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Article

# Conventionalization of Alternative Agriculture and the Intervention of External Investors: Case Sharing Community-Supported Agriculture Farm, China

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**Abstract:** The trend of alternative farmers adopting conventional farming methods, known as conventionalization, has become increasingly prevalent. External investment can be a catalyst for the conventionalization of alternative agriculture. The study seeks to examine the dynamics through which external investment and investors facilitate the conventionalization of alternative agriculture. A study was conducted on a Sharing Community Supported-Agriculture (CSA) Farm, with data being gathered through semi-structured interviews and analyzed using thematic methods. The findings indicated that (1) the low economic sustainability of Sharing CSA Farm leads to an influx of external investment; (2) external investors compel the farm manager to relax adherence to the ecological values and principles of organic agriculture and shift towards specialized and intensive farming in order to make the farms profitable; (3) a new business model for Sharing CSA Farm is adopted to further support the conventionalization. This study can provide new implications for improving the economic sustainability of alternative agriculture.

**Keywords:** organic farming; alternative farming; conventional farming; external financing; economic sustainability



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## 1. Introduction

What role do external investors play in the conventionalization of alternative agriculture? Alternative agriculture, which includes practices like organic, sustainable, regenerative, and low-input agriculture, fundamentally emphasizes organic or near-organic approaches [1]. Alternative agriculture can enhance the sustainability of environmental and social-ecological systems, as well as open up new opportunities for smallholder farmers to thrive in the rapidly changing agricultural sector [2–4]. Advocates for alternative agriculture promote smaller farming units, decreased reliance on synthetic chemicals and energy, environmental preservation, and increased direct sales to consumers [5–7]. But alternative agriculture farmers often face challenges such as low alternative agriculture yields compared to strong demand for alternative foods (e.g., in the United States, organic berries were among the best-selling items in 2023, generating approximately \$1.6 billion in sales, followed by packaged salads and apples [8]). The global market for sustainable agricultural products reached \$13.54 billion in 2023 [9]. The discrepancy in the production and consumption volumes of organic products appears to establish a market foundation for the conventionalization of alternative agriculture [10,11].

Simultaneously, widespread adoption of organic certification standards on a global scale increases awareness of the potential that a transition to alternative agricultural practices can be achieved by simply replacing conventional inputs with those permitted in alternative practices [12]. This may be a financial incentive available to alternative farmers [13], as the “mixed” practices may introduce economies of scale and production methods that resemble those used in conventional intensive farming systems. In this regard, a grow-

ing influx of external investment has been directed towards alternative agriculture, aiming to profit from its conventionalization [14].

Numerous studies have recognized that the conventionalization of alternative agriculture can be boosted by external investors [12,15–17]. The investors are not solely driven by agroecological principles and values and seek social and environmental sustainability through their investments; but they aim to achieve profitable economic returns through alternative agriculture [18,19]. They advocate for the conventionalization of alternative agriculture as a business strategy. External investors may not directly affect the practices of alternative agriculture; rather, their interventions in alternative agriculture can be examined in relation to the degree to which alternative farmers are distant from the principles and values of agroecology, the consequent changes in farming practices, and the business pattern of farms [14,20]. The process of conventionalization is recursively shaped by three processes: (1) the adaptation of agroecological principles and values to meet the expectations/requirements of external investors; (2) the integration of new production philosophies and values into the practices of alternative agriculture; (3) the development of new business patterns that support conventionalized alternative agriculture.

Alternative agriculture can receive investment from external investors who integrate their conventionalization strategies into alternative agriculture [21]. As these investors aim to maximize profits, they may compromise on the core principles and values of alternative agriculture—such as biodiversity, self-sufficiency, and long-term nutrient cycling—by introducing specialization, intensification, and economies of scale [22–24]. In this case, crop rotation, intercropping, mixed cropping, and on-farm soil fertility regeneration might be ignored [13]. While adapted production philosophies and values, along with consequent farming practices, can boost economic returns, they can partly deviate from the ecological and long-term sustainability goals of alternative agriculture [25]. This dilemma has been a subject of extensive debate on comparing conventionalized and alternative agricultural methods [14,26,27]. Besides that, the business pattern of alternative agriculture is generally designed around attempts to bring food-related actors who are, more or less, engaged in seeking an alternative to conventional agriculture [28]. But conventional alternative farmers are more inclined to collaborate with individuals primarily pursuing profits from agriculture with limited attention to environmental and social justice, or consumers who prioritize food safety [29]. The “localization” of production, processing, retailing, and consumption may not be prioritized in conventionalized alternative agriculture. For example, it is not uncommon for conventional alternative farmers to establish long-distance supply chains to cater to a wider market [30].

