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Characterizing Producer Organizations: The case of organic versus conventional vegetables in Uruguay

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ABSTRACT

Producer organizations (POs) are considered important for rural development in developing and transition countries. Scientific studies on POs mostly focus on their impact, but do not distinguish among different types. However, POs are a heterogeneous group. This paper explores the organizational characteristics that distinguish POs in the vegetables sector of Uruguay. In comparing organic and conventional vegetables chains, we have identified five types of POs and we have investigated their distinct organizational characteristics. We found, first, that POs in the organic value chain are responding to market incentives, whereas POs in the conventional value chain are responding to public incentives. Second, contrary to POs with a focus on social and political activities, POs with economic activities are small, they have a product focus, they require member investment, and they have a high formalization status. Third, POs with output-driven objectives have higher levels of horizontal and vertical coordination than POs with value-driven objectives. Our study contributes to the increasing body of literature on the internal and external conditions that explain the diversity of POs in developing and transition countries.

1. Introduction

Producer Organizations (POs) may improve farmer income, food security and rural development. POs are considered, by researchers, policymakers, and donors, as an organizational solution for the problem of the weak economic and social position of farmers in developing and transition countries (Poulton et al., 2010; World Bank, 2007). In addition to its primary economic function, POs often provide social and political benefits for the rural community in which they are embedded (Emery et al., 2017). An increasing number of studies evaluate the performance of POs by measuring *impact* on farmer household outcomes (e.g., Abebaw and Haile, 2013; Ma and Abdulai, 2017; Wossen et al., 2017). A small number of impact studies also incorporate measurements of *inclusion* of smallholder farmers in POs (Bernard and Spielman, 2009; Ito et al., 2012; Mojo et al., 2017).

While studies evaluating the impact and inclusiveness of POs are highly relevant, these studies do not pay attention to the wide diversity in organizational characteristics of the POs under study. Assuming all POs are equal is not only a problem in scientific research on the development and impact of these collective action organizations; it is also a problem in policymaking for rural development. Ignoring differences in organizational characteristics inhibits gaining a better understanding of the factors that determine their performance, and constrains making comparisons among POs and across locations (Grashuis and Su, 2018).

Thus, studies on POs in developing and transition countries focus on *whether* and *for whom* these organizations achieve impact. However, by ignoring the question how organizational characteristics affect the performance of a PO, key information is left out in the effort to better understand *how* and *under what conditions* POs achieve impact and inclusion (Bijman, 2016; Verhofstadt and Maertens, 2014). This article provides an exploration of how organizational characteristics affect PO performance, based on a qualitative empirical study among POs in the vegetables sector of Uruguay. In comparing organic and conventional vegetables chains, we identified five types of POs. Our main objective is to analyze differences in organizational characteristics across the types of POs, and develop a number of propositions.

This article makes several contributions to the academic literature on POs. First, the paper explores the organizational characteristics of POs. While most studies on POs focus on the impact, ignoring the often-large differences among POs, we show that the functionality of POs is strongly associated with their structural and functional characteristics. Second, a study that compares POs in the organic value chain with POs in the conventional chain is pertinent considering the global challenge of sustainably feeding a growing world population. Concerns about the unsustainability of conventional agriculture have led to an increased attention for organic farming systems (Reganold and Wachter, 2016). The number of organic farms, the area of organically farmed land, and the size of the organic food

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market are all increasing steadily, while more than three quarters of all organic producers in the world live in developing and transition countries (Willer and Lernoud, 2016). Studying the differences between POs in organic and conventional chains allows for better interventions and policies in support of sustainable food systems.

Finally, to our knowledge, this is the first study on vegetables POs in Uruguay. With a population that faces the double burden of stunting and obesity (Bove et al., 2012), the availability of vegetables is vital for a healthy diet. Uruguay relies almost entirely on domestic vegetable production, which makes local POs important institutions for contributing to food and nutrition security in the domestic food system. As Uruguay is experiencing societal challenges similar to other developing and transition countries, such as urbanization, an increasing rural-urban divide, and the increasing consumption of low-nutritional food (Santos and Perazzoli, 2015), lessons learned in Uruguay may also apply to other developing and transition countries.

The remainder of this paper is structured as follows. Section 2 presents a literature review on POs, whereas section 3 describes the methods of our empirical study. Section 4 outlines the findings and formulates propositions. Section 5 concludes, gives directions for future research, and formulates policy recommendations.

2. Literature review on producer organizations

The term producer organization has been used in many academic publications and policy papers, referring to an organization that is (at least in majority) owned and controlled by agricultural producers and that provides services and products to its member-producers. The term has become popular, particularly in a development context, since the turn of the century (Penrose-Buckley, 2007; Rondot and Collion, 2001; Ton and Bijman, 2008; World Bank, 2007). These publications explore the role of the PO in establishing a link between producers and other (economic) actors in the context of restructuring value chains. By strengthening the bargaining power of producers, reducing the risk and coordination costs in transactions, and providing appropriate inputs and services, POs support the economic welfare of its member-producers. A diversity of organizational forms exist for this class of economic POs. For example, studies focus on economic functions of producer groups in Poland (Fałkowski et al., 2017), marketing cooperatives in Ethiopia (Groot Kormelinck, Plaisier, Muradian and Ruben, 2016), farmer marketing groups in Kenya (Fischer and Qaim, 2012), and producer companies in India and Sri Lanka (Trebbin, 2014).

A second stream of literature has taken a broader perspective on the functionality of POs. Rondot and Collion (2001) have argued that POs often provide their members with three kinds of services: economic services when markets fail, public or semi-public goods when states fail, and a voice in political affairs. This perspective of the broad role of POs was also included in the 2008 World Development Report (World Bank, 2007). Thorp, Stewart, and Heyer (2005) have made the distinction between claims groups and efficiency groups. Claims groups seek to get favorable conditions (including subsidies) from governments. Efficiency groups seek to increase the efficiency of the production and marketing activities of farmers, by reducing transaction costs and strengthening bargaining power.

