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Production, Consumption and the Actor's Landscape in the Argentinean Organic Agricultural and Food Sector

Nicolas Fuchshofen[1], Darya Hirsch[1], Lilian Irene Brodtmann[2], and Wiltrud Terlau[1*]

[1]*International Centre for Sustainable Development (IZNE), Bonn-Rhein-Sieg University of Applied Sciences, Grantham-Allee 20, 53757 Sankt Augustin, Germany*
[2]*Argentine Movement for Organic Production (MAPO), Teodoro Garcia 2964 (C1426DND) – Colegiales, Capital Federal, Argentina*
nicolas.fuchshofen@h-brs.de; darya.hirsch@h-brs.de; wiltrud.terlau@h-brs.de

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ABSTRACT

Argentina substantially contributes to the global organic agriculture and food sector due to its large areas of organically managed agricultural land. However, most of the organic production is intended for export. Overall, food supply for the domestic organic market is hardly tapped. Based on this, we investigate the current importance of organic agriculture and food production as well as consumption attitudes and behavior within the country. The novelty of the study also lies in the observation, documentation and analysis of latest stakeholder-driven developments towards organic agriculture and food. Furthermore, the publication allows the Argentinean organic market to be significantly more visible for the international audience.

Keywords: *Latin America; Plant-based and animal-derived organic products; Consumer; Export; Regional economies; NGOs; Promotion of organic agriculture; Market access*

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1 Introduction

The United Nations (UN) adopt the 2030 Agenda for Sustainable Development in September 2015. The closing document includes 17 Sustainable Development Goals (SDGs), which comprise 169 targets. In our recent research, we focus on SDG 12 "Ensure sustainable consumption and production patterns" and place our findings on the Argentinean organic agricultural and food sector in the context of this goal. The goal itself covers eleven targets dealing with efficient use of natural resources, restrained application of chemicals, the importance of relevant information on sustainable development and behavior as well as the need of supporting lifestyles in harmony with nature (United Nations 2015). The production and consumption of organic food perfectly fits these intentions and aims. Additionally, a vital and active actor's landscape including governmental, private and non-governmental organizations (NGOs) plays an essential role in promoting sustainable production and consumption patterns of organic food by providing information and knowledge on cultivation methods and market access, organizing organic trade fairs and enabling interested parties and participants to create extended networks and exchange ideas and knowledge. Therefore, it is not only the analysis of the production environment and consumption behavior, but the investigation of the actor's landscape as well, what complements the work on organic food sectors.

Argentina substantially contributes to the global organic agriculture. Whilst Latin America (including the Caribbean) has 7.1 million reported hectares under organic cultivation, Argentina is responsible for about 3.19 million hectares. Globally, Argentina has the second largest organic sector with regard to land under organic cultivation, the largest in Latin America and about one million hectares more than the United States. Only Australia has a larger organic sector. For both countries, this is mainly due to organic wool production, for which it is typical to cover a huge amount of hectares of natural pastures and other natural vegetation for extensive sheep grazing or cattle farming (Willer and Lernoud 2018 and SENASA 2018).

Major organic exports from Argentina include cereals, oilseeds, fruits, sugar cane, meat and organic wool as well as processed organic products such as olive oil, wine or honey. Besides the exports, vegetables, fruits, juices, sugar cane, rice, polenta, honey and other products are sold in the domestic organic market (SENASA 2018). However, organic (certified)/not-certified food and food produced based on ecological principles, e.g. without using "agro toxins", seem to be used interchangeably by consumers. Another aspect is that in many rural areas food is produced in a „semi-organic (not certified)" way, because the producers simply don't know how to handle agro-chemical products, but they already meet some attributes of organic production. Buenos Aires city and its peri-urban regions, a large number of consumers depends on organic certification, because they do not know producers personally. On the other hand, in smaller and medium sized cities, organic or similar products are consumed as well, but the markets are less visible. This could be an interesting field of study for future research. Furthermore, the evolution of organic consumption can be credited to the input from national NGOs, too. An active player within the Argentinean organic network is the *Argentine Movement for Organic Production* (MAPO), which is the only organization representing several sectors related to organic activities.

We investigate the current importance of organic agriculture and food production as well as consumption attitudes within the country. The novelty of the study lies also in the observation, documentation and analysis of latest stakeholder-driven developments towards organic agriculture and food. We conducted first research on the awareness, perception and behavior of the Argentinean consumer together with the University of Buenos Aires (UBA) via the application of a detailed questionnaire. We designed the questionnaire, to gain further insights into the structure of Argentinean consumer's mindsets and unveil obstacles for higher demand in organic food. Additionally, we place our survey and the outcomes[*] alongside other recent research on consumption on organics such as Willingness-to-Pay (WTP).

The paper is organized as follows. The first section presents a comprehensive analysis of land resources under organic cultivation. Besides, we describe the characteristics of land use for organic crop production and organic livestock farming as well as its geographical distribution. This section is primarily based on data from different issues of the National Agrifood Health and Quality Service (SENASA). The second and complementary section of the paper is devoted to consumer research and presents the outcomes of our study in Argentina. Students and employees of the UBA were asked via a paper-based questionnaire in the fields of "awareness", "purchasing behavior and attitude" and "consumption". The conclusions highlight the need for further research in the area of organic agriculture and food in Argentina, especially its

[*] For the entire study, see Fuchshofen, N. and W. Terlau (2017). Perception and attitude of Argentinean consumers towards organic food (in German). In: Forum Nil – Nachhaltigkeit im Lebensmittelhandel (Sustainability in Food Retailing), NIL Research Paper 1/2017.

relevance for the evolution of the domestic market. In the last section, we deal with institutions being active in the organic agriculture and food sector at all levels and outline their interlinkages. The section is based on primary data collected by guideline-based interviews with relevant actors (e.g. MAPO, SENASA, certifiers, consumers and scientists) as well as secondary data gathered from sources such as the Food and Agricultural Organization of the United Nations (FAO).

2 Agriculture and production of organic food in Argentina

In Latin America and the Caribbean, 62% of organically managed land are permanent grassland, 14% are reserved for permanent and 7% for arable crops, whilst for the remaining share either no details were available or it was used otherwise. Coffee (424,000 hectares) and cereals (164,000 hectares) were the most important crops cultivated. We observed many differences in terms of structure, land in use for organic cultivation, number of organic producers and average size of farms as well as the share with regard to total agricultural land. Uruguay for instance had an 11.5% share of organic cultivation in terms of total agricultural land, but only six different organic producers. Moreover, Mexico has only 673,968 hectares for organic cultivation, but the vast amount of 210,000 organic producers. With regard to total agricultural land, Argentina has the largest organic sector in Latin America with 3.19 million hectares, what equals a share of 2% of total agricultural land. If we add wild collection areas (e.g. beekeeping, nuts and palms) to the total organic area, we end up with a total of 3.34 million hectares under organic occupation (Willer and Lernoud 2018 and SENASA 2018).

Argentina had a total agriculture area of 148.70 million hectares in 2015 (latest data available), which grew from a 1961 value of about 137.80 million hectares (The World Bank Group 2018). Thereof, 77,042 hectares are used for organic crop production and 2.97 million hectares for organic livestock farming (SENASA 2018). The following graph shows the evolution of both areas between 1995 and 2017 (Fig. 1). The total agriculture area for organic cultivation was divided up between 1,157 organic producers throughout Argentina, whereas the highest concentration could be observed in the southern province of Rio Negro (240). Besides, the western province of Mendoza (175) and the central province of Buenos Aires (146) show high concentrations of organic producers (SENASA 2018).

