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Countering agribusiness: analyzing the potentials for agroecology in Mendoza's Valle de Uco through a territorial perspective

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ABSTRACT

Agribusiness plays a key role in current climate and food crises, and agricultural change is a recurrent topic in transition studies. In Argentina, many question the industrialized food sector, proposing agroecology as an onto-epistemological alternative. This paper analyzes the potential for countering agribusiness in Mendoza's Valle de Uco through a territorial approach, understanding territoire as the material, ideological, and institutional relations among humans and with non-humans. Our analysis highlights agroecology's potential through collective values, value chain control, and healthy food demand, but also reveals limited institutional support, funding access, and minimal public contestation due to the strong regional wine identity.

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1. Introduction

Modern societies are engaging in increasingly disruptive patterns of interaction with the biophysical environment, leading to climate change and ecological crises. This is widely perceived as not merely a side effect but a defining feature of modernity (Descola 2005; Haberl et al. 2011; Latour 2017). Large-scale and radical societal changes are necessary to solve this grand societal challenge in order to reach sustainability. There are, however, different positions regarding what exactly this transition should look like. Contemporary research offers a broad variety of approaches to sustainability transitions, according to scholars' discipline and the theoretical frameworks they mobilize (e.g. science and technology studies, political ecology, social ecology, postcapitalism, degrowth, etc.). The different approaches differ in their understanding of what should be the major drivers of sustainability transitions (technical, institutional, social and/or ecological) and what should be transformed (techniques, practices, rules or values).

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In response to these crises, contemporary research has developed various approaches to understanding and promoting sustainability transitions. The most famous approach, and the one that founded the field of sustainability transition studies, prioritizes socio-technical transitions, focusing on the co-evolution of technological, institutional and economic changes (e.g. Geels 2002; Geels and Schot 2007; Grin, Rotmans, and Schot 2010). However, scholars from a variety of disciplines, brought together by their common understanding of socio-ecological systems beyond modernity's human-nature dichotomy, have critically engaged with sustainability transition studies. The focus on sustainable societal relations with the non-human (addressed as 'nature' in the modern ontology) has given rise to debate over the potential for holistic social-ecological transformation (e.g. Brand, Görg, and Wissen 2020; Descola 2005; Görg 2022; Görg et al. 2017). Since the 1980s, various critical approaches have examined ecological degradation. Studies from political ecology, social ecology, ecofeminism and critical agrarian studies point to 'the social relations of production, power and property relations as the root causes' (Dietz 2021, 601). From this perspective, the climate crisis is placed in the broader context of a civilizational crisis (e.g. Lander 2015). According to Escobar (2018), this crisis is in fact ontological, linked to a particular way of world-making of the dominant form of modernity, disconnected from nature. In the same way, Porto-Gonçalves (2006) affirms that the Eurocentric anthropocentrism positions science and technology as instruments of domination over life (nature). Sustainability transition studies scholars, corporate strategists and policymakers tend to consider technological innovations as the cornerstone of sustainability transitions. In contrast, radical scholars who foreground social structures and power relations in their analysis of environmental degradation critically refuse both the techno-centered analytical approach and the practical techno-centered solutions, considering them unable to cope with socio-ecological problem constellations (Bertinat and Argento 2022; Dorn 2025; Dorn, Hafner, and Plank 2022; Görg et al. 2017; Pichler 2023; Svampa 2022) due to their extractive and neocolonial logics (Fressoz 2024; Izoard 2024; Mies and Bennholdt-Thomsen 1999).

We argue that the socio-technical approach does not challenge the dominant industrial and capitalist system that lies at the heart of the current crises, highlighting its lack of consideration of social, environmental and spatial embeddedness in transformation dynamics.¹ We hold that a comprehensive understanding of the context and conditions of socio-ecological transformations thus requires a systemic spatial approach. In this article, we propose adopting the territorial approach developed by Pachoud et al. (2022). Based on French-speaking geography literature and nourished by decolonial and socio-ecological transformation literature (Del Biaggio et al. 2025), we understand the concept of *territoire* as an outcome of the relations between humans, and between humans and non-humans (Descola 2005; Giraut 2013; Magnaghi 2020). Detached from the political realm, *territoire* is considered as space, socially constructed, culturally marked and institutionally regulated (Lopez and Muchnik 1997). This heuristic framework highlights three dimensions of situated transformations – the material, the ideological and the institutional – and their interdependencies (Pachoud et al. 2022). Thus, *territoire* allows us to analyze, situate and politicize more systematically the various interrelated

¹We prefer to use transformation rather than transition to differentiate between the socio-technical approach linked to transition and the socio-ecological approach linked to transformation (Pachoud et al. 2022).

dimensions of transformative processes. In particular, it integrates the material dimension, which allows us to restore the focus on sharing and caring for territorial resources and the underlying practices; the ideological dimension, which relies on the imaginaries of local people that shape and are shaped by their values; and the institutional dimension, which integrates local actors' capacity for self-governance and their relations with institutional levels.

Agribusiness plays an important role in the current climate and food crises, and agricultural change is a recurrent topic in transition studies (Plank, Hafner, and Stotten 2020). Following McMichael (2012), we understand agribusiness as the corporate organization of agriculture that encompasses not only farming but also the provision of agricultural inputs and the processing and distribution of farm products. The agribusiness model is characterized by its emphasis on industrial efficiency, global market integration, and the concentration of decision-making power in corporate entities (Borras et al. 2016). With the concept of the green economy, twenty-first century capitalism proposes a technical and management-oriented transition focused on ecological modernization and agrofuels. However, the example of 'soyification' in Argentina shows how this can lead to numerous socio-ecological conflicts in an agro-exporting country (Gras and Cáceres 2020). In Argentina, soyification has been accompanied by an expansion of the agricultural frontier, a restructuring of the agricultural production system and an intensification of monoculture (Reboratti 2010). Most recently, the Covid-19 pandemic and severe inflation and economic crises have further expanded the spectrum of crises in the country. In this context, several actors are increasingly questioning Argentina's industrialized food sector, and agroecology has experienced a boom in many regions. These initiatives aim to recover traditional knowledge, defend their territories and promote agroecological practices as both an ecological and social alternative (Wahren 2020). In this way, agroecological actors are trying to refocus food production from the market's needs to the people's needs, with the aim of increasing food autonomy. Agroecology thus reflects a deep transformation beyond technological progress.

