

**ORGANIC FARMING AND RURAL  
TRANSFORMATIONS IN THE EUROPEAN UNION:  
A POLITICAL ECONOMY APPROACH**

A Dissertation Presented

by

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Submitted to the Graduate School of the  
University of Massachusetts Amherst in partial fulfillment  
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

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Department of Economics

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*In the memory of my grandfathers, Charalampos and Stratos*

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## ABSTRACT

# ORGANIC FARMING AND RURAL TRANSFORMATIONS IN THE EUROPEAN UNION: A POLITICAL ECONOMY APPROACH

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This dissertation investigates the impact of organic farming for achieving the environmental and social objectives of sustainability in Europe over the past 20 years. Organic farming is considered the poster child of rural development in Europe, often seen as a model of the integration of small-scale production with environmental considerations. Since this model runs counter to the logic of developing capitalist structures in agriculture, I revisit the Marxian predictions regarding the “agrarian question”. Furthermore, I trace the discursive changes in support of small-scale production in the EU’s Common Agricultural Policy (CAP), and assess whether small farms have improved their situation under the revised CAP.

Subsequently, I use statistical analysis in order to assess the socio-economic and the environmental consequences of the rise in organic farming. Contrary to what is often assumed, organic farms in Europe display larger average sizes and lower rates



of labor intensity than their conventional counterparts, casting doubts on the efficacy of organic farms to allow family farmers to remain in the countryside as high-value producers. I argue that this development should be viewed as further evidence of the “conventionalization” of organic farming. In order to explain the process which led to such an outcome, I proceed to explain the different ways through which organic farms could overcome traditional problems which impeded the capitalist development of agriculture. Regarding the environmental implications, I evaluate the rise of organic farming by assessing its impact for different countries’ overall pesticide and fertilizer intensity. My results are mixed, with higher organic shares being correlated with decreased application of fertilizer, but less significant results for pesticide intensity.

Finally, I present evidence from qualitative work conducted in 2010 in rural Greece which points to the absence of well-established networks among organic producers, and between them and other actors in the chain of distribution. Small producers who switch to organic methods appear unable to reap the benefits from the higher prices and the institutional support for organic farming. Hence, it is larger enterprises which dominate the organic sector. I also examine the role of certification agencies, as a prime recipient of surplus transfers, and question the safeguards of organic enterprises against recent developments in agricultural labor relations, which are highly exploitative of immigrant labor.

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# CHAPTER 1

## INTRODUCTION

### 1.1 A world in crisis

The capitalist world is currently witnessing one of the most severe crises in its history. More than 20 years after the “end of history”, the US is experiencing an unemployment rate of approximately 8-10%. This unemployment rate is not only close to its post-Great Recession historic high, but has also been persistent throughout the post-2008 “jobless recovery”. Striking rates of unemployment are coupled with historically unprecedented indicators of inequality. Even before the crisis income inequality was on the rise: the income share of the top 10% in the US had reached an unprecedented 50%, and the top 1% alone received one-fourth of the income generated in the US (Atkinson et al., 2011).

The economic situation is not that different on the other side of the Atlantic Ocean. European countries have been also experiencing rising inequality. Productivity increases have not been transformed into higher wages, as real unit labor costs have been stagnant in Germany (and in the EU-27) since the early 1990s. Perhaps more importantly, Europe is witnessing the collapse of the model of social welfare that has traditionally differentiated it from the US. While labor markets become more and more liberalized, basic tenets of the European capital-labor accord (such as free public education or healthcare) are dismantled. Despite the ECB’s austere monetary policy, the euro has not only failed to become a serious challenge to the dollar for the position of the world’s prime reserve currency, but in the absence of a stabilizing mechanism its very existence in its current form is thrown in doubt (Varoufakis, 2011).



Beyond facing economic troubles, the capitalist model of the global North is experiencing a severe crisis of legitimacy, which is best exemplified in movements to transcend the current form of economic organization<sup>1</sup>. Interestingly, the environment occupies a central position in terms of the public's awareness of the limitations of capitalism. In 2008, food riots broke out across the world, as a response to the increase in food prices due to speculation (Magdoff and Tokar, 2010; Ghosh, 2010). Apart from the compelling evidence on climate change, recent disasters such as the BP oil spill of 2010 and the Fukushima nuclear accident of 2011 underscore that capitalism does not only produce inequality but through its plundering of the environment threatens life as we know it on the planet (Kovel, 2007; Magdoff and Foster, 2011).

It is in this context that proposals to get us out of the crisis of capitalism in the global North meet environmental concerns. Environment-friendly proposals figure predominantly among the resurging Keynesian policies which call for more state intervention in order to kick-start the economy. In the US, the federal stimulus packages that were put forth by the Obama administration suggested that investments in energy efficiency of federal buildings would provide a significant source of employment in the short-term and long-run energy savings. In Europe, the European Investment Bank prides itself on the fact that "green investment" comprises more than half of its operations; at the same time, "green growth" through investment in solar farms is one of the few concrete proposals to lift Greece out of its current recession.

Agriculture has seen its legitimacy wane over the recent decades, turning into another contested terrain of capitalism. A number of struggles are currently occurring worldwide in rural areas in both the OECD countries and in the "developing world": the struggles of peasants and farmers who attempt to protect their liveli-

---

<sup>1</sup>One could start recounting the challenges to capitalism starting with the protests against neoliberalism in the 1990s in places as diverse as Genoa, Seattle and Chiapas, the participatory mechanisms in Venezuela or Brazil in the 2000s, and the Occupy movement in 2011.

hoods. Since WWII, and under the auspices of institutions such as the World Bank and the Ford Foundation (see Marglin, 2008; Cullather, 2010), the model of industrial agriculture was deemed as the only way to feed the world's growing population and to generate reliable sources of income for rural dwellers. However, despite the high expectations, the model of industrial agriculture did not deliver the fruits it promised. Incomes for farmers did not rise significantly, either in the developing or in the developed world; at the same time, profits for agri-businesses saw tremendous increases. Environmental problems, stemming from the wide application of fertilizers and pesticides, soared (Culliney et al., 1993; Edwards, 1993). The pressure on farmers to adopt monocultures led to the simplification of landscapes, with dire consequences for genetic diversity, and also significant losses of scenic value. The new seed varieties might have been promising higher yields than the indigenous ones; but, in the lack of optimal conditions, their results were less reliable, thus exacerbating the economic uncertainties for the farmers. Additionally, the ever-growing reliance on fossil fuels for the agricultural process meant that farmers became much more vulnerable to the oscillations of energy prices. The leverage of financial institutions on farmers meant much higher levels of debt - and rising pressures on the farmers. Finally, industrial agriculture, and the concomitant long-distance trade of food, have been clearly identified as major culprits in emissions of greenhouse gases (Norgaard, 1994; Daly, 1999; Deb, 2009; Magdoff and Tokar, 2010; Bello and Baviera, 2010; McMichael, 2010).

## 1.2 Organic farming and the reorganization of European agriculture

It is in this context that I will examine the rise of organic farming in the European Union<sup>2</sup>. Over the past 20 years and under the auspices of the revised Common Agricultural Policy, organic farming has grown from a marginal activity to a common feature of European agriculture: nowadays, 5% of European Utilized Agricultural Area (UAA) is cultivated under organic methods, and in certain regions the share of organic farming is as high as 40%. This increase in the popularity of organic farming is seen as evidence of a process of repeasantization of the European economy (van der Ploeg, 2009).

Perhaps more important than the rise in numbers is the fact that organic farming appears as the *Deus ex machina* of European agriculture. Not only does organic farming confer environmental benefits by banishing the use of pesticides and synthetic fertilizers, but it is also purported to assist the social and economic goals of the European Commission by keeping small farmers in the countryside and revitalizing regions which were plagued by urbanization (Shucksmith et al., 2005; Lynggaard, 2006). For this reason, every EU country has been subsidizing farmers who decide to switch from conventional to organic farming. Conveniently, this form of “environmental” subsidies is compatible with the regulations of the World Trade Organization, in an era where the countries of the global North demonize intervention by less developed countries in their agricultural sectors<sup>3</sup> (Garzon, 2006).

“Q: Does the CAP encourage intensive farming?”

---

<sup>2</sup>When talking about “organic” farming throughout this dissertation I refer to “certified organic” farming, unless explicitly stated otherwise. This is not meant to discard the contributions by farmers who follow organic practices without the approving stamp of a certification agency or a regulator.

<sup>3</sup>A characteristic case is Malawi, which decided to bring back fertilizer subsidies in the face of World Bank and donor opposition (Dugger, 2007).

A: No. In fact, the CAP rewards extensive production systems. We are not interested in industrialised farming for Europe. There is a place in our model for small as well as large farms. If we got rid of the CAP tomorrow, the only way for many of our farmers to survive would be to intensify their production. Under the reformed CAP, however, the incentive is not to produce more, but to produce in a sustainable and environmentally-friendly way.” (European Commission, 2009).

The present dissertation seeks to shed light on the reorganization of European agriculture around organic farming. The latter is in my opinion the most emblematic among several “environment-friendly” institutions/elements/methods that purport to transcend industrial agriculture in Europe. Despite growing attention both by policymakers and the public, there has so far been no systematic study of the ways that organic farming has been transforming the European countryside, including the environmental and socio-economic consequences of the recent policies. I seek to fill this gap with the present work.

### **1.3 Political economy**

I believe that conventional economics is constrained by a series of approaches and practices that render it an unsuitable language for telling a story of (changes in) social relations, class and power; this purpose is better served by political economy. As a starting point (and by no means an exclusive list), I would like to point the reader to two fundamental differences between mainstream economics and political economy: methodological individualism and the role of the market.

#### **1.3.1 Individuals and groups**

The starting point of most economists is methodological individualism: every economic phenomenon can be understood as the outcome of the choices of individuals. In

most theorizations these individuals are rational: they possess perfect information of the payoffs which are associated with the decisions they make. Whenever uncertainty is assumed, it is in the form of a probability distribution of the likelihood that different outcomes will occur. However, for such a conceptualization to be meaningful, all possible outcomes have to be known *a priori*. Uncertainty is not “fundamental” (Knight, 1921; Shackle, 1991; Crotty, 1994).

Theorizing on the basis of rational individuals poses a problem: aggregation. Conventional economic theory is probably the best manifestation of philosophical liberalism, by placing the individual at the center of its narrative. How is it then possible to conceptualize complex interactions if every individual is different? Economic theory mostly circumvents this problem by assuming the possibility of representation, i.e. that it is possible to produce knowledge by constructing theorizations which focus on a *representative* agent rather than struggle with the issue at hand.

A political economy analysis follows a different approach to this matter. Following classical political economists (Smith, Ricardo, Mill), the economy is theorized as the outcome of the interactions between different classes of people. Classes are groups whose members occupy similar positions in the process of production, especially vis-à-vis the production, appropriation and distribution of surplus<sup>4</sup>. There are several reasons for such a definition: the first one would be that one’s position vis-à-vis production shapes one’s political, ideological and even somatic existence. Access to power, culture and values, as well corporal experiences are in many ways determined by one’s position vis-à-vis the excess over what a society produces to cover its basic needs of reproduction. Furthermore, the division of society into classes presents a more realistic solution than mainstream economic theory and the representative

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<sup>4</sup>In classical Marxism class position is often defined as an outcome of ownership over the means of production. However, class position is an outcome of effective control rather than of the legal dimension of ownership.

agent: if we assume that differences in one's position vis-à-vis the surplus matter, it would be impossible to collapse capitalists and workers into a representative agent, even if we were to assume that all capitalists and all workers are alike.

### 1.3.2 Market

“This sphere that we are deserting, within whose boundaries the sale and purchase of labour-power goes on, is in fact a very Eden of the innate rights of man. There alone rule Freedom, Equality, Property and Bentham. Freedom, because both buyer and seller of a commodity, say of labour-power, are constrained only by their own free will. They contract as free agents, and the agreement they come to, is but the form in which they give legal expression to their common will. Equality, because each enters into relation with the other, as with a simple owner of commodities, and they exchange equivalent for equivalent. Property, because each disposes only of what is his own. And Bentham, because each looks only to himself. The only force that brings them together and puts them in relation with each other, is the selfishness, the gain and the private interests of each. Each looks to himself only, and no one troubles himself about the rest, and just because they do so, do they all, in accordance with the pre-established harmony of things, or under the auspices of an all-shrewd providence, work together to their mutual advantage, for the common weal and in the interest of all” (Marx, 1967)

The market in neoclassical economics is a fantastic *topos*. The Walrasian theorization of the economy assumes an *auctioneer* who stipulates the set of prices that allows all markets to clear simultaneously. Individuals are perfectly informed regarding the qualities of the products they buy and sell, and obviously regarding all the prices stipulated by the auctioneer. No transactions are permitted unless the auctioneer

finds the set of prices that lead to the clearing of all markets(Bowles, 2004; Katzner, 2008). This process leads to the maximization of every consumer's utility, subject to their budget constraint.

Even in neoclassical economics the market does not always work perfectly. Environmental problems are often described in neoclassical economics as primary cases of "market failure" which can be approached through the concept of the externality. When parties incur costs or attain benefits from a transaction they do not participate in, the commodity in hand is either over- or under-produced. Thus, a community which is polluted as the result of electricity generation from coal burning (transaction between electricity consumers and coal power plant) or an employer who benefits from an employee's decision to take foreign language college courses (transaction between employee and college) are examples of negative and positive externalities, respectively. The question for neoclassical economics is how to identify such cases of market failure and to correct them, with taxes, subsidies or some other instrument that restores the efficiency of the market.

Using this logic, organic farming can be conceived as a stellar case of positive externalities. The production of organic food is a production decision that is rewarded by the consumers who would be willing to buy organic products. However, such a reduction would ignore the positive effects that are generated for parties outside the organic seller/buyer transaction: these include the positive environmental effects for local residents from the decreased fertilizer and pesticide application or the creation of desired landscapes for city dwellers who do not necessarily consume organic food but enjoy taking weekend trips to the countryside. Such positive externalities are presumably rewarded by the agri-environmental measures of the EU, under which fall the subsidies for organic production.

Why is the concept of externality not enough? The concept of externality and the accompanying concept of the policy instrument to correct the market failure re-

suscitate the efficacy of the market in the face of empirical reality. “The market is still superior, if we only found a way to express the third parties’ willingness to pay”. One compelling argument would be incommensurability: when comparing plural values which lack a common unit of measurement, it is problematic to reduce them to a monetary, or even physical, expression. Therefore, reducing either pollution or environmental improvement to an externality that can be valued properly in the marketplace is already tilting the playing field in favor of these costs and benefits which can be easily identified and expressed in the market. According to Martinez-Alier et al., the philosophical position of incommensurability does not necessarily imply agnosticism and incomparability, but the need for evaluation according to multiple criteria (Martinez-Alier et al., 1998).

However, there is also a larger challenge to the market, which goes beyond questions of proper calculation. The market is just one a way of organizing allocation of resources and output; just like planning, gift-giving or sharing. Comparisons of the efficacy of markets as compared to institutions of central planning have a long history in economics, best summarized in the socialist calculation debate. One’s personal view might be influencing the evaluation of any debate; however, it is far from clear that the market was shown to be superior to central planning (McNally, 1993; Adaman and Devine, 1996). Furthermore, other forms of economic activity such as sharing or gift-giving challenge the ubiquity of the market (Gibson-Graham, 2006b; Hardt and Negri, 2009). Different forms of allocation produce a series of social effects. This might be clearer in the case of gifts rather than e.g. in encounters between producers (non-sellers) and/or users (non-buyers) of open-source software. However, even in the latter case a series of social/ethical questions arise: can one make a profit from selling a product of open-source software or is this another form of enclosure?



## 1.4 Chapter outline

This dissertation follows a political economy approach in order to approach a series of questions: Since the European Commission claims that there is a place in the European agricultural model for small farms, one should ask whether small farmers have managed to improve their position as a result of the new European agricultural policies. Does the rise in organic farming reflect a new model of sustainable agriculture? What forms of labor relations accommodate, or are even simply compatible with organic farming? What old or new institutions play a role in this reorganization of European production? Are we dealing with a form of “green capitalism” which has opened up new areas of profit-making in a process reminiscent of primitive accumulation<sup>5</sup> or are we en route to a different (perhaps non-capitalist) organization of agriculture (and society)?

The subsequent chapters explore these questions and are organized as follows: Chapter 2 traces the Marxist tradition’s analysis of the development of capitalist relations in agriculture. The issue of the disappearance (or not) of the peasantry becomes even more timely since the recent forms of organic farming are often portrayed as evidence of re-peasantization (van der Ploeg, 2009). Since the question of the reorganization of agriculture along environmental lines can be thought of as a new twist to the “agrarian question”, it becomes necessary to revisit the Marxist predictions of the capitalist penetration of agriculture. I will revisit the reasons why some of these predictions have not materialized and offer a possible solution to the teleological character of the Marxist debate.

Chapter 3 deals specifically with the changes in European agriculture over the past 50 years under the auspices of the Common Agricultural Policy (CAP) of the European Economic Community, and subsequently of the European Union. The CAP

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<sup>5</sup>For the concept of primitive accumulation see Marx (1967). For environmental regulation as a way of opening up new pathways to capitalism see Vlachou (2004).

has changed over time, from directly backing the creation of capitalist farms in Europe in the 1960s to supporting rural development, small-scale and environment-friendly agriculture by the 1990s. In this chapter, I identify the groups which benefitted from this policy change. Of particular significance is the question whether the discursive switch is accompanied by a change in the characteristics of farms.

In chapter 4 I utilize regression analysis in order to analyze some of the socio-economic consequences of organic farming. Using data from Eurostat's Farm Structure Survey, I estimate whether there is a connection between a region's share of organic agriculture and the average land size of farms in the region. Additionally, I examine the employment effects of the growth of organic farming. If policy makers are right to insist on the positive employment results of the rise in organic farming, then one should expect to have a higher labor intensity (employment per hectare) in those regions which display a larger share of their agriculture under organic methods. I find that organic farming is more predominant in regions with larger average farm size and that agricultural labor intensity is lower in regions with more organic farming. I explain these paradoxical results by pointing to the fact that organic farms are larger than their conventional counterparts, and more likely to employ non-family (possibly wage) labor.

Chapter 5 presents some environmental outcomes of the rise of organic farming. Organic farming bans the use of pesticide and synthetic fertilizer. Thus, I utilize Eurostat data in order to estimate the impact of a country's share of organic agriculture on a country's pesticide and fertilizer intensity. As expected, I find that fertilizer intensity is lower in countries with more organic farming. However, the impact of organic farming on pesticide intensity is less clear. Since this result could be explained by the indirect effects of organic farming on conventional producers, I argue for the need to conceptualize sustainability (and environmental policy) at the level of the community, instead of that of the individual farmer.

Chapter 6 moves from the larger European picture to a case study of impressive recent growth in organic agriculture: Greece. I present the results of fieldwork (semi-structured interviews with farmers, certifiers and agricultural officials) conducted in 2010 in Greece, and more specifically in the region of Etoloakarnania. I utilize class analysis in order to show how small organic farmers manage to retain only a small part of the surplus they produce. Furthermore, I examine the role of farmers' associations as a mechanism for organic farmers to keep a larger part of the surplus they produce, and to shape the way that class relations develop in Greek agriculture. Chapter 7 concludes.

## CHAPTER 2

### CAPITALISM AND AGRICULTURE

#### 2.1 Introduction

The question of capitalist penetration in agriculture has produced some of the most heated debates of the Marxist tradition. Most of the recent agrarian debates, such as the Indian mode of production debates or the Nairobi debates, take place in the developing world (Thorner, 1969; Patnaik, 1971; Thorner, 1982; Kitching, 1980; Githinji and Cullenberg, 2003). Underlying these debates is the notion that Europe, the core of capitalism, is further advanced in the (linear) process of capitalist development. However, as we will see in chapter 3, wage labor was a marginal feature of European agriculture when these theoretical confrontations took place, something that continues to this day. Furthermore, European agricultural policy has been going back and forth between actively supporting modern capitalist structures and seeking to retain family farms in the European countryside. This paradox had to be explained<sup>1</sup>.

Has the peasant disappeared in Europe? What were the Marxist predictions, and where could they be wrong? This chapter is going to trace the main Marxist positions on the role of agriculture in capitalism. Two major strands can be identified: the first one is defined by the seminal authors of the Marxian tradition (Marx, Engels, Lenin, Kautsky) and predicts the disappearance of the peasantry and the development of capitalist structures in agriculture. The second line of thought, which can be consid-

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<sup>1</sup>See Djurfeldt (1981); Winter (1982); Raikes (1982); Goodman and Redclift (1982); Nelson (1983).

ered as a continuation of Chayanov, rejects the teleology of a linear process towards capitalist agriculture. Instead it seeks to understand the integration of agriculture in capitalism, allowing for the central feature of agriculture (farming) to follow a different model than the large-scale model of industrial capitalism. Some theoretical remarks will follow.

## 2.2 Marx

Marx's views on agriculture have become the object of disdain of environmentalists and peasant activists. In a very-well known passage from the Communist Manifesto, Marx and Engels celebrate the historical role of the bourgeoisie.

“The bourgeoisie has subjected the country to the rule of the towns. It has created enormous cities, has greatly increased the urban population as compared with the rural, and has thus rescued a considerable part of the population from the idiocy of rural life. Just as it has made the country dependent on the towns, so it has made barbarian and semi-barbarian countries dependent on the civilised ones, nations of peasants on nations of bourgeois, the East on the West” (Marx and Engels, 1969)

Although several efforts have been made to defend Marx<sup>2</sup>, it is hard to deny that Marx, as part of the modernist project, believed in a trajectory of progress.

“In the sphere of agriculture, modern industry has a more revolutionary effect than elsewhere, for this reason, that it annihilates the peasant, that bulwark of the old society, and replaces him by the wage-labourer” (Marx, 1967, 474)

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<sup>2</sup>John Bellamy Foster, in particular, has done a lot of work highlighting ecological dimensions in the work of Marx and Engels (Foster, 2000; Foster and Magdoff, 2000).

Nevertheless, these new production methods do not improve the standard of living for everybody. As capitalist methods are introduced in agriculture, demand for labor goes down, thus lowering the standard of living for agricultural laborers who are relegated into pauperization (Marx, 1967, 601). Beyond the social transformations of the rural space, Marx believes that capitalism replaces “irrational, old-fashioned methods of agriculture” with “scientific” ones. However, and in spite of progress, Reason is not established by capitalist methods - which can presumably only be achieved by an overcoming of the capitalist mode of production itself. The following passage from the first Volume of *Capital* is often presented as evidence of the ecological insights of Marx.

Moreover, all progress in capitalistic agriculture is a progress of the art, not only of robbing the labourer, by of robbing the soil; all progress in increasing the fertility of the soil for a given time, is a progress towards ruining the lasting sources of that fertility (Marx, 1967, 474-475).

In the last part of the first volume of *Capital*, Marx discusses the conditions that led to the development of modern capitalism. Very quickly, he dismisses attributing the amassment of vast capitals to diligence, intelligence, and frugality as a myth. He proceeds through a detailed historical analysis into showing how capitalism emerged in the 15th and 16th century out of simple commodity production. Marx uses the term “primitive accumulation” to describe this process of separation of the producer from the means of production, and explains that it “forms the pre-historic stage of capital and of the mode of production corresponding with it” (Marx, 1967, 667-668).

The main method of primitive accumulation in England was the expulsion of the small independent producers from the land and the appropriation of the commons. The rapid increase in the price of wool in the late 15th/early 16th century gave the incentives for the direct seizure of estates, and the conversion of arable land into grazing areas. Although the King and the legislature at first opposed the enclosures,

after the 18th century legislation was finally used to seize land from the people. This same process that allowed the amassment of land created the industrial proletariat. As Marx analyzes in Chapter 28, the legislation against the expropriated effectively forced the former yeoman farmers into wage-work, as idleness was punished with slavery. At the same time, laws prohibiting coalitions of artisans and laborers, as well as laws punishing employers for offering higher than minimum wages and employees for accepting them, created favorable conditions for the development of capitalist relations of production (Marx, 1967, 690-692).

How did these relations emerge in agriculture? In the English context, the repeal of the Corn Laws was instrumental in creating modern agriculture. New techniques, such as drainage, stall-feeding, or mechanical manuring, were introduced which cut costs and increased productivity; however, these new methods required the concentration of farms and the greater outlay of capital (Marx, 1967, 632-633). Additionally, the augmentation in the stock of cattle, through the usurpation of common lands, the fall in the price of metals, which lowered the real wage and the real rent, and the increase in all agricultural prices, allowed farmers to employ more and more wage-labor; and to grow “rich at the expense both of their labourers and their landlords” (ibid., p. 695). At the same time, the destruction of the rural domestic industry (separation of the manufacturing and the agricultural sector) created an extensive and consistent internal market, which allowed in turn the development of capitalist relations in manufacturing (ibid., 700).

The enclosures, and primitive accumulation in general, are viewed by Marx in a mixed light. Marx clearly believes that this is a process that “grows the mass of misery, oppression, slavery, degradation, exploitation”; but it also grows the revolt of the working class (ibid., p. 715). The dissolution of small-scale farms, and with that of simple commodity production, and the concentration of means of production creates the possibility for co-operation, division of labor, control over nature and its

productive forces, and the free development of the social productive powers (ibid., p. 713). For Marx, the enclosures fulfill their historical task, as they consolidate scattered private property into capitalistic private property; what is needed is a further social transformation that will socialize property (a process that Marx claims will be easier and less violent than the enclosure process).

In the third volume of *Capital*, Marx discusses different forms of land rent, the part of surplus that is distributed to the landlord. This analysis is conducted under the assumption that the capitalist mode of production dominates agriculture. Hence, a capitalist farmer employs wage-labor for the purpose of commodity production, with the purpose of realizing more surplus value than originally laid out. Additionally, the capitalist farmer has to pay ground rent to the landowner in exchange for the right to use the land owned by the latter, hence securing a condition of production of surplus value. In a competitive setting, more productive land would accrue a higher ground rent; thus farmers have no incentive to invest in improvements in the land they farm, if they cannot recover them during the lease period (Marx, 1981, 751-757).

For Marx, the peasant smallholding, where the cultivator is also the owner of the land and the instruments of labor and which arose out of the dissolution of feudal estates in Europe<sup>3</sup> was only a transitional form towards capitalist farming. The destruction of the rural domestic industry, the depletion of soil fertility, and the usurpation of communal lands make it impossible for the peasant to compete with large-scale agriculture in a context of decreasing agricultural prices (because of increased productivity due to technological advances), even though the peasant keeps for himself a wage that only secures his physical existence at the bare minimum.

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<sup>3</sup>The yeoman farmer in England, and the peasants of Sweden, France, and western Germany are examples of such peasant smallholdings.



## 2.3 Kautsky

Although Marx's work contains scattered remarks on agriculture, it is hardly a systematic analysis of the penetration of agriculture by capitalism. Karl Kautsky, the leading theoretician of the German Socialdemocratic Party (SPD) of the late 19th century, seeks to remedy this gap with the publishing of the *Agrarfrage* ("The Agrarian Question") in 1899. Through historical analysis and extensive use of statistics, Kautsky tries to demonstrate how Marx's labor theory of value (and his class analysis, in general) can explain the penetration of capitalist relations in agriculture. Furthermore, and perhaps more importantly, Kautsky is concerned with the role of the peasantry ("pre-capitalist and non-capitalist forms of agriculture") in capitalism, as the persistence of small-scale independent agricultural producers presents Social Democracy both with a theoretical riddle and with a practical challenge (Kautsky, 1988a, 9-13)

According to Kautsky, feudal agriculture was organized in self-contained cooperative economies (the *Mark*) which followed a three-field system (with one field fallow, one planted with summer grains, and one with winter grains). However, class antagonisms, especially because of the need for commodity production, put an end to the restriction of external inputs to and exports from the *Mark*. The large landlords encroached on the common pasture lands, turning them into private property, and also drove the peasants off the land. The deterioration of the living conditions of the peasants became obvious also in their diet, with the peasants virtually becoming vegetarian by the 16th century (and, by having less cattle and subsequently less manure, experiencing also decreases in the production of grain). Increases in population density compromised the ability of the old agricultural system to feed the higher numbers of people living off the land. Hence private property had to be established on common lands, and scattered strips had to be consolidated so that they could be cultivated under rational methods according to capitalist competition.

After elaborating on Marx's theory of ground rent, Kautsky discusses size in agriculture. In chapter 6, Kautsky presents his clear support for the large farm, as opposed to the Narodnik position of supporting the small peasant. His basic position is one of the technological superiority of the large farm. Technological improvements cannot be introduced unless the farm size is larger than a minimum threshold. Additionally, savings can occur in large farms, through the use of specialized labor (among which, managerial and educated labor). Similarly, credit and commercial considerations point to the superiority of large farms.

What are the main arguments of the proponents of small farms? The first argument is the frugality of the peasant (which Kautsky dismisses as inhuman standards of living). The second argument is one of higher care and industriousness of the cultivators. Kautsky claims that industriousness is another word for toil and overwork. The farmer does not just put himself to very hard work, but also exploits his wife and children. Although Kautsky does not entirely dismiss the argument of higher care, he claims that the disadvantages of small-size (overwork, underconsumption, ignorance) more than counteract the higher incentives of the small proprietor, who works on his own piece of land.

Notwithstanding the superiority of the large farm, it was medium-sized farms that grew the most during the second half of the 19th century in Germany, whereas in France small- and large-scale farms grew at the expense of medium-sized ones (Kautsky, 1988a, 136-137). For Kautsky this evidence does not disprove the direction of capitalist development of agriculture, but show that the process is more complex than capitalist development of industry, because of a series of idiosyncrasies of agriculture. For example, centralization of land, i.e. the consolidation of a number of farms into one, is slower if the small farms are not adjacent and is hindered by issues of labor supervision (Kautsky, 1988a, 145-148). However, one of the most important impediments for the proliferation of capitalist relations in agriculture, according to Kautsky,

is the shortage of labor power. The close link between household and agriculture makes it hard to find wage-laborers in the countryside who have no property whatsoever. Additionally, the presence of small farms provides the best conditions for the generation of surplus agricultural population, which would form the basis for capitalist agriculture. The annihilation of small farms reduces the supply of labor power, and therefore reduces the profitability of the large farm (Kautsky, 1988a, 160-165). Thus, Kautsky arrives at the following peculiar compromise:

“The establishment of a substantial amount of small-scale agriculture alongside large-scale farms will revive the tendency for the large farm to advance - naturally, subject to other, disturbing factors which currently work in the opposite direction, such as the implantation of large-scale industry in the open countryside.

As long as the capitalist mode of production continues, there is no more reason to expect the end of the large-scale agricultural enterprise than that of the small.” (Kautsky, 1988a, 164)

The coexistence of small and large farms brings the peasant closer to the urban proletariat. As production for himself becomes a complementary activity, the peasant increasingly employs irrational methods in agriculture. He has less time for production on his land, cultivates crops that require less intensive care, has less animals, and less land (as he cannot manage large plots). Thus, in order to sustain himself, the peasant works as an agricultural wage-laborer, or he engages in domestic industry.

The “Agrarian Question” is profoundly political, a manifesto which attempts to sketch out Social Democracy’s attitude towards the peasantry. Kautsky insists that Social Democracy cannot protect the peasant existence, that is the property of the peasants, and should not even attempt to do so. Small property is what ties the peasant to the land, and makes him conservative in many ways. Although Social

Democracy cannot protect the occupational position of both workers and peasants, it can strive to protect their humanity. In Kautsky's conceptualization, this seems to be achieved through refusing to oppose the progressive elements of social development. Hence, the proletariat should not try to protect the peasantry through artificially higher commodity prices. It shouldn't get its hands dirty by advocating the expulsion of peasants from their land<sup>4</sup>. Instead, Social Democracy should push for the nationalization of mortgages, and the nationalization of forests and water. However, it should not push for the nationalization of land, since it is not clear that the state, which is "principally an *institution of domination, of rule*"<sup>5</sup> would be less expensive and more competent than private capital in organizing agricultural production (Kautsky, 1988b, 325-338). Kautsky believes that through self-administration, opposition to militarism, demands for nationalization of expenditures for social services, and provision of education and justice, the rural population has much more to benefit than the urban dwellers.

Finally, we should note that in chapter 5, Kautsky discusses agricultural cooperatives as a transitional form towards capitalist production relations. However, Kautsky does not focus that much on production cooperatives, but on credit and purchasing cooperatives. His claim is that cooperatives are important in modern capitalism, but widen the gap between small and large producers, as the latter can take better advantage of the opportunities that they have to offer. Production cooperatives would be for Kautsky the combination of the best features of peasant production and large farm, but are not a realistic option: "curiously, no farmer ever contemplates this type of cooperation" (ibid., 125). In fact, clinging to one's property obstructs the peasant from taking the step towards cooperative production; hence, it is capitalism that has

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<sup>4</sup>"We cannot, and ought not, to impede capitalist development; but this does not mean that a proletarian socialist party has any reason to support it" (Kautsky, 1988b, 330).

<sup>5</sup>Kautsky (1988b, 334), emphasis in the original.

to play the progressive role of increasing the scale of agricultural operations, before we move to the free association of agricultural producers.

## 2.4 Lenin

In 1899, the same year that the *Agrarfrage* comes out, Lenin publishes his study on *The Development of Capitalism in Russia* (Lenin, 1974). Lenin claims that Russian agriculture has undergone a rapid transformation towards commercial farming after the Reform of 1861 and the Emancipation of the serfs. As capitalism penetrates agriculture, the rural population is differentiated into a rural proletariat and a rural bourgeoisie, rendering the Narodnik discussion of the average peasant misleading. Lenin describes how the rural bourgeoisie (which is around 20% of the rural population) owns the means of production, hires labor-power, uses a disproportionately large share of the land (both allotted and also rented), and implements the more significant technical innovations, while utilizing more animals, in a more economical manner. On the other hand, the rural proletariat is comprised of peasants who don't cultivate land (possibly leasing out their allotted land) or who barely manage to sustain themselves through their agricultural production. As in Kautsky's analysis, these groups of self-employed/small-scale peasants, which according to Lenin constitute more than half of the rural population, are usually portrayed as being worse-off than the ones who don't work on their own land at all (Lenin, 1974, 129-190).

In chapter 3, Lenin deals more specifically with the labor-service system and the capitalist system in agriculture. Lenin explains how the labor-service system works; this remnant of the feudal system sees the peasants work for the landlord through a nexus of social obligations, while utilizing their own implements. The payments made to them are half those that would be demanded by agricultural laborers for the same work. Thus, production at the peasant's own land is effectively subsidizing the landlord. Therefore, Lenin strives to explain that ties to the land (land-ownership) can

perpetuate forms of medieval exploitation, instead of liberating the peasant. Hence, the progressive role of capitalist relations of production becomes more pronounced in the context of agriculture, as rural differentiation proceeds. By squeezing the middle peasant, this process does away with the labor-service system, and imposes capitalist relations and improves productivity (through the introduction of machinery).

Similarly to the *Agrarfrage*, *The Development of Capitalism in Russia* is a profoundly political text, written to rebut the Narodnik positions. According to Lenin, isolated passages in Marx do not warrant the Narodnik praise of small-scale production, as both Marx and Engels salute the historical role of capitalism (Lenin, 1974, 328-334). Finally Lenin makes it clear that communal arrangements of land tenure can only delay but not stop capitalist development in agriculture.

“If we are told that we are running ahead in making such an assertion, our reply will be the following. Whoever wants to depict some living phenomenon in its development is inevitably and necessarily confronted with the dilemma of either running ahead or lagging behind. There is no middle course. And if all the facts show that the character of the social evolution is precisely such that this evolution has already gone very far (see Chapter II), and if, furthermore, precise reference is made to the circumstances and institutions that retard this evolution (excessively high taxes, social-estate exclusiveness of the peasantry, lack of full freedom in the purchase and sale of land, and in movement and settlement), then there is nothing wrong in such running ahead.” - Lenin, on the development of capitalism in agriculture (Lenin, 1974, 329)

## 2.5 Luxemburg

Rosa Luxemburg’s work *The Accumulation of Capital* (1913) also deals with the role of the peasantry, insofar as it creates an impediment for the expansion of capital.

Luxemburg argues that capital attempts to create the conditions that will allow it to penetrate in societies that were not exposed to it before. It seizes the means of those communities' production, breaking down the social ties and rendering people into an unattached labor force, while creating external demand for capitalist products, which in turn allows for the uninterrupted accumulation of capital. Through historical examples, Luxemburg analyzes how the British colonizers broke down village communism in India, and how the French colonizers struggled against Arab patriarchal rule in Algeria. In both instances, the attempt to institute arrangements of private property on land through force is critical to the colonists' endeavor to break the rigid barriers of the *natural economies* they were faced with. Interestingly, these steps were taken through reforms that were proclaiming to be equitable and to be liberating the poor from the rule of their previous oppressors (Luxemburg, 2003, 348-365).

In chapter 29, Luxemburg shows how simple commodity production is only a transitional stage in the process of capital accumulation. Capital breaks down the relations that constitute the natural economy, and introduces commodity exchange. However, it also proceeds to separate industry from agriculture, restricting the peasant economy to agriculture, "which will not immediately and, under European conditions of ownership, only with great difficulty submit to capitalist domination" (Luxemburg, 2003, 376). Hence, as the example of agricultural production in the USA demonstrates, small and medium farmers are compelled to enter into exchange relations through markets for the satisfaction of their basic needs. However, through taxation and competition with large capital, they are forced to become wage-laborers and to go into debt, before turning to other methods (e.g. migration) to escape their situation. Of course, this process leads to concentration of capital.

Interestingly, Rosa Luxemburg's analysis is not embellished with the paeans to progress that are frequent in Kautsky and Lenin's accounts of capitalist development. However, her analysis too carries the belief that capitalist expansion will inevitably

come to an end. In Luxemburg, accumulation of capital comes to a halt when the external markets for the realization of surplus value produced under capitalist conditions cease to exist, with the inclusion of the entire world into the capitalist sphere. For Luxemburg, this creates the contradictory behavior experienced in the form of imperialism, with countries competing on a global scale, in their attempt to aid the expansion of their national capitals (Luxemburg, 2003, 397-398).

## 2.6 Bukharin and Preobrazhensky

Nikolai Bukharin and Evgeny Preobrazhensky in *The ABC of Communism* (1919) deal explicitly with the role of agriculture as they lay out the principles of the Communist Party of Russia (Bukharin and Preobrazhensky, 1966, 294-320). According to the authors, large-scale is superior to small-scale farming: it allows for the introduction of scientific methods, such as many-field crop rotation, as well as labor-saving machinery (e.g. tractors). Large-scale farming also allows better utilization of land, as less land is wasted because of parcelization (Bukharin and Preobrazhensky, 1966, 298-301).