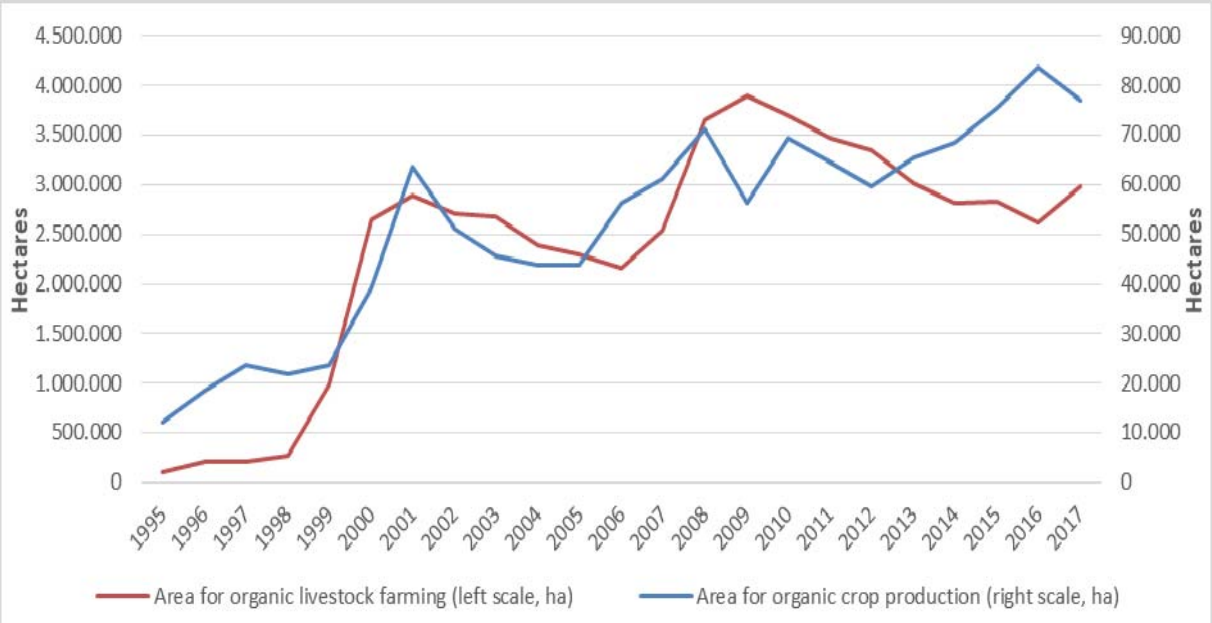

Figure 1. Area for organic livestock farming and plant cultivation in hectares between 2000 and 2017.
Source: SENASA, all volumes between 2001 and 2018.

On the other hand, the southern provinces of Santa Cruz (1.5 million hectares) and Chubut (1.11 million hectares) are those with the highest amount of land under organic production. This difference in number of organic farms as well as land size under organic cultivation is given by the different agro-climate conditions and the structure of organic cultivation, such as crop production or livestock farming, in those provinces. The ecosystem in these provinces supports extensive sheep production, which occupy large extensions of land, both for organic and conventional agriculture.

We observe that provinces with an emphasis on crop production have substantially smaller producers on average (SENASA 2018).

According to their organizational structure, producers in Argentina could be classified into four different groups: 1) Corporations (30% of production), 2) Producer's Associations (28%), 3) Individuals (27%) and 4) Limited Liability Companies (LLCs, 9%). The small producers (under 25 ha) cultivate plants, the medium sized producers (25 to 500 ha) are mainly cultivating plants as well and the large ones (above 500 ha) are involved into both fields, plant cultivation and livestock farming (Puppi, Pinasco and Ramirez 2015). Group one includes small and medium sized companies†. Some of the small companies may have adopted the status of a corporation only for fiscal reasons, but still may be very small. The size of organic producers varies considerably according to the kind of crop or type of livestock. For instance, we observe that the producers with the highest average regarding their area under occupation are located in the provinces with sheep husbandry: Santa Cruz, Tierra del Fuego and Chubut. Experience shows that the ordinary size of a producer, who does crop rotation including for instance wheat, soya, sunflower seeds and cattle farming, lies between 200 and 500 hectares. Producers of fruits, like apples or pears, usually have about five to ten hectares for their plantations and producers of vegetables may have one or two hectares for their activity. Typical for the production of sugar cane, for instance in the province of Misiones, is a small producer, who cultivates a size of less than two hectares and, on the other hand, a producer of sugar cane may be of much bigger size.

Data for the Argentinean crop production and its distribution throughout the country are available for organic grain, oilseeds, industrial crops, spices, vegetables and pulses, fruits and others. The following graph shows the distribution of the organic crop production with the corresponding size of cropland in use as well as the distribution of sheep, cattle and beehives between the leading provinces (Fig. 2).

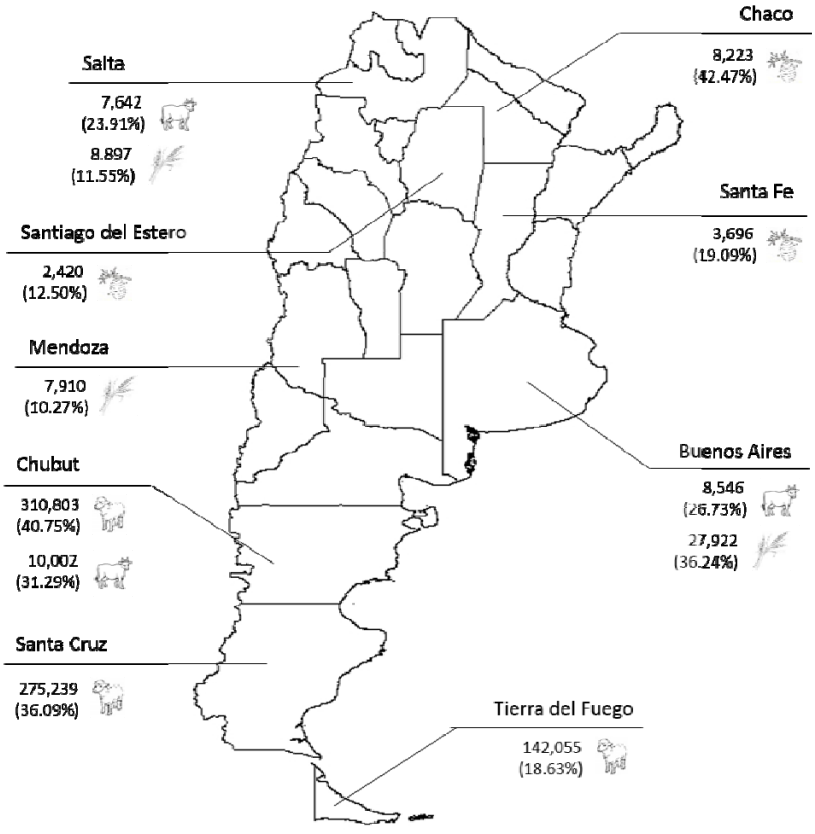

Figure 2. Distribution of organic crop production and cropland (hectares) in use and the distribution of sheep, cattle and beehives between the provinces with the highest amounts in the specific area in 2017. Source: SENASA (2018). Situación de la Producción Orgánica en la Argentina durante el año 2017, pp. 21, 35 and 36.

† Comment of the authors: The word "corporations" could be replaced by "companies" as a more specific translation from the Spanish word "empresas", according to the fact that in the Argentinean organic sector we are talking about "small and medium sized companies", in Spanish called "pequeñas y medianas empresas".

