

Organic labeling controversies: a means to an end within global value chains

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Commentary

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Abstract

This commentary argues for strengthening the dialogue between the social and natural sciences as part of a more comprehensive sustainable approach to ecological farming practices that go beyond a focus on specific labels and certifications. It nuances the approach provided by Home *et al.* in their study of Swiss farms converting to organic agriculture, in emphasizing the need to deepen the study of such farming practices by including a broad vision of global value chains and a pragmatic approach to innovation and the different stakeholders involved. Ultimately, it calls for a more complex approach to eco-agriculture in its widest sense, that goes beyond dichotomies about conversion, certification and labeling. This would provide alternatives for researchers and other actors to move forward in theory and practice.

If the aim of proponents of conversion to sustainable agriculture is to enroll ever more actors in their endeavor and exert a practical transformative effect, then it is necessary to establish a fruitful dialogue between the academic fields involved. This requires avoiding compartmentalizations of social, economic and environmental goals in a global capitalist market and refraining from considering ‘farmers’ as rational individual actors isolated from wider controversies. This is not the first plea for a more complex interdisciplinary engagement with an eco-agriculture, understood as all the divergent interpretations that actors make of sustainable and organic farming and horticulture (Teil, 2014; Macías Vázquez and Alonso González, 2015). Indeed, we aim to elaborate on the position taken by Home *et al.* (2019) in their paper ‘Factors in the decision by Swiss farmers to convert to organic farming’, pushing the argument in other directions through the application of alternative theoretical perspectives. Although their paper deserves credit for developing a detailed analysis of the Swiss case and revealing some key factors for conversion to organic, it evinces the need for more comparative research. This should explore different national contexts and link them to controversies about certifications in the context of a global capitalist market. The growing social acceptance and economic expansion of eco-labels and their potential as alternative supply chains in the agrifood sector are widely recognized (Horrigan *et al.*, 2002; van Amstel *et al.*, 2008). However, given the level of controversy regarding certifications worldwide and in Europe, a clear understanding of the different facets of the problem is sorely needed. To move forward, concrete suggestions for institutional policies and legal provisions to favor a sustainable food system are overdue.

A considerable part of the agrifood sector today is geared towards developing sustainable and organically-based edibles, contributing to a widely acknowledged ‘quality turn’ in food markets. For instance, organic viticulture is booming worldwide, having increased by 295% in Europe and 280% in the world between 2004 and 2015. Organic processes and schemes of certification are symbolized and represented by labels. These include logos that serve to signal consumers that a foodstuff not visibly different from a ‘nonorganic’ one was grown and processed according to a series of rules specific to each certification regulation. Certification also assures producers that fraudulent uses of the logo or term ‘organic’ (or ‘biodynamic’ or ‘natural’, etc.) do not deprive them of the potential price premium and market niche that can be achieved through certification. When certification schemes are credible and their corresponding labels are understood by consumers, information asymmetries between the two spheres are reduced, making the market theoretically more efficient (Lohr, 1998).

However, even for consumers with the time, money and concern for environmental protection, sustainability and healthier eating, it is already complex to make informed decisions and decipher the meanings of the different labels and associate them with the specific productive practices classified through the certification of organic food. Most research on the topic reveals the rather superficial knowledge of consumers about eco-labels and the need for further institutional policies to increase consumer awareness and guide their perceptions and attitudes (Janssen and Hamm, 2012). In turn, producers can choose to certify their practices or not, depending on a complex array of circumstances. For them, the manifold labels appear as strategic economic alternatives with consequences for their productive practices and economic

assessments, and as part of social networks that involve ideological, political and cultural decisions related to both local and global processes. Since certification schemes are intended to reassure consumers about marketing claims for quality attributes that are not observable, this disconnection generates information asymmetries in the food market (Jahn *et al.*, 2005). These asymmetries require regulations and other institutional intervention to improve consumer information about product quality, in order to reduce adverse selection problems and increase the efficiency of the labels (Parga-Dans and González, 2018).