To date, previous studies have recognized the potential for external investment to facilitate the tendency of alternative agriculture toward conventionalization. However, these studies have failed to recognize its dynamics. That is, how external investment affects the degree of adherence to agroecological principles and values and what changes are brought by external investment in farming practices and business patterns of alternative agriculture. With the growing involvement of external investment in alternative agriculture, further investigation is needed to understand how these investments influence the conventionalization of alternative agricultural practices.

The present study aims to examine the role of external investment in the conventionalization of alternative agriculture. One of the most critical yet challenging aspects of alternative agriculture lies in its economic sustainability [31–33]. Indeed, the failure of alternative agriculture often stems from a strict adherence to the principles and values of agroecology and the consequent lack of sustainable business patterns in practice [34]. This paper helps to fill this gap through an exploration of the intervention of external investment in the conventionalization of alternative agriculture. The remainder of the manuscript is organized into four sections. The second section outlines the methods utilized, followed by the sections presenting and discussing the empirical findings. Finally, the study concludes with key insights drawn from the analysis.

## 2. Material and Methods

### 2.1. Case Introduction

This study drew on a CSA farm. Originating in Japan in the late 1960s [35], CSA has expanded significantly, gaining traction in Europe and North America from the mid-2000s onwards [36,37]. As one of the most prevalent forms of alternative agriculture, CSA is dedicated to providing consumers with fresh, local, environmentally friendly food through local supply chains while simultaneously supporting local farmers [38].

This research selected Sharing CSA Farm as a case study. Sharing CSA Farm, located in Huizhou, Southern China, as its case study, stood out as a pioneering Community-Supported Agriculture (CSA) establishment within the region. Established by Zhang in 2012, Sharing CSA Farm was his third start-up in the sector of alternative agriculture. His initial two attempts at organic farming failed to prove economically viable; however, they provided him with valuable experience in entrepreneurship and organic agriculture. Zhang enjoys a distinguished reputation within China's alternative agriculture community. Sharing CSA Farm consisted of three farms: Country Story Farm, Taikang Farm, and White Horse Farm. White Horse Farm spanned 100 mu (One mu is approximately equivalent to 666.7 m<sup>2</sup>), Taikang Farm extended over 200 mu, and Country Story Farm, dedicated primarily to fruit cultivation, covered approximately 65 mu. In terms of the volume of members, Sharing CSA Farm was among the largest CSA farms in China, serving approximately 1400 families on a regular basis and charging members up to 12,000 at peak times. The majority of members were from the Pearl River Delta region. The business and management pattern, as well as the ultimate outcome of Sharing CSA Farm, offered a clear illustration of how alternative agriculture can be conventionalized in China through the involvement of external investors.

### 2.2. Data Collection and Analysis

The author carried out an investigation of Sharing CSA Farm in June and July 2023. A qualitative approach—semi-structured interviews with the manager and two former employees of Sharing CSA Farm—was adopted for this study. Three formal interviews were conducted in total, comprising two individual 4.5-h sessions with the manager and a 30-min interview with an employee. Semi-structured interviews were employed to gather comprehensive information on five key aspects as follows: (1) the underlying motivations driving the establishment of Sharing CSA farm; (2) the evolution and implementation of organic farming techniques; (3) the breadth of species and varieties cultivated on the farm; (4) the progression towards conventionalized organic farming practices; (5) an exploration of perceptions regarding the conventionalization of Sharing CSA Farm from both managerial and employee perspectives. Data collection was in accordance with ethical standards, with each participant providing informed consent for their involvement in the study and all data being collected anonymously. In addition to this, the author conducted five spontaneous interviews with new farmers whom I encountered at local farmers' markets and documented my reflections from these spontaneous interviews in my fieldwork diaries.

Reports on the Sharing CSA Farm, obtained from official media, governmental agencies, and other agricultural institutions, were another important source of data used in this research. The author collected a total of 14 reports posted between 2012 and 2019 from WeChat (WeChat is a Chinese instant messaging, social media, and mobile payment app). This unique dataset provided a reliable perspective for comprehending the developmental history of Sharing CSA Farm and triangulated the findings with interview data.