Despite believing in its advantages, the authors do not believe that large-scale Soviet agriculture can be established overnight as the dominant mode in agriculture. Hence, they explain how the Communist Party will offer support to small peasants who enter artels (voluntary productive association of peasants), communes (association which extends beyond production) or cooperatives. Even though private property may not be abolished in those arrangements, due to the peasants' fear of losing their independence, these arrangements can serve as the first steps towards truly collective farming. Thus, they need to be assisted through, among other things, expert assistance, measures to improve the peasants' education, creation of infrastructure, and better linkages to manufacturing, as a means of linking the peasants closer to the urban proletariat (Bukharin and Preobrazhensky, 1966, 311-320).



## 2.7 Chayanov

“The involvement of agriculture in the general system of capitalism is in no way bound to take the form of the creation of very large farming enterprises organized on capitalist lines and operating on the basis of hired labour.” (Chayanov, 1991, 6)

A.V. Chayanov is the most well-known critic of the thesis of the inevitability of the capitalist organization of agriculture. Chayanov, in his major work *Theory of Peasant Economy* (1966) criticizes the Marxist analysis of agriculture. According to Chayanov, capitalist categories (such as rent or capital) are not suitable for the analysis of agriculture; the reason is that agriculture is a sphere that is dominated by unpaid labor performed by peasant family members<sup>6</sup>. The absence of the social phenomenon of wages should preclude the category of net profit from having any meaning, let alone the exercise of maximizing net profits in the usual vein of neoclassical theory (assuming shadow wages).

What the peasant household seeks to generate is income in order to satisfy the needs of the family members. According to Chayanov, the relevant calculation is comparing the toil of earning an extra ruble and the utility of consumption from the extra income. The household’s total income is determined primarily by demographic factors: “In fact, family composition primarily defines the upper and lower limits of the volume of its economic activity” (Chayanov, 1966, 53). Family size, age of household members and the ratio of working to non-working members determine family income to a large extent, and so does the size of the farm.

Nevertheless, there is a significant difference between the peasant and the capitalist farm: since the family farm does not pay wages, it can operate under conditions

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<sup>6</sup>Chayanov claims that 90% of peasant households in Russia did not hire any labor power (Chayanov, 1966, 112).

which would have been impossible for a capitalist farm (Chayanov, 1966, 86-89). The peasant household will often push labor intensity beyond its optimal levels in order to increase the gross income of the family, even though the revenue per labor unit declines. Similarly, the peasant household might pay higher rents for land than what would be reasonable for a capitalist farm, or make investment decisions which do not maximize its rate of return. The peasant household might choose to grow crops which are less productive, but which do not display the irregularities in labor demand over different seasons that are characteristic of many crops. All these factors show that it is the self-exploitation of the peasant which explains the viability and the stability of the peasant farm, despite facing competition from the more efficient capitalist sector (Chayanov, 1966, 86-89, 189-236).

“Farms may increase and decline with unchanged family composition due to *purely economic causes* ... There is, nevertheless, no doubt at all that demographic causes play the leading part in these movements.”  
(Chayanov, 1966, 249, emphasis in original)

Writing in the 1920s, Chayanov’s work comes in clear opposition to the more orthodox Soviet economic theories, as it rejects the idea of social (class) differentiation among peasant farms, proposing instead demographic reasons behind changes in the agricultural sector. Furthermore, Chayanov uses marginal analysis rather than value-theoretic categories. This to some extent explains his falling in disfavor until his being translated into English in the mid-1960s and his receiving attention through the mode of production debate in the 1960s and 1970s, as well as by thinkers such as Daniel Thorner, Samir Amin or Kostas Vergopoulos.

## 2.8 Vergopoulos

Eric Hobsbawm writes in the “Age of Extremes” that “the most dramatic and far-reaching social change of the second half of this century, and the one which cuts

us off for ever from the world of the past, is the death of the peasantry” (Hobsbawm, 1996, 289). Prior to WWII, the only two industrial countries in which the agricultural population comprised less than 20% were Great Britain and Belgium. However, by the early 1980s most European countries did not employ more than 10% of their population in agriculture, whereas the peasant population had fallen even in traditional peasant strongholds, such as Latin America (Hobsbawm, 1996, 289-291). This decline of agricultural population in both absolute numbers and as a relative share of the population was achieved through an “extraordinary spurt in capital-intensive productivity per head of the agriculturists” (ibid., 292).

However, the fall in the relative share of the agricultural population was not tantamount to the appearance of capitalist farming (Lewontin, 2000). In the original countries of the EEC, less than 14% of labor was performed by non-family wage labor, whereas in the US hired labor has been constituting around 25% of agricultural employment since 1910 without a visible tendency to increase (Djurfeldt, 1981, 167-168)

For the purposes of this presentation I will focus on the way that Kostas Vergopoulos explains this phenomenon in his book “Capitalisme difforme” (Vergopoulos and Amin, 1975, first edition in French, 1974). Vergopoulos’ work has been overlooked probably due to the fact that his main theoretical piece “Capitalisme difforme” was written in French and (to the best of my knowledge) not translated into English.

The basic idea in Vergopoulos’ main work is that family ownership in agriculture is indicative of “disformed capitalism”. In an attempt to reconcile Marxism with the empirical reality of the persistence of peasants farms in Western Europes, Vergopoulos seeks to analyze the role of agriculture within the “social apparatus of capitalism”. According to Vergopoulos, the rationality of the capitalist system is guaranteed at the expense of the rationality of the organization of production in agriculture. Thus, capital supports family farming in order to block the development of agricultural

capitalism. The main objective of this venture is land rent (Vergopoulos and Amin, 1975, 21).

Vergopoulos, following Chayanov, argues that small farms (in terms of land size) are more productive than large farms, per unit of land area. They are cultivated more intensively than large farms; they display a higher application of machinery and fertilizer, as well as a higher application of labor per hectare. Therefore, according to Vergopoulos, “small farms are more capitalist than large farms” (Vergopoulos and Amin, 1975, 65-66). Additionally, family farms have been able to compete effectively against capitalist farms for a variety of reasons. The rapid urbanization, experienced by most Western European countries, in combination with low birth rates, have meant the decline of labor supply in the countryside<sup>7</sup>. The result of these tendencies is an upward pressure to the agricultural wage. However, this increase to the real wage does not hurt capitalist and family farms equally, since the latter do not pay wages (as Chayanov has argued). Therefore, family farms are able to improve their competitive position.

In addition to the problem of high agricultural wages, the price of land also deters potential capitalist firms from entering agriculture. The price of land cannot be simply calculated by the capitalization of land rent, given the current interest rate. Family farms, as Chayanov has argued, will be willing to pay higher rents for land, since they strive for income, rather than profit maximization, therefore putting upward pressure to land prices.

However, higher productivity per unit of land does not constitute the main advantage of small farms vis-à-vis large farms from a capitalist standpoint: what makes them attractive is their inability to resist the appropriation of land rent by the surrounding capitalist system (urban capitalists, the State, banks, merchant monopolies)

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<sup>7</sup>It is interesting to think how this changes after the fall of the Soviet Union in the 1990s.

(ibid., 66). Therefore, the agrarian question should not be viewed as a question of productivity differences within agriculture, but through the lens of efficiency at the aggregate level (ibid. 126-127).

Vergopoulos argues that industrial capital would be suffocated from the concentration of land predicted by classical political economists and Marxists alike. The creation of a monopoly on land would necessitate the transfer of a larger portion of industrial surplus to landowners in the form of land rent, in exchange for their providing industrial capital with access to land. Such a clash would be particularly vigorous in the European context because of high population density. Therefore, since 1906, Lenin had started proposing the nationalization of land, as a measure to promote capitalist development. Thus, the State would play the role of the collective landlord, abolishing private appropriation of land rent. Interestingly, the same idea has been proposed by a series of non-Marxist economists (Vilfredo Pareto, Leon Walras, Henry George). Despite the fact that no country has attempted this radical measure, the State in most capitalist countries has put in place a series of mechanisms for diverting surplus (rent, according to Vergopoulos) outside agriculture.

Vergopoulos asks for a rethinking of the role of the State vis-à-vis agriculture. The State, beyond breaking up latifundia through land reforms and promoting intensive farming in small farms (which increases the mass of surplus), has always promoted the transfer of surplus outside agriculture: Indebtedness has systematically transferred surplus from farms to finance capital. At the same time, the relatively small number of cases of land repossession points to a systemic preference of peasant indebtedness over capitalist agriculture. Furthermore, high taxation of land has divulged surplus towards the state, whereas the monopsonistic position of merchant capital vis-à-vis agriculture has allowed merchants to appropriate the surplus while avoiding the risk of production. Finally, Vergopoulos claims that the State intervenes further to lower the price of agricultural commodities in order to decrease the value of labor power

(e.g. through building roads), and to allow the smooth reproduction of labor power (ibid.,134-154).

## 2.9 Bringing it all together: Theoretical remarks

The preceding discussion calls for a re-evaluation of the penetration of capitalism in agriculture, and especially of the role of agricultural policy. Before we address the role of the State, some theoretical remarks are in order.

The debate on the role of agriculture in capitalism is characterized by essentialist thinking. On the one hand, the Marxist classics, despite occasional ambiguities, propose the inevitable domination of capitalist farms, as a result of their superiority over peasant farms. Capitalist farms are coded as “modern” or “dynamic”, whereas peasant farms are associated with “tradition”, “stagnation”, and “backwardness”. Thus, the narrative of the debate is “capitalocentric”: it revolves around capitalist structures of production, highlights their presence, and trivializes the perseverance of “non-capitalist” forms as being remnants of the past (Escobar, 1995; Gibson-Graham, 2006a).

“Capitalocentrism” does not characterize only the work of hardline Marxists. Even writers like Vergopoulos, who distance themselves from the more orthodox Marxist doctrines, follow a similar avenue, by resorting to the “logic of capital” for the explanations of historical development<sup>8</sup>. On the other hand, Vergopoulos’ analysis, by linking agriculture to the other sectors of a capitalist economy is a powerful way of explaining why farming in the global North did not follow a path of capitalist development. Thus, surplus which is produced and appropriated in agriculture is transferred to the predominantly capitalist sectors of the economy, such as finance or commerce. Agriculture is ‘integrated’ into capitalism, without being capitalist.

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<sup>8</sup>Vergopoulos goes as far as postulating the capitalist character of the *tsiftlik* (ciftlik), a share-cropping arrangement which appears in the 17th century Ottoman Empire (Vergopoulos, 1975).

This idea is similar to that of a series of thinkers who view the farmer as a “peculiar proletarian”. For reasons of low liquidity of farmland, difficulty in supervision of the farming process, limits to economies of scale, unpredictability, and minimum limits to turnover of advanced money, capital has abstained from farming *per se*, leaving this part of the production process to independent petty producers. However, this does not mean that capital has abstained from *agriculture*. Similarly to Vergopoulos, we can think of this organization of production as a transfer of surplus, which was extracted in agriculture, outside of it (Lewontin, 2000; Bernstein, 2010).

More recent developments in post-Althusserian Marxism allow us to go past the essentialist forms of orthodox Marxism (Resnick and Wolff, 1987; Gibson-Graham, 2006a,b). Thus, Resnick and Wolff, and the school of thought that extends their analysis, theorize a heterogenous economic landscape, comprised of a pluralism of structures of production: the *differentia specifica* being the way that the different structures produce, appropriate and distribute surplus, that is the excess over what is required for the producers of the surplus to reproduce themselves and their families. Thus, a capitalist class structure is a site of production where typically a board of directors appropriates the surplus produced by wage workers, and subsequently distributes it in different ways to various agents so as to ensure the continuation of its existence. These payments can be made to the state in the form of taxes, to its shareholders in form of dividends, towards accumulation, etc. An “independent” class structure exists when individual producers themselves appropriate the surplus they produce, whereas in a “communist” class structure workers appropriate and distribute collectively the surplus they’ve produced in cooperation with each other. The typology of class structures provided by Resnick and Wolff includes also (but is not necessary limited to) “feudal” and “slave” class structures; in the former, the appropriation of surplus happens by a group other than the direct producers, based on relations of subjugation and mutual obligations, whereas in the latter, it is effectively

the ownership of the producer by some other agent that allows him/her to appropriate labor it didn't produce him/herself.

A class structure can be characterized as exploitative or not, depending on whether producers are also the first appropriators of surplus. Hence, independent and communist class structures are not exploitative, because it is the workers themselves who appropriate and decide how to dispose the surplus, individually in the first case and collectively in the latter. Following the same logic, capitalist, feudal, and slave class structures are exploitative (Resnick and Wolff, 1987).

Different class structures can co-exist within a society, in contradictory relationship with each other, as they may compete against each other or perform functions which are necessary for each other's survival. To give one example, a communist class structure (e.g. a workers' cooperative) might be making interest payments to a capitalist bank in order to secure its conditions of existence. At the same time, both the workers' coop and the bank are probably paying taxes to the State which is providing them both with some of their conditions of existence (e.g. infrastructure, education, protection from foreign competition or access to foreign markets).

Allowing for the co-existence of different class structures presents us with a series of benefits, in addition to not requiring that reality conform perfectly to pre-existing theoretical schemes. It allows us to understand the dynamism of non-capitalist forms of production, and also to explain "paradoxical phenomena", such as prison labor, workers' coops, or human trafficking. In the case of agriculture, it can liberate us from the need to theorize the farmer as "proletarianized". Instead we can look at the ways that surplus is produced in farming. Hence, in the case of Europe, we can theorize the existence (or the possibility) of different forms of organizing agricultural labor. We note the existence of capitalist farms, where labor is performed by wage labor and the surplus is appropriated by a capitalist farmer. Communist farms or production cooperatives, where farmers pool together their land and decide collectively



how to allocate surplus among competing uses (e.g. in Emilia-Romagna). Independent farms, where the farming is done by the farmer, without recourse to wage labor; the farmer then decides individually how to allocate surplus. Feudal structures of production, which are characterized by an exploitative relationship between a male farmer and his wife<sup>9</sup>. Lastly, even “slave” structures of production, where the farmer uses immigrant labor which is forced by means of violence, threats or confiscation of passports (Andrees, 2008). Some of these practices constitute recent developments in many parts of the world. However, they are obscured by thinking of agriculture as a capitalist sector, even though the organization of the labor process takes very diverse forms.

Nonetheless, the class process is only one part of the economic organization of society. Naming the different forms of production does not tell us anything about how the surplus is distributed. To give one example, the State receives payments in the form of taxes from all these different structures of production. Since the legitimacy of the State stems from its claim to provide the necessary conditions of existence for the continuation of the class process, we notice the potential for conflict in the case where the needs of different structures clash. Thus, capitalist farms might be in favor of more liberal immigration laws; these would put pressure on farms using forced labor, as they would lose their power over their workers. State policies reflect to some extent the clash of different structures of production; not only of those in agriculture, but also in industry. Therefore, in the next chapter we turn to looking at the evolution of European agriculture in the 20th century, with particular attention to the role of the State (and quasi-state organizations, such as the European Commission).

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<sup>9</sup>For a class analysis of feudal agricultural relations in the US, see Ramey (2012). The insights from this work can be easily extended to many countries of the EU.

## CHAPTER 3

### THE EVOLUTION OF EUROPEAN AGRICULTURE

#### 3.1 Introduction

In his piece, *A future for small farms? Biodiversity and sustainable agriculture*, James Boyce argues that small farmers provide a “crucial public good: the conservation of agricultural biodiversity” (Boyce, 2006). Boyce claims that there is need for policies which will recognize the contributions made by small farmers and allow them to continue playing their positive role, reducing poverty and protecting the environment simultaneously.

When one reads the official documents of the European Union, one gets the impression that such goals are not as unrealistic as they might seem. Through the EU Common Agricultural Policy’s agri-environmental measures, European farmers receive support for contributing to objectives as diverse as biodiversity, soil, water and air quality, agricultural landscapes, climate stability, and food security (Cooper et al., 2009; European Network for Rural Development, 2010). This is an impressive discursive change for a policy that was considered predisposed, if not synonymous, to the imposition of capitalist relations in agriculture (Redclift, 1987; Panitsidis, 1992; Liodakis, 1994; Marsden, 2003). However, is the discursive change equivalent to real change in support of small farms?

The objective of this chapter is to answer this question by examining the evolution of the European agriculture over the last half century. Since the Common Agricultural Policy is the underlying policy framework, sections 3.2 and 3.3 are devoted to tracing the origins and the modifications of the policy over time. Section 3.4 discusses

the increasing role of organic farming (among other agri-environmental measures) as a tool for achieving the stated policy objectives. Since agricultural policy is conducted through the use of subsidies, section 3.5 presents a simple class-analytic exposition of the character of the policies. Section 3.6 presents statistical data in order to answer whether small farms persist within the European economic environment, and whether they have been able to withstand the pressure from their larger competitors. Particular attention will be given to labor (and wage labor) characteristics of European agriculture. Section 3.7 discusses the findings.

### 3.2 The origins of the CAP

After WWII, most European government pursued protectionist agricultural policies, in order to achieve self-sufficiency and to tackle balance of payments difficulties (Hoggart et al., 1995; Tracy, 1989). Measures to stabilize or control agricultural markets and to raise production and productivity were introduced in Britain (1947), France (1947-1951), and Italy (1948), whereas Belgium and the Netherlands retained support measures that they had introduced during the war<sup>1</sup>. In 1955, West Germany's Agricultural Act codified the country's attempts to raise productivity and farm incomes, through the stabilization of agricultural prices and supplies. This latter codification provided the framework for Article 39 of the Treaty of Rome in 1957, which signified the creation of the European Economic Community (predecessor of the European Union) by Germany, France, Italy, Belgium, Luxembourg, and the Netherlands (Hoggart et al., 1995, 114-115).

The agricultural sector already held a predominant position in this inaugural document, as can be easily demonstrated by the fact that it lays out the original objectives of the Common Agricultural Policy (CAP) of the EEC. These were:

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<sup>1</sup>The only exception to the protectionist rule was provided by Denmark, which attempted to win markets through diversification of its farm exports and free-trade.

- to increase agricultural productivity
- to ensure a fair standard of living for the agricultural community
- to stabilize markets
- to assure the availability of supplies
- to ensure reasonable prices for consumers (European Union, 2006, 54).

Three main principles were underlying the EEC's common policy: common prices ("Market Unity"), common financing ("Financial Solidarity"), and Community preference<sup>2</sup>. Since price levels were different in the various countries of the EEC, the creation of a common market with external protection would lead to different gains for different countries of the Community. Already in the late 1940s France was anticipating large agricultural surpluses: the liberalization of agricultural trade within Europe would allow it to dispose of these surpluses. At the same time, the objective of a liberalized European agricultural market was enthusiastically supported by the Netherlands, which was pursuing expansion through free-trade policies to a higher extent than other European countries (Ingersent and Rayner, 1999).

The CAP was in many ways a compromise between different European countries<sup>3</sup>. However, it was not just a manifestation of agricultural protectionism, since the latter could have been achieved with much more modest means. The CAP illustrated the desire for political integration, as the culmination of a trend that had started more

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<sup>2</sup>Common prices were a direct consequence of removing all trade barriers within Europe. Common financing meant that agricultural support would be co-financed by the Community budget. Finally, Community preference was the principle guiding trade with non-EEC countries.

<sup>3</sup>Usually, the Common Agricultural Policy is thought of as the result of a compromise between Germany and France. According to this explanation, Germany was willing to subsidize French agriculture in exchange for access to a much larger market for its industrial products. However, as Hoggart et al. (1995) point out, this is a cliché that in the end "distorts the reality of this policy initiative" (Hoggart et al., 1995, 115-116). See also Milward (1992).

than a decade before the Treaty of Rome (the Benelux countries had created a customs union in 1944 and had implemented common commercial policies since 1948) (ibid.).

Hence, the CAP came into existence; with significant payments, in the form of subsidies, being made to support agricultural production. Price supports were implemented for products in which the EEC wanted to achieve self-sufficiency, whereas tariffs and levies were imposed on imported products: 72% of agricultural production was receiving both price supports and external protection, whereas 25% was solely enjoying external protection (Sampson and Yeats, 1977; Commission of the European Communities, 1975).

### **3.3 Modifications**

The CAP cannot be conceived of as a fixed and stable policy. Over time, it went through extensive modifications that altered its specifics in very profound ways. In the next few paragraphs, I will go through these changes, and will attempt to trace the instances in which organic farming and concerns of rural sustainability appear in the CAP.

#### **3.3.1 The Mansholt plan**

The first reform of the CAP was proposed in 1968, and was associated with Sicco Mansholt, who was the first Commissioner for Agriculture (1958-1972). In this period, two problems were being identified: the first one was that the agricultural community, mainly due to its structural characteristics (an ageing farmers' population, low education levels, low technological adaptability, small size of farms), did not participate in the welfare boost that was enjoyed by the rest of society; the second one was that the previous price policies would lead to surplus production, reinforcing the downwards trends of agricultural incomes and putting additional pressure on taxpayers to support farmers. Hence, the 'Mansholt plan' attempted to "modernize" European

agriculture and to "improve its competitiveness", by actively reducing the ratio of population employed in agriculture and consolidating farms into large holdings, with minimum size requirements of 80-120 hectares of arable land or 40-60 dairy cows. These new farms would be able to take advantage of economies of scale, introducing modern technology and methods of farming (Kommission, 1968, 1-27; Lynggaard, 2006, 87-89).

The 'Mansholt plan' did not fare well. The modernization envisioned by Mansholt stipulated that by 1980 five million hectares of land be retired from agriculture and transferred to other uses, and five million people leave agriculture through early retirement or retraining. Hence, the plan faced significant opposition from farmer organizations, and Mansholt himself was given the unflattering nickname "peasant killer" (Ingersent, 1990; Ingersent and Rayner, 1999). Furthermore, the plan's support for a type of 'modern farm' went against the ideal of the small-scale- or family-farm in the South and the North of the EEC respectively. Advocating for the reduction of the people employed in agriculture seemed politically costly, in the absence of a comprehensive employment plan in other sectors, and hence was not adopted in its initial form, but as watered-down 'social-structural directives' in 1972 (Lynggaard, 2006). This attempt to essentially create capitalist structures in agricultural production is considered to this day one of the most controversial and failed attempts of European policy making (Ingersent and Rayner, 1999; Marsden, 2003; Garzon, 2006). It also drives home the point raised by Kautsky that capitalist development in the countryside necessarily renders a significant part of the rural population excessive. Therefore, a comprehensive plan of development would be needed, rather than treating the different sectors of the economy (rural vs urban) in isolation.

### 3.3.2 The Greening of the CAP

Despite the emergence of environmental concerns in the mainstream of policy literature (the *Club of Rome* published its famous report titled *The Limits to Growth* in 1972), the first reform of the CAP didn't include any environmental considerations. However, in 1973 the Council adopted the first of so far six Environmental Action Plans, which set out the environmental objectives of the EEC. In the subsequent years, the realization was made that agricultural policies affect the natural environment. More specifically, the "intensive use of certain types of fertilizer and the misuse of pesticides" were, for the first time, viewed as a source of pollution, and hence, the suggestion was made that "the dangerous effects of such practices should be lessened" (Council of the European Communities, 1973). Additionally, this period was the first in which concerns about food safety, health and animal welfare were being raised. The call was thus made for research to determine whether the biological processes (as organic processes were called at the time) carry benefits for those areas of interest.

In 1973, the EEC expanded to include the United Kingdom, Ireland, and Denmark. This expansion led to a significant change in agricultural policy, which now had to address imbalances between different regions, in a similar way to British territorial policies. Hence, in 1975 Directive 268 defined certain agricultural regions as "mountainous" or "less-favored" areas (LFAs), calling for special direct payments to allow the continuation of farming (Shucksmith et al., 2005, 26-27). The LFA designation marked a significant change in the nature of the CAP, as it allowed for policies addressing regional imbalances to be pursued through agricultural policy. In subsequent years, the scope of the LFA policies was increased with the accession of new Member States, so as to include regions

- With permanent handicaps (as indicated by altitude, poor soils, climate, steep slopes)

- Experiencing depopulation or low population density
- Lacking infrastructure, needing support for supplementary non-agricultural activities (tourism, local crafts etc.) (Shucksmith et al., 2005, 36-37).

The linkage between environmental concerns and the intensive methods of agriculture that were promoted by the Common Agricultural Policy was established for the first time in the 1980s. More specifically, the realization was being made by the European Parliament that principles like “Market unity” and “Community preference”, which were central in European policymaking, implied the disregard for the different natural conditions within the Union, and the related environmental effects stemming from agricultural production. At the same time, the principle of “Financial Solidarity” in bearing the costs of the CAP was conceived as promoting short-term planning horizons at the expense of long-term environmental sustainability (Lynggaard, 2006, 123). By 1985, the European Commission would explicitly acknowledge that modern agricultural techniques were responsible for the extinction of species and for the destruction of valuable ecosystems, while increasing the risks of ground and surface water pollution (European Commission (1985, 50) as quoted in Lynggaard (2006, 107)). The legitimacy of the CAP was further challenged by the fact that the main culprits of environmental degradation (large arable farms) were receiving the lion’s share of European payments for agricultural support (Buller et al., 2000; Garzon, 2006).

### **3.3.3 Reforms after 1992**

The first major reform of the CAP took place in 1992, ending what some authors called “thirty years of immobility” (Garzon, 2006). According to the MacSharry reform of the CAP (named after then commissioner Raymond MacSharry), the agri-environmental schemes, set up by some Member States (e.g. Germany, Denmark) on their own initiative and under the pressure of their national environmental lobbies,



became “accompanying measures” to the more traditional price support policies of the CAP. This meant that every country was now required to design and implement measures for environmental protection in its respective territory, apart from and parallel to its support for agriculture (Shucksmith et al., 2005). At the same time, the MacSharry reforms reduced the price/market support policies as a step towards the “decoupling” of support from production (Scricciu, 2011)

In 1999, the EU implemented the “Agenda 2000” reform of the CAP, as part of its attempt to facilitate the accession of new members states. Rural Development was explicitly designated as the Second Pillar of Agricultural Policy (the First Pillar being traditional price supports); agri-environmental measures were incorporated into the Second Pillar, so as to achieve coherence with the other rural development policies, and began to constitute a major component in the rhetoric of European policymakers regarding the revitalization of the countryside. In 2003, the Fischler reforms (named after agricultural commissioner Franz Fischler) sought to “ensure the economic viability of European agriculture by reinforcing its market orientation” (Garzon, 2006, 48). The “decoupling” of payments from production levels (and its basing on historical production levels instead) became a central part of the reformed CAP in an attempt to shift most of the agricultural support measures from the trade-distorting classification of the WTO (the “red box”) to the non-trade distorting “green box” (Scricciu, 2011, 79). Furthermore, the “cross-compliance” of agriculture with environmental objectives, animal welfare, and food and health safety became a necessary condition for the farmers’ receiving direct payments.

At a discursive level, the Fischler reforms constituted a significant change by bringing Rural Development into the forefront of public discussion. More importantly, it is when turning to the Second Pillar, that policymakers find the *success stories* of

Table 3.1: CAP funding - 2000-2008

EUR billion	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total Expenditure	40.5	41.5	43.5	44.4	43.6	48.5	49.8	52.7	51.007
Direct Support	36.3	37.2	39.2	39.7	38.2	42.2	42.1	41.8	40.5
%Pillar I	89.69	89.49	90.01	89.46	87.71	86.98	84.52	79.38	79.36
Rural Development	4.2	4.4	4.3	4.7	5.4	6.3	7.7	10.9	10.5
%Pillar II	10.31	10.51	9.99	10.54	12.29	13.02	15.48	20.62	20.64

Source: European Commission (2009)

the CAP. Thus, programs such as the LEADER initiatives<sup>4</sup>, which claim to adhere to a "bottom-up" philosophy, have attracted a lot of attention in recent years. In these programs of rural development, the initiative to design and submit project proposals is left to "local stakeholders". The projects approved are then co-financed by the European Union.

Despite the symbolic change, the funding associated with the CAP is still heavily tilted towards the First Pillar of price supports. Agri-environment measures and funds for regional policies are still underfunded, relatively to more traditional policies. As becomes obvious from Table 3.1, Pillar I still receive the lion's share of CAP funds. The Second Pillar, on the other hand, which encompasses, among others, rural development measures, support for young farmers, and agri-environment measures, barely receives 20% of the funds<sup>5</sup>.

<sup>4</sup>LEADER stands in for 'Liaison Entre Actions de Developpement de l'Economie Rurale' ('Links between the rural economy and development actions').

<sup>5</sup>Of course, 10 billion euros is not an amount that can (or should) be trivialized. I am mostly interested in noting that, despite the recent changes in the CAP, the *Second* Pillar is obviously less significant than the *First*.

### 3.4 Organic farming as *Deus ex machina*

Rural development encompasses a variety of projects, including agro-tourism, preservation of biodiversity, or processing of agricultural products<sup>6</sup>. It is important to note that a strong market rhetoric is usually related to those projects. Services provided are described as high-quality. Usually the projects are about taking advantage of niche market, while in certain occasions they revolve around creating markets for rural economic activities, such as local food and crafts. These policies are supplemented with a rhetoric of decentralization in policy design which mobilizes "latent social capital and entrepreneurship", when in fact it might as well be describing the "withdrawal of the state" (Shucksmith et al., 2005; Gibson-Graham, 2006b)

Organic farming occupies a central position among the different tools of rural development, as it seems capable of addressing different problems with the CAP. Organic farming was viewed as a solution to intensive agricultural production and its effects on groundwater pollution or acid rain in various European countries (e.g. the Netherlands, the UK, Denmark) (Lynggaard, 2006, 134-135). Furthermore, organic farming reduces the use of energy and agro-chemicals, and contributes to the restoration of an economic and ecological balance, with favorable implications for human health (Lynggaard, 2006, 113).

Hence, after the mid-80s, the attempt was made by different actors within the European Economic Community to institutionalize organic farming as a viable alternative, that would address different problems within the CAP. As the idea was being established that the "industrialization of agricultural production... has had adverse effects on the environment, humans, and animals" (European Parliament, 1990, 36), organic farming appeared as a solution to a variety of problems. It was seen as

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<sup>6</sup>A complete list of rural development projects would be impossible, as different countries specify their own rural development projects. For a list of rural development projects that were co-financed by the EU, see European Commission (2006).

contributing to high-quality healthy food production, answering consumer demands, and protecting rural landscapes, while providing producers with an attractive market opportunity that would help the EEC comply with the GATT negotiations, without deteriorating the position of the agricultural community (European Parliament, 1991). Additionally, as Lynggaard notes, this was a period when the EP Committee on Agriculture directly linked organic farming to the support and protection of small-scale farming (Lynggaard, 2006, 127). While organic farming can provide producers with price premia, it is also legitimate in the eyes of tax-payers who have experienced ever more frequent food scares in the past 15 years, amidst a rise in outbreaks of Bovine Spongiform Encephalopathy (Mad Cow Disease) and dioxin contaminations.

It might be tempting to attribute the increase in the attention paid by policymakers to environmental concerns to the environmental movement, that by the mid-80s had increased its popularity and its activist actions<sup>7</sup>, as well as its parliamentary representation<sup>8</sup>. However, it should be noted that there are other factors that contributed to the redesigning of the EEC's agricultural policy. The financial drain on the Community's budget pointed to the need to decrease subsidies, especially considering that it was precisely those subsidies that led to agricultural surpluses (a problem that had not been solved successfully yet). Therefore, the CAP reforms in favor of environment-friendly agriculture were supported by fiscal conservatives (Garzon, 2006). At the same time, the updating of the General Agreement on Tariffs and Trade (GATT) through the Uruguay Round (and then later with the Doha Round), exerted additional pressure on the EEC to reduce its agricultural subsidies, in accordance with the rules of the World Trade Organization (WTO) and the doctrines of

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<sup>7</sup>For example, the late 1970s and the early 1980s signify the heyday of Greenpeace - the French government sank the *Rainbow Warrior* in 1985.

<sup>8</sup>The German Green Party enters the Federal Parliament for the first time in 1982, whereas after the 1984 European Parliament elections, the first European-wide grouping of environmental parties appears ("the Rainbow Group").

free-trade (McMichael, 1994; Josling, 2009). The EU had been trying for years to keep agricultural subsidies off the negotiating table. Over the years, it was clear that such a strategy was not sustainable, as other trading partners (most notably India, China, etc), would not agree to open up their markets for EU industrial commodities, unless there was (progress towards) the abolition of agricultural tariffs. Thus, agri-environmental measures provided a way to support farmers for their provision of positive externalities, without violating WTO rules (Baylis et al., 2008).

Last but not least, one cannot underestimate the role of farmers, who have been anything but passive recipients of policy. Beyond lobbying at the national level and influencing electoral outcomes, farmers participate through their organizations in the negotiations of agricultural policy<sup>9</sup>. Farmers' resistance to the Mansholt plan was a major part of the plan's failure, as farmers in various European countries, such as France or Greece, protested against the reduction of agricultural support (which was a consequence of CAP reform) and what they considered the abandonment of peasants at the mercy of neoliberalism (Bartell, 1975; Louloudis and Maraveyas, 1997; Bove and Dufour, 2002; Woods, 2003). Beyond protest, farmers have articulated a series of responses to global agroindustrial dynamics in their attempt to maintain their livelihoods and to increase their autonomy and/or power. They have entered into new relationships of exchange, co-operation and competition, such as the local food networks or the movement against genetic modification, in what several authors call either "agrarian-based rural development (Marsden, 2003) or "repeasantization" (van der Ploeg, 2009).

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<sup>9</sup>The Committee of Professional Agricultural Organizations and the General Committee for Agricultural Cooperation in the European Union (referred to commonly as COPA-COGECA) is the largest farmers' association in the EU. Other farmers' associations are the European Farmers Coordination (CPE), which represents smaller farmers and was an founding member of Via Campesina, and the European Council of Young Farmers (CEJA).

### 3.5 The funding of the CAP

Subsidies represent transfers towards farmers. Since subsidies are financed by the European Commission (the executive body of the EU), the relevant issue becomes to identify the sources of the EU budget. According to the European Commission, its aim is to finance the budget from own resources, rather than from other sources (e.g. EU lending operations, contributions by non-EU countries to joint programs or fines on companies for violating EU competition rules). Own resources are comprised of three parts: traditional own resources, comprising customs duties and sugar levies which are collected by the Member States on behalf of the EU<sup>10</sup>, Value Added Tax payments (with a “call rate” of 0.3% for most countries<sup>11</sup>), and an additional payment to finance the budgeted expenditure based on each Member State’s Gross National Income (European Commission, 2008, 237-246). As shown in figure 3.1, the GNI-based resource constituted the largest source of revenue for EU expenditures (European Commission, 2010).

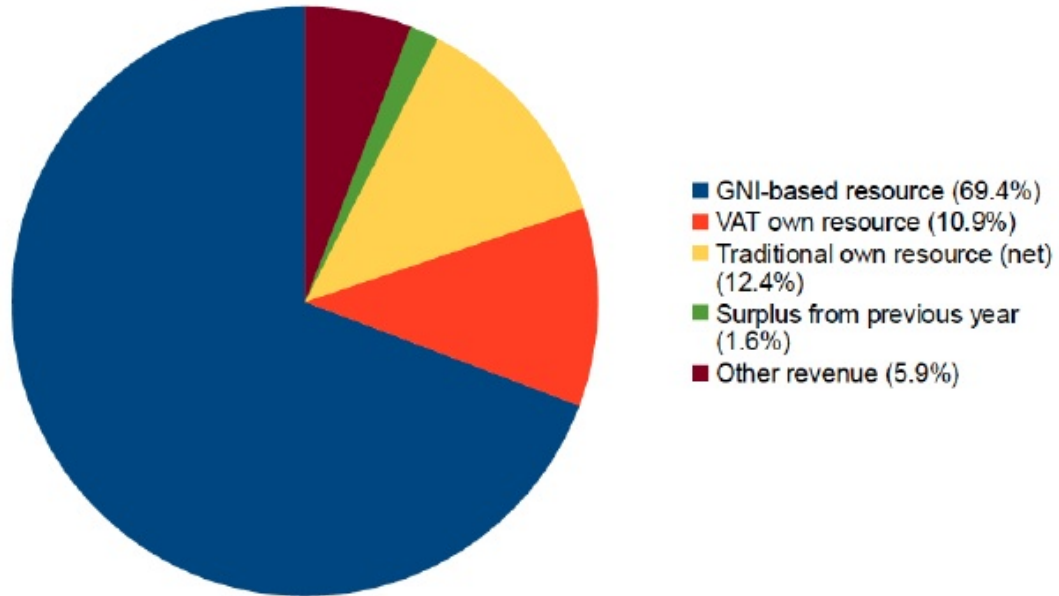
What is the source of these revenues? Value Added Tax is a regressive measure, disproportionately hurting workers, and poorer people. The distributional effect of duties on imported goods depends on the income elasticity of demand for the goods in question, and whether the increased cost of the product can be passed on to consumers. Again, any assessment of the distributional impact of duties on imported goods would require a breakdown of imports by sector (e.g. whether they are consumption items or inputs to industry). Finally, the discussion of the GNI-based resource requires an analysis of State revenues. Following Poulantzas, I assert that the capitalist state is a site of struggle between capital and labor (Poulantzas, 2001). Whether workers will bear the financial burden of a specific program or even of a

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<sup>10</sup>Member States keep 25% of the amounts collected to cover collection.

<sup>11</sup>The “call rate” is the proportion of VAT that the country has to transfer to the European Commission.