There is a complex link between consumption and production that certifications and their labels aim to facilitate, and this turns them into fertile ground for interdisciplinary research between the natural and social sciences. The need for interdisciplinarity in agricultural research has become widely recognized and part of the mantra of contemporary science policy, which calls for problem-solving approaches and the active involvement of various scientific fields to solve the challenges facing humanity in various spheres (Kees, 2009; Nuijten, 2011; Lowe *et al.*, 2013). This lack of interlinkage between the fields of production and consumption pervades academic disciplines as well, even within the social sciences. It includes the clear division between sociological or anthropological and marketing approaches, or between those focusing on consumer studies and those with a political economy orientation focusing on production. As the literature on this topic shows, interdisciplinary collaboration has increased little in recent years, presenting lower impact factors and citations on average. Most collaborations take place between natural scientists and economists rather than other social scientists (Lowe *et al.*, 2013).

Moreover, much social or 'interpretive' science research remains focused on descriptive works on 'adopters and non-adopters', due to the epistemological assumption of unsophisticated and implicit sociological frameworks (Kees, 2009). In turn, most 'hard' or 'positivist' science in agricultural research focuses on the technical constraints to productivity, ecological efficiency, or reduction of environmental impact in organic farms. Despite this literature making key contributions to the social and economic sustainability of global organic farming, it remains to connect its advances with the field of consumption, dominated by the interpretative approach of the social sciences (Villanueva-Rey *et al.*, 2014). Often, little attention has been paid to the broader social, cultural, health and ethical issues of organic production beyond the farm level, including consumer research, food processing and quality, or ethical policy and governance issues. Not to mention consumer understanding of the different productive practices behind each certification process and labels signaling it, which are often disconnected from farmers' decisions to convert or not to organic.

In our view, certifications and their signals, labels, are a means to progress towards sustainability transitions and environmental protection. The study of sustainability transitions has been dominated by the fields of socio-technical transitions, including transition management and multilevel perspectives, and of socio-ecological systems such as institutional analysis and development and resilience thinking (Markard *et al.*, 2012). There is however a tendency among agroecological scholarship to avoid considering transitions 'in a broad, systemic, and multilevel way because they have mainly conceptualized transition with the efficiency-substitution-redesign model at farm scale' and 'mainly through descriptive accounts rather than social science theories' (Ollivier *et al.*, 2018). This situation can be redressed both by incorporating social science theories to these scholarly

frameworks and moving beyond micro-scale analyses—that involve individual farms and farmers—into multiscale research.

Of course, it is not our aim here to develop a fully-fledged answer to the complex challenges of interdisciplinary research, but rather to emphasize the need to cover the whole supply chain from farm to fork. The complexity already involved in the variety of symbolic information in food (including protected indications of origin, nutritional information or organic labels) can make us, academics and public servants, mistake the means for the end. That is, are we concerned about the promotion of more environmentally sustainable and equitable food production systems, or about a specific label? Is it about environmental protection or about certifications and labels? How can our normative and practical concerns trigger policy change if we lose sight of the wide array of alternatives for both consumers and producers to make a difference regarding environmental conservation? We agree with Home *et al.* (2019) that the factors that enable or hinder conversion are multidimensional and complex but consider their attempt to shed light on them fragmentary due to a series of issues.

First, despite repeatedly stating the contrary, their approach is pervaded by methodological individualism, presupposing that farmers converting (or not) to organic agriculture are rational individual actors isolated in a (national) market. The study generally points to functional and individualistic explanations for conversion, overlooking the role that other multiple actors and stakeholders may play in it, from distributors to export-import chains and institutional agents. This approach led them to investigate and interview farmers that *already* converted to organic agriculture, and more specifically, to one specific private Swiss label *Biosuisse* and a joint NGO-private one IP SUISSE. How can we then understand the reasons for those *not* converting to organic agriculture? Were the interviewees not biased by the investigation being funded by one specific organic label? In brief, are we studying why certain economic actors adopt a label or addressing a more general controversy about environmental protection in agriculture in a capitalist global market?

