

Economic performance and profitability of agricultural holdings in Inner Areas

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ABSTRACT

The National Strategy for Inner Areas was launched by the Italian Government in 2014 to improve the quantity and quality of services (education, health and mobility) in these areas and to promote development projects enhancing the natural and cultural heritage and local production chains. To fulfil the strategy, specific funds have been provided to the Italian Regions and Autonomous Provinces. The Strategy highlights some critical elements and in particular the negative variation in Utilized Agricultural Area (UAA) and number of agricultural holdings. Despite the general abandonment of farmland, the performance and profitability of some agricultural systems in Inner Areas are comparable with those located in the Centres.

This paper analyses the economic results of the holdings surveyed through the Italian Farm Accountancy Data Network (FADN) during the period 2012-2014 and belonging to four Types of Farming: cereals, oilseed and protection crops (COP), viticulture, fruit sector, livestock. Holdings have been classified following the same criteria as the National Strategy in order to compare the performance and profitability of agriculture in Inner Areas and Centres. The main instrument through which the comparison is made is the Income Statement, a part of the Balance Sheet used in the assessment of holding profitability. The economic analysis is conducted at a subnational level (NUTS level 1) considering five macro-regions: North-West, North-East, Central Italy, South Italy and Islands. The paper highlights the difference in the most important budgetary outcomes and in a set of selected income indicators related to production factors (land and labour).

INTRODUCTION

The National Strategy for Inner Areas has been developed in Italy since 2012 with the aim of improving the quality of life and the economic well-being of people living in isolated and scarcely populated areas and to invert the demographic trend. Inner areas are defined as those areas far away from large and medium-size urban centres and related infrastructures. Essential services (healthcare, education and transport) are concentrated in urban centres and distance affects the quality of life and welfare of inner areas inhabitants. Despite this, Inner Areas have important environmental resources and a high diversification of activities as a result of the dynamics of different development paths and strategies. Natural resources include water resources, forests, natural and human landscapes, cultural resources and agricultural systems. Agriculture and agri-food systems, in particular, are considered as key factors in the development of Inner Areas and

their promotion is an important strategic element. According to an analysis based on the Italian Trade Chambers Association (Infocamere) database, almost 43% of municipalities in the Centres (service centres and belt areas) are specialized in the primary sector while this percentage rises to almost 73% in Inner Areas (Barca et al., 2014). There has been a greater tendency towards a more widespread agricultural specialization than the average in Southern Italian Inner Areas (Abruzzo, Molise, Campania, Basilicata, Sicily, Sardinia) than in Central and Northern Italy. Despite the relative importance of agriculture in many Regions, a comparison between the 1982 and 2010 Census highlights a decrease in the extension of the Utilized Agricultural Area (UAA) and number of holdings. However, the presence of agricultural systems with good performance in terms of productivity and profitability can be observed and considered as strategic in the development of the specific districts.

The accounting analysis of specific Type of Farming based on the Italian Farm Accountancy Data Network (FADN), permits costs, revenues and profits of agricultural holdings to be estimated. In FADN all the holdings are geo-referenced and this makes their classification possible on the basis of the same criteria as those applied in the Strategy. FADN data have been used for several territorial analyses (Terluin et al., 1995; Stolbova and Hlavsa, 2008; Marongiu and Cesaro, 2010; Kempena et al., 2011) but there are no specific studies based on an accounting analysis specifically for agricultural holdings located in Inner Areas.

The aim of this paper is to give a general overview on the economic results in four important Types of Farming (cereals, oilseed and protection crops - COP, viticulture, fruit sector and livestock) surveyed by the Italian FADN during the period 2012-2014. FADN is an important source of microeconomic data based on bookkeeping principles and gathers accountancy data from EU

agricultural holdings every year. The comparison is made on the basis of the economic results accounted in the Income Statement and assessing the profitability and productivity of the considered agricultural systems. Even if most structural and economic indexes are lower in Inner Areas (especially those related to work), the productivity per hectare is sometimes similar, emphasising a comparable competitiveness and economic performance.