Figure 3.1: Financing of EU budget - 2009

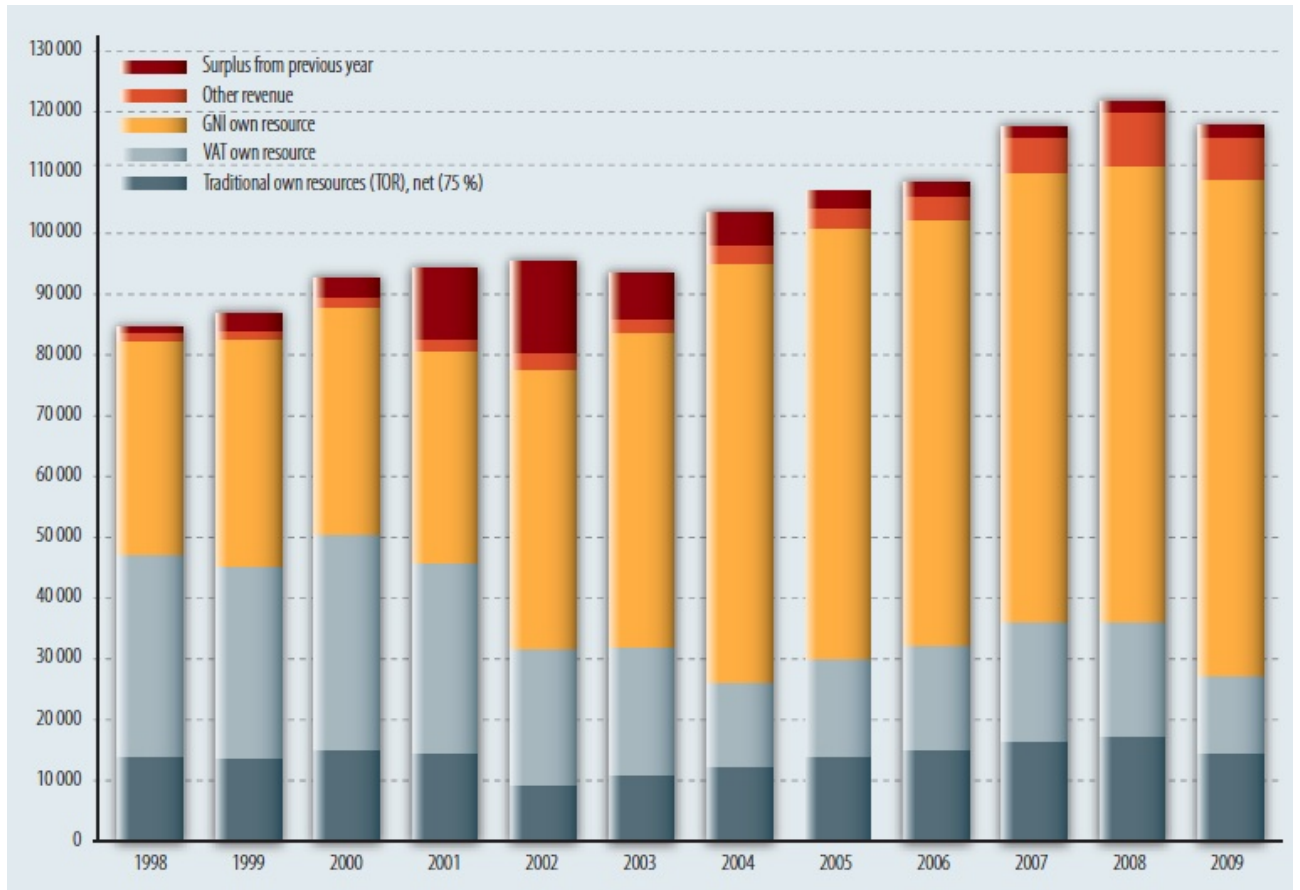


Source: European Commission (2010)

project as large as the European Union is a matter which depends (to some extent) on the relative strength of labor in a certain country. The relative share of tax revenues collect through direct (e.g. income) vs indirect (e.g. sales) taxes or the different tax rates on personal income versus that on corporations are just two examples that illustrate the contested terrain.

In the case of the EU budget, we can see in figure 3.2 the different relative weight of revenue sources over the period 1998-2009; this period is one in which the VAT call rate fell from 1.08% to 0.3%, as opposed to the 1980s which show an increase in the VAT call rate (European Commission, 2010). Although this can be considered a pro-labor turn of events (because of the regressive character of VAT), the final sign of the outcome depends on the ways that the different Member States fund their increased GNI-based contribution.

Figure 3.2: EU revenue 1998-2009 (million EUR)

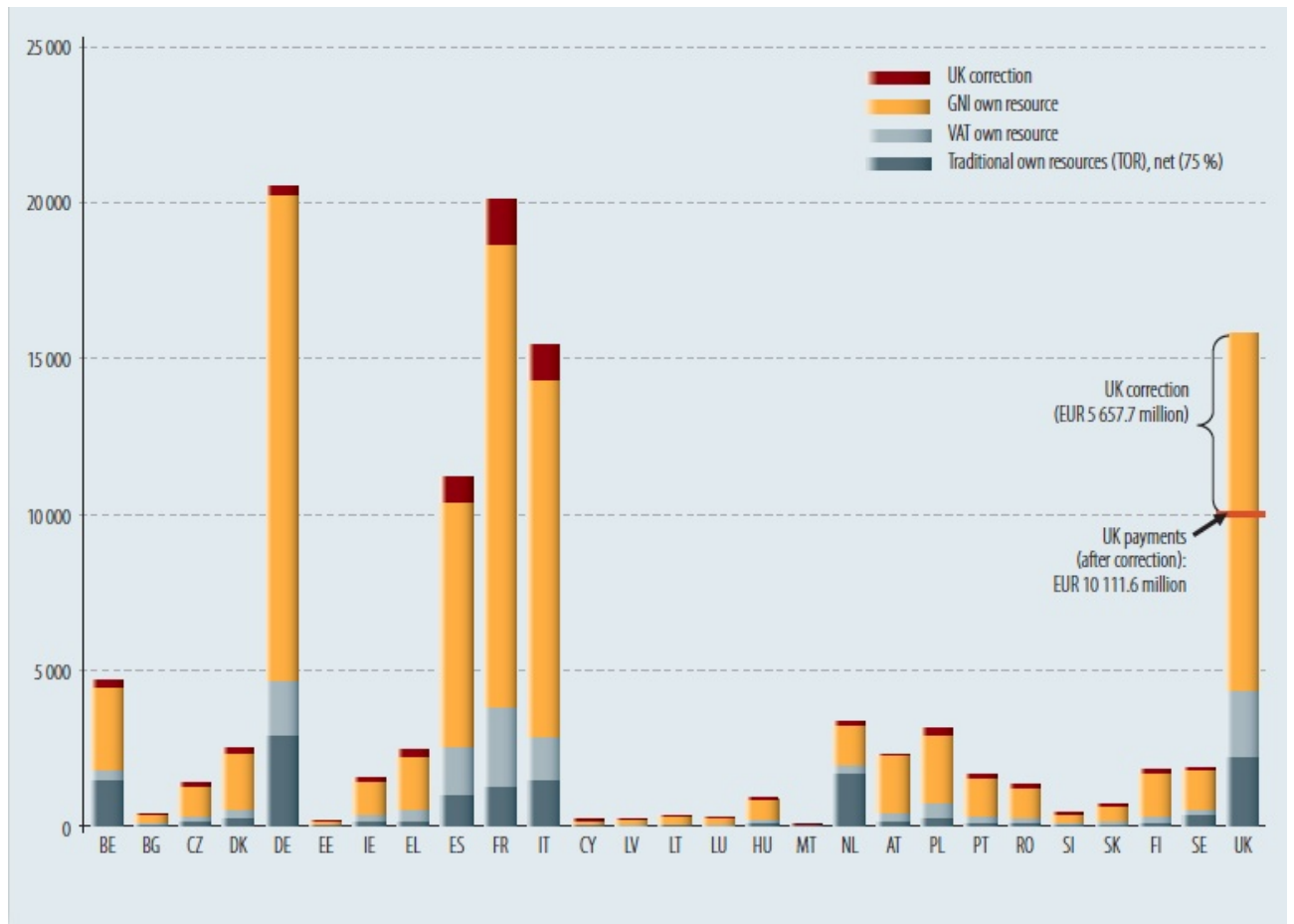


Source: European Commission (2010)

From a value-theoretic perspective it is not clear whether the transfers from the European Commission represent surplus transfers. Although this is the most likely scenario, we could theorize a situation in which a state might choose to fulfill its fiscal obligations by increasing taxes on workers. Increased pressure on workers' income could lead to a situation in which the wage is lower than the value of labor power; the latter is, according to Marx (1967), historically and socially determined. Thus two scenarios are possible: there could be a disruption in the circuit of capital, if the wages do not allow the worker to reproduce both herself and her family, thus prompting outwards migration. In the longer-run, the alternative and/or complemen-



Figure 3.3: National contributions per Member State in 2009 (million EUR)



Source: European Commission (2010)

tary scenario would have the worker readjust their expectations on what constitutes a basic good or a reasonable expectation. Thus, eating out or going to the movies once a month might become signs of luxury consumption rather than consumption that one would expect to have fulfilled by the (basic) wage. Greece is a recent example of this path. In order to increase public revenues, the Greek government increased the Value Added Tax in a series of basic commodities from to 11% to 23%, prompting a

new wave of outward migration and forcibly reducing people's expectations of what their wage should cover<sup>12</sup>.

### **3.6 The evolution of European Agriculture**

Does the CAP support small or large farms? Does it lead to concentration of land and capital and to capitalist differentiation, or does it protect the small farm and rural livelihood (even at the expense of efficiency, as free-market ideologues often proclaim)? Is there a structural break in the results of agricultural policy in Europe after 1992? In particular, what has the recent support for organic farming achieved? In the present section, I will present statistical data from the Farm Structure Survey of the EU which look at the evolution of the structural characteristics of farms. This would be a first step towards examining whether the rhetoric of the EU on agri-environmental measures and the break from industrial agriculture has produced tangible results.

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<sup>12</sup>See also Vlachou (2012).

Table 3.2: Number of agricultural holdings

	1966	1983	1990	1995	2003	2007
Austria				221,800	173,470	164,810
Belgium	214,800	102,600	85,040	71,000	54,930	48,010
Bulgaria					661,640	489,050
Cyprus					45,110	40,110
Czech Rep.					44,780	38,880
Denmark		98,700	81,200	68,800	48,390	44,350
Estonia					36,850	23,340
Finland				101,000	74,830	67,980
France	1,708,000	1,129,600	923,590	734,800	614,000	527,350
Germany	1,246,000	767,600	653,600	566,900	412,300	370,480
Greece		958,700	849,450	802,400	823,730	860,000
Hungary					769,260	626,070
Ireland			170,450	153,400	135,570	128,100
Italy	2,980,500	2,832,400	2,658,960	2,482,100	1,963,250	1,678,760
Latvia					126,610	107,690
Lithuania					272,110	230,270
Luxembourg	8,610	4,600	3,940	3,200	2,450	2,290
Malta					10,900	10,990
Netherlands	247,000	138,500	124,800	113,200	85,500	76,740
Poland					2,163,360	2,390,920
Portugal			598,740	450,600	359,250	275,080
Romania					4,464,950	3,923,150
Slovakia					71,730	68,980
Slovenia					77,140	75,330
Spain			1,577,020	1,277,600	1,127,970	1,036,210
Sweden				88,800	67,630	72,390
UK		261,900	242,570	234,500	250,400	255,320

Source: Eurostat

Although the Mansholt plan was never implemented in its original form, the European agricultural sector experienced a rapid decrease in the number of agricultural holdings between 1966 and 1995. As one can notice from table 3.2, with the exception

of Italy, all original members of the European Economic Community saw a tremendous decrease in their number of farms. France, to give the most radical example, lost approximately 1 million farms in that period of time.

This situation does not change after 1995 and the rise of agri-environmental measures (and the explicit protection of the small farm). Again we notice that with two exceptions (Greece and the UK), the number of farms keeps falling in most countries. This trend is especially visible in certain Eastern European countries, which see a dramatic fall in their number of agricultural holdings within the first 3 years in the European Union (most Eastern European countries joined the EU in 2004). Thus, between 2003 and 2007, the number of agricultural holdings decreases in Estonia by 36%, in Bulgaria by 26%, and the same happens in all former Block countries, other than Poland. Thus, by 2007, the number of agricultural holdings is significantly lower than in the past, showing the consolidation of smaller farms (and raising the possibility of another rural exodus).

Table 3.3 displays the development in average farm size over the period 1966-2007. The decrease in the number of agricultural holdings is not accompanied by a similar decrease in the utilized agricultural area. Thus, average farm size is increasing in 23 out of 27 countries for which data are available. In the core countries of the EEC, such as Belgium, Germany or the Netherlands, average farm size increases by as much as four times, fulfilling one of the main goals of the Mansholt plan. The notable exception to the trend of larger farms is again the UK, which has seen a significant decrease in average farm size after 1995. This is probably related to clear trends of counter-urbanization that the UK has been experiencing and which have continued after the 1990s (Brown, 2010).

Table 3.3: Average farm size (in ha)

	1966	1970	1975	1980	1983	1985	1987	1990	1993	1995	1997	2000	2003	2005	2007
Austria										15.45	16.25	16.99	18.74	19.14	19.28
Belgium	7.42	8.37	10.63	12.35	13.58	14.12	14.79	15.81	17.61	19.08	20.58	22.59	25.38	26.88	28.63
Bulgaria													4.36	5.11	6.19
Cyprus													3.46	3.35	3.64
Czech Rep.													79.34	84.21	89.29
Denmark			22.42	23.80	28.84	30.68	32.20	34.19	37.13	39.65	42.57	45.73	54.68	52.39	59.67
Estonia													21.59	29.87	38.85
Finland										21.71	23.75	27.32	29.95	32.05	33.60
France	17.63	18.86	22.40	23.32	25.46	26.95	28.58	30.52	35.08	38.47	41.68		45.27	48.65	52.10
Germany	10.17	11.77	13.66	14.37	15.53	16.05	16.80	26.09	28.09	30.26	32.11	36.34	41.19	43.69	45.70
Greece				4.08	4.33	4.03	4.31	4.32	4.46	4.26	4.26	4.39	4.81	4.78	4.74
Hungary												4.71	5.63	5.97	6.75
Ireland			22.27	22.59	22.78	22.69	22.65	26.04	26.84	28.19	29.37	31.40	31.69	31.80	32.28
Italy	6.02	6.03	6.19	5.60	5.60	5.57	5.58	5.61	5.92	5.92	6.41	6.06	6.68	7.35	7.59
Latvia												10.17	11.76	13.23	16.46
Lithuania													9.15	11.04	11.50
Luxembourg	15.56	17.74	21.94	25.00	27.61	28.64	30.24	32.03	37.41	39.89	42.49	45.38	52.31	52.71	56.90
Malta													0.98	0.93	0.94
Netherlands	9.04	11.61	12.83	13.70	14.51	14.91	15.33	16.12	16.83	17.66	18.63	19.97	23.48	23.93	24.95
Poland													6.64	5.96	6.47
Portugal							5.24	6.69	8.08	8.71	9.17	9.29	10.37	11.36	12.63
Romania													3.11	3.27	3.50
Slovakia												30.40	29.80	27.44	28.07
Slovenia												5.62	6.31	6.29	6.49
Spain							13.84	15.39	17.86	19.75	21.21	20.32	22.07	23.03	23.85
Sweden										34.44	34.71	37.75	46.06	42.11	42.94
UK			58.69	63.66	64.47	65.11	64.40	67.88	67.29	70.13	69.35	67.73	57.39	55.65	53.80

Source: European Communities (2000), Eurostat

Table 3.4: Number of holdings, by farm size

	Less than 10 ha		10-50 ha		Over 50 ha		
	1975	1995	1975	1995	1975	1995	2007
Austria		129,000	84,850				
Belgium	87,700	33,900	18,200	47,000	84,700	68,670	11,280
Denmark	43,000	13,400	10,190	79,200	31,100	21,020	8,790
Finland		28,500	23,840		38,200	18,900	15,270
France	545,000	270,400	178,900	631,400	43,700	30,610	17,940
Germany	493,100	263,200	134,520	388,400	265,900	151,400	198,500
Greece		723,200	767,280		232,200	150,610	71,500
Ireland	72,100	35,400	24,480	136,200	75,800	85,610	3,400
Italy	2,360,900	2,196,400	1,432,570	265,800	97,900	80,880	20,200
Luxembourg	2,200	1,100	610	3,500	245,500	206,170	40,300
Netherlands	85,200	55,500	32,450	74,200	900	580	500
Portugal		397,500	233,210		50,600	33,140	7,200
Spain		918,000	700,910		43,400	32,050	9,800
Sweden		26,500	23,840		262,500	234,110	97,100
UK	73,600	61,800	104,140	124,100	43,700	30,610	18,600
					92,600	77,210	82,900
							80,100
							73,980

Source: Eurostat

The next question is what drives the change in the average farm size. We notice in table 3.4 that during the period between 1975 and 2007, the relative distribution of farms changes for most EU-15 countries. Whereas in the UK small farms (operating with less than 10 ha of land) become more common during the last 30 years at the expense of medium (10-50 ha) and large farms (over 50-ha farms), in most other countries (France, Germany, Denmark, Ireland, Benelux, the Iberian countries) the decrease in the number of farms means the emergence of more large farms. In Sweden and Finland, we notice that the number of farms is declining in all categories, which could be a sign of concentration of land not captured by a category that doesn't differentiate among farms which possess over 50 hectares of land. Finally, we notice that in Greece, the number of farms is increasing in all categories. Here we believe that there are two parallel phenomena in play, as land fragmentation and concentration of land seem to operate at the same time<sup>13</sup>.

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<sup>13</sup>Here we need to note that land size is not necessarily a good indicator of farm size. Small farms can be cultivated very intensively, therefore making the lines between small and large blurry. However, we believe that as a general rule, a large farm in terms of land size is more likely to be also large in terms of economic value.

Table 3.5: Percent of agricultural area, by farm size category

	0 - 4.9 ha		5 - 9.9 ha		10 - 49.9 ha		50 - 99.9 ha		Over 100 ha	
	1990	2007	1990	2007	1990	2007	1990	2007	1990	2007
Austria		7.1		7.8		39.1		15.9		30.0
Belgium	4.9	2.1	7.0	3.3	60.2	40.2	19.9	33.6	8.0	20.9
Bulgaria		13.1		1.8		6.7		6.3		72.1
Cyprus		38.9		12.1		26.1		9.4		13.6
Czech Rep.		1.4		0.9		4.5		3.6		89.7
Denmark	0.3	0.3	3.4	2.8	46	17.7	28.5	18.2	21.9	60.9
Estonia		6.3		7.1		22.4		8.3		56.0
Finland		2.6		5.9		52.4		25.7		13.5
France	2.5	1.4	3.0	1.5	38.4	15.8	30.6	27.8	25.5	53.5
Germany		1.9		2.8		23.8		21.8		49.8
Greece	33.1	28.3	23.0	18.4	33.7	38.8	5.2	9.2	5.1	5.4
Hungary		9.7		3.1		11.4		7.5		68.3
Ireland	1.5	0.8	4.3	3.2	57.2	50.7	23.2	29.0	13.9	16.3
Italy	21.3	16.7	11.9	10.3	28.2	30.2	10.4	13.3	28.2	29.5
Latvia		9.7		13.3		36.9		10.9		29.3
Lithuania		16.1		12.9		27.8		9.9		33.3
Luxembourg	2.0	0.7	2.3	1.3	35.5	12.9	51.0	39.2	9.2	46.0
Malta		81.2		14.5		2.8		0		0
Netherlands	4.6	3.3	7.8	4.3	65.7	45.5	16.7	30.8	5.3	16.1
Poland		20.1		18.1		38.5		6.4		17.0
Portugal	24.8	15.4	10.8	7.9	19.1	18.8	6.4	8.1	38.9	50.0
Romania		35.0		14.0		9.8		2.4		38.9
Slovenia		26.9		31.3		35.5		2.4		3.9
Slovakia		2.0		0.7		2.8		2.0		92.5
Spain	9.8	5.6	7.1	4.3	23.6	19.1	12.7	12.9	46.8	58.0
Sweden		5.3		8.4		32.1		20.8		33.4
UK	0.6	1.4	1.4	1.4	15.6	12.4	18.2	15.3	64.2	69.5

Source: Eurostat

Furthermore, as one can see from table 3.5, the agricultural area which is cultivated in farms larger than 100 ha, increases in every country for which there is available



data between 1990 and 2007, at the expense of small and/or medium farms. One can notice a spectacular increase in the percentage of land held by really large farms (over 100 ha) in Denmark, France, and Luxembourg. Additionally, we notice the high percentage of land held by large farms in many Eastern European countries.

The fall of the communist regimes led to significant changes in agricultural patterns in Eastern Europe. The process of dismantling the large state-owned farms and the transition away from central planning and towards free markets happened in a variety of ways. Restitution of the land to its owners prior to the Communist regime, or their heirs, was followed in Bulgaria, Czech Rep. and Slovakia, and the Baltic republics. Romania and Hungary combined restitution policies with some land redistribution, which in some cases happened with distribution of shares or vouchers rather than actual plots. Finally, some countries such as Poland or Slovenia, never had a strong presence of state farms, therefore there was no significant need for land reform<sup>14</sup> (Macours and Swinnen, 2002; Swinnen, 2009; Scricciu, 2011).

It is striking that the high percentage of land held by large farms is true for countries with a history of collective farms (Czech Republic, Slovakia, Hungary) and historical peasant strongholds (Bulgaria, Romania), both for countries with restitution and for others which followed land redistribution. The distribution of land in shares rather than plots ended up benefitting the reconsolidating of land, as workers would sell their shares to corporate farms in exchange for employment. This is particularly striking since restitution of land to its previous owners did not automatically create large farms. In most cases the pre-collectivization structure of ownership was rather egalitarian, as Communist land reforms of the 1940s had seized the land from large landowners and the Church and given it to landless peasants and small farmers. The exception to this rule was Albania, which partly explains the splitting up of

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<sup>14</sup>According to Macours and Swinnen, in 1989 83% of land in Slovenia and 76% of land in Poland was held by individual farms.

collective land to rural households in the form of equal plots of land (Swinnen, 2009, 726-727).

Table 3.6: Average labor per hectare

	1990	1993	1995	1997	2000	2003	2005	2007
Austria			0.05	0.05	0.05	0.05	0.05	0.05
Belgium	0.07	0.06	0.06	0.06	0.05	0.05	0.05	0.05
Bulgaria						0.27	0.23	0.16
Cyprus						0.21	0.19	0.18
Czech Rep.						0.05	0.04	0.04
Denmark	0.03	0.04	0.04	0.04	0.03	0.02	0.02	0.02
Estonia						0.05	0.04	0.04
Finland			0.06	0.06	0.05	0.04	0.04	0.03
France						0.03	0.03	0.03
Germany	0.06	0.05	0.04	0.04	0.04	0.04	0.04	0.04
Greece	0.19	0.20	0.17	0.17	0.16	0.15	0.15	0.14
Hungary						0.12	0.11	0.10
Ireland	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.04
Italy	0.13	0.12	0.12	0.12	0.10	0.11	0.11	0.10
Latvia					0.10	0.09	0.08	0.06
Lithuania						0.09	0.08	0.07
Luxembourg	0.05	0.05	0.04	0.04	0.03	0.03	0.03	0.03
Malta						0.42	0.40	0.41
Netherlands	0.11	0.11	0.10	0.10	0.10	0.09	0.09	0.09
Poland						0.15	0.15	0.15
Portugal	0.21	0.15	0.14	0.14	0.14	0.12	0.11	0.10
Romania						0.19	0.19	0.16
Slovakia					0.06	0.06	0.05	0.05
Slovenia					0.22	0.20	0.20	0.17
Spain	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Sweden			0.03	0.03	0.02	0.02	0.02	0.02
UK	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02

Source: Eurostat

Table 3.7: Average number of full-time workers per farm

	1990	1993	1995	1997	2000	2003	2005	2007
Austria			0.84	0.85	0.91	1.01	0.98	0.99
Belgium	1.10	1.12	1.11	1.18	1.20	1.32	1.35	1.37
Bulgaria						1.19	1.17	1.00
Cyprus						0.71	0.63	0.65
Czech Rep.						3.64	3.60	3.49
Denmark	1.17	1.42	1.53	1.55	1.15	1.25	1.17	1.25
Estonia						1.02	1.33	1.37
Finland			1.30	1.37	1.26	1.39	1.18	1.06
France						1.49	1.51	1.53
Germany	1.58	1.33	1.25	1.23	1.31	1.67	1.65	1.64
Greece	0.80	0.86	0.80	0.73	0.72	0.75	0.72	0.66
Hungary						0.68	0.65	0.64
Ireland	1.46	1.50	1.42	1.37	1.19	1.19	1.15	1.15
Italy	0.72	0.74	0.73	0.78	0.63	0.75	0.80	0.78
Latvia					1.03	1.11	1.07	0.97
Lithuania						0.82	0.88	0.78
Luxembourg	1.59	1.71	1.68	1.69	1.58	1.62	1.63	1.63
Malta						0.41	0.37	0.38
Netherlands	1.80	1.87	1.86	1.93	2.02	2.18	2.13	2.15
Poland						1.01	0.92	0.95
Portugal	1.41	1.24	1.39	1.25	1.26	1.27	1.23	1.23
Romania						0.60	0.61	0.56
Slovakia					1.92	1.65	1.44	1.32
Slovenia					1.24	1.24	1.23	1.11
Spain	0.72	0.80	0.85	0.91	0.84	0.87	0.92	0.93
Sweden			0.99	0.91	0.91	1.04	0.94	0.90
UK	1.95	1.78	1.64	1.78	1.52	1.26	1.18	1.14

Source: Eurostat

Land is not a sufficient measure in order to decipher whether European agriculture is being transformed by the CAP; perhaps as crucial is to enquire how labor characteristics develop over time. Table 3.6 displays the labor intensity of the agricultural

sector across Europe for the period 1990-2007, measured in terms of labor per hectare of land<sup>15</sup>. As one can notice, labor intensity stays, more or less, constant in the more advanced economies of the EU and decreases slightly in the peripheral countries. The increase of farm size thus seems to be accompanied by economies in the use of labor power - which could also mean that the agricultural sector provides less employment opportunities for rural dwellers. Table 3.7 displays how many units of full-time labor power are, on average, expended in European agricultural holdings. It is certainly difficult to draw general conclusions for diverse economies by looking at the average number of workers per farm. We notice that there are several instances of increases in the average number of workers per farm, especially in Western European countries (e.g. Belgium, Netherlands, Spain). However, despite the increase in the size of farm, the number of full-time workers goes down in most cases.

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<sup>15</sup>Labor is measured in terms of average work units (AWUs). 1 AWU is the equivalent of a year-round full-time employee.

Table 3.8: Wage labor share of total agricultural labor

	1973	1979	1990	1993	1995	1997	2000	2003	2005	2007
Austria		9	7	8	9	10	11	12	13	15
Belgium	10	9	12	13	14	13	15	18	15	16
Bulgaria							10	10	13	15
Cyprus							20	22	27	27
Czech Rep.							78	74	76	72
Denmark	18	21	26	27	27	30	32	35	36	39
Estonia					54	38	26	39	38	41
Finland		3	4	4	9	9	15	18	17	18
France	17	17	19	21	23	25	29	31	32	33
Germany				31	31	33	34	35	37	36
Greece			9	12	14	13	16	20	19	19
Hungary					23	19	21	21	22	24
Ireland			10	9	10	9	9	9	5	9
Italy			36	35	33	30	31	29	34	36
Latvia						16	13	14	14	18
Lithuania						32	21	21	23	26
Luxembourg	5	5	10	11	12	13	14	15	18	16
Malta			4	4	7	7	6	7	10	10
Netherlands			27	29	30	31	34	37	38	40
Poland						7	6	6	6	6
Portugal		15	12	12	13	14	13	14	15	17
Romania						10	6	10	9	10
Slovakia					62	56	56	59	57	56
Slovenia					6	6	6	8	9	8
Spain			28	26	28	31	39	38	37	39
Sweden	25	26	29	28	28	26	27	29	30	30
UK	46	45	40	38	38	37	34	32	33	32

Source: Eurostat

Table 3.8 has to be interpreted among similar lines. The consolidation of farms and the creation of larger farms necessitates the move away from family farming, as the family cannot effectively provide the labor power required to manage the larger

farms. This is especially the case in Europe which has been experiencing declining birth rates over the past 50 years. In this context, wage labor presents itself as one among several options to solve the problem of increased labor requirements. One can notice a general increase in the presence of wage labor in agriculture; thus more than 40% of agricultural labor in certain countries is performed by agricultural wage workers (72% in the Czech Republic, 56% in Slovakia, 41% in Estonia, 40% in the Netherlands, etc.)<sup>16</sup>. However, this transition is far from complete: although growing, in many European countries, wage labor still accounts for less than one fifth of agricultural labor.

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<sup>16</sup>Once more the UK stands out as an exception to the general rule, probably as a result of counter-urbanization.

Table 3.9: Specialist vs mixed farms

	2000		2007	
	Specialist	Mixed	Specialist	Mixed
Austria	84.9	15.1	87.8	12.2
Belgium	71.8	28.2	74.3	25.4
Bulgaria			87.1	12.7
Cyprus			84.2	15.5
Czech Rep.			50	49.8
Denmark	74.2	25.8	75.9	24.1
Estonia			75.2	24.7
Finland	88.2	11.7	87.2	12.7
France	78.8	21.2	79.6	20.4
Germany	66.8	33.2	72.2	27.8
Greece	78.9	21.1	77.8	22.2
Hungary	61.6	38.2	72.6	27.1
Ireland	95.4	4.5	96.1	3.9
Italy	81.9	17.7	82.6	17.1
Latvia	47.4	52.6	70.2	29.8
Lithuania			59.4	40.6
Luxembourg	78.8	21.1	85	14.7
Malta			53	45.5
Netherlands	88.8	11.2	89.9	10
Poland			54.5	45
Portugal	61.3	38.7	73.4	26.6
Romania			58.9	40.4
Slovakia	46.3	53.6	62.1	37.9
Slovenia	67.3	32.7	68.2	31.8
Spain	73.2	19.2	82.7	17.2
Sweden	81	18.9	83.2	16.8
UK	89.8	10.1	82.7	8.1

Source: Eurostat

Finally, table 3.9 displays the breakdown of agricultural area among specialist farms and mixed farms. We notice that the overwhelming majority of agricultural

land in Europe is covered by monocultures (specialist farms) rather than by mixed cropping systems, mixed livestock, or integrated cropping-livestock farms, all of which would be included in the mixed farm category. It is striking that despite the rhetoric of rural sustainability and the discussion of positive externalities from environment-friendly agricultural methods, which include the surpassing of monocultures, the relative share of specialist farms increases in most countries over the first decade of the 21st century.

### 3.7 Discussion

The data present us with a paradox: The pre-1992 CAP was often presented as a set of socially-unfair and environmentally unsustainable regulations, which inadvertently was to blame for a variety of problems in the rural space. Instead European agricultural policy after 1992 proclaims the need for sustainable rural communities and for protecting those areas and those types of farms that would be threatened the most by a further alignment of European policy with world prices (Buller et al., 2000). However, the preliminary analysis hardly points to a radical break in the structural characteristics of agricultural holdings after the mid-1990s and the implementation of the new measures. We notice that the pre-existing trends continue: the number of farmers decreases, land concentration increases, and farms become larger in terms of average size. At the same time, labor intensity decreases in most areas of Europe.

One can only wonder what the European landscape would have been, had the Mansholt plan actually been implemented. Despite its rejection at the time, farms in Europe actually got larger in terms of land size. Specialist farms seem to be on the rise, even after the realization of the environmental limitations of industrial farming and the explicit support for environmental-friendly types of farming. “Sustainable” or agri-environmental farming thus appears to be a limited term, that doesn’t require



following the broader principles of agro-ecology, such as reduction in energy and resource use, local production of food, diversity and resilience (Altieri, 1987).

Larger farms mean increased labor requirements that cannot be satisfied by family labor, especially when the family is declining in size. Capitalist organization of farming offers one solution to the problem of labor. The increase of wage labor as a share of European agricultural labor is evidence of the reorganization of agriculture away from family labor, as the larger farms require more labor that cannot be provided by the family. However, wage labor is not a simple solution: the criticisms of Chayanov and Vergopoulos are still valid. Low agricultural prices and high agricultural wages as a result of the low population density of the European countryside would still present capital with significant obstacles to fully entering farming. What mechanisms or institutions would enable capital to enter agricultural production?

I suggest that organic production could provide a certain set of institutions, at least as far as agricultural prices are concerned. Certain authors discuss “organic” as a sector which confers rents to those who hold the exclusive right of using the “organic” label (Buck et al., 1997; Guthman, 1998). If organic prices are not set in a competitive market, but carry monopolistic elements, is it possible that this might entice capital to enter this sector of production? Would such a sector become even more appealing if the state offered a significant subsidy to those who operate in the sector?

Agricultural wages remain a problem. As we saw in chapter 2, capitalist farms were hurt by the relatively high level of agricultural wages in rural Europe more than family farms, since the latter did not have to pay wages. However, since the 1980s migration towards Europe has increased tremendously, possibly as a result of the large global disparities of wealth among the developed and the developing world, but also as a result of the demise of the socialist regimes in Eastern Europe and wars in Afghanistan and Iraq. This new wave of migration pushes wages down, both in the

cities and in the agricultural sector. Moreover, immigration policies that perpetuate the “illegality” of migrants contribute to the creation of a servile labor force: hence capital is provided with more exploitable labor power (Hardt and Negri, 2009; Žižek, 2009). In such a context, “free” wage labor does not have to be the only option for organizing agricultural production, as labor relations based on violence (re-)appear all across the European continent (The Economist, 2003; Weis, 2007; Shelley, 2007; Andrees, 2008).

## CHAPTER 4

# SOCIO-ECONOMIC CONSEQUENCES OF ORGANIC FARMING

### 4.1 Introduction

Since the mid-1990s, with the support of agri-environment measures directly subsidizing organic farming, and with the growing awareness of consumers around health hazards related to industrial food production, the area under organic farming has increased rapidly (see map 4.1). According to 2007 data, around 4% of agricultural land in the EU-27 is either organic or undergoing the 3-year period of conversion to organic methods. Although this number might seem small, it is considerably larger than the US (where only about 0.6% of agricultural land is organic) or Australia (3%) (Willer, 2010). Furthermore, several European countries displayed a significant dynamism in this period of time. Whereas for the EU-15 overall the organic share of agriculture doubled between 1998 and 2007 (from 1.8% to 4.2%), several countries experienced tremendous increases in that period of time<sup>1,2</sup>. If subsidies were supposed to simply increase the percentage of European land under organic methods, this goal has been to some extent achieved.

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<sup>1</sup>The organic share of agriculture increased from 0.4% to 7.3% in Greece over the 1998-2007 period. In Portugal, it increased from 0.7% to 4.4%, in the UK from 0.5% to 3.1% (Eurostat, 2005, 2007a). To some extent, these increases might signify the low starting point of those countries, as opposed to more modest increases in countries, such as Austria, Italy, or the Scandinavian countries, where the organic movement had been stronger since the 1980s. For 1998 data, see Eurostat (2005).

<sup>2</sup>The European Union grew from 15 to 27 countries with two consecutive accessions in 2004 and 2007. Therefore, it becomes difficult to construct meaningful comparisons for the EU-27 over time.