Secondly, the normative consequences deriving from this point to the need to establish more delivery points for organic products, so as to encourage producers to convert. They see the slower rate of conversions as a problem of distribution and thus of potential consumption. As a consequence of methodological individualism, the authors conclude that their 'results might well be generalizable to other national contexts' (3:9). These conclusions are partially misleading, so we aim to provide an alternative approach focusing on two brief questions. First, the need to take into account the constraints posed by the capitalist market from a value chain perspective. This implies going beyond individual actors' economic decisions to understand these at various scales, constrained by the wider economic context, and rejecting a straightforward division between 'contextual' and 'non-contextual' factors. Secondly, we highlight the benefits of shifting our understanding of the conversion to organic as a controversy involving a wide array of actors from a pragmatist sociological perspective. This views labels as symbols undergoing an ongoing dynamic process of critical evaluation and updating. Both points highlight the need to overcome methodological individualism and move towards a pragmatic stance on innovation and sustainable transitions. This is illustrated in the Spanish case. This makes sense, given that Spain and Switzerland are key actors and flip sides of the same 'organic' coin: Spain is a net producer and exporter of organic products, while Switzerland is a principal consumer and importer. The contrast between these two national contexts serves to highlight the

need for further comparative and interdisciplinary research on international trade chains, to better understand and promote sustainable food systems.

Organic global value chains

Can we affirm that the problems, motivations and context of someone willing to convert to organic agriculture in Spain, Latin America or Asia are the same as those of a Swiss farmer? If, as Home *et al.* (2019), we look at the community, family and national factors, they are probably highly comparable. Organic farmers are disregarded by other community members, there are problems of distribution, other 'non-organic farmers often incorrectly perceive organic farming as not being oriented toward production farmers' (3:1), etc. However, a global value-chain perspective provides an alternative approach by focusing on the dynamic relation between worlds of food production and consumption. This approach requires understanding actors as connected in dispersed but inter-linked global systems of production, supply, trade and consumption (Gibbon and Ponte, 2008). Hence, a different image appears. Focusing on Europe, there is a tendency of northern consumer countries with the highest productive costs and purchasing power to increase the consumption of organic products and gradually stabilize or retreat in the number of farms and surface converted to organic, from Denmark to Ireland and Switzerland (O'Donoghue *et al.*, 2018). As the authors show, while Switzerland lags behind in terms of organic production, the Swiss demand for organic products grew 13% in 2016, and according to the report *Organic in Europe, Prospects and Developments 2016*, by IFOAM European Union (EU) Group (Meredith and Willer, 2016), the country ranks first in per capita consumption with an average expenditure of 221€ per year.

Instead, Spain ranks fifth globally and first in Europe regarding the surface devoted to organic agriculture (more than 2 million hectares), and the number of organic producers keeps growing steadily, from 27,000 in 2010 to 34,000 in 2015 (MAPAMA, 2018). In terms of consumption, however, Spain ranks 18th with an average expenditure of 25€ per capita and year (against the 2110€ spent on conventional food), and most Spanish reports recognize that national consumption is a structural weakness of the sector (MAPAMA, 2018). Indeed, most programmes promoting organic agriculture focus on consumption rather than production. Moreover, bureaucratic obstacles are similarly daunting for Spanish organic producers, as economic subsidies to producers are not individually granted but distributed through rural development programs such as FEADER according to regulation UE 1305/2013. These programmes are conditioned by local, provincial and regional issues that complicate receiving them (Serra *et al.*, 2008; Alonso González and Macías Vázquez, 2014).

Given this context, it is difficult to envisage a situation in Spain similar to that the authors describe regarding organic production in Switzerland: 'In addition to separation from customers, longer travel distances to delivery points could create a barrier to conversion by increasing transport costs, and thus create a financial deterrent' (3:3). Spanish producers with environmental concerns lack local distribution networks and face a weak internal consumer market. Nevertheless, their competitive prices against other EU and global organic producers (including transport costs) allow them to export their produce (Marques *et al.*, 2015). Consequently, Spanish farmers face an entirely different market scenario than Swiss ones: the question is not about certifying or assuming transport costs, but to adapt their productive practices

and certification/labeling requirements to the demands of foreign import markets (Parga-Dans and González, 2018).