Buenos Aires for its own was responsible for more than one third of the entire land for organic crop production, followed by Salta and Jujuy. The remaining amount is spread across 17 other provinces, whilst the rest has either no land for organic crop production or the information is not reported (SENASA 2018). The total amount and distribution of organic agriculture was subject to major changes during the last 15 years. Apart from the development in the area of farming of cattle, the numbers of sheep and beehives vary heavily. In terms of animal husbandry and with regard to farming of sheep, large organic producers are located in Chubut and Santa Cruz. With 762,653 sheep in Argentina, over 40% are farmed in Chubut and 36% in Santa Cruz. Buenos Aires is responsible for farming of 8,546 cattle, which means a share of 26% of the total number of organically grown cattle in Argentina. The number of organic farming of cattle experienced a sharp decline between 2000 (142,007) and nowadays. This could be due to the Argentinean governmental import substitution strategy and the applied tools such as high export taxes (e.g. 15% for beef), quantitative export restrictions and other domestic market controls. Besides an appreciation of the exchange rate, these policies lead in combination with an unstable and not transparent execution to a poor performance of the agricultural market as a whole. In the case of beef, the governmental policies resulted in worsen sales opportunities for domestic producers and therefore in drops in supply. Besides Buenos Aires, Chubut and Salta are the provinces with a significant amount of cattle. Furthermore, apiculture is playing its role on the organic cultivation landscape. The most of the 19,360 beehives in Argentina are located in the provinces of Chaco and Santa Fe (SENASA 2001 and 2018 and Regúnaga and Rodriguez 2015).

Besides the data on organic production, SENASA provides information on exports of organic products. In most cases, export data for certified plant-based products such as cereals beef, wools and honey are available for the reporting period between 2000 and 2017. The exports for certified plant-based products experienced a strong growth. From an initial volume of 29,972 tons in 2000, Argentina exported 175,175 tons in 2017. The country was able to reach customers primarily in the United States and the European Union. It is important to keep in mind that the data, SENASA publishes about organic products, include goods, which are organic according to the Argentinean law (Ley 25.127). This contains products, which satisfy the legal systems of both countries, the Argentinean and the one of the United States. This data derives from information given by all Argentinean certifiers. The products, certified exclusively according to US law by Argentinean certifiers, do not fall under the control system of SENASA, are not organic according to the Argentinean law and are not included in the annually published data (SENASA 2001 and SENASA 2018).

In contrast, the exports of organic beef declined sharply from a total volume covering all importing countries of 522 tons in 2000 to 2.6 tons in 2017. The European Union plays the major role in the areas of wools and honey. With a share of 92%, it was able to import 591 tons of organically produced wools. The specific export figures of honey faced a high volatility from 160 tons in 2000, a peak in 2008 (1,298 tons) and the most recent volume of about 525 tons (Tab. 1) (SENASA 2001, 2009, 2016 and 2018).

Table 1.

Exports of organic products to the EU, USA, China and Latin America in tons in 2017. Source: SENASA (2018). Situación de la Producción Orgánica en la Argentina durante el año 2017, pp. 22, 23, 25, 31-33 and 37.

EXPORTS IN 2017 (TONS)	EUROPEAN UNION	UNITED STATES	CHINA	LATIN AMERICA	OTHERS	TOTAL
GRAIN	15,055.32	1,284.08	0	6,015.54	6,910.12	29,265.06
OILSEEDS	983.42	29,820.67	0	140.01	214.61	31,158.70
FRUITS	22,158.07	19,629.47	0	326.71	2,515.55	44,629.80
VEGETABLES AND PULSES	3,858.40	1,984.22	0	0	398.66	6,241.28
INDUSTRIAL CROPS	28,773.10	26,849.19	212.60	595.98	6,973.32	63,404.19
OTHERS	140.43	49.50	0	287.60	39.00	516.53
BEEF	2.59	0	0	0	0	2.59
WOOLS	591.19	0	25.13	16.48	9.77	642.57
HONEY	447.14	37.26	0	0	40.98	525.38

The dataset for domestic consumption should treated with caution, since most of the values are highly volatile over time. At this point, we have no further information on the underlying causes of these

fluctuations. One could imagine that – apart from variations of consumption behavior in Argentina itself – for example high volatility is one of the key features of a relatively new field of business. Furthermore, the requirements of certification agencies varies over time, so that from one year to another high volumes were either included or excluded from the group of organic cultivated products and therefore consumption. For instance, the volume of internally consumed oilseeds varies between 1,316 tons in 2000 and 35 kg in 2005. Nevertheless, it is interesting to compare the share of organic production, which is exported, with the respective domestic consumption. This is approximately possible for certified plant-based products, which comprises grain, oilseeds, fruits, vegetables and pulses, industrial crops and spices for our purpose. After all, there are two striking trends apparent. First, the export volume for certified plant-based products surged between the years 2000 (29,972 tons) and 2017 (175,175 tons). Second, domestic consumption dropped from 3,584 tons to 2,185 tons in the same period (SENASA 2001 and 2018).

Actually, it is very difficult to attract data on revenues generated with organic food in Argentina. Nevertheless, *Global Organic Trade* (GOT, funded by the U.S. *Department of Agriculture's Foreign Agriculture Service*) provides some estimates in its resource guide. According to GOT, the total market volume for organic packaged food and beverages in Argentina was 22.7 USD million. Globally speaking, organic food is bought for about 40 USD billion, mostly in Northern America and Western Europe. Although Argentina's share is negligibly for the moment, GOT estimates a 37% growth between 2017 and 2022 (Global Organic Trade 2018).

3 Survey and recent literature on consumption of organic food

We complemented our present knowledge on organic agricultural and food production by conducting an explorative survey at the *Faculty of Veterinary Science* at UBA and integrated our findings into the recent literature on consumer research on organic food. Primarily, the surveys purpose was to identify trends in perceptions. Although the respondents were not chosen in a way that they could represent the entire Argentinean population, the results of this survey are of interest, because the segment of the population gives an orientation regarding the state of awareness of at least the consumers in Buenos Aires city. In our paper-based questionnaire, we addressed topics in the fields of "awareness and labels", "purchasing behavior and attitude" and "consumption". The participants grouped according to their gender, age and status (income and education). On the strength of legibility and since the responds given regarding age and status are heavily correlated, we skip the presentation of the results linked with status. Table 2 shows responds given in the initial part of the survey.

In the field of awareness, our survey shows that 29.2% of male and 52.5% of female participants are accustomed to "sustainability" in the context of food, whilst all participants agree that "organic" could be linked to it. More knowledge about labels itself and on specific ones shown to the consumers is available on the male side. Obviously, the revelation of specific labels functions as a reminder. On the general question, whether labels play a role in the daily purchase process of food, the responds of male (16.7%) and female (13.6%) tend to be in the same region. Hoogland, Boer and Boersema (2007) showed that products with logo and details got higher ratings of positive attributes and consumers like to be informed about the sustainability issues related to their food choices, which leads to higher WTP (Loo et al. 2015; Loo et al. 2014). On the other hand, the discrepancy between the age cohorts is 15.4 percentage points in favor of the group of 25 years and above. The question on recent purchasing behavior, which needs to engage concrete memory on the participant's side, leads to consistently lower figures. For example, only half of the male consumers took consciously note of a labeled sustainable product during the last four weeks. Furthermore, male (20.8%) and younger (20.3%) consumers tend to be more aware of information about sustainable food at the point of sale than female or older participants are. Briz and Ward (2009) worked on the relationship of awareness and actual consumption of organic food. It is shown that the group of participants aged between 25 and 44 had the highest awareness. For an average participant, for whom the estimated average awareness probability is 46%, it leads to a likelihood of actually buying organically produced food of 53.8%.