In this paper, we analyze the potentials for agroecological food production in the Valle de Uco in Mendoza, Argentina, using the territorial approach to transition studies. Our research examines how agroecological communities and initiatives challenge the conventional imaginaries, practices and rules linked to agribusiness that dominate the *territoire*. While the Valle de Uco is not a traditional monoculture production area, it is dominated by an international and export-oriented wine industry. At the same time, several local initiatives are advocating for a different ecological and social model through agroecology. By addressing competing imaginaries, identities, practices, social organization as well as power asymmetries through the lens of multidimensional *territoire*, this paper intends to model a way for researchers and practitioners to explore possible sustainable pathways.

This paper is structured as follows: In section two, we introduce the territorial approach as our theoretical-conceptual framework for analysis and outline our methodology. In section three, we contextualize Argentina's current agricultural sector, focusing on agribusiness and struggles for agroecology and autonomy. In section four, we analyze the case of alternative food production in Mendoza's Valle de Uco. In the fifth and final section, we discuss the results and draw a brief conclusion regarding the research question, followed by an illustration of the advantages of the territorial approach compared to other transition approaches.

2. Theoretical framework: the territorial approach

Assuming that transformations towards sustainability are fundamentally ontological and require a profound shift in the values, imaginaries and practices of modern society (Porto-Gonçalves 2006; Escobar 2018), the French concept of *territoire* appears as a useful tool to help transition researchers understand the multidimensionality and complexity of transformational dynamics situated in space (Pachoud et al. 2022). We consider *territoire*, in its postmodern conception, as a geographical space that is socially constructed, culturally marked and institutionally regulated, and not linked to the exercise of state power within administrative boundaries (Debarbieux 1995; Lopez and Muchnik 1997).

Far from conforming to fixed limits, *territoire* is considered a reticular space (Giraut 2013; Painter 2010) based on relations between humans, and between humans and non-humans (Descola 2005). It forms a rather coherent biophysical space and is the dynamic product of co-evolution between humans and the environment (Magnaghi 2020). *Territoire* results from the concrete and symbolic appropriation of geographical space and therefore has a strong identity-based dimension (Raffestin 1982). *Territoire* is shaped by multiple and intertwined power relationships and related conflicts (Barbier and Hamman 2021) and is thus at the same time materially, symbolically and institutionally produced (Lopez and Muchnik 1997). For this article, we conceptualize *territoire* as comprising three interdependent dimensions: material, ideological and institutional (Amblard et al. 2018; Di Méo and Buléon 2005). The material dimension of *territoire* refers to biophysical elements and infrastructures that are valued as territorial resources and are the result of interactions between humans and non-humans. The ideological dimension refers to the imaginaries of actors, understood as shared representations among a collective (Debarbieux 2019), which shape and are shaped by values. Finally, the institutional dimension refers to territorial governance structures, including formal and informal institutions, and the effects of top-down institutional policies on territorial governance.

Pachoud and Koop (2024) show that transformations toward sustainability are driven by the relational dynamics of conflicts and possible convergences between the dominant and alternative territorialities that make up a *territoire*. Territoriality is understood as the multidimensional relationships between the *territoire* and the different groups and defines common references within a group from a material, ideological and institutional perspective (Debarbieux 2008; Koop 2021). The various territorialities reflect different ways of being, doing and thinking in the *territoire* and the identity of the different groups. Each territoriality shapes collective imaginaries and has its own expressions in territorial resource management and use practices and the design of institutional arrangements. Through studying conflicts, it is possible to identify oppositions in values, imaginaries, practices and social organizations (Figure 1).

3. Context and methods

Below, we offer a brief contextualization of Argentina's dominant industrialized agricultural sector and the struggle for food autonomy. We then present agroecological initiatives in the Valle de Uco in the province of Mendoza. Following this, we outline the methods used.

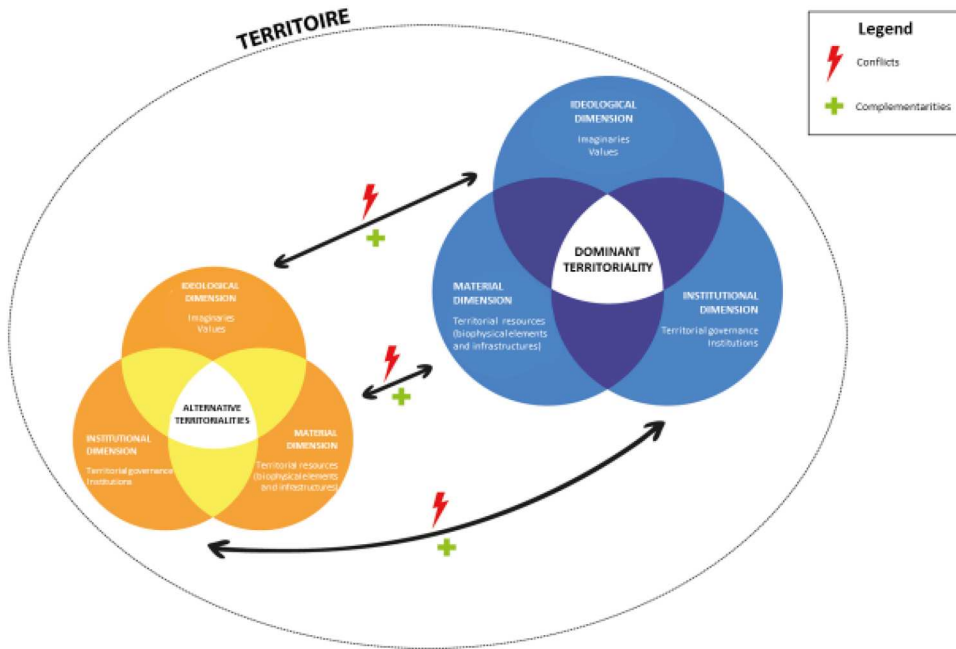


Figure 1. Multidimensional territorial transformation dynamics based on the relations between dominant and alternative territorialities. Source: Pachoud and Koop (2024).