This adds a further layer of complexity for farmers to make informed decisions about labeling and require them to be aware of international legislation and trade regulations, as well as about existing controversies between labels. They face three further problems. First, the choice of a certification scheme not only increases costs and reduces their competitiveness, but also conditions their potential consumer markets. Secondly, different certifications entail different productive practices and management structures that are costly and take time to incorporate on the farm. Thirdly, many organic products are subject to other type of quality controls, mostly by Protected Indications of Origin (PGI) that affect especially winemakers and cheese makers. This point can be illustrated through an ethnographic testimony derived from our long-term research with environmentally aware winemakers in Spain and Portugal.

The case of the wine sector is particularly relevant, precisely because it is more sensitive to quality and more valorized than other foodstuffs. It has played a leading historical role in the implementation of certification schemes, labeling practices and organic production (Teil, 2017). Wine provides a perfect terrain of study precisely because of its high commercial value, given that one main aim of most certification schemes and labels is to provide price rewards to producers for implementing various productive practices (Lohr, 1998). The lack of correspondence between wine quality, sustainable agriculture practices and market prices leads to consumer information asymmetries (Delmas *et al.*, 2016), which make it even more interesting as a case study for organic certification debates (Teil, 2014). Moreover, the higher valorization of wine has turned it into a reference for other food products, which tend to mimic the sector's dynamics. Growing global tendencies such as the gourmetization of food and taste, sustainability, healthfulness and search for authentic products have triggered similar valorization processes in most foodstuffs, from Andean potatoes to cheese or Israeli hummus (Hirsch, 2011).

Some cases from our ethnography serve to illustrate these questions. Here we quote an artisan producer from the Galician region of Ribeiro, who follows Fukuoka's natural farming practices without certifying anything, and is compelled to export almost all of his production due to the high prices of his wine:

Look, I used to have all the labels and now I only certify with the Denomination of Origin Ribeiro Wine (PGI), and I will withdraw as soon as I can from it as well. I started certifying with Demeter¹ because my main importer worked with Switzerland and Scandinavian countries and convinced me that it would improve my exports. Then they stopped importing my wines, and I found that biodynamic labeling made it difficult for my wines to enter powerful markets such as the UK or the USA. I moved to an organic label, because it is always said that it helps with the German market. However, it did not work well and goes against my philosophy: why should I pay for not polluting rather than the other way round? Funny enough, now I export almost half my wine to Japan and Canada, who do not care about labels but force me to make specific analytic tests on each wine, which of course I have to pay for. They are not interested in my Denomination of Origin certification, and within the Denomination, I have trouble to qualify my wines because they are not standard. So I will leave the DO as well (Interview #76, 2017).

Most winemakers we interviewed are well aware of the many controversies around organic labeling and market niches for

¹A Swiss private certification company that labels biodynamic practices.

each of them, showing how the complexity of the issue goes beyond a simple black and white choice between conversion or non-conversion. Given this complexity, we ask whether the stagnating rate of conversion to organic in Switzerland derives from a normative and institutional problem as the authors argue (lack of distribution networks and supervisory measures), or from a global context that prevents them from being competitive against southern producers with lower wages and prices. This alternative perspective underscores the need to analyze the question as a complex chain of actors engaged in a global market, in which policies need to take into account market dynamics beyond a simplistic scenario of 'contextual' vs 'non-contextual' factors.

Similarly, it is important to focus on promoting organic production with an eye on the controversies surrounding labels. French pragmatic sociology is groundbreaking in this regard, focusing on how actors are 'enrolled' over labels and the controversies among stakeholders themselves, and ultimately question the notion of 'innovation'. Authors like Teil and Hennion (Hennion *et al.*, 2011) see labels both as symbols of environmental protection in a non-binary gradient, and tools for producers to create niches and product differentiation in the capitalist market. The work of Teil (2013) already explored a similar problem as Home *et al.* namely the French controversies about the general stagnation in the number of farmers adopting organic labels in 2005. Her research explored the controversies regarding different public labels and private certification schemes (*Terra Vitis, Agriculture Raisonnée, Demeter, Nature & Progrés, Vitalis, Agriconfiance, Qualenvi, AB*, etc.). She describes at least three 'fronts': organic producers with a market orientation and the more ethically or ideologically committed, and those concerned with quality and *terroir*. More importantly for us here, she describes two opposite ways of understanding labels and certifications. A first option is to see them as 'finished' products, *a priori* symbols that involve a concrete set of procedures and practices that 'protect nature'. An alternative is to understand labels as realities 'in the making', constructed *a posteriori* by a dynamic network of stakeholders that engage in a critical evaluation along time of what it means to protect nature and how to best achieve this aim (Teil, 2013). This second understanding of labels as dynamic objects of controversy opens up two alternative research avenues in terms of methodology and theory.

