ORGANIC FARMING TAKE OFF IN PORTUGAL

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Abstract

Organic farming is booming in Portugal. CAP subsidies are the main reason beyond this boom. Converted farms are still a small proportion of the country's total farms. They are mostly extensive (low input) Mediterranean farms located in the mainland interior and less developed regions. Large farms and highly educated farmers are the ones converting. Olive oil is the main organic production.

The market for organic products in Portugal is segmented and distribution channels are narrow. In general, people are not aware of organic products and/or lack the money to pay the required price premium. However, a segment of highly educated consumers with above average income do exist.

Two private bodies provide certification for organic products under the supervision of the Government. Several national and regional Associations provide technical support, training and education to farmers but they face many barriers. The lack of public environmental education and the lack of research on the sector constitute other important institutional barriers to the Portuguese organic sector development.

Introduction

This paper is a descriptive report on organic farming take off in Portugal. Based on a literature review, and on own research of Américo M.S. Carvalho Mendes, we provide an overview of the organic sector in Portugal, covering its current structure and recent development across different regions and different levels of the food chain, as well as the policy and institutional environment and barriers it currently faces.[2]

The paper is sructered in five sections, with the current introductory one. In the next section, we address organic farms, products, and farmers. After we have a section on organic markets, products, and consumers. Then a section on the policy and institutional environment. Each of these three sections finishes with a brief critical

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discussion on the evidence described, on the main barriers finded, and on the current policies effects. In the last section of the paper we summarize our main findings.

Organic Farms, Products, and Farmers

Area and Number of Farms Organic and In-Conversion

Organic farming was initiated in Portugal by a small group of pioonners after the 1974 democratic revolution. However, the sector has significantly developed only in the last decade, especially in the years of 1998 and 1999, with the conversion of conventional farmers of olives, pastures, and extensive field crops. In spite of the "boom" in organic farming in recent years, it still represents a very small proportion of the total agricultural area and total number of farmers: 763 farms and 47867 ha, that is respectively **0.2% and 1.3% of the number and agricultural area** reported by the 1999 Farm Census for mainland Portugal (Table 1). However, data referring to the year 2000 shows a total area in conversion of 31568 ha, which means that the growth trend in organic farmland in recent years will be maintained in the near future (Table 2).

Table 1: Area and number of organic farms in Mainland Portugal

Year	Ha	Number	Area per farm (ha)
1985		5	
1986		8	
1987		15	
1988		25	
1989		32	
1990		38	
1991		53	
1992		84	
1993		137	
1994	7178	258	27.82
1995	10192	349	29.20
1996	9180	240	38.25
1997	11295	278	40.63
1998	24197	564	42.90
1999	45934	750	61.25
2000	47867	763	62.74

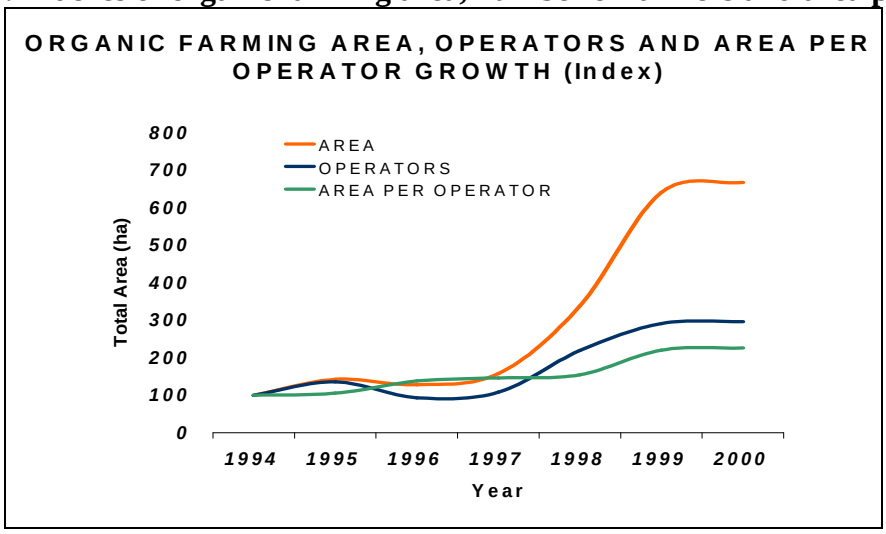
Source: Silva (2000); DGDR.

