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Conventionalization of the organic sesame network from Burkina Faso: shrinking into mainstream

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Abstract This research examines the structure and development of the organic sesame network from Burkina Faso to explain the declining trend in organic sesame export. The paper addresses particularly the question whether the organic sesame network is structurally (re)shaped as a conventional mainstream market or whether it still presents a real alternative to conventional sesame production and trade. It is found that over the last decade organic sesame is increasingly incorporated into mainstream market channels. But contrary to the well-known case of conventionalization in California, where organic agriculture *grew* into mainstream agro-food arrangements, this study illustrates a case where organic sesame agriculture *shrank* into mainstream agro-food arrangements. The weak coherence between the production and marketing nodes in the organic sesame chain resulted in failures to vertically mediate information, balance power relationships in and across sesame chains, build trust, and limit price volatility and speculation, resulting in a shrinking organic sesame market. For developing a viable alternative to conventional sesame trading, relations between production and trading nodes in the organic networks need to be strengthened through public–private partnerships, combined with other public and legal reinforcement.

Keywords Organic sesame · Conventionalization · Alternative food economy · Governance · Trust · Burkina Faso

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Abbreviations

ADDB	Development Association of the Department Bilenga
ADDESP	Departmental Association for Economic and Social Development of Piela
ARFA	Association pour la Recherche et la Formation en Agro-écologie
AICB	Association Interprofessionnelle du Coton du Burkina
APB	Association Piela-Bilenga
CAMC-O	Centre of Arbitrage, Mediation and Conciliation in Ouagadougou
EU	European Union
INERA	Institut de l'Environnement et de Recherches Agricoles
PPP	Public-private partnership
TROPEX	Tropical Products Export
UNPCB	National Union of Cotton Growers in Burkina Faso

Introduction

The recent dynamics within the global agro-food sector, which moves from industrial mass standardized production to differentiated and flexible production schemes, put quality concerns, including social and environmental, at the heart of the production, processing, and distribution. Thus, a new quality economy is emerging, moving away from competition only on price and relying also on differentiation and competition through quality standards and certification. With this quality turn in the (global) agro-food sector, research is increasingly interested in the organization of nonmainstream commodity networks, particularly

the question of how new quality attributes are created and reinforced (Marsden et al. 2000; Murdoch et al. 2000; Raynolds et al. 2007). Of particular importance is the organic agro-food market, which is the fastest growing global food sector (with around 25 % growth annually).

The organic agro-food sector arose first with pioneer farmers and citizen-consumers concerned with the heavy reliance on chemical-based technologies in agriculture, the homogenization of the ecosystems around farmlands, and the sidelining of the health-giving benefits of food (Reed and Holt 2006). The motives of these pioneers were broad in terms of their political, environmental, ethical, and philosophical intentions (Kaltoft and Risgaard 2006). With the rise of the environment as an issue of public concern and political importance around the world, the organic movement flourished and became a global phenomenon over the last 20 years, advocating alternative, socially and environmentally integrated, sustainable agro-food production systems (Jordan et al. 2006). Regulation and labeling schemes, supported by formalized auditing and certification processes, have been instrumental in the expansion of the organic food sector through providing trust among consumers (Lockie et al. 2006). Several authors (Buck et al. 1997; Guthman 1998; Tovey 1997; Clunies-Ross 1990) suggested that the growth and institutionalization of organic certification diluted the social movement component of organic agro-food and replaced it with an industrial approach (Constance et al. 2008).

This gave rise to debates on whether the organic sector is witnessing a deep and inevitable transformation by developing toward conventional farming and marketing structures and organization. Based on research in California, Buck et al. (1997), among others, introduced the concept of "conventionalization" to capture and interpret this phenomenon. Conventionalization refers to a process through which organic agriculture resembles increasingly the conventional agro-food sector in terms of structure, organization, and ideology (Lockie et al. 2006). Best (2008) posits that the conventionalization argument as developed by Buck et al. includes the replacement of small family farming with capitalist entrepreneurship, a change of direct interactions between farmers and customers towards alienated market relations, and a loss of the social and cultural benefits of organic production. Following the California research on conventionalization many other researchers have investigated the conventionalization thesis in other regions, with controversial findings. Some of them contradicted or criticized the conventionalization argument (Coombes and Campbell 1998; Campbell and Coombes 1999; Campbell and Liepins 2001; Rosin and Campbell 2009; Campbell and Rosin 2011 in New Zealand; Hall and Mogyorody 2001 in Canada; Kaltoft 2001; Lynggard 2001; Michelsen 2001 in Europe), while others supported it (Lockie et al. 2000 and Lyons 1999 in New Zealand and Australia) or produced mixed results (Constance et al. 2008 in Texas and Guptill 2009 in New York).

The conventionalization hypothesis has never been applied in the context of organic agro-food production in sub-Saharan Africa. The introduction and development of organic agriculture in African countries was motivated by pesticide reduction (with beneficial socioeconomic, environmental, and health effects) and market opportunities. In sub-Saharan Africa, where rural livelihoods are particularly vulnerable, organic agriculture is expected to strengthen farmer communities' resilience and contribute to poverty alleviation. Thus, a conventionalization development of organic agriculture could be socially destructive for smallholder farmers with limited resources and poor bargaining power. But does it take place? And if conventionalization of organic farming in Africa occurs does it take similar forms and dynamics compared to conventionalization in more developed regions? We selected organic sesame from Burkina Faso as case study for studying African agro-food conventionalization for three reasons. First, organic sesame production in Burkina Faso in 1984 was one of the earliest organic certified initiatives in Africa. Burkina Faso has been a major producer of sesame in West Africa. In 2006, Burkina Faso supplied 1 % of global sesame export and ranked respectively 12th and 2nd at global and regional levels (West Africa). The organic sesame production in Burkina Faso followed the overall trend of growth and globalization and exports peaked in 2001, when about half of the global organic sesame supply came from Burkina Faso. Second, against all trends in organic agro-food trade, organic sesame export from Burkina Faso has decreased strongly since its 2001 peak. Are these decreasing organic sesame exports from Burkina Faso part of a conventionalization process? Third, the governance of sesame commodity (both conventional and organic) globally has to date received little academic attention.

To investigate similarities, differences, connections, and integration between the organic and the conventional sesame agro-food networks in Burkina Faso, qualitative research through document analysis, semi-structured interviews, and focus groups with market and nonmarket actors has been executed through a two-stage process. Firstly, we investigated the organization and functioning of the overall sesame economy through 15 interviews with government officers (DGPER[1]) and projects managers (PROFIL[2]), international development officers, researchers, traders, and conventional sesame farmers, through group interviews with

[1] DGPER: 'Direction Générale de la Promotion de l'Economie Rurale' is the public office in charge of the rural economy.

[2] PROFIL: 'Projet d'Appui aux Filières Agricoles' is a government project promoting agro commodity chains.

conventional farmers in Dedougou and Nouna in the northwestern region, and through analyzing several policy documents and research reports on sesame. This also provided in-depth understanding of the regional and national policy context and the interventions by governmental agencies and developmental organizations. Secondly, we investigated specifically the organic sesame network to determine its rationale and governing structure and what makes it distinct from—and connected to—the conventional sesame agro-food network. For this purpose, we carried out individual and group interviews with around 35 organic sesame farmers and farmer organization leaders in the southcentral region (Nazinga village) and the east region (in Piela and Bilenga villages). In addition we carried out 10 interviews with representatives from organic businesses, NGOs, and certification agencies.

