Geography matters; the relevance of territorial heterogeneity in shaping farmers’ conditions, strategies and performances in the context of globalization and sustainability.

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*Abstract –Agriculture and food production are subjected to market and policy drivers and fluctuations that are gradually becoming global in scope. This trend turns decisions and preferences by stakeholders within local and regional farm-systems incrementally less influential. This problem directly undermines the subsidiarity principle that underpins the sustainability paradigm. We therefore argue that without gaining a better understanding of the territorial aspects of governance, it might become unfeasible to achieve the sustainability targets currently set for farming systems across Europe. Based on this argument, in this paper we will discuss how we adapted the C (Conditions)-S (Strategies)-P (Performances) conceptual model developed in the H2020 SUFISA project (*[www.sufisa.eu](http://www.sufisa.eu)*) to best reflect the territorial heterogeneity of farming systems and its potential to affect sustainability targets. To achieve this goal, we explored three key conceptual elements in geographical sciences; scale, place and landscape. Incorporating these elements allowed us to enrich and expand our theoretical model beyond its basic sociological and economic foundations. Currently, further theoretical arguments and empirical tests are undergoing in order for the model to be refined to an extent that it can meaningfully influence future agricultural policy and farmer´s practices across Europe.*

 *Keywords: Territory; Heterogeneity; Farming Systems; Sustainability; Globalization.*

1. INTRODUCTION

The trend towards a globalized economy and culture is a key force driving change in agricultural production, trade and consumption (Josling, 2012). From a territorial point of view these changes are reflected in the heterogeneous mosaics of rural habitats and farming systems that exist worldwide, and which are changing in rapid, complex and largely unsustainable ways (Wen-bin; Qiang-yi; Verburg et al. 2014). Furthermore, such changes are expected to trigger externalities that shall affect the sustainability of multiple national and regional economies and societies across the rural world (Seppelt, Beckmann, Ceasau, et al, 2016).

The situation of food production in the European Union is reflective of such complexity (Van Zanten *et al*, 2014). This is so despite of the many attempts, mainly through market initiatives, to implement a common regulatory and policy framework (Robinson & Carson, 2015). Considering this context, we argue that farmer’s decisions, strategies, and performances are not solely driven by the conditions considered in the economic and sociological literature. Conversely the territorial aspects are indeed as important as the socio-economic ones (see conceptual framework in <http://www.sufisa.eu/news.html>).

Consequently, disentangling the territorial heterogeneity of farming systems across Europe is a key step to design policy and economic instruments that are better tailored to reflect on farmers’ own motivations, perceptions and interests. With this argument in mind we examined the multi-faceted implications of expanding the current framework of conditions, strategies and performances for farm sustainability set in the SUFISA H2020 project ([www.sufisa.eu](http://www.sufisa.eu)). The main aim of this was to better understand the differences and commonalities among farmers’ mind sets when they are considered in their distinctive territorial contexts. To achieve this, we examined the possibilities posed by a series of key territorial concepts developed in the geographical sciences including; scale, place and landscape. Considering scale (Gibson, Ostrom & Ahn, 2000) helps unravel the complexity of institutional and spatial-temporal levels in which farmers’ conditions and decisions are framed, and the miss-matches between the scope of action for diverse decision-makers (Cumming, Cumming & Redman, 2006).

The concepts of place (Castle, 1998) and landscape (Pedroli, Pinto-Correia & Cornish, 2006) contribute by respectively adding the sense of belonging (place) and the perceived social-ecological context (landscape) which are both important aspects of farmer´s realms, and which strongly influence decision making at the farm level.

In this paper, we will discuss how considering these three key territorial concepts helped enrich the conceptual framework set in the SUFISA project, enabling its potential to better coordinate the multiple bottom-up initiatives (e.g. decisions at the farm level) and top-down strategies (e.g. planning and policies) that are required to drive change towards sustainability in globalized farming systems.

1. METHODS

Given the lack of previous experiences available to test the conceptual approaches that we were pursuing, we decided to revise the diverse tasks planned in SUFISA in the following ways:

* To test the relevance of the concept of scale we categorized each of the Conditions and Strategies generally defined for all case studies in the project so that they would also include information about the spatial scales (Global to National vs Regional to Local) at which each of them individually become relevant. In addition, the original list of CSPs was also altered to reflect some conditions and strategies that are either directly reflect landscape

 functions and processes or either that are active

 at the landscape scale.