Table 2: Area and number of farms in conversion in Mainland Portugal (hectares)

Regions	Organic Farmers Number	Area in the 1st Year of Conversion	Area in the 2nd Year of Conversion	Area in the 3rd Year of Conversion	Organic Farming Area	Total area (Conversion + Organic)
E D M	8	30	4	174	55	263
T M	138	673	751	453	3631	5508
B L	13	3	14	0	84	101
B I	93	2729	7466	680	3443	14318
R O	30	150	244	42	191	627
AL	316	2231	9621	6168	4610	22630
AG	22	113	10	12	418	553
TOTAL	620	5929	18110	7529	12432	44000

Source: SOCERT, 2001

Graph 1: Indexes of organic farming area, number of farmers and area per farm



Source: Table1 and Table 2, base 100 in 1994.

Geographical Distribution

Mainland Portugal encompasses seven agricultural regions. Four of these regions (EDM, BL, RO and ALG) are located in the lowlands along the Atlantic coast. The other three (TM, BI, and ALE) occupy the interior and more hilly areas up to the eastern border with Spain. The coastal regions are densely populated, local economies economies are well developed, and conventional farming is more active and intensive. As opposed, the interior regions are low populated, local economies are lagging, and conventional farming is mostly extensive (low input). In the year 2000, the interior regions together represented 93% of the total organic farmland. This situation is not likely to change in the near future (Table2, Table 3).

Table 3: Geographical distribution of the organic farming area in Mainland Portugal

Agricultural regions	Location	1994		2000		Variation 1994-00
		Ha	%	Ha	%	
Trás-os-Montes	**Interior Regions**	3323	36%	6126	12%	184.35%
Beira Interior		1136	12%	15711	32%	1383.01%
Alentejo		1192	22%	24571	49%	2061.33%
Entre-Douro-e-Minho	**Coastal regions**	42	0%	51	0%	121.43%
Beira Litoral		177	2%	103	0%	-41.81%
Ribatejo Oeste		177	2%	615	1%	347.46%
Algarve		330	4%	690	1%	209.09%
TOTAL		7178	100%	47867	100%	566.9%

Source: DGDR, 2001

Land use and Output

The data we present here shows that from 1994 to the year 2000 the area of organic field crops grew up by a factor of 17.4, the area of organic pastures by a factor of 14.8 and the area of organic olive groves by a factor of 4.3. By the end of 2000 olive groves, pastures and field crops represented 92% of the agricultural area of organic farms (Table 4).

Table 4: Area of organic farming activities in Mainland Portugal in 1994 and 2000

Activities	1994		2000		Variation 1994-00
	ha	%	ha	%	
Olive groves	3781.3	53%	20193	42%	434%
Pastures	765.4	11%	12098	25%	1481%
Field crops	645.4	9%	11897	25%	1743%
Orchards	1199.4	17%	2615	5%	118%
Vineyards	601.6	8%	868	2%	44%
Vegetables	161.9	2%	176	0%	9%
Aromatic plants	23.1	0%	18	0%	-22%
TOTAL		100%		100%	

Source: DGDR, 2001

In 2000, organic oliviculture stands well ahead in importance of the other activities with 6% of total mailand agricultural area in this activity, followed by orchards with 1.7%. The other activities areas are all below 1% (Table 5).

Table 5: Representativeness of organic farming in total land area per activity in 2000 in Mainland Portugal

Activities	Total land area in the whole farm sector (ha)	Land area in the organic sector	
		ha	% of total
Olive groves	335028	20193	6.0
Pastures	1331033	12098	0.9
Field crops*	1151646	11897	1.0
Orchards	156248	2615	1.7
Vineyards	211821	868	0.4
Vegetables	73801	176	0.2

* Data refer to 1997. The source is INE (1999).
Sources: INE 1999; INE-RGA 2000; DGDR 2001

For the organic sector output data are scarcer than for the land areas. We only managed to get estimates for 1999 and projections for 2000 and 2001 (Ramos, 2000). Throughout the whole period considered, olive groves have kept their first position in organic farming land use and possibly also in value of production. However, these and the other permanent activities are loosing their shares in favour of temporary and extendive activities, more subsidized by the Common Agricultural Policy (CAP), as pastures and field crops (Table 6).