Map 4.1 Organic Farming in Europe, 2009 (Source: Eurostat)

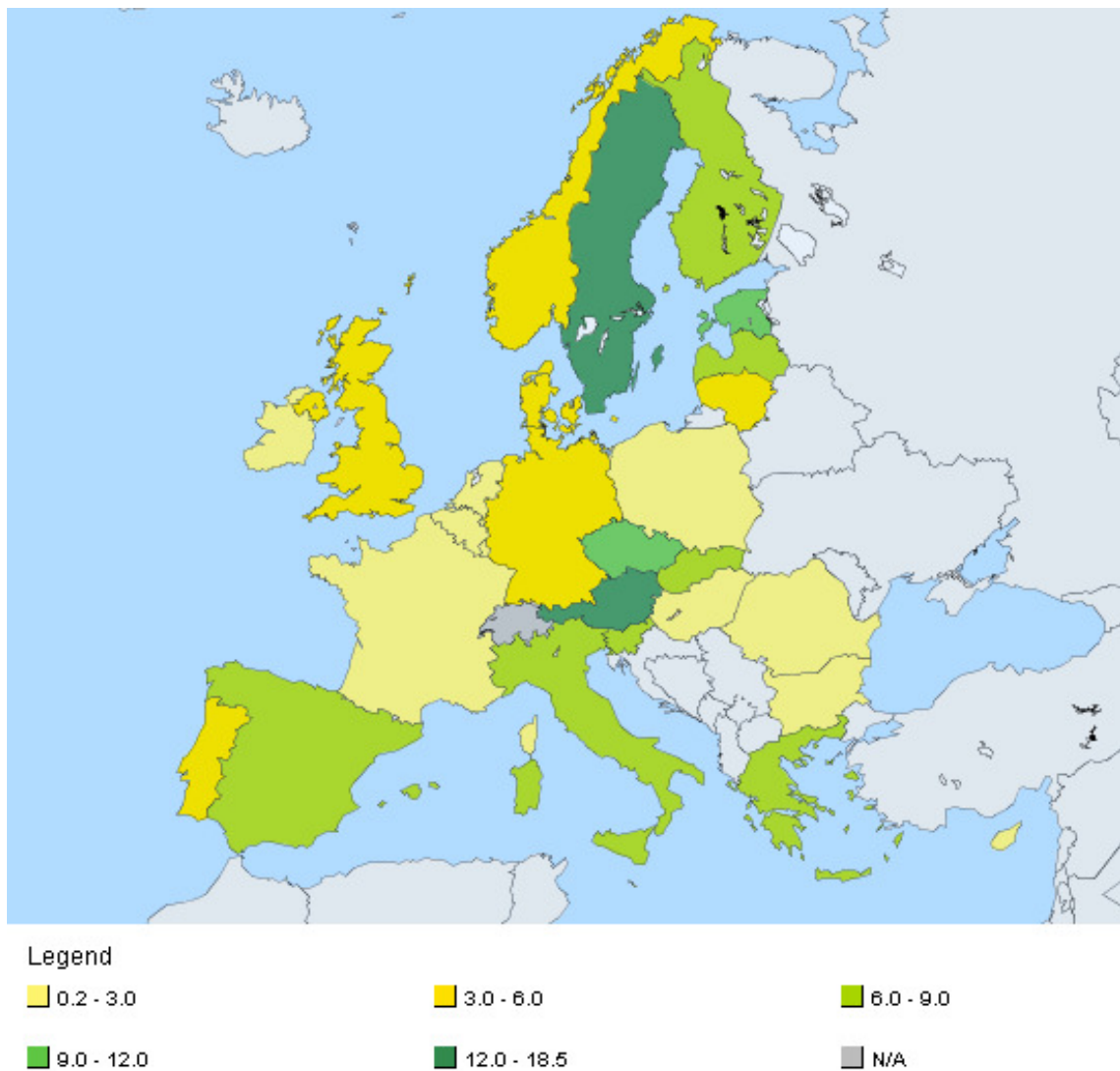
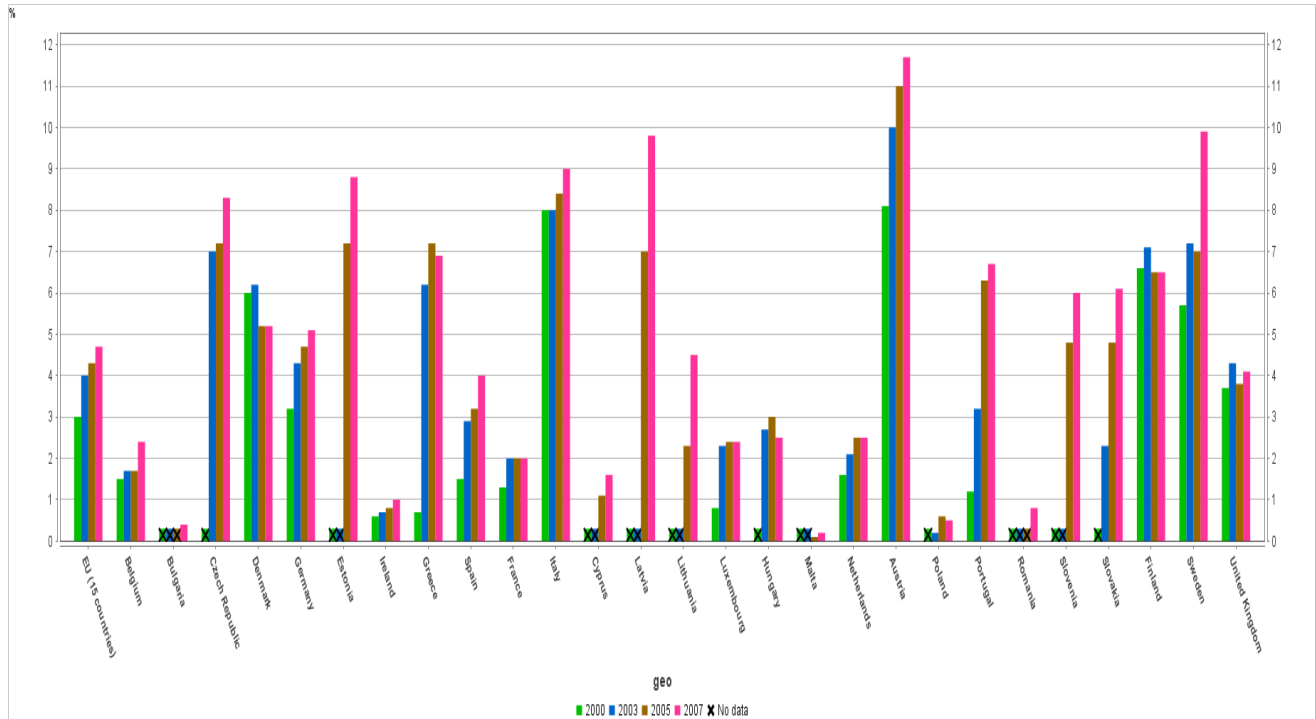


Figure 4.1: Organic area in the EU - 2000 to 2007 (Source: Eurostat)



Does this rise of organic farming represent a different model to industrial agriculture, one that is associated with small farms and “peasant” processes? One of the most controversial issues in the literature of organic farming is probably the so-called “conventionalization” thesis, namely the position that organic farms bear more and more resemblance to conventional farms, which was first advanced by Tovey (1997) and Buck et al. (1997). Tovey, in a paper that focuses on Ireland, traces the ways through which EU agricultural policy leads organic agriculture to increasingly replicate conventional processes (Tovey, 1997). Buck et al. claim that the organic farming sector has created an opportunity for agri-business, which could extract rents and accelerate the process of accumulation through its investing in organic farming. Thus, regulation, which involved registration with the State and third-party certification, conferred a rent to those having the right to market their product as organic. Hence,

organic farming displays characteristics that were traditionally associated with conventional forms of agriculture, such as monocultures and long-distance trading, and labor practices became increasingly more and more alike. Thereby, “organic” becomes an industry rather than a distinct philosophy (Buck et al., 1997).

Despite being supported by several case studies<sup>3</sup>, the conventionalization thesis hasn't become universally accepted. A special issue of the journal *Sociologia Ruralis* (Winter 2001) was dedicated to proving it either false or associating its existence with specific exceptional cases. In order to rebut the claims of conventionalization, opponents sought to highlight the characteristics of organic farming as a social movement. Hence, Michelsen claims that both the Californian and the Irish cases are associated with a small share of organic agriculture, rendering generalizations “heroic” (Michelsen, 2001b, 6). In the case of New Zealand, Campbell and Liepins (2001) claim that the development of “organic” as an industry is contested by organic growers, thereby challenging its potential linear development. Kaltoft (2001) draws similar results, by examining the case of the Danish organic movement. Since other papers in the same issue portray the European experience as disproving “conventionalization”<sup>4</sup>, it becomes imperative to look at the transformations of Europe's organic farms, especially given the fact that we now have ample distance in time from the early 1990s and the early rise of organic farming.

Although there is no consensus on which aspects would allow us to call an organic sector “conventionalized”, I will propose a set of three criteria. The first criterion is farm size: organic farming is usually associated with small-scale, partly because it was seen as a reaction to the “modernization” of agriculture after the 1950s and the “industrial” (conventional) farm. Organic farms are usually portrayed as family

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<sup>3</sup>Research by Guthman (1998, 2004) and Allen and Kovach (2000) provided additional evidence to its support.

<sup>4</sup>See Michelsen (2001a); Pugliese (2001).

farms, as when the International Federation of Organic Agricultural Movements (the umbrella organization of most organic associations) stresses the role of smallholders in organic farming. The second criterion of conventionalization is related to agricultural systems: if organic farms represent a radical break with industrial agriculture, one would expect organic farms to be more self-contained agricultural systems employing mixed methods, rather than to be specializing in one commodity, as the industrial monocultures which rely heavily on external inputs. This would be the case if organic farming were to be actually closer to “agro-ecological” farming and thus more economical than industrial farming whose impressive yields are a product of its high energy use, in the form of fossil fuels or fertilizer (Altieri, 1987). Finally, one would expect organic farms to be creating employment in their regions. The reason for this proposition is that organic farmers cannot use pesticides to combat pests, hence resorting to more labor-intensive processes, such as weeding. Therefore, agricultural labor intensity in organic farms should be higher than that of their conventional counterparts. For all these reasons, it becomes interesting to see what lies behind the rise of organic farming in the EU - and whether the rise of organic farming is revolutionizing agricultural relations.

This chapter has the following structure: the following section presents descriptive statistics pertaining to the growth and the characteristics of organic farms in the European Union, while section 4.3 lays out the empirical methodology. Sections 4.4 and 4.5 are the main empirical sections. Section 4.6 offers some preliminary discussion, to be followed by a concluding section.

## **4.2 The rise of organic farming in the EU**

This section examines whether organic farming in the EU has been displaying traits that are more commonly associated with “conventional” agriculture. I use data on organic farming, acquired from Eurostat in the period March-April 2010. My

dataset is a subset of the Farm Structure Survey, which is conducted approximately every two years in each Member State of the EU. Questions on organic farming were not introduced in the Farm Structure Survey until 2000. Thus, I have relevant regional data from the four surveys which were conducted in 2000, 2003, 2005 and 2007.

Individual farm data are not publicly available. Thus, my data is aggregated at the NUTS-3 level, which is the lowest regional denomination in the EU. The European Commission uses the NUTS (Nomenclature of Territorial Units for Statistics) classification in order to divide the territory of the EU for statistical purposes. The current NUTS classification divides the European territory into 97 regions at the NUTS-1 level, 271 regions at the NUTS-2 level and 1303 regions at the NUTS-3 level (Eurostat, 2007b, 10-11). One can think of the NUTS-1 level as similar to the state-level in the US, the NUTS-2 level as similar to the county level and the NUTS-3 level as parallel to the district level.

Despite the rise in organic production in the European Union, there is something puzzling when one takes a closer look at the data. Contrary to the official rhetoric which axiomatically links organic production to small-scale farms, the average organic holding is usually much larger than the average holding. Eurostat (2007a) reports that in the 2004-2005 period, the average organic holding for EU-25 was 38.7 ha, compared to 16 ha for an average holding (conventional or organic). Slovakia, Hungary, Portugal are representative examples of large discrepancies between the size of different farm types, whereas only in Austria and Denmark do organic farms appear to be smaller, on average, than conventional ones (ibid.).



Table 4.1: Basic statistics - 2007

	Share of organic area in total utilized agricultural area (%)	Organic area (ha)	Share of Member State in total EU27 organic area (%)	Average size of organic holdings (ha)	Average size of conventional holdings (ha)
EU-15	4.2	5,225,590	82.8	37.6	21.6
EU-25	4.1	6,268,400	99.3	40.6	16.4
EU-27	3.7	6,309,710	100	40.4	12.3
Austria	12.7	405,750	6.4	22.3	18.9
Belgium	1.9	25,900	0.4	52.9	28.4
Bulgaria	0.3	9,320	0.1	84.7	6.2
Cyprus	1.1	1670	0.0	8	3.6
Czech Rep.	7.1	250,930	4	334.6	84.5
Denmark	5.4	144,060	2.3	68.3	59.2
Estonia	7.5	68,160	1.1	73.3	37.4
Finland	6.3	143,700	2.3	39.7	33.3
France	1.9	533,220	8.5	59.8	52
Germany	4.7	794,430	12.6	58.5	45.2
Greece	7.3	297,710	4.7	10.7	4.5
Hungary	4.1	171,640	2.7	350.3	6.5
Ireland	0.6	23,340	0.4	38.3	32.2
Italy	7.5	950,180	15.1	24.3	7.2
Latvia	7.5	133,190	2.1	44.8	15.6
Lithuania	3.8	99,430	1.6	71	11.1
Luxembourg	2.4	3,190	0.1	63.8	56.8
Malta	NA	NA	NA	NA	0.9
Netherlands	2.6	49,680	0.8	42.8	24.7
Poland	0.1	181,480	2.9	25.4	6.4
Portugal	4.4	151,290	2.4	127.1	12.1
Romania	0.2	31,990	0.5	19	3.5
Slovakia	5.8	111,740	1.8	588.1	26.5
Slovenia	5	24,570	0.4	15.9	6.3
Spain	3.7	921,730	14.6	57.9	23.3
Sweden	9.2	286,410	4.5	97.4	40.6
UK	3.1	494,370	7.8	154	52.7

Source: Eurostat

Table 4.2: Size of average farm (ha)

	2000		2003		2005		2007	
	Conv	Org	Conv	Org	Conv	Org	Conv	Org
Austria	16.7	20.0	18.4	21.3	18.7	22.9	18.9	22.3
Belgium	22.4	43.0	25.2	43.8	26.7	45.3	28.4	52.9
Bulgaria	NA	NA	4.4	NA	5.1	64.3	6.2	84.7
Cyprus	NA	NA	3.5	5.6	3.3	6.2	3.6	8.0
Czech Rep.	NA	NA	75.7	402.6	79.7	398.6	84.5	334.6
Denmark	45.3	56	54.2	63.3	52.0	61.5	59.2	68.3
Estonia	NA	NA	21.1	86.6	28.9	70.2	37.4	73.3
Finland	27.1	31.4	29.7	34.2	31.8	36.3	33.3	39.7
France	41.9	46.9	45.1	56.5	48.5	60.2	52.0	59.8
Germany	36.0	51.1	40.8	55.2	43.2	56.4	45.2	58.5
Greece	4.4	4.8	4.7	11.7	4.7	12.9	4.5	10.7
Hungary	4.6	68.8	5.4	197.6	5.7	193.0	6.5	350.3
Ireland	31.5	26.8	31.7	29.3	31.8	34.2	32.2	38.3
Italy	5.8	18.0	6.4	19.6	7.0	21.5	7.2	24.3
Latvia	10.3	7.6	11.6	36.3	13.0	64.8	15.7	44.8
Lithuania	NA	NA	9.1	90.6	10.9	41.7	11.1	71.0
Luxembourg	45.3	51.5	52.3	52.8	52.6	58.2	56.8	63.8
Malta	NA	NA	1.0	NA	0.9	NA	0.9	NA
Netherlands	19.9	30.7	23.0	58.4	23.7	40.4	24.7	42.8
Poland	NA	NA	NA	NA	5.9	23.0	6.4	25.4
Portugal	9.0	145.8	10.0	157.7	10.9	172.0	12.1	127.1
Romania	NA	NA	3.1	NA	3.3	143.2	3.5	19.0
Slovakia	29.7	854.8	28.6	1402	26.7	737.4	26.5	588.1
Slovenia	5.6	8.6	NA	NA	6.2	13.9	6.3	15.9
Spain	20.1	40.1	21.7	67.8	22.6	55.2	23.3	57.9
Sweden	36.0	51.4	44.7	50.8	40.3	89.9	40.6	97.4
UK	66.6	222.1	56.1	187.6	54.4	177.9	52.7	154.0

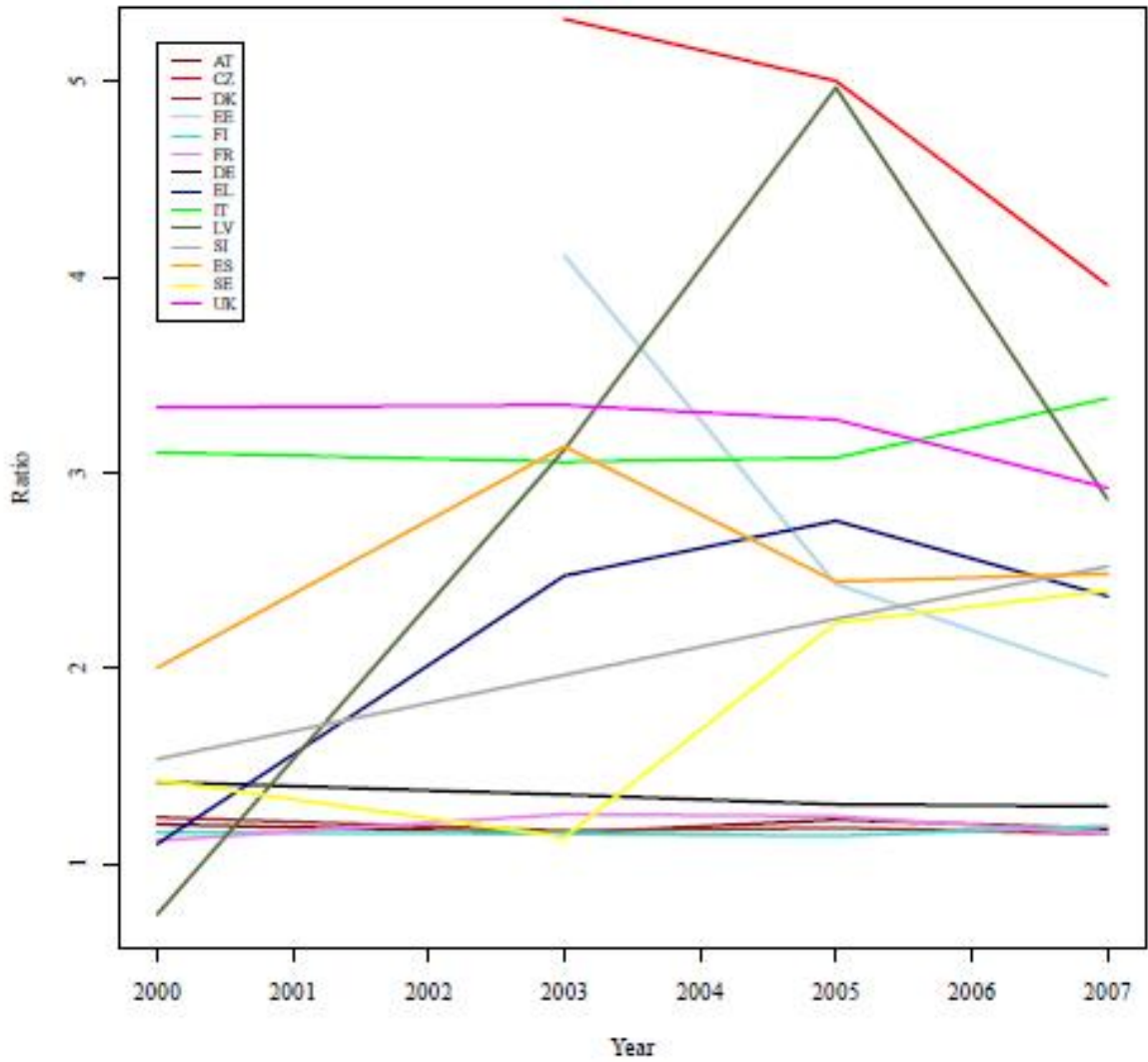
Source: Eurostat

Table 4.1 presents basic statistics for organic production in 2007. We observe that the “exceptional cases” of Austria and Denmark do not appear in the newer data - in every country of Europe, the average organic farm is larger than the aver-

age conventional farm. Table 4.2 illustrates the evolution of average farm size, for both conventional and organic farms, whereas figure 4.2 uses this data to display the evolution of the ratio of average organic farm size to average conventional farm size in selected countries of the EU.

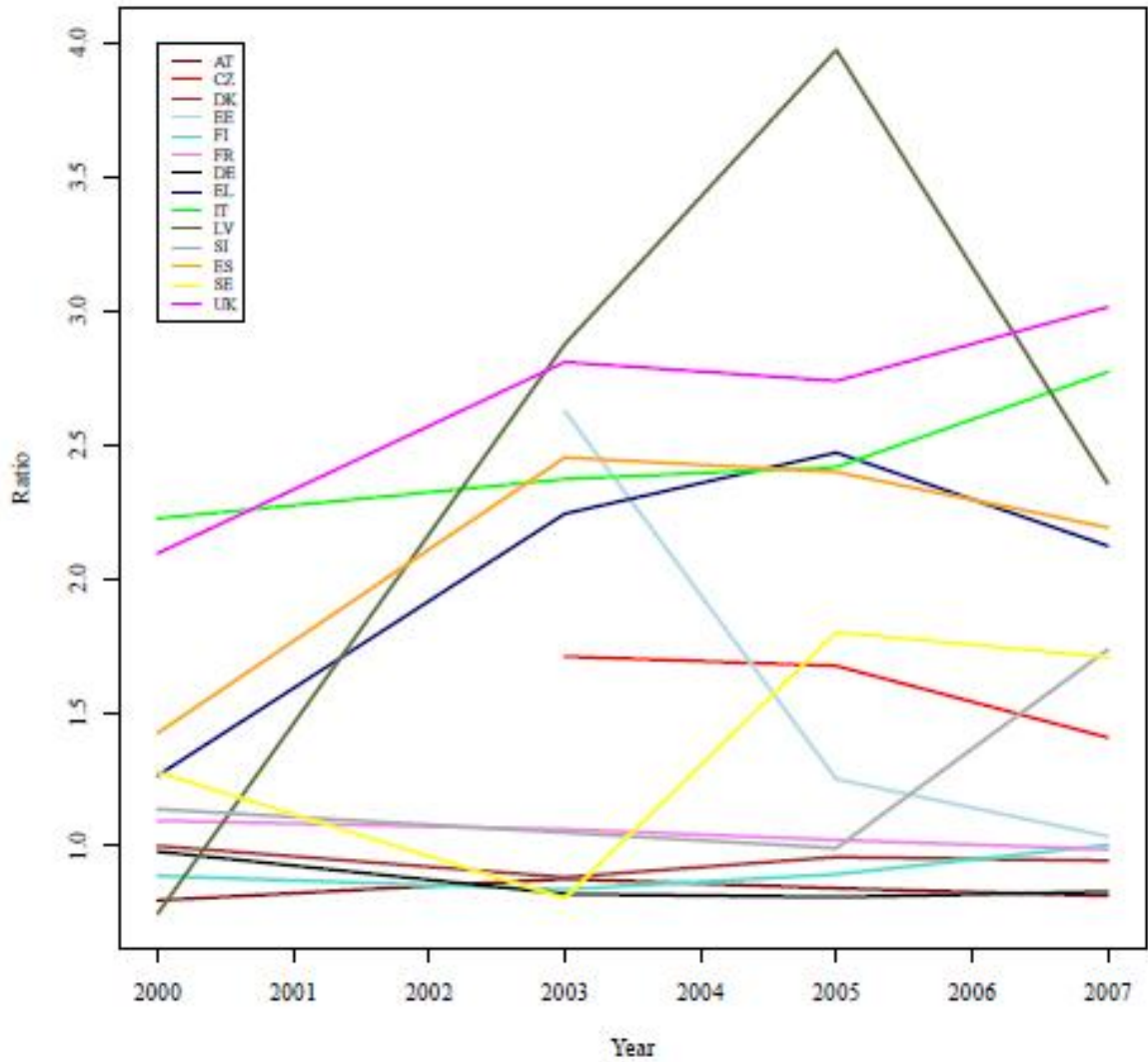
Does the relationship between average farm sizes for the two different categories display a consistent trend? By looking at figure 4.2, we conclude that there is no clear answer. We observe that a group of countries (e.g. Germany, France, Austria) display a rather constant ratio over the last decade, at a value slightly higher than 1 (meaning that the average organic farm is slightly larger than the average conventional farm). For a second group of countries (e.g. Greece, Latvia) the farm size ratio increases significantly creating a discrepancy in the size of the different types of farms. Whereas for some countries, such as the Czech Republic or Estonia, the same ratio decreases, the final values are still much larger than 1. Finally, countries like Italy or the United Kingdom display ratios that remain constant around the value of 3, i.e. the average organic farm is three-times larger than the average conventional farm.

Figure 4.2: Organic/Conventional Farm Size, Selected Countries



Source: Eurostat

Figure 4.3: Organic/Conventional Farm Value, Selected Countries



Source: Eurostat

Table 4.3: Value of average farm (in euros)

	2000		2003		2005		2007	
	Conv	Org	Conv	Org	Conv	Org	Conv	Org
Austria	13,913	11,096	16,948	14,873	18,045	15,203	20,491	16,692
Belgium	63,393	73,414	70,315	78,011	78,620	85,585	84,226	95,974
Bulgaria	NA	NA	1,940	NA	2,088	37,758	2,575	38,002
Cyprus	NA	NA	7,839	65,203	7,913	72,129	9,568	14,496
Czech Rep.	NA	NA	38,169	65,203	43,118	72,129	49,073	68,966
Denmark	74,110	74,177	92,229	81,520	83,946	80,530	96,424	91,186
Estonia	NA	NA	4,331	11,367	5,820	7,277	9,157	9,494
Finland	27,851	24,755	26,858	22,514	30,298	27,119	29,011	29,132
France	52,037	56,988	56,866	60,440	60,458	61,835	64,315	63,577
Germany	48,823	47,851	61,532	50,541	60,082	48,642	59,739	49,593
Greece	7,513	9,494	7,452	16,703	7,805	19,273	8,302	17,607
Hungary	1,994	25,865	2,659	67,805	3,164	87,116	3,784	144,692
Ireland	24,960	12,439	24,573	25,865	23,069	15,533	23,292	16,622
Italy	10,352	23,017	11,576	27,442	14,909	36,010	17,155	47,531
Latvia	2,147	1,606	2,449	7,039	2,495	9,912	3,554	8,363
Lithuania	NA	NA	1,910	20,990	2,601	8,652	2,876	16,384
Luxembourg	43,099	37,158	51,485	37,496	55,600	43,372	62,435	50,209
Malta	NA	NA	8,817	NA	6,351	NA	5,842	NA
Netherlands	107,604	95,845	114,081	160,824	123,041	128,067	133,041	163,883
Poland	NA	NA	NA	NA	3,995	11,347	4,325	13,690
Portugal	7,553	53,080	7,641	57,164	7,905	53,570	7,722	42,335
Romania	NA	NA	1,368	NA	1,324	55,708	1,156	42,335
Slovakia	9,258	164,758	8,497	159,453	8,965	137,946	8,416	90,756
Slovenia	5,605	6,377	NA	NA	5,505	5,463	6,969	12,084
Spain	14,201	20,195	17,929	43,945	21,829	52,325	24,322	53,261
Sweden	30,477	38,891	35,737	28,771	25,090	45,128	28,816	49,148
UK	56,424	118,090	45,592	127,985	43,552	119,202	36,828	110,962

Source: Eurostat

In order to figure out whether a farm is large or small it is necessary to go beyond land size<sup>5</sup>. Different types of farm operations confer different incomes to farmers. Additionally, differences in the intensity of farming activities or the degree of mechanization will, in all likelihood, create significant yield differentials, even among farms producing similar crops. Table 4.3 examines the average value produced by organic and conventional farms for the period 2000-2007<sup>6</sup>. We notice the high average value of Dutch farms (both conventional and organic), but also the stunning increase in average organic farm value, which occurs not only in the Netherlands, but also in Hungary and, to a smaller extent, in Italy, Greece or Latvia. As can be seen in table 4.3, the discrepancy between conventional and organic farming generally remains constant, despite the fact that organic farms are generally considered less productive than conventional ones (Oude Lansink et al., 2002; Tzouvelekas et al., 2001). Figure 4.3 displays similar patterns in the ratio of organic to conventional farm value.

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<sup>5</sup>See Darnhofer (2005, 308).

<sup>6</sup>Farm value is measured by Eurostat in terms of standard gross margin (SGM). The standard gross margin of a farm is the total value of its activities after subtracting the costs associated with all variable inputs.

Table 4.4: Size and value - excluding pastures, 2007

	Size		Value	
	Conventional	Organic	Conventional	Organic
Austria	18.1	28.1	29,701	26,818
Belgium	27.1	43.4	99,179	136,300
Bulgaria	6.9	84.7	2,742	38,002
Cyprus	3.1	8.0	8,198	14,496
Czech Rep.	99.4	346.8	61,178	142,737
Denmark	59.4	46.7	92,435	54,437
Estonia	33.9	49.9	8,373	6,786
Finland	31.1	34.1	21,701	18,309
France	50.9	47.1	77,849	72,245
Germany	53.3	66.8	73,790	75,090
Greece	4.1	9.7	7,853	17,152
Hungary	6.2	265.7	3,610	134,440
Ireland	49.8	32.3	57,883	33,189
Italy	5.5	19.2	15,514	45,904
Latvia	15.6	44.9	3,602	7,254
Lithuania	11.5	72.8	3,034	17,002
Luxembourg	31.8	50.3	45,330	46,014
Malta	0.9	NA	5,511	NA
Netherlands	21.4	33.9	181,073	209,905
Poland	6.3	22.5	4,316	14,316
Portugal	7.7	77.8	6,298	39,872
Romania	2.9	19.7	1,098	4,228
Slovakia	24.4	503.7	8,421	111,896
Slovenia	5.1	11.1	6,970	12,594
Spain	19.4	50.5	24,872	53,153
Sweden	40.7	88.9	32,281	47,890
UK	46.6	138.5	42,114	148,716

Source: Eurostat

In order to assess the degree of conventionalization, it is necessary to address a possible criticism. Since pastures constitute indeed a large percentage of specialist organic practices, it might be interesting to examine whether organic farms remain



larger than conventional ones, even if we exclude pastures from our calculations. Table 4.4 addresses this particular question. We notice that, with the exceptions of Denmark, France and Ireland, the average organic farm remains larger than the average conventional farm, even when pastures are excluded. However, the picture we draw from the comparison of value is more mixed: conventional farms display a higher average value of operations than organic farms not only in the three countries above, but also in Austria, Estonia and France.

Providing an explanation of what is actually happening requires, again, analysis of the specific forces at work in every context. However, we can point to another peculiar result. The maintenance of pastures is obviously less labor-intensive, even in comparison to the most specialized organic monocultures; it demands less experimentation and could probably be thought of as 'organic by neglect'. Hence, if such forms are driving the higher incomes of organic farmers, then we are dealing with EU subsidizing forms of agriculture that do not contribute to sustainability as much as integrated cropping and livestock practices do.

One last point we need to address is the number of organic farms in every country. Although the area under organic methods has grown rapidly in the European Union during the first decade of the 21st century, table 4.5 reveals that the number of organic farms hasn't followed the same path. At least in several EU countries, the number of organic farmers has stagnated, or even decreased back to mid-1990s levels, with dramatic decreases in some cases (e.g. Ireland, Italy and Sweden). This should raise some issues around the growth of organic farming: obviously the recent growth of organic land is significant. However, it didn't always rely on many small farmers turning away from conventional production and into organic, but it happened in many cases through fewer and larger producers switching into organic - or alternatively, through the absorption of small organic farms by larger ones.

Table 4.5: Number of organic farms, by country

	1985	1990	1993	1995	1997	2000	2003	2005	2007
AT	420	1539	9713	18542	19996	18880	17880	18760	18200
BE	50	160	160	193	291	580	530	550	490
CZ	NA	30	132	187	192	NA	510	600	750
DK	130	523	640	1050	1617	2520	2600	2440	2110
FI	60	671	1599	2793	4381	4900	4280	4020	3620
FR	2500	2700	3231	3538	4784	7060	8610	9010	8910
DE	1610	4188	11248	15055	12368	9570	11420	13480	13580
EL	NA	25	165	568	2514	1460	7550	9610	27700
IR	8	150	162	378	808	1560	670	590	610
IT	600	1500	4656	10630	30844	45710	38470	41000	39140
LU	10	10	12	19	23	20	40	50	50
NL	215	399	455	561	810	710	1140	1190	1160
PT	1	50	90	331	278	810	900	880	1190
ES	264	350	753	1042	3526	17160	10270	14450	15920
SE	150	1859	1876	4206	10869	9040	15040	2810	2940
UK	300	700	655	828	1026	1690	2750	2900	3210

Source: Michelsen (2001b), Eurostat

### 4.3 Empirical strategy

From the descriptive statistics one notices that organic farms generally appear larger than conventional ones, both in terms of size and value. In this context, is it still true that organic farming is associated with small farms? Furthermore, does organic farming actually generate positive employment effects in the regions where it becomes prominent? Regression analysis can shed further insight into these two questions.

I estimate two sets of regressions in order to explain what might have led to the current picture of European organic farming. The dependent variables are

1. a region's share of organic agriculture, measured by the share of utilized agricultural area under organic methods of production
2. the agricultural labor intensity of a region, measured by dividing a region's labor power which is employed in agriculture (in terms of annual full-time equivalent workers) by the region's utilized agricultural area

I have compiled the dataset from

1. the Farm Structure Surveys (FSS) conducted between 2000 and 2007 (acquired through private correspondence with Eurostat in the Spring of 2010).
2. the Eurostat website (data accessed in the Spring of 2011).

I use a hierarchical linear model with four levels. I make use of the fact that each NUTS-2 region (county) is nested within a NUTS-1 region (state), which in turn is nested within a country. Hence, the share of organic farming in each of the different Farm Structure Surveys is the level 1 unit, NUTS-2 regions are the level 2 units, NUTS-1 regions are the level 3 units and countries are the level 4 units. I account for this clustering by introducing random effects at every level in the hierarchy. I also allow the marginal effect of time on the dependent variable to vary randomly across different NUTS-2 regions, thus allowing every NUTS-2 region to have both random intercept and slope. Equation 1 presents the general form of the estimated equation:  $Y$  is the dependent variable,  $X$  is the vector of independent variables, the  $Z$  vectors represent the effects at every level of the hierarchy, and the subscripts  $i, j, k$  represent the different regional levels of the hierarchy<sup>7</sup>. A restricted maximum likelihood estimation is utilized to estimate the coefficients.

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<sup>7</sup>I use NUTS-2 rather than NUTS-3 regional data as the level of analysis. This choice allows me to be consistent across time, since for certain regions the numbers are aggregated at the NUTS-2 level in the 2000 FSS.

$$Y_{ijkt} = X_{ijkt}\beta + Z_{ijkt}^{(4)}b_k^{(4)} + Z_{ijkt}^{(3)}b_{jk}^{(3)} + Z_{ijkt}^{(2)}b_{ijk}^{(2)} + \epsilon_{ijkt} \quad (4.1)$$

#### 4.4 What determines a region's organic share of agriculture

The first question I proceed to ask is what determines the share of organic farming in a NUTS-2 region. The main relationship of interest is that between the share of organic land and the average farm size of the region. If policy makers are right to emphasize the connection between organic and small-scale farming, we should find a negative relationship between a region's average farm size and the region's organic share of agriculture<sup>8</sup>.

I control for a region's utilized agricultural area that is classified as Less Favored (LFA). Less Favored Areas are designated by the national governments based on some natural handicap, such as altitude or lack of water. My initial hypothesis is that the share of Utilized Agricultural Area (UAA) which gets classified as LFA will have a positive impact on a region's organic share: the reason for this hypothesis is that LFAs are less likely to have undergone the transition to industrial forms of agriculture. Hence, the transition towards organic methods might be easier from a technical standpoint, as some of them might be practicing organic methods "by default" (Altieri, 1987). Additionally, I am interested in figuring out if there is a systematic relation between a region's income and the share of organic farming. If we were to find a positive relationship, then we could argue that it is richer areas that have benefitted from the growth of organic farming. Thus, I control for the logarithm of GDP per capita, and I also include a squared term to allow for the possibility of a U-shaped relationship.

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<sup>8</sup>The connection between small farms and organic agriculture is taken, more or less, as given in much of the literature. See Altieri (1987); Lynggaard (2006); van der Ploeg (2009).

I control for the share of population living in rural and urban areas, omitting the share of population living in intermediate areas<sup>9</sup>. At least two factors could be at play here: the one could be an association between “rurality” and organic farming; the other could be the need of proximity to urban markets in order to have a sustainable organic sector. The urban/rural breakdown of population could allow for a first approximation of those factors.

I also control for crop and activity patterns. Since some activities (e.g. grazing) are thought of as being more suitable for organic methods than others (e.g. horticulture), it would be interesting to capture whether there is a systematic connection between the prevalence of each activity in a region and the prevalence of organic farming. For this purpose, I follow the categorizations employed by Eurostat in the Farm Structure Survey which classifies agricultural holdings into the following activities: specialist fieldcrops, specialist horticulture, specialist permanent crops, specialist grazing land, specialist granivorous holdings, mixed cropping, mixed livestock, mixed cropping and livestock, and non-classifiable holdings. In all the estimations to follow, specialist grazing land will be the omitted activity (as it is the most common use of agricultural land in the EU); hence the coefficients on the eight categories indicate how they differ from specialized grazing land.

Finally, the hierarchical linear model allows me to include controls at the NUTS-2 level (which is the level of observation, equivalent to the level of the region), at the NUTS-1 level (state level), and the country level. Additionally, I can allow the marginal effect of time on the share of organic farming to vary across different NUTS-2 regions. The general model is :

$$\text{Organic Share}_{ijkt} = \mathbf{X}_{ijkt}\beta + \mathbf{Z}_{ijkt}^{(4)}b_k^{(4)} + \mathbf{Z}_{ijkt}^{(3)}b_{jk}^{(3)} + \mathbf{Z}_{ijkt}^{(2)}b_{ijk}^{(2)} + \epsilon_{ijkt} \quad (4.2)$$

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<sup>9</sup>Eurostat defines rural, intermediate and urban areas by population density and proximity to an urban center.

The estimated equation is as follows:

$$\begin{aligned}
OrganicShare_{ijkt} = & \beta_0 + \beta_1 \times Year_{ijkt} \\
& + \beta_2 \times \log AverageFarmSize_{ijkt} + \beta_3 \times \%LFA_{ijkt} \\
& + \beta_4 \times \log GDP_{ijkt} + \beta_5 \times \log GDPsquare_{ijkt} \\
& + \beta_6 \times \%RuralPop_{ijkt} + \beta_7 \times \%UrbanPop_{ijkt} \quad (4.3) \\
& + \beta_8 \times \%PermanentCrops_{ijkt} + \dots \\
& + \beta_{16} \times \%NonClassifiedHoldings_{ijkt} \\
& + b_k^{(4)} + b_{jk}^{(3)} + b_{ijk0}^{(2)} + b_{ijk1}^{(2)} Year_{ijkt} + \epsilon_{ijkt}
\end{aligned}$$

where  $i=1, \dots, 271$  NUTS-2 regions,  $j=1, \dots, 97$  NUTS-1 regions,  $k=1, \dots, 27$  countries, and  $t=2000, 2003, 2005, 2007$ .

The estimation results (presented in table 4.6) point to a positive relationship between organic share and average farm size (statistically significant in all but one specification). Hence a 1% increase in average farm size is associated with a rise in organic share by about 0.01%; a doubling in the average farm size is related with an increase in the share of organic land by approximately 1%, *ceteris paribus*. As one can see, the coefficient on the year variable is positive and statistically significant in the first four specifications, but its impact becomes less clear when I add controls for the percentage of rural and urban population in a region. The percent of Less Favored area in a region doesn't seem to have a significant impact on a region's organic share. Neither per capita income nor the rural/urban breakdown of population seems to have a strong relationship with the extent of organic farming. Finally, a higher share of permanent crops in the region's agricultural area seems to be correlated with a higher share of organic farming (a 1% increase in the share of permanent crops in a region is correlated with a rise in organic land by 0.05%, *ceteris paribus*).

Table 4.6: Determinants of organic share of agriculture

	(1)	(2)	(3)	(4)	(5)	(6)
	% Org. Land	% Org. Land	% Org. Land	% Org. Land	% Org. Land	% Org. Land
Av. Farm Size (log)	0.010*** (0.003)	0.009** (0.003)	0.008** (0.003)	0.008** (0.003)	0.005 (0.003)	0.009* (0.004)
Year		0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	-0.000 (0.001)	-0.000 (0.001)
% LFA			0.011 (0.019)	0.009 (0.019)	-0.002 (0.021)	-0.000 (0.021)
GDP per capita (log)				0.100 (0.074)	0.119 (0.080)	0.093 (0.082)
GDP per capita sq.(log)				-0.005 (0.004)	-0.006 (0.004)	-0.005 (0.004)
% Rural Population					0.012 (0.008)	0.011 (0.008)
% Urban Population					-0.008 (0.007)	-0.006 (0.008)
% Fieldcrop						-0.020 (0.012)
% Horticulture						-0.056 (0.113)
% Permanent Crops						0.054* (0.025)
% Granivorous Crops						-0.140 (0.114)
% Mixed Crops						0.026 (0.053)
% Mixed Livestock						-0.084 (0.068)
% Mixed Crop-Livestock						-0.033 (0.029)
% Non-classifiable						0.016 (0.057)
Constant	0.011 (0.010)	-3.334*** (0.797)	-3.363*** (0.845)	-3.860*** (0.964)	-0.127 (1.404)	0.461 (1.435)
Observations	975	975	953	951	709	709

Hierarchical linear model. Random regional effects at the country, NUTS-1 and NUTS-2 levels. Random time effects at the NUTS-2 level.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ . Standard errors in parentheses.

