace how global-local entanglements come into being and how seemingly similar practices of entangling result in contrasting configurations.

Anthropologists and human geographers alike are particularly concerned with analyzing various forms and dynamics that constitute global-local entanglements in food systems. Such work has highlighted the power relations and interdependencies of distant places over time (Mintz 1986), as well as the persistence of difference across trade and production networks (Freidberg 2004). Moreover, scholars have shed light on how (some) situated relations of food production are formatted according to market logics (Ouma 2015), while others unfold in the ruins and »eco-edges of [global] capitalism« (Helmreich 2016, 571; also Tsing 2015). This paper has been inspired by this body of literature that illuminates how connectivity is put to work. We trace the configurations and forms that emerge from such enactments in a humble attempt to account for the multiplicity and heterogeneity of possible global-local food connections in the contemporary.

We take as our point of departure a puzzle that emerged from an ongoing discussion of our research insights, which show many parallels and are yet completely different. In both cases, rice cultivation and the making of rice sectors require meticulous, skillful agricultural practices, knowledge exchange, technological equipment, know-how and financial resources. It involves a broad range of actors and tools that need to be connected, at times in strikingly similar ways. Yet the outcomes of specific configurations that emerge from connecting those elements are radically different: whereas the rice sector in Burkina Faso is highly fragmented and continuously dependent on external subsidies, Uruguayan rice constitutes a solid backbone of the country's economy. Burkina Faso's rice market is a response to the increasing dependency on imports and subsequent vulnerability to price

shocks. Despite massive efforts and investments, the sector remains scattered and hardly capable of reducing the gap between the amount of rice that is being produced and consumed. Uruguay, on the other hand, has succeeded in establishing itself as one of the top rice exporters worldwide. In line with a historically steady rationale of seeking economic growth and political stability through extensive agricultural export activities, it is primarily oriented toward international, often transatlantic, trade relations. As such, it is profitable and operates without subsidies.

Thus, the two national rice economies are emblematic of two opposite ends of the spectrum of possible postcolonial entanglements in the globalized market order of the economy. By bringing together these two cases, we tackle the (de-)stabilization of the configurations that constitute rice markets. Juxtaposing two rather different stories of the process of marketization (Çalışkan/Callon 2010) and »development-oriented agronomy« (Andersson/Sumberg 2017) allows us to scrutinize how existing patterns of social organization and stratification are either reified or left aside. Moreover, we show how local understandings of global-local relations, as well as practices of enacting such understandings, are constantly ordered to fit globalized and situated relations. In the case of the Uruguayan rice sector, these efforts constitute a harmonized, depoliticized web of relations that prompt particular kinds of doings and reflections to persist and to preclude others. In Burkina Faso, in turn, comparable efforts and tools do not result in a hegemonic frame of reference but rather amplify divergences and contradictions between different understandings and activities revolving around rice production. Based on these insights, we argue that studying different orderings of fits between global forms and situated relations sheds light on processes of (de-)stabilization of food systems and the ongoing work they require. Such a processual perspective allows for a multiplication of stories of global-local entangling. Thus, it goes beyond reproducing clear-cut categorizations and escapes dichotomies, such as one of market integration and market failure.

Rice Research and Anthropo-Geographies of Global-Local Food Connections

Food production and supply are crucial to human survival and therefore constitute a central arena of cultural and political life and debate. Ensuring access to healthy food for the growing population of a world inherently shaped by socio-economic inequalities and depleted ecosystems is one of the greatest humanitarian and political challenges of our times. Its significance is reflected in global agendas such as the Sustainable Development Goals and in emblematic events like the recent awarding of the Nobel Peace Prize to the UN World Food Programme. Despite its prominence, it does not come with simple, universal solutions but instead triggers disputes, confrontations of opposing ideologies and mutually exclusive prioritizations. In particular, any attempt to organize, optimize and analyze relations of food production is inevitably grounded in particular understandings, valuations and operationalizations of the relation between »the global« and »the local.« These understandings, valuations and operationalizations are far from universally shared; rather, they entail different orderings of production systems and trade relations.

As one of the three most widely produced and consumed food crops worldwide, rice is an especially notable example of the need to engage both »the global« and »the local.« Rice is the major staple crop for more than 3.5 billion people worldwide (CGIAR 2020) and is produced and consumed on six continents (Prasad et al. 2017, 1). At the same time, rice is deeply enmeshed in a vast variety of highly situated social worlds and agricultural and culinary traditions.

Mainstream agronomic and economic rice research is characterized by the overarching pursuit of efficiency and resilience of production systems. State-, World Bank- and industry-funded genetic, biomolecular and agronomic research promotes development of new varieties that promise higher yields, are resistant to various pests and adapt to climatic changes and their environmental impacts (Kortright 2012; Smith 2012; Reynolds et al. 2015). International trade is monitored with regard to the actual and potential consequences of any changes in this volatile web of relations (IRRI 2017). Meanwhile national rice strategies drive massive landscape restructuration in the course of infrastructure projects, accompanied by conflictual land evictions and subsequent protests (Demont/Ndour 2015). Thus, most rice research agendas in economics and agricultural sciences can be understood as seeking to introduce allegedly universal norms and trajectories of profitability and crop resilience into a vast range of diverse social, cultural and political contexts.