Table 6: Organic farming outputs in Portugal in 1999 and projections for 2000 and 2001

Organic Products	Outputs (Metric Tons)	Estimated Outputs (Metric Tons)	
	1999	2000	2001
Olive oil	6654.95	8650.14	11245.18
Arable crops & pastures	27109.29	35242.08	45814.70
Fresh & dry fruit	13572.00	17643.60	22936.69
Table grapes & wine	7099.63	9463.52	12302.58
Vegetables	7860.53	10218.69	13284.29
Aromatic herbs	408.20	530.66	689.86

Unit: Equivalent Metric Tones.
Sources: DGDR; CEMASE (1996); AGROBIO, in Ramos (2000).

Organic Farmers Socio-Economic Charecteristics

When compared to the typical conventional farmer, the typical organic farmer is younger and more educated (Carvalho, 2000; Cristovão *et al*, 2000). Also, it was found that the larger group amongst organic farmers is the group of the college graduates. This

finding was confirmed twice, in 1995 and 1998, through two independent surveys (CEMASE, 1996; Carvalho, 2000). Organic college graduated farmers in this last survey reached 52%. This is very significant when compared with the 3% of college graduates among Portuguese farmers reported by the 1999 Agricultural Census (INE, 2000), even admitting a response bias favouring the more educated (Table 7).

Table 7: Distribution of organic farmers by educational levels in 1995 and 1998 (%)

Educational levels	1995	1998
Can read and write		1.1
Elementary school	16	8.9
Junior high school	2	5.6
High school	25	32.2
Polytechnic school	17	13.3
College	40	38.9
Number of respondents	100	90

Sources: CEMASE (1996); Carvalho (2000)

Concerning motivation to convert to organic farming, the two mentioned independent surveys (CEMASE, 1996; Carvalho, 2000) indicate two main motivations: to make healthier products and to protect the environment (Table 8).

Table 8: Motivations to convert to organic farming (%)*

Motivations	1995	1998
To make healthier products	49	77.8
To protect the environment	53	71.1
Market opportunities	17	24.4
Looking for innovation		23.3
Availability of incentives	29	23.3
Others		4.4
Number of respondents	100	90

* Percentages don't add up to 100% due to multiple choices.
Sources: CEMASE (1996); Carvalho (2000).

Facts, Hypotheses, Barriers, and Policies

From the above description the reader can take that low input extensive large Mediterranean farms, located in the interior mainland Portugal, are the ones converting to organic production. The main product is olive oil. However, field crops (as cereals) and pastures are increasing their share, which can be attributed mainly to CAP subsidies. Organic farmers besides having larger farms are younger and well more educated than the average Portuguese farmer. Their stated motivations to convert are the production of healthier products and the protection of the environment. However, most of the farmers came into de sector in the 90's, with CAP subsidies.

The conversion of the above large farms is not surprising. These farms are located in less productive areas, where competition from intensive conventional farming is lower. There activities are easily convertible to organic standards. CAP structure of incentives helps conversion in these areas. Farm size lowers transaction costs to apply for incentives, including the organic incentives.

The relative importance of olive oil production is also not surprising. Converted farms were already operating traditional oliviculture. Converting traditional oliviculture to organic standards has low costs. Also, organic food labels match well with the image of olive oil as an healthier and natural product, at least for some segments of consumers. These consumers have willingness to pay a price premium. Together with CAP

subsidies, they help to rescue the value of an activity in distress, through a differentiation strategy.

Based on Américo M.S. Carvalho Mendes research and on the data presented here, we can distinguish three groups of organic farmers: a group of "pioneers" with a life time commitment that were in business before CAP subsidies; a group of young farmers, environmentally concerned, that look for technical and commercial innovations; a group of "newcomers" mostly motivated by the incentive schemes. According to the the two mentioned independent surveys (CEMASE, 1996; Carvalho, 2000), it seems that the first two groups take the lead over the third in terms of number of farmers, although the representativeness of the third might be larger in terms of area. Many of the extensive farmers that entered the business in the 90's are in this third group.