3.1. Agribusiness and the struggle for food autonomy in Argentina

While Argentina's agricultural sector has long been export-oriented (see Infante-Amate, Alexander Urrego-Mesa, and Tello 2022; Dorninger and Eisenmenger 2016), this tendency received a significant push with the neoliberal restructuring of the country's economy in the 1990s. In the agricultural sector, deregulation, liberalization and financialization were accompanied by the admission of genetically modified seeds in 1996 (Leguizamón 2016). Historically known for its family farming structures in the Pampa region and the peasant economies in the northern provinces, since the 1990s the country's agriculture has been fundamentally reorganized, including a strong increase of export production, of financial capital flows and investment and the technologization of farms. The need for new technology, including machineries, agro-chemical supplies and genetically modified seeds, has deeply changed the social and economic structure of food production, including a decline in the number of farms, growth in the average farm size, and a concentration of production and ownership structures (Gras 2009; Gras and Hernández 2014).

As a result of these developments, soy became the dominant cash crop, leading to what Argentine scholars often describe as the 'soyification' of agriculture (Reboratti 2010), a process that is also related to overarching practices of agrarian extractivism (Alonso-Fradejas 2021; Tittor 2021) and is observable across Latin America (Coy et al. 2022). While Argentina's main agricultural products also include wheat, maize, cow milk, grapes, sunflower seeds, sugar cane and apples (ITC 2021), soybean production is a particularly emblematic case for both the restructuring of the Argentine campo as well as the country's integration into the corporate food regime (McMichael 2012).

Today, Argentina is the third biggest soybean producer in the world, after the United States and Brazil. In 2015, the area dedicated to soybeans exceeded 20 million hectares for the first time. Compared to this, between 2017 and 2020, the gold, silver and lithium complex was responsible for an average of 4.8% of Argentina's exports, while oil-seeds accounted for 29.5% (Palmisano, Wahren, and Hadad 2021). While soybean cultivation and associated value-adding processes contribute to fiscal income through export duties and have significant influence on the country's economic wellbeing (Dorn and Hafner 2018), soyification has also displaced the cultivation of traditional foods for the domestic market, resulting in an overall loss in crop diversity.

As a result of these transitions, conflicts have been increasing in recent years, both in the central provinces and along the frontier of industrial agriculture in the northern provinces (especially in Catamarca, Jujuy, Salta, Santiago del Estero and Tucumán). Conflicts have evolved around the privatization of land, the contamination of water, the application of pesticides/herbicides close to settled areas, deforestation and the displacement of small-scale farmers, among others (Goldfarb and van der Haar 2016; Hafner 2018; Leguizamón 2016; Palmisano, Wahren, and Hadad 2021). Based on the Movimiento Nacional Campesino Indígena (National Indigenous Peasant Movement, MCNI), about 200,000 rural families have been displaced or affected by genetically modified soy expansion. According to Red Agroforestal Chaco Argentina (Agroforestry Network Chaco Argentina, REDAF), this amounts to 950,000 peasants and indigenous people (Goldfarb and van der Haar 2016; Goldfarb and Zoomers 2013). Along with other crisis trends such as the Covid-19 pandemic and a general inflation and economic crisis, a report by Red de Cátedras Libres de Soberanía Alimentaria y Colectivos Afines (Network of Free Chairs of Food Sovereignty and Related Collectives, CALISAS 2022) has recently noted an enormous rise in food insecurity.

At the same time, with 3.6 million hectares, Argentina ranks second globally in terms of the agricultural land dedicated to organic agriculture and records continuous and strong increases (Willer et al. 2020). In terms of organic vegetable products by volume, olives, rice, oats, sunflowers and lemons particularly stand out. Organic farms are mainly located in the provinces of Río Negro, Mendoza and Buenos Aires, with the largest increases in Mendoza, Buenos Aires and Jujuy. Still, organic agriculture is often criticized for its export orientation: 98.7% of organically certified products are exported, with the United States (54%) and the European Union (27%) the main importers (SENASA 2024). Although organic agriculture avoids the use of synthetic fertilizers, pesticides and transgenic seeds, foodstuffs are still traded as commodities, making large agricultural firms, short-term agricultural companies, producer entrepreneurs and contractors the winners of this reorganization, while rural workers and traditional producers with insufficient scales of production remain highly vulnerable to current cycles of capital (Bustamante and Maldonado 2009; Hafner 2018). In some ways, this can be understood as a co-optation of agricultural alternatives, processes that have been given various names such as 'climate change adapted agriculture', 'sustainable' or 'ecological intensification', industrial monoculture production of 'organic' food, among others (Baldini and Mendizábal 2019).

Faced with the dominant agribusiness model and the treatment of food as a commodity for export, more and more alternatives have appeared 'from below' that promote the recovery of traditional knowledge, food autonomy, and the defense of and access to territories and agroecological practices (Wahren 2020). In this context, several protests and mobilizations against the dominant agribusiness model have taken place in recent years.

One example are the so-called *verdurazos*, which the rural Land Workers' Union (UTT) has been organizing since 2016 in different public spaces in large cities, where small agricultural producers offer vegetables at low cost in order to make their sectoral demands visible (Saettone 2023; Urcola 2024). Together with the above-mentioned mobilizations, various experiences and networks of producers that propose agroecology as an alternative have been strengthened (Ivars, Carballo Hiramatsu, and Fili 2021; Lucero 2022), while at the same time structures have been generated that include the commercialization and consumption of agroecologically-produced food (Gasparrini et al. 2022). This reflects what Pinto (2020, 170, own translation) identifies as a 'process of recampesination' associated with agroecology, whose social subjects are varied: peasant-indigenous social movements and small family farmers (who use their own or rented land) and populations expelled from the countryside settled in peri-urban areas (where they continue to demand access to land by renting it, taking it over or directly as landless rural workers).