The article is structured as follows. The next section explains and conceptualizes the 'alternative' food economy as well as the concept of conventionalization. Subsequently, an overview is given of the international sesame market, followed by a comparison of the governing arrangements within production and marketing of organic and conventional sesame networks. Then, the logic of growing conventionalization of the organic sesame network is analyzed and explained, to conclude with (potential) responses to the shrinking organic sesame trade.

Conventionalization of the alternative food economy

The concept of 'alternative' economy, though not very well elaborated, relates to the idea of a new counter-hegemonic moral economy, opposing the hegemony of a neoliberal economy, central in the so-called Washington consensus (Peck and Tickell 2002; Watts et al. 2005. The post-war hegemonic agro-industrial development relied on the increasing appropriation of nature, intensified use of chemical inputs and mechanization, corporate concentration, and standardization of products for mass consumption (Goodman et al. 1987; Raynolds et al. 2007). This Fordist production system increased productivity but proved unsustainable and has been challenged by the rise of 'alternative' food economies that focus on quality, health, environment, and fair trade, rather than just productivity increase (Robinson 2004).

However, the definition and agenda of such an 'alternative' economy is still disputed and debated in both academic circles and domains of (development) practitioners. Different alternative food networks are built around multiple and competing definitions of quality, reflecting differences in farming practices, cultural traditions, organizational structures, consumer perceptions, and institutional and policy support (see Oosterveer and Sonnenfeld 2011; Renting et al. 2003). While recognizing the value of the debates on alternative food networks, Holloway et al. (2007) consider the concept 'alternative' rather opaque, as it represents a collection of other terms and interpretations, and is used in a polarized manner as part of a conventional-alternative dualism. Thus, there is a need to specify what makes such economies 'alternative', and 'alternative' to what (McCarthy 2006; Whatmore et al. 2003). To answer this question, more general and more specific responses have been formulated. Some authors interpret the 'alternative' agenda as attempting to craft alternatives to capitalism in general (McCarthy 2006), while others articulate more particular dimensions such as greater authority for local communities, socially responsible production, or environmental sustainability (Mutersbaugh et al. 2005). Commonly identified features of an alternative agro-food economy are: intensive face-to-face interactions, short physical and social distance between production and consumption, a thorough embedding of the economy in the local social context, emphasis/reliance on social capital, cooperation and mutual dependency, and environmental sustainability.

Traditionally, an important feature of alternative agro-food commodity production relates to the embedding in 'localities': their cultural values, histories, and specific geographical assets. While, initially alternative agro-food economies brought consumers and producers locally together, this is less and less the case, evidenced by the growing globalization of certain parts of the alternative agro-food economy. To assure distant consumers about the social, environmental, and geographic claims, the alternative food economy relies strongly on third-party certification and auditing (Hatanaka et al. 2005). Third-party certification helps mediate, across time and space, reliability and trust between market actors and plays a major role in connecting quality production to consumer markets. Consequently, an alternative food economy requires a distinct governing arrangement, involving market and nonmarket actors, transparency and certification, and specific rewarding mechanisms (monetary as well as non-monetary). The extensive involvement of civil society organizations, such as environmental, farmer, consumer, and development organizations, gives evidence of the 'social movement' character of the alternative food economy (Buck et al. 1997; Glin et al. 2012). These organizations articulate broad social and environmental concerns and thus market demand, and mediate and build trust among stakeholders within and between the food production and food distribution network nodes (see Glin et al. 2012; Mol 2010). In the end it depends on the market whether premiums are paid for commodities that are better for the environment, producers, consumers, or the society in general (McCarthy 2006).

Organic agro-food production and distribution is a prototype of the alternative agro-food economy. Initially, it

resembled many of the ideals, values, and features of alternative agro-food economies, but that seems to be in debate lately. Buck et al. (1997) noted that the explosive growth and global spread of the organic sector since the late 1980s is both cause and effect of the growing number of new entrants who are attempting to capture part of the lucrative niche markets lurking behind organic products and organic labels. With the success and globalization of organic agro-food production and markets, the question and debate is to what extent this results in the mainstreaming and conventionalization of organic production and marketing. Conventionalization of organic agro-food networks is widely seen as undesirable, as it tends to undermine the fundamental aims of organic food production and provision. The idea of conventionalization emerged from research in California by Buck et al. (1997), who noted the increasing resemblance of the organic sector with the conventional one. Not only did agribusiness capital enter the organic sector, but it also reconfigured the structure and characteristics of organic food production and marketing (Buck et al. 1997).

Following this initial formulation of the conventionalization thesis, it was widely researched in Canada, Australia, New Zealand, USA, and the EU, among others. From the rich literature and debates on conventionalization (see Constance et al. 2008), we want to emphasize three controversies: (1) the (in)evitability/unidirectionality of conventionalization, (2) the bifurcation thesis, and (3) the impacts of conventionalization on smallholder farmers and the future of organics. Following their Californian case study, Buck et al. (1997) predicted that formal certification standards would inevitably accelerate conventionalization as agribusiness would reshape organic agriculture to its own advantage. Guthman (1998) further concluded that California is exemplary for a broader process whereby nature is appropriated through the regulation and cooption of the organic label. Magdoff et al. (2000) suggest that once niche markets become mature, such as organic farming, producers can expect to face pressure from agribusinesses, which penetrate and monopolize niche markets and turn them into large-scale lucrative markets. This deterministic and linear view of corporatization and instrumentalization of organics is contested and criticized by several authors. Campbell and Liepins (2001) see organic food production and consumption as a discursive and dynamic field in which "corporate involvement, and issues of standards and meanings around organics," are contested (p. 23). From their New Zealand case they conclude that the local organic industry is not engaged in a linear trajectory toward conventionalization but will continue to act as a counterpoint, a moment of contestation, or site of dialogue with the globalizing conventional food system. Likewise, Rosin and Campbell (2009) posit that the single trajectory toward capitalist forms of production implicit in the concept of conventionalization is untenable because of the complexity and heterogeneity that characterize the organic sector in New Zealand.

The second controversy in the conventionalization debate is the bifurcation thesis. Bifurcation refers to the process through which organic agriculture adopts a dual-structure of industrial profit-maximizing farming and marketing orientation (generally for export markets) and smaller, lifestyle, or more ideological-oriented farming (often for local and direct markets). From the early work of Buck et al. (1997, p. 8) in California, it stands out that "there is a bifurcation among organic growers, with many large operations becoming specialized in the mass production of a few high-growth, high-profit crops, while smaller farms continue to diversify their strategies, employing artisanal methods to grow a variety of marketable crops that also increase soil fertility, improve nitrogen self-sufficiency, reduce pests and so forth." Bifurcation has been investigated extensively in different contexts. Some findings support, at least partially, the bifurcation thesis by concluding that early organic adopters tend to be more ideological and lifestyle oriented in their commitment and practice of organic farming while newcomers tend to be larger and more (export) market oriented (Best 2008). Other findings challenged this bifurcation view by nuancing the distinction between farmers supplying a domestic market and those supplying export markets and drawing attention to the role of extra-economic factors (such as quality insurance audits) on the viability of organic production systems (Rosin and Campbell 2009).

