REFEREED ARTICLE

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Does the Pangea model empower family farms? A case on farmland stewardship

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ABSTRACT

Land is often considered as a metaphor for power, wealth and status. This is as true in agriculture as the control and ownership of farmland are often intertwined with the notion of food security. As a result, in recent years farmland has attracted investors outside farming which often leads to speculative behaviours. With a new approach in mind, Pangea was founded in 2012 by farm owner-operator Serge Fortin and well-known Saguenay entrepreneur Charles Sirois. Their arrival on the Quebec agricultural scene garnered significant criticism from farming communities across the province. As Pangea is beginning to venture into the province of Ontario, some wonder if the model is both scalable and transferable to other economies. This case study presents the Pangea model by virtue of several interviews conducted at Pangea's head office in Montreal in early 2016. Using a political economy framework, the model's performance is evaluated and commented on. Some limitations and future research paths are also suggested.

KEYWORDS: farm management; family farms; scalability; limited partnerships

1. Introduction

Agriculture is likely one of the most subsidised and protected industries in the world, so it not surprising that farmland ownership has become a point of contention within modern society. Farmland ownership has been the subject of many headlines all over the world, including Canada. With market vitality, and given that farmland is inflation protected and can generate good returns over time, many investors have shown an acute interest in food production and farming (Lepage, 2014).

Many funds and investors have organized themselves to acquire farmland to better their returns. Many models have emerged over the years. Montreal-based Pangea claims that it has developed a new way to invest in farmland by partnering with farming families, by offering capital access and increasing farmland values. But since Pangea started operations in 2012, it has attracted tremendous criticism from farmers, farmer's unions and politicians. Tensions erupted when Pangea purchased land in several regions across the Province of Quebec which prompted public outcry. As a result of this outcry, a parliamentary commission was held in 2015 for two days in Quebec. Many questioned Pangea's intentions and accused the company of land grabbing. Some farmers, supported by the very politically influential Union des Producteurs Agricole (UPA), claimed that farmland should only be owned by farmer-operators, and that all transactions should be monitored and approved by the union representing farmers. Pangea has disputed these criticisms numerous times since its inception. The UPA is, by law, the only organization allowed to represent the interest of farmers in the province and has historically been perceived as one of the most powerful lobby groups in the province.

The aim of this case study is to determine how Pangea has affected the whole notion of farmland ownership. This case will also attempt to show how different Pangea's model is from the established farming model. The case will be considered within a political economy framework and will look at partnerships affected by power or dependence, as well as the conflicting and cooperative relationships for Pangea. While farmland management and stewardship is discussed a great deal, it is rarely theorised. This article will begin by presenting a theoretical framework applied to the political economy of farmland protection and regulation in advanced capitalist economies. It will also integrate the analysis of preventive policies across the social, environmental and economic domains.

2. Context

Ever since the 2008 dramatic surge in agricultural commodity prices, many have speculated that countries and investors are competing for land, more specifically arable farmland (Arezki, Deininger and Selod, 2012). There has been a significant increase of farmland transactions over the last few years. From 2000 to 2011, the International Land Coalition reported over 2000 transactions which involved more than 200 million hectares of land, a region

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larger than the province of Quebec (MAPAQ, 2015). More than 67% of the areas involved in transactions are located in Africa (AGÉCO, 2012).

In Canada, the situation is somewhat different, but some trends can be identified. There is an increasing amount of farmland being exploited by non-traditional owners. In Québec 84% of farmland is owned by owner-operators, compared to 70.7% in Ontario. A study from the University of Guelph published in 2010 showed that most of the farmland is either rented by retired farmers or rented by local owners (Bryan, Deaton, Weersink and Meilke, 2011). Nonetheless, it has been challenging to monitor the extent of farmland transaction activity, particularly transactions involving investors coming from outside traditional farming communities (Bryan, Deaton, Weersink and Meilke, 2011).

The common underlying intent in farmland acquisition would be to secure supplies of grains by acquiring large quantities of arable land in other countries. As such, farmland protection and management has been a topical issue in both western and developing countries. Urban and suburban growth in Canada has had a significant impact upon land use, real estate speculation, property taxation and the agricultural sector of the country. As a result, farmland has been a subject of many political debates in recent years (Richetto, 1983). Farmland protection and management are relatively broad concepts. It generally involves both quantitative and qualitative protection of farmland by legal, administrative, economic and technical means and measures.

Many have argued that governments should play a more active role in farmland protection. Governments in developed countries that manage urbanizing areas are increasingly utilizing mechanisms to preserve farmland and protect local farm economies. The underlying determinant for these policies is to exercise control over increasing prices of farmland (Nickerson and Lynch, 2001).

Most of these concerns are related to developing countries. In recent years though, developed countries have also expressed similar concerns (Nickerson and Hellerstein, 2006). More specifically, urban-rural edges have been of interest over the past few years (Oberholtzer, Clancy and Esseks, 2010; Sokolow, 2010).

3. Farmland protection and values

In the developed world, the impact of farmland protection programs has been mixed. Some suggest that the criteria used for designating protected farmland is not effective (Hart, 1991; Klein and Reganold, 1997; Oberholtzer, Clancy and Esseks, 2010). Beyond urban sprawl, economic, political, and social forces greatly influence farm operations and operators in deciding whether to continue in the sector or sell out.

The values of farmland and fluctuations have been studied for decades (Lence, 2001; Sherrick, Mallory and Hopper, 2013). In the Western world, farmland value is often recognized as an effective measure and the financial strength of the agricultural sector (Zakrzewicz, Brorsen and Briggeman, 2012). Farmland price fluctuation, whether higher or lower, represents a source of concern for farmers and policymakers alike (Briggeman, Gunderson and Gloy, 2009). The value of non-agricultural characteristics of farmland has been noted in many previous studies that describe the frequently speculative nature of business transactions where the buyer intends to develop the land for other economic purposes. Buyers with a special motivation often pay more than the market price to obtain access to agricultural land (Drozd and Johnson, 2004). Bidding wars can lead to farmland prices that are not affordable to farmers with little or no access to capital.

Ferguson, Hartley and Carlberg (2006) have argued that the effects of regulation with respect to farmland purchase are negative overall, which signifies that the more stringent the regulation is to protect farmland the more likely land values will be lower. Farmland returns have been relatively strong over the last few years and many are now monitoring price progress in the sector. Its display of low systematic risk, high inflation hedging potential, and good diversification benefits make farmland an interesting investment option and as a result, there is significant interest in farmland from non-operator investors who have not been in agriculture and/or farming before (Henley, 1998). In fact, some studies suggest that farmland has been a reasonably good investment over the past few decades, particularly in Canada (Painter, 2010).