Methodologically, a wider understanding of certification and labels requires addressing the networks of actors involved in the certification chain. This includes certification companies and institutions, as well as distributors and final consumers in a global organic market, but also those following certain eco-agricultural practices without certification and stakeholders in the non-conventional field, and their reasons to avoid enrolling in the organic crusade. Our research in Spain and Portugal gradually revealed the significant role played by too-often disregarded actors, including distributors, importers and bloggers. Their role as intermediaries (which, according to Home *et al.* should be adopted by the State in Switzerland) reveals the complexity of the issue. According to a sommelier and owner of the largest online distributor of environmentally friendly wines in Spain:

I am looking for winemakers respectful of nature, not because I am an ecologist, but because for me they cannot express their *terroir* in an authentic way without respecting the environment. Labels for me are less important, they confuse consumers, who do not demand them too much. Instead, they look for trustworthy advice from me and personalized attention. We must take into account the bureaucratic burden that small artisanal winemakers already have. The labels are for the industry, for

the mass production that allows the public to differentiate between wines on supermarket shelves. But these respectful and quality wines don't need certificates, all the info is available online, and I have orders from China or from my neighbors down here (...) I am just an intermediary that facilitates transparency in the relationship between consumers and producers, explaining why these products are more expensive and worth paying for (Interview #45, 2016).

Taking into account the views of multiple actors allows us to get deeper into the complexity of food value chains, which, as Kleine points out in her research on Fairtrade chains between Chilean producers and German consumers, are subject to increasingly "unfair" global trade rules' leading to a "race to the bottom" in social and environmental standards' [Kleine (2008) 28:109]. Similarly, for many winemakers, their environmentally aware and artisan work does not so much involve a continuation of the viticultural tradition of their region but rather represents a form of innovation facing the challenge of valorizing their products amidst the controversies and complexities surrounding the varied certifications that should help them in the task. Certifying in organic production is not, therefore, an innovation in itself. Rather, it becomes part of a multifaceted assemblage of options, decisions and values constrained by socio-economic, legal and institutional factors leading to changes in practices.

To discontinue certifying organic wine and continue practicing environment and consumer-friendly agriculture might as well be an innovative move for many winemakers. This nuances a point by Home *et al.* who, drawing on Lamine and Bellon (2009), readily understand the conversion to organic as the adoption of an innovation (Home *et al.*, 2019). However, the pragmatist perspective offers an alternative to both structuralism and methodological individualism by highlighting the dynamic process through which human creativity and agency interrelate with broader social structures. Conversion to organic agriculture can be seen not as an innovation, but as a form of change resulting from the creative action. Environmentally-aware winemakers often need to reject pre-established and standard forms of production and marketing and break with culturally and peer-assumed routines and protocols in order to open up new market boundaries to survive. They must transform consumer behavior and even change powerful corporate attitudes toward environmental sustainability. Contrary to the relative neglect of creativity and change in markets, the 'dissonance' created by labeling controversies, competing global value chains and legal and socio-economic constraints is a source of potential conflict. In the view of pragmatist theories of innovation, it is also a precondition for innovation as such to take place as a result of a creative search in a given context (Stark, 2011).

