Farm investment and the *filière*: the influence of internal and external environments on subsidised investment in greenhouse agriculture in Northeast Portugal

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Abstract

This paper presents the preliminary results of the research-in-progress on the 1990-95 subsidised investment boom in greenhouse agriculture in the Trás-os-Montes e Alto Douro region, in Northeast part of Portugal. The primary aims of the initial phase of this research are : (1) to build a profile of the type of farmers involved, (2) to evaluate the impact and the sustainability of the investments made, (3) to identify important economic and institutional actors in the preparation, submission and implementation phases of subsidised farm modernisation.

The conclusions, so far drawn, underline the hypothesis that the success or failure of those investments cannot be explained merely in terms of factors associated with the farm enterprise's "internal environment". Both improved analysis and policy making depend on a careful assessment of the respective roles played by all key actors in the investment process – including other firms in the "filière", government agencies and the technical consultants involved in designing investment plans.

INTRODUCTION

Over the past ten years, even casual observers of the changing landscape of the Trás-os Montes e Alto Douro region (TMAD), in the Northeast Portugal, will have noticed the proliferation of greenhouse agriculture. Where once experts considered the climate of the mountainous interior inappropriate for the commercial use of greenhouses, now the countryside is dotted with modern greenhouses designed for the cultivation of flowers, vegetables and ornamental plants. Intuitively, this development suggests that a new entrepreneurial dynamic has come to characterise the region's farming, hitherto assumed to consist only of relatively technically traditional, pluri-active production units.

This paper presents the initial results of the ongoing research on the entrepreneurship and the investment boom in greenhouses in TMAD, in the period of 1990-95. Special attention is placed on the role played by all the key actors in the production and institutional *filière* in determining the volume, pattern and viability of subsidised farm investment, as well as the role of technical consultants not only in the design of investment plans but also as "knowledge intermediaries" between funding agencies and input suppliers (on the one hand) and farmers. (on the other).

DATA COLLECTION

Quantitative and qualitative data were collected on 100 out of the 141 investment proposals (*planos de melhoria*) with a greenhouse component submitted to IFADAP (*Instituto Financeiro de Apoio ao Desenvolvimento da Agricultura e Pescas*), Portugal's state agricultural credit agency, for part funding under the European Community Rules 797/85 and 2328/91. These proposals were approved and most were undertaken in the period under scrutiny.

The analysis of the aggregated data allowed us first to profile the greenhouse investor, then to apply certain typologies, desegregating the sample in terms of scale of investment, extent of specialisation and degree of entrepreneurial experience. The typologies thus created provided details on the importance of the *internal* environment in the success or failure of subsidised investments. The data also provided the necessary information to assess the role of all key actors in the enterprise's *external* environment in the definition and implementation of the investment process. The general characteristics of investors in greenhouse agriculture were analysed using descriptive statistics, focusing primarily on :

(a) The chronology of investment ;
(b) Its location ;
(c) The level of intended investment ;
(d) Expected sales turnover ;
(e) Expected gross return on investment ;
(f) Investors' gender, age and educational background ;
(g) Landholding and tenure patterns ;
(h) Other variables, such as value of plant and machinery owned, and the authorship of the farm improvement plan.

RESULTS AND CONCLUSIONS

The investment process first began around large centres such as Vila Real and Lamego, close to the Douro Valley, and later spread to Chaves, situated close to the Northern border with Spain, the area, which has since become the undisputed centre of greenhouse agriculture in the region. The investment boom peaked in 1994, measured by the number and the volume of the investments. The greenhouse production consisted mainly of cut flowers and horticultural produce. Over the 1990-1995 period, average investment was around 52 500 euros but, in the peak year, it exceeded 63 000 euros. Expected turnover from greenhouse produce averaged almost 23 000 euros (or around 70% of total sales resulting from the farm improvement plan) and the projected gross rate of return on the investment was around 75%.

Typically, greenhouse investors are young farmers, 80% being below 35 years old. Interestingly, almost half of the investment plans were submitted by women. This trend may reflect the appearance on the scene of women investors prepared to invest in the same manner as their male counterparts, and/or a manifestation of a collective strategy in which male investors use the signature of women relatives in order to maximise family funding. Further research is needed to clarify this point.

Investors tended to work small farms, the average area of which was 3,5 ha. Two thirds rented the land, frequently from parents and relatives. They were in general poorly educated : over 60% of the males and 45% of women had received no more than 6 years of schooling, only 33% having gone beyond the now legal minimum of the 9th grade, with women tending to be better educated than men.