Obviously, it is difficult to find some all-encompassing variables that explain the rise of organic farming in places with very diverse political, economic, and specifically agricultural, histories. However, the fact that under a variety of specifications, regions with a larger average farm size are more likely to have a higher share of organic agriculture, disproves the assumed association of organic farms with small farm size and presents us with a more complicated reality than what policy makers or environmentalists often assume to exist. If organic farming is more prevalent in regions with larger average farm size, the association between small farms and organic methods doesn't seem to be as natural as often assumed.

#### **4.5 Organic farming and agricultural labor intensity**

In this section, I estimate the impact of organic share on a region's average labor intensity. Organic farming is often assumed to be inextricably interwoven with high labor intensity<sup>10</sup>. Thus, organic farming is presented as a tool for keeping people in the countryside. Whether the switch towards organic practices actually has a significant impact on a region's agricultural employment needs to be shown. Hence, it becomes necessary to inquire whether organic farming does impact a region's agricultural labor intensity in a positive manner.

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<sup>10</sup>See van der Ploeg et al. (2002) or van der Ploeg (2009) for illustrations of analysis which equates organic farming with peasant processes.



Table 4.7: Labor intensity per hectare, by type of farm

	2000		2003		2005		2007	
	Conv	Org	Conv	Org	Conv	Org	Conv	Org
EU-27							0.084	0.043
EU-25					0.083	0.047	0.078	0.040
EU-15	0.057	0.043	0.054	0.036	0.052	0.035	0.049	0.034
Austria	0.053	0.056	0.052	0.055	0.050	0.049	0.050	0.049
Belgium	0.052	0.037	0.051	0.040	0.048	0.039	0.046	0.031
Bulgaria			0.264		0.219	0.187	0.154	0.105
Cyprus			0.184	0.196	0.168	0.225	0.167	0.144
Czech Rep.			0.044	0.016	0.042	0.015	0.040	0.017
Denmark	0.024	0.022	0.022	0.019	0.022	0.019	0.020	0.019
Estonia			0.047	0.024	0.044	0.023	0.036	0.022
Finland	0.045	0.037	0.041	0.034	0.035	0.030	0.030	0.026
France	0.031	0.040	0.029	0.034	0.028	0.031	0.026	0.032
Germany	0.035	0.033	0.038	0.032	0.035	0.029	0.033	0.029
Greece	0.143	0.156	0.131	0.087	0.130	0.080	0.123	0.078
Hungary			0.121	0.036	0.109	0.033	0.095	0.027
Ireland	0.037	0.040	0.037	0.039	0.035	0.033	0.035	0.030
Italy	0.095	0.050	0.104	0.055	0.100	0.060	0.095	0.046
Latvia	0.099	0.139	0.092	0.052	0.079	0.044	0.060	0.039
Lithuania			0.087	0.064	0.077	0.042	0.068	0.034
Luxembourg	0.034	0.039	0.030	0.033	0.030	0.031	0.028	0.034
Malta			0.415		0.394		0.404	
Netherlands	0.096	0.066	0.088	0.050	0.082	0.063	0.079	0.070
Poland			0.15		0.150	0.078	0.143	0.062
Portugal	0.127	0.016	0.116	0.014	0.104	0.014	0.094	0.018
Romania			0.180		0.173	0.027	0.149	0.048
Slovakia	0.062	0.027	0.055	0.023	0.052	0.024	0.047	0.020
Slovenia	0.214	0.158			0.189	0.105	0.168	0.086
Spain	0.033	0.021	0.032	0.016	0.033	0.021	0.032	0.018
Sweden	0.024	0.021	0.022	0.021	0.022	0.016	0.021	0.015
UK	0.021	0.013	0.021	0.016	0.020	0.014	0.020	0.016

Source: Eurostat

Table 4.7 provides a first approximation of the answer to this research question, by comparing labor intensity at the country level (measured as Annual Work Units equivalent per hectare) for conventional and organic farms. We notice that in 2007 organic farms displayed higher labor intensity than conventional farms only in the cases of France and Luxembourg (in Austria, Cyprus and Ireland that ceased to be the case during the last decade). I proceed to examine the relationship between labor intensity and organic share of agriculture at the regional level, while controlling for other characteristics.

$$\begin{aligned}
\log Labor Intensity_{ijkt} = & \beta_0 + \beta_1 \times Year_{ijkt} + \beta_2 \times \log Organic Share_{ijkt} \\
& + \beta_3 \times Average Farm Size_{ijkt} + \beta_4 \times \% \log GDP_{ijkt} \\
& + \beta_5 \times \% Rented Land_{ijkt} + \beta_6 \times \% LFA_{ijkt} \\
& + \beta_7 \times \% Permanent Crops_{ijkt} + \dots \\
& + \beta_{15} \times \% Non Classified Holdings_{ijkt} \\
& + b_k^{(4)} + b_{jk}^{(3)} + b_{ijk0}^{(2)} + b_{ijk1}^{(2)} Year_{ijkt} + \epsilon_{ijkt}
\end{aligned} \tag{4.4}$$

I again utilize a hierarchical linear model in order to estimate the impact of a region's organic share on the average labor intensity of that region's agricultural sector. I hypothesize that the share of organic land will have a positive impact on labor intensity (measured as labor units per hectare). As in the previous section, I control for the share of Less Favored Area in a region and for the region's income<sup>11</sup>.

I also control for the average farm size and the percentage of rented land in a region, as these might be indicators of structural differences in the agricultural

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<sup>11</sup>In this estimation, I do not include a squared term for income. There seems to be no intuitive reason why the relationship between labor intensity and GDP would change direction after some level of income.

sectors of different regions (such as the extent of agricultural wage labor). Hence, I hypothesize a negative relationship between a region's average farm size and its labor intensity (since larger farms are more likely to substitute capital for labor), and a positive relationship between the degree of rental arrangements and the region's average labor intensity (since no land would remain underutilized). As above, I control for crop and activity patterns, since labor requirements will inevitably depend on the type of activity that is performed in a certain farm. Thus, we would expect processes such as mixed cropping or horticulture to be more labor intensive than grazing; the real question that we are asking here is whether, controlling for these factors, more organic farming in a region would lead to even higher labor intensity.

Table 4.8: Determinants of agricultural labor intensity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Labor Int.	Labor Int.	Labor Int.	Labor Int.	Labor Int.	Labor In.	Labor Int.
% Organic Land	-0.767*** (0.133)	-0.488*** (0.121)	-0.279* (0.116)	-0.285* (0.111)	-0.321** (0.111)	-0.310** (0.113)	-0.282* (0.112)
Year		-0.018*** (0.001)	-0.004** (0.001)	-0.000 (0.002)	-0.000 (0.002)	0.000 (0.002)	-0.002 (0.002)
Av. Farm Size (log)			-0.680*** (0.022)	-0.643*** (0.023)	-0.649*** (0.023)	-0.657*** (0.023)	-0.624*** (0.024)
GDP per capita (log)				-0.222*** (0.042)	-0.229*** (0.041)	-0.198*** (0.042)	-0.172*** (0.041)
% Rental Arrangements					0.140* (0.058)	0.140* (0.060)	0.188** (0.059)
% LFA						-0.241** (0.075)	-0.174* (0.075)
% Fieldcrop						0.034 (0.073)	0.034 (0.073)
% Horticulture							3.566*** (0.539)
% Permanent Crops							0.449** (0.148)
% Granivorous Crops							1.537*** (0.440)
% Mixed Crops							-0.121 (0.218)
% Mixed Livestock							0.700** (0.259)
% Mixed Crop-Livestock							-0.031 (0.118)
% Non-classifiable							-0.430*** (0.128)
Constant	-2.623*** (0.153)	32.500*** (2.680)	7.798** (2.702)	1.898 (2.858)	1.738 (2.836)	0.961 (2.988)	5.231 (3.004)
Observations	966	966	966	964	964	942	942

Hierarchical linear model. Random regional effects at the country, NUTS-1 and NUTS-2 levels. Random time effects at the NUTS-2 level.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$  Standard errors in parentheses.

Table 4.8 presents the results of the estimated hierarchical linear model. Contrary to my hypothesis, we notice the persistence of a strong negative relation between a region's organic share and its average agricultural labor intensity (a 1% increase in organic share is related with a drop in a region's agricultural labor intensity by 0.28-0.77%). Any negative effects of the year coefficient disappear when controlling for GDP per capita. As expected, there is a strong negative relationship between a region's average farm size and its average labor intensity; smaller farms are more likely to apply labor more intensively (a 1% decrease in average farm size is related with a rise in labor intensity by approximately 0.62-0.68%). Additionally, the coefficient on GDP per capita shows that richer areas will display lower agricultural labor intensity. The extent of rental arrangements on land increases average labor intensity, probably because less land is idle, whereas more Less Favored Agricultural Area means less intensively used land. Finally, horticulture, permanent crops, granivorous cropping and mixed livestock activities mean a more intensive use of land than grazing land.

#### 4.6 Discussion

The preceding sections cast doubt on the effectiveness of organic farming for achieving the socio-economic objectives that it is purported to assist. The data point to a positive relationship between a region's share of organic land and the region's average farm size. This result, which contradicts the idea that organic farming is "naturally" intertwined with small-scale farming, can be explained in a variety of ways. Even if small producers are less likely to follow conventional input-intensive methods of production, their transition towards certified organic methods requires a series of conditions that they cannot necessarily secure as easily as larger farms (such

as access to markets or credit)<sup>12</sup>. Additionally, since agricultural officials are measuring the success of agri-environmental projects by land coverage as a share of utilized agricultural area, it is easier and faster to achieve their targets by the transition of a few large producers, rather than by many small ones. Hence, organic farms are not representative farms, which might be why agricultural labor intensity does not increase as a result of the rise in the share of organic land. Instead, as I show, labor intensity is lower in regions which have larger organic sectors, controlling for a series of other factors.

What the previous statistical analysis does not (and possibly cannot) show, are the dynamics behind the transformations occurring in rural Europe. The growth of organic farming, in many cases, does not result from farmers deciding to switch into organic. It comes through the consolidation of holdings which were previously conventional and the exit of farmers from production.

Table 4.9: Regional trends, 2000-2007

Organic producers	Organic land		
	Increase	Unchanged	Decrease
Increase	161	1	4
Unchanged	4	17	5
Decrease	30	3	43

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<sup>12</sup>The cost of certification is usually covered by the subsidy producers receive for going organic. However, as we will see in chapter 6, the smaller the farm the larger the cost of certification as a share of the subsidy.

Table 4.10: Changes in selected regions, 2000-2007

Region	Change in Organic Producers	Change in Organic Land	Change in Conventional Producers	Change in Conventional Land
Luxembourg (BE34)	10	2,500	-990	-1,940
Yugozoitchen (BG34)	20	1,220	-33,530	-21,440
Central (CZ06)	10	16,790	-2,080	-21,500
Freiburg (DE13)	-90	6,240	-5,360	-22,080
Kassel (DE73)	-10	4,410	-3,460	-3,210
Hovedstaden (DK01)	10	2,200	-220	-5,340
Castile-La Mancha (ES42)	-260	7,990	-25,010	-105,480
Extremadura (ES43)	-1,360	39,850	-12,540	-259,330
Balearic Islands (ES53)	-10	3,960	-1,920	-30,000
Brittany (FR52)	-50	7,120	-13,510	-50,580
Auvergne (FR72)	10	4,860	-5,780	-16,300
Central Hungary (HU10)	-170	8,290	-19,660	-19,610
Northern Great Plain (HU32)	-150	27,550	-71,280	-57,010
Southern Great Plain (HU33)	-290	9,950	-74,880	-113,320
Southern and Eastern (IE02)	0	1,870	-2,670	32,330
Sicily (ITG1)	-1,980	57,230	-56,400	-61,290
Flevoland (NL23)	40	4,690	-380	-7,910
Alentejo (PT18)	30	18,690	-17,370	-269,310
Eastern Slovakia (SK04)	60	38,660	-490	-128,830
Northern Ireland (UKN0)	-40	560	-3700	-36,420

Table 4.9 displays the trends in the numbers of organic producers and organic land in Europe during the 2000s. The elements on the diagonal represent regions which experienced a positive relationship between the number of producers and their land, whereas the upper off-diagonal elements represent regions in which organic farmers are under pressure. The lower off-diagonal elements display the existence of an unambiguous process of concentration of organic land<sup>13</sup>. Thus, in thirty regions the number of organic farmers decreases while organic land increases, whereas in seven other re-

<sup>13</sup>Such a process can be occurring even if both organic producers and organic land are moving in the same direction, as is the case in most regions.

regions organic land either increases with the number of organic producers unchanged or the number of organic farmers decreases with organic area unchanged. Hence, in a significant number of regions, “rise in organic farming” means a rise in the organic share of agricultural land, without a rise in the number of organic producers. Such a development puts in question the longevity of the “organic movement” and its potential for influencing agricultural practices. Contrary to popular misconception which equates organic with “doing nothing” (because nature presumably does everything), organic farming is a knowledge-intensive activity, which is based on constant experimentation (Kummer and Vogl, 2009; Milestad et al., 2010). Hence, the proliferation and the deepening of organic practices become precarious unless they are widespread among a large number of farmers.

Table 4.10 shows the rapid changes that occurred in the agricultural sectors of certain regions of Europe, which experienced an increase of organic land during the first years of the 21st century. We notice that in all these areas, there is a dramatic decrease in the numbers of conventional producers and in the area taken out of conventional production. However, the number of organic producers does not increase significantly (and in some cases even goes down) in those areas. Hence, part of the area taken out of conventional production is converted into organic land; however, that process is concomitant with a process of concentration of land into fewer hands.

Table 4.11: Percent of corporate farms

	2000		2003		2005		2007	
	Conv	Org	Conv	Org	Conv	Org	Conv	Org
EU-27							1.9	5.2
EU-25					2.4	5.4	2.5	5.2
EU-15	2.7	4	2.9	4.7	3.5	5.3	3.7	5.2

I present more evidence on the discrepancies between conventional and organic farms in tables 4.2, 4.11 and 4.12. Whereas the average organic farm size in the EU-27



Table 4.12: Percent of farms renting land

	2000		2003		2005		2007	
	Conv	Org	Conv	Org	Conv	Org	Conv	Org
EU-27							16.9	42.1
EU-25					22.6	42.4	23.6	42.5
EU-15	24.9	37.2	27.5	46.3	22.6	42.4	23.6	42.5

is 40.4 ha, the average conventional farm size is 12.3 ha, a pattern which is present in all European countries. Additionally, organic farms are more likely than conventional farms to assume a corporate legal status (5.2% of organic farms are corporate entities, compared to only 1.9%), and to rent land additionally to the land they own (42.1% of organic farms rent land, whereas only 16.9% of conventional farms do), both of which are elements associated with a capitalist organization of production. Furthermore, one can notice from table 4.13 that the designation of a farm as “organic” hardly means that the farm uses integrated approaches to farming. On the contrary, we notice that in many countries (e.g. Czech Republic, Denmark, Lithuania), the share of organic utilized area which is characterized by specialist farming is larger than what is the case for land under conventional methods. Additionally, this figure seems to be growing during the first decade of the 21st century, at particularly impressive in countries such as Portugal, Slovakia, or Latvia.

Table 4.13: Percentage of agricultural area by type of farm

	2000				2007			
	Conventional		Organic		Conventional		Organic	
	Specialist	Mixed	Specialist	Mixed	Specialist	Mixed	Specialist	Mixed
Austria	84	16	95	5	87	13	93	7
Belgium	72	28	77	23	74	26	83	17
Bulgaria					87	13	77	0
Cyprus					84	15	80	16
Czech Rep.					48	52	79	21
Denmark	74	26	84	16	75	25	85	15
Estonia					75	25	78	21
Finland	89	11	84	16	88	12	81	19
France	79	21	79	21	80	20	82	18
Germany	67	33	67	33	72	28	76	24
Greece	79	21	75	25	78	22	76	24
Hungary	62	38	49	51	73	26	57	43
Ireland	95	5	94	6	96	4	90	7
Italy	82	17	76	24	83	17	78	22
Latvia	48	52	42	58	70	30	67	33
Lithuania					59	41	71	29
Luxembourg	79	21	63	0	86	14	53	39
Malta					53	46		
Netherlands	89	11	88	12	90	10	84	16
Poland					54	45	68	32
Portugal	62	38	37	63	74	26	68	32
Romania					59	40	75	23
Slovakia	47	53	39	40	61	39	79	18
Slovenia	67	33	77	21	67	33	85	15
Spain	73	19	64	27	83	17	68	32
Sweden	82	18	77	23	84	16	79	21
UK	90	10	87	13	83	8	85	13

Source: Eurostat

Table 4.14: Average labor (annual full time equivalent), by type of farm

	2000		2003		2005		2007	
	Conv	Org	Conv	Org	Conv	Org	Conv	Org
EU-27							1.10	2.71
EU-25					1.14	2.70	1.13	2.53
EU-15	1.12	1.51	1.17	1.62	1.14	1.60	1.13	1.62
Austria	0.88	1.12	0.97	1.18	0.93	1.13	0.94	1.10
Belgium	1.17	1.57	1.27	1.75	1.29	1.75	1.30	1.61
Bulgaria			1.15		1.12	1.2	0.95	8.91
Cyprus			0.63	1.1	0.56	1.38	0.60	1.14
Czech Rep.			3.37	6.53	3.32	6.12	3.36	5.63
Denmark	1.10	1.24	1.20	1.22	1.13	1.14	1.2	1.27
Estonia			0.99	2.07	1.28	1.61	1.33	1.60
Finland	1.21	1.16	1.23	1.15	1.11	1.11	0.99	1.03
France	1.28	1.87	1.33	1.91	1.34	1.89	1.35	1.92
Germany	1.26	1.66	1.56	1.78	1.51	1.66	1.49	1.68
Greece	0.63	0.75	0.62	1.02	0.61	1.03	0.56	0.84
Hungary			0.65	7.03	0.63	5.97	0.62	9.59
Ireland	1.16	1.07	1.16	1.15	1.12	1.14	1.13	1.15
Italy	0.55	0.91	0.67	1.08	0.70	1.30	0.69	1.11
Latvia	1.02	1.06	1.08	1.88	1.03	2.86	0.94	1.76
Lithuania			0.79	5.83	0.85	1.78	0.76	1.93
Luxembourg	1.55	2	1.58	1.75	1.58	1.80	1.59	2.20
Malta			0.41		0.36		0.38	
Netherlands	1.91	2.03	2.02	2.91	1.95	2.53	1.95	3.01
Poland					0.89	1.79	0.92	1.57
Portugal	1.14	2.40	1.16	2.19	1.14	2.42	1.14	2.34
Romania			0.56		0.57	3.89	0.52	0.90
Slovakia	1.85	22.67	1.58	32.17	1.38	17.86	1.24	11.84
Slovenia	1.20	1.36			1.16	1.46	1.06	1.36
Spain	0.66	0.83	0.70	1.07	0.74	1.17	0.75	1.04
Sweden	0.86	1.08	0.98	1.05	0.88	1.41	0.85	1.48
UK	1.43	2.92	1.17	3.07	1.10	3.10	1.04	2.51

Source: Eurostat

Turning to the characteristics pertaining to labor, table 4.14 shows that average labor power (measured in terms of annual full-time equivalent) is larger in organic farms, despite the lower labor intensity per hectare. Labor intensity of organic farms is lower than that of their conventional counterparts in most European countries<sup>14</sup>. Yet the average number of people working on a farm (measured as the equivalent of fully-employed workers) is higher in organic farms than in conventional farms. Interestingly, these differences are present in all countries of Europe. Hence, the interpretation that the results are driven by either the former socialist countries, which experienced structural transformations in the 1990s, or by countries, with a feudalist agrarian past, is rendered highly improbable.

There are several ways to interpret these results. One way, which is consistent with Marxist literature, is to speak of a phenomenon that points to concentration and centralization of capital (Panitsidis, 1992; Liodakis, 1994; Economakis, 2000; Tolios, 2009). Basically, the claim made by these authors is that the CAP attempts to facilitate the penetration of capital in the agricultural sector, a phenomenon predicted by Kautsky and Lenin. Consequently, even if they assert the protection of the family farm as their political priority, all policies falling under the CAP ultimately support capitalist structures and attempt to create these, when they don't exist. Hence, the support for organic farms should be considered, more or less, a pretense for the further intrusion of capital in the agricultural sector.

Another way, which is consistent with development literature and which avoids attributing hidden intentions to those designing and implementing the CAP, would be to think in terms of technology diffusion<sup>15</sup>. Drawing lessons from the Green Revolution, one could argue that, for reasons of higher income, access to credit, political power, education, and ability to take risks, large farmers are more likely to differen-

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<sup>14</sup>The only exceptions are France and Luxembourg. See table 4.7.

<sup>15</sup>See, for example, Feder and O'Mara (1981) or Albrecht (1974).

tiate partly or to transition wholly to organic production earlier than small farmers. Institutional biases, such as minimum land requirements for a holding to be certified as organic, might accentuate those biases and, by conferring first-mover advantages to the large farmers, exclude the smaller farmers from switching over to organic production, even after the removal of those obstacles.

In fact, these two approaches are in some ways not completely antithetical; one could argue that the characteristics of the large farmer, described by the development literature, could accelerate the processes of concentration and centralization. In the absence of strong farmers' associations or local food networks, small organic farmers cannot establish their position as easily as larger ones. Certification is more expensive for smaller farms in comparison to larger ones, allowing them to retain a smaller part of the subsidy they receive. If they do not associate with other organic farmers, they still have to pay high interest rates to banks, and high procurement prices to input providers, while their access to the markets is not guaranteed, because of their small volume of production. To give an example of the latter, Greek organic farmers often resort to selling their organic production as conventional, because the small number of organic merchants in the country do not want to deal with small volumes of products. Furthermore, larger farms are more likely to be able to afford the services of agronomists specialized in tackling production problems associated with organic farming. In the absence of the technical (and even psychological) support of a community of other organic farmers, the small producers are likely to be discouraged, exiting production and selling their land<sup>16</sup>. The fact that several regions experience either a decrease or stagnation in the number of organic farmers points to the weakness of the adoption/diffusion framework, while the persistence of significant differences

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<sup>16</sup>I will expand these points in chapter 6.

in the economic characteristics of the different types of farms points to institutional factors that act as barriers to entry for smaller farmers.

The results presented in the previous sections confront European policy-makers with a serious problem. They challenge the idea that small farms, who theoretically should be presented with fewer problems than larger farms for the transition to (certified) organic processes, actually take advantage of the new policies. Hence, it becomes difficult to articulate the claim that the discrepancy between organic and conventional farms is a temporary phenomenon, happening for reasons advanced by the adoption/diffusion framework, which would be ameliorated over time with the growing appearance of organic methods. The same institutional factors allow larger farms to generate super-profits and also to receive surplus transfers in the form of pecuniary transfers for the provision of environmental services<sup>17</sup>. Thus, the organic sector develops forms of production which deviate more and more from the social and environmental ideals of the more radical segments of the organic movement. The creation of large farms which specialize in monocultures and sell in distant markets, but abstain from using chemicals and pesticides, is evidence of the “conventionalization” of organic farming.

## 4.7 Conclusions

This chapter shows that the rise of organic agriculture in Europe has fallen short of producing the socio-economic benefits which policy-makers and environmentalists generally associate with it. Organic methods seem to be connected with larger farms, both in terms of land size and in terms of labor, disproving the association between small-scale, family farming and organic methods, which is often held as axiomatic. Moreover, organic farming in Europe has not contributed to increases in the labor

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<sup>17</sup>Agri-environmental measures including payments in support of organic farming are a clear case of payments for environmental services.

intensity of the agricultural sector, casting doubts on the efficacy of organic farming for increasing labor demand in marginalized communities and acting as an effective tool for keeping rural residents in the countryside.

The problem, however, does not lie in organic farming *per se*. European agricultural policies have measured success in a region's transformation towards "greener" methods in agriculture by the share of organic land in its utilized agricultural area, while treating social dimensions as mechanically derivative of the growth in organic farming. Thus, the failure of these rural development policies to fulfill their social goals is unsurprising. One element that these policies failed to recognize is the significance of strong agricultural cooperatives and other effective forms of farmers' associations. The latter would empower small farmers, helping them to avoid paying large rents to certifiers, finance and input providers and merchants, while providing them with the economic and technical support to compete effectively against larger-scale farms. At the same time, these forms of organization could effectively enforce high standards in the treatment of labor, while moving towards more ecologically sustainable methods of production. I return to these issues in chapter 6.

## CHAPTER 5

# ENVIRONMENTAL DIMENSIONS OF THE RISE OF ORGANIC FARMING

### 5.1 Introduction

After WWII, a new model of agriculture became prominent both in the OECD countries and the developing world: the model of industrial agriculture. Under the auspices of institutions such as the World Bank and the Ford Foundation, farmers across the world replaced traditional species with “high-yield” varieties of different crops, cultivated in monocultures. The early Common Agricultural Policy in Europe followed the same logic of specialization and “agricultural modernization” to achieve production increases (Redclift, 1987; Marsden, 2003).

Increased yields were based on the widespread application of fertilizers and pesticides. Although this model of industrial agriculture led to increased productivity of land, it was proven unsustainable, both in term of its environmental impact (high energy use, eutrophication) and also of its health hazards for farmers (e.g. increased cancer rates). Thus, the primary reason for public support of organic farming, exemplified in Europe through the subsidies for organic production, was that it could provide consumers with safe food which doesn't harm the environment. In line with these promises of organic farming, I estimate the environmental effects of organic farming in the European Union, after almost two decades of policy support. I suggest that one way of estimating the environmental impact of organic farming would be to examine the impact of a country's organic share of agriculture on the country's pesticide and fertilizer intensity. My hypothesis is that a rising share of organic farming



in a country would decrease the intensity of pesticide and fertilizer application per hectare.

This chapter has the following structure: Section 5.2 elaborates on the environmental problems of industrial agriculture. Section 5.3 lays out the research question and the estimation technique. The three subsequent sections present the estimation results and offer an explanation for the mixed environmental impact of the rise of organic farming. Section 5.7 concludes.

## **5.2 Environmental problems of industrial agriculture**

The productivist logic of the early CAP led to a series of environmental problems. Specialization and monocropping sacrificed natural resistance for productivity. Additionally, genetic homogeneity created environments for virulent pests and plant diseases to develop, leading farmers to increasingly rely on pesticides. As a large portion of the target weeds, insects and other pests became resistant to the chemicals used, the need arose for the development of newer pesticides, putting the farmer on a “pesticide treadmill” (Altieri, 2000).

Furthermore, intensive agricultural methods led to decreased soil fertility. The answer to that problem was found in the application of synthetic fertilizers. The latter became available in the global North at very low prices after WWII. Thus farmers did not have to rely on legume crops for converting atmospheric nitrogen into forms that plants could use, supplying non-legumes with sufficient fertility (Foster and Magdoff, 2000, 51-52).

Beyond the private costs of pesticide and fertilizer acquisition, the indirect costs to the environment and public health have to be taken into account when assessing pesticide and fertilizer use. Groundwater and fishery contamination, impacts on wildlife and other foods, farmers’ poisoning, as well as higher cancer rates are among the ramifications of higher pesticide use (Edwards, 1993; Culliney et al., 1993; Altieri,

2000; Allen and Kovach, 2000; Foster and Magdoff, 2000). With respect to fertilizers, one has to point out the high energy intensity of their production process<sup>1</sup>. Beyond turning agriculture into a high carbon-footprint sector, inorganic fertilizers are responsible for groundwater and surface water contamination. Since a large amount of nitrogen fertilizers is not recovered by the crops, it ends up in the water in nitrate forms, causing eutrophication (a population explosion of algae, which depletes the oxygen in water systems and upsets ecosystem balance) and putting human health at risk<sup>2</sup>. Additionally, certain nitrogen fertilizers should be viewed as air pollutants, as they contribute to the destruction of the ozone layer (Altieri, 2000, 82-83).

Starting in the 1970s, the “intensive use of certain types of fertilizer and the misuse of pesticides” began to be viewed in Europe as a source of pollution, especially as pesticide intensification impacted water sources, with serious consequences for public health (Council of the European Communities, 1973; Andersen et al., 2000; Buller and Brives, 2000; Louloudis et al., 2000). In the early 1980s, various countries, such as Denmark, the Netherlands, Austria and the UK, implemented programs which paid farmers for environmentally friendly methods of production. In 1992, the EEC’s adoption of Directive 2078/92 which establishes agri-environmental measures pointed to a new direction of agriculture, one which tries to reconcile agricultural with environmental policy. Promotion of organic farming stands out among a list of agri-environmental measures, which includes reduction of inputs, preservation of biodiversity, conversion of arable land to grassland, and rotation measures, set-aside, landscape preservation, etc.<sup>3</sup> (Grafen and Schramek, 2000; Groier and Loibl, 2000; Hart and Wilson, 2000).

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<sup>1</sup>Foster and Magdoff claim that in the US cornbelt, nitrogen fertilizer production accounts for 40% of the necessary energy to produce an acre of corn (Foster and Magdoff, 2000, 54).

<sup>2</sup>Several types of cancer, as well as methamoglobinemia (low blood oxygen levels) in children, have been linked to nitrate uptake (Conway and Pretty, 1991; Altieri, 2000).

<sup>3</sup>For a more complete list, see European Commission, 2005.

### 5.3 Methodology

I inquire whether the increase in organic farming in a country has led to lower rates of pesticide and fertilizer application per unit of land. Organic farmers are not allowed to use pesticides or inorganic fertilizers; however, this positive impact would be lessened, if the conventional farmers were to apply pesticide and fertilizer more intensively than before. Two possible explanations can be given for such an outcome. First, the splitting of the agricultural sector into conventional and organic farming could lead the two branches to drift further apart, making conventional farmers care even less than before about their environmental impact<sup>4</sup>. Such an effect would also be accelerated by fewer interactions between conventional and organic farmers (e.g. by not participating in the same associations, the two types of farmers would be less likely to influence each other). A second explanation, in the case of pesticides, could be that pests might be reappearing in areas where organic farming is rising in popularity. Conventional farmers in those areas might apply more pesticide to face reappearing problems or even do so preemptively, because of the spillover effects from their neighbors. Thus, I am interested in the combined direct and spillover effects of organic farming for an agricultural sector's pesticide and fertilizer use.

The first way of assessing the environmental effectiveness of organic farming is to look at the impact of the share of organic land on a country's pesticide intensity. The latter is measured by the sales of pesticide (in tonnes of active ingredient) per hectare of national utilized agricultural area. In order to express changes in percentage terms, I apply a logarithmic transformation to pesticide intensity. Hence, I proceed to estimate the following equation, where subscripts  $t$  and  $k$  denote year and country respectively:

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<sup>4</sup>However, if "organic" becomes visible and respectable, one could imagine a scenario in which even conventional farmers would be influenced in a positive manner, even though they would not be willing to follow the strict organic regulations.

$$\begin{aligned}
\log Pesticide Intensity_{kt} = & \beta_0 + \beta_1 \times OrganicShare_{kt} + \beta_2 \times Year_{kt} \\
& + \beta_3 \times \log GDP_{kt} + \beta_4 \times \log GDPsquare_{kt} \\
& + \beta_5 \times EUmembership_{kt} + \beta_6 \times SecondaryEducation_{kt} \\
& + \beta_7 \times Gini_{kt} + \beta_8 \times RegionalImbalances_{kt} \\
& + \beta_9 \times \%PermanentCrops_{kt} + \dots + \beta_{17} \times \%NonClassifiedHoldings_{kt} \\
& + b_{k0} + b_{k1} \times Year_{kt} + \epsilon_{kt}
\end{aligned}
\tag{5.1}$$

with  $k=1, \dots, 27$  countries and  $t=2000, \dots, 2007$ . Using vector and matrix notation, the model can be expressed as

$$\log Pesticide Intensity_k = \mathbf{X}_k \beta + \mathbf{Z}_k b_k + \epsilon_k
\tag{5.2}$$

This is a mixed linear model: the regressors  $\mathbf{X}_k$  include an intercept and I include both fixed parameters  $\beta$  and zero-mean random parameters  $b_k$ . This specification includes not only random intercepts but also random slopes on year. This way I allow for differences among different countries in their development of pesticide use over time, rather than assuming the same rate of change overtime for all countries in my sample<sup>5</sup>.

I control for gross domestic product per capita (measured in 2000 prices) and also allow for a non-linear relationship between pesticide intensity and GDP per capita by including a squared-GDP term. The rationale for this inclusion is that, initially, as a country's income grows, the intensity of pesticide use will increase, as part of the process of catching-up. However, as the Environmental Kuznets Curve

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<sup>5</sup> $u_{0k}$  is the time invariant effect for every different country.

literature argues<sup>6</sup>, after the attainment of a certain standard of living, environmental concerns will become more prominent, leading to a decrease in the intensity of the environmentally harmful activity (pesticide use, in this case).

I decided to include a dummy variable for EU membership. This is possible since our data begins a few years before some of the newer member states entered the EU<sup>7</sup>. Since the EU prides itself for its environmental consciousness, it is interesting to check whether entering the EU *per se* has a significant impact on environmental indicators<sup>8</sup>.

Following James Boyce's work (Torras and Boyce, 1998; Boyce, 2002, 2006), I also assert that inequality should play a key role in explaining environmental issues. Higher inequality could presumably lead to more intensive use of pesticides and fertilizer in agriculture, both because of shorter planning horizons of the poor and of more industrial modes of agriculture of the rich (easier mechanization, more use of pesticide rather than weeding).

For the purposes of estimation, I am going to use two separate (but obviously related) indicators in order to capture inequality. The first one is the well-known Gini coefficient; the second indicator captures regional imbalances, as measured by the sum of the absolute difference between regional and national GDP per inhabitant, weighted by the share of population and expressed in percent of the national per capita GDP. It is true that increases in both the Gini coefficient and the indicator of regional imbalances mean increases in inequality. However, the country's regional imbalances indicator can be zero if the regional income per capita is equal across all regions of a

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<sup>6</sup>See Grossman and Krueger (1995); Torras and Boyce (1998); Dinda (2004).

<sup>7</sup>The European Union grew from 12 to 27 members with subsequent enlargements in 1995, 2004 and 2007.

<sup>8</sup>There is hardly anything more striking than the following quote from an official document of the European Commission: "Were we to represent Europe by a colour, that colour would undoubtedly be green" (European Commission, 1992, 7).

country. On the other hand, the Gini coefficient will also capture the distribution of income within every region, hence differentiating between two regions which report the same average income as a result of either equal or unequal distributions. Similarly, the Gini coefficient doesn't capture the geographical dimension of inequality among regions within a country, which we hope to derive through the use of the regional imbalances indicator. Since the correlation between the two indicators of inequality in my sample is at 0.33, there is not a statistical multicollinearity problem from including both in the regression analysis.

I believe that it is also important to control for education (measured by the percentage of the population which has finished secondary education). My hypothesis is that a more educated population will be less willing to tolerate high rates of pesticide use. I also control for the share of different types of crops or activities taking place in a given region, in order to capture crop-related differences in pesticide intensity. For this purpose, I follow the categorizations employed by Eurostat in the Farm Structure Survey which classifies agricultural holdings into the following activities: specialist fieldcrops, specialist horticulture, specialist permanent crops, specialist grazing land, specialist granivorous holdings, mixed cropping, mixed livestock, mixed cropping and livestock, and non-classifiable holdings. In all the estimations to follow, specialist grazing land will be the omitted activity (as it is the most common use of agricultural land in the EU).

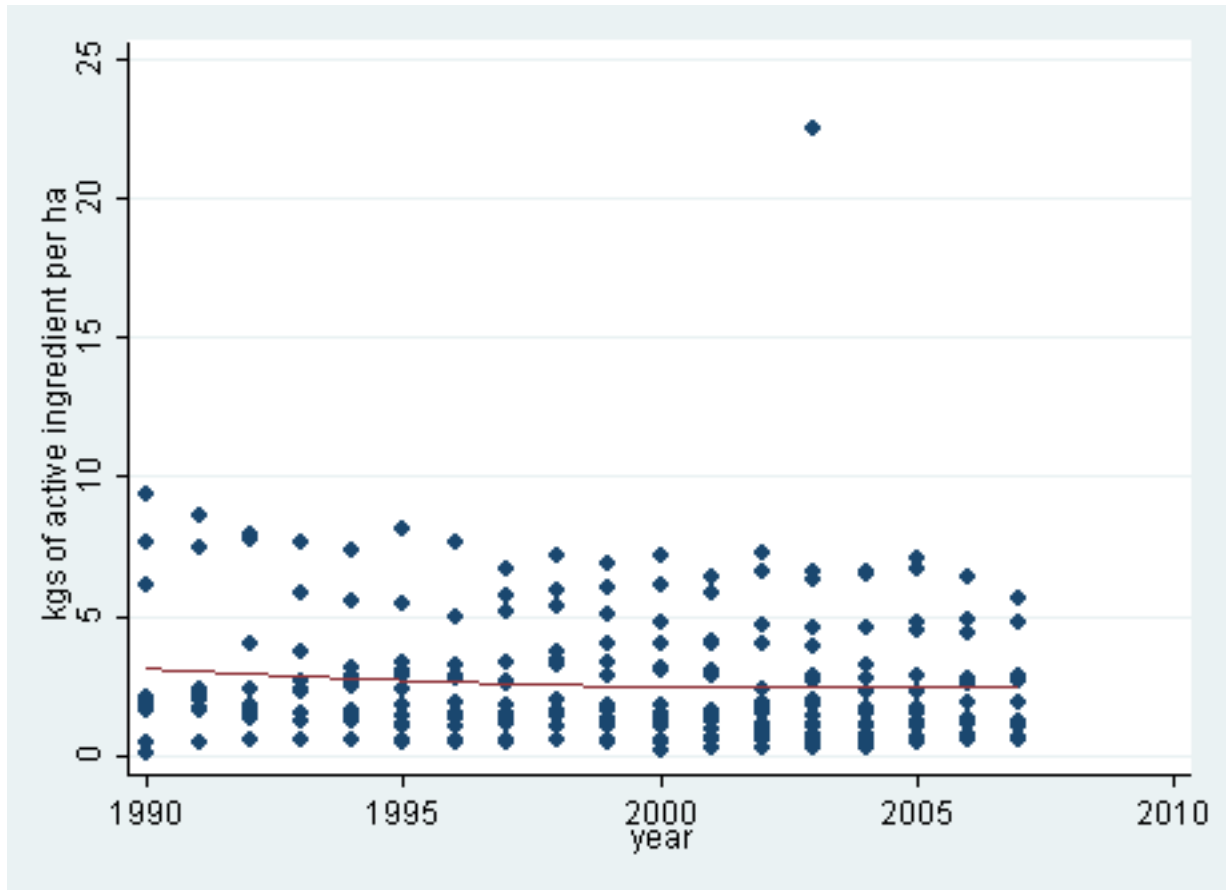
I employ the same methodology, utilizing a similar mixed linear model, in order to estimate the impact of a country's share of organic agriculture on fertilizer intensity. I expect the impact of organic farming on fertilizer intensity to be negative, and I expect all other control variables to have the same sign as in the case of pesticide use, for the reasons that have been outlined above:

$$\begin{aligned}
\log FertilizerIntensity_{kt} = & \beta_0 + \beta_1 \times OrganicShare_{kt} + \beta_2 \times Year_{kt} \\
& + \beta_3 \times \log GDP_{kt} + \beta_4 \times \log GDPsquare_{kt} \\
& + \beta_5 \times EUmembership_{kt} + \beta_6 \times SecondaryEducation_{kt} \\
& + \beta_7 \times Gini_{kt} + \beta_8 \times RegionalImbalances_{kt} \\
& + \beta_9 \times \%PermanentCrops_{kt} + \dots + \beta_{17} \times \%NonCIHold_{kt} \\
& + b_{k0} + b_{k1} \times Year_{kt} + \epsilon_{kt}
\end{aligned}
\tag{5.3}$$

## 5.4 Pesticide intensity

Figure 5.1 shows the development of pesticide intensity (measured as kilograms of active ingredient per hectare of utilized agricultural area) in various European countries over the past two decades, and figure 5.2 shows the relationship between the logarithm of pesticide intensity and GDP per capita. We notice that pesticide intensity displays an inverted U-shape, which is consistent with the hypothesis of the environmental Kuznets curve.