The third source of debate within the conventionalization literature relates to the perceived impacts of the increasing corporatization and industrialization on organics. Buck et al. (1997), Tovey (1997), and Guthman (1998, 2004) see structural trends towards further industrialization of the organic sector. According to those authors, the ongoing conventionalization will affect negatively the survival of organic smallholder farmers as well as the sustainability of organics itself. Guthman (2004, p. 307) points out three negative impacts of agribusiness entry in and appropriation of organics: (1) a political threat of lowering standards, "commandeering the organic label" and diluting the meaning of organic; (2) a direct economic threat, as agribusiness can substantially undermine the livelihoods of existing, presumably more committed, organic producers; (3) a threat that agribusiness practices organic farming in a more "shallow" fashion, reducing the distinction between organic and conventional farming. This pessimistic account of the structural changes in the organic sector is challenged. Constance et al. (2008) indicate that even with conventionalization, organics performs better on environmental quality compared to conventional farming. Darnhofer (2006) interprets the structural changes in the

organic sector as a modernization or professionalization of organic farming, resulting in desirable consequences. Best (2008) concurs that professionalization could result in more efficient and sustainable organic production, lower prices for the customers, and concurrent growth in the market, thus resulting in an aggregate increase in animal welfare and environmental protection.

In all, it appears that the overall debate on conventionalization focuses on *internal* dynamics within organics, i.e. whether, how, to what extent, and with what consequences the core values, institutions, and practices of the organic sector change when it takes up a professional/modernized/capitalist/large-scale mode similar to mainstream agriculture. The question whether the mainstream sector can also *externally* influence, reconfigure, and conventionalize the organic sector and its outcomes has never been addressed. For organic sesame from Burkina Faso that last question seems very relevant: how is the international commercial pressure of the mainstream sesame value chain affecting the organic sesame network, leading to a deviation of substantial organic sesame flows into conventional sesame marketing channels.

The international sesame market

In order to understand the linkage between global trends and local phenomena in the (organic) sesame economy in Burkina Faso, this section provides an overview of the international sesame economy. Sesame is one of the most ancient oil seed used by humans (Aysheshm 2007) and ranks sixth in the world among vegetable oils (Olowe et al. 2009). The world sesame seed market is worth a billion dollars and supports the livelihoods of millions of farmers throughout the world (USAID 2010). The sesame seed market is diverse and includes a range of products such as raw seeds, used mainly in confectionery and bakery, and oil used in cosmetics, essential oils, sweets, sauces, butter, flour, etc. Over 60 countries worldwide produce significant quantities of sesame seed. Since the early 1990s, the global supply of sesame seed has been increasing. Good quality seed is highly valued on the world market, whereby quality criteria include purity (lack of dirt), uniformity (a homogeneous product), color/size (for hulled seeds, white and big is preferred to dark and small), and degree of humidity (low is preferred) (Artola 2000). Out of the 3.66 million tons of sesame produced in the world, Asia and Africa account for 2.55 and 0.95 million tons, respectively (Olowe et al. 2009), or 70 and 26 %. The world's largest sesame producing countries include India, Myanmar, China, Sudan, Ethiopia, Uganda, Somalia, Nigeria, Tanzania, and Paraguay. Sesame is grown in 23 countries in Africa with Sudan, Uganda, and Ethiopia as leading countries. West Africa's production amounts to 120,000 tons with a tendency for growth and export-orientation.

The international trade in sesame accounts for only 25 % of the global production, as domestic consumption is highly important in producing countries, especially in Asia. Figures 1, 2, and 3 display some key trends in global sesame production and trade.

India, Ethiopia, and Sudan are the leading exporters of sesame seed, accounting for 46 % (491,790 tons) of the total world export (1,067,512 tons) in 2008 (USAID 2010). Japan, China, the EU, Turkey, and USA are the largest importers of sesame seeds, together accounting for more than two-thirds of global sesame imports. Particularly in Japan, demand is strongly increasing, prompting many traders working for Japanese companies to settle down in Africa to ease procurement and export of sesame seeds. The trend toward import from Africa is not only driven by available supply but also by price differences, because sesame from South America is getting more expensive. In general, the price of sesame seed has increased steadily for most of the last decade. The annual average world market price for sesame seed has increased from $893/ton in 2005 to $1,311/ton in 2009 (USAID 2010). The peak of $1,668/ton

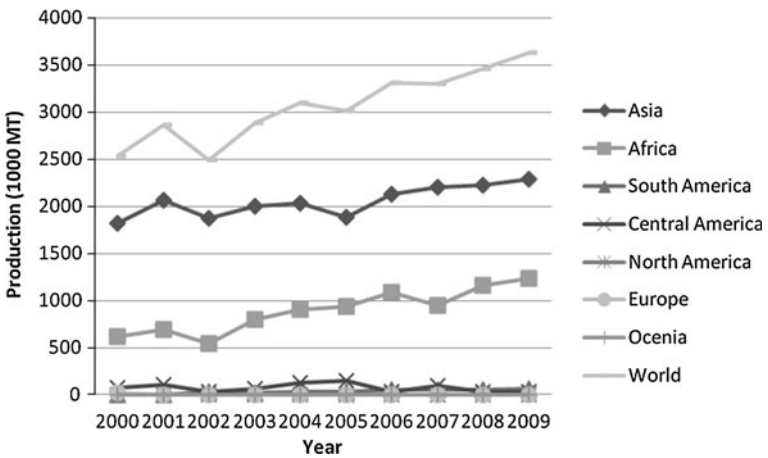

Fig. 1 Global sesame production, 2000–2009, in 1,000 metric tons. *Source*: Authors, based on FAO statistics (http://faostat.fao.org/site/339/default.aspx)

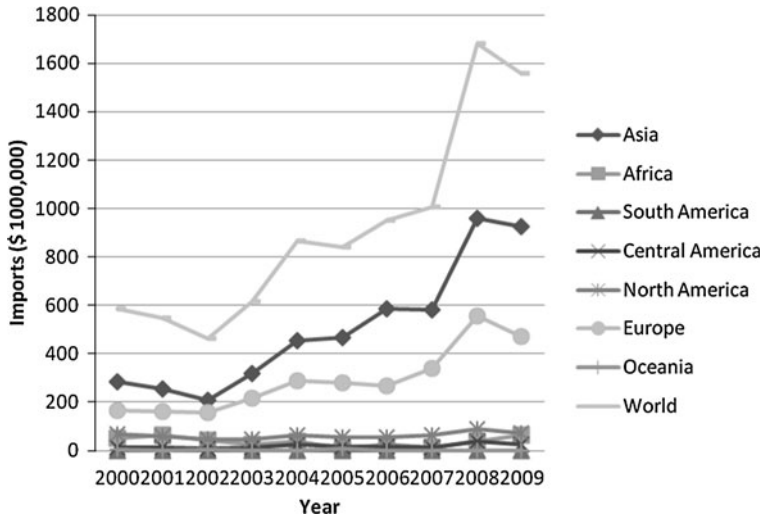

Fig. 2 Global imports of sesame, 2000–2009, in $1 million. *Source*: Authors, based on FAO statistics (http://faostat.fao.org/site/339/default.aspx)