A third stream of literature has focused on the social embeddedness and the institutionalization of POs. Community groups, village associations and various types of self-help groups are examples of POs that cater for the needs of the community as whole, and not only for those of the member-producers (Bernard and Spielman, 2008; Emery et al., 2017). While in many countries business-oriented POs have grown out of community associations, the continuous interaction with political and administrative authorities depends largely on the institutional culture of the country. For instance, Pesche and Losch (2016) describe the ongoing interaction of rural POs with policy circles in West Africa, while Fonte and Cucco (2017) explore the social obligations that cooperatives carry in Italy. More recently, also within the literature on community organizations, there is increasing attention to the entrepreneurial role of these organizations, not only to support producers, but also to strengthen the economic viability of the community as a whole (Dentoni et al., 2018; Donovan et al., 2008).

A fourth stream of literature deals with organizations in which producers closely collaborate with other actors, such as multi-stakeholder cooperatives and multi-actor rural networks (Kilelu et al., 2013). The objectives of these types of POs range from the more narrowly defined goal of introducing innovations at the farm among members (Tregear and Cooper, 2016), or even induce larger societal changes, such as alternative food systems (Ajates Gonzalez, 2017).

This brief literature review indicates that POs are multi-faceted organizations that may provide benefits to its members and to the wider community. Besides developing different conceptualizations of POs, literature also uses various (multi)disciplinary perspectives in studying evolution and design, performance, institutionalization, and internal social and governance relations. In our study, we explore the organizational characteristics of the POs in vegetables value chains in Uruguay, while explicitly taking into account the institutional and social interactions that affect the establishment of the POs, and their product and market focus.

While the majority of empirical studies on POs leave organizational characteristics undescribed, a few studies *do* include and define organizational features. Francesconi and Heerink (2010) and Bernard et al. (2008) distinguish POs on the basis of their function (livelihood versus marketing cooperatives), whereas Fischer and Qaim (2012) include activities, the initiator, age and homogeneity of the group. Barham and Chitemi (2009) incorporate group composition characteristics, group heterogeneity, and social structure (group assets, trust, altruism), whereas Verhofstadt and Maertens (2014) distinguish the type of remuneration schemes (individual or collective). In an overview paper, Bijman and Hanisch (2012) list twelve different characteristics, including the main function of the PO, the initiator for establishment, the legal form, and the position of the PO in the value chain.

Based on the different strands of literature reviewed here, we took a broad approach in selecting key organizational characteristics. In the next section, we will elaborate on the choice of characteristics that have been explored in our study.

3. Methods

3.1. Research context

We carried out our empirical study on organizational characteristics of POs in the organic and conventional vegetables chains of Uruguay. The following outline of the conventional and organic value chain, and of the institutional support for POs, is based on interviews with value chain and institutional actors – triangulated with data from secondary sources.

Vegetable production forms six percent of the agricultural production value, whereas the agricultural sector as a whole accounts for five percent of the gross domestic product (DIEA-MGAP, 2018). Given its high labor intensity, horticulture is Uruguay's second largest agricultural labor occupancy after dairy, with more than 15,000 people employed in 2013 (Ackermann, 2014). The latest census data, collected in 2011, show that more than eleven thousand vegetable producers were active on a total of 18,111 ha of land. The large majority of vegetable producers are small family farmers, whereby most farms have between one and three hectares of land (DIEA-MGAP, 2011).

Many vegetable producers are closing their farms as their income is declining due to decreasing prices and increasing costs (Dogliotti et al., 2014a). The number of vegetable producers decreased with more than 50 percent between 2000 and 2011 (MGAP-Opypa, 2017). Agriculture and particularly the vegetables sector is characterized by a process of farm concentration and agricultural intensification. The intensification of vegetable production has led to a loss of biodiversity, soil degradation, and contamination of drinking water resources due to the high and imprecise use of pesticides (Dogliotti et al., 2014b).

Table 1
Population and sampling method.

PO type	Population	N selected	Sampling method
Type 1. Rural Support Association (RSA)	33[a]	2	Non-random sampling
Type 2. Marketing cooperative with institutional contracts	2	2	Total population
Type 3. Producer network	1	1	Total population
Type 4. Marketing cooperative with its own shop	2	2	Total population
Type 5. Marketing cooperative with supermarket contracts	2	2	Total population

[a] The total population of 100 includes RSAs from all agricultural sectors. An estimated 33 RSAs have a majority of vegetable member-producers (source: two interviews with union representatives).

In this context, the organic vegetables sector has developed as a sustainable alternative. While still being a niche, the sector has evolved over the past 25 years from a few isolated producers to an estimated 120 certified organic vegetables growers (Santos and Perazzoli, 2015). Accredited by the Ministry of Agriculture, a participatory certification program exists that is coordinated and enforced by the Agro-ecology network, in which small teams of organic producers, extension officers and agronomists control compliance. Apart from this certification program, the organic vegetables sector remains largely undocumented and informal. Interviews revealed that different actors estimate the number of actual organic producers to be higher, as not all producers sell in a market that requires certification (e.g. organic street markets).

Vegetables are mostly consumed fresh, and production is almost entirely destined for the domestic market. Conventional and organic vegetables are sold in a variety of domestic market channels. Conventional vegetables are sold via the wholesale market to supermarkets, street markets, small retail stores, institutional buyers, and (only a minor part) to the processing industry. Conventional vegetables are low-value commodities that are sold based on visual quality inspection in a chain with many intermediaries. In the market for conventional vegetables, supply exceeds demand. The chain is characterized by high informality and uncertainty, high price volatility, and a low producer bargaining position.

Organic vegetables are sold in short chains to organic street markets, organic shops, supermarkets, and via organic bag systems. Organic vegetables are high-value products that are sold based on its credence quality attributes, especially the absence of agro-chemicals in the production process. In the organic market, demand grows more rapidly than supply. Organic producers have a strong bargaining position; they receive relatively stable prices and earn a good income (as compared to producers of conventional vegetables).