Finally, the CAP structure of incentives seems to be more suited to promote the conversion of extensive farms in Less Favored Areas (LFA) than to cope with the pressure of modern evolution and intensive agriculture on the highly populated littoral areas. In Portugal, conversion to organic farming is contributing more to mitigate LFA abandonmement than to, for instance, reduce the pressure of intensive agriculture on water resources in the coastal areas.

Markets for Organic Products

Overview of the Market Structure

The national market for organic food is competitively imperfect. The number of suppliers and buyers is still relatively small. In many cases the prices for organic products are fixed (by contract between the farmer and the institutional buyer or by the specialized shops) for a long period, which results in a sluggish response of prices to seasonal fluctuations in supply and demand. Furthermore, the market is segmented in several local markets. The quantities marketed are still too small and almost all absorbed by specific channels. For instance, on-farm sales, sales to specific national and/or international wholesalers or retailers. High transportation costs impede producers to move between local markets according to price differences (CEMASE, 1997; Olivença *et al*., undated).

Demand

The levels of demand are above supply. Growth is happening in both demand and supply but at a slow pace (Firmino, undated). However, national demand doesn't match national supply, as CAP supply side subsidies, which are not oriented to support the most demanded organic products, determine the latter. Lack of awareness of the properties of organic products has been pointed out as one of the reasons for the slow demand growth of the sector. Another reason has to do with the relatively high prices of these products with respect to the purchasing power of large groups of the population. Nevertheless organic food consumption has been growing possibly in response to growing health concerns (Ramos, 2000) and almost certainly as a result of the growth in real income per capita. Environmental concerns have also been pointed as a motivation for organic products consumption (Firmino, 1996).

Distribution Channels of Farm Products

The development of distribution channels so that producers can be more effectively and efficiently organized to respond and to promote market growth is a challenge. According to Carvalho (2000) 1998 survey: 41.3% of the organic farmers inquired reported to sell their products in conventional markets without organic labels. Thus, organic producers still have major problems in reaching consumers willing to pay for their products, and *vice versa*. According to a CEMASE (1996) survey, for a representative sample of housewives across the country, aware about organic products but who never tried it, more than half (58%) said never had come across such products in their shopping trips.

Table 9: Distribution channels of organic products in 1998

Type of channel	Nº	%
Conventional Market	33	41.3
Organic Products Market		
- At the farm	24	30.0
- Distributor	24	30.0
- Big wholesalers	6	7.5
- Specialized stores	10	12.5
- Processor	21	26.3
- Consumers Cooperative	14	17.5
- Other	15	18.8
Number of farmers surveyed	90	

Source: Carvalho, 1998

Penetration of organic food in supermarkets would be one of the best ways to reach out to consumers. Due probably to the low levels of production, supermarkets and other larger distributers still play a minor role in organic food marketing. In the 1998 survey mentioned before (Carvalho, 2000), only 7.5% of the farmers reported to sell their products as organic to supermarkets. This is certainly an impeding factor of market growth given the fact that supermarkets have, by far, the major share in food distribution in Portugal.

Detailed data on the distribution channels by product are only available for December 1996 in a CEMASE (1997) study. This is reported in table 10. We provide next some further information for three distinct product groups: fruits and vegetables, olive oil and wine, and dietetic products.

Table 10: Distribution channels by type of organic product in 1996

Product group	Channels					
	Direct sales to consumer	Specialised organic food shops	Specialised shops (bakers and butchers)	General stores incl. super/hyper markets	Export	Total
Olive oil	1%	-	-	74%	25%	100%
Potatoes	-	-	-	20%	80%	100%
Vegetables	1%	0-1%	1-5%	20%	75%	100%
Fruit (incl. Nuts)	0-1%	0-1%	1-5%	> 90%		100%
Wine	10%	25%		40%	25%	100%

Source: CEMASE (1996)

a) Fruits & Vegetables

A single association of producers, located in the Algarve, exports a small share of organic horticultural products into the UK. Internal distribution of organic products is done by the producers themselves in the case of consumer cooperatives, and by two distribution firms with headquarters near Lisbon ("Urze" & "Provida"). Door-to-door sales are made by the producers and by a single company located in the Algarve. Sales

points for organic fruit & horticultural are mostly concentrated in Lisbon (Ramos, 2000).