In conclusion, this commentary has argued for a position other than that expressed in the original paper, pushing the argument further by applying an alternative theoretical perspective to shed light on similar issues. It has contributed to agricultural and social research needs by showing that farm-level decisions and practices are shaped in different ways by international global chains, requiring a scale of analysis that goes beyond the local and even national contexts. Thus, rather than a simple dichotomy between organic and conventional, there exists a wide array of possibilities and variables between conventional and respectful farming. Further research on the specific agrobiological practices and labels involved must reflect these complexities. Those must be explored worldwide and in a comparative fashion beyond national frameworks, so as to establish normative measures and institutional practices based on approaches that convey these

complexities and include all the relevant actors. These may operate in the local and global organic food chains, from (conventional and organic) producers to distributors and retailers, and policymakers themselves. Academics can also play an important role in helping those concerned with the environment and health to better understand their own global social, economic and environmental context to make better and more informed decisions. Normative recommendations might not only address public institutions but should draw inspiration from the notion of ‘enrollment’ developed by Latour (2005). Through such a snowball type process, a growing number of actors are enrolled in the protection of the environment in a gradual fashion, and then mobilized in different ways to reconstitute the structures of global farming and trade.

Given all this, should we abandon research about certification schemes and their associated labels? On the contrary, we are not taking a position for or against certification and research into the area. However, the research implications of our position are that certifications must be included in a wider network of controversies and stakeholders’ views that go beyond them into the global value chain. Our view is that interdisciplinary agricultural research should go from farm to fork, with contributions covering the whole supply chain between agricultural systems and their socio-economic contexts. Interdisciplinary collaboration between the social and natural sciences can help policy-makers address complex questions at different scales. This includes, for instance, the growing concern about the stagnating rates of organic conversion in the wealthiest northern European countries (e.g. 17), which might reflect the rise of cheaper organic foods sourced from southern countries. Agricultural producers in these countries have lower wages and prices on average, and for them, decisions about converting to organic depend more on fluctuations in demand than on individual farm decisions, or local and national realities.

In turn, neither are we in favor of the many companies benefiting from different labeling schemes that put more economic and bureaucratic pressure on producers in less prosperous countries, with the consent of public institutions and academics (Getz and Shreck, 2006). This requires that individual organic consumers and net consuming countries perform more robust analyses on how international value chains intersect with certification schemes to affect organic producers in other countries. It is then important to consider controversies about labels as only one more factor to take into account so that we do not confuse the means with the end: reaching more sustainable and fair eco-agricultural production worldwide. Future discussions among practitioners, researchers and policy-makers should promote a more fluent dialogue between the social and natural sciences, bringing mutual benefits to support the different processes and functions and the associated labels aimed at providing transparent information to consumers.

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References

Alonso González P and Macías Vázquez A (2014) Neoliberalismo corporativo y clientelismo en España: etnografía de la financiación europea del desarrollo rural a través de un proyecto fallido. *AIBR* 9, 223–250.