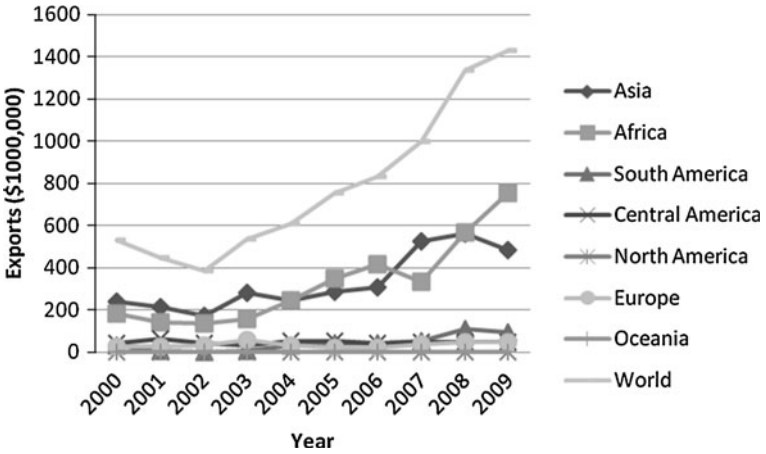

Fig. 3 Global exports of sesame, 2000–2009, in $1 million. *Source*: Authors, based on FAO statistics (http://faostat.fao.org/site/339/default.aspx)

was reached in 2008. Unlike commodities such as coffee, for which the price is subject to the price fluctuations of the 'New York Coffee Contract', there is no public price-setting mechanism on the global sesame market (Artola 2000). Thus, transparent price information is not readily available on this market, which relies almost completely on personalized relationships between the main market actors.

Sesame is currently underexploited as an organic crop despite its great potential, as sesame is generally grown in traditional agriculture without using synthesized chemical products. Organic sesame is sold particularly in the USA, the EU, and Japan, where prices are substantially higher (around 20–30 %) than those for conventional sesame products because of attributes of 'ecological soundness' and 'social fairness' (Artola 2000; EPOPA 2005).

Sesame market in Burkina Faso

Next to cotton, sesame is the most important export crop of Burkina Faso. Recently, the production of sesame has witnessed a remarkable increase from less than 10,000 tons in 1997 to 90,649 tons in 2010, signifying a 47.62 % average annual growth (see Fig. 4).

Most (around 95 %) of the sesame produced in Burkina Faso is exported. The main importers of sesame from Burkina Faso are Japan, Switzerland, Egypt, the Netherlands, France, Germany, China, Spain, United Kingdom, and Dubai (PDA 2008). Sesame is also exported to neighboring countries especially Ghana, Togo, and Cote d'Ivoire. In 2007 the exported volume amounted to 29,888 tons representing $20.19 million.

A major concern in the sesame industry in Burkina Faso is the quality. In fact, as the chain is not well organized with a multiplicity of market actors, the quality of sesame sometimes suffers from the presence of impurities and rot, threatening its reputation on the international market. Moreover, some cases of salmonella-contaminated sesame from Burkina Faso have been witnessed at the borders of the European market, putting the issue of quality as a priority on the sesame sector development agenda (Portail sur le développement du Burkina Faso 2008). The EU recommended strengthening the organization of the Burkina Faso sesame industry around the distribution of certified seeds,

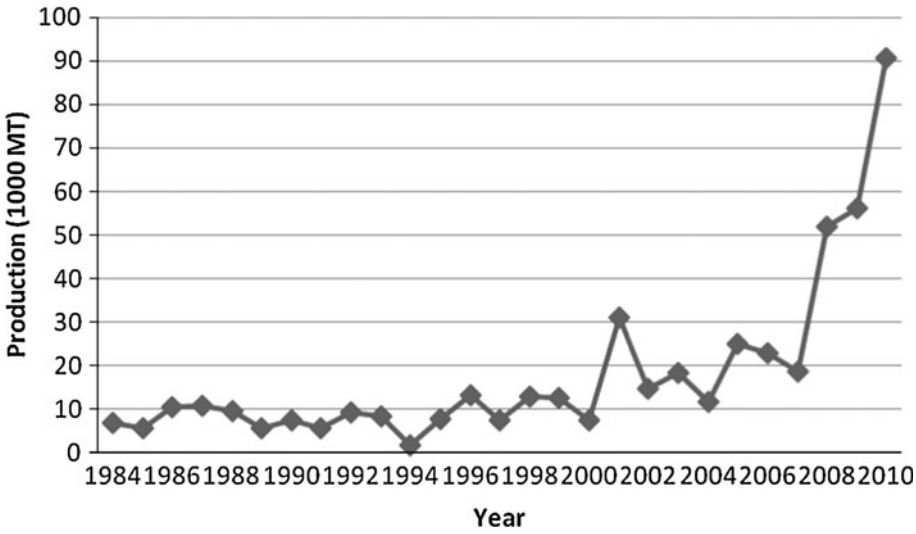

Fig. 4 Trends in sesame production in Burkina Faso, in 1,000 metric tons. *Source*: Authors, based on FAO statistics (http://faostat.fao.org/site/567/DesktopDefault.aspx?PageID=567)

quality control, the establishment of cleaning operation points, and introducing a "Burkina" label for products complying to these quality standards (Portail sur le développement du Burkina Faso 2008).

In line with demand for high-quality sesame on the international market, the organic niche market is developing particularly in the EU and the US. In Burkina Faso, the organic sesame commodity chain started operation already in 1984, driven by the French trading company TROPEX (Tropical Products Export), exporting exclusively to Provence Régime, a French organic business company (Portail sur le développement du Burkina Faso 2008). In 1989, around 300 tons of organic sesame were exported and in 2001 a record export of over 2,500 tons was reached. The recent trend in organic sesame exports from Burkina Faso is shown in Fig. 5.

Overall, these figures indicate that the export of organic sesame sharply declined over the last decade. Identifying the major reasons for this decreasing trend is the subject of the next section.

Governing the supply of the organic sesame

The international market is a major driver of organic sesame business. Usually, international traders drive their local representatives and partners to contract existing organic farmers or initiate new organic production. Alternatively, farmers' organizations with the support of technical partners, take the lead of prospecting and engaging commercial partnerships with established and interested organic sesame traders. The third way of enacting organic sesame business comes from international development agencies, which consider organic farming an opportunity in their strategy towards poverty alleviation and diversification of the local economy.

While in the conventional sesame sector, local buying agents/traders are central in the sourcing of sesame from producers and handing it to processors and exporters, in organic sesame networks the management of sesame procurement and selling to exporters lays mainly in the hands of farmers' organizations. Figure 6 represents the

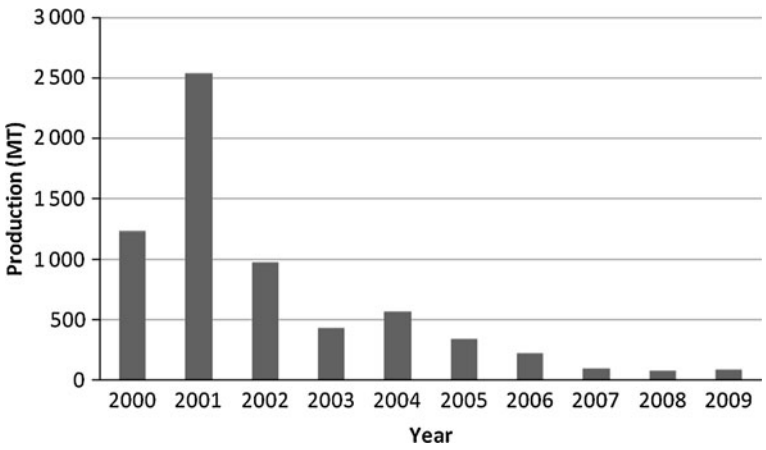

Fig. 5 Trend in organic sesame exports from Burkina Faso, 2000–2009, in metric tons. *Source*: PDA (2008); Fieldwork 2010–2011

conventional (panel a) and the organic (panel b) sesame networks, respectively, which are further analyzed below.