b) Olive Oil & Wine

Marketing of olive oil and wine is done by producers and by producers' co-operatives. Olive oil is mainly sold directly to the retailers or end-consumers, or is directly exported – with no middlemen. Farmers also sell olive oil to certified stores (where other organic products are sold), to food and nutrition stores, and to major supermarkets. Wine is mainly sold to consumers at farm gate or directly exported. Producers also sell the wine to certified stores (where other organic products are sold), to other food stores, to restaurants, to major supermarkets and through Port Wine companies in one case (Cristovão *et al.*, 2000; Ramos, 2000).

c) Dietetic products

National companies, related to the area of dietetic products, presently import most of the products sold at retail. Only one company and one cooperative dedicate themselves to the importation of organic products exclusively (Ramos, 2000).

Recent data provided by the Ministry of Agriculture and reported in Cristovão *et al.* (2000) concerning mainland Portugal, show that there are 42 operators processing a variety of organic products. It is important to underline the following aspects: 18 of these operators (about 43%) deal with olives, producing and selling olive oil – most of them (9) work in the region of Trás-os-Montes and Alto Douro or nearby; 9 operators (about 22%) work with grapes, producing raisins (2), table wine (3) or Port wine (4) – two of the last ones are located in Trás-os-Montes and Alto Douro, and a total of seven work in the northern part of Portugal; 5 operators are not specialised and process, package and sell a variety of organic products; 4 operators are dealing with aromatic plants, and they are all located in southern Portugal; the remaining 5 operators are all specialised in some products, like cosmetics (3), bread (2) and wild berries (1).

Olive oil & wine are the most important organic processed items. Olive oil is the most important, although figures are not available. Olive oil producers produce small amounts. Among the organic farmers interviewed in 1998, 41 percent had a total capacity of less then 1.000 litres per year, and 87 percent had a total capacity of less than 5.000 litres per year (Firmino, 1999). In total, in 1999, the processors produced 43.152 litters of olive oil as well as 4.261 kg of preserved olives, a special type called "Negrinha do Freixo" (Cristovão *et al.*, 2000).

Wine is the second most important. Twelve percent of the interviewed farmers (Firmino, 1999) produced an average of more than 20.000 hectolitres of wine per year. Some farms produce five times more, mainly for export (the Quinta da Comenda, for instance). In total, in 1999, the wine processors produced 393.000 litters of wine, using the organically raised grapes. Different types of wine are produced, according to the region: Douro wine, Port wine, Vinho Verde wine, and Lafões wine. Presently, these wines are not certified as organic, as the EU and IVV - the Portuguese Institute for Wine and Vineyards - regulations do not consider them, due to the fact that potassium metasulphite is used during wine processing. To stress the organic origin of such wines producers have to underline in the labels that their product is made of organically produced grapes (Cristovão *et al.*, 2000; Firmino, 1999).

Distributors and Wholesalers

Wholesalers - which represent a sales channel used by 35 % of farmers (CEMASE, 1997) - move fresh and processed food products from producers or processors to retailers. Their major functions are to purchase, transport, assemble, store, and distribute food to their customers. As commercialisation initiatives and institutions

are quite new in Portugal, so also are wholesalers. We were able to identify the following two: Urze, an organised group of producers located in Montijo, which sells organic products (mainly horticultural and dried fruits) directly to consumers and to supermarkets, mainly in the great Lisbon area; Provida, a company located in Sintra, near Lisbon, created in 1984, which stores and distributes organic food products, mainly to supermarkets and specialist shops (Ramos, 2000).

Retailers

From the wholesalers/retailers who marketed organic products 83% sold directly to the final consumer; 17 % sold to supermarkets; 11% sold to hypermarkets; 6% sold to grocery stores, and 6% sold to stores of natural products, which gives an idea about the small length of the Portuguese supply chains (CEMASE, 1997). This is reinforced by the fact that some wholesalers (for instance Urze) and retailers (for instance Biocoop and Terra Sana) are producers or consumers cooperatives, which reduces even more the real length of the supply chain, and makes available cheaper and fresher products to the final consumers (Olivença, undated).