According to Sherrick, Mallory and Hopper (2013) agricultural real estate investments have outperformed other types of investment opportunities. They have recognized greater interest in farmland investing, yet the collection of data remains a challenge. No real comprehensive global database exists to monitor these activities. Still, farmland investment has attracted a lot of attention these past few years, particularly since 2008.

Economic cycles and interest rates have significant impact on farmland prices. In recent years, real farmland values have surpassed the record highs set a few decades ago when interest rates were historically high (Zakrzewicz, Brorsen and Briggeman, 2012). Similar to equity markets, farmland is exposed to boom and bust cycles. Predicting and knowing what factors affect farmland prices is key for many stakeholders in agriculture.

Canada is certainly not in the same situation as other emerging markets. China, for example, with its very large population and with little land, feeds 22% of the world's population with only 7 % of the world's farmland (Luo *et al.*, 2013). Resource scarcity is clearly a challenge in China. But in developed economies, the significance of farmland availability, and related operational costs have generated concerns over issues related to the risk exposure facing grain farmers. Risks have gone up at times, depending on financial agreements included in rental contracts (Paulson and Schnitkey, 2013).

Access to proper capital to buy farmland has also been assessed in past studies. Credit quality does not appear to be affected by the increase of farmland prices (Cocheo, 2013). Pangea co-founder Charles Sirois believes that one of the most significant challenges for small scale farmers is access to capital in order to become more productive via scale. During our interview with him, Mr. Sirois stated, ''To avoid the industrialization of agriculture, the family has to make decisions. Farms should be managed by families, but it has to be sustainable. To be sustainable, it has to be profitable. So, the optimal size of a family farm should be set at 3,000 acres, we figured'' (personal communication).

4. The family farm

The whole notion of the ''family farm'', no matter how it is defined, has also been at the core of discussions on farmland stewardship. Many believe that the changes we see in agriculture are severely threatening farms which have been owned by families for decades (Huang *et al.*, 2006). These factors have been given little, if any, consideration when designating and designing strategies to protect important agricultural lands in mature economies. Little attention has also been given to how to scale up family-owned operations in agriculture. Resources, human capital and knowledge to support a profitable agricultural enterprise are arguably as imperative as having access to high quality soils (Klein and Reganold, 1997).

The historical role of families as farm operators also needs to be underscored. As such, succession planning remains an issue in agriculture. Farmland is often abandoned or not properly utilized by communities. This often leads to discounted acquisitions, although in some countries actions have been taken that have allowed price premiums for farmland to be achieved (Hüttel, Jetzinger and Odening, 2014).

Farmland ownership transfers occur for many reasons. Over the last few years, the industrialized world has witnessed an accelerated pace in primary production consolidation, smaller operations being acquired by larger ones as families let go of assets. As a result, fewer farms are managed by families as they exit the industry. In contrast, another phenomenon has also occurred. Many investors living in urban centres have opted to invest in regions to begin hobby farms, but not for commercial purposes.

5. Pangea

Over the years, Canada has seen different farmland purchase models. Meloche and Debailleul (2013) have argued that there are three distinctive models of farmland investment mechanisms. The first model is a fund focused on buying and renting farmland. The sole purpose of these domestic funds is to increase returns for investors. Some examples are Agriterra in Quebec and Assiniboine in Saskatchewan. Another model is focused on concessions of farmland to local farmers. In this model, a domestic fund buys land for farmers and rents it to local farmers at a discounted price. The third model is based on a vertically integrated approach where many enterprise elements and intents are combined (Charlebois and Camp, 2007). In this model in order to increase their capacity farmers are supported by a financial partner. This model is particularly popular in hog production. Pangea's creation in 2012 would not fit any of the three models described above as the fundamental principle of Pangea is to create partnerships with farmers without taking away majority shares from the operator-farmer. The following comment by Mr. Sirois captures the financial philosophy behind the company: ''Most financial models work with the premise of making inflation, plus 4%. Life insurance companies, pension plans, all will face gigantic problems. It's tough to get 4% in today's world, bonds, and stocks, impossible. So bankers look for alternatives, like hedge funds, real estate, and many other investments. We should invest in real assets. Why buy gold? You can't do anything with it. You can't eat it. Farmland is a good investment for the future and to hedge against uncertainty'' (personal communication).

Pangea provides a long-term rate instrument that will satisfy the need of achieving a good return—the rate of inflation plus 4%. Reducing the variance is key. Farmland is inflation protected, but Pangea believes it is fairly easy to achieve 4% if the family unit operates the farm properly. Pangea is using capital to assist farm operators, and specifically, farming families.

With a new approach in mind, Pangea was founded in 2012 by farm owner-operator Serge Fortin and well-known Saguenay entrepreneur Charles Sirois. Both men were involved in highly successful telecommunication ventures. Mr. Fortin is also a multi-generation farmer. The company owns and seeks to acquire high-quality primary row crop farmland located in agricultural markets throughout Eastern Canada. The main impetus of Pangea is ''to develop sustainable and profitable agricultural enterprises, to use regional players for supplies, services and expert agricultural resources, to demonstrate flexibility in the actions to be promoted to reflect the preferences of our agricultural partners, to purchase land whose agricultural yield justifies its price, to take regional differences in land into account in order to achieve its full potential, and to support agricultural partners through training, agricultural coaching and business mentoring''.

Under the Pangea model, farmers remain owners of the land while entering into a limited partnership with Pangea. The majority owner (51%) is the farmer. This co-enterprise rents land from both Pangea and the farmer. Under such an agreement, farmers are compensated accordingly by the co-enterprise to maintain the land rented by the co-enterprise. This is a new ownership and partnership model in farming (Lepage, 2014). The fundamental objective of Pangea is to establish business partnerships with farmers to make underused agricultural land more productive and allow farmers to earn more money. Pangea's model postulates that small-scale farming, which dominated farming in Canada, has run its course and may not be optimal for the future. But the Pangea model does not support the industrialization of farming either, as claimed by the co-founders. ''Land grabbing in Africa is awful. That's when I became interested in food production. Most were stating that the industrialization of agriculture is the only solution. On the other hand, many are saying artisanal production is more sustainable, but that's not profitable. Both were undesirable. Something was wrong'' (Charles Sirois, Co-Founder of Pangea, personal communication). It is intended to empower family farms to become more profitable and thus, more sustainable.