Situating rice in such localized contexts has mainly been taken up in the epistemic agenda of the social sciences and cultural studies. Anthropologists and human geographers, among others, deal with the relation and meaning of rice production and consumption to and for cultural identities (Ohnuki-Tierney 1993; Wilk/Barbosa 2012), material culture and rituals (Hamilton 2004; Pedersen/Dharmiasih 2015), development discourse and interventions (Shepherd/McWilliam 2011), politics (Lee 2011), the making of heritage (Cagat 2018) or gendering processes (Linares 1997; Bergstedt 2012). Some aim to attend to all aspects at once by trying to identify the role of rice for a particular society or community (Lansing 2006; Avieli 2012; Davidson 2016). Across this diversity, there seems to be some consensus around the fact that the complicated nexus of rice production, consumption and politics shapes histories and identities (Fields-Black 2008; Marton 2014; Bray et al. 2015), which are always localized and globally entangled.

These two domains of rice research — one shaped by economics and agronomy, the other rooted in anthropology and human geography — remain rather isolated from one another. From the vantage point of the former, rice production systems can be studied and evaluated against the background of objectified indicators, parameters and objectives. The latter, in turn, tends to focus on accounts of localized struggles and valuations, and often treats universalized and decontextualized research programs pursued in the name of marketization as »the problematic other.« Some ethnographic and geographical research, however, addresses the intertwinement of global and local relations of rice trade and production in a more symmetrical, explicit manner. Such studies track how localized rice worlds are situated within global configurations of development, infrastructure and land markets (Shepherd/McWilliam 2011; Morita 2017; Green 2019). They build upon a well-established tradition of geographies and ethnographies of food production that provide insightful analyses of the connections and contradictions in local-global food systems.

Sidney Mintz's (1986) seminal research on sugar trade between the Caribbean and England is an early, prominent example of a study of (global) food relations. Mintz highlighted and made analytically tangible the co-emergence of sugar production and consumption that »were so closely bound together that each may be said partly to have determined the other« (ibid., xxix). Mintz's account is particularly sensitive to power configurations but nonetheless avoids simply reproducing an overarching narrative of a center-periphery or metropolis-colony relationship.

Susanne Freidberg (2003; 2004) draws on Mintz's work and takes his historical approach further into the domain of empirical research on contemporary food commodity markets. The human geographer examines similarities and differences across two fresh vegetable trade networks rooted in the colonial relations between Burkina Faso and France and Zambia

and Great Britain, respectively. Thus, her work provides differentiated insights into the »relationship between culture and power in globalized food provisioning« (Freidberg 2004, 5). Freidberg's recent work on sustainability standards and accountability extends this line of analysis (Freidberg 2013; 2017; 2019). It traces how global forms and presumably universal standards »touch ground« amidst the affordances and ambiguities of knowledge and work practices that make up today's food systems.

In his analysis of the work it takes to assemble export markets, Stefan Ouma (2015; Ouma et al. 2013) specifically focuses on practices that actualize and reproduce the market order of the economy. Ouma traces everyday efforts invested in formatting two fresh fruit networks in Ghana in ways that render them compatible with consumer markets in Europe. The human geographer generates detailed descriptions of the everyday connection work that constitutes markets as a practical accomplishment rather than an abstract entity. Hence, in Ouma's work, the distinction between global and local food markets is shown to be obsolete. Rather, his research points out how globalized trade heavily relies on particular orderings of social and economic life — orderings that, far from »naturally« evolving, require specific market knowledge and tools to be mobilized.

Similarly, Anna Tsing (2015) offers an empirically grounded account of daily practices that constitute food trade. She traces a commodity chain that largely escapes market standardization and formalization, assembled in practices of harvesting, trading and consuming the matsutake mushroom. Her work directs our attention to the patchiness of capitalist forms amidst globalized relations. According to Tsing, the latter might — as in the case of matsutake worlds — or might not converge. Thus, this seminal ethnography of »polyphonic« (ibid., 23) matsutake worlds draws attention to the making of connections, its unpredictable implications and the crucial fact that »not all connections have the same effects« (ibid., 213).

What we take from the studies briefly introduced here is an understanding of how seemingly universal phenomena are not simply »out there« but need to be practically assembled, accomplished and actualized, thereby interrogating, questioning and critiquing generalized truth claims. Furthermore, these works are not content with curating a priori analytical heuristics for clear-cut depictions of how »the global« relates to »the local.« Instead, Freidberg, Ouma and Tsing trace how particular forms of global-local entanglements assume form. Their work renders visible how the outcomes of such processes are never predictable but instead differ across cases and contexts. Ethnography, as this literature demonstrates, is particularly apt for such a perspective. It unpacks abstract phenomena by locally and temporally situating them in the everyday lives of people-in-places.