The data collected were organized in NVIVO 12 and subsequently analyzed using thematic methods. Information obtained through open-ended questions was coded, and themes were identified and then defined. The first step of the thematic analysis was coding, wherein data exhibiting similar characteristics were systematically organized into corresponding code categories. The second stage was to collate initial codes into groupings by comparing the relations, similarities, and dissimilarities between them. The last stage was to define themes. Table 1 lists the major themes, sub-themes, and theme descriptors

for this research. The themes were used to unpack the role of external investment in the conventionalization of alternative agriculture.

**Table 1.** The list of key themes and sub-themes.

Key Theme	Sub-Theme	Theme Description
Establish Sharing CSA Farm	Benefits and challenges to establish Sharing CSA Farm	Obtaining stable investments to achieve and maintain sustainable agricultural practices
Commitment to founding members	Responsibilities and long-term dedication to founding members	Effectively marketing the Sharing CSA Farm by fulfilling the commitment to founding members
Financial crisis	Uprising financial crisis of organic agricultural production	Immature skills in organic production and farm management, as well as volatile weather
External investors' intervention	Benefits and challenges to engage external investors into Sharing CSA Farm	Increased financial sustainability of Shared CSA farms
Conventionalization of Sharing CSA Farm	Conventionalization as a means to improve the financial sustainability of Shared CSA Farm	Changes in production philosophies and values, alternative agriculture practices, and business patterns

### 3. The Establishment of Sharing CSA Farm

Shared CSA Farm was established through a crowdfunding initiative by individuals who had a strong commitment to food safety and a dedication to investing in organic agriculture. Motivated by a group of friends' dedication to managing fundraising efforts, Zhang was ultimately convinced by their sincerity and assurance that the farm would operate on a non-profit basis. Despite initial hesitation, this led to his acceptance of the managerial role. Zhang and his friend utilized their social networks to advocate for their organic farming initiative and swiftly garnered a cohort of 100 supporters. As discussed between Zhang and supporters, each supporter made a contribution of 10,000 yuan ( $\approx$ \$7000), resulting in an initial capital of 5 million yuan ( $\approx$ \$700,000) in total. These start-up members were entitled to tangible benefits, including a weekly allocation of 10 kg of organic vegetables for a period of five years. These individuals aligned with the philosophy of CSA and refrained from interfering with the farm's operations and management, as in the words of Stephens (2021) that due to heavy emphasis on socio-environmental impacts, alternative farming was likely to rely on patient forms of capital than traditional businesses [39]. Zhang was responsible for farm management and received remuneration equivalent to five percent of the farm's annual profit. In this instance, the business pattern of CSA allowed producers and consumers to share the risks and rewards of organic farming—giving consumers access to high-quality food and farmers financial stability while also re-establishing a connection between consumers and their food and land [40,41]. Zhang gave a detailed explanation of the purpose of crowdfunding in his interview that was published on the WeChat official account of Sharing CSA Farm [42]:

*The farm was initially intended to address the food safety issues that customers brought to light, which may be seen as a self-help approach taken by customers when faced with food safety issues. They took out their 5-year vegetable consumption money to support the farm, which was not operated for profit, but only for addressing our food safety issue.*

Like many CSA farms, the acquisition of organic farming techniques was perceived as an ongoing challenge for the operations of Sharing CSA Farm [26,43]. In 2012 and 2013, Zhang's exploration of organic farming techniques, combined with his limited farm management experience, resulted in reduced yields and inconsistent quality of organic produce, such as variations in product size. The farm's management "hardship" was significantly exacerbated by extreme weather, such as hot and rainy summers, as well as harsh winters. For example, in September 2013, Huizhou experienced a direct hit from super typhoon "Tiantu". Zhang offered a detailed explanation of the impacts of extreme weather on Sharing CSA Farm, as indicated in his published interview [44]:



*The farm had seen several tropical storms, cyclones, and four super typhoons by the end of 2019. We were not very skilled at managing extreme weather at the start. But as we gained expertise, we were able to significantly improve the pre-typhoon preventative maintenance of machines in vegetable bases. Even though we were able to reduce the effects of harsh weather as much as possible, each restoration required a significant financial investment.*

The farm suffered huge losses due to a lack of expertise in typhoon management. As Whitty and Maylor (2009) suggested, effective management of alternative agriculture necessitated a specific toolkit and set of techniques, as well as the deployment of essential skills and abilities to navigate the complexities inherent in alternative agricultural practices [45]. Similar occurrences between 2012 and 2014 placed substantial financial strain on the farm. While Zhang enhanced his management skills gradually, the exploration process incurred financial costs—the initial membership fees proved insufficient for the normal functioning of the farm. To secure more funds, Zhang successfully raised 1 million (≈\$140,000) from 20 new members through the second-round crowdfunding initiative.