Pangea does not consider itself an investment fund, but it is divided into three separate divisions. The first one, Pangea Terres Agricoles, acquires land for the company in diverse geographic regions to mitigate risks, such as the risk of weather by spreading farmland acquisitions geographically. This is set up as an investment trust which allows for others to invest in farmland. Main shareholders have an agreement not to sell purchased farmland for at least 50 years (Fuchs, Meyer-Eppler and Hamenstädt, 2013).

Pangea Operations, the company's second division, plays a key role in bringing together farmers and Pangea.

What Pangea proposes under Pangea Operations is a partnership with farmers by virtue of a co-enterprise. When asked about his farming partnership with Pangea, Patrice Garneau responded, ''Pangea will provide me with some advice, but they don't intervene in how I run my business'' (farmer and Pangea partner, personal communication). Co-enterprises are called Agricultural Operating Partnership (AOP), which provides dividends to both the farmer and Pangea. Pangea commits to be very transparent and flexible to the farmer-operator's needs.

The goal with AOP's is to increase operational efficiencies and apply more budgetary rigour to farming. Pangea currently has seven AOPs. These types of farming partnerships have been studied on a few occasions (Calomiris *et al*., 1986; Collins and Bourn, 1986; Fiske *et al*., 1986) and have had mixed results (Cheriet and Dikmen-Gorini 2014). For the time being Pangea has only considered large cereal crop production. The agricultural partner is the decision-maker and principal holder of the net profit of the joint venture. The goal in creating a co-enterprise is to address the issue of capital access. Charles Sirois stated: ''The mainstream belief is that the family farm should have 250, 300 acres. The UPA stated this as it believed that family farms were only able to handle such a scale, from a capital point of view. Since agriculture is a closed system, it was likely true. So capital is the problem'' (Co-founder of Pangea, personal communication).

As mentioned before, the majority shareholder of the co-enterprise is the farmer at 51%, which is key to the model. Pangea owns 49% of the AOP. The farmer and Pangea each own their own land but share equipment, infrastructure and managerial know-how.

Pangea Com, a third division, is dedicated to developing international markets for the company and its partners. This division has yet to be developed.

Finding the right partner has been the most significant challenge for Pangea. It first needs to find the proper region before selecting a producer who can fit and work in the context of a co-enterprise. Robin Godin Gauthier, Pangea's Agrologist, notes that, ''Finding the right partner is difficult. Finding land is not difficult, there's too much of it in fact. We're getting better at finding the right partner, but it's difficult. Most who approach us want to do business with us for the wrong reasons'' (personal communication). The region itself has to exude agrological potential and social accessibility. Criteria used to find the right partners are; entrepreneurial values and evidence of any motivation to manage a scalable operation.

The profile used by Pangea also suggests that it is actively looking for educated individuals with a good reputation in the community. Pangea also looks for individuals with strong leadership skills who can handle highly stressful situations. Quality-focused is also another personal attribute Pangea looks for: ''We need partners who are committed which is why we give them majority ownership and a lot of leverage'' (Robin Godin Gauthier, Pangea's Agrologist, personal communication). Once the right producer has been found, land is selected based on the following criteria: Proximity from the farmer-operator (maximum 30-minute tractor journey), a minimum of 100 acres per lot, possibility of upgrade and good return potential.

Farmers can continue to make decisions with Pangea on how the land will be used. In the process, they have access to lower interest rates and better lending conditions. Pangea and AOP's are currently managing more than 15,000 acres of farmland, of which 8,956 acres are owned by Pangea. The company claims to have invested over $22m in farmland, equipment, inputs and services in several regions in Quebec and Ontario to-date. Most AOP's are located in the province of Quebec (6 of 7). Pangea currently has only one partnership (AOP) in Ontario and has plans to expand in this province.

Since its foundation, Pangea has been targeted as a company which mainly intends to speculate on farmland prices, an affront to family farms (Nicolas, 2014). Some have suggested that the sole purpose of the company is to land grab farmland from domestic and/or local owners. It all began when Pangea purchased 2,400 acres from the National Bank in 2012 after the financial institution faced considerable criticism in the region. As Katy Dupéré noted ''Many believe the UPA forcefully defends small farms so their revenues as a union are not affected. [This] makes sense'' (in-house lawyer, personal communication). During our interview with Patrice Garneau stated, ''Why UPA doesn't support Pangea? I have no idea. I suspect that the UPA feels that money and greed motivate Pangea. They never asked why we got involved with Pangea, which is disappointing'' (farmer and Pangea partner, personal communication). Charles Sirois, Co-Founder of Pangea, similarly does not understand why UPA will not support Pangea: ''The whole idea of the union is to have agriculture live on welfare. With Pangea, they don't need the union anymore. I don't get why people want to subsidize poor farmers'' (personal communication).

A commission on the matter was held in 2015 to allow Members of the Quebec National Assembly (MNA) to evaluate whether land grabbing was actually occurring in the province. The commission was arguably motivated by the UPA's very public affront towards Pangea's model. Testimonies occurred in March 2015 and lasted two full days. The UPA made a formal request to be allowed to oversee all farmland transaction in the province, and to be granted authority to approve them. As a result of the commission, several MNAs, except those of the Parti Québécois, are in agreement that Pangea is unique and may be beneficial to the province's agricultural economy. Quebec's Ministry of Agriculture shared the view. When asked about the commission, Charles Sirois stated: ''The government loves the model. Regions can only grow through sectors: tourism, natural recourses and agriculture. With our model, agriculture can grow in regions'' (Co-Founder of Pangea, personal communication). Patrice Garneau's response about the commission hearing was, ''At the Commission, you could feel that most were against Pangea, without knowing what it did. But the Commission was a waste of time since Quebec is not experiencing any land grabbing'' (farmer and Pangea partner, personal communication).