The Strategy for Inner Areas and the classification of Italian territory in terms of “marginality” (distance from health care and education structures) is described in the first paragraph together with an analysis of the different importance of agriculture in Inner Areas and Centres. In the second paragraph, the structural characteristics of four Types of Farming, selected on the basis of FADN results for the 3-year period 2012-2014 are presented, while the economic analysis is the main focus of the third paragraph. The performance and profitability (in terms of costs, revenues and economic indexes) of the holdings located in Inner Areas and Centres are compared on the basis of the Income Statement elaboration, as provided by the Italian FADN.

In the final paragraph, some concluding remarks are provided.

THE STRATEGY FOR INNER AREAS AND THE IMPORTANCE OF AGRICULTURE

The Strategy for Inner Areas was launched in 2014 in a document drafted by the Italian Department of Development and Economic Cohesion as not just a structural development policy but also a new way to recognize rural deprivation (Barca et al., 2014). Its aim is to improve the quality of life and economic well-being of people living in isolated and scarcely populated areas through interconnected projects focused on selected fields of intervention and priorities.

The identification of Inner Areas is based on a polycentric consideration of the Italian territory, characterized by a network of municipalities and aggregation of municipalities (*Service Provision Centres*) which areas with different levels of spatial remoteness gravitate around (Barca et al., 2014). The distance between these areas and the urban centres limits citizens' access to essential services affecting their quality of life and level of social inclusion. The classification focuses on marginality in terms of distance from health care and education structures (Higgs and White, 1997). Following this criteria, the Italian territory has been mapped identifying six classes (Figure 1):

- A. Single-municipality service centres
- B. Multi-municipality service centres
- C. Belt areas (up 20 minutes from the centres)
- D. Intermediate areas (from 20 to 40 minutes)
- E. Peripheral areas (from 40 to 75 minutes)
- F. Ultra-peripheral areas (over 75 minutes)

Figure 1: Classification of Italian Territory according to the Strategy for Inner Areas



Source: Agency for Territorial Cohesion, 2014

Inner Areas are identified by grouping the intermediate, peripheral and ultra-peripheral areas. They include 51.1% of Italian municipalities, 22.5% of the national population and 59.8% of the national territory.

Since the late 1970s, Inner Areas have been affected by a negative demographic trend (-8.1% in peripheral areas and -5.3% in ultra-

peripheral areas during the period 1971-2011), an increase in the number of elderly people and an increasing migration flow. This has resulted in a change in the use and destination of the land. The consequent loss of active protection and increased hydrogeological risk are considered among the worrying phenomenon that could affect these areas.

Agriculture plays an important role in Inner Areas, even if a comparison between the results of the Agricultural Censuses 1982-2010 highlights a general decline in the Utilised Agricultural Area (UAA) and number of holdings and an increase in wooded lands. Table 1 shows the distribution of agricultural land, holdings and forests in all six classes identified by the Strategy.

Table 1– Distribution of UAA and holdings in Centres and Inner Areas.

	Agricultural holdings (n.)	UAA - Utilized Agricultural Area (ha)	Forested area (ha)	Agricultural holdings (%)	UAA (%)	Forested area (%)	UAA average (ha)
Centres							
A - Single-municipality service centres	186,241	1,442,531	516,343	24.1	25.5	18.4	7.7
B - Multi-municipality service centres	48,695	265,107	181,276	6.3	4.7	6.5	5.4
C - Belt areas	537,506	3,942,653	2,107,700	69.6	69.8	75.1	7.3
Inner areas							
D - Intermediate areas	495,058	3,642,737	3,329,240	58.4	50.6	43.6	7.4
E - Remote areas	295,131	2,744,535	3,222,034	34.8	38.1	42.2	9.3
F - Ultra remote areas	58,192	817,474	1,084,743	6.9	11.3	14.2	14.0
Total	1,620,823	12,855,038	10,441,336	100	100	100	7.9
Total Centres	772,442	5,650,291	2,805,319	47.7	44.0	26.9	7.3
Total Inner Areas	848,381	7,204,747	7,636,017	52.3	56.0	73.1	8.5

Source: Agency for Territorial Cohesion; Agricultural Census 2010.