In the remainder of this paper, we will scrutinize two different ways in which globalized epistemic, political and economic relations assume form in local rice worlds. To do so, we will experiment with juxtaposing two contrasting cases that seem entirely unrelated, both in cultural and geographic terms. We thereby shed light on how the allegedly universal, ubiquitously cited and hardly contestable facts and configurations, such as those briefly depicted in the introduction of this paper, were (differently) present, enacted and presented in Burkina Faso and Uruguay. Hence, we shall show how both places were made part of one rice world, a rice world that is »more than one — but less than many« (Mol 2002, 55).

Studying (a) World(s) of Rice

Rice is of high relevance for the facilitation of food security, as it makes up around 16.5 % of the total global calorie intake (Pariona 2019) and is the most important food source for

the Global South (Seck et al. 2012, 8). Asian countries account for 90 % of the world's rice consumption (CGIAR 2020). However, demand for rice is increasing at a higher rate than for any other staple crop, especially across Africa (Seck et al. 2012) and in Latin America (CGIAR 2020) due to rapid population growth and urbanization (Seck et al. 2012; Vorley/Lançon 2016). These developments account for global rice flows that are highly dynamic, with some countries being major exporters while others fulfill domestic demand largely with imports (Prasad et al. 2017). Thus, rice increasingly connects people and places all over the world (Bray et al. 2015).

Although only around 7 % of the total global production is traded internationally (GRiSP 2013, 40), rice is considered the most important source of income and employment for rural populations globally (ibid., x). More than 144 million farms, most family operations on less than 1 ha of land, are engaged in rice production worldwide (ibid., x). Global rice trade has fostered highly asymmetrical relations; entire national economies like those of India, the US, Uruguay and Italy depend on rice export (Prasad et al. 2017, 2), whereas many West African countries import more than 50 % of their rice demand. Thus, rice is overall an important political issue, as became tangible during the global food price crisis in 2007-08 (Slayton 2009; Dawe/Slayton 2010; Seck et al. 2013). It is an indicator and means of exerting political power and pressure, respectively (Lee 2011; Yaméogo 2015). As one of the agricultural economists whom Ruzana interviewed during her fieldwork in Uruguay expressed,

> rice is the most politically intervened market in the world, as it's a basic staple for many. If in the Philippines there is no rice, the government will go down. Or in Thailand, or whatever. Mostly, countries that produce a lot of rice also consume a lot of rice. And in Brazil — the same stuff. So, they have really a big problem, a really big political and economic problem, all these countries. On the one side, as they have a lot of production, they want to have a price as high as possible to maintain their farmers. But on the other hand, they need a price as low as possible to be able to feed their population. They have these two forces working in the opposite side, and governments try to find equilibrium — so subsidizing this or the opposite, losing a lot of money. It's very costly. [...] It's very costly to pay more for farmers and also make the consumers pay less. Who pays the difference? So, there is a huge and costly mechanism to handle these two things. [...] That's the reason why in most of these countries the governments intervene — they have to regulate. [...] Which means that it is a really complicated market. It's a very political market. (Interview 10.10.2017, RL)

Against this backdrop, many countries have established national strategies for developing, regulating and supporting their rice sectors. Such agendas either focus on pathways to increase production and strengthen the sector to improve national food security for net import countries (Demont 2013), or they aim to secure economic strength and growth for net export countries (Bierlen et al. 1997; GRiSP 2013).

Inter- and transnationally operating institutions such as the CGIAR (Consultative Group on International Agricultural Research), which hosts the IRRI (International Rice Research Institute), AfricaRice and CIAT (International Center for Tropical Agriculture), are major players providing expertise, guidelines and financial resources for rice research across the world. This situation was both confirmed and problematized during an interview that Janine conducted with a researcher from the National Institute for the Environment and Agricultural Research (INERA) in Burkina Faso:

> The International Research Institutes have a high influence. I would earn more if I'd work for them. Also, they are strong in diffusing the rice varieties they promote. But these are not necessarily adapted to the specificities of Burkina Faso, but promoted across entire West Africa. We [at the National Institute] have less resources, but we conduct high quality research and achieve good results. Still, national research budgets get reduced more and more, because of the big organizations. Our government is poor and therefore glad to save this money. But we lose control and influence on what is happening on our fields. (Interview 23.10.2017, JH)

As this quote implies, the transnational nexus of expertise in agronomy and development economics bundles many resources and thus plays a crucial role in how local rice systems are ordered. As in the case of Burkina Faso, these institutions sometimes overrule local research initiatives and are perceived as competing with them. In other cases, such as in Uruguay, local and globally organized rice research institutions merge into a network in which potential frictions are far less visible. These frictions are meticulously levelled out in practices of establishing shared objectives and a mutual understanding of the distribution of tasks (Field note, 19.10.2017, RL). In fact, universalized truth claims and political agendas cannot be expected to be simply rolled out in predictable ways. Depending on the local constellation in which they are meant to be implemented and unfold, they may entail very different dynamics and effects. Not least due to their deep entanglement with local politics and the organization of national economies (see interview quote above), rice markets constitute a field where this phenomenon becomes particularly visible. When it comes to rice production and trade, any allegedly universal form — be it a standard, a formalized goal or an institution — inevitably encounters particular local concerns, alliances and prioritizations. What results from that are unique, at times strikingly different global-local orderings of rice worlds.