Uruguay has a large and diverse trajectory of collective experiences, with origins of cooperative formation dating back to the 1870s. The first agricultural organizations were formed in the beginning of the 20th century, when small family producers collectively tried to resolve problems of scale and bargaining power. In 1941, law institutionalized the cooperative organization, while the Cooperative Law has been revised in 2008. Legally, three types of formal agricultural POs are acknowledged: 1) Agricultural cooperatives; 2) Rural Support Associations; and 3) Agricultural trade unions (FIDA & CCU, 2014). The latest cooperative census, of 2008, indicated an existence of 125 agricultural POs with 21,519 members and 4393 employees (INE, 2009).[1] Primary POs are federated in two unions,[2] while these unions are members of the Uruguayan Confederation of Cooperatives.

Various policy instruments have been developed by the Ministry of Agriculture to support (family) producers and their organizations. Rural Support Associations have the legal mandate to apply these instruments to its members. Support may be directed towards individual producers (e.g. providing inputs and technical assistance), or towards the PO (e.g. strengthening the capacity of the organization). One such instrument is the support for POs to collectively sell vegetables to institutional buyers (Ackermann, 2014). POs in both the organic and conventional chains can benefit from these support instruments. However, different respondents (e.g. organic producers, organic and Agro-ecology organizations, and Ministry representatives) indicated the lack of specific support for organic agriculture, for example the insufficient number of agronomists that are knowledgeable about organic farming.

3.2. Data collection and analysis

A qualitative case study design was chosen, which is appropriate for obtaining insights into complex processes, formulating propositions, and revealing details (Yin, 2003). Data were collected between November 2016 and April 2017. At the start of data collection, a mapping of all POs in both value chains was done, based on interviews with key informants and secondary data. The mapping led to a categorization of POs into five types (see Table 1).

Types 1 and 2 are organizations of conventional producers, while types 3–5 include organic producers. Types 2, 4, and 5 fall under the legal form of Agricultural cooperatives, while type 1 falls under the legal form of Rural Support Associations. Type 3 is an informal PO. Given that for each of the types 2–5, only one or two POs exist in Uruguay, the total population was included in the study. For type 1, non-random sampling was conducted through typical-case sampling. Based on two interviews with union representatives, two POs were selected that are representative for their population.

Fifty interviews were held in the organic chain ($N = 21$) and in the conventional chain ($N = 29$), including three actor groups: POs, value chain actors, and institutional actors (for details, see Appendix Table A1). Interviewees were selected through purposive and snowball sampling, until data saturation was achieved. Sixteen interviews were conducted with PO members, whose contact details were obtained via the union (for type 1), the public support institution they are working with (for type 2), the Agro-ecology network (for type 3), or the buyer (for type 4, 5). Fifteen interviews were held with various actors from the value chain. Nineteen interviews were held with representatives of regulating and supporting institutions. Interviews with PO members were triangulated through interviews with unions, buyers, and the institutions supporting POs.

To enhance validity and reliability, a standardized topic list was used for each of the three actor groups (Yin, 2003) (see Appendix Table A2). The main objective of the interviews with POs was to measure their organizational characteristics. On the basis of the empirical studies reviewed in section 2, we selected twelve organizational characteristics. Eventually, eight measures were included[3] in the analysis: *1) Incentives for establishment*

[1] This is a reduction of 31 percent in agricultural POs and 56 percent of its members since 1989. Agricultural POs form 11 percent of the country's 1165 POs. Seventy-six percent of agricultural POs have less than 1 million dollar annual turnover, and 44 percent less than 100,000.

[2] The Federation of Agricultural Cooperatives represents agricultural cooperatives, while the National Commission for Rural Development represents Rural Support Associations.

[3] The following variables were measured but excluded from the analysis:- *Level of PO in multilayer system:* Only type 1 had a union;- *Sector:* All POs are studied in the vegetables sector;- *Geographical scope*: All POs cater for the

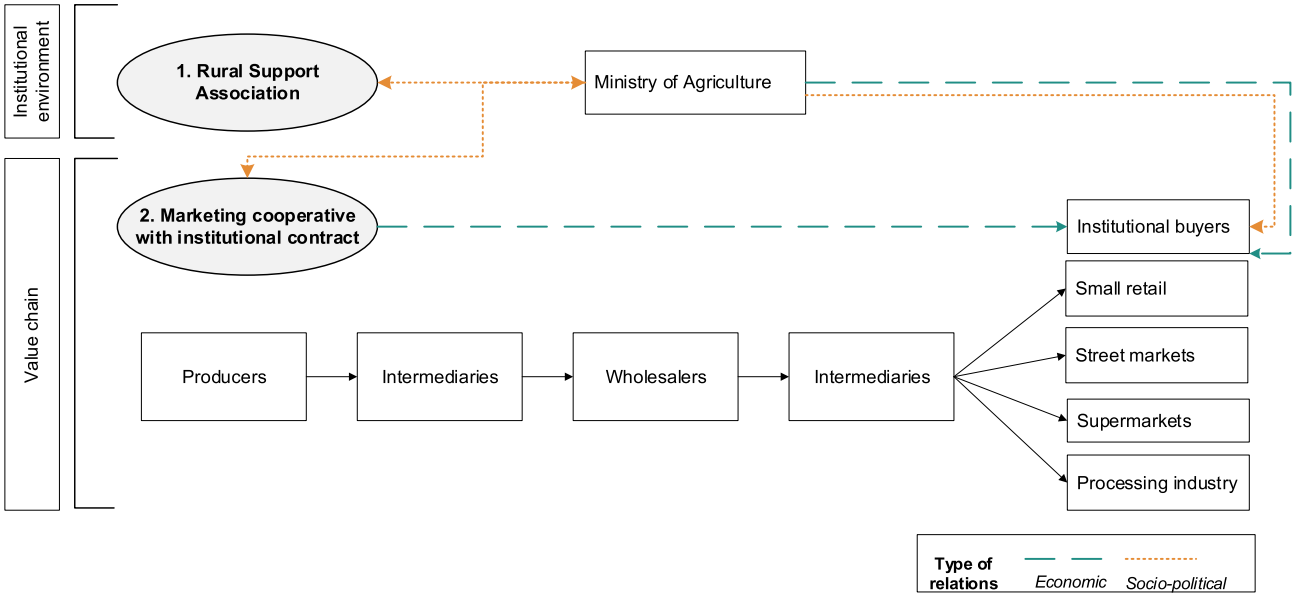

Fig. 1. Types of POs in the conventional chain.