While providing a broad profile of the type of investors applying for farm improvement subsidies, the above profile does not permit an assessment of the *sustainability* of these entrepreneurial initiatives nor does it offer a basis for future improvements in the advisory, selection, monitoring or post-investment follow-up services provided either by public or private institutions.

Consequently, the sample was desegregated and data analysed according to three different typologies of farmers involved, namely :

(a) The *scale of investment* :
small investors (< 25 000 euros),
medium investors (25 000 - 75 000 euros)
and large investors (> 75 000 euros) ;

(b) The *extent of specialisation,* measured by the share of total projected sales derived from greenhouse production, and used as an indicator of specialist, diversified and minimalist investment patterns ;

(c) The *degree of entrepreneurial experience* : namely, the distinction between experienced/established and business start-up investors.

From the desegregated analysis of the data, we could conclude that, although in the peak of the boom (1993-94) the initiatives undertaken were by medium-to-large, younger "business start-up" farmers, producing mainly cut flowers. In reality, the process started in 1991-92, with smaller investments on the part of older, more-experienced investors with a much stronger emphasis on diversification. As we move from one extreme of the continuum *specialists-diversifiers-minimalists* to the other, the importance of the medium investors diminishes relatively to small and large investor groups. While "business start-up" farmers constituted only a small proportion of small investors, farmers with business experience were relatively concentrated in the *minimalist* category, i.e. those for whom greenhouse agriculture represented just a small component of the investment project.

Interviews and informal contacts with a limited number of farmers, and with Ministry of Agriculture and IFADAP technical staff, proved useful in defining the contours of the external environment in which greenhouse agricultural investment has been taking place in TMAD.

One conclusion that can be provisionally drawn from such data is that the investment boom was a more supply-driven than demand-driven process. The very availability of investment subsidies for this type of production clearly influenced the decisions of farmers who, hitherto, and in company with many agronomists, had not considered the region appropriate for greenhouse cultivation.

Furthermore, there was an institutional imperative for IFADAP to ensure that available subsidies were taken up, and for this new initiative to be a success. However, while IFADAP may have felt there would be a relatively small and slowly expanding market for subsidies for greenhouse agriculture, other private and institutional actors, such as innovating farmers in this sector, technical consultants, upstream input sellers, downstream wholesalers and outsourcing agricultural enterprises, all played an important role in accelerating and deepening the investment boom far beyond IFADAP's predictions. The role of each of these actors will now be sketched out.

Initial analysis of the chronology of investment indicates that farmers with a more developed business background constituted the vanguard of investors. The demonstration effect of these first investments provided part of the stimulus that led younger and less-experienced farmers to submit greenhouse-based projects.

However, in the rural Interior North of Portugal, the influence of both full- and part-time technical consultants *(projectistas)* over the contours and trajectory of agricultural investment should not be underestimated. In areas where extension services are scarce and/or overstretched, where most farmers have little education and therefore substantial difficulty in dealing with complex bureaucratic requirements, and where the establishment of an agricultural consultant services company would not be viable, individuals able to advise – for a fee – on how to apply for subsidies, and which subsidies may be more readily available, find a ready-made demand for their privileged knowledge and specialist skills. The data analysed not only showed that around three-quarters of the farm improvement plans were submitted with the help of such *projectistas*, but also indicated that a relatively small number of them exerted considerable influence at the local level.

The data on the investors' internal environment also shows that the first phase of greenhouse agriculture development took place close to key administrative and commercial centres and not in the localities which now constitute the core production areas. While this is partly explained by the clustering of IFADAP and other key agencies in county seats *(sedes de concelho)*, it may also be that farm input companies located in such centres, conscious of the new investment trend, were keen to diversify beyond their traditional activities as nurserymen and sellers of farm equipment, seeds, fertilisers and pesticides, and opted for the supply of greenhouses and greenhouse-related products such as drip-feed irrigation systems.

Finally, there is strong anecdotal evidence that agricultural co-operatives in Spain's autonomous region of Galícia were also a key factor in the investment boom, visiting Young Farmer training courses in Portugal, encouraging participants to submit projects, advising on technical aspects, and offering contracts for the whole crop. The Portuguese *outsourcing* strategy of Spanish flower and vegetable co-operatives, by creating an additional group of growers with more ready access to subsidies, allowed producers/buyers in Galícia to operate more effectively in an increasingly competitive and globalised market, in which the leading firms have already adopted such organisational innovations.

In future work on this subject, and with a view to informing agricultural support policy, which aims to create more viable small farm operations in profoundly rural areas, the authors intend to analyse in detail the precise role and strength of influence exerted by the whole range of private and public actors in this specific *filière*.

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