Juxtaposing and comparing fieldwork insights from such different settings prompted us to pay particular attention to the ways in which localized practices (were) related to universalized bodies of knowledge, global forms and discourses. Before we delve into this analytical exercise and present its results, we shall briefly introduce the projects from which our empirical material was derived. In fact, they have spurred an ongoing dialogue between the authors, despite the fact that the projects were designed and conducted independently.

For her doctoral dissertation, Janine traced the shifting geographies of the emerging rice market in Burkina Faso by ethnographically engaging with one particular project, the Bagré Growth Pole Project, in which rice played a crucial role in driving land-use change and supposedly induced overall economic growth. Massive inter-, trans- and national investments have funded costly land conversions to create irrigable rice plains, where small-scale farmers (are) engage(d) in rice production; simultaneously, a range of interventions downstream in the rice value chain directed the growing demand toward locally produced rice and fostered connections between different direct and indirect actors that together constituted the rice sector (Hauer/Nielsen 2020). Throughout her research, she found that Burkina's rice sector-in-the-making was a highly politicized terrain on which different strategies to »project« development played out (Yaméogo 2015). The tension between striving for national autonomy on the one hand and international cooperation on the other makes Burkina Faso a paramount example of developmentality (Lie 2015). The government's strategy is inscribed in the orientation of the World Bank (among others) toward economic growth as a motor for overall well-being. During a total of nine months of fieldwork in 2017 and 2018, Janine observed and interviewed a broad range of rice actors horizontally, from

production to sale, and vertically across different levels of organization, from individual farmers, processors and traders to national organizations.

Meanwhile, Ruzana came to study rice in Uruguay while investigating the potentials and limitations of sustainable change by ethnographically zooming in on trade connections and working worlds along a transatlantic supply chain. The latter linked public catering and food wholesaling enterprises in Germany with a European rice mill, which imported most of its supplies of long-grain rice varieties from Uruguay. The Uruguayan rice world was a textbook example of marketization (Callon 1998; Ouma 2015). It was carefully assembled to become entangled in global markets and succeeded in realizing the neoliberal vision of a subsidy-independent, competitive agri-food sector. Although local demand in Uruguay was exceptionally low, entire regions and family traditions were deeply intertwined with the production of high-quality rice for exports. As such, the Uruguayan national rice production system is both paradigmatic and constitutive of a particular, long-established discourse. The latter links the historical and political trajectory of the small South American country — in its relative stability and its dramatic upheavals — to its status as an exporter of agricultural products (Barrán/Nahum 1984; Fitzgibbon 1953; Switzer 2015; Weinstein 1975).

As these brief accounts imply, the practices and events that we meticulously studied unfolded in physically and symbolically distant places, under different conditions and with strikingly distinct effects. However, we both came to notice that they were inherently linked to narratives, knowledges, trends, shifts and crises circulating and taking shape on a global scale. Acknowledging that what we observed and wrote about in our field notes overlapped and reached far beyond localized relations was, in fact, crucial to accounting for differences across our fields.

Essentially, neither »local conditions« nor the »global situation« are sufficient to explain the dynamics that constituted the Burkinian and the Uruguayan rice sectors. To account for the differences and similarities requires more than stressing the plurality of possible rice worlds. In fact, we do not merely point to different ways of relating local and global across our cases; instead, we continue from there to focus on the consequences of those different ways of relating. Starting from detailed ethnographic descriptions, we zoom out (Nicolini 2009) to consider the outcomes of different modes of intertwining global and local relations. Depending on the specific form a rice system assumes, it may afford and necessitate very dissimilar kinds of operations, interventions and justifications on the part of national and international actors. Thus, how global-local entanglements crystallize in a particular rice world has pivotal effects. It provides the basis for further political actions and preconfigures the course of possible transformations in ways that are increasingly difficult to change. Therefore, a better understanding of the similarities and differences, as well as of the specificities of our cases, informs our conceptualization of contemporary global-local food systems as ongoing processes of (de-)stabilization.

First Empirical Layer: Burkina Faso

By the end of Janine's fieldwork in 2018, rice was the fourth most important staple crop in Burkina Faso after sorghum, millet and maize (GRiSP 2013, 205), but its per capita consumption was growing faster than the other crops. Rice was mainly consumed in the country's cities, which are still expanding rapidly (Hauer et al. 2018). Therefore, demand as well as the potential market for rice are continuously increasing (Vorley/Lançon 2016). Rice started to enter the foodscape (MacKendrick 2014) of Burkina Faso in the form of international relief

supplies in the 1960s after the country's independence, and it has since spread further due to increasing imports from the 1980s onwards (Bonnecase 2016, 15). It became particularly popular among the urban population because it is more convenient to prepare than traditional foodstuffs. In tandem with increasing imports and demand, local rice production was launched and increased slowly through support by government investments and foreign financial and technical aid. Following a general tendency toward liberalization in the 1990s, a subsequent withdrawal of state support and general neglect of the national rice sector, the global food price crisis of 2007–08 has suddenly shifted public interest back to rice and to the rural sector more broadly. Since, investments and, subsequently, the area used for rice cultivation and average yields have increased substantially. In the aftermath of the global food price crisis, which in Burkina Faso resulted in massive price increases and subsequent food riots (Engels 2017), rice became the government's central matter of concern as the most dynamic staple crop, for which demand is growing rapidly and therefore supply vulnerability is increasing in an unpredictable world market. The government's strategy to strengthen the rice sector is recorded in the National Rice Development Strategy (SNDR): »To keep pace with the growing needs of the population« by »realizing the potential« of underdeveloped natural resources (topography, e.g., valley, shallow lands and water, either in areas with favorable rainfall patterns or with the possibility for irrigation) (MAAH 2011) would ultimately contribute to achieving self-sufficiency and food security, reducing poverty (for both the population and the national economy) and spurring economic growth (World Bank 2010).