* To check for place and space, some further extra Conditions and Strategies were added to the framework that directly relate to these concepts (e.g. for sense of place we added some subjective and perceptive variables, whilst for space we looked at spatial relationships and location of farms in relation to their neighbours). Also, the consideration of elements of place and spatial relationships and location were included in the design and implementation of the wide range of participatory events and stakeholder interactions planned along the project (WP2).
* Last, considering space and landscape allowed to perform a spatial stratification of farms to be surveyed that should therefore be more representative of the territorial heterogeneity in each case study commodity and region.
1. RESULTS and DISCUSSION

The results obtained are only in progress (the project ends in 2019), but still bear some significant implications which can be already stated. Firstly, it is clear how adding a territorial heterogeneity permitted to enrich and expand the original CSP model beyond its socio-economic approach, thus better matching the concept of sustainability.

Secondly, it allowed us to better engage with non-researchers, who responded positively to the importance of place, space and landscape in their decisions and strategies.

1. CONCLUSIONS

Adding a geographical perspective to the analysis of financial sustainability of farming systems in the context of globalisation and sustainability could, in principle, become important to move towards research programs that are better grounded in the reality of farm systems and other local and regional governance institutions. In addition, the addition of a territorial heterogeneity approach seems to be appreciated by farmers and other key stakeholders as it better expresses the wide set of conditions underpinning their strategies and related performances. However, results so far are either theoretical or preliminary, and more work will be required under the SUFISA project before definitive lessons are learnt that can be tested in a wider range of situations and contexts.

Acknowledgement

We thank the European Commission for funding our research under the HORIZON 2020 SUFISA- “Sustainable Finance for Sustainable Agriculture and Fisheries” project (grant agreement No 635577). We also thank all partners in the project for their suggestions and fruitful discussions.

References

Castle, E.N. 1998. A conceptual framework for the study of rural places. American Journal of Agricultural Economics, 80 (3): 621-631.

Cumming, G. S., D. H. M. Cumming, and C. L. Redman. 2006. Scale mismatches in social-ecological systems: causes, consequences, and solutions . Ecology and Society 11(1): 14.

Gibson, C.C. Ostrom, E. & T.K. Ahn, 2000. The concept of scale and the human dimensions of global change: a survey. Ecological Economics, 2000 (32-2), 217-239

Josling, 2012. New Trade Issues in Food, Agriculture and Natural Resources, in Amrita Narlikar, Martin Daunton, and Robert M. Stern (eds.) The Oxford Handbook on the World Trade Organization, Oxford University Press

Pedroli, B., Pinto-Correia, T. & Cornish, P. 2006. Landscape – What’s in it? Trends in European Landscape Science and priority themes for concerted research. Landscape Ecology (2006) 21: 421.

Robinson G. & D.A. Carson, 2015. Resilient communities: transitions, pathways and resourcefulness. The Geographical Journal, 182 (2), 114–122.

Seppelt, R. M., Beckmann, S., Ceauşu, A.F., Cord, K., Gerstner, J., Gurevitch, S., Kambach, S., Klotz, C., Mendenhall, H.R.P., Phillips, K., Powell, P.H., Verburg, W., Verhagen, M., Winter, M. & T. Newbold. 2016. Harmonizing Biodiversity Conservation and Productivity in the Context of Increasing Demands on Landscapes. BioScience (2016) 66 (10): 890-896

Van Zanten, B.T., Verburg, P.H., Espinosa, M., Gomez-y-Paloma, S., Galimberti, S.G., Kantelhardt, J., Kapfer, M., Lefebvre, M., Manrique, R., Piorr, M., Raggi, M., Schaller, L., Targetti, S. Zasada, I. & D. Viaggi, 2014. European agricultural landscapes, common agricultural policy and ecosystem services: a review. Agron. Sustain. Dev., 34 (2014), pp. 309–325

Wen-bin, WU., Qiang-yi, Y., Verburg, P., Liangh-Zi, Y., Peng, Y. & T. Huan-Jung, 2014. How Could Agricultural Land Systems Contribute to Raise Food Production Under Global Change?. Journal of Integrative Agriculture 13(7):1432–1442.