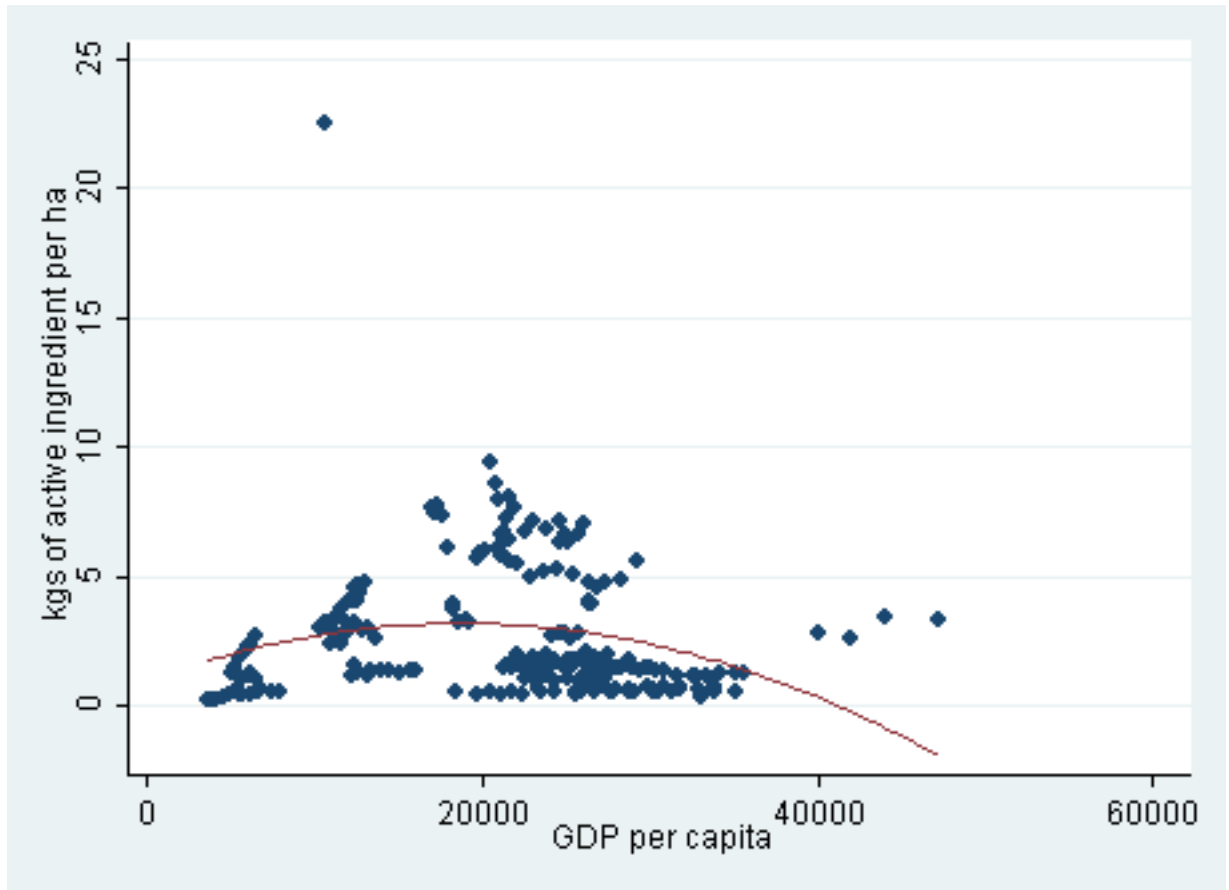
Figure 5.1: Pesticide intensity in Europe, 1990-2007



Source: Eurostat



Figure 5.2: Pesticide intensity and GDP per capita, 1990-2007



Source: Eurostat

Table 5.1 presents our estimation results. We notice that the organic share of utilized agricultural land in a country appears initially to have a positive impact on a country's pesticide intensity: a 1% increase in the country's share of organic agriculture is correlated with an increase to the log of pesticide application by 0.04-0.06%, *ceteris paribus*. However, when I control for GDP per capita and GDP per capita square, this impact ceases being statistically different from zero, even though it remains positive in all specifications. The year variable is also positive, and statistically significant in specifications 2-5, showing an increase in pesticide intensity

over time. The regressions also point to the existence of an environmental Kuznets curve for pesticide intensity, since the estimates for GDP and GDP-squared are positive and negative respectively, in addition to being statistically significant at the 5% level in most specifications. There is no conclusive evidence regarding the impact of EU membership and education. Interestingly, the Gini coefficient is associated with more intensive pesticide use: this is a first indication that more unequal societies will demonstrate more intensive pesticide use. On the other hand, the coefficient on regional imbalances doesn't yield statistically significant estimates. Finally, the presence of horticulture, permanent crops, and integrated cropping-livestock activities increases pesticide application *ceteris paribus*.

One plausible explanation for the positive relationship between organic share and pesticide intensity is that conventional farmers use pesticides more intensively if their neighbors go organic, either because they have to deal with more pests, or even preemptively, if they think that their neighbors switch to organic might make them more vulnerable to pests. Hence, the negative direct impact of a country's share of organic farming on that country's pesticide intensity (positive impact in environmental terms) is counterbalanced by an indirect effect, which is negative in environmental terms. Another explanation could be that organic farming is one among several options in the arsenal of environmental policy-makers for reducing pesticide intensity. It is possible that there is some substitutability between those projects (in the sense that participation in multiple programs requires going through different hoops of paperwork, control, etc.). Thus, it might be the case that participation in organic schemes is, in some cases, the "low-hanging fruit", whereas greater reductions in a country's pesticide intensity require programs directly targeting pesticide use, even if they do not banish pesticides altogether, as organic farming does.

Table 5.1: Determinants of pesticide intensity - Mixed Effects Regression

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	log_pest	log_pest	log_pest	log_pest	log_pest	log_pest	log_pest	log_pest
% Organic Land	0.055*** (0.015)	0.043** (0.016)	0.006 (0.017)	0.014 (0.017)	0.019 (0.018)	0.010 (0.020)	0.006 (0.022)	0.038 (0.025)
Year		0.016 (0.008)	0.025* (0.010)	0.019 (0.011)	0.033** (0.012)	0.018 (0.013)	0.021 (0.014)	0.010 (0.016)
GDP per capita (log)			14.994*** (3.795)	11.842** (4.297)	10.570* (4.369)	6.973 (4.927)	7.473 (5.236)	13.602* (6.010)
GDP per capita sq.(log)			-0.767*** (0.202)	-0.602** (0.228)	-0.540* (0.231)	-0.344 (0.259)	-0.372 (0.274)	-0.668* (0.309)
EU membership				0.154 (0.112)	0.193 (0.115)	0.001 (0.156)	-0.008 (0.171)	-0.170 (0.178)
% Secondary Education					-0.015* (0.007)	-0.009 (0.008)	-0.010 (0.009)	-0.003 (0.009)
Gini						0.034** (0.011)	0.035** (0.012)	0.046*** (0.012)
Reg. Imbalances							-0.002 (0.014)	0.000 (0.013)
% Fieldcrop								0.370 (0.952)
% Horticulture								52.128** (17.301)
% Permanent Crops								5.115 (3.042)
% Granivorous Crops								-3.922 (4.522)
% Mixed Crops								-2.449 (3.753)
% Mixed Livestock								3.711 (4.124)
% Mixed Crop-Livestock								6.672** (2.526)
% Non-classifiable								-0.037 (3.144)
Constant	-6.676*** (0.227)	-38.059* (16.533)	-128.672*** (32.331)	-102.482** (36.447)	-122.587*** (36.179)	-78.492* (38.890)	-87.053* (41.893)	-97.566* (47.730)
Observations	110	110	110	110	110	89	86	86

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$  Random effects at the country level. Random time effects. Standard errors in parentheses

Table 5.2: Determinants of fertilizer intensity - Mixed Effects Regression

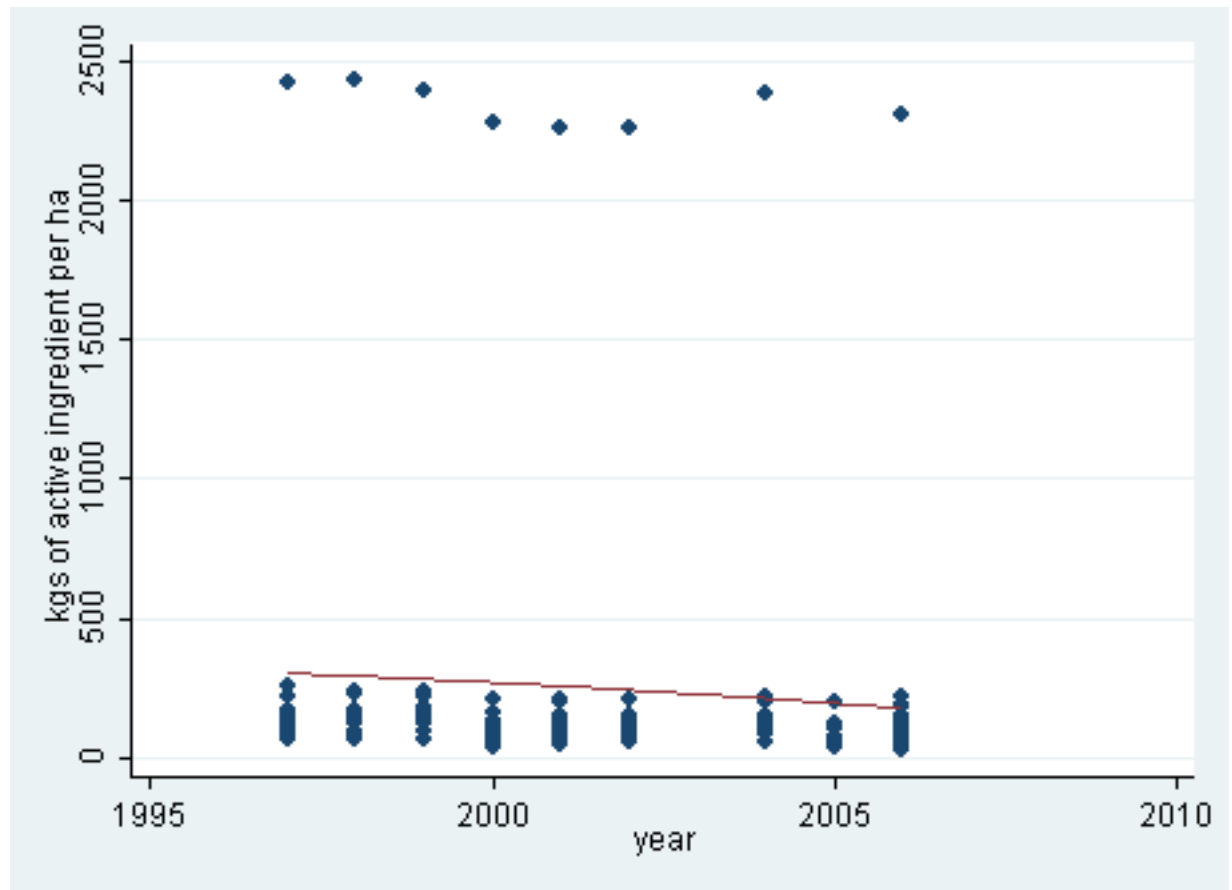
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	log_fert	log_fert	log_fert	log_fert	log_fert	log_fert	log_fert	log_fert
% Organic Land	-0.029*** (0.007)	-0.012 (0.008)	-0.016 (0.008)	-0.014 (0.009)	-0.015 (0.009)	-0.015 (0.010)	-0.035** (0.011)	-0.034** (0.011)
Year		-0.018*** (0.004)	-0.028*** (0.006)	-0.029*** (0.006)	-0.031*** (0.008)	-0.030*** (0.009)	-0.021* (0.008)	-0.026* (0.011)
GDP per capita (log)			-0.577 (2.247)	-2.324 (2.747)	-2.095 (2.786)	-2.850 (3.098)	6.744 (3.535)	4.863 (3.926)
GDP per capita sq.(log)			0.060 (0.119)	0.147 (0.143)	0.136 (0.145)	0.176 (0.161)	-0.336 (0.185)	-0.246 (0.205)
EU Membership				0.676 (0.626)	0.640 (0.636)	0.713 (0.657)	-0.209 (0.508)	0.130 (0.608)
% Secondary Education					0.002 (0.005)	0.001 (0.005)	0.008 (0.004)	0.009 (0.006)
Gini						-0.002 (0.008)	-0.004 (0.008)	0.001 (0.008)
Reg. Imbalances							-0.001 (0.007)	-0.001 (0.007)
% Fieldcrop							0.047 (0.536)	0.047 (0.536)
% Horticulture							22.008* (9.057)	22.008* (9.057)
% Permanent Crops							0.081 (1.542)	0.081 (1.542)
% Granivorous Crops							1.472 (2.780)	1.472 (2.780)
% Mixed Crops							-0.509 (2.024)	-0.509 (2.024)
% Mixed Livestock							-2.564 (2.109)	-2.564 (2.109)
% Mixed Crop-Livestock							0.224 (1.212)	0.224 (1.212)
% Non-classifiable							-0.556 (1.005)	-0.556 (1.005)
Constant	-2.106*** (0.153)	33.915*** (8.499)	53.962** (20.430)	64.069** (22.358)	66.782** (23.443)	68.744** (26.414)	6.168 (27.213)	25.882 (34.299)
Observations	93	93	93	93	93	79	70	70

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$  Random effects at the country level. Random time effects. Standard errors in parentheses

## 5.5 Fertilizer intensity

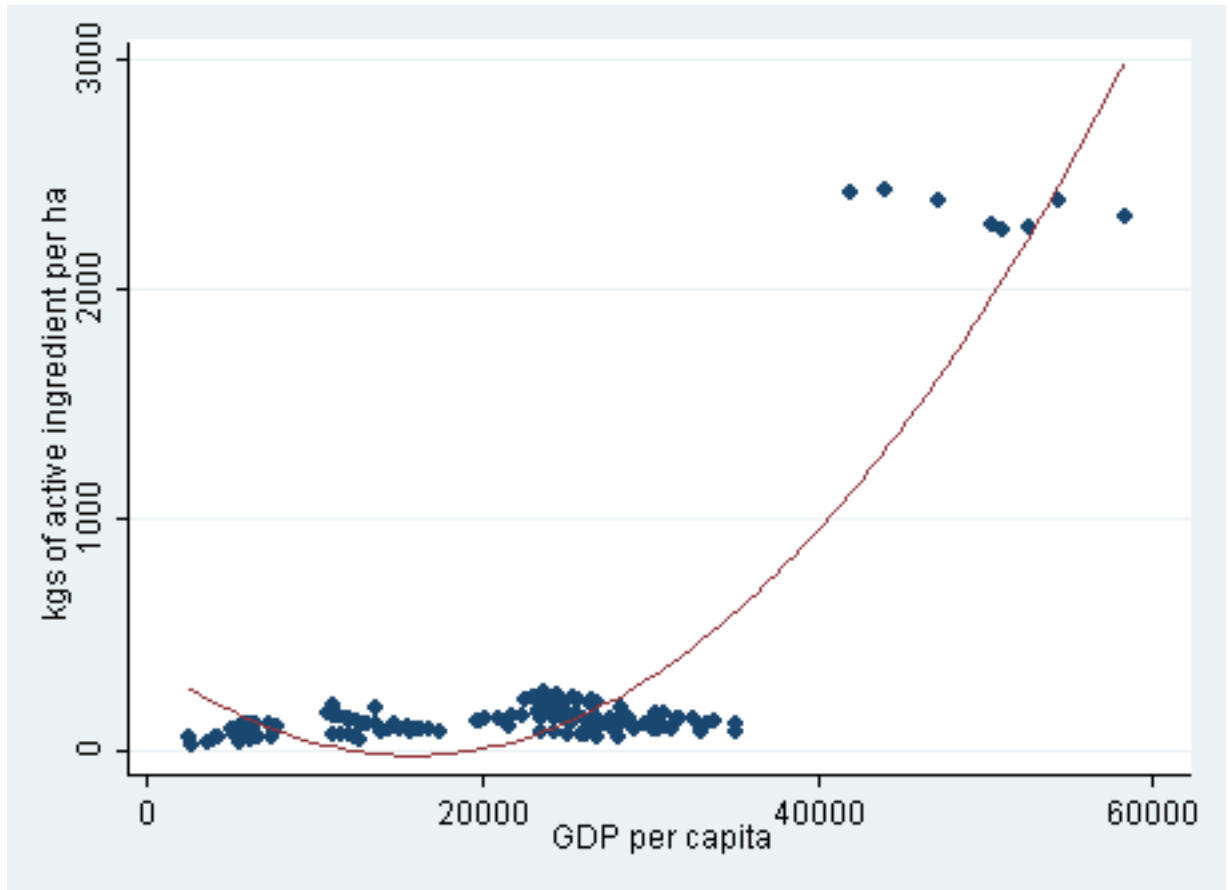
Figures 5.3 and 5.4 present the development of fertilizer intensity after 1997, as well as its relationship with GDP per capita. The obvious outlier which illustrates the logic of industrial agriculture at its extreme is Luxembourg. Interestingly, Luxembourg has also been recently condemned by the European Court of Justice for not complying with the EU's Nitrates Directive (European Commission, 2010).

Figure 5.3: Fertilizer intensity in Europe, 1997-2006



Source: Eurostat

Figure 5.4: Fertilizer intensity and GDP per capita



Source: Eurostat

Table 5.2 presents the results of the regression estimating the impact of organic farming on fertilizer use. We notice that the share of land under organic methods of production has a negative impact on fertilizer intensity, statistically significant in most specifications. A 1% increase in a country's organic share is associated with a fall in its overall log of fertilizer intensity by 0.02-0.04%. The coefficient of the time variable is negative and statistically significant, suggesting a decrease of fertilizer intensity over time. The coefficients on GDP per capita and GDP per capita squared are inconclusive: they are statistically significant in only one out of six specifications

and they suggest an inverted U-shape between fertilizer intensity and per capita income; however, this result cannot support any strong claims about a relationship between income and fertilizer intensity. The same holds for the other controls: EU membership and the two measures of inequality are not statistically significant in any estimations, whereas the percentage of population having completed secondary education is positive and statistically significant in only one specification. Finally, the only agricultural activity which shows a statistically significant impact on fertilizer intensity is horticulture: a 1% increase in the share of land devoted to horticulture is associated with an increase to the log of fertilizer intensity by 22%.

Interpreting the results of the regression from an environmental standpoint, it is encouraging that the impact of organic share on fertilizer intensity is negative: this means that the growth in organic farming does in fact have an environmentally beneficial impact on the country's fertilizer intensity, beyond and in addition to the overall trend of limiting fertilizer use. Such a result can also be explained by the lack of obvious spillover effects: compared to pesticides, it is more unlikely that a farmer will apply more fertilizer because her neighbor switched to organic methods of production. Among the different impacts of farming activities on the environment, I would like to point out the impact of horticulture on fertilizer (and pesticide) intensity. Welcome though it may be, the switch to organic methods is hardly a panacea for environmental problems, especially if organic farming is associated with the least intensive activities, such as grazing. Hence, in order to tackle the environmental problems of European agriculture, it becomes imperative to lessen the ramifications of the most intensive agricultural activities (such as European horticulture).

## 5.6 Discussion

If we were to evaluate the environmental outcomes of the rise of organic farming in the European Union during the first decade of the 21st century, it would be hard

to call them anything more than mixed. We notice that the increase in the share of a country's agricultural area which is cultivated under organic methods of production is associated with a statistically significant decrease in fertilizer intensity. Although this result validates my initial hypothesis and is encouraging, I do not get the same result with respect to pesticide intensity: the rise in a country's organic share is not associated with decreased pesticide intensity.

This is a peculiar result: organic farming bans the use of pesticides (just like the use of synthetic fertilizers). Yet, we notice that a rise in organic farming does not lead to a decrease in the use of pesticide per unit of land. To put it differently, the direct effect of the decrease of pesticide use because of the spread of organic farming is counteracted by the indirect effect of pesticide use by conventional farmers which rises.

I proposed two hypotheses for the explanation of this result: organic farming being "one among many" tools for reducing pesticide intensity or organic farming creating negative spillover effects. The first explanation is the less problematic one; the basic idea is that organic farming is not the most effective tool for reducing pesticide intensity, as it would remedy the issue of excessive pesticide use in a roundabout way, as compared, for example, to a direct payment for a decrease in pesticide use. We know that there is some substitutability between different agri-environmental projects; in the case of Greece, for example, the agri-environmental programs to reduce nitrogen pollution have attracted a lot of farmers, possibly deterring farmers from converting to organic farming (Vlachos, 2007; Louloudis et al., 2000, 2004). Unfortunately, I cannot test this hypothesis given the available data<sup>9</sup>.

The second plausible explanation is more troublesome; it posits that conventional farmers react to the rise of environmental-friendly farming by moving towards the

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<sup>9</sup>The Eurostat website has data describing the area covered under agri-environmental measures (Directive 2078) only for the period 2001-2005; and not for every EU country.



opposite direction. Thus, they intensify their use of pesticides as they see their neighbors' giving up on them. This behavior could be spurred by several reasons. It could be a "rational" response of conventional farmers, who do not enjoy spillover effects from their neighbors' pesticide use anymore and who might be seeing pests reappear in their fields. It also could be a preemptive response; the actual appearance of pests is not necessary for conventional farmers to respond to the news that their neighbors have gone organic by increasing their pesticide use. Finally, it could be a question of interaction between different types of farmers. We can certainly think of situations where the organic farmers' values and practices have an impact on conventional farmers, leading the latter to more environmentally conscious practices. However, one could also imagine a situation where the organic and the conventional farmers develop in opposite directions. Thus, the bifurcation of farmers might mean less interaction between farmers, as they develop different networks, and stop learning from each other. To the best of my knowledge, there is no empirical study that examines how conventional farmers change their fertilizer and pesticide use as a response to organic farming<sup>10</sup>.

## 5.7 Conclusions

Industrial agriculture is proving to be incompatible with citizens' demand for quality of life and provision of safe food. Organic agriculture can provide society with a solution to many of the environmental problems created by intensive methods of agricultural production. However, European agricultural policies deal with sustainability in a way that turns it into an individual choice of the farmer, rather than viewing it as being part of a larger project. A farmer can choose to transition to organic methods, thereby cutting down its fertilizer or pesticide intensity. However, certain

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<sup>10</sup>Darnhofer's work on farmers' attitudes and preferences comes close, but does not address this question. See Darnhofer et al. (2005).

aspects of production are better served by a collective transition to organic farming, which goes beyond the individual. The knowledge of organic farming and the positive impacts from experimentation require a collective transition in order to create a “bottom-up epistemic community”<sup>11</sup> (Padel, 2001; Reed, 2002; Kummer and Vogl, 2009). Additionally, the requirement for buffer zones to avoid cross-contamination of organic products by conventional production methods means efficiency losses unless the transition to organic production is coordinated at a collective level (Parker and Munroe, 2007). Such coordination would also avoid an adverse reaction of conventional farmers to organic farmers, as outlined above.

A pertinent illustration of an ecological challenge to the individual character of environmental policy, which has gone fairly unnoticed, is that of the *eco-region* (*Bioregion* in German) (Schermer, 2003; Vogl and Darnhofer, 2004; Nigg and Schermer, 2005). Organic farmers in various regions of Austria have, over the past 15 years, associated in order to form eco-regions<sup>12</sup>. Their aspirations extend beyond solely finding ways of facilitating the marketing of their products or achieving cheaper access to capital. The main idea is to find bottom-up ways of regional development, which would center around the switch of whole regions to organic farming and the possibility for creating new forms of social relationships with other actors in the same region (Schermer, 2003, 50-54).

I believe that such experiments remind us of the collective character of the concept of sustainability. According to the well-known definition by the Brundtland Commission, sustainable development is “development that meets the needs of the present, without compromising the ability of future generations to meet their own needs”. Neither the concept of “development” nor the concept of “need” can be

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<sup>11</sup>For the concept of the “epistemic community, see Haas (1992).

<sup>12</sup>According to Verdorfer (2008, 11), in 2008, there were 30 initiatives in 23 regions of Austria which attempted to create bioregions, whereas the project Bio Alpe Adria even attempts to link regions of Slovenia, Italy, and Austria.

defined meaningfully at the individual level. Thus, devising environmental policies that treat sustainability as an individual choice is not only limited, but could even be counter-productive. What is needed is to create mechanisms of participation that would enable people to collectively meet their needs and transform their environment in positive ways.

## CHAPTER 6

### WHEN SUBSIDIES ARE NOT ENOUGH: ORGANIC FARMERS' ASSOCIATIONS AND SOCIAL SUSTAINABILITY IN RURAL GREECE

#### 6.1 Introduction

This chapter is a case study of the political economy of organic farming in Greece. Greece is a case of an impressive late-comer when it comes to organic farming. The first farms explicitly following the principles of organic farming appeared in Greece around the mid-1980s. The initial impetus of organic farming was related to the European social movements of the period: most of the first organic farmers come from urban backgrounds are well-educated, whereas several among them come from Northern European countries. In 1993, the first Greek certification organization ( $\Delta\text{H}\Omega$ ) was created. Until 1998, less than 0.5% of Greece's utilized agricultural area was covered by organic farms or farms under transition to organic farming, and the number of farms following organic methods was around 500 out of a total of more than 800,000 agricultural holdings.

Ten years later the situation looks very different. With the help of subsidies for switching to organic production, around 7% of utilized agricultural area is cultivated under organic methods, or is undergoing the 3-year transitional period. In 2007, there were more than 27,000 organic farmers, and the number of certifiers had increased to eleven. Beyond the impressive jump in the numbers, there was also a significant discursive change: "organic" had become part of the vocabulary of Greek farmers,

who were now engaged in what 20 years ago seemed at best impractical, if not plain weird<sup>1</sup>.

Despite the impressive increase in the number of organic farmers in Greece in the early 2000s, organic has not flourished as a sector. The number of products made available to consumers is extremely limited, even for products which were traditionally available in Greece (e.g. feta); the prices are exorbitant; and the number of organic producers is likely to show a significant decline very soon. The new buzzword in the Greek countryside is "photovoltaics", as Greek farmers, lured by the promises of high kilowatt-hour prices for solar energy by the Greek State Electricity Company are attempting to install solar panels in their fields.

In this chapter I utilize the results of fieldwork I conducted in Greece in the period July-December 2010 in order to examine further who benefited from the rise of organic farming over the past 20 years. I enquire whether the agri-environmental measures have been successful in creating a real sector of organic producers, and whether they have improved the economic situation of small farmers. I identify some of the reasons which prompted the boom in the numbers of organic producers in Greece in the past 10 years, and explain the role of institutions in this process (State, market, cooperatives). Furthermore, I explore how organic farming is situated vis-à-vis new forms of labor relations in the Greek countryside.

## 6.2 Historical background

In the period that followed its Civil War (1946-1949), Greece experienced rapid transformations, both in the cities and in its rural space. In the period 1955-1973, over a million Greeks, mostly from rural areas, participated in a great wave of mi-

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<sup>1</sup>This was also the case in other countries, such as Austria, which had a much longer tradition of organic farming. The new farmers were mostly outsiders from urban regions, and were considered "dirty" by the majority of farmers (Schermer, 2008).

gration: over 15% of the Greek population left the country. Germany with approximately 600,000 immigrants, the US and Canada with over 200,000, and Australia with over 170,000 immigrants, were the main recipients of that wave of Greek migration (Kasimis and Kassimi, 2004).

The same period was characterized by rapid urbanization. Beyond economic reasons and the search for employment, political reasons contributed significantly to this phenomenon. As part of the attack of the National Army against the Democratic Army of Greece and in order to cut off the latter from its networks of support, the Greek State ordered the evacuation of many mountainous villages and the transfer of the residents to other rural areas and cities: the subjects of these policies were known as “guerilla-plagued” (ανταρτόπληκτοι). After the end of the Civil War in 1949 and the Right-wing victory, cities provided a relatively safer environment for those who could be perceived as communists or sympathizers and were in danger of imprisonment to exile islands, like Makronisos or Yiaros (Mazower, 2000; Hamilakis, 2002).

Thus, the population of Athens (the capital city of Greece) grew from 1,376,202 in 1951 to 3,038,245 in 1981, while Thessaloniki, the second largest city, grew from less than 300,000 to 706,180 in the same period. Rural Greece, which is mostly mountainous, was depopulated. The lack of educational or professional prospects meant a rapid aging of the Greek rural population. Labor shortages in agriculture were alleviated only with the fall of the Soviet block and the waves of migration, which reversed the role of Greece as an exporter of labor power and transformed it into a host country (Gropas and Triandafyllidou, 2005).

Any story on Greek agriculture needs to incorporate another element: Greece’s accession to the European Economic Community in 1981, and the need to implement the latter’s Common Agricultural Policy (which was described in chapter 3). What makes the Greek case especially interesting is that the Greece’s entry into the EEC

was carried out by PASOK, a Socialist Party which lay to the left of the European Social Democracy and which won the 1981 elections in a landslide, to a large extent based on its hostility to the EEC and NATO.

PASOK's display of power was not limited to the cities, but also extended to the rural areas. Its rhetoric included a strong emphasis on the non-privileged - this attracted farmers, who had been excluded from the centers of decision-making. Despite the writing-off of debt, conducted by the G. Papandreou government in 1964 and later by the junta in 1967 (Patronis, 2002, 15-16), the rural population had hardly any access to power. The promise of "Change" (the basic election slogan of PASOK in 1981) managed to lure farmers into the ranks of PASOK. PASOK's rhetoric, which appropriated much of the more standard communist analysis, was critical of capitalist development in agriculture among other sectors. However, it was also attractive to the farmers since it didn't promise the future socialization of the means of production, but the protection of the non-privileged small family farmer, who had been victimized by the State of Right-Wingers and its alliance with foreign capital and international organizations, such as the EEC that represented them (Louloudis and Maraveyas, 1997, 276)

The State, the Agricultural Bank of Greece (ATE) and the agricultural cooperatives received a particular role in PASOK's program of rural transformation (Louloudis and Maraveyas, 1997; Patronis, 2002). New legislation was passed that would lead to the democratization of the cooperatives, instead of them serving as mechanisms that would serve old agricultural hierarchies. Hence the principle of one person, one vote was established, while cooperatives that didn't comply with the new measures were dissolved (Patronis and Mavreas, 2004, 58)

However, the pro-agriculture policy of PASOK failed to produce the beneficial results it promised. The politicization of cooperatives meant that they were used as a first step towards political careers, rather than as farmers' associations. Addition-

ally, the old cooperatives (which were mostly credit cooperatives) assumed new roles: they were now supposed to gather the product, and also to provide the agricultural subsidies to the farmers. Since they were now supposed to conduct social policy, they were often asked to pay higher-than-market prices to farmers, often through dubious borrowing from ATE. In the process of pursuing short-term political goals, but also under the pressure of the more powerful members of the cooperative, they undertook investments that didn't serve the interests of the majority of the cooperative members (Panitsidis, 1992). This process led to rapid accumulation of debt (Louloudis and Maraveyas, 1997; Patronis and Mavreas, 2004). Perhaps more importantly, it led to a discrediting of the cooperative project in the agricultural area. Showing that farmers can act collectively, and add value to their products, bypassing the middlemen and managing to keep part of the surplus value that they produce, instead of transferring it to banks, suppliers, merchants and processors, is something that has yet to be shown.

Before I move on to the specifically organic part of the story, it is necessary to describe the current role of agriculture within the Greek economy. Despite the popular misconception that Greece is an agricultural country, the role of agriculture in Greece has been declining rapidly over the past 30 years. In 1980, according to the Greek Statistical Agency, agriculture accounted for 15% of GDP, while Greece was a net exporter of agricultural products. By 2010, agriculture accounts for only 2.7% of GDP in 2011. Greece has a trade deficit in agricultural products equal to 1.9 billion euros; interestingly, 89-96% of this deficit is due to trade with other European countries (PASEGES, 2011). Furthermore, while agricultural income in the EU-27 rose by 12.3%, agricultural income has been declining in Greece after 2005, as one can notice in table 6.1. This decrease is partly due to the abrupt decrease in subsidies after the CAP "Health Check" in 2004, which affected adversely certain traditional



Table 6.1: Income from agricultural production

Year	1993	1996	2000	2003	2005	2007	2010
Total Value	6.836	9.378	10.287	10.223	11.308	9.077	9.215
Subsidies (%)	7.1	17.0	16.6	16.6	16.8	5.1	3.3

Source: Greek Statistic Agency

Value measured in billion of euros, constant 2010 prices.

Greek products, such as cotton and tobacco (ibid.). However, the value of production (excluding subsidies) also fell during the same period by 500 million euros.

### 6.3 Case study

The region of Etoloakarnania is situated in the western part of mainland Greece. With an area of 5,447 square kilometers, it ranks first in size among Greek prefectures (NUTS-3 regions), whereas with a population of 209,500, it ranks 7th in Greece, according to the 2011 Population Census (EL.STAT., 2011). According to the Greek Statistical Agency, in 2009 Etoloakarnania ranked 41st among 51 regions in terms of per capita income: average income was 13,272 euros, as compared to a country average income of 20,531<sup>2</sup>.

Etoloakarnania historically was a predominantly agricultural region. Tobacco was the main product, and cornerstone of the local economy. Thus, the shock of the CAP-reform and the rapid decline of tobacco after 2004 meant that producers would have to look for other products to grow<sup>3</sup>. Other products have traditionally included cotton, olives, citrus products (oranges, lemons, mandarin oranges), and goat and sheep production in the more mountainous parts. Since all these products are typical Mediterranean commodities, the region of Etoloakarnania has been directly affected

<sup>2</sup>Data accessed April 20, 2012.

<sup>3</sup>According to Eurostat data (accessed on the Eurostat website on May 3, 2012), tobacco production in Greece declined from 108,000 tones in 2005 to 22,000 tones in 2006.

by the decrease in protection for traditional Mediterranean products and the liberalization of EU trade with North Africa and the Euro-Mediterranean Association Agreements: such agreements might be opening up markets for the industrial products of the European North, but increase competition for the countries of the EU South (Tolios, 2009).

**Map 6.1** Map of Greece



The ecological significance of Etoloakarnania can be established in a variety of ways: Lake Trichonida, the largest lake of Greece, is located in Etoloakarnania; the

Achelooos River, the second longest river of Greece, runs through it, and its delta in the Ionian sea constitutes a significant ecosystem in terms of biodiversity and is protected by the Ramsar treaty for wetlands.

Regarding its agricultural characteristics, Etoloakarnania is the second prefecture of Greece lying only behind Iraklio in terms of number of farms, utilized agricultural area (UAA), and Annual Work Units (full-time employment) in agriculture. However, it leads all the organic categories: 16% of organic farms and labor force are located in Etoloakarnania, whereas over 10% of organic UAA is to be found in Etoloakarnania. Organic farming has been particularly visible in Etoloakarnania, making it a good location for a case study of the rise of organic: 4,450 out of 39,320 farms in the region were following organic standards in 2007, while the organic share of UAA was over 20% (31,060 organic hectares out of a total of 153,370).

Turning to the specific characteristics of the agricultural sector of Etoloakarnania, one can notice a significant shift over the period 2000-2007, as seen in table 6.3. We notice an exponential growth in the organic farms of Etoloakarania. At the same time, the number of conventional farms increased slightly; however, neither the utilized agricultural area under conventional methods nor the number of full-time employed in conventional agriculture increased. This fragmentation is probably a consequence of inheritance laws and, perhaps more importantly, of the Young Farmers' Programs, implemented by the Greek State to improve the age composition of the agricultural population. In order to participate in the Program, farmers had to be between 18 and 40 years of age, and to either own or have long-term leases of land. A start-up payment of up to 25,000 euros per young farmer meant that in many cases parents transferred their land to their children, leading to further fragmentation of land<sup>4</sup>.

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<sup>4</sup>The website of the Greek Ministry of Agriculture ([www.minagric.gr](http://www.minagric.gr)) is a good source for the detailed requirements of participation.

Table 6.2: Regional Characteristics

	Etoloakarnania	Greece	% of total	Ranking
Population	209,500	10,787,690	1.9	7
Area (km <sup>2</sup> )	5,447	131,990	4.1	1
Average Income	13,272	20,531		41
Number of Farms	39,320	860,150	4.6	2
Organic Farms	4,450	27,700	16.1	1
UAA (ha)	153,370	4,076,230	3.8	2
Organic UAA (ha)	31,060	297,710	10.4	1
Employment - Agriculture	23,590	488,500	4.8	2
Employment - Organic	3,630	23,360	15.5	1

Source: ELSTAT, Eurostat

Population based on 2011 census (preliminary data). Average Income based on 2010 data.

