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SUSTAINABILITY TRANSITIONS IN BOSNIAN AGRO-FOOD SYSTEM

SUMMARY

Agriculture plays an important socio-economic role in rural areas of Bosnia and Herzegovina (BiH); the rural population accounts for 61% and almost half of the rural households is still engaged in agriculture. Faced with several environmental, economic and social problems, Bosnian agriculture needs a deep transformation to achieve both food security and food system sustainability. This paper explores the dynamics of past and ongoing transition towards sustainability in Bosnian agro-food system through the lens of the Multi-Level Perspective (MLP) on socio-technical transitions. MLP heuristic posits that transitions come about through interacting processes within and between niches (locus of radical innovations), regimes (locus of established and dominant socio-technical system) and an exogenous landscape. There are different agro-food niches in BiH (e.g. organic farming) but they are still marginal both in terms of land use and market share. Bosnia is characterised by a dual agro-food regime i.e. traditional farming and intensive agriculture. Landscape factors (e.g. civil war, Common Agricultural Policy, climate change) have shaped transformation in both sub-regimes. It is argued that changing climate and harmonisation with the regulatory acquis of the European Union will put pressure on the agro-food regime, whose de-alignment will create opportunities for nascent agro-food niches in the country. This also implies that transition pathways will likely be diverse; from technological/input substitution, to transformation and reconfiguration. Diversity of pathways means that different, tailored policy interventions are needed to foster transition-in-the-making towards sustainable agro-food system in BiH. MLP is useful to map sustainability transitions but further refinement is needed to adapt it to agro-food systems.

Keywords: sustainability transitions, Multi-Level Perspective, agro-food system, agriculture, Bosnia and Herzegovina.

INTRODUCTION

Bosnia and Herzegovina has to cope with serious socio-structural problems, such as high rates of unemployment (especially youth unemployment).

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The rural population, which accounts to 61%, is faced with missing job opportunities in sectors other than the primary one (UNDP, 2013), because the presence and growth of industry is insufficient in rural areas (Martinovska Stojcheska *et al.*, 2016). The economic importance of agriculture is shown in its contribution to the gross domestic product (6.4% in 2016) and in the high number of people being employed in agriculture (19.2% in 2016) (World Bank, 2018). Nevertheless, Bosnia and Herzegovina (BiH) is not capable of producing self-sufficiently. Import of foreign agro-food goods was nearly 3 times higher than exports in 2017 (MoFTER, 2018a).

Agriculture in BiH is typically small-scale, fragmented and organised in family farms that mainly produce for local markets or for self-consumption. In 2012, only half of the potential arable land was used for agricultural production. The vast majority of agricultural land (80%) is in the mountainous parts (typically grasslands for livestock farming), whereas only 20% of agricultural land (located in the northern flatter region) is suited for intensive agriculture (Zurovec *et al.*, 2015; Sakic and Crnkic, 2015).

Agro-environmental problems identified in the First National Report on the Implementation of the United Nations Convention to Combat Desertification/Land Degradation in BiH include low quality soils due to poor soil management (e.g. inadequate use of pesticides or fertilisers, livestock production practices, increasing soil acidity), soil degradation and destruction caused by exploitation of raw materials and war activities, erosion and deforestation (MAFWM, 2007). Apart from the numerous environmental problems and the general underrepresentation of environmental issues in the legislation, the lack of environmental awareness by producers and the lack of available official data on the status of the environment are evidently reinforcing the difficulties. The fragmentation of competencies in the administration regarding agriculture and environment constitutes another hindrance for successful measures dealing with the amelioration of the environmental condition. Despite all these complications, there have been small achievements in environmental protection, mainly due to the EU accession process and increased public awareness for nature conservation (MoFTER, 2013).

Bosnian agriculture needs a genuine transition to achieve both food security/self-sufficiency and food system sustainability. The objective of this paper is to explore transitions towards sustainability in the agro-food sector of BiH, with a particular focus on conversion to organic agriculture.

The Multi-Level Perspective on socio-technical transitions (MLP) is the framework used in analysing change dynamics and processes in the Bosnian agro-food sector. This paper discusses the emergence of organic agriculture within the agro-food regime in the Bosnian political and socio-economic context (cf. landscape). In line with the MLP, interactions and processes are analysed within and between three levels: niche (micro-level), socio-technical regime (meso-level) and a socio-technical landscape (macro-level) (Geels, 2002; Geels, 2011). Emerging problems (environmental, economic, social) or new

developments in the socio-technical landscape put pressure on the regime, forcing its adaptation or creating windows of opportunity for new niches to break through. Once a niche-innovation gains momentum and creates a new equilibrium, changes in the regime are possible (Geels, 2002). In sustainability transitions in the agro-food sector, institutional, regulatory and political support is of particular importance. Often sustainability is an intended, long-term goal, but the inherent broad meaning of sustainability can have different directions dependent on the network of actors involved (Smith et al., 2005; Markard et al., 2012). Depending on the constellation of actors from the political arena or from agricultural organisations, alternative practices in the agro-food sector may have a true chance to evolve or will be highly suppressed (Darnhofer, 2015).