At the time, the commission garnered significant media attention. Since then, the hype around Pangea has dropped significantly. The number of mentions related to Pangea and land grabbing in the media has dropped by 34% in 2015 from 2014 (Pangea, 2016). Pangea also has specific expectations when it comes to profitability. Jean-Paul Tardif, Chief Operating Officer at Pangea,

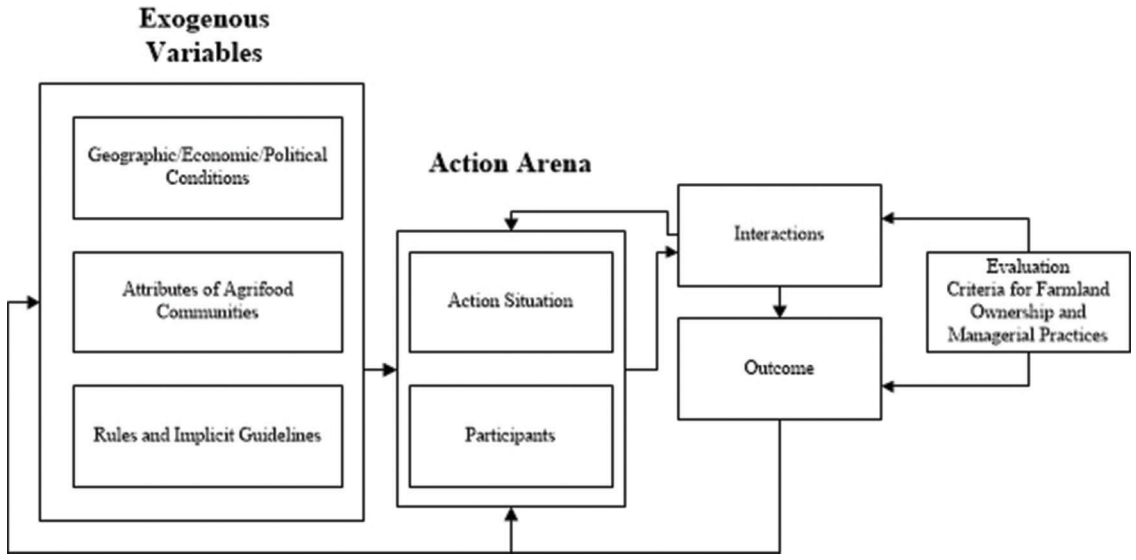

Figure 1: Political Economies of Farmland Ownership in Mature Economies

spoke about Pangea's expectations, ''We expect most operations to take 3 years before they are profitable'' (personal communication).

The day-to-day relationship with farmers is key for Pangea as they visit farmers on a regular basis. They encourage farmers to get in touch with them: ''We encourage farmers to call us and to seek some advice. Typically, during the first year though, they like to show they know things. But after, they get more comfortable, more vulnerable with Pangea'' (Jean-Paul Tardif, Chief Operating Officer, Pangea, personal communication). Patrice Garneau noted that, ''Robin and Serge come often for a visit'' (farmer and Pangea partner, personal communication).

The Pangea model is unique but has been scrutinized by many groups over the last few years. Pangea's vision is to allow families to stay in regions and increase the scale of their operations through a unique business partnership. Allowing partners to immerse themselves in their farming business is not easy to accept. Often, farmers are uncomfortable allowing external stakeholders to look into their affairs. Pangea also works to create camaraderie amongst the AOP's by hosting knowledge sharing events which include all family members of the AOP's.

6. Political economies of farmland ownership and management

To conceptually review Pangea's purpose, we looked at the company as a part of a political economy. It has been argued that the homogeneity of farmland and irrigation systems increased the transparency of farming, thereby increasing appropriability (Brezis and Verdier, 2014). Therein lies a deep connection between geography, topography and economics. Farmland stewardship is connected to all three intrinsic aspects of political economies. Water, essential to agriculture, has also had an impact on farmland management over the years. Irrigation led to differences in the power of the state, state institutions and political systems for centuries. This can still be true today.

To examine how agencies interact with each other in agriculture, a political economy framework is the most appropriate for proper evaluation. Political economies allow for a better understanding of how institutions, the political environment, and an economic system influence one another. Political economies consider the spatial aspects of economic activities in agriculture, and it is appropriate that they examine the location, distribution, and spatial organization of agro-economic activities. Urban centres and economies of agglomeration, as well as the effects of distances and transportation are also in the scope of such a conceptual approach (Charlebois, 2005; Boyer and Charlebois, 2007).

Land is often considered as a metaphor for power, wealth and status. In developed economies, the most common reason to impose restrictions on farmland ownership is domestic food security. For speculators, the combination of power and fast returns can be attractive. Research has shown that urban citizens are willing to acquire farmland in certain areas as long as they can expect the value of farmland to increase (Liu, 2015). This is likely why farmland is often considered an attractive investment for speculators.

From a policy perspective, it has been argued that poor legislation allows foreign investors to take advantage of low priced farmland in the western world. These claims have often no foundation since most farm prices are based on levels of productivity, or what the potential of productivity may be (Dadak, 2004). One of the primary reasons for low productivity in agriculture is the inability for many small farming operations to reach reasonable economies of scale. A good system of private property rights for farmlands is an essential ingredient of good economic development (Krasnozhon, 2013). This is often perceived as a founding premise to sound rural economic development.

The attempt to portray the institutional landscape for farmland management and ownership is represented in Figure 1. As shown in the diagram, exogenous variables affect the structure of an action arena, generating interactions that produce outcomes. Outcomes can lead to cooperative or conflicting relationships within a political economy (Walker, 2006). Evaluative criteria are used to

judge the performance of the system by examining the patterns of interactions and outcomes. The focal point of the framework is called Action Arena in which participants and an action situation interact as they are affected by exogenous variables. These interactions can produce outcomes that in turn affect the participants and the action situation. Action arenas exist in local, regional, national, and international councils, in firms and markets, and in the interactions among all of these arenas with others. The farmland public discourse potentially includes all levels of society, in many different ways.

An action situation can be considered as using several clusters of variables: participants (who may be either single individuals or corporate actors), positions, potential outcomes, action-outcome linkages and cooperation amongst actors, the control or power that participants exercise, types of information generated, and the costs and benefits assigned to actions and outcomes. An action situation refers to the social space where participants with diverse preferences interact, exchange goods and services, collaborate and solve issues, dominate one another, or conflict with one another.

Outcomes feed back onto the participants and the situation and may transform both over time. Over time, outcomes may also slowly affect some of the exogenous variables. In undertaking an analysis, however, one treats the exogenous variables as fixed; at least for the purpose of the analysis. When the interactions yielding outcomes are productive for those involved, the participants may increase their commitment to maintaining the structure of the situation as it is in order to continue to receive positive outcomes. In the case of political economies, when participants view interactions as unfair or otherwise inappropriate, they may change their strategies even when they are receiving positive outcomes from the situation. When outcomes are perceived by those involved (or others) as less valued than other outcomes that might be obtained, some will raise questions about trying to change the structure of the situations by moving to a different level and changing the exogenous variables themselves. Or, if the procedures were viewed as unfair, motivation to change the structure may exist.