Farmers' organizations in organic sesame networks

Currently, three major umbrella farmers' organizations are operational in the organic sesame network in Burkina Faso: the UNPCB (National Union of Cotton Growers in Burkina Faso), APB (Association Piela-Bilenga), and Association Neerbuli (see Table 1). The UNPCB is the national farmers' organization of cotton growers, conventional as well as organic. Unlike the situation in other countries in West Africa (e.g., Benin, Mali) where organic cotton is driven by specific organizational arrangements, in Burkina Faso since 2002 the UNPCB has taken a central position in the organizational framework supporting the conventional cotton network as well as the organic cotton network. Moreover, the UNPCB is allowed to develop its own technical support arrangement for organic cotton farmers, while as far as conventional cotton is concerned the *sociétés cotonnières* (commercial cotton companies) and the newly built Association Interprofessionnelle du Coton du

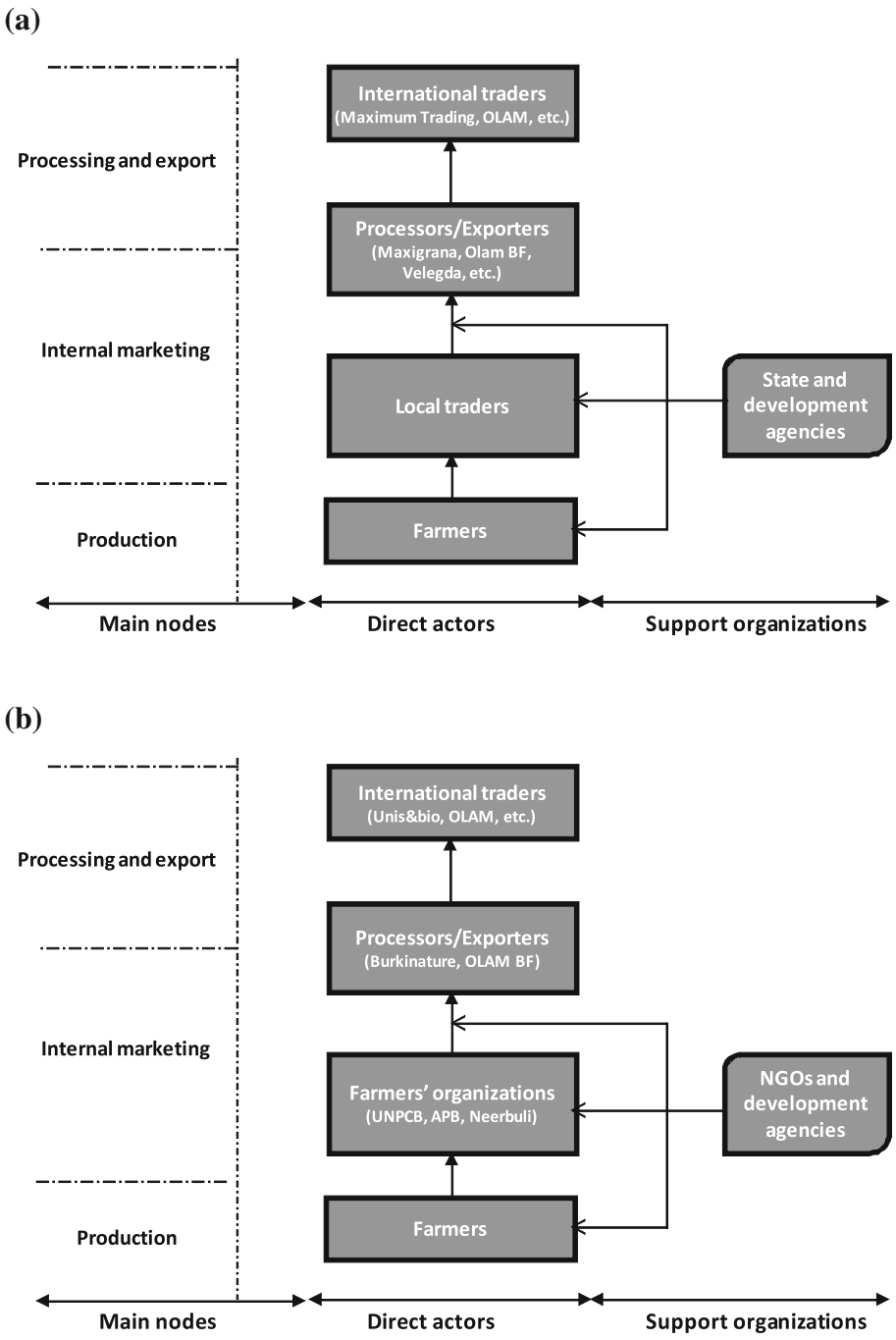

Fig. 6 Simplified overview of the two sesame network chains in Burkina Faso. **a** Conventional sesame chain, **b** Organic sesame network

Table 1 Characteristics of the three major farmers' organizations in the organic sesame economy in Burkina Faso

Characteristics	UNPCB	Association Piela-Bilenga	Association Neerbuli
Governing structure	National board with a technical assistance office	Regional board with a technical assistance office	Regional board with a technical assistance office 3 permanent technical committees
Involved civil society organizations and number of farmers	107 grassroots farmers' organizations, mainly in organic cotton production areas Major support from Helvetas and GIZ 1,003 organic sesame farmers (including 257 women)	Two department-level organizations 10 downstream organizations Major support from BMZ, Freundeskreis Bareka, and DED Around 2,000 organic farmers	Three province-level organizations 35 grassroots organizations Major support from ARFA-NGO and LWR (Lutheran World Relief) 1,800 organic sesame farmers
Broad social and development targets	Improving and diversification of farmers' incomes Promotion of organic agriculture (cotton and rotation crops including sesame)	Provision of several types of development assistance: hydraulics (construction of drillings), education (school equipment), health (basic infrastructures, HIV) Promotion of organic agriculture/sesame	Protection of the environment Facilitating agro-ecological and environmentally friendly innovations Promotion of organic agriculture/sesame
Geographical scope/ focus	Nationwide: all the cotton growing areas	Locally built and embedded (Piela and Bilenga departments in the eastern region)	Locally built and embedded (eastern region)
Specific services in the organic sesame network	Technical and organizational support to organic sesame farming and marketing: Extension and trainings Provision of seeds Management of the internal control system Liaising with organic market Coordination	Technical and organizational support to organic sesame farming and marketing: Extension and trainings Provision of seeds Management of the internal control system Liaising with organic market Coordination	Technical and organizational support to organic sesame farming and marketing: Extension and trainings Provision of seeds Management of the internal control system Liaising with organic market Coordination
Mode of operation	Adoption and diffusion of packaged innovations to increase crop yields (cotton and sesame) Extension worker-farmer relationship	Facilitating social learning Improving farmers' collective and individual decision-making capacity	Facilitating social learning Improving farmers' collective and individual decision-making capacity
Certification agency	Ecocert International	Certisys	Ecocert International
Commercial partners	Burkinature (currently) Olam BF (formerly)	Burkinature SOPRADEX (formerly)	Olam BF Burkinature Maxigrana

Source: Fieldwork 2010–2011

Burkina (AICB) have this monopoly. Sesame is promoted as a major rotation crop in the cotton farming system, and still lacks a real national federation. So since 2008 UNPCB has also engaged in the organic sesame network with the backing of Helvetas-BF (Burkina Faso).