Table 2.
Awareness for sustainable or organic labeled food by gender and age cohort. *Gap to 100% owed to responds either in the category "indifference" or in "lack of knowledge".

	Male		*Female*		*Under 25*		*25 and above*	
Question	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**
Did you ever hear of "sustainability" in the context of food?	29.2%*	62.5%	52.5%	40.7%	40.1%	51.6%	63.2%	31.6%
What connotations do you link with "sustainability"?	Conditions of production, environmental protection, little pollution, consumer's health protection, reliability, durability, recyclability, Brundtland definition, equilibrium							
Did you ever hear of "organic" in the context of food?	100%	0%	100%	0%	100%	0%	100%	0%
Do you know labels, which tag sustainable or organically grown food in Argentina?	33.3%	12.5%	25.2%	8.5%	21.9%	9.4%	47.4%	10.5%
Did you ever recognize the label "Orgánico Argentina"?	37.5%	62.5%	25.4%	74.6%	29.7%	70.3%	26.3%	73.7%
Did you ever recognize the label "Alimentos Argentinos"?	25.0%	75.0%	18.6%	81.4%	20.3%	79.7%	21.1%	78.9%
Do you take note of labels when purchasing food?	16.7%	37.5%	13.6%	5.1%	10.9%	42.2%	26.3%	15.8%
Did you consciously take note of labeled sustainable products during the last four weeks when purchasing food?	8.3%	66.7%	11.9%	67.8%	9.4%	65.6%	15.8%	73.7%
Were you actively informed (e.g. by posters or verbally) about sustainable food products while shopping food in the last week?	20.8%	66.7%	16.9%	74.6%	20.3%	68.8%	15.4%	84.2%
Did you ever buy consciously one or more as "sustainable" labeled products?	16.7%	58.3%	22.0%	37.3%	21.9%	40.6%	15.8%	52.6%

Moreover, we asked about the reasons that argue in favor and against the purchase of food labeled as "sustainable". In total, 20.5% of the participants said that they consciously bought one or more products labeled as "sustainable". By far, the most frequently given response to why they bought this product was "quality" (82.4%). Apparently, products with a sustainability label perceived to be of high quality. Wiedmann et al. (2014) states this as a signaling effect and found out that an organic label for conventional products (wine) lead to a better perceived appearance and taste and therefore to a higher WTP. Bauer, Heinrich and Schäfer (2013) showed that organic labels affect the consumers' perception of brands in particular. These effects also supports the consumers' WTP. Rousseau and Vranken (2013) worked on information provision through environmental and health impacts of organic labels. They use a stated choice experiment and found out that Flemish consumers' WTP increases by 33 eurocent per kilogram for labeled organic apples, whereas Lockie et al. (2002) emphasized the importance of an independent certification. Bryla (2016), Hamzaoui-Essoussi and Zahaf (2012), O'Doherty Jensen, Denver and Zanoli (2011) and Rodríguez, Lacaze and Lupín (2008) traced higher WTP to additional benefits of organic food like health reasons, willingness to help the local economy and the environment, awareness of production methods, country of origin as well as taste and freshness. This fits to our findings, that "curiosity" and the desire to support discriminated producers in developing countries are further reasons for purchase. However, the concentrated occurrence of labels could cause confusion as well (Mesías Díaz et al. 2012). Constantly, customers mentioned health or environmental issues (e.g. Marette, Messéan, and Millet (2012); Padel and Foster (2005)), whereas the findings of Michaelidou and Hassan (2008) indicate

that health-consciousness is far less important than ethical self-identity and food safety concerns.

By lacking health options in our questionnaire, we were able to incentivize the participants to choose between underlying options like quality, which is linked to health. Consistently, the participants, who did not purchase products labeled as "sustainable" up to now, did not mention "quality" once (Fig. 3).

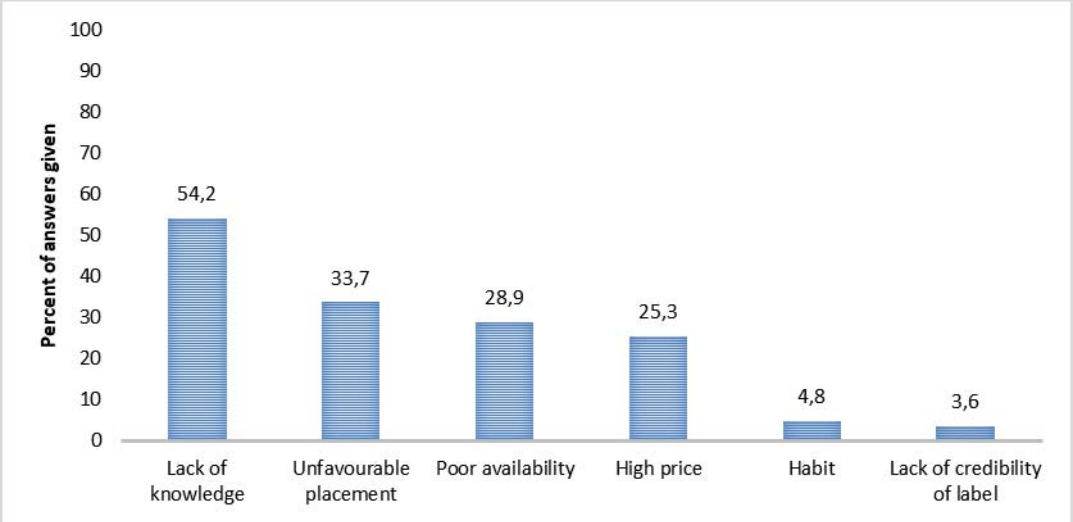

Figure 3. Reasons for not purchasing products that are labeled as "sustainable".

Furthermore, the lack of knowledge (54.2%) about sustainable products and problems with visibility (33.7%) and availability (28.9%) are obstacles for higher demand. The problem of limited availability as an obstacle for consumer awareness and therefore purchase is stressed in several studies (e.g. Bryla (2016); Buder, Feldmann and Hamm (2014); Rodríguez, Lacaze and Lupín (2008) and Lockie et al. (2002)). There is evidence, that unfavorable placement and frequent rearrangements (as well as regular price changes) have a higher elasticity for organic food products than for conventional ones (Bezawada and Pauwels (2012)). Furthermore, customers are very interested in the availability of locally grown products and the possibility of an easy comparison with non-organic products (Gottschalk and Leistner (2012); Hill and Lynchehaun (2002)).

The lack of knowledge and consumer's concerns about agricultural practices were the starting point for the research of Roitner-Schobesberger et al. (2008). They focused on fresh organic vegetables and developed a questionnaire including questions on safe food and organics. Male participants with higher income, university degree and being older showed higher WTP and tended to buy organic food. This corresponds to the findings of for instance Zakowska-Biemans (2011), Smith and Paladino (2010), Aertsens et al. (2009), Michaelidou and Hassan (2008) or Zhang et al. (2008), who dealt with underlying consumer values, attitudes and motivations, as well as knowledge on organic food in the context of labeled organic food. Smith and Paladino (2010) observed that organic knowledge (respectively lack of knowledge) is one of the most significant aspects in consumer's organic attitudes forming a specific purchasing behavior. On the contrary, Bryla (2016), Aschemann-Witzel and Aagaard (2014), Timmins and Blunt (2013), Gottschalk and Leistner (2012), Rodríguez, Lacaze and Lupín (2008) and Zanoli and Naspetti (2002) argued that a (perceived) higher price is one of the barriers to buy organic food. Aschemann-Witzel and Aagaard (2014) stated that especially younger people would buy more organics, when they were able to improve their financial situation later in their lives. In addition, Buder, Feldmann and Hamm (2014) mentioned insufficient product quality, apart from product price as an important reason for not purchasing organic products. As outlined before, we could not confirm this for Argentina.