7. Methodology

We chose an exploratory case study design to guide our investigation based on Yin's (1994) argument that case studies are the preferred strategy when 'how' or 'why' questions are being posed and when the focus is on a modern phenomenon within a real-life context. When using the political economy framework, such an approach is particularly appropriate for understanding the details and complexity of a phenomenon and design. In our study research data was collected through multiple approaches. A semi-structured questionnaire was designed and adopted to collect primary data. The objective of the empirical segment is not to test the applicability of the existing approaches, but rather to study conceptual nuances related to the presented model grounded on the political economy framework.

A survey study focused on formal onsite interviews at Pangea's headquarters in Montreal, Canada in January 2016. Comments were recorded comprehensively for supporting analysis. Respondents were interviewed separately, and represented key informants in a variety of functional areas, including co-founders. These individuals possessed sufficient experience and understanding of the organization's culture and strategic intents to be able to comment with authority on the young history of Pangea and its role in the economy. A total of seven (7) people form the company; each was interviewed, along with one farmer who is involved in an AOP. The interview questions were largely designed to be open-ended in order to provide flexibility in interview discussions. The interviews provided information on the perceptions, application and experience of strategy in food security and biotechnology. The collected data was arranged, analysed and put into the subsequent application phase. A draft version of the paper was submitted for review to the organization for internal validity (Yin, 1994). This case study will aim to uncover best practices in land investment, management and stewardship in agriculture.

8. Findings

The value of farmland is determined by many agronomic, economic, demographic and geographic factors. These factors have affected how farmer-operators perceive their future and how they wish to mitigate their financial risks. Controlling values can also be done in many ways but threats can emerge instantly. The arrival of Pangea in Canadian agriculture made many stakeholders react. While some opposed its model, others supported it. Pangea's arrival challenged the values embedded in policies aimed at protecting family farms and the capacity for one nation to preserve food sovereignty. Pangea was perceived as an external to agriculture so political linkages were critical. Robin Godin Gauthier stated that, ''We deal with a lot of politicians, their support is very important to us because our partners are affected by these relationships'' (Pangea's Agrologist, personal communication).

All agricultural policy challenges are becoming international ones. External menaces are influencing domestically-based issues and can be resolved only in a network of relationships with other nations and transnational interests. Farmland ownership is often recognized as a metric for how open and vulnerable an agricultural economy is becoming. The more non-farm operators or external investors own land, the more vulnerable an agricultural economy will be perceived to be (Briggeman, Gunderson and Gloy, 2009). Provincial and federal institutions play a role in policies and policy making related to farmland management and stewardship, but the validity and the effectiveness of many state-sponsored organizations are declining. This may be the reason why trade groups and others react to insurgences. Pangea's Director of Communications, Marie-Christine Éthier stated, ''The UPA's voice is very strong, so it's been a challenge. Farmers are very afraid to talk'' (personal communication).

Farmland is often intertwined with the notion of power and influence in rural communities and beyond. The capacity to control and support the food security agenda for any developed economies has been influencing pundits in agriculture. Table 1 presents several factors that affected the action arena amongst agents in the political economy.

Table 1: Exogenous variables affecting the political economy of farmland governance

Exogenous variables affecting Pangea Strategy	Observations	References
Geographic conditions	• Acquisitions in rural communities to leverage wealth creation • Pangea looks for farmland in poor agrological conditions • Pangea actively looking for agrological potential • Pangea mitigates risks by acquiring farmland in many different regions, reduce variance	Klein and Reganold, 1997; Henley, 1998; Oberholtzer, Clancy and Esseks, 2010; Brezis and Verdier, 2014; Bausch, 2015.
Economic conditions	• Misunderstanding of model related to how it financially operates • Changing the inability for many small farming operations to reach reasonable economies of scale; • Increase cash flow of small operations (family farms) • Making capital intensive operations viable • Both spouses can work on the farm on a full-time basis • Pangea provides knowledge and capital to co-enterprise • Pangea model spreads variance and limits risk exposure • Pangea does not bid against another farmers to acquire farmland • Enterprise not supportive of speculative behaviour related to farmland • Pangea's model not easily expandable	Dadak, 2004; Drozd and Johnson, 2004; Huang et al., 2006; Painter, 2010; Oberholtzer, Clancy and Esseks, 2010; Arezki, Deininger and Selod, 2012; Deinenger, 2013; Krasnozhon, 2013; Weber and Key, 2015.
Political conditions	• Pangea seen as an economic intruder • Confusion about Pangea model led to political conflict • Segregation of Pangea partners from farmer union • Pangea perceived as external agent to agriculture • No state intervention required • Transparency key to Pangea approach	Richetto, 1983; Hart, 1991; Walker, 2006; Krasnozhon, 2013; Eagle et al., 2015; Liu, 2015.
Attributes of Communities	• Limited business knowledge and professionalism in rural communities • Farmers know farming, challenging for outsider to train and provide enhanced knowledge • Growth may not be a value embraced by all • Push against ''financialization'' of food • Legacy of farmland critical to farmers for next generation • Pangea often seen as a bankruptcy avoiding mechanism • Limited partnership concept difficult to understand by farmers • Pangea's promise hard to believe by rural communities • Farmer-partners guilty by association	Ferguson, Hartley and Carlberg, 2006; Engelen et al., 2010; Magnan, 2012; McMichael, 2012; Fuchs, Meyer-Eppler and Hamenstädt, 2013.
Rules	• Pangea not seen as member of community, no social license • Pangea's core values differ from traditional, artisanal farming • The UPA is the sole protector of farmers • Pangea depends on relationship based on trust and engage with reliable partners • Proximity of support is key	Cavailhes, Hilal and Wavresky, 2012; Eagle et al., 2015; Liu, 2015.

Geographic factors are critical to any transactions. Pangea was and is very selective in terms of where to purchase land. As Katy Dupéré, Pangea's in-house lawyer, told us ''We will not buy land if it is located within 30 minutes of tractor-time of one of our current partners'' (personal communication). It mitigates its risks so it does not comprise its chance to maintain a profitable portfolio: ''There is a fundamental principle in mathematics. When you centralize the decision-making process, you will increase the variance, and variance is risk. By having many partnerships, the variance is significantly decreased'' (Charles Sirois, Co-Founder of Pangea, personal communication).