In terms of land area and number of holdings, agricultural activities seem to be more important in Inner Areas, where 56.0% of UAA and 52.3% of holdings are concentrated, mainly in Intermediate and Remote areas. In the Centres, UAA and holdings are concentrated mainly in Belt Areas (more than 69.0% of UAA and holdings in the Centres). As stated in another analysis (Osti, 2016), not all rural areas are marginalized and peri-urban areas could be associated with the idea of urban farming, the characteristics of which differ from the agricultural systems in remote areas, not included in the urban networks.

According to the results of an analysis performed using the Italian Land Use Inventory (Marchetti et al., 2016), in 2008 almost 5.1 million hectares in Inner Areas were covered by arable land, 1.6 million by orchards, vineyards and nurseries, 1.5 million by natural grassland and pastures and 8.7 million by forests and other wooded lands. More than 70% of forests in Inner Areas are in protected areas (Carlucci and Lucatelli, 2013). Forests in Inner Areas give an important contribution to the richness of natural assets, being important not only for the production of timber but also for the provision of ecosystem services (natural landscapes, water resources, protected areas, etc.).

DESCRIPTION OF FADN SAMPLE

As previously stated the analysis of the economic characteristics of agricultural holdings in Inner Areas has been based on the elaboration of the Italian FADN (Farm Accountancy Data Network). FADN is a European system of sample surveys conducted every year to collect accountancy data from agricultural holdings, with the aim of monitoring the income and business activities of the EU agricultural system. FADN is the only source of microeconomic data based on harmonized bookkeeping

principles. In order to reflect the farming diversity and heterogeneity of FADN's field of observation, the Liaison Agency (responsible for the FADN survey in each Member State) selects the stratified sample on the basis of three criteria: Region, Type of Farming and Economic Size. The Type of Farming is defined in terms of the relative importance of the different activities on the farm, measured as a proportion of each activity's Standard Output on the farm's total Standard Output¹. Each Type of Farming is further broken down into different types with a more accurate level of detail. Not all agricultural holdings are included in the FADN sample but just those which, due to their economic size, are considered as "commercial". This threshold differs in the Member States: in Italy only holdings with a Standard Output equal to or greater than 8,000 € are taken into account.

In this paper, all the holdings have been classified following the same criteria as that used for the Strategy for Inner Areas. The analysis is based on a 3-year period (2012, 2013 and 2014) and the source of data is the on-line FADN Database, where all the structural and economic results are gathered every year. Table 2 shows the distribution of holdings and UAA between Centres and Inner Areas. In the 3-year period, an average of 10,537 holdings per year have been surveyed by FADN. Similarly to what is stated in Table 1 on the basis of the Agricultural Census results, agricultural lands and holdings are more or less equally shared, given that 49.0% of holdings and 52.6% of UAA are located in Inner Areas. The largest part of holdings surveyed by FADN in

¹ The Standard Output of an agricultural product (crop or livestock) is the average monetary value of the output at farm-gate price in euros per hectare or head of livestock.

Centres is concentrated in Belt Areas, while the survey in Inner Areas involves mainly Intermediate and Remote Areas.

The average size is not very different: in the Centres it is equal to 32.3 hectares while in Inner Areas it rises to 37.3 hectares. Instead, the type of farm in which a forested area is combined with the agricultural one, is concentrated mainly in Inner Areas (69.3% of forested areas).

Table 2 - Number of holdings and UAA of FADN sample in Centres and Inner Areas

	Agricultural holdings (n.)	UAA - Utilized Agricultural Area (ha)	Forested area (ha)	Agricultural holdings (%)	UAA (%)	Forested area (%)	UAA average (ha)
Centres							
A - Single-municipality service centres	1,278	46,945	3,012	23.8	27.0	31.3	36.7
B - Multi-municipality service centres	263	6,016	734	4.9	3.5	7.6	22.8
C - Belt areas	3,830	120,702	5,889	71.3	69.5	61.1	31.5
Total Centres	5,372	173,662	9,635	51.0	47.4	30.7	32.3
Inner areas							
D - Intermediate areas	3,149	103,444	11,797	61.0	53.7	54.2	32.9
E - Remote areas	1,678	69,494	8,499	32.5	36.0	39.1	41.4
F - Ultra remote areas	338	19,837	1,461	6.6	10.3	6.7	58.6
Total Inner Areas	5,165	192,775	21,757	49.0	52.6	69.3	37.3
Total	10,537	366,438	31,392				34.8

Source: Elaboration on the on-line FADN Database (2012-2014)

As previously stated, every holding is classified in a different Type of Farming according to the value of Standard Output. Four Types of Farming are included in the analysis as the most representative in Inner Areas in terms of number of holdings and UAA:

- Specialist field crops: specialist cereals, oilseed and protection crops (COP), excluding rice
- Specialist permanent crops: vineyards (quality wine)
- Specialist permanent crops: fresh fruits (other than citrus)
- Specialist grazing livestock: dairy sector (milk production).