(public; market); 2) *Size* (small; medium; large); 3) *Product* (vegetables; multiple); 4) *Member investment* (yes; no); 5) *Formalization* (low; medium; high); (6) *Activity* (social and political; economic); 7) *Objectives* (output-driven; value-driven); 8) *Level of horizontal and vertical coordination* (low; medium; high). For more details, see Appendix Table A3. Interviews with value chain and institutional actors focused on measuring value chain characteristics, and the availability of institutional support. Results of the interviews are included in the description of the research context (section 3.1) and in the cross-case analysis (section 4.2).

Interviews were conducted in Spanish by the principal researcher; they lasted between 45 and 75 min for POs and institutional actors, and 15–30 min for value chain actors. Interviews were recorded, and subsequently transcribed by a native Spanish speaker. Interview data were complemented with secondary data from sector reports, policy documents, and PO business plans. The principal researcher coded the data. Coding was done deductively (using the topic list of each actor group), as well as inductively (based on new topics that arose from the data). Based on content analysis, PO reports were written in English. Two types of analyses were carried out: Within-case analysis to describe organizational characteristics of each type of PO, and cross-case analysis to explore the relationship among organizational characteristics (Goertz and Mahoney, 2012). Finally, preliminary results were discussed and verified in a multi-stakeholder workshop in Uruguay in March 2018.

4. Results

Section 4.1 presents results of the within-case analysis on the organizational characteristics of the five types of POs. Two PO types are described for the conventional chain (Fig. 1) and three PO types for the organic chain (Fig. 2). Section 4.2 presents results of the cross-case analysis on differences in organizational characteristics across the five types of POs.

4.1. Within-case analysis

4.1.1. Producer organizations in the conventional chain

PO type 1: rural support association: The first type consists of Rural Support Associations. Around 100 of these associations currently exist in Uruguay with varying membership size (between 30 and 100 farmers). Associations are formed based on geographical location, and they include non-vegetable producers. An estimated 33 associations have a majority of vegetable producing members. The associations and their union are established by law in 1915, in order to channel government support to producers. The associations have social and political activities. Social activities focus on social interaction among members, including activities targeted at women and young farmers. Political activities focus on channeling support from the government to producers, and – via the union – to lobby the government for better policies. Various interviewees indicated difficulties of maintaining active membership. As a coordinator from the union stated: *"A large part of the associations still exist because of public* support*, they are a channel for the government to help family farmers."* The establishment law of the associations forbids them to conduct economic activities, although there are plans to change this. Hence, up until now, no vertical coordination in the value chain is done.

PO type 2: marketing cooperative with institutional contract: The second type consists of marketing cooperatives that have a so-called institutional contract. In 2017, two of such cooperatives exist. The cooperatives are small (between 10 and 20 members), and are established in response to a 2014 government law that seeks to support family farming through collective marketing to institutional buyers (e.g. military, schools, hospitals). Both cooperatives have been established by members of type 1 who decided to form a separate cooperative to obtain a guaranteed market without intermediaries, and to receive a higher and more stable price.

Horizontal coordination within the cooperative entails production planning of vegetable varieties among members, and organizing logistics of bringing produce to the central distribution place. A part of the sales revenues is used by the cooperative to cover operational costs, and to invest in new infrastructure (e.g. to set up a cold storage, and a processing plant). The cooperatives focus on compliance of the delivery agreement with institutional buyers. Vertical coordination takes place within the context of the institutionalized three-party contract. The government provides financial support for the cooperatives, facilitates technical advice, and monitors contract compliance. The contract includes an annual forecast of demand, quality requirements, and logistic conditions – although adaptations on volumes are coordinated bilaterally between buyer and cooperative. Buyer and cooperative can agree on a price within the boundaries set by the government instrument, meaning that prices should fall within 140 percent of prices in the

(*footnote continued*)
domestic market;- *Position in the value chain:* This variable is captured by our more informative variable 'Level of horizontal and vertical coordination'.

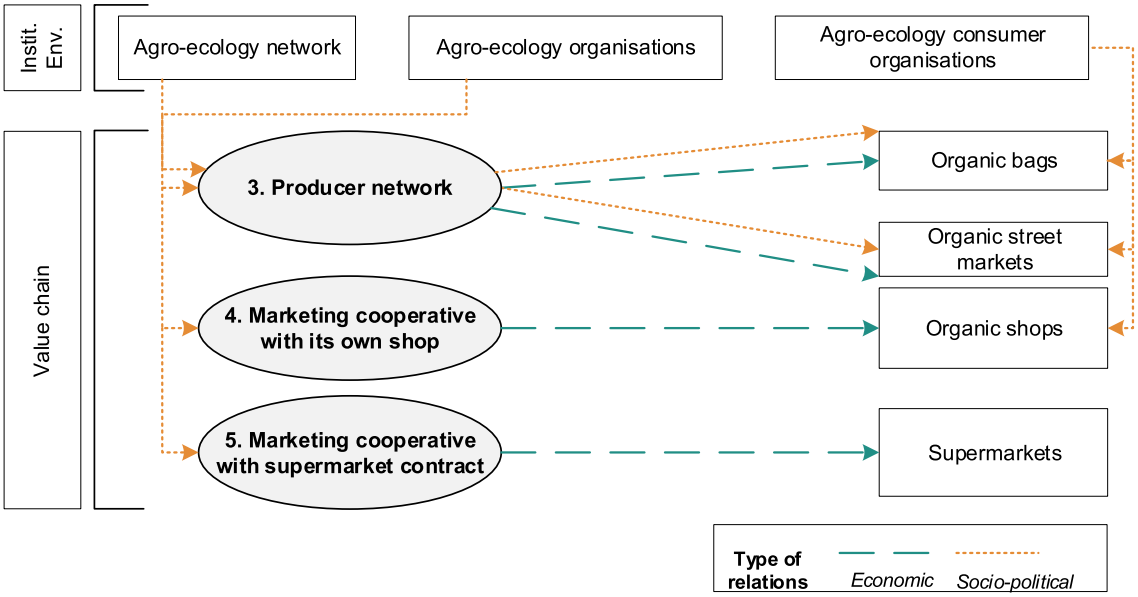

Fig. 2. Types of POs in the organic chain.