The essence of Pangea's model is to reduce the variance, and risks by spreading its footprint into many regions. Economic factors also ought to be considered. At first, some did not understand Pangea's model. For instance, Patrice Garneau stated, ''At the beginning, we weren't sure about Pangea. But after a while, we realized that they were serious'' (farmer and Pangea partner, personal communication). It came as a surprise and was deemed almost too good to be true. Katy Dupéré informed us that, ''My practice with Pangea is 5% related to law, but most of it is about education, counselling and support for young farmers. We're giving them a dream almost.'' She also stated that, ''The biggest challenge for farmers is to accept to be involved at 51%. At first, they are not always convinced they can deliver. But most importantly, they are not accustomed to dealing with an external partner'' (in-house lawyer, personal communication).

One clear incentive for farmers is to improve cash flow and the financial viability of their operations. For instance, Patrice Garneau explained that he contacted Pangea to partner with them: ''We were very interested in dealing with Pangea since it is more challenging to invest in cash crops without having our own parents involved. Getting Pangea involved increased our cash flow'' (personal communication). By creating a co-enterprise, farmers are able to rely on an enhanced access to capital to support their operations. Robin Godin Gauthiert noted that, ''Producers often underestimate the learning process, and Pangea helps partners to acquire business-oriented knowledge like cash flow management. But Pangea also learns from partners as well'' (Pangea's Agrologist, personal communication).

According to Garneau, the cash flow is healthy enough that it allows the farmer and partner of Pangea and his family to work on the farm on a full-time basis. This is a significant incentive for families who want to spend some time together. One aspect of Pangea's model, which remained misunderstood, or even disbelieved, was the claim that they would not outbid another farmer when purchasing farmland. What is interesting is that, despite claiming how transparent it is, Pangea does not disclose which deals they have walked away from. This may have fuelled speculations about Pangea's ulterior motives. During the commission, many members of the committee disputed Pangea's claim since it is difficult to demonstrate. However, Patrice Garneau supported Pangea's claim. During an interview he stated: ''Pangea will buy land based on its market value. If a farmer comes in with a highest bid, Pangea will not compete, and I've seen it happen.'' (farmer and Pangea partner, personal communication).

Scalability for many farmers is also a challenge. Pangea brings knowledge and expertise into the co-enterprise which was acknowledged by the Patrice Garneau: ''Cash crops were considered as bad business, for years. Pangea is allowing us to understand how we can make money with a different commodity'' (farmer and Pangea partner, personal communication).

From a model perspective, it is challenging to appreciate how it can expand beyond a dozen partnerships in Eastern Canada, if Pangea remains compliant with its current approach. It has seven partnerships already that have taken almost two years to start. Every co-enterprise is extremely time consuming since proximity is critical to the success of each enterprise. Patrice Garneau even believes that Pangea has its limitations: ''The model has limitations. I'm not sure Pangea can expand beyond 10 or 15 partnerships'' (farmer and Pangea partner, personal communication).

Another respondent, Robin Godin Gauthier, had a different perspective on Pangea's strategy and how scalable it is: ''We do believe that the model is scalable. We are committed to processing but we need good partners. We want to build a crushing plant for Patrice so he can develop the regional market'' (Pangea's Agrologist, personal communication). This statement is based on how the model can support vertical integration, something a small-scale farm is not able to do under normal circumstances. Vertical integration is something that Pangea is very interested in for its AOP's because they see it as another way of reducing the risk of AOP's not be able to meet rents (Charlebois and Summan, 2014).

Agriculture is a capital-intensive industry, as capital cost affects the viability of agricultural investments. Co-enterprises created by Pangea lowers the cost of capital, and helps mitigate financial risks for the farmer operator (Deinenger, 2013).

It is also difficult to see how current partners would want more co-enterprises as part of the network. Incentives to find new farmers for current partnerships remain ambiguous. Finally, political factors were considerably influential in Pangea's case. One can also venture to state that Pangea underestimated political forces. Segregation or even marginalisation became evident while assessing the point of view of a farmer. The UPA distanced itself from farmers opting for a partnership with Pangea. The farmer interviewed was surprised to realize after a while that his own union made him an outcaste: ''The UPA never approached me about Pangea, at any time. The UPA always supported us, but not since Pangea has been involved. It surprised us'' (Patrice Garneau, farmer and Pangea partner, personal communication).

In its inception, Pangea made a case to the provincial government and ask it not to intervene in any way. Pangea stated in meetings that its intent was to create wealth for regions, beyond agro tourism and natural resources. Pangea made a conscious effort to meet with officials beyond farming. Marie-Christine Éthier, Director of Communications, stated that, ''Being accepted by communities was a priority from the start. With what happened between the region of Lac St-Jean and the National Bank'' (personal communication).

Transparency also became key for Pangea as it battled disapproval. They met different key political and economic figures and posted key information on their website on a regular basis. Robin Godin Gauthier, Pangea's Agrologist, explained that, ''Pangea is very transparent. As soon as we bought land and created a partnership, we posted everything on our website, so a registry won't make much of a difference to us'' (personal communication).

Attributes of communities mirror the political and economic reality of the system. These are elements that are not easy to change. These elements can be socio-economic, technological or even judicial. The concept of limited partnerships appeared difficult for farmers to understand. Some did not believe what Pangea was promising. Staff at Pangea have spent a great deal of time explaining the concept due to the fact that most farmers are inherently not accustomed to partnerships. Marie-Christine Éthier, Director of Communications, stated that, ''The UPA was willing to meet with us at the beginning, but afterwards, they refuse to meet with us. They felt that the model was too good to be true'' (personal communication).

Pride of land ownership also came up as an attribute. In Pangea's case, while farmers are mostly proud of their farmland as they see it as their legacy, some have made the observation that most farmers lack the skills to operate a farm on a much larger scale. Even further, Sirois suggested that farmers do not have the same level of professionalism one can find in other sectors. However, some farmers do approach Pangea with an objective that is not compatible with Pangea model. As Robin Godin Gauthier stated, ''We need partners who are entrepreneurs and are willing to learn'', and he continued, ''Many come to us with extreme financial difficulties,

or they just have the wrong personality'' (Pangea's Agrologist, personal communication). Similarly, Charles Sirois stated, ''It's amazing how many farmers don't know how to farm on a larger scale. Training is key. They rarely know what their returns actually are''. He went on further to say, ''What does business mean in agriculture? It's different than in other sectors. It's a much more sensitive business than other sector I have been involved with. There is also lack of professionalism in agriculture. Most don't seem to have a preoccupation around productivity. They are protected all the time. The fact that mistakes in operational farming should be compensated by society is a strange belief'' (Co-founder of Pangea, personal communication).

Most rural communities have embedded rules that affect the discourse between agents in a political economy. Trust seems to be a very important factor which rides on the whole notion that partners in rural communities are trustworthy. Robin Godin Gauthier commented on the issue of trust: ''Pangea basically gives partners keys to the house, so trust is very, very important'' (Pangea's Agrologist, personal communication).