Table 3 shows number of holdings and their average size in Centres and Inner Areas for each of the five Italian macro-regions (NUTS level 1).

Table 3 - Number of farms and average size in the selected Type of Farming per macro-region

	Specialist COP (other than rice)		Specialist vineyards (Quality Wine)		Specialist fresh fruits (other than citrus)		Specialist dairy (milk)	
	Centres	Inner Areas	Centres	Inner Areas	Centres	Inner Areas	Centres	Inner Areas
	Number							
North-East	590	165	778	307	426	337	437	609
North-West	532	158	432	299	127	77	522	397
Central Italy	395	363	250	211	40	57	164	146
South Italy	157	558	271	193	160	177	156	487
Islands	18	61	37	78	9	38	94	76
	UAA (ha)							
North-East	40.4	45.0	15.7	9.5	13.0	6.1	50.9	26.3
North-West	46.8	22.3	9.6	11.1	18.5	10.9	65.1	59.9
Central Italy	59.4	52.2	28.4	22.3	7.7	14.6	43.7	46.3
South Italy	37.0	42.4	15.3	11.9	11.7	8.2	40.2	27.9
Islands	37.8	61.0	31.5	55.8	6.3	12.8	42.4	56.2

Source: Italian on-line FADN Database (2012-2014)

ECONOMIC CHARACTERISTICS OF AGRICULTURAL HOLDINGS IN INNER AREAS

The performance and profitability of the holdings is compared on the basis of the Balance Sheet elaboration, and in particular the Income Statement. The Income Statement (or Profit and Loss Statement) is one of the most important statements used by accountants in the analysis of the profitability of a holding or company during a given period (in general one year). It shows revenues, expenses, gains and losses incurred by the holding. The Income Statement format varies according to the complexity of the activities. In this paper, the scheme is the same as that provided by the Italian FADN: it takes into account revenues and expenses for primary and complementary activities, subsidies from the Common Agricultural Policy (1st and 2nd Pillar) or other sources (national and regional). The scheme starts from the Total Revenues and, by subtracting the different cost components, leads to the determination of the Net Income (or Net Loss). There are important accounting aggregates in the scheme that allow to make preliminary evaluations on the holding management (Table 4):

- Total Revenues (TR): include the sale of goods and services, European subsidies and revenues from other gainful activities
- Current Costs (CC): include the expenses for production inputs during the accounting year (seeds and seedlings, fertilizers, crop protection products, feedstuffs, etc.), other costs (processing, commercialization, general expenses) and farming overheads (insurance, veterinary expenses, etc.);
- Added Value: is the gross profit, calculated as the difference between the TR and the CC, it gives initial information about the production results, before the deduction of structural and labour costs

- Net Income (NI): is the final result of the farm management and includes all the items coming from the whole activity (financial and extraordinary management, other public subsidies).

Accounting aggregates are expressed in euro per hectare, except those related to the holdings specialized in milk production, calculated for every livestock unit (LSU; Total revenues, Current costs, Feedstuffs, Added Value and Net Income). LSU are calculated applying to the average number of animals reared in the farm, a coefficient related to the category of animal.