Table 2
Types of POs in the conventional chain.

Organizational characteristics	1. Rural Support Association	2. Marketing cooperative with institutional contract
• Incentives for establishment	Public	Public
• Size (N)	Medium/large (30–100)	Small (10–20)
• Product	Multiple	Vegetables
• Member investment	No	Yes
• Formalization	Low	High
• Activity	Social, Political	Economic
• Objective	–	–
• Level of coordination	Low	Medium
- Horizontal	Social activities, lobby to and channel support from government	Production planning, transport, payment, investments in collective infrastructure
- Vertical	–	3-party contract (incl. government) specifying volume, quality, delivery conditions

wholesale market. Table 2 provides an overview of the eight organizational characteristics for both types of POs in the conventional chain.

PO type 3: producer network: The third type is a producer network. It is an informal network, consisting of relations among individual farmers and (in)formal subgroups. Its members are part of the participatory certification program of the Agro-ecology network.[4] They also produce other products than vegetables. The producers have united to obtain certification, and thereby have recognizable, differentiated products for consumers. The network has social, political, and economic activities. Producers informally exchange information on production and markets, and have social meetings. Other social and political activities involve membership in agro-ecology organizations. As a member of a small cooperative of young producers stated: *"We have collective production on collective land. We want to be social and political actors, so we have discussed in which agro-ecology organizations we participate in."*

Economic activities include marketing of produce, individually or in small subgroups, in a variety of market channels, such as organic street markets and organic bags systems. In all cases, it implies selling directly to consumers. The level of horizontal and vertical coordination is low in terms of rules for commercialization, price setting, and logistics. There is no financial investment of members in the network. The objectives of network members are value-driven, such as selling directly to consumers for a fair price, and exchanging information with consumers about agro-ecology.

PO type 4: marketing cooperative with own shop: The fourth type consists of marketing cooperatives with their own organic shop in the capital Montevideo. In 2017, two of such cooperatives exist. The cooperatives originate from type 1 and 3 and respond to market opportunities, as their members were looking for an organic market channel with daily sales. The cooperatives are small (between five and twelve members), and sell vegetables only. Although the cooperatives had initial financial support from NGOs, both cooperatives run without external support.

Horizontal coordination within the marketing cooperative entails sharing production information, buying inputs collectively, production planning based on sales records, development of basic quality guidelines, price setting, and arranging transport logistics. Members invest in the cooperative, and a percentage of revenues is used to pay for collective costs. The cooperatives are vertically integrated with the retail function, as they pay the rent for the shop, and hire a manager and an accountant. Vertical coordination entails aligning production, logistics and sales, with three to six deliveries per week. The shop manager conducts visual quality inspections upon arrival. The cooperatives aim to combine output-driven with value-driven objectives, such as direct

[4] The Agro-ecology network is an organization that supports agro-ecology (including organic). Its members are producers, organic chain actors and consumers. Organic producers receive certification via its participatory certification program. In 2017, the Agro-ecology network has around 120 certified producers. Organic producers from type 4 and 5 are also part of this network, however they are not using the network for their marketing activities. Thus, we do not consider them to be part of type 3.

Table 3
Types of POs in the organic chain.

Organizational characteristics	3. Producer network	4. Marketing cooperative with its own shop	5. Marketing cooperative with supermarket contract
• Incentives for establishment	Market	Market	Market
• Size	Large (60–80)	Small (5–12)	Small (8–9)
• Product	Multiple	Vegetables	Vegetables
• Member Investment	No	Yes	Yes
• Formalization	Low	High	High
• Activity	Social, Political, Economic	Economic	Economic
• Objectives	Value-driven	Value + Output-driven	Output-driven
• Level of Coordination	Low	Medium	High
- Horizontal	Exchange (social, production, market information)	Production planning, quality setting, logistics, pricing	Production planning, quality setting and control, logistics, pricing, side-activities
- Vertical	Partial collective commercialization directly to consumers	Integration with own shop. With manager: Production, logistics, quality	Contract with supermarket: Product, quality, packaging, branding, logistics, investments

relations with consumers and fairness of pricing, while maintaining efficiency in operations.

PO type 5: marketing cooperative with supermarket contract: The fifth type consists of marketing cooperatives with contracts with national supermarkets. In 2017, two of such cooperatives exist. The cooperatives are small in size (eight and nine members), and sell vegetables only. The cooperatives originate from type 1, whereby a few conventional producers decided to pilot with organic farming in an informal group, resulting in the cooperatives. The cooperatives have economic activities and respond to market opportunities. The level of horizontal and vertical coordination is high. Sales records of the supermarkets are translated into detailed crop production planning per member. Cooperatives clean and package vegetables, and apply the organic label. Members invest in the cooperative, and part of the revenues is reinvested, whereas transport and financial administration are outsourced. Besides full traceability of products, members have internal quality control mechanisms. Side-activities include production of organic pest control inputs, trials with importing and selling organic fruit, and trials to process lower-quality vegetables into conserves.

The cooperatives have an output-driven strategy that considers organic as business model to sell for a high price to supermarkets, with a focus on efficiency. Cooperatives have a verbal or written contract with the supermarkets. Supermarkets require high volumes, a broad assortment (> 25 crops/varieties), high quality, year-round delivery with three to five deliveries per week, and organic certification. Supermarkets conduct quality control upon receiving the products, next to laboratory control on pesticide residues. Supermarkets established an organic brand that has the cooperative name in it, while producers invest in marketing and promotions of the supermarket, and pay fifty to hundred percent of the costs for laboratory analyses. Table 3 provides an overview of the eight organizational characteristics for the three types of POs.

4.2. Cross-case analysis

4.2.1. Incentives for establishment

The first finding that differentiates the five types of POs concerns differences in the incentives that have led to establishment. Whereas POs in the organic value chain (type 3, 4, 5) have been established in response to market incentives, POs in the conventional chain (type 1, 2) are initiated in response to public incentives.