Despite the attempt to bundle all actions under a national strategy, massive investments and ongoing interventions that target rice production and promotion in Burkina Faso, the sector is continuously being described as fragmented and highly unstable. Actors come and go and rice flows repeatedly run dry, which makes engaging in the sector risky at times. As a rice vendor in Ouagadougou told me:

> I sell rice from China and India. I know we produce rice in Burkina and it is actually good rice. Fresher than that one [points to the corner of the shop where the rice bags are stored] with more nutrients. But you know, my customers ask for stable prices and supply. I once got Bagré rice. Two people came and asked if I wanted to take it. They worked for the project [that promoted local rice and developed an app that was supposed to help customers to find a shop that sold Bagré rice around their neighborhood]. They came with a few bags. They were more expensive that the imported rice, but I sold them easily by explaining about the quality. When people came back to buy more, the rice was gone. I tried to order more. They told me they had a rupture in stock. They never called me again. (Field notes 22.6.2017, JH)

And indeed, when I arrived in Bagré, one of Burkina Faso's most important rice production areas, I was told that the storage facilities were all empty; the last dry season's rice had been sold and the farmers had only just started the rainy season's sowing. Over the course of fieldwork, I learned about the paradoxes that Burkinabé farmers were facing, namely the difficulty of finding solvent buyers for their harvest, even though stores in Ouagadougou were empty. The intermediary steps, it seemed, constituted a bottleneck that was hard to overcome. Much of the subsidized rice thus flew out of Burkina. Some businessmen in Bagré, close to the Ghanaian border, had good networks in the neighboring country. When the rice harvest was bad in Ghana, retailers and processors would turn to Burkina Faso. When talking to me, farmers and zone managers always emphasized that it was important

to keep rice in Burkina Faso to strive for rice autonomy, but I still observed dozens of trucks that loaded paddy rice in Bagré during the harvest in July and August 2018. Ghanaian rice buyers would drive into the fields, saving farmers' transportation costs. They would also pay cash, whereas Burkinabé processors and buyers would usually pay later. Thus, selling rice to Ghanaian buyers was tempting for many Bagré farmers, who were constantly short of cash. Whereas food security and sovereignty provided the rationale for many ongoing programs concerning rice, their practical realization was co-constituted by demand, as well as the solvency of actors who operated beyond the boundaries of the envisioned sector and who — as the field notes show — did not align with existing practices that are embedded in colonial legacies and perpetuated asymmetries. Building a rice sector in Burkina Faso required the continuous making and maintaining of connections between actors in order to make rice flow.

Having established rice as a staple food in the foodscape of Burkina Faso and West Africa more broadly has reshaped world market dynamics that are constituted around rice. West Africa has become a major player, first and foremost as a growing market for rice from China, India, Vietnam and others, thereby making it highly dependent on and vulnerable to the global market. To counterbalance this trend, which became particularly tangible during the food price crisis, huge investments have been made to catch up with the growing demand. Accounting for the emergence of rice production in Burkina Faso over recent decades thus provides us with an understanding of rice consumption, increasing demand and the project-driven establishment of rice fields and markets as co-constitutive (Mintz 1986).

A second example that points to the need to orchestrate connections is illustrated by the following series of field experiences. During my stays, I joined as many events as I could — from farmer trainings to cooperative sessions and meetings — that would allow me to observe how different actors and groups related to one another. Anxious that I would miss something, I always arrived there at the announced time, waiting for minutes and sometimes for hours for the participants to arrive. I recall these phases of waiting not to make a case for different perceptions of time and punctuality, but because the topic was frequently taken up by different organizers of such meetings, as exemplified in the following sequence:

> I arrived at the meeting location at 8:30. No one was there. Around 9:00 a car passed and I recognized one of the agricultural advisors that I knew would lead the session. He greeted me out of the car window, then told his driver to return to his headquarters to pick up devices for the presentation. They returned an hour later; some farmers were already gathered in front of the building. The training finally started at around 11. Until the lunch break at one o'clock the room would continuously be filled up with newcomers. During the lunch break I joined the group of advisors. Without me raising the issue, the same man I met this morning in the car would say: ›See, the producers are always late. You schedule a time and then they come an hour later, or two. They come when they want. There is a lack of discipline. Can you imagine that would happen in Germany (we know each other, so he knows I am German)? They always have something else to do.‹ [...] Later that day in the same meeting, I talked to a group of farmers. They were sitting outside during the last break of the day. I turned to one farmer whom I had met before and who had invited me to sit with the group. I asked him about the long procedure of kicking the meeting off in the morning, which I had found particularly stiff and formal and absolutely unproductive. He sighed. ›I only arrived after lunch; I had business to arrange in Tenkodogo.‹ One of the other farmers started to explain the morning ceremony. [...] In the final block of the train-