Table 4: Economic results of different Types of Farming in Centres and Inner Areas (€/ha)

	Specialist COP (other than rice)		Specialist vineyards (Quality Wine)		Specialist fresh fruits (other than citrus)		Specialist dairy (milk)	
	Centres	Inner Areas	Centres	Inner Areas	Centres	Inner Areas	Centres	Inner Areas
	Total revenues: €/ha						€/LSU	
North-East	2,075	2,316	11,012	12,027	12,156	22,727	2,730	2,851
North-West	2,395	2,395	13,580	11,004	10,162	10,111	2,279	2,312
Central Italy	1,650	1,550	7,347	5,595	5,028	5,125	2,158	2,571
South Italy	1,873	1,490	5,123	5,973	8,170	6,132	2,206	2,150
Islands	1,047	1,190	3,974	4,000	6,108	4,135	2,465	1,920
	Subsidies (EU and not EU; €/ha)							
North-East	395	414	237	302	585	1,232	669	781
North-West	451	480	491	482	638	603	825	725
Central Italy	408	461	397	381	268	350	465	400
South Italy	449	407	279	316	205	335	421	342
Islands	309	302	264	214	172	203	915	305
	Other gainful activities (€/ha)							
North-East	66	169	303	478	253	598	135	189
North-West	57	18	262	507	21	386	153	422
Central Italy	96	55	764	183	11	237	225	425

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South Italy	70	34	104	50	26	113	37	49
Islands	0	85	0	13	7	12	2	1
	Current Costs: €ha						€LSU	
North-East	1,073	1,111	3,464	3,847	3,804	5,260	1,366	1,436
North-West	1,101	1,102	4,023	2,970	2,994	2,627	958	817
Central Italy	746	643	2,263	1,911	1,668	1,552	994	949
South Italy	737	647	1,440	1,496	2,423	1,787	1,016	911
Islands	497	535	958	901	1,861	1,528	1,100	784
	Fertilizers and crop protection products (€ha)							
North-East	354	370	806	848	1,380	1,494	197	68
North-West	350	278	793	702	967	791	159	58
Central Italy	221	181	386	339	602	233	314	99
South Italy	185	180	511	584	958	745	244	184
Islands	170	172	252	202	609	505	370	68
	Feedstuffs (€LSU)							
North-East	-	-	-	-	-	-	715	713
North-West	-	-	-	-	-	-	471	369
Central Italy	-	-	-	-	-	-	423	410
South Italy	-	-	-	-	-	-	553	432
Islands	-	-	-	-	-	-	613	380
	Added Value (€ha)						€LSU	
North-East	1,002	1,205	7,548	8,180	8,352	17,467	1,364	1,416
North-West	1,294	1,293	9,557	8,034	7,169	7,484	1,322	1,495
Central Italy	904	907	5,084	3,684	3,360	3,573	1,164	1,622
South Italy	1,136	843	3,684	4,478	5,747	4,345	1,190	1,239
Islands	549	654	3,016	3,099	4,247	2,606	1,366	1,136
	Net Income (€ha)						€LSU	
North-East	524	656	4,826	5,321	4,859	11,719	902	907
North-West	581	447	6,807	6,118	4,997	5,338	975	1,300
Central Italy	546	570	2,917	2,092	1,845	2,255	666	1,222
South Italy	762	615	2,084	3,256	3,277	2,345	744	840
Islands	465	355	1,885	1,804	2,011	1,275	1,063	801

Source: elaboration on Italian on-line FADN Database (2012-2014)

The economic performance of agricultural holdings in Inner Areas and Centres is not the same. The total revenues per hectare are, in general, lower in Inner Areas, pointing out the more difficult production and market conditions. The fresh fruit sector in North-East Italy is the exception: the high values of total revenues derive mainly from the apple production district of Trentino Alto Adige, characterized by high yields and an efficient market organization (Marongiu, 2013). A deeper analysis focused just on apple production highlights the greater competitiveness of holdings located in Inner Areas: average yield is 38.6 tons/ha (with peaks of more 60.0 tons/ha in Trentino Alto Adige) and gross margin per hectare is 14,187 €/ha. In the Centres, the yield is 33.3 tons/ha and gross margin is 10,856 €/ha.