#### **4. The Uprising of Financial Crisis: The Intervention of External Investors in Conventionalizing Sharing CSA Farm**

Low membership fees for 120 founding members led to financial difficulties for the Farm. From 2012 to 2014, due to immature organic farming practices, the output of organic crops was only sufficient to meet the regular demands of the 120 members, with no extra organic items to sell in the market. The farm experienced a negligible income over the past two years. Furthermore, the transportation of organic products to the 120 members generated substantial expenses. In order to preserve the quality of organic products, Zhang bought a cold-chain logistics truck and hired a driver for weekly deliveries. The expenses for each delivery to the 120 members ranged from 7000 yuan (≈\$980) to 8000 yuan (≈\$1125). However, as per the agreement for founding members, delivery costs for organic food had been included within their membership fees. The annual membership fee of 10,000 yuan (≈\$14,000) per year was determined primarily by the production costs of organic goods and was insufficient to cover the high delivery fees. Zhang described the farm's delivery service, as reported in Huizhou Daily [46]:

*Direct delivery of our products from the farm to members' homes was provided. We did not work with other courier firms when we set up our organic goods delivery route. This made sure that, within a day of harvesting, our organic goods could be at our consumers' doorsteps.*

In late 2014, Zhang reviewed the financial "health" of the Shared CSA Farm and discovered a shortfall of approximately 1 million yuan (≈\$140,000). The accumulated financial deficit of the farm necessitated Zhang to pursue external investment in order to mitigate the financial crisis. To sustain the farm's normal functioning, the founding three members stepped in as investors, contributing 1 million yuan (≈\$140,000) in 2015 and an additional 1.3 million yuan (≈\$180,000) in 2016. The investment came with certain obligations—a contractual agreement with Zhang stipulated an increase in the number of farm members and further expansion of the production scale for the farm. In this context, the essential investment afforded investors the opportunity to intervene in the farm's management. The continued viability of the Sharing CSA Farm was attained at the cost of compromising the agroecological principles and business pattern that underpinned the CSA.

By late 2014, Zhang had progressively honed his organic farming techniques, as evidenced by the stable yields and quality of various leafy organic greens. However, under the pressure of external investors, he adapted his methods to some extent for the intensification and scaling-up of organic cultivation while still adhering to the standards for organic produce. Their pest control methods included physical barriers such as greenhouses, alongside the use of organic chemicals like odoriferous liquids to deter insects in most cases. To be more specific, Zhang applied significant quantities of organic fertilizer to facilitate rapid

crop growth. Besides that, Zhang primarily opted for specialization over crop rotation and cultivated the consumer's favorite crops, such as tomatoes and choy sum. The practices of conventional alternative agriculture greatly enhanced the economic efficiency of the Farm's organic production. Prices, production costs and profit margins of organic and conventional agricultural products varied greatly in China, as seen in Table 2. The increase in yield per mu and the decrease in product prices were used to explain the rationale of conventionalizing organic farming.

**Table 2.** Prices, production costs and net profits of conventional products and Sharing CSA farm products in 2019.

	Prices (Dollar/kg)	Cost (Dollar/mu)	Net Profit (%)
Conventional produce	About 2 yuan ( $\approx$ \$0.3) to 8 yuan ( $\approx$ \$1.1)/kg	About 3986 yuan ( $\approx$ \$560)/mu	22% to 70%
Organic produce	About \$4 to \$9.8/kg	About 15,000 yuan ( $\approx$ \$2100) to 22,500 yuan ( $\approx$ \$3100)/mu	10% to 30%

Source: Department of Agriculture Rural Affairs of Guangdong Province [47] and Zhang.

This scale-up and intensified farming practices mirrored the essence of conventional alternative agriculture—maximizing yields through a range of farming measures in compliance with organic product standards [48]. The primary goal of Sharing CSA Farm shifted away from environmental sustainability and agroecological principles, yet this change has improved the farm's revenue from organic products. As indicated by Zhang, the total farm yield increased to 2000 kg per mu from the previous yield of around 500 kg per mu. The cost of the organic radishes we grow decreased to 16 yuan ( $\approx$ \$2.4) per kilogram. Table 3 produced a comparison between before and after the maturation of organic farming techniques and management practices of Sharing CSA Farm.