> ing there was some time for the farmers to raise questions. Instead of referring to the content of the training sessions one farmer raised his hand and once he was authorized to speak, he started to explain that he would have better yields if he could have more land. The audience expressed its consent by affirming and nodding. The speaker reminded him that this had nothing to do with the training session but in his closing statement the head of the team took the issue up: ›We know about the problems on the rice plains. But if you stick to the methods and techniques, you will get better results. Family farming is at the heart of the Burkinabé economy. Still, the rice season is only 2 – 3 months long. And once the rice is on the fields, it grows. You pay it attention when it needs something, but you also need to do something else. You need to diversify. It is not good to rely on one thing only.‹ (Field notes 29.9.2018, JH)

This field excerpt opens up for an analysis of a range of references that do not add up to a coherent set of narratives and/or practices. On a managerial level, the problems of the rice sector were frequently explained away as a lack of discipline. From their perspective, farmers had all the prerequisites at their disposition to successfully cultivate rice: irrigated land, regular trainings and institutional support, even though they admitted that they lacked proper, »modern« equipment. However, small-scale family farming still was the backbone of the country's economy, and producers therefore could not expect to be allotted huge areas of land – everyone needed land for cultivation. In fact, the imperative to diversify was omnipresent in Bagré. The farmers eventually embraced the call for diversification, which has long been shown to be a common livelihood strategy in Burkina Faso (Nielsen/Vigh 2012). But they also felt that they were unable to attend to the standards of modern rice agriculture while they participated in other businesses. Although connections between different actors constituted the day-to-day world of rice-related actors in Bagré, the connections did not add up to a coherent set of practices and/or narratives. The orientations often pointed in opposite directions, leading to a plethora of potential rice systems at best and a fragmented, instable system at worst. In the words of Tsing, making connections in Bagré fosters a »process of patchy emergence within global connections« (Tsing 2015, 206) that remain incoherent and therefore vulnerable to ruptures and breakdown.

Second Empirical Layer: Uruguay

The Uruguayan world of rice is very different from the one that Janine came to know in Burkina Faso. The tales told of how rice came into the country revolve around the entrepreneurial spirit of individual men who had built small mills and warehouses in the 1930s and 1940s. These men, so the story goes, convinced farmers to buy cheap land, unsuitable for other crops, to cultivate more rice. Together, they were successful in producing more rice than a small country like Uruguay, with the lowest rice consumption in South America, would need. Exports eventually became the main goal of the Uruguayan rice industry in the 1960s and 1970s.

For several years before Ruzana's first visit in 2017 and up to today, more than 90 % of rice produced in Uruguay is sold and shipped to buyers abroad every year (GRiSP 2013; MGAP 2017; 2019). With this amount of rice being exported, the small South American country with a population of just under 3.4 million consistently remains among the ten largest rice exporters worldwide (Lanfranco et al. 2016; USDA 2020). In the 2018 and 2019 seasons, 1.2 to 1.3 megatons were produced by approximately 450 Uruguayan rice growers cultivating

around 145,000 to 160,000 ha (ACA 2018; MGAP 2019). According to a contract farming system that was established in the 1960s, nearly the entire amount of (mainly long-grain) rice produced on irrigated fields is sold to one of the five largest rice milling enterprises that operate in Uruguay. These companies process the rice by milling (and sometimes parboiling) and exporting it, mostly via intermediaries such as internationally operating brokers or traders, to more than 60 countries worldwide.[1]

The fact that this brief portrayal of the Uruguayan rice sector is likely to come across as a market success story is the result of continuous effort invested in maintaining relations. These relations were assembled, adjusted and sustained according to a particular notion, namely one of international competitiveness. International competitiveness is a key discourse that shapes neoliberal global governance and hence often figures as a panacea for all kinds of problems confronted by governments and industries alike (Fougner 2006). Given the significance of agri-food production and export for Uruguay's national economy, it was not surprising that international competitiveness was a »collecting statement« (Latour 2005, 232) for the rice sector — a narrative that envisioned and formatted the socio-material order of Uruguayan rice production.

Uruguay's rice production system is linked to the global institutional nexus of development programs, as well as to the corresponding representation and performance of the world. The notion of »international competitiveness,« in turn, is intertwined with a fundamental assumption posed by development economics: if exports grow, so does the local economy. Therefore, it is not surprising that despite low local demand, rice production and milling were »declared to be in the national interest« of Uruguay in 1962 (Bierlen et al. 1997, 51). In the 1970s, World Bank researchers explicitly listed Uruguay among those semi-industrialized countries in which »greater stress on exports« (Chenery/Hughes 1972 ›Responses to Policy Changes,‹ paragraph 7) was needed. They pleaded for an »outward looking policy mix« (ibid.) to be introduced to allow for »more rapid growth« (ibid.). Thus, facilitating international competitiveness of Uruguayan rice was ultimately also a matter of development promotion and marketization.