Trust is likely the most significant vulnerability of Pangea's model. Both Pangea and rural communities appear to be at odds when evaluating rules which influence their behaviour. Pangea had to earn its social license throughout the process as it was not seen as a member of community. Also, Pangea's core values differ from traditional, artisanal farming. It does not seem to appreciate why society should support operational mistakes made by farmers, which in turn nurtures a culture of neglect and misuse of resources. What became clear is that Pangea had to manage an environment in which most entrepreneurs felt they operated under the protection of the UPA. Pangea underestimated how difficult and unpredictable the UPA would be.

Action Arena

Looking at farmland management as a political economy, some groups appear to have fared better than others. The UPA, for example, was very vocal for a while but one respondent mentioned that the group may have neglected much larger issues in the process. Despite Pangea's good intentions in reaching out to the community, opinions and perceptions shifted. Director of Communications, Marie-Christine Éthier explained, ''We met with regional chapters and people at head office. At first, the message was well received. But later we realized that the UPA was not pleased with what Pangea was doing'' (personal communication).

Pangea was not able to explain why these shifts in perception were occurring. Pangea felt it was important to protect its partners, but were not sure why it was doing it, or if it was needed. From a communications perspective, the will is to make farmers the face of Pangea. Robin Godin Gauthier believes that, ''The UPA demonised Pangea, but they have much bigger problems to deal with in the near future. They will likely stop talking about Pangea. While they were dealing with us, they did not see other issues emerging like TPP (Transpacific Partnership) or CETA (Comprehensive European Trade Agreement)'' (Agrologist, Pangea, personal communication). Katy Dupéré also stated that, ''The UPA is not really a threat. They have a political position to defend and that's what they do. But what is clear though is that we are not land grabbers. Pangea's model is largely misunderstood'' (in-house Lawyer, Pangea, personal communication).

A great deal of time was spent addressing issues and managing political agendas within the establishment of farmland governance. According to Pangea's Co-Founder, Serge Fortin: ''Our communication strategy is based on transparency, availability, and honesty. I have spent more time explaining, even justifying the model than actually working with partners, but things have calmed down'' (personal communication).

Mr. Fortin, a farmer, became the spokesperson for Pangea, but gave other partners the opportunity to speak for themselves. At the commission, both Mr. Fortin and Mr. Garneau testified providing Pangea farmers with a voice. Even though it was clear that the UPA was purposefully attacking Pangea, the communication strategy never acknowledged the farmer's union in its communication strategy. ''We never mention the UPA in our communication strategy. We conducted many face-to-face meetings. They seem to be more productive'' (Marie-Christine Éthier, Director of Communications, personal communication). Pangea mentioned it has no regrets with its communications strategy and would adopt the same approach again. Charles Sirois stated, ''We meet every year to build a family, the Pangea family. We are creating our own UPA, really'' (Co-Founder of Pangea, personal communication).

Pangea's aspirations is to create a knowledge network to support families and farms, which is an area served mainly by the UPA in the province. Pangea is likely perceived as a threat. It seems that members have raised concerns about other issues, beyond farmland management. The UPA has been much less active after the commission. Trade agreements are a great source of concern for farmers in Quebec and have become more important issues for the UPA. Pangea is now looking at Ontario as a potent market for its model, the largest province in the country. As Robin Godin Gautheir noted, ''Ontario is a different market. They seem to not have that regional, protectionist mentality. This is why we want to expand in Ontario in the future'' (Pangea's Agrologist, personal communication).

The arrival of Pangea also jumpstarted a cognitive process which has made many young farmers realize that capacity is a challenge. In order to grow and to run a sustainable operation, it is critical to own more land. More young farmers are having that debate right now. But growth for Pangea will likely remain a challenge. It became clear during interviews that the proximity to offer support was key for co-enterprises. Jean-Paul Tardif, Director of Operations at Pangea, stated, ''We encourage farmers to call us and to seek some advice. Typically, during the first year though, they like to show they know things. But after, they get more comfortable, more vulnerable with Pangea.'' He went on to say, ''We hope to get 20 partners in Quebec, perhaps more in Ontario. The important thing is proximity. We need to provide the proper support on site for the model to work'' (personal communication).

Expectations of farmer-operators that affect Pangea's ability to manage a greater number of limited partnerships is high. The support provided is time consuming and costly. Keeping a lawyer in-house, for example,

is unusual for a firm of this size. At the beginning, Pangea insisted in having a lawyer in-house to deal with farmers and partnerships when the company could have sought council externally and transacted through any well-known legal firms in Montreal. Katy Dupéré explained ''Pangea wanted me to be in-house, to be close to Serge, and farmers. At first, it would have been more difficult for him if I would have been external'' (in-house lawyer, personal communication). Dupéré has now left Pangea and has her own practice. However, she remains committed to serve Pangea in the future. Most of Pangea's limited partnerships are not profitable. However, the company expects most to be profitable by year 3. Pangea is confident that this objective will be met.

9. Discussion

Evaluation criteria that impacts interactions and outcomes for Pangea's model in the context of a political economy are difficult to define and assess (see Figure 1). Pangea's approach is certainly in sharp contrast with other existing farmland investment schemes. Irrespective of whether a rural region in Quebec or elsewhere aims to attract investors, increased land values necessitate institutional innovation to improve land governance. Pangea's arrival in the political economy of farmland management allowed most to recognize that some gaps are perceived to exist in the legal framework, whether gaps do exist or not. We could also argue that western societies may need to reflect more on what is and what is not acceptable in terms of farmland ownership and governance for their country.

Looking at Pangea and agriculture, it is relatively easy to conceive of the relationships between financiers and agriculture as an unnatural coupling. This reflects two key assumptions that underlie much of the research on the ''financialization'' of food. The first is that finance and agriculture represent two distinct sectors that have been brought together and thus linked as a result of the business enhanced hype in agriculture-based investments. While this opposition is based on the fact that agriculture is meant to create wealth by way of physical effort, the finance sector is, in some ways, often credited for generating wealth in a virtual fashion. Pangea makes this fundamental dissimilarity more obvious between the two worlds. The financial sector represents an unnatural or artificial influence on agriculture, undermining the normal course of ''price taking''. Finance is about control, hedging and most importantly, it is about distorting the ordinary functions of agrifood markets. Pangea's opponents have galvanized the distrust expressed towards the ''financialization'' of food (McMichael, 2012). What is often missing from these exchanges within a political economy is an understanding of what ''financialization'' looks like in practice. These misunderstandings could lead to confusion, fear and prejudgement, as it did with Pangea. No mediation mechanism to accommodate discrepancies is in place, which only can make the situation worse.