3.2. The case of alternative food production in Valle de Uco, Mendoza

Against the backdrop of this national scenario, we now examine alternative food production in the province of Mendoza, focusing particularly on the Valle de Uco. Mendoza is part of the Cuyo region that lies at the foot of the Andes mountain range and extends from La Rioja and San Juan to San Luis. According to its origin in indigenous language, the word Cuyo refers to 'land of the sands,' underlining the region's dry climate and annual rainfall peaks ranging between 100 and 350 mm (Larsimont and Ivars 2021). Under these circumstances, agriculture is not possible without irrigation. The region's history is therefore closely linked to the history of water management and irrigation. The deviation of rivers has configured a strong spatial fragmentation, resulting in artificial irrigated oases in the midst of vast non-irrigated and relatively unpopulated desert spaces (Martín and Larsimont 2016). While Mendoza's ecological conditions have not permitted the expansion of industrial agriculture in the style of the country's northern frontier, pressure on land is nevertheless increasing with (international) investments and the expansion of wine, olive, walnut and potato production, mostly for the global market (Larsimont, Carballo Hiramatsu, and Daniel 2018). This is why the Cuyo region has emerged as another significant epicenter of social protest (Palmisano, Wahren, and Hadad 2021). In Mendoza, besides massive mobilizations against mining projects and the self-image as an anti-mining province, the consumption of water by agribusiness is also increasingly being highlighted.

The acreage under cultivation in the province of Mendoza has increased since the end of the twentieth century. However, this growth has not been the same for all cultivations. Instead, the diversification of production decreased while wine production increased (Petz 2023). The Valle de Uco, located at an altitude ranging from 900 to 1,200 m above sea level and constituting one of Mendoza's oases, is no exception. Located in the center-west of the province, it forms part of the departments of San Carlos, Tunuyán and Tupungato and is known as one of Argentina's top wine regions. While the area dedicated to agriculture has increased since the early twentieth century, the area devoted to vineyards grew by 259% between 1990 and 2021 (Instituto Nacional de Vitivinicultura 2022). In addition, Altschuler and Collado (2013) describe a fundamental restructuring of the wine agribusiness that accompanied this expansion. The wine business is increasingly focused on quality grapes and export, resulting in a valorization

of certain areas and an overall expansion of the wine-growing area towards the mountains. Today, Mendoza is responsible for 93% of Argentina's wine exports in terms of volume (Instituto Nacional de Vitivinicultura 2024). The technological innovations and know-how required for production increased the need for capital and led to (land) concentration and a trans-nationalization of the sector (Petz 2023). This has mainly affected small grape producers, and the share of small producers fell drastically over the same period. Already between 1988 and 2002 their total number had dropped by 20% (Petz 2023). This decline continued dramatically: according to the National Agricultural Census, the number of small producers in Mendoza decreased by an additional 35.1% between 2002 and 2018. Today, small producers cultivate only 3.2% of the province's agricultural area (INTA 2025). The agricultural structure has thus changed considerably in just two decades. Martín and Larsimont (2018) point out that alongside new actors, new production models have also emerged. New business projects, for example, tend to combine viticultural activity with other lines of accumulation such as luxury agritourism. These new wineries are often financed by foreign direct investments and operated by national or international firms (Figure 2).

In Mendoza's Valle de Uco, however, there is a whole range of alternative small-scale food production, cultivating tomatoes, eggplants, peppers, pumpkins, onions, lettuce, cherries, apples and aromatic herbs, among others. Agroecological producers usually plant a combination of crops. These networks have been strengthened and, in some cases, even expanded in recent years. Quantitative data on agroecological production in Mendoza remains limited. The 2018 National Agricultural Census reports 2,309 agroecological farms in Argentina and 237 in the Cuyo region (INDEC 2021), but does not provide

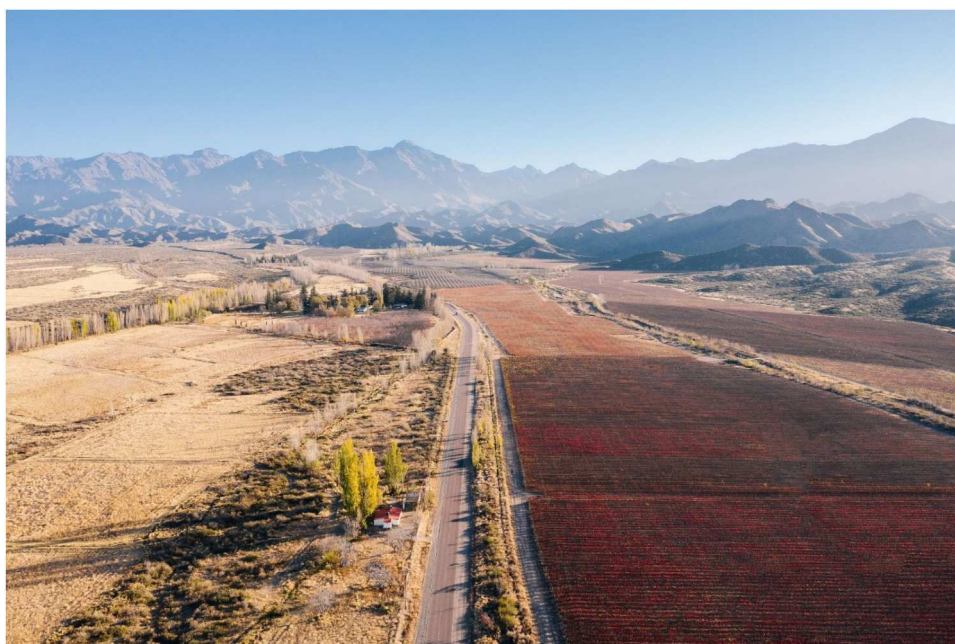


Figure 2. In the Valle de Uco, large wineries produce mainly for the international market. Source: Own photo.

provincial or municipal disaggregation. Despite this statistical gap, qualitative evidence reveals the growing presence of agroecology in the Valle de Uco. This dynamism is evident in: (1) institutional recognition, such as San Carlo municipality's 2022 ordinance (N°1972) establishing an Agroecology Area and Municipal Register of Agroecological Producers; (2) organizational networks, including the Valle de Uco Agroecology Committee (established 2022); and (3) alternative commercialization spaces, such as the Eco Feria in Tupungato, the Little Agroecological Market (El Mercadito Agroecológico) and Seed and Knowledge Exchange meetings in San Carlos, among others. These developments, alongside the in-depth interviews conducted for this research, demonstrate how agroecological initiatives are creating new territorial arrangements at the local level.