As in attempts to turn local farmers into profit-maximizing »homines oeconomici« and to implement the vision of growth for the national rice program in Burkina Faso, facilitating the international competitiveness of the Uruguayan rice sector was also the matter of a particular marketization program (Callon 1998; Çalışkan/Callon 2010; Ouma 2015). However, in contrast to the situation in Burkina Faso, in Uruguay this agenda became naturalized and succeeded in encompassing all kinds of concerns.

At the time when Ruzana was there, the sector faced a crisis that forced many farmers to stop cropping due to high production costs and subsequently low profitability. When she talked to people about the crisis, everyone kept referring to competitiveness on the global market as *the* relevant frame of reference to keep in mind. Such was the case among public officials, such as a representative of the ministry for agriculture whom she interviewed:

> Surely, they are not having a good business (this year?), but maybe it's not a real, real, real problem. [...] Where is the problem? You know? [...] Because they have a very high productivity, it's very good rice, they have very good markets [RL: importing clients]. I think that the problem, in a short time, will be solved. (Interview 5.3.2018, RL)

Farmers also constantly referred to Uruguay's positioning on the market, such as in the following conversation that Ruzana had while spending a day at a rice and livestock farm:

> He says that there was actually no problem at all on the rice market. The prices were stable and Uruguayan rice was highly demanded and also expensive; the problem was the production costs. That, in turn, was a »local problem,« and he preferred »local problems« over »market problems,« because one could solve the former »among ourselves.« (Field notes 12.10.2017, RL)

So did local researchers, like the agricultural economist previously quoted in the introduction to this paper:

> Even though Uruguay has the best average yields in the world, still the production costs will be too high. [...] The break-even point for farmers is very, very high. Close, very close to 8,000 kilograms per hectare, which is a really very good production. Brazil, Argentina — none of them just produce this in average. We produce this, and still, sometimes lose money. (Interview 10.10.2017, RL)

As these instances of making sense of the events imply, the overall attribution of significance to the crisis was different. State officials claimed that the situation was not too bad and that the market positioning of Uruguayan rice would naturally solve the problems. Practitioners from the rice sector and agricultural research, on the other hand, insisted that high production costs were an unnecessary barrier to their market success. However, these conflicting perspectives naturally situated Uruguayan rice production and its crisis in the context of its positioning on the global market. Even against the background of an open political dispute, there was no real drifting apart of politics and prioritization, such as in the case of Burkina Faso.

The reason was that the very fundamental relations constituting rice production in Uruguay co-evolved in alignment with the promise of international competitiveness. Rice was never meant to satisfy the nutritional needs or culinary preferences of the local population. Its production was disentangled from food and cooking traditions, as well as from valuations other than those specific to export commodities. Rice production was never linked to meanings and practices other than those introduced in the course of a particular marketization program. It was initiated with a blank slate of attachments. The following field notes taken during a conversation with someone from the milling industry imply how the collective force of the notion of »international competitiveness« unfolded:

> He is talking about »great decisions« their »grandfathers had taken for them,« namely to bet big on quality. [...] They are a rather small rice producing country. [...] Hence, it was clear that they »cannot compete in quantity,« and they took the decision to spend all energy on quality as a distinctive feature. [...] The mills offer support for farmers in order to make them allies in the common strive for achieving the highest possible quality. [...] The most important thing is that they pull together when it comes to making »the best quality product« — it is »the only way to get the best price.« (Field notes 28.9.2017, RL)

In order to facilitate consistent, reliable quality assurance, a contract farming system was introduced very early based on strong personal ties between agricultural advisors working for the mills and rice growers. In addition, the materiality of the rice grain was adjusted in alignment with visions of international competitiveness. Thus, there were several research programs and tools in place to constantly optimize grain quality, improve existing Uruguay-

an varieties, ensure their uniqueness and distinctiveness and develop new, better ones. The very subjectivities of rice farmers, the flow of money and resources and the materiality of rice grains themselves were bound up in facilitation of international competitiveness. Therefore, there were no ambivalences, contradictions or controversies between different ways of knowing and representing the world of Uruguayan rice production. Regardless of how difficult the circumstances or how prevalent political disputes would become, local relations of rice production were ordered and made sense of as integral elements of globalized agri-food markets, and hence as inseparable from them. The Uruguayan rice world did not unfold »in the ruins of capitalism« (Tsing 2015) but instead amidst its good, old hegemonic promises. As such, it was assembled and constantly re-organized in a way that sought to uphold the dominant vision of global market integration and competitiveness. Meanwhile, alternative practices of »worlding« — practices that made and actualized particular »propositions about context« (Tsing 2010, 49), provided meaning and guidance and thus allowed one to »imagine worlds« (ibid., 50) — were precluded and excluded.

Grounding and Multiplying Local-Global Entanglements: Discussion and Outlook

By delving into practices of connecting actors in and along rice production systems in Uruguay and Burkina Faso, we examined differences in the orchestration and coordination of these connections. The connecting itself often took place in similar situations and with similar tools: research programs, agronomic advisory practices and other forms of knowledge transfer among expert institutions, market intermediaries and farmers. Yet differences in orienting, weighing and balancing connections led to almost opposite shapes of rice systems in the two cases. Reading our respective research projects in Burkina Faso and Uruguay through one another thus makes a case for the multiplicity of possible enactments of local-global connections.