MATERIAL AND METHODS

The agro-food sector can be conceptualised as a ‘socio-technical system’ (Geels, 2002; Geels, 2004), whose societal function is primarily food supply. Multiple factors within or outside a sector can initiate a transformation of an established system, whereas the function per se remains. To structure relevant elements of an evolving transition and to see the implications and challenges for the development of organic agriculture (OA) in BiH, the analytical framework of MLP is employed. In order to develop the analysis, secondary data was searched on the databases Scopus and Google Scholar between 23 May and 16 June 2018. Publications were reviewed first by title relevance, followed by abstract scrutiny and full-text reading. Further literature was included from the reference lists in the found publications. Recent data and statistics on BiH were found on several websites by targeted search via Google. The findings of the relevant literature were conceptualised in the framework suggested by El Bilali and Probst (2017) to map sustainability transitions in Bosnian agro-food system. The identification of processes and dynamics, influential factors and incorporation into the conceptual framework was carried out stepwise. First, influential factors are identified to understand the ongoing change processes in the agro-food regime as well as the emergence and development of niches in BiH. These external factors, that are historically relevant, have shaped the current agro-food regime. Second, the configuration of the agro-food regime is described, including specific agricultural characteristics, institutions and policy framework.

Hereinafter, some insights are highlighted about the constraints for agricultural governance, but also about potential that Bosnian agriculture holds. The last part consists of a description of OA in BiH, the processes within the niche and how OA is linked internally and externally to the regime and the landscape. At this point, it was useful to apply analytical frameworks of Transition Management (TM) (Rotmans and Loorbach, 2009) and Strategic Niche Management (SNM) (Kemp et al., 1998) to understand if organic niche is supported by policy measures, how niche actors are organised and if niche-regime networks are established.

RESULTS AND DISCUSSION

The current Bosnian agro-food regime evolved from past processes and changes summarised in several landscape elements. Changes in political ideologies, demography and migration, macro-economic trends and the civil war (1992-1995) changed the regime and introduced characteristic patterns. Transition in the agro-food sector is strongly linked to political transition – rather convulsed and incomplete – that BiH has undergone. The Yugoslavian socialist government had great difficulties in managing agricultural issues and was mainly concerned with industrialisation of the country. After a period of economic reforms, where market mechanisms were introduced, efficiency of the agricultural sector increased (Hofler and Payne, 1995), thanks to higher output of private agriculture in the 1950s despite the discrimination of private farmers (Dyker, 2011). Subsequent redistributions of agricultural land, land-maximum holding and prohibition on the sale of land rendered the agricultural population with low possibilities of agricultural rationalisation. All in all, the main obstacles for the improvement of the agricultural sector lied in the obsession of the socialist government and party for a top-down regulation without considering the fatal effects of non-implementation by the agricultural population (Dyker, 2011).

After the fall of Yugoslavia, followed by the recent civil war in BiH, agriculture sector was devastated. Post-war recovery was characterised by international donor funds for social support. Around ten years after the war more budgetary support was dedicated, mainly for traditional production (Bajramović *et al.*, 2014). The Dayton agreement marked the end of the war and still marks the complex structure of the government in BiH. Today agricultural policy management is divided into several administrative levels. There is a Division for Agriculture, Food and Rural Development within the Ministry of Foreign Trade and Economic Affairs (MoFTER) at the state level. At the entity level (Federation of BiH and Republic of Srpska) several ministries are responsible for agricultural policy measures, along with a Division for Agriculture in Brčko District (BD). In the entity Federation of BiH (FBiH), the cantonal level has as well certain competencies for agriculture, veterinary, forestry and water management.

Evidently, Bosnian administration brings a complicate framework for governance and policy management and the agricultural population must cope with instable funding, constantly changing requirements for payments and complex regulations (different regulations depending on entity) (Bajramović *et al.*, 2014). Additional constraints originate from different political ideologies where cooperation among the administrative units is challenged by ethnic contention. As a consequence, agricultural measures are implemented at a very slow rate or not effectively, because of unclear responsibilities and split competencies in the administration (Martin and Fahey, 2009). BiH's current fragmented structure of agricultural land is the consequence of Yugoslavian collectivisation and policy measures for egalitarian land ownership. It is estimated that over 80% of the farms are smaller than 2 ha, most of the times in

separated, multiple plots (Dimitrije and Tomic, 2010). Additionally, migration before, during and after the war left more arable land unused. Only a few farms gain their total income from their agricultural source. The majority is engaged in traditional agriculture with low or inefficient use of inputs and machinery, but also knowledge and technology utilisation, are not favourable (Bajramović et al., 2014).