The production of quality wine is another important agricultural system in Inner Areas: 43.1% of UAA covered by vineyards for quality wine is located in these areas. Concerning the total revenues per hectare, values are similar in holdings located in South Italy and the Islands while in North-West and Central Italy, revenues are higher in Centres. Only in the North-East viticulture for quality wine seems to guarantee higher revenues in Inner Areas. In all cases, the structure of costs (in general higher in Centres) leads to a very competitive Net Income per hectare, highlighting the importance of this sector in the agricultural system of Inner Areas, in every macro-region considered in the analysis. Small variations in terms of total revenues per hectare are found in the holdings specialized in milk production: in every macro-region the value in Inner Areas is not so different from the Centres, except for the South of Italy, where the values are lower. Greatest differences are observed in the costs per livestock unit. Current costs, including feedstuffs, are in general lower in Inner Areas, in particular in the Islands, characterized by grazed pasture. The animal density (Table 5) is, in general, lower in Inner Areas, except for holdings in the

South of Italy, where animal density is quite similar (in particular, the value is influenced by the raising of buffaloes in Campania, in intensive farming systems). In terms of Net Income per livestock unit, the results show the competitiveness of holdings located in Inner Areas, which performance are similar or higher than those observed for the Centres. A low value of Net Income per LSU is calculated for Islands, where the different animal density in Inner Areas (2.0 LSU/ha) and in Centres (5.4 LSU/ha) reflects a different intensity of dairy systems.

Another interesting point emerging from the analysis is the relative importance of the other gainful activities² (OGA). In particular the share of these revenues on the total farm revenues is higher in the Inner Areas, especially in holdings specialized in fresh fruits and dairy farming (all the macro-regions). Holdings specialized in viticulture for quality wine have an important income from OGA in the Inner Areas of Northern Italy.

This is an important parameter, especially in the context of income diversification, identified as one of the solutions proposed by the Strategy to revitalize the territories. Diversification can be explained on the basis of internal and external characteristics. External determinants are often linked to the location of the agricultural holding, which involves a different degree of rurality depending on the distance from urban centres. Studies have found that there is less diversification in less favoured areas but, at the same time, more service-related diversification (e.g. agri-tourism) in environmentally attractive locations (Sharpley and Vass, 2006),

² Include all activities other than farm work, directly related to the holding and having an economic impact on the holding. In these activities, either the resources of the holding (area, buildings, machinery, agricultural produce, etc.) or the products of the holdings are used.

where the natural beauty of the landscape can enhance opportunities for diversification. According to some studies based on the Italian FADN (Dries et al., 2012), when a farm location is in the vicinity of an urban area, the likelihood of observing income diversification is positive while the effect is negative for agricultural, structural and environmental diversification. This is plausible, given that urbanization can pose constraints on a farmer willing to provide environmental services such as landscape protection and agri-environmental schemes. When a farm location is in a mountainous area, it seems that the likelihood of observing an income diversification strategy increases, in line with other analysis (Maye et al., 2009) emphasizing the importance of off-farm employment as a survival strategy in marginal areas.

The governance of Inner Areas and implementation of the projects planned within the Strategy should consider this important element for integration wherever the presence of natural assets (water resources, agricultural systems, forests, natural landscapes), cultural resources and landscapes positively affects the diversification structure.

Concerning the current costs per hectare, the values are in general lower for holdings located in Inner Areas, except for the fresh fruit sector of North-East Italy that, however, has a lower Cost Incidence (Table 5) than the holdings in Centres. The same applies to the cost for fertilizers and crop protection products: excluding the fruit sector, in almost all the macro-regions and Farm Types considered in the analysis, the value per hectare is lower in Inner Areas than in Centres, with important differences in the dairy sector.

The Net Income per hectare, considered a measure of the farm performance and an index of land profitability, is similar in farms specialized in COP, while in vineyards for quality wine the results differ in the macro-regions: a higher land profitability in Inner Areas is observed in North-East and South Italy while the results

are similar in the Islands. The fresh fruit sector seems to be competitive in Inner Areas, especially in Central and Northern Italy. Concerning dairy systems, the land profitability in Inner Areas is lower than in Centres, in all the considered macro-regions. As stated before, more specific structural and economic indexes are summarized in Table 5. The value of the subsidies incidence (subsidies on the Net Income) is a little bit higher in the Inner Areas for holdings specialized in COP (where subsidies count for the half of Net Income), vineyards and fresh fruits in almost all the macro-regions. In the dairy sector, the incidence is particularly high in the Inner Areas of northern Italy, where an important part of subsidies are linked to all the nature-enhancing measures, easier to implement when the intensity of agricultural land use is low (agri-environmental measures, compensatory allowances for Less Favoured Areas, modulation, greening, etc.). In some cases the continuation of the traditional agricultural systems with a low-input impact depends heavily on this support (Strijker, 2004).