Existing preferences or the lack of credibility of labels play a marginal role, whilst the price of labeled products did not seems to be the most important part. Zagata (2012) supports this view, since she found that perceived high prices and availability are issues of smaller importance for consumers, who buying organic food products at least once a month. This matches the answer of 45.8%, who are willing to pay more for a labeled product. At this point, we could observe significant differences between male (20.8%) and female participants (55.9%), of whom a far greater proportion is prepared to pay more. In general, small households (Padilla Bravo et al. (2013)), women (Padilla Bravo et al. (2013); Oates, Cohena and Braun (2012); Lockie et al. (2002)), older (Padilla Bravo et al. (2013); Herpen, Nierop and Sloot (2012); Kriwy and Mecking (2012)), well-educated (Herpen, Nierop and Sloot (2012); Kriwy and Mecking (2012);

Zhang et al. (2008); Fotopoulos and Krystallis (2002)), health-conscious (Bryla (2016); Hamzaoui-Essoussi and Zahaf (2012); O'Doherty Jensen, Denver and Zanoli (2011); Rodríguez, Lacaze and Lupín (2008); Kriwy and Mecking (2012); Oates, Cohena and Braun (2012); Barrena and Sánchez (2010); Padel and Foster (2005); Lockie et al. (2002); Zanoli and Naspetti (2002)) and people with higher income (Padilla Bravo et al. (2013); Zhang et al. (2008); Fotopoulos and Krystallis (2002)) tend to buy more organic products. Apart from that, Zhang et al. (2008) found mixed effects of age between households regularly buying organic products and households buying conventional products. Moreover, Barrena and Sánchez (2010) did not find significant gender or education effects.

Overall, it is interesting that such a high share is willing to pay more for labeled products, although the knowledge of labels is rather small. In addition, only 14.5% of the consumers take note of labels during the purchasing process at all. This corresponds to the findings of Roitner-Schobesberger et al. (2008), who stated that actual and detailed knowledge about labels itself was relatively low and a larger group of consumers recognized that fact. Besides health and environmental issues and with some distance, "freshness", "taste" and "curiosity" were important in the purchasing process as well. Although the price premium between organic and conventional food reaches 50% in their study, which is far away from a premium range of 10% to 20% or 30% indicated by our and other WTP studies as acceptable for consumers, the price is not a strong barrier. One could imagine that this tells more about consumer's (lack of) knowledge on prices than their actual WTP (or even an overestimation, Plassmann-Weidauer (2011) and Hoogland, Boer and Boersema (2007)).

Another hint for the strong connection of "labeled product" and "quality" is the fact that 57.8% of the participants would pay up to 20% more for products labeled as "organic" in comparison to conventional food. The research of Linder et al. (2010) indicates that consumers are willing to pay more for a labeled product (German Bio label) than for the same product without the organic label (or an artificial one). Again, it seems that the label on its own leads to a higher WTP (as Wiedmann et al. (2014) stated as well). An issue, that we did not address, is sensory factors around the organic food on site. According to the research of Zakowska-Biemans (2011), these factors were the most important motives for food choice for customers in Poland, followed by price and safety.

Organic institutional landscape and policies: History and current state

History of the organic sector in Argentina

1985	Establishment of the Centro de Estudios de Cultivos Orgánicos (CENECOS)
1987	First five farming pioneers of organic production; No relevant legislation; No relevant certifiers
1990	Argentina's representatives at the 2nd Congress of the International Federation of Organic Agricultural Movements (IFOAM); Need in global supply of organic products
1991	First two certifiers were established, certification according to the internationally established rules (IFOAM)
1992	First national guidelines "National System of Control of Organic Products" are adopted through the Instituto Argentino para la Sanidad y Calidad Vegetal (IASSCAV) and Servicio National de Sanidad Animal (SENASA)
1993	Regulation for organic livestock farming was legislated
1992	Argentina is included into the provisional equivalence list of third countries of EC
1994	IFOAM International Scientific Conference in New Zealand with participation of Argentinean representatives; Argreement to carry out next IFOAM conference (1998) in Argentina; In-between, the IFOAM assested Argentinean representatives in their intention to create an organic movement in Argentina, which resulted in the establishment of MAPO
1995	Establishment of MAPO
1996	Argentina is included in the EC equivalence list of third countries (for plant products); 80% growth in organic export
1998	IFOAM International Scientific Conference in Mar del Plata, Buenos Aires Province, Argentina
1999	The national law on organic production was legislated: Ley Nacional 25.127 de Producción Ecológica, Biológica u Orgánica
2000	Argentina is included in the EC equivalence list of third countries (for animal products)
2001	Publication of the first annual report of SENASA about the situation of organic production in Argentina for the previous year
2002	Opening of the advisory committee for organic farming (Comisión asesora para la producción orgánica), with over 50 meetings up to 2017
2007	Creation of Argentina´s "Day of Organic Production" at December 3rd (Ley Nacional 26.295) in accordance to the World Anti-Pesticide Day
2012	The Argentinean organic seal "Orgánico Argentino" is created in order to offer a seal for all organic products and to be utilized in conjunction with the seal of the different certifiers
2014	After several years of implementation, the 3-year-career for organic production offered in UBA obtains national recognition
2016	Opening of committees for organic rice, for means of input for organic agriculture and organic seeds (Mesa de arroz, Mesa de insumos aptos para la producción orgánica, Mesa de semillas orgánicas)
2017	Opening of committee for peri-urban areas (Mesa de periurbanos), within which the organic production has an important role as well as the agro-ecologic approach

Figure 4. The history of the organic sector in Argentina (own presentation).

The contemporary Argentinean organic sector is well presented by a huge variety of actors, embedded in a widely developed institutional landscape. According to FAO, the Argentinean organic sector has its origin in 1985 (see Fig. 4) (FAO 2008). The Centro de Estudios de Cultivos Orgánicos (CENECOS[‡]-Centre of Organic Cultivation Studies) was established in 1985 and lay in the origins of the organic movement. After some years, organic practices stopped being a lateral experience in Argentina and had transformed, little by little, into a more expansive movement with new adepts (Pais and MAPO 2002). Since then, the organic sector developed steadily and became a consolidated segment of food production, which is represented throughout the institutional landscape and undergoes a constantly growing demand amongst consumers.

The stakeholder landscape of the organic sector in Argentina is split up between the private sector, non-governmental actors and state bodies, which are responsible for controlling and supporting the organic production activities (Fig. 5). All these actors are closely connected with each other.