Historical developments shape the agro-food regime and its elements (policy, culture, practices and technology, markets and consumer preferences). Current exogenous landscape factors, such as trade and competition, market prices, environmental problems and climate change, put pressure on the regime and will influence the relevant regime elements. Agricultural production in BiH is generally weakly linked to the needs of the food industry and the consumers (Kuipers et al. 2013; Vanzetti and Nikolić, 2013), explaining the increasing imports of highly processed food (Vanzetti and Nikolić, 2013). Food processors need larger quantities of raw materials, but the fragmented structure of agriculture and farmers missing to organise themselves in cooperatives to deliver collectively, block this essential coordinated supply (Martin and Fahey, 2009). In 2006, BiH signed the CEFTA (Central European Free Trade Agreement), along with other countries to prepare for accession to the European Union (EU). The anticipation for membership in the EU and a regional free trade cooperation would serve as impulses for integrating political and institutional values of the EU into domestic policy making. Apart from socio-economic and political factors, pressure on the agro-food regime evolves also from environmental problems and climate change. During the last two decades, agricultural production was economically damaged by a few extreme weather events, such as periods of extreme droughts or floods (Žurovec et al., 2017). The Germanwatch Climate Risk Index (CRI) ranks BiH 69 based on weather and socio-economic related impacts (Eckstein et al., 2017). The high share of rural population and their dependence on agriculture, leaves this population considerably vulnerable to climate change because of their livelihood options (UNDP, 2013; Žurovec et al., 2017).

BiH will need a transition from the current agricultural regime, to gain in productivity, to meet future market needs and to produce sustainably. First, modernisation of conventional agriculture is necessary to deliver competitively to the domestic and the European market (Lampietti et al., 2009). Second, as stated by several scholars, the characteristics of traditional farming (e.g. low use of pesticides and fertilisers, small-scale) in BiH are convenient qualifications for a conversion to economically and environmentally sustainable agriculture, e.g. organic agriculture (OA) (Dimitrije and Tomic, 2010; Driouech et al., 2013). A transformation from a dominant to a sustainable system is a long-term, multidimensional process, bearing fundamental or large-scale disruptive changes. Loorbach et al. (2017) refers to sustainability transitions (STs) as “large-scale societal changes, deemed necessary to solve grand societal challenges”. Transition from conventional and/or traditional to organic farming is already

underway in BiH. Moreover, the organic market in BiH is growing at an annual rate of 10-20% and an increase by 17% in organically cultivated land surface was registered in 2010. Despite this growth, less than 1% of agricultural land was devoted to organic farming (Dimitrije and Tomic, 2010).

In order to support sustainable food systems, it is important to identify the already ongoing dynamics and linkages between and within (i) organic agriculture (niche), (ii) the political and institutional framework, institutional linkings, market and consumers (regime), and (iii) the external market and consumer preferences and EU originating processes (landscape). The trend and progress of organic production is mainly influenced by developments outside of BiH. EU accession and gradual market opening for Bosnian products are fruitful incentives for OA. It is expected that organic products will be profitable due to exportability and compatibility to European countries, if measures for certification and controlling are implemented (Natos *et al.*, 2014). Most of the exported organic food products are raw material goods without further processing (except drying and freezing) to add value to the production (Dimitrije and Tomic, 2010; MoFTER, 2018b), hence organic producers experience the same missing links to food processors as conventional farmers. The agricultural market structure grounds major hindrances for further development of organic farming. Inside the country, the supply-demand chain is poorly established. Organic operators, who can bear the costly certification, export their products mainly to European countries (Renko *et al.*, 2010). Some producers have promotional agreements with and sell their organic products at local supermarkets and shops. Food is also retailed directly on-site or at local green markets. Medicinal or healthy plants, produced or wildy collected, are also sold at drugstores and pharmacies and make a significant share of organic production (Dimitrije and Tomic, 2010). Studies show that there is an awareness for organically produced products and that people's choice to buy them is because of their ecologically and socially sustainable production (Vukasović, 2013; Nikolić *et al.*, 2014). On the other hand, Bosnian consumers cannot pay higher prices for certified organic products and are satisfied with the taste and quality of locally produced food. They put them in the same category of food, because of the rare use of pesticides (Dimitrije and Tomic, 2010; Giraud *et al.*, 2013; Nikolić *et al.*, 2014). Nevertheless, the domestic organic market is small (about 0.4% of the total food market) but growing (Dimitrije and Tomic, 2010).