**Table 3.** Yields, product losses, prices, and net profits of organic products before (2013) and after (2019) the maturation of organic farming techniques and farm management.

	Yield (Kg/mu)	Yield Loss (%)	Prices (Dollar/kg)	Net Profit (%)
2013	Around 700 kg	Over 70%	– <sup>1</sup>	Less than 10%
2019	About 1000 kg to 3000 kg	50% to 60%	Around 30 yuan ( $\approx$ \$4.5) to 70 yuan ( $\approx$ \$10)	10% to 30%

Source: Zhang. <sup>1</sup> At this stage, nearly all the produce from CSA Sharing Farm was distributed to the founding members, leaving no surplus to sell in the marketplace.

## 5. New Business Pattern Underpinning Conventionalized Alternative Agriculture

Strategies of membership management that external investors proposed formed the new business pattern of Sharing CSA Farm. The investors attributed the farm's financial losses to providing delivery service for the founding 120 members and suggested a quick turnaround in profitability by allowing contracts with these members to expire without renewal. Under pressure from external investors, Zhang terminated its contractual relationship with 120 founding members upon the expiration of their contracts in 2017. Founding members, who were initially dedicated to achieving social, economic, and environmental benefits through the CSA model, received increasingly less respect from the management team of Sharing CSA Farm.

As suggested by external investors, targeting consumers of Sharing CSA Farm should be the prevalent consumers of organic food in China [49–51], who prioritized food safety over the socio-economic and environmental advantages of alternative agriculture. Zhang and his team employed various strategies to recruit this type of organic product customers, including utilizing the WeChat platform, distributing leaflets about Sharing CSA Farm in

high-end residential complexes and organizing one-day tours for people interested in their organic products. Following this, Zhang offered a range of gift card options to members, as seen in Table 4. The market strategies to recruit new members completely changed the CSA business pattern—an “agreement and commitment” between farmers and consumers to share risks and benefits from alternative agriculture—but catered to achieve the investors’ goal of generating short-term profits [40]. The market and business strategy proved effective: during its peak, Sharing CSA Farm had a membership of up to 12,000 and generated annual revenues exceeding 30 million (≈\$4.2 million dollars). The substantial market demand enabled Zhang to adhere more closely to scaling and intensifying production. Zhang explained his market strategy in his published interview [44].

*At this stage, members are no longer required to pay tens of thousands of dollars upfront; even RMB 1000 yuan (≈\$140) will do! The flavor of our veggies is so much better that it is difficult to become used to eating them and then transition to something else due to the high quality of our food, especially if the youngsters in the family do not like it.*

**Table 4.** Gift card options and balance for Sharing CSA Farm members.

Gift Card Options	1000 Yuan (≈\$140)	2000 Yuan (≈\$280)	5000 Yuan (≈\$703)	10,000 Yuan (≈\$1407)
Gift card balance	1100 yuan (≈\$154)	2200 yuan (≈\$308)	5800 (≈\$816)	12,000 yuan (≈\$1688)

Source: Zhang.