Price Premia for Organic Food

Available data on price premia for organic food are very scarce and fragmentary. Table 11 reports what we could find on this matter. In spite of the wide variation in the figures of the different sources, there is a consumer price premia for most organic products that is above 25%.

Table 11: Consumer price premia* (ACRESCENTAR CARLOS MARQUES)

Products	CEMASE (1995)	Carvalho (1998)	Martins (2001)
Olive oil	30%	97.8%	
Potatoes	Up to 200%		
Carrots		88.8%	825%
Savoy cabbage		32.21%	140%
Green beans		3.7%	8.9%
Vegetables	25%-200%	111%	
Fruit (incl. nuts)	5%		
Courgette		27.5%	
Broccoli		31.3%	
Melon		377.8%	
Peppers		190%	
Butter			150%
Black Beans			26.1%
Rice			53.1%
Cauliflower			63.3%
Wine	25%		

* (Consumer price of organic food – Consumer price of conventional food) / Consumer price of conventional food

Sources: CEMASE 1996, Carvalho 1998 , Martins 2001

According to Marques *et al.* (1998) market study conducted in 1997, the average Portuguese consumer price premium for organic olive oil is negative. However, the authors have found a segment of more educated and wealthy consumers whose price premium is positive. The market study of CEMASE (1996) shows that in 1995 organic consumers were more price sensitive than quality sensitive.

Consumer Awareness and Attitudes Towards Organic Products

In what concerns consumer attitudes to our knowledge the only published data available for the Portuguese market comes from CEMASE (1996) and Marques *et al.* (1998) surveys.

In CEMASE (1996) a sample of 900 Portuguese housewives across the country were systematically interviewed on organic products consumption. The awareness of organic products was shown to be very low as approximately two thirds of the sample never heard about organic products. For the ones acquainted three quarters never tried the product. However, amongst this latter group a significant proportion (58%) declared that never came across the products in their shopping trips, being apparent here more the lack of opportunity than the lack of a positive attitude towards the products. Amongst the consumers that had already tried organic products, the great majority (91%) was pleased with the experience, and willing to try again, at affordable prices. The main features perceived on organic products were: - absence of chemicals, contribution of organic farming to soil preservation, better taste, and healthier characteristics. This shows that one is facing a sample of above average educated consumers. When asked about the product types they were more likely to associate with organic products, by large fruits and vegetables came first (55 and 51% of the respondents, respectively), then meat was also mentioned (in this case only by 13% of the respondents), and dairy products and olive oil by very few respondents (5% and 1%, respectively).

In Marques *et al.* (1998) a sample of 600 individuals, leaving in 58 different locations, with different ages, education, income, and social status, were interviewed on Trás-os-Montes olive oil consumption, including organic olive oil. Only 29% of the individuals were aware of organic products, and only 7% were aware of organic olive oil. The main reason being that they never came across these products in their shopping trips. Faced with diferent types of Trás-os-Montes Olive oil, about 12,5% preferred the organic to the conventional. On average, these 12,5% leaved in locations with more than 2000 inhabitants, had a minimum of eleven years of school, acquired their olive oil in supermarkets and hipermarkets, paid attention to olive oil acidity, used olive oil much more than the average population, and had between 30 and 54 years.

Facts, Hypotheses, Barriers, and Policies

The market for organic products is imperfect and/or segmented. Production is too small and locations are distant which results in very high costs of transportation. The length of the supply chain is small.

National demand for organic products is narrow and doesn't match supply. The latter is determined by CAP subsidies. Distribution channels are also narrow. Producers have major problems in reaching urban consumers that are willing to pay for their products. Consumers have difficulties in finding the products in their shopping trips.

Due to EU and national regulations on processing, processed wine is not considered organic but merely wine produced with organic grapes.

Price premia vary widely according to the sources. This can be the result of a segmented market. Observed price premia lie for most of the products above 25%. However, the Portuguese average consumer is willing to pay a price premium for organic olive oil that is negative. Nonetheless, a segment of urban consumers, more educated, and wealthy, is willing to pay a positive price premium for organic olive oil. Thus, we hypothesise that observed price premia refer to an elite of consumers. These price premia should not be interpreted as the willingness to pay for organic products of the average Portuguese consumer.

