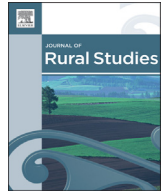


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Specialisation and economies of scale or diversification and economies of scope? Assessing different agricultural development pathways

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ABSTRACT

For decades agricultural development has been led by a modernisation paradigm based on specialisation, intensification and scale enlargement. This model of development model has been supported by means of price support policies and, often, strong central marketing agencies, which had a stabilising effect on prices and significantly reduced market risks for an array of commodities. The economic rationale of this model is based on the pursuit of economies of scale and highly efficient technical production. This model has led farmers to increasing their technical capacity and to neglect activities such as marketing, which was delegated to specialised marketing agencies.

In this paper we argue that such specialisation has weakened the economic resilience of farms. Although a high level of specialisation allows farmers to be technically efficient, acquire highly specific production skills and apply the latest production techniques, it also leads specialised farms to be highly dependent on the commodity market(s) in which they operate, increasing their economic vulnerability. As markets have become deregulated, prices of both inputs and produce have become more volatile, often compromising the economic sustainability of these specialised farms.

The weakened economic resilience of such farms has been aggravated by the gradual dismantling of producer price support causing an increase in price volatility, which has become a near-universal phenomenon for almost all agricultural produce. Highly specialised farming is now only viable where markets are stable and this requires the existence of effective market agencies and strong inter-branch organisations and/or the prevalence of contract farming.

The increasing market orientation of the CAP, the fragmentation and weakening of marketing agencies and – last but not least – the growing societal demand for a more sustainable agriculture have led many farmers to rethink their farm development strategies. They are rediscovering farm diversification as one way of reducing market risks, as well improving the efficiency of the farm's organisation and resource use.

Economies of scope emerge when a farmer can use the same input(s) to produce two or more products, and lower the cost of producing them separately. To achieve this end the inputs have to be complementary. By developing cost complementarities between different crops or livestock species, diversified farms can become more efficient than specialised farms.

Another way that diversified farms can increase their economic sustainability is to partially produce for niche markets thereby generating a higher added value. A product mix of high quality products, possibly from the same production sector, but aimed at different, specific, market segments can further contribute to increasing the overall profitability of diversified farms.

This paper summarises a series of case studies from EU member states and Israel which illustrate how farmers are experimenting with alternative pathways of development based on diversification. It is also shows the challenges they face. These include learning the skills for marketing high value-added farm products, establishing short food chains and the rebuilding supportive social and economic networks. The latter is particularly important when farms are too small to diversify effectively individually. Farms that participate in these economic networks are more able to internalise external economies generated within these networks and develop their knowledge of marketing and production through close

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cooperation with other farms. In some of the case studies the success of diversification clearly depended on the ability of farms to collaborate and share knowledge especially when new technical capacities for say, introducing crop diversification or intercropping, needed to be acquired. The knowledge involved in developing new crop rotation patterns, knowing about crop associations and combinations of crop and livestock activities was either developed *ex novo* or by rediscovering traditional knowledge. At the same time training in marketing food products is also a key to successfully shifting from being a specialised farm to a diversified one.

Farmers need encouragement in order to work together and share their knowledge and experiences of diversification strategies. To this end policies that support collaborative networks are needed. Policies are also required to help establish and sustain collective marketing initiatives, especially short and direct supply chains. Finally, public support to assure against market risks is very helpful when farmers are entering into new markets. These policies are essential to support the existing processes of change that are occurring at grassroots level which are leading to a new model of farm modernisation.

The specific contribution that this paper makes to the rural social science literature is to empirically highlight the limitations of theories about the benefits of economies of scale.