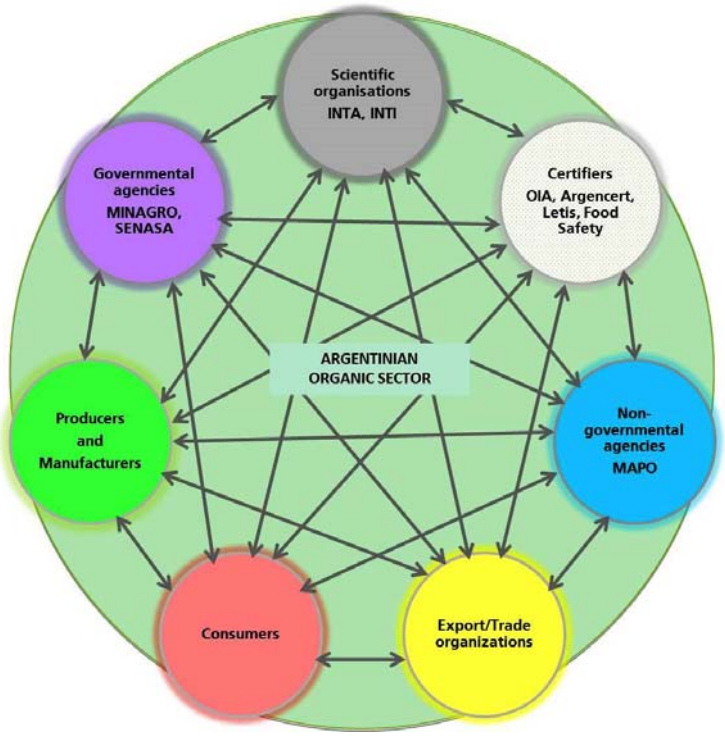

Figure 5. Schematic diagram of organic sector's actors (own presentation)**.**

4 Governmental agencies: activities dedicated to the organic sector

There are numerous governmental agencies, which are responsible for state organic production control and support. As part of the *Ministerio de Agroindustria* (MINAGRO), the Secretaría de Agregado de Valor is the coordinator of the advisory committee for organic farming. Originally, this committee was established by the *Secretaría de Agricultura, Ganadería, Pesca y Alimentación* (SAGPYA) and the *Servicio Nacional de Sanidad y Calidad Agroalimentaria* (SENASA, National Food Safety and Quality Service). The advisory committee includes representatives from the *Oficina Nacional de Control Comercial Agropecuario* (ONCCA, National Agency for Agricultural Trade Control), SENASA, the Instituto Nacional de Tecnología Agropecuaria (INTA, National Institute of Agricultural Technology), the *Secretaría de la Pequeña y Mediana Empresa del Ministerio de Economía* (State Secretary of the Ministry for Small and Medium-Sized Enterprises, Trade and the Business Environment), the Fundación Exportar (Export Foundation) and representatives of the NGOs and private sector, Movimiento Argentino para la Producción Orgánica (MAPO) and *Cámara de Certificadoras de Alimentos, Productos Orgánicos y Afines* (CACER, Chamber of Food Certifiers, Organic Products and Allied Products) (Decreto 97/2001, Morgera et al. 2012 and OIA 2017). Beside the aforementioned actors, representatives of the *Instituto Interamericano de Cooperación para la Agricultura* (IICA, Inter-American Institute for Cooperation on Agriculture), the *Consejo Federal de Inversiones* (CFI, Federal Council on Investments) and mayors of the provinces are also participating in the advisory committee.

[‡] In some literature, CENECOS was misspelled with "CANECOS". CENECOS does not exist any more.

The Agro-food and Agro-industrial Strategic Plan (Plan Estratégico Agroalimentario y Agroindustrial (PEA 2020)) for the organic sector was elaborated by the participants of the advisory committee and published by the MINAGRO. In addition, MINAGRO runs a website for food produced in Argentina (Alimentos Argentinos) with a special section for information related to the organic sector. Here, the organic producers, manufacturers, distributors and certifiers as well as organic products offered in the domestic market are listed.

SENASA has a special division dedicated to organic production and Argentina counts with an official control system based on a legal framework, including a national law about organic production passed in 1999 (Ley 25.127) and its regulations. Some regulations date back to 1992 (plant-based production) and 1993 (animal-based production). The control system is applied by SENASA. In addition, SENASA is responsible for controlling and auditing the certifiers and guarantees the compliance of the regulating system. Because of the activities realized by the Argentinean Government, the country obtained the equivalence of the European Norm, first for plant-based production and from 2000 on for animal-based production. Furthermore, the equivalence of the organic certification for Switzerland, United States, Canada and Japan was obtained. Therefore, these countries can import Argentinean organic products as "organic", without the necessity of an additional local certification.

The IICA is a specialized agency for agriculture. It belongs to the Inter-American System (governments) created in 1942 and maintains an office in Buenos Aires since 1968. IICA provides technical cooperation for its 34 Member States. Activities regarding organic agriculture are not coordinated in behalf of a separate division dedicated exclusively to that area, but are included throughout all cooperation instruments of IICA. Furthermore, IICA is the current Executive Secretary of the Inter-American Commission for Organic Agriculture (CIAO). Agricultural Ministries of several countries (promoted by IICA) established CIAO in 2008. With 19 member countries in 2016, it is aiming to contribute to the development of organic activities and facilitate the commerce of its products. In 2016, the VIII Assembly of the Inter-American Commission on Organic Agriculture took place in Buenos Aires.

5 Scientific bodies: activities destined to the organic sector

INTA (National Institute of Agricultural Technology) and INTI (National Institute of Industrial Technology) are public institutions forming a part of a national system of science, technology and innovation and have branches distributed over the country. Since the beginning of the organic production in Argentina during the 90ies, INTA had an active role implementing educative activities and realizing projects related to organic agriculture and scientific follow up. Through those projects, specific data of local environments, each with its specific climate, were obtained in order to give way to agriculture with organic standards and create specific expertise, which can be utilized by other producers. The first investigation done by INTA contributed to the development of systems for cattle farming on implanted pastures. During that time, INTA also realized investigations related to horticulture implemented in accordance to organic standards. In 2009, INTA edited a technical report called "Development and distribution of technology for ecological production" including the different areas of investigation and available data, which was placed at the disposal to those, who stared to convert into organic production systems. In addition, it published a report about agro-ecological production in 2013. Moreover, INTA had an active role cooperating with organic producers through its local branches, the regional Experimental Units for Agriculture. The impact of this cooperation with MAPO´s producers group led to a growing organic activity in agriculture.

In 2014, INTA decided to build up an agro-ecological network aiming to realize investigations about sustainable agricultural systems and to generate new knowledge though diversified production systems in a context, in which agriculture is evaluated properly. INTA´s approach to agro-ecology is interdisciplinary, aiming economic competitiveness, environmental quality and social equality. It includes a variety of aspects from agriculture and sociology as well as socio-cultural, socio-economical, national, regional and local characteristics, to study and analyze production systems focusing on sustainable agriculture.

INTI assists organic manufacturing companies through its research and development center for industrial technology for grains and oilseeds. Currently, INTI is providing technical assistance to increase benefit for several manufactures through the implementation of pilot projects, for instance for the elaboration of granolas, snack bars, products of rice or other grains. These activities are aiming the introduction of products with benefits for the domestic market as well as exportation.

Regarding tertiary organic production education, the UBA offers a 3-year-career for organic plant-based production, called "Tecnicatura en Producción Vegetal Orgánica", since 2003. Meanwhile, the Faculty of Agriculture of the UBA (FAUBA) took over the responsibility and the program received national recognition. FAUBA is running an experimental vegetable garden of 7,000 square meters, where students

are trained through different activities. The main objectives are to form professionals, which are able to organize, manage, control and give advice to rural establishments destined to organic production. In the experimental vegetable garden, courses are given, which are open to public attendees. Postgraduate education was offered by the Catholic University of Argentina (UCA), but is discontinued now. Since 2017, the University of Catamarca offers the "Diplomatura en Producción y Comercialización de Agroalimentos Orgánicos". Both careers focus on the development of organic products and its marketing.