3.3. Methods

The findings of this article are based on a qualitative research design. For this paper, one month of ethnographic field research was conducted in the city of Mendoza and Valle de Uco in May 2022, using (participatory) observation, go-along interviews in the field, as well as both narrative and semi-structured interviews with agroecological, organic and conventional producers, and members of different collectives for the commercialization of agroecological products in the city of Mendoza. This was complemented by semi-structured online interviews with scientists, members of NGOs and government representatives conducted beforehand (see Table 1). Information from the go-along interviews and observations was documented in the field diary. Formal interviews were recorded, transcribed and coded using maxQDA regarding the dimensions of *territoire*. In addition, the third author forms part of a commercialization collective and possesses a comprehensive overview of historical and ongoing developments related to agricultural alternatives in Mendoza.

4. Analyzing agroecology from a territorial perspective

Against the backdrop of the dominant wine agribusiness in the Valle de Uco, we examine more closely the territoriality of agroecological actors from a material, ideological and institutional perspective and illustrate how this contrasts with the territoriality of dominant industrial agriculture. The agroecological producers interviewed for this study typically cultivate small plots of 1–2 hectares, with most owning their land through inheritance or purchase. These are primarily family operations, occasionally employing seasonal workers during harvest. They produce diverse crops including tomatoes, eggplants, peppers, pumpkins, onions, lettuce, and aromatic herbs (as mentioned in section 3.2). One notable exception is the Movimiento Campesino de Mendoza, whose members occupy land without formal ownership, reflecting ongoing struggles over land access in the region. In the following sections, we examine how these small-scale producers navigate the material, ideological, and institutional dimensions of the *territoire* in their struggle to maintain alternative food production systems.

4.1. Material level: water as a contested resource

Among the material resources shaping agricultural production in the Valle de Uco, water emerges as the most contested, particularly given the region's arid climate

Table 1. List of interviewed actors.

Nr.	Actor role	Date	Place
1	Member of Argentine environmental organization	21.10.2021	Online (Buenos Aires)
2	Social scientist	04.11.2021	Online (Buenos Aires)
3	Agroecology Network Coordinator	05.11.2021	Online (Buenos Aires)
4	Representative of Secretariat of Agriculture, Livestock and Fisheries	09.12.2021	Online (Buenos Aires)
5	Director of National Agroecology Directorate	14.12.2021	Online (Buenos Aires)
6	Professor for Food Sovereignty at National University of La Plata (UNLP)	06.05.2022	La Plata
7	Director of University Diploma in Agroecology at University of Buenos Aires (UBA)	07.05.2022	Buenos Aires
8	Founder of biodynamic farm	13.05.2022	Lavalle
9	Associate of agroecological store	14.05.2022	Mendoza
10	Founder of agroecological store	14.05.2022	Mendoza
11	Associate of agroecological store	14.05.2022	Mendoza
12	Associate of collective market	14.05.2022	Mendoza
13	Chief Operating Officer at Argentbio SRL	16.05.2022	San Carlos / Valle de Uco
14	Member of Water Assembly	16.05.2022	Tupungato / Valle de Uco
15	Agroecological producer	17.05.2022	Guaymallén
16	Agroecological producer	17.05.2022	Tupungato / Valle de Uco
17	Employee of international winery	19.05.2022	Tupungato / Valle de Uco
18	Employee of international winery	20.05.2022	Tunuyán / Valle de Uco
19	Agroecological producer	21.05.2022	Tupungato / Valle de Uco
20	Agroecological producer	22.05.2022	Tunuyán / Valle de Uco
21	Associate of agroecology collective	23.05.2022	San Carlos / Valle de Uco

and the expansion of wine production. The development of the wine agribusiness sector in the Valle de Uco has increased the pressure on water as a key agricultural resource over the past two decades (Martín 2009; Larsimont 2018). Capital-intensive wine production for global markets relies on technologies such as precision agriculture and controllable drip irrigation systems. These have facilitated the expansion of agricultural land toward the Andean Cordillera, increasing dependence on groundwater supplies (Larsimont and Ivars 2021). The spread of vineyards in the upper valley has thus extended the irrigation frontier and restructured patterns of water use (Petz 2023).

Access to and control over water and irrigation technologies are therefore central at the material level. In contrast to large companies, small producers typically lack the means to extract groundwater from wells or invest in modern irrigation infrastructure, making their crops more vulnerable to irregular water supply. As one agroecological producer explained: 'Many people from abroad, many foreigners bought farms and at that time many wells were built further uphill. That means that we get less and less water down here' (interview #20). She continued: 'Normally no more wells should be built. It's not allowed! No more drilling in this area. But if you have money ... if you have good lobby, that's different. Instead, here we have water in shifts and can only irrigate sometimes' (interview #20). This testimony highlights the inequalities between small producers and the wine industry. While many wineries were able to construct private wells, small producers continue to rely on historically rooted communally-managed irrigation systems. Most depend on surface irrigation, as they lack access to drip technology or modern water-saving infrastructure. The traditional use of surface water without drip



Figure 3. Small producer with self-built irrigation system. Source: own photo.

irrigation was also picked up on a guided tour of a bodega, where the guide remarked: ‘Small farmers waste a lot of water, because drip technology saves water’ (fieldnotes, 20.05.2022). Such narratives serve to distinguish wine producers as responsible and exemplary in their use of water (Figure 3).

However, even large wineries – despite their apparent autonomy – remain embedded in broader hydrological systems that sustain the region. Groundwater and surface water are part of interconnected flows, and intensive extraction from wells can affect the availability of water downstream. In this sense, large producers are not isolated from the environmental consequences of shared water use. Small-scale farmers hold long-standing water rights and rely on rotational irrigation schedules coordinated through community-based systems. Adjustments in water use require ongoing negotiation with neighboring producers (Montaña 2008). In this context, water is not only a resource but also a medium of communication and coordination among producers, woven into a network of social relations (Petz 2023). By contrast, the capital and profitability of large winemakers allow them to circumvent these collective arrangements and ensure a continuous water supply via wells. While they appear more autonomous, their productivity remains tied to shared ecological and infrastructural conditions.

