

2014

UMR 1302 SMART

INRA de Rennes
 4 allée A. Bobierre
 CS 61103
 35011 Rennes cedex

AGROCAMPUS OUEST
 65 rue de Saint-Brieuc
 CS 84215
 35042 Rennes cedex

UR 1134 LERECO

INRA de Angers-Nantes
 Rue de la Géraudière
 BP 71627
 44316 Nantes cedex 3

Management

Pierre Dupraz, director
 Vincent Chatellier, director
 Jean Cordier, Deputy Director

Key figures for 2014

- 33 research and academic staff
- including 13 accredited PhD supervisors
- 17 assistants, technicians and administrative staff
- 12 PhD students
- 34 scientific articles in peer-reviewed journals
- 15 research and expertise reports
- 3 PhDs defended
- 10 Working Papers
- 20 scientific seminars

SMART-LERECO

Research Highlights

SMART-LERECO is a research team as defined by the French Evaluation Agency for Research and Higher Education (AERES). It is made up of the INRA – Agrocampus Ouest Joint Research Unit on “Agricultural and Market Structures, Resources and Territories” (UMR 1302 SMART) based in Rennes and the INRA “Economic Research and Studies Laboratory” Research Unit (UR 1134 LERECO) based in Nantes.

Research Highlights looks back over the year’s main achievements in terms of research findings, participation in setting up research projects and programmes, decision-making assistance and knowledge transfer activities in our partnerships with academic research and higher education bodies and/or with public and private agriculture players (French ministries, European institutions, international organisations, extension services, professional agricultural organisations, etc.).

Research findings

Agricultural prices and the food industry

The downturn in agricultural prices might be expected to boost sales across all food industries and encourage the appearance of new businesses. However, an imperfect competition model in which firms are heterogeneous and the decision to enter the market and choice to export are endogenous shows that **a fall in agricultural prices drives up large food firms’ market share at the expense of the low productivity businesses**. What happens is that the relative weight of agricultural inputs in production costs increases with the level of labour productivity. So a more productive firm can undercut the selling prices of a less productive firm when agricultural prices drop. This study provides greater insight into the reasons behind the growing food business concentration among a few firms and the rise in average productivity observed over the last 30 years.

Find out more:

Gagné C., LeMener L. (2014). Agricultural prices, selection, and the evolution of food industry. *American Journal of Agricultural Economics* 96(3): 884-902.

Contact: carl.gaigne@rennes.inra.fr

Research findings

Trade and the supermarkets

Multinational retailers play an important role in international food trade. A model estimated from bilateral data on trade in food sold in supermarkets for a large panel of import and export countries studies whether **the presence of major retailers on overseas markets stimulates exports from the home country to these destinations**. A positive effect is found for both values and quantities exported, with the conclusion that the impact of major retailers’ overseas operations on home country exports is not induced by a change in the price or quality of the exported product. It remains to be seen whether this result is due to lower export costs for the firms in the home country and/or foreign consumers’ greater preference for products from the home country.

Find out more:

Cheptea A., Emlinger C., Latouche K. (2015). Multinational Retailers and Home Country Food Exports. *American Journal of Agricultural Economics* 97(1): 159-179.

Contact:

karine.latouche@nantes.inra.fr

Partnership

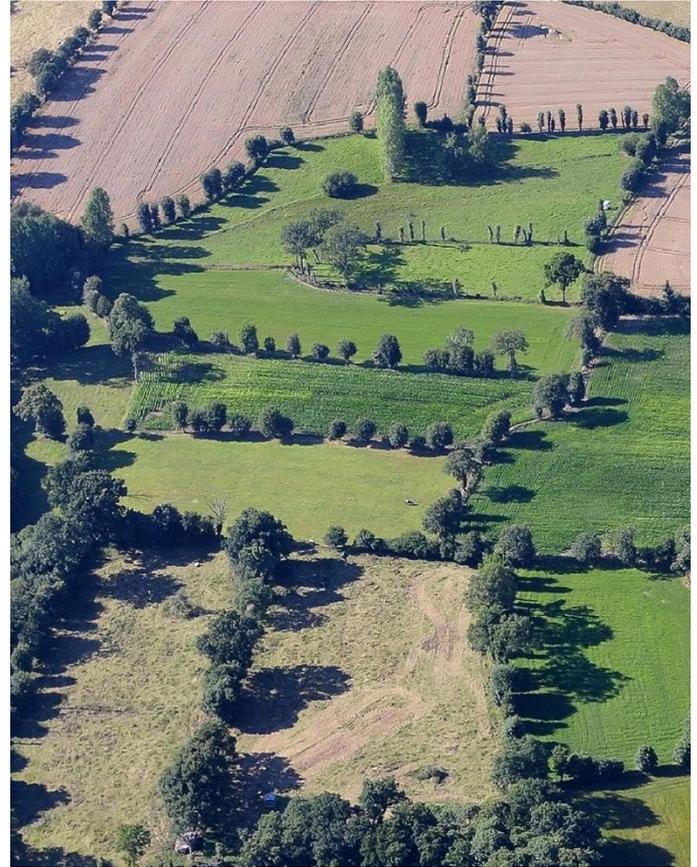
The farmland market

The Association Régionale pour l'Agriculture Paysanne (ARAP) and the Confédération Paysanne teamed up with SMART-LERECO to study the farmland market in Brittany. With highly volatile prices and the end of milk quotas, access to land has become an important issue for Breton livestock farmers and system autonomy. The development and concentration of intensive livestock farming based on high-energy, high-protein feed is often responsible for higher animal waste levels than local sewage treatment capacities can handle. Regulations and environmental policies drive up competition for land between farms and production systems, resulting in geographic farmland price disparities.

Find out more:

Letort E., Temesgen C. (2014). The influence of environmental policies on farmland prices in the Bretagne region of France. *Review of Agricultural and Environmental Studies* 95(1): 77-109.

Contact: elodie.letort@rennes.inra.fr



© J. Baudry - INRA

Research findings

Farm dependency on fertilisers

The European Union (EU) imports the natural resources it needs to produce most fertilisers from Africa and Russia. The massive increase in fertiliser prices in recent years has triggered much debate about **the EU's vulnerability to its supply sources and the strategies required for its technical systems to become gradually less dependent on this input**. Although European fertiliser use has been decreasing for over a decade due to the yield stagnation, shrinking farmland and improved expertise, EU farm dependency on fertilisers is a serious issue for three reasons at least: global demand for fertilisers is shooting up in the Asian countries; the countries that supply the European market are not necessarily politically stable at present; and the development of European farming less dependent on fertilisers is feasible in the long term, but will call for governments, firms and farmers to all pull together.

The studies conducted here show that French and European farms are not uniform in their ability to deal with mineral fertiliser price volatility. Some do not have any real problem with the price rise in view of their ratio of high production levels to the cost of fertilisation. However, fertiliser price volatility is an important factor for the competitiveness of farms with high fertiliser outlays compared with their production and/or with little agronomic room for manoeuvre.

Find out more:

Lecuyer B., Chatellier V., Daniel K. (2014). Analysis of price volatility of mineral fertilisers: possible issues for European farmers. *International Journal of Agricultural Resources Governance and Ecology* 10 (4): 344-361.

Lecuyer B., Chatellier V., Daniel K. (2013). Les engrais minéraux dans les exploitations agricoles françaises et européennes. *Économie Rurale* 333: 147-157.

Contact: vincent.chatellier@nantes.inra.fr

SMART-LERECO – 2014 Research Highlights

Research support

End of the FP7 Factor Markets project

The European 7th Framework Programme's Comparative Analysis of Factor Markets for Agriculture across the Member States (Factor Markets) project ran from 1 January 2011 to 31 December 2013. The project objective was to **improve our knowledge of the functioning of production factor markets (land, capital and labour) in Europe**. SMART-LERECO researchers contributed to the research on the land market, especially the effect of subsidies and environmental regulations on farmland prices in France. One study of long-run transaction data for a number of French regions found among its main results that although agricultural subsidies are clearly capitalised in farmland prices, the extent of this capitalisation depends on subsidy type, regional context and the environmental zoning regulations.

Find out more:

<http://www.factormarkets.eu/>

Ay J.-S., Latruffe L. (2013). The Empirical Content of the Present Value Model: A Survey of the Instrumental Uses of Farmland Prices. *Factor Markets Working Paper n°53*.

Latruffe L., Minviel J. J., Salanié J. (2013). The Role of Environmental and Land Transaction Regulations on Agricultural Land Price: The Example of the French Region Brittany. *Factor Markets Working Paper n°52*.