6 Vegetable Gardens: implementation of organic principles without certification

Both INTA and the National Ministry of Social Development (MDS) lead ProHuerta, a national program, which aims to strengthen food security through food self-sufficiency, targeting vulnerable communities all along the country and harnessing INTA's presence in more than 400 locations. Founded during the 1990s, the program currently reaches over three million people and works with approximately 540,000 vegetable gardens, including families, communities and institutions. The instructions are given during trainings and awareness raising in accordance with agro-ecological production. The priority within ProHuerta is a practical way to promote the creation and keeping of vegetable gardens by offering seeds, manuals, workshops and other activities. Furthermore, ProHuerta expanded to other non-traditional areas, fostered local development strategies and contributed to the fulfilment of fundamental rights of the population in rural, urban and outskirt areas with topics such as water access.

Another example for an initiative closely connected to organic land use is CIESA, a project created by an agronomic engineer, who started an educational garden near El Bolsón, Chubut, putting into practice the Biointensive method in 1994. It aims to promote the development of vegetable gardens following the principles of organic production, has an annual apprentice program and sells its products directly to the consumer.

7 Organic producers and manufacturers

The sector of organic producers is well developed. Almost all of Argentinean agrarian products are available as organic alternatives, even though in a small amount. Regarding extensive agriculture and livestock farming, Pampa Orgánica has to be mentioned. It is a group of farmers, who are pioneering in organic farming. Pampa Orgánica was founded within MAPO in 2003, starting with four organic farmers and grew up to 15 members, now forming group 'Pampa Orgánica North' and 'Pampa Orgánica South'. The group was created to combine forces and enable a progress in production, support rational land use and a respectful treatment of nature. Since then, other organic producers joined the group spread over several provinces. A close cooperation with INTA is maintained through the INTA branches located near by the farms.

The northern and southern group of Pampa Orgánica cover around 30,000 hectares in total, which encompasses cattle rearing and agricultural products. Twenty percent are covered with sunflower seeds, maize, soya, millet, wheat, oats, barley and rye and 80% of the land are used for the production of pastures, of which about two thirds are natural. In addition, egg production in mobile hen houses is implemented. Through the common think tank established by all participating producers, specific expertise for organic production and knowledge for different climate zones is gathered and put into practice. Moreover, it is aimed to integrate the full food chain, like for example through the whole meal bakery Hausbrot or a fairly new initiative for the marketing of organic meat called MOO (Meat Organic Organization).

Furthermore, the biodynamic producers, in order to obtain biodynamic certification, has to certify as "organic" first. The certifying body is Fundación Demeter Argentina, which was established in 2009 and is a guest member in Demeter International. Now, around 30 biodynamic certified producers exist in Argentina. In addition, since 1998, an association for biodynamic agriculture (Asociación para la Agricultura Biológico-dinámica de Argentina (AABDA)) develops and promotes biodynamic agriculture in Argentina.

Another example is "Las Quinas", a company that produces organic honey and obtained the "Sistema B" certificate, integrating the global movement of certified B Corporations, in 2017. Besides, the company "Stay True" is a B Corporation, which is dedicated to produce cotton with organic certification to export to the United States since 2015. Since 2016, it is in transition to certify biodynamic and counting with the Fair Trade certificate. Stay True is a member of Textile Exchange and was included in the Organic Cotton Market Report 2017.

The organic sector in Argentina is much more developed regarding agriculture and livestock farming than the manufacturing sector. Some organic manufactures came into action, because of companies with some kind of primary production, which tried to cover the whole food chain. Other manufacturers are rather wholesalers and provide products to the domestic market. Products with more added value like jams, fruit juices, baby food, sugar cane, honey, teas, yerba mate, wine, olive oil and polenta are elaborated. Some manufacturers aim to create organic products, which need a bigger number of ingredients, but face difficulties in buying ingredients with organic certification.

Other actors within the organic sector are promoters of Argentinean organic food for export. Among such is the program PROAgrex, which promoted highly added-value export goods in the food sector, including fruits like pears and grapes, and was completed in 2016. PROAgrex primarily supported small and medium sized enterprises by advertising campaigns of Argentinean food during the participation in trade fairs worldwide.

8 Livestock farming on natural vegetation: a potential complement to organic producers

In order to meet the targets of SDG 12, especially the efficient use of natural resources, and keeping in mind that one of the Argentinean natural resources is wild vegetation, it is important to mention some examples of agricultural practices, which are complementary to the ones proposed by organic production. The mentioned wild vegetation may be either natural grassland, shrubland or forest.

In this context, the practices mentioned below are appropriate to match the needs of organic principles, for instance regarding soil management. In addition, they are well adjusted to different ecosystems and designed to combine livestock farming with the conservation of native flora and fauna. These practices are usually applied to sheep, goat, lama or cattle farming. The target of SDG 12, referring to a restrained application of chemicals, is met by systems of pasture management, which were developed by the initiatives mentioned below. They don't recommend the application of agrochemicals, but a specific management of livestock farming that promotes the restauration and, once it is restored, the conservation of the natural vegetation.

This section is an example for the need to revise the existing organic system known as Organic 2.0. It was found that the organic principles are not always fully met and that there is a need to incorporate the next step, referred to as Organic 3.0. The organic norm was designed for cropland and livestock farming in general, but not for farming on natural vegetation. One of the 20 criteria of Organic 3.0 is biodiversity and the solutions of the following initiatives respond to this in the area of livestock farming on natural vegetation. Furthermore, they can be applied on areas within any rural establishment, such as alongside driveways, creeks or in-between crop fields.

The Fundación Vida Silvestre Argentina (FVSA) is an NGO for wild life conservation. Since 1988, it is the Argentinean partner organization of the World Wildlife Fund (WWF). FVSA runs an initiative called "Wildlife Refuges Network", to accomplish the conjunction of conservation and private land use. The initiative started in 1987 and includes 20 natural private reserves throughout Argentina, covering more than 190,000 hectares. Eight of these are protected areas are dedicated to livestock farming, including two with organic certification.

These two organic producers also integrate an initiative called "Alianza del Pastizal", which was developed by BirdLife International to accomplish the conjunction of bird conservation and cattle farming. Aves Argentinas is an NGO for bird conservation, member of Birdlife International and the local counterpart for Alianza del Pastizal. This initiative started in 2007 and includes 80 producers in Argentina, covering about 200,000 hectares.

The Savory Institute is an international NGO and promotes large-scale restoration of the world´s grasslands through Holistic Management, a methodology, which has its origin in observing wild living herbivores. The Argentinean hub for the Savory Institute is called Ovis 21, a certified B Company with a strong educational emphasis.

9 Non-governmental organic sector

The oldest and major NGO of the organic sector is the *Movimiento Argentino para la Producción Orgánica* (MAPO), established in 1995. Local representations in different parts of the country belong to its organizational structure. MAPO is a member of the International Federation of Organic Agriculture Movements (IFOAM) and brings together experts in organic agriculture and livestock farming, organic

certification, export as well as the domestic market. Therefore, it had a leading role during the foundation and development phase of the organic sector in Argentina and its connection and interaction with the international organic community. Out of the practical experience of its members, MAPO is a main referee and opinion former regarding issues referred to organic food production, manufacturing and trading. As an NGO, MAPO represents the interests of organic producers, manufacturers, certifiers, exporters, actors within the domestic market as well as of consumers, acts as a counterpart towards governmental agencies and cooperates with scientific organizations. MAPO promotes a series of activities, such as capacity building, research activities, promotion of organic farming and trainings. Although MAPO was established more than 20 years ago, it is an NGO that maintains a small structure and has further need to grow in order to be able to fully meet the demand of a developing organic sector.

Another organization, which was created to support the promotion of organic activities, was the *Cámara Argentina de Productores Orgánicos Certificados* (CAPOC). This is a business association, which represented the interests of enterprises exporting organic products and was established in 1998. However, it became part of MAPO in 2010 in order to concentrate actors of the same interest.