4.2. Ideological level: environmentally-friendly and healthy food production produced collectively

Several agroecological producers described how explicit ecological and health considerations are more crucial to them than market logics. Both agroecological producers and

marketers emphasized that food should not be traded as a commodity, but should be destined for local consumption. For example, one stated that ‘the solution must be local [...] It doesn’t make sense to export food to Europe. That’s not agroecological at all’ (interview #19). Moreover, as organic food production has grown alongside the large wineries in the Valle de Uco, one agroecological farmer reported: ‘At the time they did it for the sake of ideals, today it has changed to being a business. They [organic farms] became big productions for export’ (interview #16). While some agroecological farmers started out producing organically, they eventually abandoned certification. An organic farm would only be viable for export, and as a producer ‘you would have to concentrate on fewer crops and manage your farm like a business’ (interview #8). Several farmers therefore turned away from organic farming for ideological reasons or because the export business was not going well. This shows that organic farming requires a minimum level of capital intensity, which often runs counter to social priorities.

Furthermore, the issue of health problems caused by the conventional production model was frequently brought up in the interviews, particularly as the genetically modified wheat variety HB4 was approved during the month of field research: ‘Now they have approved genetically modified wheat. That’s serious, because it’s going to be the daily poison of Argentine households. Bread, pasta and all this. The population will be badly poisoned’ (interview #15). Some newly-settled agroecological farmers had moved out of the city in order to grow agroecological produce in the countryside. Their reasons were diverse and included pursuing ‘a different lifestyle,’ ‘a healthier life,’ ‘a better life for the children’ and ‘knowing the value of our food’ (interviews #19, #20 and #21).² At the same time, some already-established farmers were also switching to agroecological production. Here too, the reasons for doing so ranged from cases of cancer in their own families, financial difficulties in purchasing synthetic pesticides and idealistic reasons (fieldnotes, 17.05.2022).

Despite the variety of initial reasons for changing to agroecological production, most producers explicitly opted to continue agroecological production out of social and ecological motivations. Beyond that, solidarity was a locally-shared value, even if some agroecological producers described increased competition in some sub-sectors such as home delivery. While home delivery experienced a brief boom during the pandemic, more recently there has been an oversupply (of both agroecological and conventional products) on the market. Nevertheless, other producers are usually not seen as competition, as all farmers underline the general ‘need for more agroecological production’ (fieldnotes, 21.05.2024). Even if the main point of reference is the family, the producers see themselves as part of a loose collective. This is particularly evident in the concept of the *minga*, a historical and onto-epistemological concept that has received renewed attention in recent years. One interviewee explained it as follows:

We use the *minga* quite a lot to move forward collectively. We organize *mingas* with friends, but also with other producers. If we need to build a barn or something else, we invite everyone we want and work together for a full day to make progress. We do the same for the harvest, for example. In turn, we go one day to a *minga* of this producer, the next day to

²This is in line with the findings of Castro and Arzeno (2018) on ‘new ruralities’. A form of new rurality combined with solidarity was also identified by Enrique, Cardozo, and Mudrik (2023) during the Covid-19 pandemic, which they named ‘new solidarity ruralities’.

another producer ... There is a *minga* in every *finca* [farm] and every week there is a *minga* somewhere. If there are volunteers we all go and sometimes we are many and it really works out well. (interview #20)

Even if most producers still need to employ harvest helpers at short notice at harvest time, in the case of a *minga*, neighboring producers contribute their entire workforce, including volunteers and harvest helpers, on a rotating basis for one day at a time.

4.3. Institutional level: self-organization and opposition from the government

To implement agroecological principles, farmers have created a regional, informal, participatory agroecology certification scheme, which they themselves control. Alongside mutual monitoring, it also includes sharing knowledge and advice on remedies, pests and other complex challenges posed by the climatic conditions in the Valle de Uco (interview #21). Farmers have also created self-organized agroecological markets and small shops. In the Valle de Uco, there is, for example, a cooperative shop operated by the *Crece desde el Pie* association in La Consulta, which sells the products of all local producers and accompanies and supports farmers toward agroecological production. In Mendoza city, the Bioferia market, created in 2005, allows producers from the region to sell their products every Saturday. In addition, while some farmers started to complement their sales at the market with a home delivery service, others have formed small cooperative brands.

Alternative food production not only requires a different form of production but is woven into an alternative network of social relationships. While there is not one protagonist movement in Mendoza driving alternative food production, there are several more or less interrelated initiatives engaged in the production, marketing and/or consumption of food. Beyond agroecological food production, this plurality also includes, for example, networks of commercialization – in the city of Mendoza there are currently several marketing efforts to promote agroecological products, operated largely by volunteers and small shops – as well as biodynamic producers and producers in transition to agroecology. Even if there are occasional disagreements between the various groups (due to internal disputes, for example, Bioferia split into two markets, Bioferia and Vidaferia), the idea of collectivity and networks stands out as central (interview #12).

The state can promote agroecological initiatives as part of a social and solidarity-based economy (Jurado and Gallo 2017). However, various phases of institutional support as well as institutional disregard have accompanied local self-organization, at the regional/provincial and national level. Despite Cristina Kirchner's (2007–2015) anti-agribusiness rhetoric, the national government's dependence on agribusiness within the framework of neo-extractivism was long reflected in a policy that favored industrialized agriculture (Hafner 2018). While the conservative government of Mauricio Macri (2015–2019) pursued the explicit path of globalized market liberalization, leading to an increase in conflicts and inflation, citizens joined forces in many places to foster local projects and promote agroecological alternatives (interview #5). For the Pampean region, the creation of the National Network of Municipalities and Communities Promoting Agroecology (RENAMA) in 2016 was an important milestone, bringing together agroecological experiences, social organizations and academics all proposing viable and concrete alternatives to the agribusiness model (Palmisano, Wahren, and Hadad 2021).