Beyond the model, the most interesting aspect of Pangea is how dissimilar both Mr. Fortin and Mr. Sirois are. The common denominator is that both are highly successful business people in telecommunications. It is difficult to believe the two would create Pangea on the basis of greed as both are arguably financially independent. While Mr. Fortin is a multi-generation farmer in Quebec, Mr. Sirois is a mathematician and banker and has never worked on a farm. But Mr. Sirois is arguably one of the most well-known business persons in the province and in the country. This may have contributed to the negative perception of Pangea by the UPA, seeing the company as a speculator and a land grabber. Mr. Sorois' influence is well recognized but the association between himself and Mr. Fortin seems complimentary. One comment was made which captures how Pangea dealt with Mr. Sirois notoriety: ''Charles Sirois may not be a farmer, but he knows how to start businesses. That is what he does well. We weren't trying to either hide or to promote Charles just because it was not really relevant for our strategy'' (Marie-Christine Éthier, Director of Communications, personal communication).

Farmland values are certainly a bellwether of the financial health of agriculture in Canada. As a result, producers, lenders, policymakers, and media are searching for signals and methods to provide sound stewardship in the future. The importance of public education on matters related to farmland management, economic development and resource utilization cannot be over emphasized. Local communities could embrace new models to support small-scale farms as long as they are aware and well informed of implications and of the need of their responsibility in nurturing wealth creation and ensuring sustainable resource utilization.

What may have added to the anxiety was the fact that local communities in many areas in the province of Quebec may lack the ability to assess the technical and economic viability of investments, to identify key challenges associated with them, to effectively negotiate intricate contracts, or to enforce compliance with such agreements even if judicial infrastructure were available. This, of course, was fuelled by the highly organized and well-resourced UPA which capitalized on specific attributes of rural communities to generate more conflict. Pangea's Co-Founder Mr. Sirois stated, ''I never expected so much opposition by the union. They state they don't want speculators, but I don't either. They just don't believe us'' (personal communication).

The Pangea model revealed an underlying fundamental problem of lack of faithfulness and/or trustworthiness on the part of some of the parties involved in the conflict. The UPA and the Parti Québécois strongly opposed the model, even two years after the first limited partnership was established. For instance, the projected gains in the community, direct and indirect were found to be grossly unbelievable during visitations in different regions. In addition, Pangea was perceived as an urban agent, attempting to control agriculture in regions. Interactions led to disbelief. Many misunderstood or did not understand the model and assumed farmers became Pangea employees. Patrice Garneau spoke against this misunderstanding, saying, ''Most people misunderstand the Pangea model. Most thought we became employees of the firm and worked for Pangea, which obviously is not the case'' (farmer and Pangea partner, personal communication).

Strong political will and commitment to a healthy environment on the part of Pangea, and truthfulness and fairness on the part of investors was, and continues to be, essential in the implementation of the plan as fears of Pangea have dissipated over the last year.

This case study underscores the importance of public awareness on matters related to sustainable financial models in farming, and on matters of development and resource utilization which are vital, if local communities are to participate effectively in maintaining a vibrant agrifood economy. Protecting the interest of local entrepreneurs is also critical. The persistent opposition from the communities and other more well-organized parties opposed to Pangea increased attention on this new model and the issue of farmland ownership and eventually resulted in a parliamentary commission. Pangea demonstrated resolve throughout the process and opposition against the model has almost disappeared. Pangea's initial intent was based on geo-economics, but the company was committed early on to addressing the political aspects of farmland ownership. It broadened its action arena as it went along. Such a strong political will and commitment to a healthy environment on the part of Pangea only discloses that truthfulness and fairness on the part of external investors in agriculture are essential.

Some limitations ought to be considered when reading the case. Firstly, this case study relies only on the co-authors' specific knowledge in the sector to accurately depict the agents involved in the sector. It also relies on the types of relationships and how they interact since an in-depth analysis was only achieved by involving the targeted unit involved in the case. Since this is a singular case, findings in this case may not be necessarily applicable for other cases. Nevertheless, it does provide a sense of how one model may be considered for future endeavours. Furthermore, the chosen methodology only provides the scientific community with a ground for an effective consolidation on farmland management concepts, as it offers practical knowledge and contributes to the scientific development of farmland governance.

10. Conclusion

The latest increases in farmland prices, and returns driven by rising commodity prices have led to significant increases in both the value of and rental rates associated with farmland exploitation (Paulson and Schnitkey, 2013). At the same time, ongoing research is needed to examine changes to agriculture policies to protect farmland in urbanizing counties over time. Investing and farming are increasingly becoming interchangeable. The Pangea case speaks to how both worlds are colliding and how conflicts could emerge in political economies. Financial markets are increasingly virtual and abstract, separated from the physical form of agricultural commodities. The Pangea approach may be the most effective and it certainly offers one avenue of attracting major capital to farming and of allowing farming families to access this capital (or its usefulness) to grow and sustain family farming enterprises.

Certainly, over the last few years it has been noticed that economic cycles have an impact on urban development and pressures from both the residential and business sectors. This factor should be considered in future research. Furthermore, studies that examine locations over time will help understand farmers' methods of coping with different economic circumstances.

Future research should look at how scalable the Pangea model is and how it can be adapted for regions where food insecurity is very real. Properly assessing how transferable the model is remains to be seen. Many industrialized countries with large amounts of arable land that investors might want to bring under usage have a limited appreciation of the resources at their disposal. The most appropriate ways to add value to these, while using human capital already available, should be further developed. Pangea's model represents one method to contribute to growth and equity on a broader scale for farming and agriculture. Mr. Sirois has expressed that Pangea has ambitions beyond Canada, ''My goal is to convince the World Bank to invest in Farmland, but they ask me to prove it, so we did'' (Co-Founder of Pangea, personal communication).

It is the complexity and messiness of the financial sector's involvement in agriculture that stands as a key lesson of the Pangea case and that offers the most fertile ground for future research. After almost two years the model appears to be delivering, but a more longitudinal evaluation is warranted. It should expand on a much larger scale to see how Pangea's approach can support developing countries. From this case study, it would appear that Canada is a test for other projects which would likely be more influential in addressing the issue of the lack of access to capital by farmers and its relation to global food insecurity. But this case suggests that the support system for co-enterprises needs to be refined in order to support growth of the model.

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