Acknowledging the pre-developmental phase of organic agriculture in BiH, there are many reasons for the low land and market share. The main constraint faced by farmers to enter into or to stay in organic production is the lack of support from municipalities and other public institutions. Institutionally evoked problems, such as lack of financial resources and training on organic farming, irregular payments, weak organisation at the national level and high certification costs, cause difficulties specifically for organic farmers (Driouech *et al.*, 2013). Legislative frameworks for organic agriculture are developed at the entity level. The Republic of Srpska (RS) adopted The Law on Organic

Production already in 2013 (Official Gazette of RS, No. 12/13), whereas the Law on organic production has not been introduced until September 2016 in FBiH (Official Gazette of FBiH, No. 72/16). The adopted laws comply with the EU regulations on organic farming and food processing.

Farmers are generally linked to diverse associations and institutions: municipalities, entities' ministries of agriculture, farmers' cooperatives, research institutes, certification bodies or extension services. Around 2000 organic producers and 17 institutional members (other smaller associations dealing with organic production) connect their knowledge, vision and promotion of organic farming via the Union of organic producers ORGANSKO FBiH. Likewise, an association of organic producers was established by the ministry of agricultural in RS in 2015.

To strengthen the linkages between micro-level niche and meso-level regime, Elzen et al. (2012) suggested to "anchor" emerging links i.e. intensifying exchange between niche and regime actors, and then making more robust links between the two levels. Because of undeveloped institutional capacity in BiH (Bajramović et al., 2014), disbelief that policy measures can bring change (Martinovska Stojcheska et al., 2016) and weak extension services (Driouech et al., 2013; Martinovska Stojcheska et al., 2016), dedicated niche actors supporting and strengthening the networks are crucial for the emergence and establishment of niche-innovations. Farmers who had already experience with rural development support (that also encompasses measures dealing with OA) were more likely to apply again (Martinovska Stojcheska et al., 2016) and this willingness is a good prerequisite for future measures as they can play an active role in supporting unexperienced farmers to engage in rural development programs. Therefore, subsidy programs or policy measures have a higher legitimisation and are more likely to be implemented. Extension services are asked to coordinate such transfer of knowledge but also to provide adequate advisory assistance to increase the knowledge about organic production (Driouech et al., 2013; Pestek et al., 2017). Beneficial effects of organic farming could be delivered by information campaigns to increase the public awareness on the whole concept of organic agriculture. A concerted way of collaboration between different institutions and actors (e.g. State, entities, municipalities/cantons, cooperatives, extension services, academia) is needed to push the institutional progress of organic agriculture. But most importantly is to identify enthusiastic niche actors and bring them together to catalyse synergistically organic agriculture development in order to change the agro-food regime in BiH.

CONCLUSIONS

The current agro-food regime in BiH is shaped by historical processes connected to former macro-economic trends and political ideologies in the Yugoslavian socialism, ethnic conflicts and the recent civil war, and former political agreements. Past developments define present agricultural practices,

routines in production and consumption, shared and contested beliefs and institutional norms and regulations. Implications for governance derive from practices during the socialist periods, the slow policy implementation due to the Dayton agreement and politics along ethnic lines.

However, the agro-food system is changing, due to internal and external pressures. Accession to the EU forces the political harmonisation with the *acquis communautaire* and the opening of the market due to the CEFTA agreement changes the rules for trade and competition. Climate change and environmental problems are also shaping future rural development policy. Cooperation within the administration at all levels and with the private sector are needed for a gradual alignment and harmonisation of efficient policy measures in the agro-food sector. BiH needs to draw upon the given natural potentials (e.g. unused agricultural land, untouched forests), the low labour costs and its geographical position (proximity to EU market) to develop a comparative advantage, especially in OA. A transition towards a sustainable agro-food system will require several transformational steps: reducing policy inconsistencies, changing priorities towards sustainable practices, improving provision of knowledge regarding sustainable agriculture, and strengthening institutional capacity. To foster organic agriculture development, better organisation at the state level is needed to protect organic producers' interests. Reducing certification costs and securing premium prices for organic products could improve market access.

Further research is necessary to understand farmers' awareness of sustainable agro-food production and how they perceive conversion towards organic farming. It is also necessary to analyse worldviews and narratives of actors involved in the niche, those providing institutional and political support to OA as well as the agro-food regime actors in BiH in order to better understand the factors hindering sustainability transitions in the country. MLP is useful in understanding the ongoing change processes but an integration with other transition frameworks (e.g. TM, SNM) might be needed.

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