- Delmas MA, Gergaud O and Lim J (2016) Does organic wine taste better? An analysis of experts’ ratings. *Journal of Wine Economics* 11, 329–354.
- Getz C and Shreck A (2006) What organic and Fair Trade labels do not tell us: towards a place-based understanding of certification. *International Journal of Consumer Studies* 30, 490–501.
- Gibbon P and Ponte S (2008) Global value chains: from governance to governmentality? *Economy and Society* 37, 365–392.
- Hennion A, Teil G, Barrey S and Floux P (2011) *Le vin et l’environnement: faire compter la différence*. Paris: Presses des Mines.
- Hirsch D (2011) “Hummus is best when it is fresh and made by Arabs”: the gourmetization of hummus in Israel and the return of the repressed Arab. *American Ethnologist* 38, 617–630.
- Home R, Indermuehle A, Tschanz A, Ries E and Stolze M (2019) Factors in the decision by Swiss farmers to convert to organic farming. *Renewable Agriculture and Food Systems* 34, 571–581.
- Horrigan L, Lawrence RS and Walker P (2002) How sustainable agriculture can address the environmental and human health harms of industrial agriculture. *Environmental Health Perspectives* 110, 445–456.
- Jahn G, Schramm M and Spiller A (2005) The reliability of certification: quality labels as a consumer policy tool. *Journal of Consumer Policy* 28, 53–73.
- Janssen M and Hamm U (2012) Product labelling in the market for organic food: consumer preferences and willingness-to-pay for different organic certification logos. *Food Quality and Preference* 25, 9–22.
- Kees J (2009) Implicit sociology, interdisciplinarity and systems theories in agricultural science. *Sociologia Ruralis* 49, 172–188.
- Kleine D (2008) Negotiating partnerships, understanding power: doing action research on Chilean Fairtrade wine value chains. *The Geographical Journal* 174, 109–123.
- Lamine C and Bellon S (2009) Conversion to organic farming: a multidimensional research object at the crossroads of agricultural and social sciences. A review. *Agronomy for Sustainable Development* 29, 97–112.
- Latour B (2005) *Reassembling the Social: An introduction to Actor-Network-Theory*. Oxford: Oxford University Press.
- Lohr L (1998) Implications of organic certification for market structure and trade. *American Journal of Agricultural Economics* 80, 1125–1129.
- Lowe P, Phillipson J and Wilkinson K (2013) Why social scientists should engage with natural scientists. *Contemporary Social Science* 8, 207–222.
- Macías Vázquez A and Alonso González P (2015) Managing collective symbolic capital through agro-food labelling: strategies of local communities facing neoliberalism in Spain. *Journal of Rural Studies* 41, 142–152.
- MAPAMA (2018) *Estrategia para la producción ecológica 2018–2020*. Madrid: Gobierno de España.
- Markard J, Raven R and Truffer B (2012) Sustainability transitions: an emerging field of research and its prospects. *Research Policy* 41, 955–967.
- Marques MJ, Bienes R, Cuadrado J, Ruiz-Colmenero M, Barbero-Sierra C and Velasco A (2015) Analysing perceptions attitudes and responses of winegrowers about sustainable land management in Central Spain. *Land Degradation & Development* 26, 458–467.
- Meredith S and Willer H (2016) *Organic in Europe, Prospects and Development*. Brussels: IFOAM EU Group.
- Nuijten E (2011) Combining research styles of the natural and social sciences in agricultural research. *NJAS - Wageningen Journal of Life Sciences* 57, 197–205.
- O’Donoghue C, Clavin D, Ryan M, Heery D and Leavy E (2018) Policy incentives and the organic value chain in Ireland. *International Journal on Food System Dynamics* 9, 21.
- Ollivier G, Magda D, Mazé A, Plumecocq G and Lamine C (2018) Agroecological transitions: what can sustainability transition frameworks teach us? An ontological and empirical analysis. *Ecology and Society* 23, 5. <https://doi.org/10.5751/ES-09952-230205>
- Parga-Dans E and González PA (2018) From paper to soil: the impact of new EU alcoholic drinks labeling regulations for wine regions. *Journal of Consumer Protection and Food Safety* 13, 89–94.
- Serra T, Zilberman D and Gil JM (2008) Differential uncertainties and risk attitudes between conventional and organic producers: the case of Spanish arable crop farmers. *Agricultural Economics* 39, 219–229.
- Stark D (2011) *The Sense of Dissonance: Accounts of Worth in Economic Life*. Princeton: Princeton University Press.

- Teil G** (2013) Should controversies be cut short? An empirical analysis of agri-environmental certifications in the French vitiviniculture. *Cahiers Agricultures* **22**, 133–141.
- Teil G** (2014) Is organic farming unsustainable? Analysis of the debate about the conventionalisation of the organic label. In Bellon S and Penvern S (eds), *Organic Farming, Prototype for Sustainable Agricultures: Prototype for Sustainable Agricultures*. Dordrecht: Springer, pp. 325–344.
- Teil G** (2017) Protecting appellations of origin: one hundred years of efforts and debates. In van Caenegem W and Cleary J (eds), *The Importance of Place: Geographical Indications as a Tool for Local and Regional Development*. Cham: Springer, pp. 147–171.
- van Amstel M, Driessen P and Glasbergen P** (2008) Eco-labeling and information asymmetry: a comparison of five eco-labels in the Netherlands. *Journal of Cleaner Production* **16**, 263–276.
- Villanueva-Rey P, Vázquez-Rowe I, Moreira MT and Feijoo G** (2014) Comparative life cycle assessment in the wine sector: biodynamic vs. conventional viticulture activities in NW Spain. *Journal of Cleaner Production* **65**, 330–341.