Latruffe L., Piet L., Dupraz P., Le Mouél C. (2013). Chapter 8: The influence of agricultural subsidies and regulations on sale prices of farmland in France. in J. Swinnen and L. Knops (eds.), *Land, labour and capital markets in European agriculture. Diversity under a common policy*, CEPS, Brussels (Belgium), pp. 81-87.

Temesgen C. (2014). Comprendre la formation des prix du foncier agricole en France. *PhD thesis*.

Contact: laure.latruffe@rennes.inra.fr



© M. Meuret - INRA



© A. Beguey - INRA

Knowledge transfer

Business and Agricultural Economy Chair

The Business and Agricultural Economy (EEA) Chair was created in 2013 by a partnership between Agrocampus Ouest and Crédit Agricole in Brittany to conduct research, training and dissemination activities focusing on the development and performance of Breton farming structures. **The first annual EEA Chair meeting was held on 5 December 2014**. The meeting presented a progress report on the Chair's work, awarded a prize to the two best studies by Agrocampus Ouest students on the Chair's focal areas, and received a guest speaker on a current issue affecting the Breton farming and food sector. The guest speaker at this first meeting was Jean-Christophe Debar, Agri US Analyse consultant and Director of Pluriagri and the Fondation pour l'Agriculture et la Ruralité dans le Monde (FARM). He presented the new agricultural policy of the United States introduced by the 2014-2018 Farm Bill.

Find out more:

<http://chaire-eea.agrocampus-ouest.fr/>

Contact: aude.ridier@agrocampus-ouest.fr

Decision-making assistance

Evaluation of the CAP second pillar

With the Common Agricultural Policy (CAP) budget increasingly under attack and the use of every single euro scrutinised, it is important to evaluate the impacts of measures implemented to meet the policy objectives. Within the evaluation of the CAP second pillar, **the impact of measures implemented under two French rural development plans (2000-2006 and 2007-2013) was studied**. Spatial econometric techniques were used to isolate the spatial and temporal effects of the measures. The findings show that a detailed geographic resolution is needed to observe any effects. They also show that some 2000-2006 measures, such as local farm contracts (CTE) and sustainable agriculture contracts (CAD), have delayed effects on farm biodiversity. Among others, locally targeted agroenvironmental measures have a positive impact on both the farm employment and biodiversity. It is shown that spatial econometrics makes it possible to better understand the processes that lead to changes, and that trends observed at the national scale do not necessarily apply at the regional scale.

Find out more:

Desjeux Y., et al. (2015). Evaluating the impact of rural development measures on nature value indicators at different spatial levels: Application to France and the Netherlands. *Ecological Indicators*.

Desjeux Y., et al. (2014). Evaluating the impact of rural development measures on farm labour use: a spatial approach. *XIVth Congress of the European Association of Agricultural Economists*, Ljubljana (Slovenia).

Contact: yann.desjeux@rennes.inra.fr



© L. Delaby - INRA

Research findings

Farmland fragmentation and performance

2007 data from the Farm Accountancy Data Network (FADN) and the Land Parcel Identification System (LPIS) were jointly processed to study **the impact of farmland fragmentation on the performance of Breton farms**. Farmland remains fragmented despite extensive reorganisation in response to the decrease in the number of French farms and the simultaneous increase in farm size. This fragmentation may influence farmers' decisions and have positive and negative impacts on farm performance. The study is original in that it considers a wide range of fragmentation descriptors (number, size, shape, distance of plots from farm buildings and plot scattering) and performance indicators (production costs, yields, revenue, profitability, and technical and scale efficiency). The findings show that fragmentation virtually always diminishes the performance of the Breton farms in the year considered. It tends to push up production costs and reduce technical performance, revenue and profitability as well as the overall efficiency of the productive process. Yet the findings also show that the magnitude of this impact depends on the fragmentation descriptors and performance indicators considered. In particular, the rarely studied fragmentation descriptors of plot shape and distance prove to be among the most decisive.

Find out more:

Latruffe L., Piet L. (2014). Does land fragmentation affect farm performance? A case study from Brittany, France. *Agricultural Systems* 129: 68-80.

Piet L., Cariou S. (2014). Le morcellement des exploitations agricoles françaises. *Économie Rurale* 342: 107-120.

Contact: laurent.piet@rennes.inra.fr

Publishers

Pierre Dupraz (SMART) and Vincent Chatellier (LERECO)

Editors-in-Chief

Laurent Piet and Laure Latruffe

Layout

Laurent Piet

http://www.rennes.inra.fr/smart_eng/
© SMART-LERECO, 2015