In addition, the *Cámara de Certificadoras de Alimentos, Productos Orgánicos y Afines* (CACER), which was established in 2002, is promoting organic agriculture. CACER is a chamber counting with the membership of all four organic certifiers as well as of other certifying companies and aims to improve the standard of Argentinean products and its position within the global market by supporting and developing activities regarding evaluation from an independent third party's side as well as certification. Different sources (FAO 2001, Rodriguez 2008) cited MAPO, CAPOC and CACER as the key parts of the Argentinean organic network.

10 Certifiers

There is different information about the number of certifying bodies in the scientific literature and online sources. Some sources mention 14 certifying bodies with varying degrees of national and international recognition, Garibay and Ugas (2009) counted twelve certification organizations and the most recent online sources listed 15 (BWN Argentina 2016). Nevertheless, the only valid information regarding registered and approved certifying and inspection bodies is SENASA, according to which today four certifiers operate in Argentina.

SENASA approves and supervises private inspection bodies, which are ARGENCERT S.A., Food Safety S.A., LETIS S.A. and International Agriculture Organization S.A. (OIA). All operate with a background of many years. OIA was the first accredited certifier in 1991, shortly followed by ARGENCERT. A few years later in 1997 and 1994 respectively, LETIS and Food Safety, which count with a long experience as organic certifiers of plant-based, animal and processed products, were founded. They are recognized by the European Union and accredited with the US Department of Agriculture (USDA). In addition, ARGENCERT, LETIS and OIA are accredited with IFOAM, where Food Safety is a member. All include other certification programs as Good Agricultural Practices (GAP), Hazard Analysis and Critical Control Points (HACCP), Food Quality Attributes, Argentinean Food (Alimentos Argentinos), Organic Textiles (GOTS), Organic Content Standard (OCS), Responsible Wool Standard (RWS), Fair Trade or Sustainable Fishery. Every year, OIA holds a one-day conference called "Jornadas PROD" presenting international experts acting within the organic sector as well as experiences of Argentinean institutions and local organic producers. LETIS boosts STS (Sustainable Trade Sessions), technical and commercial trainings for farmers, researchers and executives linked to certified high quality products, which are held yearly in several cities though Argentina. Moreover, ARGENCERT and Food Safety organize presentations and events in order to promote the organic sector and stimulate its growth.

All certifiers have experience outside the country and providing their websites in different languages like English, French and Portuguese. In addition, they hold offices in other countries, for instance ARGENCERT in Chile, Food Safety in Paraguay, LETIS in Pakistan and OIA in Brazil. At the end of 2016, the acquisition of ARGENCERT by the ECOCERT Group, a certification agency for sustainable development, which holds a network of offices in various continents, was announced.

11 Local commerce and other distributors

Besides the local commerce, local distributors of organic food with weekly delivery for households are very common in the metropolitan area of Buenos Aires. Moreover, consumers can find some restaurants utilizing organic products for a major part of their ingredients in this area, including the first restaurant with organic certification, called "Bio – Solo Orgánico", which initiated the certification in December 2016.

Regarding the promotion of the domestic market, in 2016 the "Guía orgánica" (organic guide) was published online. Also, a local organic market (Fiab (Feria Itinerante de Abastecimiento Barrial) - Feria orgánica y sostenible) is a new development, organized by the city of Buenos Aires, which invites organic producers that are members of MAPO. This fair is functioning twice or thrice a week since 2015. Here, producers and consumers can get into contact and it is the only fair, in which consumers can be sure to find products with organic certification solely. In other markets, generally organic (certified) products as well as not-certified food and products, based on ecological principles, often are offered altogether. This does not make it easy for consumers to distinguish between ecological agricultural production methods. In the case of „Fiab", the majority of the products are organic (certified) and if not, at least one ingredient has to be organic. This exception is only made for products, which are in transition to become organic. In this case, the product is considered sustainable and this condition has to be clearly identified by the selling farmer.

12 Consumers

In terms of consumers, the domestic organic market is rather small but constantly growing. Generally, organic and environmentally conscious products, not-certified food and food produced based on ecological principles, e.g. without using "agro toxins", seem to be used interchangeably by consumers. For instance, this is illustrated by consumer's behavior and food choices, when locals in Argentina exchange ideas and tips on where to buy organic food. This means that, for some actors of the organic network it is unequivocally clear, which producers belong to the organic scene – that is to say certified actors – and which not, but from the consumer's perspective, it looks different. A farmer, who is selling his products on an "agro-ecological" market with an additional label, e.g. "no agro toxins", could be rated as a pure organic farmer. Important is to mention, that "agro-ecological" markets experience a high rate of development and reflect the interest of consumers in this kind of consumption.

13 Legal and institutional framework and arrangements of organic sector

A legal and institutional framework forms the organic sector of Argentina, regulates it by giving room for action and promotes (or restricts) its development. The legal framework for organic production has its roots in the early 90ies, when the Organic Production Control System was created and the qualification of the country as equivalent to the EU standards came into existence. The National Organic law of 1999 (Ley 25.127) as well as its administrative regulations set the rules for controlling the organic production. For packaging, each organic certifier has its own seal, which is utilized in addition to the Argentinean label for organic products "Orgánico Argentino". Furthermore, the products have to show its registration number at SENASA.

As mentioned above, stakeholders of the Argentinean landscape are highly interconnected. Therefore, the entire support of organic agriculture in Argentina demonstrates a wide and diverse institutional framework and institutional arrangements. As an example for the central role of the governmental institutions as promoter of the organic agriculture, it is worth to mention the "Guía Orgánica" again, developed to strengthen the domestic market in 2016. This interactive map was initiated as a cooperation of MINAGRO and MAPO in order to support consumers in finding organic products. Furthermore, a bunch of organic agriculture promotion and support programs exist carried out by different stakeholders (alone or jointly). Market access was also supported by programs and projects of export agencies such as PROAgrex, which was completed in 2016.

14 Discussion

Unless the relatively long record (e.g. SENASA publications) of the information collected on the Argentinean organic market, a lot of questions could not be answered to our complete satisfaction. For example, the actual definition and size of the organic market is not entirely clear. The delimitation in the field between certified organic and food production according to ecological principles should be concretized. Our study shows that the actual devolvement of the domestic organic sector in Argentina already contributes to the realization of the SDGs in Argentina, especially the Goal 12. Many steps such as a solid institutional framework given by the governmental agencies, a highly diversified range of organically produced agrarian products and recent developments such as the creation of the interactive map on organic products "Guía Orgánica" were undertaken in this direction. Moreover, the vital scene of actors within the organic sector, the NGOs, the governmental institutions, researchers, certifiers and civil society builds an excellent basis for the study of several forms of networks and organizations.

On the other hand, organic consumption and therefore production needs transparency of information about the value chains to build up and retain trust in the target markets. These target markets are not only global, but also local. Obviously, global certification standards cannot fit to any imaginable local circumstance. There is a trade-off between the needs and demands of certification and the necessities of local producers, especially smallholders, to sustain their business. For instance, for smallholders, the certification may become too complicated regarding related paperwork or too costly. Smallholders could be activated to fulfill their role as change agents as stressed in the SDGs only under the presence of prerequisites, such as access to financial resources, markets as well as to domestic institutional support through policies, which lobbies smallholders as well as domestic certification programs.

This is a task, which is not unique for the Argentinean situation, but has global relevance. Further research could deal with the requirements and opportunities of local and visible marketing strategies. Complex legal and institutional frameworks need to be further documented and analyzed. Finally, the consumers and their attitude towards organic products should be further investigated regarding the Argentinean characteristics to understand, how the progress of the whole sector could be supported and pushed.

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