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1. Introduction

Up until the 1950s and 1960s, the majority of farms in Europe were mixed farms, combining animal and plant production and exploiting the agronomic advantages of organic manure and crop rotation (Grigg, 1974; Robinson and Sutherland, 2002). Mixed farming is still common in many other parts of the world, though much less so in Europe (Devendra and Thomas, 2002). The Common Agricultural Policy's (CAP) farm structure policy, introduced at the end of the 1960s, offering price and market support, led many farms and even entire regions to specialise in either milk, beef or pig production or in arable crops, fruits and vegetables (Bowler, 1985; Mora and San Juan, 2004; Zhu et al., 2008). The policy framework, with intervention prices and variable import levies, achieved a relative stability of farm gate prices and created the ideal setting for more specialised farms to follow a strategy of seeking to continuously reduce production costs. In the large plains, production has become predominantly based on intensification, scale enlargement and a high use of external inputs. This has enabled a strong increase in the productivity of labour and the land, but has also caused severe environmental problems such as the pollution of the air, soil, ground and surface water (Brouwer and Lowe, 1988). Meanwhile, farms operating in less-favoured areas run the continual risk of marginalisation and abandonment (Knickel, 1990).

For decades farm modernisation and agricultural policy have focused on specialisation, land consolidation and the reduction of production costs in order to satisfy demand for lower priced food (Johnston and Mellor, 1961; Kleinhanss et al., 2007; Bartolini and Viaggi, 2013). The introduction of labour and land saving technologies accompanied this process of intensification. One main aim was to stimulate general economic development, so consumers could shift more of their expenditure to non-food products. The economic benefits of a strong increase of agricultural productivity were transferred to the rest of the economy through the reduction of real food prices for consumers and by freeing labour for the rapidly expanding non-agricultural sector. For several decades, this was the predominant pathway of farm development, and farmers were not able even to think of alternative routes as extension services, research and training all followed this development paradigm (Benvenuti, 1975). Only some farmers in some, often less favoured areas, continued with production models based on mixed farming and crop rotation, operating in an environment that did not offer many alternatives.

The reduction of market support measures since 2000 has led to a higher price volatility, and this has increased the economic

vulnerability of specialised farmers (Chatellier, 2011). Price volatility notoriously undermines long-term investment perspectives, as the degree of uncertainty regarding expected profit is a key variable determining the rate of investment (Sckokai and Moro, 2009). Moreover, it undermines the capacity of farms to absorb market shocks, and thereby weakens their economic resilience (Darnhofer, 2014). Market liberalisation leaves two essential choices open to farmers.

1. They can specialise further, opting for sustainable intensification (Buckwell, 2014) by improving the productivity of existing agricultural land, but with higher environmental standards (rather than expanding the area under cultivation). Simultaneously they delegate the marketing of their products to strong and centralised agencies that operate on domestic and world markets and are able to cope with price volatility.
2. Or they can diversify production and reduce price risks by making use of the potential for economies of scope and adopt their own marketing strategies to meet diversified demand from local and global consumers.

The first strategy implies not only farm specialisation, but the specialisation of entire regions able to gain a competitive advantage in international markets. There is no doubt that economies of agglomeration can benefit individual farms specialising in certain products. Specialised farmers delegate product marketing and the purchase of inputs to centralised agencies and concentrate their efforts solely on production activities. Social and inter-organisational networks enable the construction of trust, a reduction in transaction costs and the dissemination of entrepreneurial capacities (Butler and Hansen, 2006). For large scale specialisation in fruit production we can find examples in the collective brands of Melinda in Trento and Marlène in South Tirol (Arfini et al., 2008) as well as other specialised fruit and vegetable districts (Alagnier et al., 2002; Mora and San Juan, 2004). These regions can only remain competitive if marketing and logistics are highly centralised, as this is the only way that production can meet the requirements of the centralised purchase platforms of large scale retailers. Regions with fragmented marketing structures are experiencing a drastic decline in production levels and need to find alternative pathways of development (Camanzi et al., 2011).

The second strategy, directed towards diversification, implies the exploitation of shared inputs for two or more products and the opening of new marketing channels. Knowledge about crop rotations and associations needs to be mobilised in order to reach a

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