Janine's Burkinabé interlocutors described the country's rice production system as a »powder keg,« whereas Ruzana mostly heard practitioners and experts characterize the Uruguayan rice sector as »homogeneous« and »integrated.« In this paper, we chose to focus on interpreting how stability and de-politicization of rice production systems was or was not generated, respectively. We did so by tracing how grand narratives of modernization, development and growth were performed on the ground by making and maintaining market relations. In the case of Burkina Faso, we have shown how the making of a local rice market resulted in an acute process of drifting apart of meanings, judgements, prioritization and politics, depending on the overarching narratives that were mobilized. In the case of Uruguay, we have pointed out that the making of an export market channelized meaning-making and valuation into one trajectory, or, in other words, along one particular spectrum. In the context of promoting for-profit rice production in Burkina Faso, the practical efforts invested in ordering and connecting failed to amount to such a »process of translation that reduces complexity within networks, ends polyvalence [...], pacifies controversies [...], and unifies heterogeneous human and nonhuman elements so that they can act as a network/market« (Ouma 2015, 47). Contrary to Uruguay, Burkina Faso's rice sector thus continues to be considered highly unstable.

Our ethnographic studies and the radical differences they display point out that global-local entanglements come in many shapes. In the particular collage we are presenting here, both empirical cases are ordered by processes of marketization that aim to render

local relations of food production and trade compatible with universalized norms and globalized flows of money and goods. Such programs of »making markets« (Ouma 2015) mobilize equal tools, craft similar orderings and seek to install the same frame of reference, while ignoring the global differences that they have hitherto produced and reproduced.

For both Burkinabés and Uruguayos, rice was not a crop rich in meaning or embedded in agricultural traditions when it was introduced. Its status and price were not subject to state interventions, as is the case in countries where this crop is inevitably a major means for sustaining livelihoods. Instead, rice was a device of development promotion. It was meant to boost the local economy by creating a robust local market and an efficient export market, respectively. The fact that these agendas resulted in very different degrees of consensus was not just a matter of local, situated circumstances. Nor was it merely a matter of uneven development across the globe. Rather, it was inherent in the paradoxical nature of the connecting work and the coordination of a plethora of connections, which heavily relies on de-contextualization while constantly crafting an overarching, global context.

The insights gained through a comparative heuristic that tracked different orderings of global-local-entanglements allow for a better understanding of different ways in which particular rice production systems relate to globalization dynamics on the one hand, and to local networks, discourses, alliances and conflicts on the other. In times like ours, when the call to transform food systems has become a major academic and public concern (FAO 2012; FAO et al. 2012), it is precisely this concurrence that requires analytical attention. Rather than presuming a universally desirable trajectory of agricultural production systems or emphasizing their uniqueness and incomparability, social analysts ought to study and weigh different modes in which »the global« touches ground and is entangled in »the local.« To be precise, a major challenge for qualitative research in the social sciences is to understand and make tangible the varied extents of orderliness and coherence that result from such assemblages. In this vein, it is also crucial to render visible that neither stability nor instability are straightforwardly (un)desirable characteristics of agri-food production systems. Rather, both the lack of closure as alleged instability *and* its effective completion as apparent stability come at a price. This kind of decidedly evaluative knowledge of a spectrum of stabilities and instabilities in food systems, as well as their preconditions and effects, is indispensable for thinking about change and how it could be best facilitated.

Insights from specific, quite unrepresentative and atypical local rice worlds suggest that comparing the seemingly incomparable is a promising analytical exercise for making sense of the relation of »the local« and »the global.« It highlights links between highly localized dynamics which were hitherto considered to be abstract or even alleged to be completely non-existent. Eventually, such a diffractive (Barad 2007) reading also deepens understandings of these dynamics. While shedding new light on situated local concerns, a comparative exercise such as the one discussed here is not content with reifying the distinction between large- and small-scale. Thus, we did not juxtapose »a big, all-encompassing global« with insights into a single, localized setting. Rather, our approach allows us to make sense of »the local« as a *spectrum* of such unique configurations.

This perspective further emphasizes the entanglement of global and local dynamics. It introduces an analytical heuristic that can be mobilized for scrutinizing the plurality and heterogeneity of such entanglements. Specifically, our contribution addresses one of the most fundamental challenges faced by qualitative social-science research on markets: »the problem of how to define [them] in a way that captures both diversity and generality« (Barry/Slater 2002, 184). It compares how, with what effects and at whose expense particular worlds of agri-food production are assembled. The empirical cases briefly presented here

illustrate how this heuristic may further sensitize ethnographers to the elusive variety of in- and ex-clusions, distributions of epistemic agency and post- and neocolonial constellations in contemporary food systems. As such, it contributes to the tradition of geographical and anthropological research on global-local food connections from which it took original inspiration.

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Endnotes

1 The summary provided here is a synthesis of information that Ruzana gathered from interviews and informal conversations, as well as from numerous documents read and collected during and after her fieldwork in Uruguay.

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