The conventional value chain is characterized by medium to high public support for POs. Type 1 has political activities, including lobbying to the government for improved farmer policies, and channeling government support to its members, while type 2 is selling farm products to institutional buyers facilitated by a government contract. The product and market characteristics – a low-value commodity sold in a long chain with many intermediaries, and low producer prices – may not be favorable for more market-oriented POs. A saturated market implies that producers are competitors, which does not favor integration into a marketing PO. Different interviewees reported failed attempts to establish a PO: "*POs don't have the commercial skills to operate in the speculative wholesale market. Also, the groups make costs for taking up vertical activities, such as transport and commercialization, whilst they don't have the product or market channel that pays a higher price for it.*"

In the organic chain, product and market characteristics are more favorable for integration into a marketing PO. Organic vegetables are a high-value niche product, sold in a short chain with preferred supplier transactions, and with high and stable producer prices. The type 3 and 4 POs are established in response to consumer demand: "*We saw the demand for organic. As a niche product, you can't wait for intermediaries to come to your farm. We decided to establish a cooperative and open our own shop*" (type 4). Type 5 was supported by the supermarket. As the supermarket manager stated, *"Consumers are demanding organic production, so we were incentivizing producers to organize and sell to us. We are still giving the cooperatives signals about new varieties, new production technologies, etc."* With public support being absent, POs in the organic chain collaborate with other organic and agro-ecology organizations. This finding lead us to formulate the following proposition:

> *P1: POs operating in an organic chain (a conventional chain) are more likely to be established in response to market (public) incentives.*

4.2.2. Structural organizational characteristics

The second finding that differentiates the five types of POs concerns differences in structural organizational characteristics of the POs. The POs that focus on economic activities (type 2, 4, 5) have four structural characteristics in common: they are small in size (and only open to new members under specific conditions), they deal with vegetables only, they require member investment, and they have a high formalization status. The POs with non-economic activities[5] (type 1, 3) have opposite characteristics: they are large (and open to new members), they focus on multiple products, they do not require member investment, and they have a low formalization status.

The POs with economic activities focus on collective marketing. Due to the perishable nature of vegetables, buyers and POs have three to six transactions per week, and therefore need efficient coordination. This translates into vertical integration with an own shop (type 4), or contracts with institutional buyers or supermarkets (type 2 and 5). Producers coordinate with buyers to comply with requirements on volume, variety, quality, and logistics. This implies daily contact among all PO members, and a high reliance on informal coordination mechanisms. As a member from type 5 states: *"If the cooperative would be large, it would be more difficult to coordinate internally. We would compete amongst ourselves, and it would be more difficult to find agreement. We*

[5] Non-economic activities are mainly social and political activities.

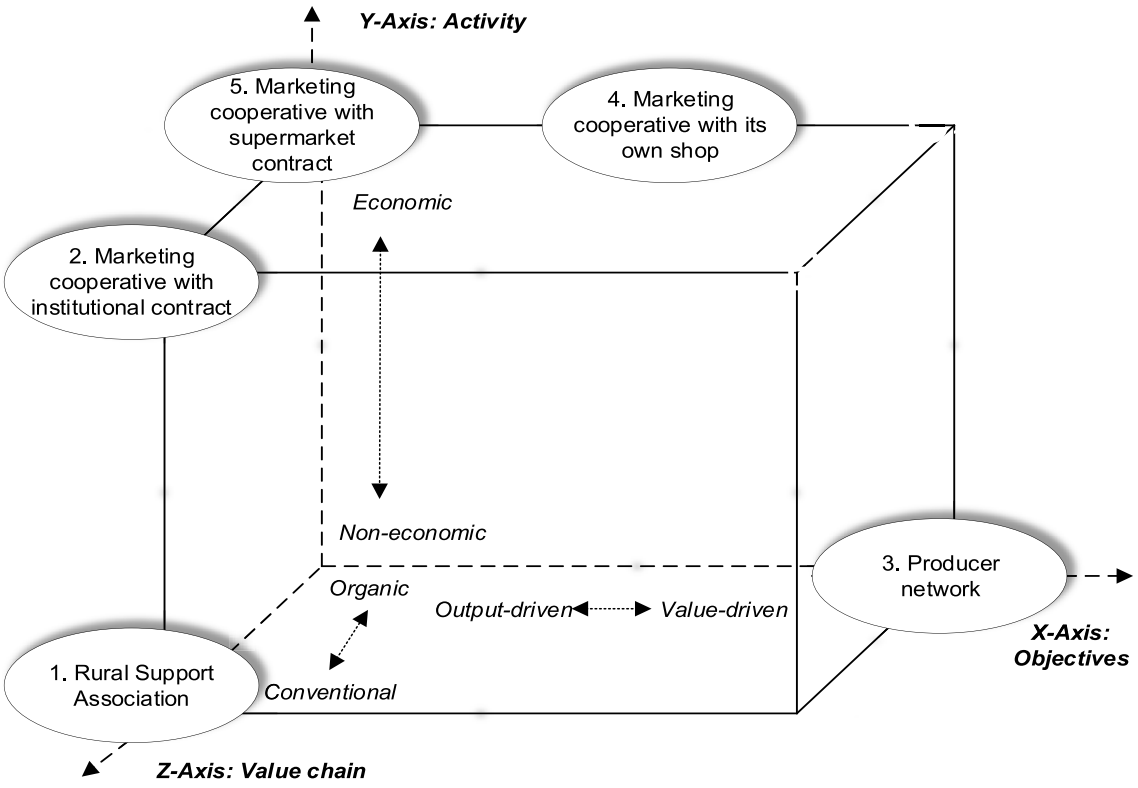

Fig. 3. Distribution of POs on three dimensions.

resolved many problems for over twenty years, our group is strong." On the contrary, a large size, a large variety of products, and a low formalization status seems to align better with social and political activities, such as lobbying to the government, and organizing youth meetings. We translate our findings into the following proposition:

> *P2: POs with economic activities – as compared to non-economic activities – are more likely to be small, have a product focus, require member investment, and have a high formalization status.*

4.2.3. Level of coordination

The third finding that differentiates the five types of POs concerns the differences in the level of horizontal and vertical coordination among the three types of POs in the organic chain. The POs with value-driven objectives (type 3) have low levels of horizontal and vertical coordination, while the POs with output-driven objectives (type 5) have high levels of horizontal and vertical coordination. The POs that combine value with output-driven objectives have medium levels of coordination (type 4).