Most recently, the Covid-19 pandemic brought the basic need for food and healthy nutrition back into the spotlight. In combination with pressure from social movements, this also resulted in a discursive agroecology boom at higher political-institutional levels. It can be observed, however, that the state still operates along contradictory lines, by simultaneously deepening the agribusiness model on the one hand and proposing policies towards agroecology, peasant and indigenous agriculture on the other. For example, within the National Ministry of Economy and Agricultural Production, the Fernández government (2019–2023) created the National Agroecology Directorate and appointed Eduardo Cerdá, one of the main RENAMA referents, as its national director (one of the promoters of the aforementioned Uco Valley Agroecology Committee as well as other committees in Argentina). Although the establishment was welcomed at a symbolic level, many producers complained about the lack of support for agroecology: ‘Nobody finances you to do agroecology. It’s very difficult to get a loan for that. If we wanted to technify the farm for drip irrigation, we simply can’t do it economically’ (interview #21). Another farmer underlined that ‘they created an agroecology department, but it’s very small. There is a bit of movement, there is a little interest, but there is no promotional policy. I really don’t even know why they are there’ (interview #8).

In another example, the Buenos Aires central market is managed by one of the country’s main peasant organizations, the Land Workers’ Union (UTT). However, while there are some resources directed towards the subaltern sectors of the rural world, most of the state’s resources are concentrated in policies to promote agribusiness. Meanwhile, the dominant discourse has shifted, arguing that agribusiness must coexist with family farming, including indigenous and peasant economies (interview #4). A farmer added that the problems of agroecology in Argentina must be considered as embedded in the global order and related to the country’s imperative to generate foreign currency (interview #16). In this context, she also considered the possibilities of the new National Agroecology Directorate to be very limited, primarily due to the perceived incompatibility of large-scale resource exploitation and agroecology:

Politicians at the national level focus more on exploiting the natural resources that exist, and this is completely opposed to agroecology. In other words, Argentina is facing a very difficult situation because there is a very heavy debt with the IMF and the way to pay for it will be handing over natural resources. (...) I don’t know if it will really matter what society wants or doesn’t want. (interview #16)

In this sense, many producers and marketers criticized the institutional appropriation of the agroecology term: ‘Agroecological markets are currently emerging everywhere and are being heralded as the ‘first’ or ‘biggest’ market. We were at the market in Godoy Cruz recently and we were the only agroecological stand there’ (interview #20). Agroecological experiences are thus not always characterized by harmony, and current regulations mostly favor large landowners and export-oriented farmers. Furthermore, the production and marketing of agroecological products usually requires a lot of (voluntary) work. Nevertheless, at the local level, the recent emergence of municipal initiatives supporting agroecology (as described in section 3.2) represents a form of bottom-up institutional innovation that contrasts with these national and provincial policies. While limited in resources, these local institutional frameworks demonstrate how alternative

territorialities can create parallel governance structures that operate independently from the dominant arrangements favoring agribusiness.

Under the ultra-right-wing government of Javier Milei (in office since December 2023), the National Agroecology Directorate and the minimal funds for agroecology have already been dissolved (Tierra Viva 2024).³ As a result, current agroecological projects have become fundamentally dependent on local/regional collectives, such as the Crece desde el Pie association in the Valle de Uco. An organization representative noted that 'many farmers are forced to work without external inputs due to high inflation and Argentina's economic crisis' (personal communication, 07.12.2023).

5. Discussion and conclusion

Our analysis reveals the coexistence of two opposing territorialities shaping food production in Mendoza's Valle de Uco. On the one hand, an alternative territoriality associated with agroecology – emerging but still marginal – aims to strengthen autonomy and resilience, while caring for the *territoire* and people's health. On the other hand, the dominant territoriality linked to agribusiness is characterized by industrial production, capital-intensive infrastructure, and export orientation. This model commodifies food, fosters unequal access to resources – particularly water – and is widely seen by small producers as environmentally harmful and health-threatening. Nonetheless, it continues to frame local identity, particularly through the prestige of wine production.

We have separated the three dimensions linked to *territoire* (material, ideological and institutional) for the analysis. In practice, however, these dimensions are indivisibly present and affect each other in relational ways. For example, agroecological producers do not only consider water a natural resource but also a symbol to which everyone should have access. This is framed by an imaginary based on an oasis and desert dichotomy. This imaginary is materialized by traditional irrigation infrastructures (canals and ditches) and by a historical collective organization for water sharing. In the same vein, the solidarity organization throughout the value chain, based on the *minga*, is also translated into norms and rules for mutual aid on the farms and all along the value chain (e.g. commercialization, advice). Here, the *minga* embodies an alternative ontology – a different way of being, producing and organizing that diverge fundamentally from agribusiness. The territorial approach to transition allows to inductively reveal the practices, imaginaries and values of local people, particularly those marginalized by dominant systems.

In this analysis, we have pointed to several potentials for agroecology in the Valle de Uco. Producers are organized around shared values of solidarity and autonomy. The *minga*, a historical form of collective organization, provides great resilience in terms of labor and related price fluctuations. Producers also have the capacity to organize and control their entire value chain. Self-monitored certification schemes and selling products at local markets and shops make them largely independent of the global market and

³In the same sense, for example, the Staff Association of the National Institute of Agricultural Technology, an organization that brings together workers of the institute (a state agency dedicated to agro-technological research and development), denounced the fact that the current authorities have prohibited the use of certain words and concepts in official and internal communiqués such as 'agroecology', 'climate change', 'biodiversity', 'gender', 'sustainability', 'carbon footprint' and '*ProHuerta*', among others (Tiempo Argentino 2024).

costly labels. In addition, the increasing demand of Mendoza's urban middle class for healthy food and their greater awareness of environmental pollution bears the potential for increasing overall demand for sustainable food production.