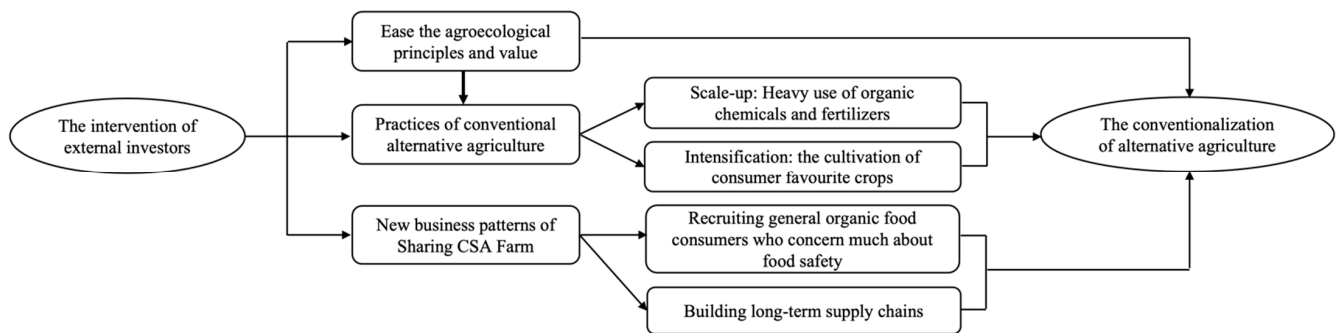
Sharing CSA Farm expanded the business by partnering with neighboring farms. Introduced by an investor, Zhang began to explore the potential of collaborating with neighboring farms to solve the high volume of orders. The selection of partner farms was based on a rigorous evaluation of the quality of goods from potential partnering farms. If the farms were in close proximity, such as those situated within the Pearl River Delta region or Guangdong province, Zhang conducted on-site visits to have a comprehensive understanding of the farms and their products. Once it was confirmed that the farms’ produce met their stringent standards, a partnership was then established. For instance, CSA Sharing Farm expanded its collaboration to include farms in other provinces and cities, such as Chuxiong and Dali in Yunnan and Kurten in Xinjiang. These partnerships helped complement its offerings, particularly during off-season periods and met the diverse niche demands of consumers. However, the rapid expansion of business through non-local partnerships detracted from the foundational goals of CSA—supporting local farmers and fostering local supply chains [50–52]. The partnership business strategy was primarily designed to cater to steadily growing consumer demand for diverse, fresh organic produce and thus accommodated investors seeking rapid returns. But another fundamental aspect of CSA, which lay in the establishment of local product supply chains to ensure the quality of produce and, at times, to support local communities [29], was weakened as a result. As Zhang said the following:

However, the conventionalization of Sharing CSA Farm, driven by external investors, proved ineffective in addressing the farm’s economic challenges. Despite Zhang’s advancements in organic farming techniques since 2014, the high rate of wastage for organic produce led to diminished profit margins. The revenue generated from the significant sales of organic produce was inadequate in offsetting the operational cost deficits accumulated in prior fiscal periods. Zhang and his investors decided to declare the farm bankrupt in 2019. All of the assets were then sold at auction, and the proceeds raised was used to pay off the remaining obligations. That same year, the farm’s operations came to an end.



## 6. Conclusions

This study aimed to shed light on the dynamics of how external investors act on the conventionalization of alternative agriculture. The low economic sustainability of Sharing CSA Farm leads to an influx of external investment into the Farm. External investors, primarily concerned with rapidly achieving profitability, exert pressure on the farm manager to relax adherence to ecological values and principles of organic agriculture and transition towards specialized and intensive farming practices [5,6,14]. The significant changes in the business pattern of Sharing CSA Farm, including a notable expansion in membership among individuals who prioritize food safety and the establishment of a long-term supply chain, are designed to support conventionalized alternative agriculture. The process of conventionalization of Sharing CSA Farm is recursively shaped by the three processes under the intervention of external investors (see Figure 1).



**Figure 1.** The conventionalization of Sharing CSA Farm under the intervention of external investors.

This research contributes significantly to the literature on the conventionalization of alternative agriculture. While specifically focused on this subject, the study's findings also provide broader insights into the role of external investment in conventionalization. Scholars in the realm of alternative agriculture acknowledge the crucial role played by external investors in conventionalization [18,19,53,54], yet there remains a lack of exploration into the specific dynamics through which external investors intervene and facilitate this process. This study thus enriches the literature on conventionalized alternative agriculture by highlighting the critical impact of external investment [15,17]. The findings of this research can pave the way for future studies on how such interventions contribute to practical and social changes resulting from the interaction between intervenors and the actions of alternative farmers.

This study develops propositions regarding the impact of external investors' interventions on the conventionalization of alternative agriculture. First, the high costs associated with adhering to the principles and values of alternative agriculture, acquiring necessary farming skills, and managing potentially lower yields pose significant challenges in this sector. Governments can assist farmers by providing increased resources and technical guidance. Second, there is a need for alternative agriculture practitioners to be more conscious of the suggestion that the engagement of external investors might improve the alternative farm's economic viability. The key is to ease the tension between maintaining the agroecological values and principles and the modifications made to align with economic objectives. Finally, a critical concern is whether alternative agriculture farmers can counteract the conventionalization tendencies in alternative agriculture. In this regard, the way in which alternative agriculture farmers interact with external investors needs further exploration. This study aimed to advance preliminary findings and set the stage for future research on how external investment can better support alternative agriculture.

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