A second umbrella organization involved in the organic supply chain in Burkina Faso is APB. APB is an umbrella organization created in 2001 through the merging of two organizations at the department level: ADDESP (Departmental Association for Economic and Social Development of Piela) created in 1991, and ADDB (Development Association of the Department Bilenga) created in 1994. APB targets the socio-economic development of the two neighboring departments, Piela and Bilenga, located in eastern Burkina Faso. APB's interventions include hydraulics, education, health, gender equity, and organic agriculture, particularly organic sesame (APB, Annual Reports 2008 and 2010). The Association Neerbuli—the third farmers' organization—was created in 1997 through a bottom-up process, prompted by the local NGO Association pour la Recherche et la Formation en Agro-écologie (ARFA), one of the pioneers of organic sesame promotion in

Burkina Faso. ARFA has been supporting farmers and grassroots farmers' organizations on environmentally friendly technologies and innovations, and organic agriculture for almost two decades in the district of Farda N'goma and the surrounding areas in the eastern region. As part of its scaling up strategy, ARFA encouraged and facilitated the construction of the Association Neerbuli, which was initially composed of 35 grassroots organizations. Currently, around 1,800 organic sesame farmers are involved in Association Neerbuli (Association Neerbuli, personal communication). All three above-mentioned umbrella farmers' organizations are structured downstream in multi-level local organizations, from department to hamlet level (see Table 1).

The most important service these farmers' organizations provide is technical assistance to farmers. This technical support to farmers includes: sensitizing and training about organic standards and norms, good farming practices, internal control systems, quality management, etc. Fieldworkers are engaged and trained by the farmers' organizations for this purpose. In addition, some on-farm research experiments are undertaken on technical issues, such as performance of certain varieties, and farming techniques. The three farmers' organizations are also active in managing sesame seed provision and distribution among organic farmers, and facilitating price negotiations with traders. Sesame seed provision is a major bottleneck in both conventional and organic sesame supply networks (PDA 2008). An effective seed supply mechanism responsive to the increasing demand for sesame is still lacking, despite several efforts deployed by INERA (Institut de l'Environnement et de Recherches Agricoles) in recent years (APB, Annual Reports 2008, 2010). Traditional varieties in use for decades are no longer appropriate to meet the quality and performance standards of the international market. Traditionally in Burkina Faso, sesame is reused for sowing and informal social networks are instrumental for its distribution. Not only has the productivity of the traditional seeds decreased over time, but variety blending is also common. This undermines yields and quality of the harvested sesame. In response, INERA created a new hybrid variety (known as S42), which is more productive with higher quality attributes (color, taste, oil content, etc.) (Chetail et al. 2003; PPMS 2009). Still, an effective organizational and institutional arrangement needs to be constructed to ensure regular supply of sesame seeds at the farm level, as the private sector is absent in this field (Traoré and Son 2009). Currently, INERA encourages and assists local farmers' organizations in seed breeding by providing training and necessary technical support and by facilitating the certification process. Particularly in the organic sesame network, farmers' organizations increasingly appoint local farmers as seed-bearers, with technical support from INERA to be able to fulfill farmers' needs locally, and to export the surplus if necessary (Association Neerbuli, personal communication).

Organic farmers' organizations set the purchase price of sesame seeds and have to ensure the fulfillment of obligations both from the farmers' and from the seed-bearers' sides. As far as organic sesame trading is concerned, farmers' organizations operate as facilitators between grassroots farmers and traders/processors (Sopradex, Olam, Burkinature, etc.). They prompt and coach price discussions with farmers at the grassroots level and come up with proposals that are re-discussed and renegotiated with traders, although power relations between the two categories seem uneven. Overall, farmers' organizations play a very important role by integrating local farmers into global organic sesame markets.

International markets

Overall, the still increasing international sesame demand is far higher than global supply, particularly in the conventional market. This exacerbates the pressure on producers and traders throughout the sesame commodity chain and has fostered some structural changes over the last decade. In Burkina Faso exporting companies used to be located abroad or in neighboring countries on the coast, and relied for the procurement of sesame on local traders in Burkina Faso, the so-called *grossistes* (wholesalers) (Traoré and Son 2009). With increasing demand from international markets, most exporting companies relocated to Burkina Faso to shorten the commodity circuit and translate international demand to Burkina Faso supply.

Two trading companies currently dominate the organic sesame sector: Bukinature SARL and Olam-BF. Other companies only occasionally purchase organic sesame and export it through conventional trade channels. These include: Maxigrana, SDV-Groupe Boloré, Ets Nalcomme Transit and Ets VELEGDA Mamounata. After the collection of sesame, mainly carried out by farmers' organizations and local buying agents in the organic and conventional networks respectively, the trading companies take care of storage, quality upgrading, packing, transporting, and shipping.

Burkinature, established in 1999, is a joint venture with stakeholders from Burkina Faso, the EU, and Japan. It targets specifically the development and international trade of organic agro-foods, mainly sesame, mangoes, and pawpaw. For the international marketing of the organic sesame, Burkinature partners with Unis & Bio, which is an organic sesame oil production company. Owing to successful working relationships over many years, Unis & Bio and Burkinature succeeded in setting renewable annual contracts with farmers and in planning long-term production. To secure the procurement of organic sesame Unis & Bio invested in capacity building and quality management. Olam BF is the local branch of Olam International based in

Singapore and trades a wide range of agricultural products and food ingredients including cotton, raw cashew nuts, sesame, and shea nuts. Olam BF entered the sesame business in 1995 and operates primarily in the conventional sector (with an annual trade of 21–56 tons between 2004 and 2009; its organic sesame is less than 1 % of its total sesame turnover). Olam BF exports sesame via Olam International, which may assist with financial and market facilities (Olam BF, personal communication).

Conventionalization of organic sesame

This section analyzes the logics of conventionalization in the organic sesame network and (potential) responses in the making.

Spatial differentiation of the sesame economy

Historically, sesame production in Burkina Faso has been concentrated in the western region, which has more favorable agro-ecological conditions and provides now more than 70 % of the national sesame production. The organic sesame initiative started in the same area, specifically in Kossi province in 1984. This region is also known as the major area of conventional cotton farming with a great reliance on chemical pesticides and mineral fertilizers, and the subsequent risks of contamination and pollution. In contrast, the southeastern region with more fragile agro-ecological conditions (lower rainfall patterns, etc.) remained almost free of industrial production and use of agrochemicals, and became the major region for agro-ecological and environmentally friendly innovations (techniques of stony cords, agriculture-breeding integration, etc.) and hosting protected areas. Hence, the southeastern area became an attractive area for organic farming in general and for sesame in particular. The local NGO ARFA has significantly invested in the development of environmental innovations and has been the pioneer of organic sesame promotion in the region since 1998. Although, sesame production in this area was historically marginal (and only applied in mixed cropping practices) organic sesame became of significant economic importance (and increasingly grown in monocropping). Even eating habits and diets in this area are affected by this trend. It was expected that within a few years the southeastern region would become the major bastion of organic sesame, while the western region would remain the major provider of conventional sesame. This principle seemed even informally adopted or at least considered by market actors and development agencies when they considered their interventions though any legal or institutional instrument is not (yet) applied to strengthen that differentiation in Burkina Faso. This spatial differentiation can be interpreted as a disembedding and separation of conventional and organic sesame chains, and the attachment of organic sesame to 'localities' and their values as of the *appellation d'origine controlee* (country of origin labels).