We also identified a series of limitations to implementing agroecology on a large scale. The dominant territoriality is characterized by a strong regional identity linked to wine production. Besides the agroecological farmers, only few people publicly criticize the water consumption of the large-scale export-oriented wineries, making public contestation largely absent. This was exacerbated by the strong international demand for Argentinean wine, especially from Mendoza, in the late 1990s and early 2000s (Petz 2023; Instituto Nacional de Vitivinicultura 2024). Furthermore, with exclusive wells and efficient irrigation technology, wineries usually have easier access to water. The relationship between producers and water is historically complex and access to water is limited by the availability of capital to dig wells and access groundwater. Furthermore, actors with drip irrigation technology present themselves as more responsible in the face of water scarcity. In contrast, they frame agroecology as a problem by emphasizing its higher water use. Finally, agroecological producers lack access to funding and loans.

In the recent past, agroecology has faced different phases of institutional support and disregard, though in general political support has been minimal. While current president Javier Milei has eliminated all forms of institutional support, former president Alberto Fernández promoted agroecology at a discursive level. However, despite establishing programs to promote agroecology, most state support was still dedicated to agribusiness. This includes, for example, the approval of genetically modified wheat, but also the 2022–2023 Livestock Plan to increase productivity and competitiveness in meat, milk and by-products, or Argentina's 4.0 Productive Development Plan to promote the development of 4.0 technologies for agriculture (MAGyP 2022; Lachman et al. 2022). This last example is seen by agribusiness as an opportunity not only to generate economic value from 4.0 technologies, but also to reduce the environmental impact of the activity by using inputs more efficiently through these new technologies (Lachman et al. 2022). The association between technology and environmental responsibility is again reflected here. The institutional discourse argues that agroecology must coexist with agribusiness (see Gasselin et al. 2020). Wahren (2020), on the other hand, considers that the current agribusiness model, due to its own expansive and exclusive logic, does not allow for coexistence with other alternative models like indigenous and/or agroecological agriculture. In the case of Valle de Uco, agroecological producers in turn consider their alternative model of food production to be incompatible with agribusiness, because of the unfair repartition of and access to water resources and increasing environmental pollution.

Alongside agroecology, dominant actors often portray organic food production as an alternative to agribusiness. At first glance, organic practices may appear aligned with agroecological values due to their reduced use of chemical inputs avoidance of genetically modified crops. In the Valle de Uco, however, we identified organic wine, vegetable and fruit production that is primarily export-oriented and embedded in similar economic logics as conventional agribusiness. While organic farming does reduce the use of synthetic inputs, it largely caters to international markets and is not oriented toward feeding local populations. Agroecological producers therefore stress that organic agriculture replicates many of the same dynamics as agribusiness, particularly in terms of capital requirements, water access, and commercialization channels. These distinctions between

organic and agroecological production have been widely documented in agrarian studies (Guthman 2004; Rossett and Altieri 1997). Yet, our territorial analysis reveals how these differences are not merely about certification schemes or market orientation. They are anchored in divergent territorialities, expressed through contrasting ways of organizing labor, managing resources, and constructing social relations. Thus, the territorial approach shows how agroecology constitutes a distinct territoriality that challenges both agribusiness and market-oriented organic production. This resonates with broader movements across Argentina where socio-environmental assemblies are prefiguring post-extractivist futures through territorial practices rooted in community relations to water and land (Rasmussen and Navarrete 2025).

A comparable study using the territorial approach to analyze potentialities for agricultural diversification in a context of extensive livestock farming with a specialization for cheese production in the French Alps has produced similar results (Pachoud and Koop 2024). The study identifies one territoriality linked to livestock farming and one territoriality linked to alternative agricultural productions. However, power relations are more diffuse between the different groups, which share different forms of power (e.g. land versus cultural capital) (Bourdieu 1994). Conventional family breeders still depend on agribusiness, relying on inputs and equipment. This makes it more difficult to distinguish between the dominant and dominated actors. Despite existing conflicts, and in contrast to the Valle de Uco, the analysis in the French Alps also reveals possible synergies between the groups to build a sustainable and diversified agriculture.

The Valle de Uco case study shows strong ontological and epistemological divergences between the different territorialities. We consider transition as a profound transformation of the value systems of the dominant forms of modernity, responsible for the current ecological crisis (Escobar 2018). Agribusiness represents the dominant ontology, seeking to establish human domination over nature and is largely disconnected from the *territoire*, relying on exogenous expert knowledge, state support and technologies. Because of this detachment from local socio-ecological contexts, agribusiness actors cannot promote a sustainable mode of agricultural production. By contrast, the alternative territoriality associated with agroecology proposes a relational ontology based on interdependence between community members (for water management, certification, etc.) and with resources specific to the *territoire*, through situated knowledge. The territoriality of agroecology unfolds autonomously in the *territoire* through multiple symbolic, ecological, economic and social relationships.

While the technological transition approach allows for an examination of shifting socio-technological regimes within the framework of modernity (Geels 2002; Grin, Rotmans, and Schot 2010), the territorial approach redirects attention to the various actors sharing the same space, with an emphasis on their different ways of doing, thinking and organizing. The territorial framework allows for an ontological and epistemological approach rooted in local perspectives. This approach aligns with broader calls for geographical research on social-ecological transformation that emphasizes process-oriented perspectives, multi-scalar analysis, and the incorporation of power relations in understanding complex transformation dynamics (Kister, Dorn, and Hafner 2024). In this paper, we have applied the territorial approach, focusing on its material, ideological and institutional dimensions, to politicize socio-ecological conflicts through a systemic analysis of local transformation dynamics. Firstly, the material dimension is particularly

suited to identifying practices linked to the use of local resources and to highlighting their (un)fair distribution. Secondly, the ideological dimension reveals competing imaginaries and underlying values at the local level and examines their impact on the social and economic logics of the different groups that compose the *territoire*. Thirdly, analyzing the institutional dimension of *territoire* helps to uncover the formal and informal rules established by local actors, their modes of self-organization, and their relationships with top-down institutional policies representing dominant interests. Against this background, the territorial framework offers a lens to focus on local change and to render transformation processes more concrete. As a pragmatic, systematic and political framework, it holds great potential for future efforts to advance deep transformation by exposing power relations and supporting values, imaginaries, practices and organizational forms that enable for sustainable territorial pathways.

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