Farm data based on 2007 FSS data. Employment measured in terms of full-time equivalent.

Table 6.3: Etoloakarnania

	2000		2007	
	Conv	Org	Conv	Org
Number of farms	34,710	20	34,870	4,450
UAA (ha)	127,280	80	122,310	31,060
Full-time employed	25,890	20	19,950	3,630

Source: Eurostat

Table 6.4 displays the breakdown of farming in general and organic farming by type of agricultural activity, in terms of number of farms, utilized agricultural area, and employment<sup>5</sup>. We notice that in 2000, around 37% of farms are cultivating specialist permanent crops. However, the main category of utilized agricultural area (29%) and employment (32%) is specialist field crops. This is probably an indicator of the importance of tobacco for the regional economy. By 2007, the picture is completely different. Almost 46% of farms are engaged in the growing of permanent crops; this

<sup>5</sup>Since there were only 20 organic farms in Etoloakarnania in 2000, there is no reliable detailed data on their characteristics

Table 6.4: Breakdown of Etoloakarnania's agriculture

	Total						Organic		
	2000			2007			2007		
	Farms	UAA	AWU	Farms	UAA	AWU	Farms	UAA	AWU
Field crops	26.2	29.1	32.1	6.7	10.4	4.5	5.8	8.3	3.6
Horticulture	0.6	0.4	1.0	0.8	0.7	1.4	0.4	0.3	0.6
Permanent crops	36.6	12.8	13.7	45.5	23.7	27.3	51.2	29.0	32.2
Grazing land	8.7	17.9	15.7	10.6	24.1	23.1	13.5	21.7	23.7
Granivores	0.3	0.2	0.5	0.4	0.2	0.8	0.4	0.4	0.6
Mixed cropping	15.0	16.1	17.0	19.5	16.7	17.0	11.9	14.9	12.7
Mixed livestock	4.0	6.7	6.0	7.0	11.4	11.7	5.6	12.7	11.0
Mixed crop-livestock	8.5	17.0	14.0	9.5	12.7	14.1	11.0	12.8	16.0

Source: Eurostat

category is the main source of agricultural employment, accounting for around 27% of full-time agricultural employment in Etoloakarnania. However, 24% of utilized agricultural area is by 2007 covered by pastures.

The characteristics of organic farms are quite similar: we notice that the majority of organic farms are engaged in permanent crops, such as olives or citrus trees. The same category generates around 29% of utilized organic area and 32% of employment in the organic sector. Pastures constitute the second most important category of organic farming, accounting for 22% of UAA and 24% of organic farming employment.

## 6.4 Data and Methods

Statistical analysis is a powerful way for telling stories: however, it is not always enough in order to describe a phenomenon which evolves as rapidly as the growth of organic farming in Etoloakarnania (and Greece more generally). Designing an agricultural survey such as the Farm Structure Survey (FSS) and implementing this in the entire territory of the European Union is a time-consuming and rather inflexible method for acquiring information. As shown by the fact that the FSS includes

questions on organic farming only after 2000, it becomes difficult to capture the phenomena that evolve in front of our eyes. Furthermore, when analyzing qualitative data from a survey, one has to bear in mind that the theoretical framework of those who designed the survey conditions the survey results.

The available data to analyze Greek organic farming suffers from both those pitfalls: it is not suitable for telling a story about the impact of organic farming in the communities, the problems of organic farmers, the class relations in organic farming and the transfers of surplus taking place in agriculture. I concluded that the best way for getting this knowledge was through interviews with people engaged in organic farming. Thus, I conducted a series of 18 semi-structured interviews with organic farmers, agricultural officials, and certifiers, during the period of July-December 2010.

The method used to identify interviewees was key informant interviews (for officials and certifiers) and snowball sampling (for farmers). As such, the sample was not random and is not representative (Bernard, 2006). The agricultural officials and certifiers I interviewed were situated in Athens (capital of Greece) and Agrinio (largest city of Etoloakarnania). Out of the agricultural officials interviewed, 2 were interviewed at the Ministry of Agriculture in Athens and one in Agrinio. Two certifiers were based in Athens and one was based in Agrinio. In all these cases, the guaranteeing of anonymity was a precondition for the interview to take place. The farmers I interviewed were located in a 40-km radius from Agrinio, in a region that encompasses the Agrinio valley and extends to the south to Messolongi and the Katochi valley (Acheloos delta) and north to the village of Rivio (where the municipalities of Agrinio, Xiromero, and Amfilochia meet). Interviews with farmers also happened under the condition of anonymity; however, perhaps it is interesting to note that farmers rejected being interviewed at a rate of around 70%.

Table 6.5: Interview characteristics

Type	Number
Farmers	12
Certifiers	3
Officials	3

Map 6.2 Map of Etoloakarnania



Municipalities of Etoloakarnania: 1. Mesolongi 2. Agrinio 3. Aktio-Vonitsa 4. Amfilochia 5. Thermo 6. Nafpaktia 7. Xiromero

The interviews usually lasted 30 minutes to 2 hours. Interviews with agricultural officials and certifiers were less structured: my main aim was to have them tell me how they viewed the story of the rise of organic farming in Greece, and in Etoloakar-



naniania more concretely. Additionally, I was interested in getting their take on the achievements and the problems that organic farming is facing. Finally, a theme running through my interviews with agricultural officials and certifiers was asking why organic farms were larger in terms of size than conventional farms.

Interviews with farmers were more structured: I followed the structure below.

- Personal information: age, education, marital status
- Farmer experience: years working as a farmer, other activities, size of land, rented or owned land, animals, products, other labor (e.g. family labor, wage wage), self-consumption vs market
- Information about the transition to organic farming: when did you first hear about organic farming, initial reactions to organic farming, how many years actually engaged in organic farming, reasons, changes that organic has brought to you
- Evaluating organic: how satisfied are you from your choice, what were the largest problems or challenges you faced, what were the largest advantages you saw, do you receive structural support, how do you sell your product, do you belong to farmers' associations, do you belong to organic producers' groups, what do these groups mean for your activity?
- Future: Do people leave the area, how do you envision your future, what would you like to see your children do, what would you like to see from future state policies?

## 6.5 Farm size

This dissertation project started from noting the differences in average farm size between conventional and organic farms (Eurostat, 2005). Hence, at least initially, I



was going to the interviews with the certifiers and the agricultural officials assuming that they knew this. I was surprised to find that they didn't. All three certifiers attributed this size difference to the inclusion of pastures in the official statistics<sup>6</sup>. Assuming the accuracy of Eurostat data, I calculated average sizes both including and excluding pastures from the calculations (Table 6.6). One can notice that average farm sizes decrease both for conventional and organic farms when pastures are excluded; however, the patterns do not change. In Greece average farm size for organic farms doubles after 2003. I suggest that this is not a statistical artifact, but can be explained.

Table 6.6: Average Farm Size (ha) - Greece

	2000	2003	2005	2007
Conventional Farms	4.4	4.7	4.7	4.5
Organic Farms	4.8	11.7	12.9	10.7
Conv Farms (excl. Pastures)	4.1	4.2	4.1	4.1
Organic Farms (excl. Pastures)	4.7	9.3	10.7	9.7

Source: Eurostat

The response of the agricultural officials on the same question was also interesting. One of them attributed it to pastures. However, when pressed further on it, he gave a revealing answer:

“We are not interested where it comes from [“small or large farms”]. They ask us to show growth in organic farming. We do.” (A.Y., 6/20/2010)

The FSS of 2003 can give us further insight: I acquired data from the Greek Statistical Agency. Table 6.8 shows the different classes of (total and organic) farms in the Greek agricultural sector, as well as the land controlled by each category of farms. There are several interesting points to be made: in 2003, the size of 52% of

<sup>6</sup>One of them even suggested that the Greek State includes pasture lands in the numerator, but not in the denominator of their agricultural statistics in order to magnify the share of agricultural under organic methods of production.

Table 6.7: Average Farm Size (ha) - Etoloakarnania

	2000	2003	2005	2007
Conventional Farms	3.7	3.8	3.8	3.5
Organic Farms	4.0	12.4	15.1	7.0
Conv Farms (excl. Pastures)	3.3	3.3	3.2	2.9
Organic Farms (excl. Pastures)	4.0	10.1	12.7	6.3

Source: Eurostat

organic farms is below 5 ha, which is approximately the average size of Greek holdings. However, these farms make up only 10.6% of organic land in Greece. At the same time, 1.5% of organic farmers control over 26% of organic land. Furthermore, we notice that the prevalence of organic farmers in each class of farmers increases with farm size: 1 out of every 10 mega-farmers (over 100 ha) is an organic farmer.

Table 6.8: Characteristics of Greek agriculture - FSS 2003

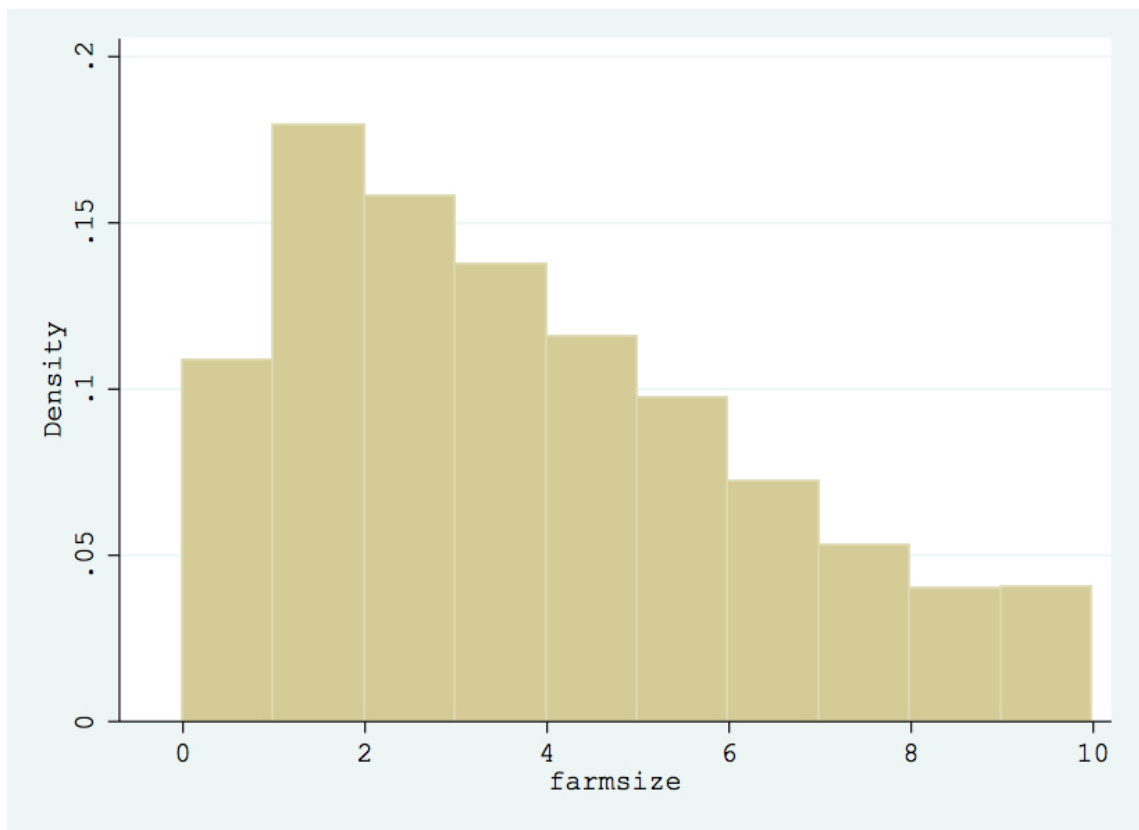
	Farms	Org. Farms	Org. Farms (%)	UAA	Org. UAA	Org. UAA (%)
Total	824,464	9,380	1.14	3,967,774	111,704	2.82
No UAA	5,998	0	0	0	0	0
0-0.49	106,998	183	0.17	29,266	64	0.22
0.5-0.99	118,517	577	0.49	81,643	322	0.39
1-1.99	166,014	1,154	0.70	231,434	1,641	0.71
2-2.99	107,495	1,172	1.09	256,415	2,840	1.11
3-4.99	122,358	1,823	1.49	464,112	7,013	1.51
5-7.99	82,108	1,472	1.79	508,413	9,355	1.84
8-9.99	27,563	584	2.12	243,226	5,203	2.14
10-14.99	36,256	904	2.49	434,959	10,983	2.53
15-19.99	17,255	446	2.58	294,931	7,680	2.60
20-24.99	9,963	239	2.40	218,976	5,235	2.39
25-29.99	5,986	142	2.37	161,958	3,869	2.39
30-39.99	7,914	191	2.41	269,610	6,688	2.48
40-49.99	3,545	117	3.30	155,891	4,309	2.76
50-99.99	4,977	238	4.78	329,765	16,533	5.01
Over 100 ha	1,517	139	9.16	287,168	29,058	10.12

Source: ELSTAT

UAA measured in ha

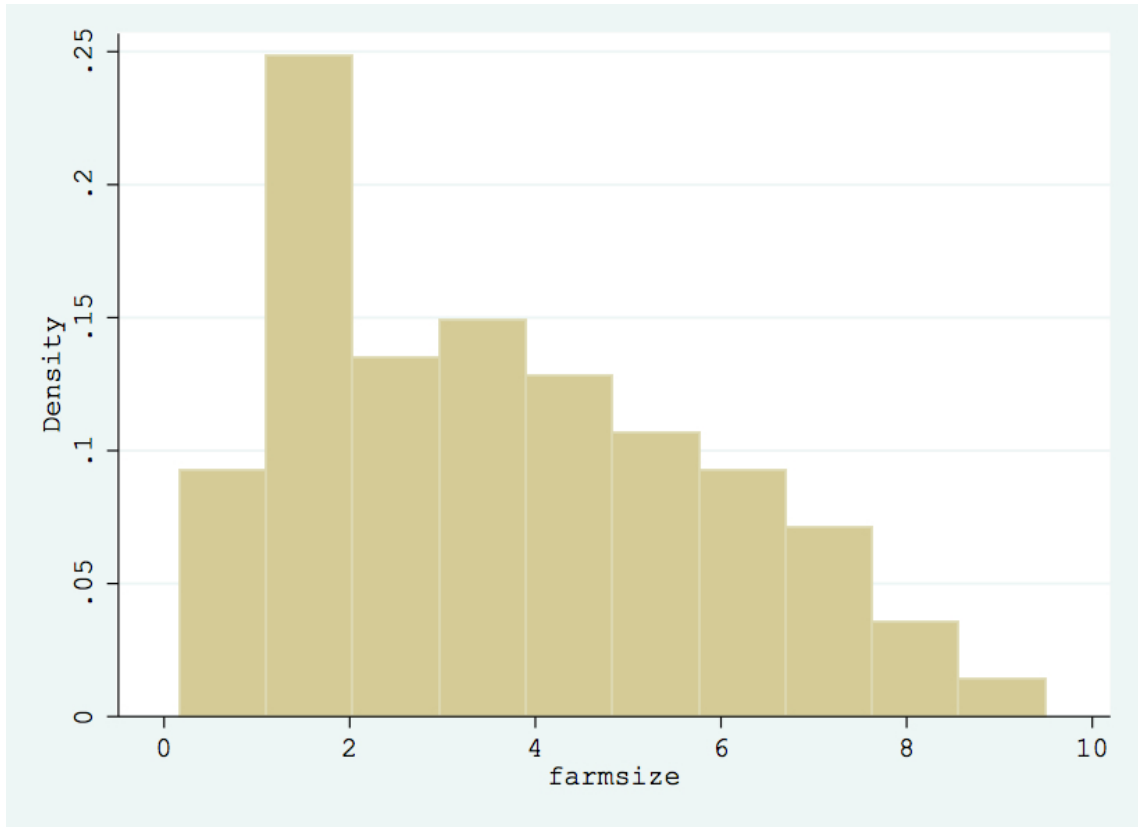
Figure 6.1 shows the distribution of farmers who are certified by a specific agency in 2008; figure 6.2 shows the distribution of famers who are represented by a syndi- calist group in Etoloakarnania in 2006<sup>7</sup>. In both cases we notice the prevalence of farmers whose farm size lies between 1 and 2 ha. None of the two groups displayed a systematic pattern between farm size and years engaged in organic farming. However, in both cases we have the presence of extraordinarily large farms, which go far beyond 100 hectares. Although these numbers are not extraordinary for other countries, they are highly unusual in Greece.

Figure 6.1: Distribution of organic farmers in Greece - 2008



<sup>7</sup>The agency certifies 7,245 farmers. The Etoloakarnania group represents 181 farmers. For the histograms, I excluded farms with a land size of over 10 ha.

Figure 6.2: Distribution of organic farmers in Etoloakarnania - 2006



## 6.6 State

State actions seem to account to a large extent for the boost of organic farming. Subsidies for organic farming were first given 1997-1998, which led to the first wave of farmers converting to organic farming. The number of organic farmers exploded in 2005 when the subsidies were increased in scope and more than doubled<sup>8</sup>. By 2009, subsidies for organic production started at 320 euros per hectare per year for wheat, rice, and other field crops, and reached up to 900 euros per hectare per year

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<sup>8</sup>According to the FSS, the number of organic farmers in Etoloakarnania was 20 in 2000, 530 in 2003, 1,210 in 2005 and 4,450 in 2007. There seems to be a lag between the actual number of farmers and its depiction by the FSS.

for viticulture and saffron; olive production was subsidized at 756 euros per hectare for new producers and 415 for continuing producers<sup>9</sup> (Government of Greece, 2009).

Despite this support, it is hard to characterize the relationship between the State and organic farming as smooth. The Greek state was initially perceived as being hostile to organic farming<sup>10</sup>. The more benign explanation would be that inertia and lack of training did not allow agricultural officials to enlist actively to the ranks of supporters of organic farming. However, two of the certifiers I interviewed claimed that the State didn't want to disrupt their established networks with providers of chemicals and fertilizers. State officials had different vested interests, and were not interested in supporting a new form of production. Therefore, it was outside pressure that first led to State support of farming in Greece in the form of Regulation 2078/92, which established agri-environmental measures in the EU:

This confirms the claim of State inertia; environmental concerns were not prioritized by the Greek administration. Louloudis et al. (2000) name a variety of other factors in their discussion of state policy in agriculture, including the lack of extension services and the poor coordination between central authorities and regional actors. Both these elements were named as by interviewees as a big part of their experience as organic farmers:

D.L., a farmer from Etoloakarnania had the following to say:

The basic problem is that Greece has no policy it is true in general for everything, but more particularly, there is no consistent policy about organic

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<sup>9</sup>This happens in the spirit of maximizing the “environmental efficiency” of every euro spent, but also because subsidies are conceived as compensations for the decreased income of farmers who switch to organic. Whereas certain countries in Europe pay the same sum of money during the conversion and the maintenance period, most countries (among which Greece) pay more during the conversion period. See Wunscher et al. (2008); Baylis et al. (2008); Stolze and Lampkin (2009).

<sup>10</sup>T.T., a certifier from Athens, said “They [the Government] would not announce the programs. We had to threaten to sue them at the European Court to make them announce them” (T.T. interview, 6/28/2010).

farming. Actions in support of organic farming happen randomly, based on personal attributes of those in power, and with an eye to their own gains. And the the money is spent without balance. Organic farmers receive a subsidy of 300 euros/ha. At the same time, cotton farmers in Thesaly receive 600 euros/ha for integrated cotton production. Obviously, the State is bowing to electoral pressure (D.L. interview, 7/22/2010).

Even after the beginning of subsidies, lack of training and support pose further problems for small farmers who go organic. Farmers who consider going organic cannot count on receiving any support from the state in terms of training or counseling; technical knowledge in the forms of State agronomists and extensions services trained in organic farming are non-existent. Hiring the services of one of the few agronomists specialized specifically in organic methods means a significant increase in the cost of operations, one which usually cannot be absorbed by a small farmer. Certifiers claim that they often provide technical advice to farmers for free, although doing so is technically not permitted, because of conflicts of interest.

Furthermore, one more thing has to be noted regarding the support from the State: it is tilted towards large farmers. This happens both by omission since the lack of extension services makes it difficult for small farmers to surpass technical difficulties and also explicitly. Very small farms (below 0.2-0.3 ha, depending on the type of activity) are not eligible for pecuniary support by the State in the form of subsidies; one could consider this a reasonable provision to prevent fragmentation. Large farms also receive explicit preference over small farms for receiving organic subsidies: Regulation 239591/2009 establishes a point system which gives 5 points for farms between 0.2-1 ha, 10 points for farms between 1-2 ha and 15 points for farms over 2 ha. Such a provision is clearly biased against several types of farming, such as mountainous terrace farming. Similar provisions favor large scale animal husbandry

(measured in terms of number of animals) over smaller producers (Government of Greece, 2009).

Finally, there is another way that the State could assist organic farmers, which was noted by farmers during the interview process in the form of a complaint: the lack of effective demand by the State for organic products. As I will explain below, demand for organic products is a major problems faced by organic farmers. In our interview, D.L. claimed that the State apparatus could provide an avenue for the disposal of the final product that would not only provide farmers with income but also affect the preferences of consumers, by making them acquainted with organic products. Such policies are followed in other countries of Europe, such as Italy where public institutions (e.g. kindergartens) provide a significant avenue for the disposal of the organic product<sup>11</sup> (D.L. interview, 7/22/2010)

## 6.7 Certifiers

Certifiers are one of the most important players in the Greek organic landscape. Greece might be the only country where certifiers “represent” organic: in other countries, such as Austria, it is farmers’ associations, such as Bio-Austria or Demeter, that represent and lobby for organic farmers. However, in Greece, the vitality of organic farming is almost exclusively symbolized by the presence of organic certifiers which has been steadily rising. While the first certification organizations, such as ΔΗΩ or Φυσιολογική, were formed before the era of subsidies by people with direct ties to the Green or the farmers’ movement, Greece has arrived at 13 organic certifiers, 3 of which were formed as late as 2010. An interesting new characteristic is that a connection with the organic (or even with the agricultural sector) is no longer a condition.

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<sup>11</sup>The case of Piacenza is documented by Nolting (2009). Since 2001, Emilia-Romagna mandates that 100% of meals in day care facilities and at least 70% of meals in primary and secondary schools are organic. See also Loes and Nolting (2009).

Thus, companies such as TÜV which have been operating in certification and systems inspection, have since 2010 entered the Greek certification organic market through their local subsidiary.

Subsidies have turned certification into a safer business than it used to be, spurring the rapid growth of certification agencies. As a condition for receiving the subsidy for organic production, organic farmers need to be certified organic by one of the accredited agencies. As table 6.9 shows, for an average olive farmer with a farm size of 5 ha, the rent paid to the certifier would be around 7-11% of the subsidy. The same cost is around 10-13% of the subsidy for a farm size of 3 ha, while it reduces to 3-5% of the subsidy for 20-ha farms. For the major certification agencies, there is an inverse relationship between certification fees per hectare and farm size, meaning that the small farmers have to transfer a larger sum of their subsidy to certifiers in the form of rent<sup>12</sup>.

Table 6.9: Typical subsidies and cost of certification for olive production

Farm size	Subsidy	Subsidy/ha	Cost $\Delta H\Omega$	Cost/ha	Cost Bio-Hellas	Cost/ha
3 ha	2,268	756	$160+2+140= 302$	100.7	225 (fixed)	75
5 ha	3,780	756	$160+10+228= 398$	79.6	$246+5=251$	50.2
20 ha	15,120	756	$160+20+628= 808$	40.4	$481+20=501$	25.1

Own calculations based on certifiers' websites, assuming 1, 5, and 20 plots respectively

## 6.8 Market

The market occupies a peculiar role in the story of organic farming. Although the numbers of organic farmers have increased tremendously, organic products are hard to find in grocery stores. When organic products do exist, they are often imported: according to a recent newspaper article, imports comprise 57% of the organic food

<sup>12</sup>For  $\Delta H\Omega$  (major certifier), the rate per hectare starts at 48 euros, and goes down to 10 euros for farms over 20 hectares. For Bio-Hellas, the cost of certification starts at 171 euros (fixed cost for small farms) and goes down to 5 euros per hectare for farms over 20 hectares.



market, and more than 80% of organic fruit and vegetables in Greek grocery stores are imported (Kathimerini, 2010). If there are 27,000 organic farmers in Greece, where is their product?

T.T. described three groups of organic farmers: the first one, which he estimated at about 5% of organic farmers, had an ideological affinity to organic farming. However, the overwhelming majority, he claimed, did not engage in organic farming because of environmental sensitivity or some larger project, but because of the subsidies. Around 60-65% did not even sell their product as organic, he claimed; receiving the subsidy was enough for them (T.T. interview, 6/28/2010). D.L., who has been in the organic movement since its early years, placed the number of those interested in subsidies only at about 80%.

G.R., the head of the largest certification agency operating in Etoloakarnania said:

G.R.: The large wave of organic producers started here in 1997. Then people entered organic regardless of the subsidies to sell the product. This was the main purpose, it wasn't subsidies. The subsidy existed, it was welcome...

Those who entered in 2004.. that's when many entered, when the subsidies were increased, that is they were doubled. A lot of people entered in '04, in '05, in '06. In Etoloakarnania we have the phenomenon that after the end of the program, nobody entered organic because there was no subsidy. Now, those who entered in '04 and in '05 are exiting en masse, and those who sell oranges stay. If there is no new subsidy, from 4000 people there won't be even 200 left.

Q: That much?

G.R.: Yes, that much; because they entered for the subsidies, they did nothing for the product. It started very well in 1997, which is when I

started working on organic too, as an agronomist. These guys were all conscious producers. They were interested in a new product and they had some environmental sensitivities. These guys were disappointed within 3-4 years, and then they stayed just for the subsidy. Many of them are restless, but they cannot do anything because they haven't gotten organized in groups. (G.R., interview 9/10/2010)

Problems with product disposal was a recurring subject of the interviews with farmers. D.N. is a farmer producing olives and oranges on 5 ha in the Agrinio valley.

I started 10 years ago, both for the subsidy and also because they were saying that we'd get a better price. This never happened.

Our biggest problem is the disposal of our product. There is no merchant for olives, and there are only a couple of merchants left for oranges in our region. There used to be 4-5, but even they have problems. The State has not fulfilled its obligations to them, and now they cannot get our product.

Is it possible to have organic which is cleaner than conventional? The slightest hit on the product, and the merchant won't take it. I still have 50 tonnes of orange left. The merchant wouldn't take it. He started taking it at 27 cents and ended up at 4 cents, much lower than what it would fetch as conventional. (D.N., interview 9/17/2010)

Similar problems were faced by other interviewed farmers. Table 6.10 shows how a group of organic producers disposed of its product<sup>13</sup>. One can notice that even the self-selected farmers (those who care enough to enter an organic producers group) are not able to sell their organic product as such in the market. Thus, they incur a loss

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<sup>13</sup>D.N., who represents the group in talks to merchants, provided me with the numbers.

in production and an increase in cost because of the higher price of organic fertilizers, but do not manage to capture the organic price premia.

Table 6.10: Organic production in Western Greece

	Organic Production		Sale as organic		Sale as conventional	
	Kilos		Kilos	%	Kilos	%
Greenhouse vegetables	162,450		113,715	70	48,735	30
Land vegetables	732,300		275,995	38	456,305	62
Grapefruit	83,460		58,422	70	25,038	30
Lemons	527,420		342,823	65	184,597	35
Tangerines	684,060		410,436	60	273,624	40
Oranges	16,033,090		4,092,880	25	11,941,020	75
Bitter orange	22,000		1,100	5	20,900	95
Bergamot orange	15,000		750	5	14,250	95
Kiwi	157,366		47,210	30	110,156	70
Almonds	5,082		508	10	4,574	90
Pears	96,800		24,200	25	72,600	75
Apricots	5,280		2,112	40	3,168	60
Plums	8,800		2,640	30	7,170	70
Walnuts	98,214		19,643	20	78,571	80
Chestnuts	12,800		2,560	20	10,240	80
Cherries	9,540		2,385	25	7,155	75
Quince	2,000		100	5	1,900	95
Apples	2,000		2,000	100	0	0
Loquat	9,800		0	0	9,800	100
Pomegranate	4,400		0	0	4,400	100
Table grapes	482,355		96,471	20	385,884	80
Figs	32,200		3,220	10	28,980	90
Corinth raisins	543,439		380,407	70	163,032	30

Source: D.L.

G.R., the certifier once more:

They cannot sell their product as organic - they [producers] need to organize. They tried to, back in 1998, 1999, with D.L.. But it didn't work. They had different interests, their personal stuff got in the middle. They

were more conscious, more interested in doing organic. Now, after 2004, there are many people who don't care - they just care about the subsidy. Our producers, the way that they had learned (we have a peculiarity in our prefecture), at least in Northern Etoloakarnania, north of Klisoura, the main crop was tobacco. Tobacco was sold even before you'd grow it. Virginia tobacco had a subsidy of 3 euros, and the retail price started at 1.50 and ended up at 0.30 euros. They'd been safe before, and now they had to enter a different process, to sell on their own, to make associations. The same happened in Niochori with cotton producers, which you'd sell in advance, so they didn't enter into the process to research, to do stuff. And then they were left hanging. They saw the subsidies for organic, and they could get the same money without really growing; they would grow a little oat, they didn't enter the process to have trees, to have fruit. Look at the others without subsidies, they continue.

Q: Did they have problems with production?

GR: No, they didn't. Let me tell you what's going on. Olives, oranges, medick, wheat don't really face issues in production.

Q: Didn't their production drop?

GR: Their only problem was higher cost. Most of the things that they used before are also allowed in organic production (e.g. copper). Organic fertilizers were more expensive, double the price. But they should be doing different types of management. Because when we talk about organic, we shouldn't talk about fertilizer, we should be talking about different management, compost, nitrogen fixation. Very few do that, they had learned to use fertilizer. The only ones who face problems in production are pear producers, because of psylla. The rest don't: their production is

a little decreased, but if they paid a little attention, they wouldn't have any decrease at all. Their real problem was selling the product.

Q: Why didn't they do something if they could get a higher price?

GR: Our region is so far behind. What is the system: we have the agency which certifies the product. The farmers, in order to get the subsidy have to go to any private agronomist, whoever has an office, to give them their form for the subsidy. Nobody told them "OK, we have these products, we can do something, get in touch with organic merchants and sell to them": so they all stayed at the subsidy.

Let me give you an example. Minerva has a factory in Giannena [100 miles north of Agrinio] to produce organic feta. When they started, they came to find producers from Etoloakarnania, because the previous factory owner (FAGE) had ties with our region. Nobody here had any interest. They go to the Peloponnese instead. (G.R., interview 9/10/2010)

Most of the farmers I talked to were not part of producer groups. Only two out of twelve farmers were part of producer groups. At the same time, several producers who were not involved in producer groups told me about how necessary it was to have producer groups. However, when asked whether they would help form a producer group, their responses were characterized by a sense of disempowerment.

"We tried 10 years and didn't make it; they were cheating us" (L.H., interview 8/2/2010)

"Producer groups are taken advantage of. There is always some people who just want a cut." (D.N., interview 9/17/2010)

"You don't remember PASOK, and how the associations were driven to the ground" (R.V., interview 9/19/2010)

Organizing a producer group takes time and energy. One can think of it as a coordination problem or a collective action problem (Olson, 1965; Ostrom, 1990; Bowles, 2004). Farmers know that they would be better off if they were part of a producer group. At the same time, their “rational” behavior is not to expend any energy themselves, but to hope that a producer group will be formed, in which case they would join it<sup>14</sup>. This to some extent is codified in the following quote by D.L., who was involved in the organic movement since its early (pre-subsidy) years and was involved in the first efforts to build producer groups in Etoloakarnania.

Farmers in Greece are really in favor of subsidies. However, at the same time, they are opposed to productive efforts. They are opposed to operating on a cooperative basis, and they are unwilling to take up the efforts and responsibilities that such an organization structure entails. (D.L. interview, 7/22/2010).

Parallel to the main story of product disposal, there are some interesting side stories. I talked to D.D., a farmer in his early 30s who grows alfalfa, oat, and oranges in his 30-ha farm located close to Amfilochia. D.D. doesn't keep animals, so he gets manure from his neighbors engaged in animal husbandry, in addition to using some organic fertilizers. He also sells part of his product as conventional - but he cited “obligations” as the reason for this choice.

Q: What do you mean by “obligations”?

D.D.: “You know, obligations.. I have to give [alfalfa] to others in my village. I get manure from them. Some of them don't want to buy organic,

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<sup>14</sup>I would like to thank Ika Darnhofer for pointing this out to me.

they don't want to pay the extra money. I cannot sell it to them as organic.”<sup>15</sup> (D.D. interview, 9/3/2010)

The role of producer groups goes beyond product disposal. Two more aspects that have to be highlighted are emotional support and knowledge transfers. The only two farmers who belonged to producer groups were convinced that they would be doing organic farming into the future. My sample was not representative: however, part of the process of being in a producer group allows a farmer to realize that they are not the only one who is struggling with the process of growing organic rather than taking the technical fixes of conventional agricultural methods. The presence of such networks is critical, especially in difficult times for organic farmers. The case of Austria is characteristic: between 1998 and 2003 the number of organic farms fell by approximately 1,500 farmers. The overwhelming majority of farms exiting organic production were *Codex-betriebe*: farmers who follow the government regulations (Codex alimentarius) without being members of an organic farmers' association. In the area of Tirol alone, over 1,600 Codex-farmers left organic production within that five-year period, whereas the number of organized organic farmers remained more or less constant (Lebensministerium, 1999; Schermer, 2003).

The second aspect is knowledge diffusion. Contrary to popular misconception, which equates organic farming with doing nothing and letting nature take care, organic farmers constantly experiment both with respect to devices and production methods (Bartel-Kratochvil and Schermer, 2008; Kummer and Vogl, 2009; Milestad et al., 2010). This diffusion of knowledge is better served when farmers have more forms of communication, through (among other things) producer groups. Especially interesting is the position of farmers who are isolated and do not only have to deal

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<sup>15</sup>D.D. had told me that the organic premium was around 15%. I asked him whether these obligations would break down if the organic price was higher, say double the conventional price. He agreed; in hindsight, I think that I was trying to impose my preconceived power of the market on his nexus of non-market transactions and I succeeded.

with the lack of disposal channels, but also the lack of a well-established support network.

“I didn’t make it. I am not sure what I am doing wrong, maybe my issue was location. I know that others are doing better, they are producing. I will stop.” (D.N., interview 9/17/2010)

## 6.9 Labor relations, surplus and farm size

Almost all the farmers I interviewed were small farmers in terms of labor power employed. With one exception (L.N.), nobody employed wage labor year round. Most interviewed farmers said that they worked their fields on their own; some said that they received “help” from their wife and, in two instances from male family members (father and brother). Some of them indicated that they would employ wage labor for parts of the year, more commonly during the harvest period. Another common phrase was “I have an Albanian” (“έχω έναν Αλβανό”), which indicates a stable, but not permanent, work relationship throughout the year. Twenty years ago, when the large wave of Albanian migration to Greece occurred, this phrase would have been more interesting in terms of labor relations. With the establishment of the presence of Albanian workers over time, it is more or less safe to assume that Albanians would be employed in Etoloakarnania under wage labor conditions.

The only large producer (both in terms of farm size and in terms of labor power employed) I interviewed was L.N.. L.N., a former tobacco merchant, started an organic winery in 2000 on his 40 hectare farm. In addition to grapes, olives were also grown, and chicken, deer, and goats were kept on the farm. L.N. employs 20 wage-workers (5 on the farm, 5 on the winery, and the rest in distribution and accounting). The first striking thing in our interview was that L.N.’s business had only started selling its product two years ago, which meant a prolonged period without



any market revenues. Given the million-euro investment, such a path seemed almost incomprehensible, and definitely one that smaller farmers could not follow.

This is a money-losing business. The State doesn't support it. I am surviving because I have other businesses - and I went to university. Otherwise, how are you going to handle the banks that want double-digits for loans? How are you going to compete with the French, the Italians, the Austrians or the Swiss?

You cannot convince me that France has better climate for wine production: they allow sugar to be added to increase the alcohol degrees. Our biggest problem is the lack of education, the lack of know-how. There are no universities, there are no chemical labs, no people who are really specialized in this business. Most of them are opportunistic, trying to make a snatch. Oenologists with a tariff of 20,000 euros who consult 20 wineries each and make 400,000 a year. Yes, but on the day that the wine will have to come out, which of the 20 wineries are they going to go to?

A product always starts from its own region. That's why we are trying to be known starting locally and then to export a little, to the Netherlands, Belgium and soon to Canada. In order to compete, you have to advertise and sell at competitive prices. But here in Greece, there is so much misery. Especially in exhibitions abroad, you see that things are done without a plan. But this is no excuse either. I am tired of listening that "the State doesn't do anything' (L.N., interview 12/20/2010)

From the interviews and the data, it becomes clear that it is extremely difficult for small organic farmers to thrive. Farmers receive subsidies in order to switch to organic methods of production. Nevertheless, this apparent support is not enough to guarantee the successful transition to organic production. Farmers have to pay a

significant percentage of this support to certifiers; monopsonistic market conditions mean that they have to transfer part of the surplus they produce to the organic merchants through low farm gate prices. Just like conventional farmers, organic farmers face such high interest rates that is almost prohibitive for most of them to borrow money.

This situation of organic farmers can be thought of as a conflict over the transfers from the EU (which could be stemming either from the surplus or from the value of labor power) and the surplus that is produced by farmers (and their wives and occasional wage workers), when they actually produce organic commodities. Certifiers represent a major draw on the EU transfers, as their position as a necessary precondition for farmers' actually getting the transfer confers them significant power; in the absence of specialized extensions services, so do trained agronomists who would provide farmers with technical knowledge on organic production methods. Furthermore, when farmers actually produce organic commodities, merchants, banks, and even input providers (e.g. organic fertilizer providers) pose further demands on the surplus produced by organic farmers. Such demands on the farmers become much more apparent when the farmer is small.

How do farmers respond to such a situation? One way would be to form associations: such a move would not only diminish the transfer towards certifiers (since the latter offer discounts for collective certification). It would permit an easier transmission of knowledge on organic methods among farmers, as well as provide struggling farmers with much-needed emotional support. Associations could diminish the transfers towards merchants and input providers, because of the higher quantities of commodities sold or inputs procured. In addition to that, associations would provide farmers with easier access to credit for farm improvement or machinery purchases.