But spatial differentiation does not guarantee separation between conventional and organic value chains, especially when value chains are of international or global nature. Moreover, the southeastern region of Burkina Faso is geographically close to the major regional markets of conventional sesame of Niger and Nigeria, facilitating the diversion of organic sesame into conventional circuits. And this is what increasingly seems to happen.

Conventionalization of the organic sesame network

The procurement of sesame starts at the point of collection. Sesame is delivered by farmers or small buying agents in small lots. In the case of conventional sesame, networks of buying agents collect and aggregate sesame in sizable quantities. In the organic sesame network, farmers' organizations take over this operation. Moreover, while individual delivery of the sesame is common practice in the conventional sesame network, only collective marketing is practiced in the organic sesame network. The need to distinguish organic sesame to enable traceability and certification entails the formation of a community of practice for sharing knowledge and material resources (Glin et al. 2012) and prompts the construction of a cooperative network among organic sesame farmers. First, the costs of certifying smallholdings of organic farmers, particularly in developing countries, favors certification at the level of farmer groups or cooperatives, instead of individual farmers (Lockie et al. 2006; Ton et al. 2007). Second, shifting from the conventional 'crop-orientation' to the organic 'agro ecosystem-orientation' requires collective networks of and social learning among organic farmers to operate collectively and gain new knowledge and skills. Alternative agriculture triggers and pushes for more cooperation and community building than conventional agriculture with its emphasis on self-interest and competition (Beus and Dunlap 1990).

However, although certification and regulation of organic sesame prompt collective action within the production node, those mechanisms fail to vertically construct or mediate the trust necessary to ensure cohesiveness and coherence between the production and marketing nodes. In fact, via their organizations organic sesame farmers are engaged in annual contracts with traders on farming and trading. Very often the contract is signed between February and October, while the actual purchase and delivery of the organic sesame at the farm gate take place only in December. The rationale of a contract in organic farming is to materialize farmers' commitment to fulfill specified production standards, and thereby to be qualified for the resulting socio-economic

benefits, especially the price premium. The contract also appears as an important device for long-term trading relationships, opposite to the short-term orientations of the mainstream free market. Thus, farming and trading contracts are common in export-oriented organic networks from Africa. Buck et al. (1997) argue that contract farming is to the advantage of trading firms as they gain access to rural products without having to deal with production risks. Moreover, trading companies have more bargaining power to successfully renegotiate contract clauses in their interest. Market conditions or financial difficulties may trigger trading companies to postpone the purchase of sesame or lower the agreed transaction volume one-sidedly. For instance, though a purchasing contract was agreed upon between SOPRADEX and APB, the former failed to purchase the sesame in 2005 because of financial difficulties. This forced the leaders of APB to seek other commercial opportunities to sell their produce (APB, personal communication). In 2009 while organic farmers and their organizations in Nazinga village (in the southcentral region) managed to get the sesame ready for marketing in December as stipulated in the contract, the trading company (Olam) was not ready to purchase the produce at that moment because of a delay in cash provision. Farmers interpreted this as a strategy from Olam to bypass the period of high demand where prices are high, to reach a period of high supply during which the firm could renegotiate the purchasing price according to actual market conditions. Theoretically, farmers can also initiate contract revisions through their organizations, especially when the conventional market offers a better price at the moment of selling sesame seed, as was the case during the last years. But reality is that farmers' organizations hardly succeed in changing contracts to their advantage. In general, the price of organic sesame is based on the purchasing price of the previous year and the local market price at the moment of contracting, although at the moment of purchasing, some adjustments may be made to take the prevailing price situation into account. The difficulties of setting favorable prices for organic sesame through contracts are further complicated by international price volatilities. In the absence of any mechanism for regulating prices, international conventional markets and traders showed high price competition and high price volatility over the last decade. During purchasing periods in 2010 and 2011, the conventional sesame price at farm gate fluctuated between US$0.66 and US$1.33 per kg. This made it impossible for organic businesses to use the conventional price as a fixed standard upon which they could add a premium for the organic standard. Hence, many organic farmers were tempted to sell their sesame to conventional traders, who could offer a better price as they did not previously invest in the provision of seeds, farming equipment, and technical support. The already weak ties between production and marketing in the organic sesame network made it vulnerable to pressure from the conventional sesame market, in which it increasingly became incorporated. Since 2007, the price for conventional sesame has exceeded the price offered for organic sesame through contracts, due to increasing demand and pressure from the conventional international market.

On the farmers' side fulfilling contract obligations may also be endangered by their static nature and the sometimes short-term direct need of farmers for credit, as a farmer in Bilenga illustrates:

> Assume that the purchase of organic sesame is set in two weeks' time, and today your child gets sick and you need money for medical cares. Could you wait two weeks seeing your kid dying? Though you have the good will to be faithful to the contract you signed, you may take some produce (sesame) and sell it on the local market or to the trader knocking on your door, just for the sake of your child's life.

The existence of the conventional sesame market also undermines the contracts on organic sesame. The conventional sesame market in Burkina Faso is a typical free market with hardly any regulation and where individualism, profit maximization, speculation, and price volatility prevail. Long-term investments and trading contracts are almost completely absent because of the opportunistic and free riding behavior of market actors, who offer a marginally higher price to capture the produce someone else has invested in (by providing technical, material, and financial support). Hence, conventional sesame traders also started targeting the organic producers, thereby complicating the supply of sesame by organic traders, which they hardly manage despite many investments. For instance, with the support of CAMC-O (Centre of Arbitrage, Mediation and Conciliation in Ouagadougou) Olam invested in 2008 in building farmers' capacity on contract management, but without much success. Eventually, Olam included municipal and local leaders in contract arrangements with farmers' organizations in certain districts (Moussoudougou in 2008–2009, Dori in 2010), in order to mediate trust between organic farmers and Olam and to secure the supply of organic sesame. But also here results were not satisfactory.

As a consequence, important quantities of organic sesame are diverted from organic to conventional channels. According to leaders of farmers' organizations, currently less than one-third of the organic sesame produced is actually sold through organic trading arrangements, while roughly two-thirds is marketed via the conventional market. Due to this mixing with the conventional markets, accurate data on the actual organic sesame production is lacking. It is widely held that over the last decade organic sesame production in Burkina Faso has not decreased as dramatically as has the international organic sesame trade

(see Fig. 5). However, local demand for sesame oil is also increasing and may have absorbed a significant part of the produced organic sesame.

