

# Transition to organic production

## The case of the Camargue in France

**SUMMARY** This case study focuses on the transition to organic farming in the French Camargue. A research programme was launched in the year 2000 with the objective of expanding organic farming in the territory and thus responding to the severe environmental problems, e.g. the pollution of the Rhône River. The main impacts of the research – additionally driven by external factors, especially economic ones – are the increase in the surface under organic rice (the main crop in the territory) as well as increased revenues at farm level. We hereby trace back the innovation pathway, describe the key influencing factors and draw general conclusions for research and innovation in EU agriculture.

→ Find the complete case study report at [www.impresa-project.eu](http://www.impresa-project.eu)



Paddy field in the Camargue  
(Source: Ray Wilson)

### INTRODUCTION

#### THE CASE STUDY TOPIC

In the 1980s, organic rice production in the Camargue increased largely through the initiative of pioneer producers. In the year 2000 a research programme on organic rice production was launched by the French National Institute of Agronomic Research (INRA) together with some partners (CIRAD, the French Centre of Rice – CFR, and the national institute FranceAgriMer). The aim was to create new techniques adapted to organic production, but also to foster the development of organic

production in the Camargue. The rationale was mainly to solve pollution problems in the region (e.g. of the Rhône River).

In 2014, organic rice accounted for 10% of the total rice farming area and 16% of the rice producers (35 out of a total 215).

This case study examines the radical innovation of the transition to organic farming in the Camargue, through investigating five related incremental innovations. The most important ones are the development of crop rotation systems, false seed bed techniques, and the organisation and scaling-up of the organic value chain. Two minor ones are

- (1) seeding and flooding paddy fields later in the year and
- (2) increasing the crop-seeding rate.

#### THE RESEARCH

The research programme was composed of six consecutive projects. The main specific objectives of the programme were to develop organic production and marketing and to establish a strong link with training. The research activities principally led by INRA included: exploring the conditions of developing organic cereals; conducting field

trials to combat weeds and improve the fertilisation management; and developing training sessions with farmers (ORPESA project). One research activity from CIRAD was also under review, which focused on weed control machinery (e.g. harrows and hoes).

### THE ACTOR NETWORK

The main actors involved in the research programme and innovation under review are two researchers from INRA, one scientist from CIRAD, the cooperative SudCéréales, the private traders SARL Thomas and BIOSUD, and 35 partially organic and fully organic farmers. The national FranceAgriMer institute is also important since it financed many trials and projects. It is noteworthy that the research and extension centre CFR, the Rice Farmers Union and the Park of the Camargue are not core elements in the actor network. The network has substantially evolved since the beginning of the research programme. Particularly, INRA became more and more important due to increasingly close relationships with farmers.

### THE IMPACT OF AGRICULTURAL RESEARCH

#### THE IMPACT MEASURED

All impacts of the research arise from farmers' adoption of organic farming. The surface under organic rice cultivation had reached 1,400 ha in 2014. Since 2000, other direct impacts have been a decrease by 8.5% in the use of pesticides and by 45% in the consumption of water at the level of the Camargue's agriculture. An indirect impact is the reduction by 8% of the total surface dedicated to rice due to the fact that converting to organic production requires an extended crop rotation to control weeds. Finally, a very important (rather indirect) impact is the increase in net margins per hectare to about 111% for organic farmers (on crop production), without taking CAP payments into account.

### ROLE AND INFLUENCE OF THE RESEARCH

The research programme was launched thanks to one key scientist from INRA who is very passionate about organic rice and has been working on it intensely. However, the research activities and related outputs did not contribute much to attaining outcomes and impacts. There is a gap between research outputs and farmers' decisions to adopt new techniques. We emphasize three main evidence factors:

- (1) informal trials with crop rotations by farmers were very important for converting to organic farming;
- (2) economic drivers were crucial;
- (3) the institutionalization of the supply chain was a decisive factor (not directly linked to the research).

As a result, the increase in area under organic farming since 2000 would probably have occurred without the research programme, and the development of crop rotation systems in particular. However, we have no evidence whether the rate of development would have been less significant.