Another way that the farmers could respond to the pressure from merchant or finance capital would be to attempt to increase the surplus produced. Such an attempt

might include a change in the way surplus production is organized. Over the past 20 years, Greek agriculture has undergone a profound transformation from mostly family labor to the Albanian, Bulgarian, and more recently Pakistani immigrant labor (Louloudis et al., 2004; Gropas and Triandafyllidou, 2005; Kasimis and Papadopoulos, 2005; Lianos et al., 2008; Tolios, 2009). One could even argue that the subsidies from the European Union made this transition easier, since the farmer now had access to money with which to hire labor power. However, labor relations *per se* are not always capitalist. There is a wealth of news stories which show that immigrants are being employed under quasi-slave labor relations. By virtue of perpetuating the status of the “illegal” worker, the Greek state allows the immigrant land workers to fall prey to the profiteering of the agricultural “entrepreneurs”/traffickers. In a well-documented case, a fire had destroyed one of the camps where immigrant strawberry workers were kept under inhumane conditions in Nea Manolada, Ilia. In 2008, a newer story appearing in one of the most widely-circulating Greek newspapers revealed the existence of child labor and inhumane conditions in the same town (Daskalopoulou and Nodaros, 2008). Three years later (April 2011) it was revealed that Romanian workers had still been working in the strawberry fields of Nea Manolada in Ilia under captivity (tvxs, 2011; To Vima, 2011).

Racism as a phenomenon has a concrete economic function. The lower value of immigrant labor power has allowed Greek farmers not only to continue “unprofitable activities” (Louloudis et al., 2004), but to even gain advantage over their competitors. Hence, in the case of the Nea Manolada strawberry fields, the local enterprises have come to dominate 90% of the domestic market, while still exporting 70% of their production (Papantoniou-Frangouli, 2011). Furthermore, the news stories reveal a harmonic relationship between exploiters and local authorities. Withdrawing the wages of immigrant workers and reporting them to the police after the end of the

harvest is a common practice<sup>16</sup> (Papantoniou-Frangouli, 2011). The illegal immigrant is a modern “homo sacer” (set-apart man). He is guilty of a crime; he shall not be sacrificed, yet whoever kills him will not be guilty of sin (Agamben, 1998).

## 6.10 Discussion

Organic farming has no safeguards against this type of labor activity. In fact, as organic farms are larger in terms of size than conventional ones and require more labor per land size, it is likely that the temptation will exist to procure labor power through similar arrangements. Although I didn’t encounter such activities from the farmers I interviewed, there seems to be no systemic reason why organic farmers would not turn to such practices. IFOAM (the International Federation of Organic Agriculture Movements) includes fairness in its list of principles of organic agriculture.

“This principle emphasizes that those involved in organic agriculture should conduct human relationships in a manner that ensures fairness at all levels and to all parties - farmers, workers, processors, distributors, traders and consumers.... Fairness requires systems of production, distribution and trade that are open and equitable and account for real environmental and social costs” (IFOAM, 2009).

In spite of this inclusion, the actual certification process is not preoccupied with labor conditions. This is particularly troublesome, especially in the context of Greek agriculture where labor relations which were considered parochial have reappeared over the past 20 years. This is another instance where farmers organization could play a positive role. Farmers association would not only help their members resist more effectively the demands of certifiers, merchants, financial institutions, and input

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<sup>16</sup>This practice was also common with Albanian workers in Etoiakarnania in the 1990s, and waned only as Albanian workers established their presence in the area (B.T., interview 9/24).

providers and allowing farmers to retain a larger part of the produced surplus. A self-conscious movement of farmers associations could also self-regulate the practices of its members and secure high labor standards.

## CHAPTER 7

### CONCLUSION

In recent years, an increasing share of the population has come to the realization that our economic system compromises long-run sustainability. People often turn to the state, demanding that environmental regulation be implemented. Food and agriculture are especially contested terrains. This might be due to the fact that industrial agriculture not only challenges people's environmental sensibilities in their capacity as citizens, but also jeopardizes their health in their capacity as consumers. Even if people do not experience problems such as eutrophication or decreased biodiversity directly, they are exposed to health hazards because of industrial food production.

Organic farming can provide us with a solution to some of the problems created by industrial agriculture. It can decrease the pressure on ecosystems from fertilizer and pesticide use. It can help maintain biodiversity and landscapes in the countryside. Finally, it can contribute to decreased use of external inputs in agriculture, and thus help reverse climate change.

Beyond a tool for achieving environmental goals, organic farming was presented in the European Union as a mechanism to achieve socio-economic objectives. Organic farming practices would substitute labor for capital (e.g. manual weeding would replace pesticide application). Therefore, organic farming would generate employment opportunities for rural dwellers. Organic farming was presented as an appealing option especially for small farmers who had not fully transitioned to industrial methods of agriculture and who could now receive price premia for their niche products. Small

farmers would thus not only manage to resist pressures from their larger competitors more effectively, but also thrive.

My analysis of organic farming in Europe shows that the particular path of development of organic farming fails to fulfill many of these promises. As shown in chapter 5, environmental results are mixed. The growth of organic farming in different European countries seems to be associated with decreased rates of fertilizer application in the agricultural sectors of these countries; pesticide intensity however does not decrease in the countries where organic farming grows. Specialist farms hold the overwhelming majority of agricultural area under organic methods. Although discussions of biodiversity go beyond the scope of this study, this finding casts doubt on whether the present European model of organic farming represents a radically different model of sustainable agriculture.

While the environmental effects of the rise of organic farming are mixed, the socio-economic results are discouraging, as shown in chapter 4. My statistical analysis shows that organic farming has grown mostly in regions which are characterized by large average farm size. Thus, the association between small farm size and organic agriculture, often perceived as natural, becomes questionable. Furthermore, organic farming does not seem to generate positive employment results: I show that the rise in a region's share of organic agriculture is actually associated with decreased labor intensity in that region's agricultural sector.

As an impressive latecomer in organic farming, the Greek case study provides valuable insight into the phenomenon of the rise of organic farming. Although small farmers receive financial support by the state in order to transition to organic methods, they face a series of problems after that decision. Not only do they have to transfer a larger part of the subsidy they receive to organic certifiers than large farmers, but they also face significant pressures from organic merchants, input providers and financial institutions. With the help of the state limited to the subsidy and

without the creation of networks of producers and organic associations, it becomes more difficult for small farmers to transition to organic methods. Furthermore, small farmers are more likely to be discouraged and exit, leading to the absorption of their holdings by larger farms. This could offer an explanation as to why organic farms in Europe appear to be larger in terms of size and value than their conventional counterparts.

Organic farms are different from conventional farms in significant ways: they are larger, more likely to be corporate farms, and they paradoxically utilize less labor per unit of land. However, being significantly larger in terms of land size, they require more labor than could be satisfied through family labor. Wage labor is one way of satisfying increased labor requirements. Beyond allowing them to diversify their portfolio and to increase their long-run competitive position, subsidies and price premia could entice capital to enter specifically organic production in an accelerated pace. Furthermore, the increased presence of immigrants might provide capital with an increased availability of labor power in the countryside, made even cheaper and more docile by the status of “illegality”. The combination of these factors could allow capital to surpass some of the main obstacles that hindered its entry into European agriculture over the past 100 years, as we saw in chapter 2. Ironically, such a result would be achieved under the auspices of a Common Agricultural Policy that promises the exact opposite, namely the surpassing of industrial agriculture and the survival of the small farmer.

However, capitalist farming is only one among several options for European agriculture. Another option would be to follow forms of unfree labor relations, which have been reappearing in the countryside of different European countries over the past 20 years. In this context, it is shocking that organic farming, as an institution which promotes sustainability, does not have effective mechanisms against the implementation of highly exploitative structures of production.



The development of organic farming in Europe should be read as a cautionary tale. Policies similar to the ones that are used to support organic farming in the European Union are very likely to be attractive to policy makers, as their claim to be friendly to the environment has the potential of garnering public support. However, it is unlikely that such policies, which do not take into account the class relations of agriculture, would manage to allow rural residents to make a livelihood, let alone achieve more ambitious objectives, such as reversing trends of urbanization. By treating “organic” as a technical question of inputs used during the process of production, and by rendering ethical and social dimensions secondary, the policy makers have managed to create another profitable industry, a truly exciting development in times of falling rates of profits in other sectors.

Beyond being a cautionary tale, I believe that the story of organic farming in Europe also contains a map for the way forward. First of all, it provides a strong assertion for the shortcomings of individual responses to environmental problems. Ecological sustainability cannot be attained at the individual level. In order to achieve sustainable communities, it is necessary that we develop collective responses and new collective forms of production and consumption.

Furthermore, the story of organic farming has an important lesson for labor: exploitative structures are not the only way for organic farmers to survive or flourish. Farmers’ associations can play a progressive role in the realm of labor relations. Most organic farmers’ associations follow stricter environmental standards than what is mandated by the State. Similarly, (organic) farmers’ associations can stipulate high labor standards when the State fails to legislate or enforce those. Furthermore, associations can offer an alternative to an organization of farming along capitalist or other exploitative lines, as they provide organic farmers with the same services, and hence allow them to retain their “independence” and to realize larger parts of the surplus

they produce. This can be a first step towards creating new forms of commons, which will combine ecological sustainability with social justice and human dignity.

## BIBLIOGRAPHY

- Adaman, F. and P. Devine (1996). The economic calculation debate: lessons for socialists. *Cambridge Journal of Economics* 20, 523–537.
- Agamben, G. (1998). *Homo sacer: Sovereign Power and Bare Life*. Stanford University Press.
- Albrecht, H. (1974). Die Verbreitung von Neuerungen: der Diffusionsprozess. *Der Förderungsdienst* 22(2), 33–40.
- Allen, P. and M. Kovach (2000). The capitalist composition of organic: The potential of markets in fulfilling the promise of organic agriculture. *Agriculture and Human Values* 17, 221–232.
- Altieri, M. A. (1987). *Agroecology: The Scientific Basis of Alternative Agriculture*. Boulder, Colorado: Westview Press.
- Altieri, M. A. (2000). Ecological impacts of industrial agriculture and the possibilities for truly sustainable farming. In F. Magdoff, J. B. Foster, and F. H. Buttel (Eds.), *Hungry for Profit: The Agribusiness Threat to Farmers, Food, and the Environment*. New York: Monthly Review Press.
- Andersen, E., A. Henningsen, and J. Primdahl (2000). Denmark: implementation of new agri-environmental policy based on regulation 2078. In H. Buller, G. A. Wilson, and A. Holl (Eds.), *Agri-environmental policy in the European Union*. Aldershot: Ashgate.
- Andrees, B. (2008). Forced labour and trafficking in europe: how people are trapped in, live through and come out. *International Labour Office, Working Paper 57*.
- Atkinson, A. B., T. Piketty, and E. Saez (2011). Top incomes in the long run of history. *Journal of Economic Literature* 49(1), 3–71.
- Bartel-Kratochvil, R. and M. Schermer (2008). Regionale Vermarktung in Österreich. *Ökologie und Landbau* 147(3), 30–32.
- Bartell, T. (1975). Agrarian violence: A comparative analysis of recent farm movements in europe and north america. In *Paper presented at the Annual Meeting of the Rural Sociological Society (San Francisco, CA, August 21-24, 1975)*.
- Baylis, K., S. Peplow, G. Rausser, and L. Simon (2008). Agri-environmental policies in the EU and United States: A comparison. *Ecological Economics* 65, 753–764.

- Bello, W. and M. Baviera (2010). Food wars. In F. Magdoff and B. Tokar (Eds.), *Agriculture and Food in Crisis: Conflict, Resistance and Renewal*. New York, NY: Monthly Review Press.
- Bernard, H. R. (2006). *Research Methods in Anthropology: Qualitative and Quantitative Approaches*. Oxford: Altamira Press.
- Bernstein, H. (2010). *Class Dynamics of Agrarian Change*. Halifax: Fernwood Publishing.
- Bove, J. and F. Dufour (2002). *The World is not for sale: Farmers against Junk Food*. New York: Verso Books.
- Bowles, S. (2004). *Microeconomics: Behavior, Institutions, and Evolution*. Princeton: Princeton University Press.
- Boyce, J. K. (2002). *The Political Economy of the Environment*. Cheltenham, UK: Edward Elgar.
- Boyce, J. K. (2006). A future for small farms? Biodiversity and sustainable agriculture. In J. K. Boyce, S. Cullenberg, P. K. Pattanaik, and R. Pollin (Eds.), *Human Development in the Era of Globalization*. Northampton, MA: Edward Elgar.
- Brown, D. L. (2010). Rethinking the OECD's new rural demography. *Centre for Rural Economy Discussion Paper Series No. 26*.
- Buck, D., C. Getz, and J. Guthman (1997). From farm to table: The organic vegetable commodity chain of Northern California. *Sociologia Ruralis* 37(1), 3–20.
- Bukharin, N. and E. Preobrazhensky (1966). *The ABC of Communism: A popular explanation of the program of the Communist Party of Russia*. Ann Arbor, MI: The University of Michigan Press.
- Buller, H. and H. Brives (2000). France: farm production and rural product as key factors influencing agri-environmental policy. In H. Buller, G. A. Wilson, and A. Holl (Eds.), *Agri-environmental policy in the European Union*. Aldershot: Ashgate.
- Buller, H., G. A. Wilson, and A. Holl (2000). Introduction: the emergence of regulation 2078. In H. Buller, G. A. Wilson, and A. Holl (Eds.), *Agri-environmental policy in the European Union*. Aldershot: Ashgate.
- Campbell, H. and R. Liepins (2001). Naming organics: Understanding organic standards in New Zealand as a discursive field. *Sociologia Ruralis* 41(1), 21–39.
- Chayanov, A. (1966). *The Theory of Peasant Economy*. Homewood, IL: Richard D. Irwin, Inc.
- Chayanov, A. (1991). *The Theory of Peasant Co-operatives*. Columbus, OH: Ohio State University Press.

- Commission of the European Communities (1975). *Stocktaking of the Common Agricultural Policy*. Brussels: Commission of the Economic Communities.
- Conway, G. R. and J. N. Pretty (1991). *Unwelcome Harvest: Agriculture and Pollution*. Earthscan Publisher.
- Cooper, T., K. Hart, and D. Baldock (2009). The provision of public goods through agriculture in the European Union. Technical report, Report Prepared for DG Agriculture and Rural Development, Contract No. 30-CE-0233091/00-28, Institute for Environmental Policy: London.
- Council of the European Communities (1973). Declaration of the Council of the European Communities and of the representatives of the Governments of the Member States meeting in the Council of 22 November 1973 on the programme of action of the European Communities on the environment. In *Official Journal C112*, 20.12.73.
- Crotty, J. R. (1994). Are Keynesian Uncertainty and Macrotheory Compatible? Conventional Decision Making, Institutional Structures, and Conditional Stability in Keynesian Macromodels. *Unpublished manuscript*.
- Cullather, N. (2010). *The Hungry World: America's cold war battle against poverty in Asia*. Cambridge, MA: Harvard University Press.
- Culliney, T. W., D. Pimentel, and M. H. Pimentel (1993). Pesticides and natural toxicants in foods. In D. Pimentel and H. Lehman (Eds.), *The Pesticide Question: Environment, Economics, and Ethics*. New York: Chapman and Hall.
- Daly, H. E. (1999). *Ecological Economics and the Ecology of Economics*. Cheltenham, UK: Edward Elgar.
- Darnhofer, I. (2005). Organic farming and rural development: Some evidence from Austria. *Sociologia Ruralis* 45(4), 308–323.
- Darnhofer, I., W. Schneeberger, and B. Freyer (2005). Converting or not converting to organic farming in Austria: Farmer types and their rationale. *Agriculture and Human Values* 22(1), 39–52.
- Daskalopoulou, N. and M. Nodaros (2008). Strawberries and blood. *Epsilon March* 30.
- Deb, D. (2009). *Beyond Developmentality: Constructing Inclusive Freedom and Sustainability*. London: Earthscan.
- Dinda, S. (2004). Environmental Kuznets Curve hypothesis: A survey. *Ecological Economics* 49, 431–455.
- Djurfeldt, G. (1981). What happened to the agrarian bourgeoisie and rural proletariat under monopoly capitalism? Some hypotheses derived from the classics of Marxism on the agrarian question. *Acta Sociologica* 24(3), pp. 167–191.

- Dugger, C. W. (2007). Ending famine, simply by ignoring the experts. *The New York Times* December 2.
- Economakis, G. (2000). *Historical Modes of Production: Capitalist System and Agriculture*. Athens: Ellinika Grammata. IN GREEK.
- Edwards, C. A. (1993). The impact of pesticides on the environment. In D. Pimentel and H. Lehman (Eds.), *The Pesticide Question: Environment, Economics, and Ethics*. New York: Chapman and Hall.
- EL.STAT. (2011). Press release, July 22. Technical report, EL.STAT.
- Escobar, A. (1995). *Encountering Development: The making and unmaking of the Third World*. Princeton, NJ: Princeton University Press.
- European Commission (2009). Europe's agriculture and the Common Agricultural Policy (CAP) frequently asked questions. Technical report, Directorate-General for Agriculture and Rural Development.
- European Commission (2010, November). Environment: Commission urges Luxembourg to implement Court ruling on water pollution. Press Release.
- European Commission (1985). *Communication from the Commission to the Council and Parliament: Perspectives for the Common Agricultural Policy. COM(85) 333 Final, 15.07.85*. Luxembourg: Office for Official Publications of the European Communities.
- European Commission (1992). *Agriculture in Europe*. Luxembourg: Office for Official Publications of the European Communities.
- European Commission (2005). *Agri-Environment Measures: Overview on General Principles, Types of Measures and Applications*. Luxembourg: Directorate General for Agriculture and Rural Development. Office for Official Publications of the European Communities.
- European Commission (2006). *Rural Development Success Stories*. Luxembourg: Directorate General for Agriculture and Rural Development. Office for Official Publications of the European Communities.
- European Commission (2008). European Union: Public finance. Technical report, Luxembourg: Publications Office of the European Union, Luxembourg.
- European Commission (2009). EU budget 2008 financial report. Technical report, Luxembourg: Publications Office of the European Union, Luxembourg.
- European Commission (2010). EU budget 2009 financial report. Technical report, Luxembourg: Publications Office of the European Union, Luxembourg.

- European Communities (2000). *Farm structure - Historical results - Surveys from 1966/67 to 1997*. Luxembourg: Luxembourg: Office for Official Publications of the European Communities.
- European Network for Rural Development (2010). Public goods and public intervention in agriculture. Technical report, European Commission: Agriculture and Rural Development.
- European Parliament (1990). On the proposal from the Commission to the Council for a regulation on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs. report drawn up on behalf of the Committee on Agriculture, Fisheries and Rural Development. document a3-0311/90, 19.11.90. No. 3-401, 19.2.91, 76-78., European Parliament.
- European Parliament (1991). Debates of the European Parliament. no. 3-401, 19.2.91, pp. 76-78. Technical report, European Parliament.
- European Union (2006). Consolidated versions of the Treaty on European Union and of the Treaty establishing the European Community.
- Eurostat (2005). Organic farming in Europe. Technical report, Eurostat, Luxembourg.
- Eurostat (2007a). Different organic farming patterns within EU-25: An overview of the current situation. Technical report, Eurostat.
- Eurostat (2007b). *Regions in the European Union: Nomenclature of territorial units for statistics NUTS 2006 /EU-27*. Luxembourg: Office for Official Publications of the European Communities.
- Feder, G. and G. T. O'Mara (1981). Farm size and the diffusion of green revolution technology. *Economic Development and Cultural Change* 30(1), 59–76.
- Foster, J. B. (2000). *Marx's Ecology*. New York, NY: Monthly Review Press.
- Foster, J. B. and F. Magdoff (2000). Liebig, Marx, and the depletion of soil fertility: Relevance for today's agriculture. In F. Magdoff, J. B. Foster, and F. H. Buttel (Eds.), *Hungry for Profit: The Agribusiness Threat to Farmers, Food, and the Environment*. New York: Monthly Review Press.
- Garzon, I. (2006). *Reforming the Common Agricultural Policy: History of a Paradigm Change*. New York, NY: Palgrave Macmillan.
- Ghosh, J. (2010). The unnatural coupling: Food and global finance. *Journal of Agrarian Change* 10(1), 72–86.
- Gibson-Graham, J. (1996/2006a). *The End of Capitalism (As We Knew It)*. Minnesota, MN: University of Minnesota Press.



- Gibson-Graham, J. (2006b). *A Postcapitalist Politics*. Minnesota, MN: University of Minnesota Press.
- Githinji, M. w. and S. Cullenberg (2003). Deconstructing the peasantry: class and development in rural Kenya. *Critical Sociology* 29(1), 67–88.
- Goodman, D. and M. Redclift (1982). *From Peasant to Proletarian: Capitalist Development and Agrarian Transitions*. New York: St. Martin's Press.
- Government of Greece (2009). Government of Greece: Legal Gazette no. 2204 (in Greek). Technical report, Government of Greece: Legal Gazette.
- Grafen, A. and J. Schramek (2000). Germany: complex agri-environmental policy in a federal system. In H. Buller, G. A. Wilson, and A. Holl (Eds.), *Agri-environmental policy in the European Union*. Aldershot: Ashgate.
- Groier, M. and E. Loibl (2000). Austria: towards an environmentally sound agriculture. In H. Buller, G. A. Wilson, and A. Holl (Eds.), *Agri-environmental policy in the European Union*. Aldershot: Ashgate.
- Gropas, R. and A. Triandafyllidou (2005). Migration in Greece at a glance. Technical report, ELIAMEP.
- Grossman, G. M. and A. B. Krueger (1995). Economic growth and the environment. *The Quarterly Journal of Economics* 110(2), 353–377.
- Guthman, J. (1998). Regulating meaning, appropriating nature: The codification of California organic agriculture. *Antipode* 30(2), 135–154.
- Guthman, J. (2004). The trouble with organic 'lite' in California: a rejoinder to the 'conventionalisation' debate. *Sociologia Ruralis* 44(3), 301–316.
- Haas, P. M. (1992). Introduction: Epistemic communities and international policy coordination. *International Organization* 46(1), pp. 1–35.
- Hamilakis, Y. (2002). "The other Parthenon": Antiquity and national memory at Makronisos. *Journal of Modern Greek Studies* 20(2), 307–338.
- Hardt, M. and A. Negri (2009). *Commonwealth*. Cambridge, MA: Harvard University Press.
- Hart, K. and G. A. Wilson (2000). United Kingdom: from agri-environmental policy shaper to policy receiver? In H. Buller, G. A. Wilson, and A. Holl (Eds.), *Agri-environmental policy in the European Union*. Aldershot: Ashgate.
- Hobsbawm, E. (1996). *The Age of Extremes: A History of the World, 1914-1991*. New York: Vintage Books.
- Hoggart, K., H. Buller, and R. Black (1995). *Rural Europe: Identity and Change*. London: Arnold.



- IFOAM (2009). The principles of organic agriculture. Technical report, IFOAM.
- Ingersent, K. A. (1990). Agriculture in the Uruguay Round: A European perspective. *University of Minnesota, Institute of Agriculture, Forestry and Home Economics, Staff Paper Series P90-2*.
- Ingersent, K. A. and A. Rayner (1999). *Agricultural Policy in Western Europe and the United States*. Northampton, MA: Edward Elgar.
- Josling, T. (2009). Western Europe. In K. Anderson (Ed.), *Distortions to Agricultural Incentives: A global perspective, 1955-2007*. Washington, DC: Palgrave Macmillan and the World Bank.
- Kaltoft, P. (2001). Organic farming in late modernity: At the frontier of modernity or opposing modernity? *Sociologia Ruralis* 41(1), 146–158.
- Kasimis, C. and C. Kassimi (2004, June). Greece: A history of migration.
- Kasimis, C. and A. G. Papadopoulos (2005). The multifunctional role of migrants in the Greek countryside: Implications for the rural economy and society. *Journal of Ethnic and Migration Studies* 31(1), 99–127.
- Kathimerini (2010). The “bubble” of organic. (in Greek). *February 11*.
- Katzner, D. W. (2008). *An Introduction to the Economic Theory of Market Behavior: Microeconomics from a Walrasian Perspective*. Northampton, MA: Edward Elgar.
- Kautsky, K. (1988a). *The Agrarian Question. Volume 1*. London: Zwan Publications.
- Kautsky, K. (1988b). *The Agrarian Question. Volume 2*. London: Zwan Publications.
- Kitching, G. (1980). *Class and Economic Change in Kenya: The making of an African Petite-Bourgeoisie*. New Haven: Yale University Press.
- Knight, F. H. (1921). *Risk, Uncertainty, and Profit*. Boston, MA: Hart, Schaffner & Marx; Houghton Mifflin Co.
- Kommission (1968). *Memorandum zur Reform der Landwirtschaft in der Europäischen Wirtschaftsgemeinschaft. KOM(68) 1000, Teil A, 18.12.68*. Brüssel: Kommission der Europäischen Gemeinschaften.
- Kovel, J. (2007). *The enemy of Nature: The end of capitalism or the end of the world?* New York: Zed Books.
- Kummer, S. and C. R. Vogl (2009). Bäuerliche Experimente. Forschung ohne Wissenschaftler. *Ökologie & Landbau* 152(4), 54–56.
- Lebensministerium (1999). *Grüner Bericht 1998: Bericht über die Lage der österreichischen Landwirtschaft 1998*. Vienna, Austria: Bundesministerium für Land- und Forstwirtschaft.

- Lenin, V. (1974). *The Development of Capitalism in Russia*. Moscow: Prog.
- Lewontin, R. C. (2000). The maturing of capitalist agriculture: Farmer as proletarian. In F. Magdoff, J. B. Foster, and F. H. Buttel (Eds.), *Hungry for Profit: The Agribusiness Threat to Farmers, Food, and the Environment*. New York: Mo.
- Lianos, T. P., K. Kanellopoulos, M. Gregou, E. Gemi, and P. Papakonstantinou (2008, April). Estimation of the volume of foreigners living illegally in Greece.
- Liodakis, G. (1994). *Land rent, interest rates and agricultural prices: Economic aspects of the agrarian question*. Athens: Synchroni Epohi. IN GREEK.
- Loes, A.-K. and B. Nolting (2009). Organic school meal systems towards a more sustainable nutrition. *Agronomy Research 7 (Special Issue II)*, 647–653.
- Louloudis, L., N. Beopoulos, and G. Vlahos (2000). Greece: late implementation of agri-environmental policies. In H. Buller, G. A. Wilson, and A. Holl (Eds.), *Agri-environmental policy in the European Union*. Aldershot: Ashgate.
- Louloudis, L. and N. Maraveyas (1997). Farmers and agricultural policy in Greece since the accession to the European Union. *Sociologia Ruralis 37(2)*, 270–286.
- Louloudis, L., G. Vlahos, and Y. Theocharopoulos (2004). The dynamics of local survival in Greek LFAs. In F. Brouwer (Ed.), *Sustaining Agriculture and the Rural Environment: Governance, Policy and Multifunctionality*. Northampton, MA: Edward Elgar.
- Luxemburg, R. (2003). *The Accumulation of Capital*. New York, NY: Routledge Classics.
- Lynggaard, K. (2006). *The Common Agricultural Policy and Organic Farming: An Institutional Perspective on Continuity and Change*. Oxfordshire: CABI Publishing.
- Macours, K. and J. F. M. Swinnen (2002). Patterns of agrarian transition. *Economic Development and Cultural Change 50(2)*, pp. 365–394.
- Magdoff, F. and J. B. Foster (2011). *What every Environmentalist needs to know about Capitalism*. New York: Monthly Review Press.
- Magdoff, F. and B. Tokar (2010). Agriculture and food in crisis: An overview. In F. Magdoff and B. Tokar (Eds.), *Agriculture and Food in Crisis: Conflict, Resistance and Renewal*. New York, NY: Monthly Review Press.
- Marglin, S. A. (2008). *The Dismal Science: How Thinking Like an Economist Undermines Community*. Cambridge, MA: Harvard University Press.
- Marsden, T. (2003). *The Condition of Rural Sustainability*. Assen, The Netherlands: Royal Van Gorcum.

- Martinez-Alier, J., G. Munda, and J. O'Neill (1998). Weak comparability of values as a foundation for ecological economics. *Ecological Economics* 26(3), 277 – 286.
- Marx, K. (1967). *Capital, Vol. I*. New York: International Publishers.
- Marx, K. (1981). *Capital, Volume 3*. London: Penguin Books.
- Marx, K. and F. Engels (1969). *Selected Works, Vol. One*. Moscow: Progress Publishers.
- Mazower, M. (2000). Introduction. In M. Mazower (Ed.), *Reconstructing the Family, Nation, and State in Greece, 1943-1960*. Princeton: Princeton University Press.
- McMichael, P. (1994). Global restructuring: Some lines of inquiry. In P. McMichael (Ed.), *The Global Restructuring of Agro-Food Systems*. Ithaca, NY: Cornell University Press.
- McMichael, P. (2010). The world food crisis in historical perspective. In F. Magdoff and B. Tokar (Eds.), *Agriculture and Food in Crisis: Conflict, Resistance and Renewal*. New York, NY: Monthly Review Press.
- McNally, D. (1993). *Against the Market: Political Economy, Market Socialism and the Marxist Critique*. London: Verso.
- Michelsen, J. (2001a). Organic farming in a regulatory perspective. The Danish case. *Rural Sociology* 41(1), 62–84.
- Michelsen, J. (2001b). Recent development and political acceptance of organic farming in Europe. *Rural Sociology* 41(1), 3–20.
- Milestad, R., S. Kummer, and C. R. Vogl (2010). Building farm resilience through farmers' experimentation. In *9th European IFSA Symposium, 4-7 July 2010, Vienna (Austria)*.
- Milward, A. (1992). *The European Rescue of the Nation-State*. London: Routledge.
- Nelson, E. (1983). Capitalism in Western Agriculture: A Comment. *Acta Sociologica* 26(3/4), pp. 281–285.
- Nigg, D. and M. Schermer (2005). Von der Vision zur Richtlinie - die Konventionalisierung und Instrumentalisierung des Biologischen Landbaus in Österreich. Technical report, Zentrum für Berglandwirtschaft, Universität Innsbruck.
- Nolting, B. (Ed.) (2009). *Organising supply chains of organic products for Italian school meals The case of the province and of the city of Piacenza: Providing organic school food for youths in Europe Policy strategies, certification and supply chain management in Denmark, Finland, Italy and Norway. Proceedings of the iPOPYP seminar held at the BioFach February 20th 2009 in Nuremberg, Germany.*

- Norgaard, R. B. (1994). *Development Betrayed: The end of progress and a coevolutionary revisioning of the future*. London: Routledge.
- Olson, M. (1965). *The Logic of Collective Action: Public Goods and the Theory of Groups*. Cambridge, Mass: Harvard University Press.
- Ostrom, E. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge, MA: Cambridge University Press.
- Oude Lansink, A., K. Pietola, and S. Bckman (2002). Efficiency and productivity of conventional and organic farms in Finland 1994-1997. *European Review of Agricultural Economics* 29(1), 51-65.
- Padel, S. (2001). Conversion to organic farming: A typical example of the diffusion of an innovation? *Sociologia Ruralis* 41(1), 40-61.
- Panitsidis, G. (1992). *Approaching the Class Structure of our Agricultural Economy*. Athens: Synchroni Epohi. IN GREEK.
- Papantoniou-Frangouli, M. (2011). Trafficking for labour in Greece. Technical report, Report prepared in the frame of the project: Combating trafficking in human beings - going beyond. Coordinated by CCME.
- Parker, D. C. and D. K. Munroe (2007). The geography of market failure: Edge-effect externalities and the location and production patterns of organic farming. *Ecological Economics* 60(4), 821 - 833.
- PASEGES (2011). The situation of the Greek agricultural sector. Technical report, PASEGES.
- Patnaik, U. (1971). Capitalist development in agriculture. *Economic and Political Weekly* 39, 123-130.
- Patronis, V. (2002). Between state and market forces: Greek agricultural cooperative organizations in transition period.
- Patronis, V. and K. Mavreas (2004). Agricultural cooperative organizations in Greece throughout the 20th century: A critical overview. *Journal of Rural Cooperation* 32(1), 51-62.
- Poulantzas, N. (2001). *State, Power, Socialism*. New York: Verso Books.
- Pugliese, P. (2001). Organic farming and sustainable rural development: A multi-faceted and promising convergence. *Sociologia Ruralis* 41(1), 112-130.
- Raikes, P. (1982). Djurfeldt's 'what happened to the agrarian bourgeoisie and rural proletariat under monopoly capitalism?' A Comment. *Acta Sociologica* 25(2), pp. 159-165.

- Ramey, E. A. (2012). *Agriculture and Class: Contradictions of Midwestern Family Farms Across the Twentieth Century*. Open access dissertations. paper 517., University of Massachusetts Amherst.
- Redclift, M. (1987). *Sustainable Development: Exploring the Contradictions*. London: Routledge.
- Reed, M. (2002). Rebels from the crown down: The organic movements revolt against agricultural biotechnology. *Science as Culture* 11(4), 481–504.
- Resnick, S. A. and R. D. Wolff (1987). *Knowledge and Class: A Marxian Critique of Political Economy*. Chicago and London: University of Chicago Press.
- Sampson, G. P. and A. J. Yeats (1977, February). An evaluation of the Common Agricultural Policy as a barrier facing agricultural exports to the European Economic Community. *American Journal of Agricultural Economics* 59(1), 99–106.
- Schermer, M. (2003). *Bauer - Power - Bioregion: Das Potenzial des biologischen Landbaues für die ländliche Regionalentwicklung in Österreich*. Ph. D. thesis, Leopold Franzens Universität Innsbruck.
- Schermer, M. (2008). Organic policy in Austria: greening and greenwashing. *International Journal of Agricultural Resources, Governance and Ecology* 7(1/2), 40–50.
- Scrieci, S. S. (2011). *Socioeconomic and Environmental Impacts on Agriculture in the New Europe: Post-Communist transition and accession to the European Union*. London: Routledge.
- Shackle, G. (1991). *Epistemics and Economics: A Critique of Economic Doctrines*. Transaction Publishers.
- Shelley, T. (2007). *Exploited: Migrant Labour in the New Global Economy*. London: Zed Books.
- Shucksmith, M., K. Thomson, and D. Roberts (2005). *The CAP and the Regions: The Territorial Impact of the Common Agricultural Policy*. Oxfordshire: CABI Publishing.
- Stolze, M. and N. Lampkin (2009). Policy for organic farming: Rationale and concepts. *Food Policy* 34, 237–244.
- Swinnen, J. F. (2009). Reforms, globalization, and endogenous agricultural structures. *Agricultural Economics* 40, 719–732.
- The Economist (2003, July). Farm labour gang ways: A flexible rural labour market has its drawbacks.
- Thorner, A. (1982). Semi-Feudalism or Capitalism? Contemporary Debate on Classes and Modes of Production in India. *Economic and Political Weekly* 17(51), pp. 2061–2066.

- Thorner, D. (1969). Capitalist Farming in India. *Economic and Political Weekly* 4(52), pp. A211–A212.
- To Vima (2011). Strawberries and bullies in Manolada. *April* 20.
- Tolios, G. (2009). *Environment and Agricultural Policy under Globalization: An Alternative Strategy for Food Sovereignty*. Athens: Kapsimi. IN GREEK.
- Torras, M. and J. K. Boyce (1998). Income, inequality and pollution: a reassessment of the Environmental Kuznets Curve. *Ecological Economics* 25, 147–160.
- Tovey, H. (1997). Food, environmentalism and rural sociology: On the organic farming movement in Ireland. *Sociologia Ruralis* 37(1), 21–37.
- Tracy, M. (1989). *Government and Agriculture in Western Europe 1880-1988* (Third ed.). Hemel Hempstead: Harvester Wheatsheaf.
- tvxs (2011, April). Arrests for human trafficking in Ilia.
- Tzouvelekas, V., C. J. Pantzios, and C. Fotopoulos (2001). Economic efficiency in organic farming: Evidence from cotton farms in Viotia, Greece. *Journal of Agricultural and Applied Economics* 33(1), 35–48.
- van der Ploeg, J. D. (2009). *The New Peasantries: Struggles for Autonomy and Sustainability in an Era of Empire and Globalization*. London: Earthscan.
- van der Ploeg, J. D., A. Long, and J. Banks (2002). Introduction. In J. D. van der Ploeg, A. Long, and J. Banks (Eds.), *Living Countrysides: Rural Development Processes in Europe: The State of the Art*. Doetinchem, The Netherlands: Elsevier.
- Varoufakis, Y. (2011). *The Global Minotaur: America, the True Origins of the Financial Crisis and the Future of the World Economy*. London: Zed Books.
- Verdorfer, R. (2008). Bio-Regionen: Eine Chance für die nachhaltige Regionentwicklung? *Naturschutzblatt* 2, 9–11.
- Vergopoulos, C. (1975). *The Agrarian Question in Greece: The Social Integration of Agriculture*. Athens: Exantas. IN GREEK.
- Vergopoulos, K. and S. Amin (1975). *Capitalisme difforme: essai sur l'agriculture dans le capitalisme*. Athens: Papazisis. IN GREEK.
- Vlachos, G. (2007). CAP's fight against desertification. In L. Louloudis, G. Vlachos, and S. Christopoulos (Eds.), *Rural Environment Protection Policies*. Athens: Agricultural University of Athens.
- Vlachou, A. (2004). Capitalism and ecological sustainability: the shaping of environmental policies. *Review of International Political Economy* 11(5), 926–952.



- Vlachou, A. (2012). The Greek Economy in Turmoil. *Rethinking Marxism* 24(2), 171–200.
- Vogl, C. and I. Darnhofer (2004). Organic agriculture in Austria. *The Organic Standard* 34, 2–5.
- Weis, T. (2007). *The Global Food Economy: The Battle for the Future of Farming*. London: Zed Books.
- Willer, H. (2010). Organic agriculture world-wide: Current statistics. In H. Willer and L. Kilcher (Eds.), *The World of Organic Agriculture. Statistics and Emerging Trends 2010*. Bonn: IFOAM, Bonn and FiBL, Frick.
- Winter, M. (1982). What happened to the agrarian bourgeoisie and rural proletariat under monopoly capitalism? A reply to Göran Djurfeldt. *Acta Sociologica* 25(2), pp. 147–157.
- Woods, M. (2003). Deconstructing rural protest: the emergence of a new social movement. *Journal of Rural Studies* 19(3), 309 – 325.
- Wunscher, T., S. Engel, and S. Wunder (2008). Spatial targeting of payments for environmental services: A tool for boosting conservation benefits. *Ecological Economics* 65, 822–833.
- Zizek, S. (2009). *First as Tragedy, Then as Farce*. London: Verso.