What would be the implications of the conventionalization on the organic sesame network, and particularly on smallholder farmers in the near future? This sesame case is quite complex with the enmeshment of global and local, conventional and organic, and perceived immediate and future interests. Obviously the shrinking of organic sesame into conventional sesame endangers the existence of the organic sesame network itself. In fact, if this trend continues not only mistrust and distrust between organic farmers and traders will increase, but also investments (logistics, trainings, standard setting) in organic sesame may become irrelevant and non-profitable, particularly for traders. As far as smallholder farmers are concerned, the shrinking of the organic sesame into conventional, with the consequence of exposing them to free market rules and realities, may bear several implications. Smallholders as well as large-scale farmers may lack the necessary business skills (bargaining power, access to market information) to adequately deal with traders in the absence of any control or third party support. Specifically, smallholder farmers will be more vulnerable to price fluctuation and will likely be constrained to sell all their sesame in the harvest period when prices are particularly low. The absence of any premium and incentives may progressively affect farmers' willingness to keep applying good farming practices and environmental friendly techniques that the organic standard requires. To counter these consequences organic farmers and their leaders could reorganize/restructure themselves, searching alliances with other stakeholders, and strengthen their capacities to (re)negotiate with traders and re-enact the contract-based organic sesame trading. Development agencies could support this by further assisting farmer' organizations and brokering public–private partnerships in the (organic) sesame sector.

Public–private partnerships in organic markets

The weak ties between production and marketing practices and nodes make the organic sesame network vulnerable to the pressure from a strong conventional market, leading to its increasing incorporation into conventional supply channels. The conventional sesame chain has even weaker ties between production and marketing than the organic sesame market has, but does not (have to) rely on and work through contracts. To bridge and strengthen these ties, several development agencies (e.g., GIZ, Helvetas BF, LWR, UNDP, CIRAD, OCADES) are involved as intermediaries in both the conventional and the organic sesame chains. They target mainly the liaising of production to markets through the formation of public–private partnerships (PPPs) and the provision of financial, material, and technical assistance. In PPPs in the sesame sector in Burkina Faso a private entity (mostly a trading company) partners with a public development agency by agreeing on an action plan and resources for developing the sesame economy in a region. Sometimes farmers' organizations are also involved in such a partnership. The development agencies GIZ, Helvetas BF, Freundeskreis Bareka, LWR, and BMZ are active in constructing such partnerships in the organic sesame sector. For them, supporting organic sesame means increasing smallholders' income as part of an overall poverty alleviation strategy. For example, GIZ (public entity), Olam BF (private entity) and the *Union des producteurs de sesame de Po*, a sesame growers' organization, formed a public–private partnership in the southern region. This partnership constructed contract-based trading relations between Olam and the *Union des producteurs de sesame de Po* for the procurement of both conventional and organic sesame. GIZ served as *garantie morale* (a kind of legal warranty) of the partnership, while providing technical and financial support, including training of farmers (in good farming practices), payment of field workers, provision of spraying equipment, and coaching the fulfillment of contact obligations. The farmers' organization sold all the produced sesame (conventional and organic) to Olam. Olam had the obligation to pay the farmers at an agreed premium price. GIZ supported this process for 2 years. But just one season after the exit of GIZ the partnership between Olam and the *Union des producteurs de sesame de Po* collapsed because of difficulties in fulfilling the contract obligations (Olam BF, personal communication). The *Union des producteurs de sesame de Po* was unable to provide the agreed quantity of sesame, while Olam was accused of not offering attractive and interesting payment conditions.

Public–private partnerships are expected to favor the working relations between farmers and private businesses and to build trust between them. However, according to some farmers' organization leaders, this may also be an opportunistic tool for businesses seeking public funds for their own profit. A farmers' organization leader expressed this as follows: "I have the feeling that as these business guys know that we get financial support from donors to undertake some activities, they implicitly hide under this to not hasten to pay their dues, and if they do they are not willing to pay good prices." Development agencies feel that leaving farmers alone in dealing with traders would be socially devastating. Coaching and facilitation of NGOs and other development agencies is seen as important to compensate partially the power disadvantages of farmers, but not enough to secure long-term contract-based trading in organic sesame networks and also in conventional ones. These partnerships seem unable to control price volatility and speculation. The combination of partnerships with

price regulation seems necessary to be able to control the volatility of sesame prices and limit speculation and opportunistic trading behavior and prevent the undermining of contract-based trading in organic as well as conventional sesame. The articulation/incorporation of a fair trade standard within organic, as currently driven by Helvetas BF, might also offer some chance to address in particular the issue of fairness and transparence between production and marketing nodes.

Conclusion

This research extended conventionalization research into a new geography, by investigating whether—and if so how—the organic sesame network in Burkina Faso has become subject to conventionalization. Is the organic sesame sector in Burkina Faso still clearly distinct from its conventional counterpart or has it increasingly taking up characteristics of and thus become 'dissolved' in mainstream production and trading practices?

Within production, the organic sesame network still differs significantly from the conventional one. The internal control system and the certification requirements of organic sesame foster the construction of 'a community of practice' for social learning and the generation and sharing of new knowledge and skills where farmers' organizations play a pivotal role. But the organic sesame trading system is strongly affected by fierce price competition and volatility in the conventional sesame sector and the free market behavior of conventional sesame traders. This makes the organic sesame network vulnerable and permeable to the international commercial pressure from the mainstream conventional sesame market. As a consequence, the differentiation in the production process is partly dissolved during trading with the increasing incorporation of the organic sesame flows into the mainstream commercial channels. Most of the organic sesame farmers are tempted by the short-term, occasionally higher price offered by opportunistic conventional traders at the expense of long-term contract-based trading relations with organic businesses. Even the spatial differentiation of the Burkina Faso sesame production, where the eastern region becomes most favorable to organic sesame, does not free organic farmers in that area from challenges resulting from the proximity to transnational conventional sesame trading reservoirs. Under these conditions organic sesame arrangements fail to vertically mediate information, balance power relationships, build trust, regulate prices, and insure cohesiveness and coherence between the production and the marketing nodes. This has put the viability of the organic sesame economy at risk, despite efforts deployed by development agencies to more effectively connect production to the market. In that sense one can conclude that the organic sesame sector faces conventionalization into the mainstream sesame economy. But that is only half of the story.

Contrary to the case of conventionalization in California, described by Buck and al. (1997) and Guthman (1998, 2004), where organic agriculture *grew* into mainstream agro-food arrangements, this study illustrated a case where organic agriculture *shrank* into mainstream agro-food arrangements, perhaps not (yet) so much in the production stage but especially in the commercialization stage. Another main difference is that most research on conventionalization focused and found *internal* dynamics within organics as the main mechanism of conventionalization: agribusiness and capitalism penetrate and subsequently restructure and transform the organic sector toward further industrial and conventional models. This case illustrates that dynamics outside the organic sector can also be a major cause that *externally* affects the organic commodity networks and drives it towards conventionalization. This opens up a new research agenda on the external drivers of conventionalization in alternative food economies. For instance, are these drivers perhaps mainly or especially relevant for organic commodity chains from developing countries?

What can be done to turn around this shrinking into mainstream of organic sesame in Burkina? The organic standard does provide the technical conditions of organic production and processing, and organized organic producers into cooperative organizations. But the standard has not been able to adequately extend its influence into trading. The organic standard, mainly driven and governed through private and civil society networks, proved hardly able to address issues of chain inequity, power imbalances, price speculation, and volatility, and the lack of trust across the chain, all central in (global) agro-food governance. In situations of relative powerless organic producers and marketing channels the state and public agencies should address these limitations and protect the organic chain from becoming subsumed and dissolved by mainstream conventional international trade. To be successful, the product and spatial specialization needs to be combined with institutional specialization and legal reinforcement

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