The PO with value-driven objectives (type 3) translates its objectives in low levels of horizontal and vertical coordination. The mechanisms of coordination are aligned to the objectives that are rooted in agro-ecology. As a network member stated, "*We want to sell in nearby markets with direct contact with the consumer, and with a price that reaches more consumers. Our way of commercialization asks a lot from us, it slows down our infrastructure and logistics – but this is the way we want it."* A member who produces and delivers organic bags to consumers in Montevideo stated, *"Even though we make very long days and have little rest, we don't want to outsource the delivery of bags to consumers to an intermediary. We would then lose our friendship and connection with consumers."* Thus, their prioritization of value over output is reflected in the level and mechanism of coordination.

The type 4 PO combines value- and output-driven objectives, and has medium levels of horizontal and vertical coordination. This is not always easy, as the following quote by a cooperative member shows: "*We first co-owned and managed the shop with consumers, in which each producer would sell in the shop one day per week jointly with consumers. It was a good idea, but didn't function. We were few producers and many consumers, and coordination and administration was difficult. There were also endless discussions on price setting. We still sell directly to consumers, but we now set the price ourselves, for the whole season. We keep prices accessible to a wider public, as we don't want organic to be for the elite."* The POs with output-driven objectives (type 5) have high levels of horizontal and vertical coordination. As a member of one of the cooperatives stated: *"Our cooperative is a commercial company with profit objectives; we not only have organic production because it is better for the environment, but also to sustain us economically. This is reflected in the way we work with the supermarket. There is nothing romantic about that."* We translate our finding into the following proposition:

> *P3: POs with output-driven objectives have higher levels of horizontal and vertical coordination than POs with value-driven objectives.*

We visualize our findings by placing the five types of POs in a three dimensional graph (Fig. 3). Each of the dimensions of the box represent a scale on which POs can be placed: from conventional to organic chain; from non-economic to economic activities; and from output-driven to value-driven objectives.

5. Conclusion and discussion

This paper investigated the organizational characteristics of POs. A detailed analysis of the PO can provide better insights in the relationship among different characteristics, which can lead to better support policies. A qualitative case study was conducted on POs in organic and conventional vegetables chains in Uruguay. We identified five types of POs for the two value chains, and compared these types on eight organizational characteristics. We identified three key dimensions along which POs can be classified: conventional versus organic chain, economic versus non-economic activities, output-driven versus value-driven objectives.

5.1. Empirical and theoretical contribution

The first finding is about incentives for establishing a PO. The POs in the organic chain are established in response to market incentives, whereas the POs in the conventional chain are established in response to public incentives (*Proposition 1*). This finding confirms empirical studies of Narrod et al. (2009), and Hellin et al. (2009) who found that POs are more likely to be a response to market incentives available in high-value chains, such as organic. Conversely, Reganold & Wachter (2016: 5), in their review of organic versus conventional agriculture, found that considerably less public and private financial support is put towards organic than towards conventional systems worldwide.

The second finding is about structural organizational characteristics. Contrary to the POs with non-economic activities, the POs with economic activities are small, they have a product focus, they require member investment, and they have a high formalization status (*Proposition 2*). Our finding fits within the debate on inclusiveness of POs and is in line with Bernard and Spielman (2009), and Shiferaw et al. (2011), who found that a higher level of economic-orientation is associated with a smaller group size, which may have a trade-off with inclusion. It is also in line with Bijman (2016), who argued that many POs in developing and transition countries are in a transformation from social and political functions towards more economic functions.

The third finding is about levels of coordination. We show that among the three types of POs within the organic chain, POs with output-driven objectives have higher levels of horizontal and vertical coordination than POs with value-driven objectives (*Proposition 3*). POs with output-driven objectives require stronger coordination, particularly when POs engage in vertical arrangements, such as contracts with buyers (Mugwagwa et al., 2019; Ton, Vellema, Desiere, Weituschat, & D'Haese, 2018). Lower levels of coordination in value-driven POs were also found by DuPuis and Gillon (2009), and Kirwan (2006), who studied producer-consumer relations and mechanisms for coordination in direct market channels, such as for organic produce.

Both our findings on high coordination in output-driven POs and on structural characteristics of economic POs can be explained by transaction cost economics (Williamson, 1985). These findings align with economic-organization literature on cooperatives, the first stream of literature discussed in Section 2. Due to the perishability and heterogeneity of vegetables, particularly in the organic chain, transaction costs tend to be high. POs, therefore, choose formal and informal governance mechanisms that keep transaction costs low. Because transactions in organic chains are characterized by high uncertainty, high information asymmetry, and relation-specific investments, the organizational choices reflect the need to reduce transaction costs, such as a small number of members (Cox et al., 2010), the use of trust and reputation mechanisms (Ostrom, 2010), and formal contracting (Ménard, 2017).

However, transaction cost economics cannot explain the existence and durability of all POs in the organic value chain. POs based on value-driven objectives deliberately choose to engage in time-consuming interaction with consumers. Selling and engaging directly with consumers in short chains, selling at fair prices to make organic products available to a large group of consumers, and contributing to food system transformation, are crucial objectives for producers and their POs. Literature on alternative food systems (Hinrichs, 2003; Marsden et al., 2000), and on multi-stakeholder cooperatives (Ajates Gonzalez, 2017) can better explain that values can be more important than economic efficiency, and that the participation of different stakeholders in itself is valuable, particularly in the light of pursuing a transformation towards more sustainable agriculture.