Policy and Institutional Environment

Public Policy Instruments

Besides certification rules, the major public policy instruments targeting organic farming in Portugal are the agri-environmental measures co-funded by the EU. Previously these measures were under Reg. 2078/92. Now they are under Reg. 1257/99 of Agenda 2000. For the horizon 2000-2006, the agri-environmental measures, together with other CAP-Reform accompanying measures (afforestation and early retirement) and with the Less Favoured Areas (LFA) payments, are programmed in the national Rural Development Plan (RURIS). With Agenda 2000, the LFA payments started to be financed by the EAGGF guarantee section and oriented to reward low input farming systems. To have access to LFA payments farmers must adopt Best Management Practices (BMP). Environmental services provided by organic farmers go beyond these BMP requirements. Agri-environmental payments are modulated according to the land area of each organic farming activity. Specific support to organic farming is provided by the agri-environmental measures under the ruris section on Environmental, Soil, and Water Protection and Improvement. However, organic farmers can also apply for complementary support under other sections of the RURIS, such as the section on Soil Improvement/Erosion Prevention, or the section on Reduction of Water Pollution by Agrochemicals (Nitrates). On the modulated agri-environmental payments for each farm organic activity, the reader is referred to Portaria N.º 475/2001 of May 5, 2001 (Diário da República I Série B N.º 108, 10.05.2001).

Certification Schemes

The Ministry of Agriculture is the public agency more directly responsible for setting and supervising the certification rules and other public regulations concerning organic farming. Two private bodies carry out certification: SOCERT, since 1995, and SATIVA, since 1999. The rules that apply in Portugal concerning organic farming certification were first set for crops in line with EEC Reg. 2092/91 and further amendments. The rules for livestock production were set in the year 2000 in line with EU Reg. 1804/99.

Farmers' Collective Organizations

Organic farmers associative movement has started in 1985 with the establishment of AGROBIO, the first national association. This association has a very considerable history in the development of the organic sector in Portugal, namely in the areas of information, training, technical support, market promotion and public policy advice. Up to 1995 AGROBIO also had a role in certification which was then passed to SOCERT, in line with the new regulations. After AGROBIO, several regional associations as DA TERRA (?), AJAMPS (Madeira), ARABBI (BI), NATURA (Azores), SALVA (southern Portugal), and AABTM (TM) were created, and recently a second national association (BIO-ANA) also appeared.

Farmers' Education, Training, and Advisory Services

At the secondary level of education, organic farming is addressed as an example of sustainable activity in the context of environmental education. At higher levels of education, organic farming is presently more accepted than it was in 1987, when this topic was included in the "Rural Geography" curriculum at the New University of

Lisbon, Department of Geography and Regional Planning. Interest in organic farming is visible in new courses just emerging such as "Engineering of Biological Production", a 5-year BA programme starting this academic year (2000/2001) in the Colllege of Biotechnology of the Catholic University at Caldas da Rainha, and "Biotechnology of Natural Products", a 4-year BA programme organised by the Independent University at Lisbon, wich includes a course on organic farming during the third semester. This is also the case with the "Agricultural Engineering" programme taught in the Politechnic Institute at Castelo Branco.

Short training programmes on organic farming are also offered by several institutions, AGROBIO being the key player. The Ministry of Agriculture also offers or supports courses in this area. These courses are mandatory for those wishing to become organic farmers. Recently, a group of northern Portugal farmers has organized some courses on bio-dynamic farming with the participation of international experts.

Technical support to organic producers is provided mostly by the organic farmers' associations at the regional and local level. National associations as AGROBIO are more focused on technical training. The Ministry of Agriculture and its regional offices have "very little or no staff technically equipped to provide assistance to organic farmers" (Cristóvão *et al.*, 2000), and to farmers in general.

Consumers' Information and Education

Consumers' information and education on environmental-friendly agricultural production methods is quite limited, despite the recognition by the Portuguese Constitution and the Law of Consumer Protection of five major consumer rights: right to health and safety protection, right to economic protection, right to damage repair, right to information and education, right to representation and consultation. Some institutions have developed efforts in this direction but the number of information and education campaigns directed to consumers is largely insufficient. There is no specific course about environmental issues at the secondary level. Environmental education is integrated in different courses (Cristóvão *et al.*, 2000). Outside the formal educational system, AGROBIO has been one of the institutions more active in disseminating information about organic farming and organic food. The two consumer rights associations existing in the country (DECO and APDC) play a useful role in promoting the agenda of food quality, but without specific attention to organic food so far.