### THE IMPACT PATHWAY STORY

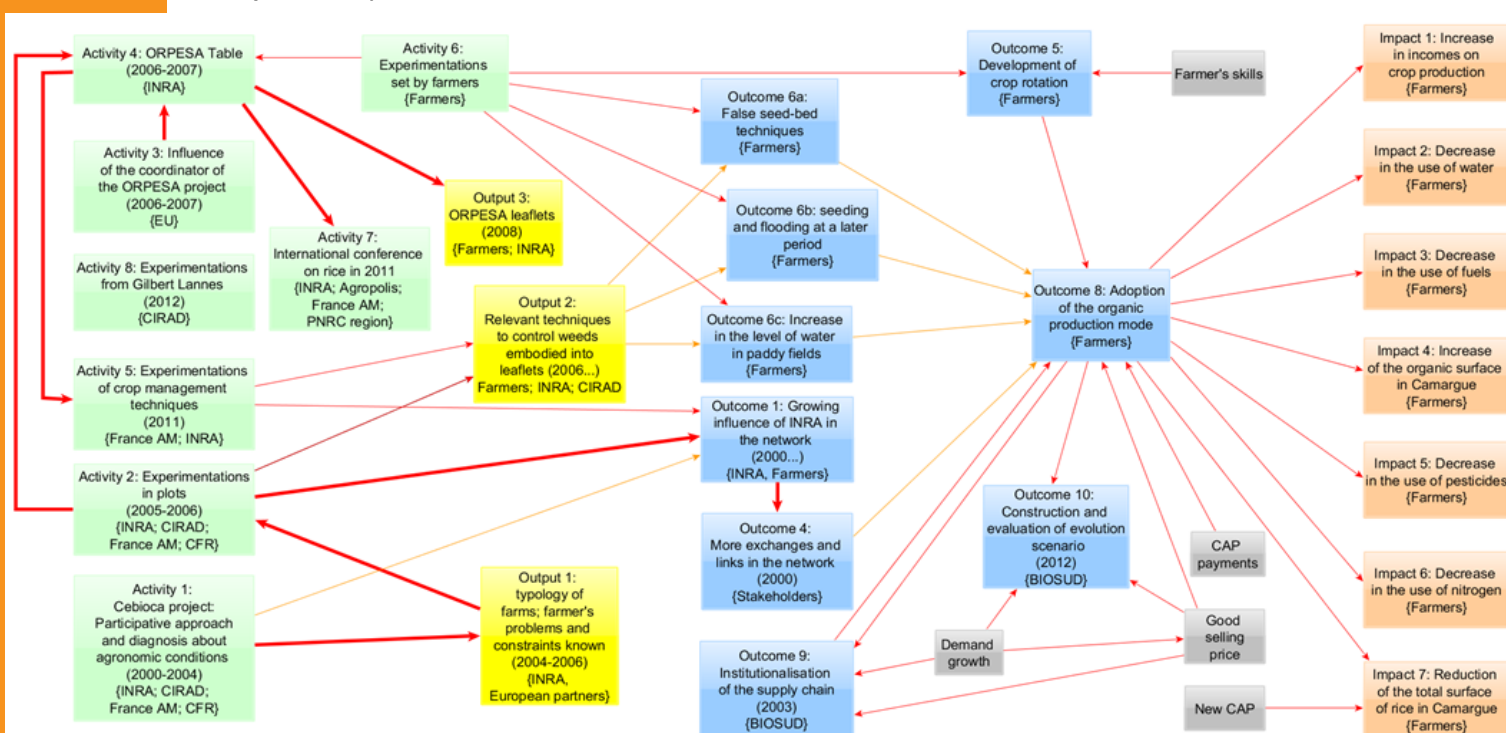
The research programme had started by identifying and understanding problems related to environmental issues and challenges encountered at the farm level. This diagnostic highlighted yield variability factors and discovered innovative technical systems. First, scientific experiments (mainly on controlling weeds) and participatory training sessions involving researchers and farmers were done on that basis. This, in turn, allowed advanced scientific trials to be conducted. INRA produced several leaflets in which new knowledge was integrated.

In general, the increasing involvement of INRA in the network helped the idea of organic farming to be developed; and those farmers who hosted trials on behalf of INRA

acknowledged INRA's efforts more than others.

That said, research outputs did not substantially contribute to the adoption of organic farming, mainly due to informal trials made by farmers and to economic drivers such as market prices. The near absence of peer-to-peer exchange among producers and the low involvement of the knowledge broker CFR (French Centre of Rice) also explain this. →

The transition to organic farming has contributed to some impacts at the level of the Camargue territory: an increase in the surface dedicated to organic rice production; a fall in the use of pesticides, water, fuels and nitrogen; an increase in net margins per hectare; and a decrease of the total surface devoted to rice in the Camargue.



## KEY FACTORS

There is clear evidence that the participatory training sessions (in the ORPESA project) were useful for participants, however only a few attended. In other words, the co-production of knowledge that took place among stakeholders, based on research experiments, farmers' trials (refinement of agronomic systems) and general knowledge already gained, did produce some interesting results. The ORPESA sessions allowed ideas to be shared, but most importantly listed and assessed available techniques to combat weeds, and in turn suggested new relevant scientific experiments. →

Generally, the different projects conducted in the research programme led to, or were mostly due to, the increasing influence of INRA in the network and related growing interactions with farmers.

Another important enabling factor was the institutionalisation of the supply chain in 2003. The creation of the firm BIOSUD in 2003 by the traders SudCéréales and SARL Thomas supported farmers' conversion mainly through increasing the storage capacities for organic products.

Furthermore, the important price difference of around 100% between organic and

conventional rice as well as the CAP subsidies for conversion to and maintenance of organic areas were two crucial external economic factors.

An important disabling factor was the lack of involvement of the French Centre of Rice: farmers saw this as a barrier to them converting to organic production (lack of experiments and weak knowledge brokering activities).

Finally, we must emphasise the absence of peer-to-peer exchanges between farmers, which was clearly a disabling factor. None of the farmers justified their decision to adopt incremental innovations through inspiration from their neighbours' practices.

## CONCLUSIONS

The research studied played a limited role in supporting farmers' transition to organic farming. Four main factors were identified in evidence:

- (1) informal trials by farmers were very important;
- (2) economic factors were indispensable;
- (3) the institutionalization of the supply chain for organic rice was seen as a crucial factor, whereby the research did not contribute substantially; and
- (4) the CFR was seen as a barrier to the innovation. The last point reflects the fact that knowledge needs, and various types of knowledge must be acknowledged and reflected interactively among stakeholders.

That said, we must emphasize that the research cannot be sufficient in itself and clearly requires political, institutional and organizational support. In particular, we emphasize that an ambitious agricultural policy in the form of support payments, as well as multidisciplinary research collaboration through on-farm trials, are necessary to effect change.

**CONTACT** for more information on the case study:

Sylvain Quiédeville, Otto Schmid,  
Matthias Stolze & Dominique Barjolle  
Research Institute of  
Organic Agriculture  
Frick, Switzerland  
E-mail: [sylvain.quiedeville@fibl.ch](mailto:sylvain.quiedeville@fibl.ch)  
Phone: +41 62 865 0424



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