5.2. Limitations and future research

Our study has a number of limitations, particularly related to our empirical approach. First, we acknowledge the small number of respondents per PO as a limitation. Second, in addition to the eight variables explored in our study, there may be other organizational characteristics that associate with PO performance. For instance, group features like trust and reciprocity may be even important, as indicated by research on collective action studies in natural resource management (Cox et al., 2010; Ostrom, 2010). We suggest that future studies on organizational characteristics of POs also include such social-psychology variables. Another area of future research may focus on different capacities and skills of PO leaders, particularly when POs are making a transition from conventional to organic, or from a social-political orientation towards an economic orientation (Bijman, 2016). Finally, our findings have shown a broad variety of POs that do not fit in a simple dichotomy of organic versus conventional. In accordance with Tregear (2011) and Sonnino and Marsden (2006), we conclude that POs in organic versus conventional chains are not opposites separated by strict boundaries. Future research may zoom into interlinkages between POs in both chains, for example on developing efficient value chains.

5.3. Policy recommendations

This paper has shown that POs are heterogeneous in the way they are organized and embedded in their value chain context. This yields recommendations for policy makers, donors, and NGOs on how POs can be supported. First, in absence of market incentives, public support may induce PO establishment. However the sustainability of POs with economic activities (such as those that collectively sell farm produce) may be at risk when they are based purely on public support instruments (Francesconi and Wouterse, 2015; Shiferaw et al., 2011). Conversely, public support for POs in the organic chain may need to be increased to fill institutional voids that hamper growth in this sector. Public support can facilitate the transition from conventional to organic systems (Reganold and Wachter, 2016).

Second, when seeking to strengthen market access of organic farmers, it may be better to establish new POs instead of transforming traditional POs. In our study, the POs with economic activities were often a spinoff of conventional POs, but had clearly different organizational characteristics. In addition, it is important for policymakers to realize that besides the investment, it takes different resources to become an economic group, such as commercialization capacity and time to spend on organizing internal meetings. Finally, given the diversity of objectives that translate into different levels of coordination in value chains, it is important for policymakers to realize that there are no one-size-fits-all solutions in supporting POs – especially when supporting the transition to more sustainable food systems.

Declaration of interest

None.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jrurstud.2019.04.012.

Appendix

Table A1
Overview interviews per actor group

	Conventional		Organic		
	PO 1	PO 2	PO 3	PO 4	PO 5
Producer Organization *(N = 16)*	*Four interviews* 2 Members 2 Union representatives	*Three interviews* 1 Member 1 Group interview 1 Technical advisor	*Three interviews* 3 Members	*Three interviews* 3 Members	*Three interviews* 3 Members
Value chain *(N = 15)*	*Ten interviews* 2 Producers (non-members) 4 Intermediaries 3 Wholesalers 1 Supermarket		*Four interviews* 2 Supermarkets 2 Organic shops 1 Specialized bag system run by consumers		
Institutional environment *(N = 19)*	*Twelve interviews* 3 Government departments 3 Technical advisors 1 Public research institute 3 Cooperative institutes 2 Governing body of wholesale market		*Seven interviews* 1 Government department (environmental affairs) 1 University researcher 2 Agro-ecology network (1 national, 1 regional officer) 2 Agro-ecology / organic organizations 1 Agro-ecology consumer organization		
Total (N = 50)	**29**		**21**		

Table A2
Overview of topics per actor group

Topics covered per actor group	N
Producer organizations	*16*
• *PO characteristics* Incentives for establishment, number and type of members, type of product, history of PO, formalization status, activities, objectives, internal governance (decision-making structures and mechanisms), member investment, relation among members, willingness to allow new members, horizontal coordination (level and mechanisms, e.g. production coordination, quality requirements and control, pricing and payment, logistics, other), existence of higher tier, geographical scope, strengths and challenges of PO, future plans of PO.	
• *Vertical coordination in value chain* Position in value chain, type of buyer, level of coordination (including formalization), mechanisms of coordination (production coordination, quality requirements, control and sanctions for non-compliance, pricing and payment, logistics), additional services of buyer, decision-making structure with buyer, history with buyer (how relationship established), strengths and challenges in relation with buyer, bargaining power, existence alternative market channels for PO, strengths and challenges in market channels.	
• *Institutional environment* Extent of collaboration with government, research, extension, organic and agro-ecology organizations, collaboration with other POs, strengths and challenges of PO in sector.	
Value chain actors	*15*
• *Actor characteristics* Type of product, activities, objectives. Additional questions for buyers working with POs: Same questions on vertical coordination in value chain (see above), but directed towards relation with PO.	
• *Value chain characteristics* Type of product, supply versus demand dynamics, type of transactions in chain, pricing system in chain, bargaining power of producers, strengths and weaknesses of chain, changes in chain over time.	
Institutional actors Organizational structure, activities, objectives, financing sources, support to POs, PO landscape, comparison organic versus conventional institutional support (including for POs), collaboration other institutional actors.	*19*

Table A3
Explanation of the organizational characteristics

Organizational characteristics	Categories	Classification
1. Incentives for establishment	• Public	• Established in response to public incentives, e.g. public support for collective production, marketing, service provision
	• Market	•Established in response to market incentives, e.g. observed demand for produce, opportunities for collective marketing
2. Size	• Small	• Less than 20 members
	• Medium	• Between 20 and 50 members
	• Large	• More than 50 members
3. Product	• Vegetables	• Members with only vegetables production
	• Multiple	• Members with vegetables and other production (e.g. dairy)
4. Member investment	• Yes	• Members need to make an initial financial investment
	• No	• Members do not need to make an initial financial investment

(*continued on next page*)

Table A3 (*continued*)

Organizational characteristics	Categories	Classification
5. Formalization	• Low	•
	• Medium	Informal organization or formal organization with limited rules and regulations
	•High	• Formal organization with some rules and regulations
		• Formal organization with extensive rules and regulations
6. Activity	• Social	• PO with social activities, e.g. social events and services
	• Political	• PO with political activities, e.g. lobbying for improved support
	• Economic	• PO with economic activities, e.g. collectively selling produce
7. Objectives	• Output-driven	• Organic PO with activities that focus on efficiency
	• Value-driven	• Organic PO with activities that focus on internal values
8. Level of horizontal and vertical co-ordination	• Low	• Low level of horizontal coordination and no or limited vertical coordination with buyer in value chain
	•Medium	• Medium level of horizontal and vertical coordination (e.g. basic production planning, alignment of logistics)
	•High	• High level of horizontal and vertical coordination (e.g. strict production planning, quality standards, logistics, pricing agreements, additional services)

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