Research

Research about organic farming in Portugal is as fledgling as the economy of the sector, or even lagging. Américo M.S. Carvalho Mendes (1998) inquiry for the FAIR project as well as Carvalho (2000) identified only a few isolated research projects. Firmino (1999) wrote that "[in Portugal] research keeps ignoring organic farming", mentioning its lack as a constraint in the development of the sector. Cristóvão *et al.* (2000) concluded that a permanent commitment to research in the field is inexistent, as no institution elects research on organic farming as a first priority. With the exception of two projects in which the Catholic University at Oporto was and is involved (the FAIR project, in 2000, and the Conversion project, currently ongoing) all the other projects are essentially national or regional without concerted action with foreign institutions.

Table 12: Institutions and ongoing research projects in Organic Farming in 2000

Institution(s)	Project(s)

University of Trás-os-Montes e Alto Douro, Politechnic Institute of Bragança, Regional Directorate for Agriculture of Trás-os-Montes, National Agronomic Station, and AGROBIO	Organic Olive Production in Trás-os-Montes
Portuguese Catholic University (Oporto) – Faculty of Economics and Management	Effects of the CAP-reform and possible further developments on organic farming in the EU
New University of Lisbon – Faculty of Social and Human Sciences	Studies on the geographical and social aspects of organic farming and sustainable rural development
University of Madeira with other institutions in Madeira	Research on composting
Regional Directorate for Agriculture of Algarve	Research on the organic production of strawberries
University of Azores – Department of Agricultural Sciences	Research on the organic production of pineapple, tea, fruits and vegetables
Regional Directorate for Agriculture of Beira Litoral	Research on the organic production of potatoes
Technical University of Lisbon – Institute of Agronomy	Studies on the socio-economic aspects of organic farming

Source: Cristóvão et al. *(2000).Hypotheses, barriers, policies*

Facts, Hypotheses, Barriers, and Policies

Agri-environmental payments supporting organic farming are programmed in Portugal under the RURIS. Certification is provided by two private bodies (SOCERT and SATIVA) under the supervision of the Ministry of Agriculture. Many organic farmers associations exist, two national as AGROBIO and BIO-ANA, and other regional as DA TERRA, AJAMPS, ARABBI, NATURA, SALVA, and AABTM. This variety of organizations in a still very small sector can be explained by the already mentioned structure of the population of organic farmers: “pioneers”, “young innovative”, and “rent seekers”.

Insufficient technical assistance to farmers, well supported by appropriated research institutions, is certainly one of the major barriers to the Portuguese organic sector development. Another important barrier is the lack of consumers education on the environmental positive effects of organic farming.

Conclusions

The Portuguese organic farming sector didn't gain yet enough critical mass to impose its agenda on the public policy and on the marketing strategies of big food distributors and manufacturers. It is also barely present in the agronomic and rural development teaching and research agenda. In these conditions the current growth in organic farming in the country is mostly sustained by the EU co-funded incentive schemes. The hope is that this critical mass can be reached while the current incentive schemes are still in place.

However, for organic farming to have a sustainable future in Portugal much more should be done in terms of linking producers, distributors and consumers, and in terms of research, training and technical support to farmers and other operators. Organic farmers isolated or scattered through different types of associations and views of the world cannot accomplish such a task. Public policy makers should have a catalyzing role in here helping to promote the necessary articulation between the main stakeholders

that should be involved in organic farming development. This can be done through the participatory preparation and effective implementation of a National Action Plan with a medium and long run horizon; reaching beyond the current EU supported incentive schemes, and relying as much as possible on national and international partnerships able to generate competitive advantages for the sector. Certainly farmers but also food distributors and consumers should be major stakeholders in this process. Another indispensable piece in this action plan should be the research and educational system in order to fill in the huge gap in research, training and technical advice in a way that should be adapted to the needs and opportunities of organic farming in a southern Europe setting.

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