As previously stated, the indexes related to land productivity and profitability are, in general, lower in the farms located in Inner Areas, in particular in the holdings specialized in milk production. As other indexes, holdings specialized in COP have similar values, showing an equality between Inner Areas and Centres. Differently from the profitability of land, the income per Annual Work Unit (labour profitability) of holdings specialized in COP is higher in the Inner Areas, except for the North-West. For vineyards, the highest value in the Inner Areas are observed only for the North-West and South Italy while the labour profitability in the fresh fruit sector has its highest value in the holdings of North-East. The income per AWU in the dairy sector of Inner Areas is lower than in the Centres in all the macro-regions (except Central Italy). Another important parameter is the labour cost per unit, which value is almost always lower in Inner Areas.

**Table 5 – Structural and economic indexes of different Types of
Farming in Centres and Inner Areas**

	Specialist COP (other than rice)		Specialist vineyards (Quality Wine)		Specialist fresh fruits (other than citrus)		Specialist dairy (milk)	
	Centres	Inner Areas	Centres	Inner Areas	Centres	Inner Areas	Centres	Inner Areas
	Livestock Density (LSU/UAA)							
North-East							4.4	2.8
North-West							3.7	2.6
Central Italy							5.7	3.1
South Italy							6.5	6.9
Islands							5.4	2.0
	Subsidies incidence (EU and non-EU subsidies/Net Income; %)							
North-East	37.4	39.6	6.7	7.0	12.0	9.1	13.8	41.7
North-West	36.9	44.4	10.4	13.7	12.9	11.1	36.0	46.0
Central Italy	55.4	57.9	15.8	24.3	15.0	16.9	14.8	16.6
South Italy	44.8	54.4	11.0	11.1	5.1	10.2	11.3	13.7
Islands	60.7	54.0	12.3	13.2	4.7	16.6	17.1	21.2
	Cost incidence (Current Costs/Total Revenues; %)							
North-East	52.7	51.3	36.3	36.5	36.2	26.3	50.6	52.6
North-West	47.7	48.8	32.4	32.1	29.7	28.6	43.4	37.3
Central Italy	46.0	43.9	35.9	40.5	50.2	34.6	48.5	37.3
South Italy	40.5	44.1	33.2	28.0	29.1	34.5	46.3	42.6
Islands	47.3	44.9	23.3	26.0	32.0	39.5	46.0	40.4
	Gross land productivity (Gross Saleable Production/UAA; €/ha)							
North-East	2,008	2,148	10,706	11,549	11,903	22,126	10,984	7,194
North-West	2,337	2,378	13,318	10,490	10,141	9,725	8,069	5,135
Central Italy	1,549	1,494	6,491	5,372	5,018	4,885	9,930	6,358
South Italy	1,794	1,454	5,020	5,923	8,143	6,011	11,944	11,948
Islands	1,047	1,104	3,974	3,986	6,100	4,123	12,526	3,638
	Net land profitability (Net Income/UAA; €/ha)							
North-East	524	656	4,826	5,321	4,859	11,719	3,756	2,273
North-West	581	447	6,807	6,118	4,997	5,338	3,433	2,761
Central Italy	546	570	2,917	2,092	1,845	2,255	2,752	2,996

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South Italy	762	615	2,084	3,256	3,277	2,345	4,192	4,164
Islands	465	355	1,885	1,804	2,011	1,275	5,225	1,338
Gross labour productivity (Gross Saleable Production/Annual Work Unit; €)								
North-East	67,817	75,547	51,608	46,543	51,089	60,218	118,717	67,357
North-West	78,079	46,700	49,301	49,917	61,699	45,883	111,988	72,645
Central Italy	58,119	54,748	47,499	36,164	22,148	25,872	96,103	90,680
South Italy	56,267	64,287	36,675	31,755	35,087	28,197	83,623	77,013
Islands	48,956	58,758	52,221	45,320	25,609	31,373	133,754	72,224
Net labour profitability (Net Income/Annual Work Unit; €)								
North-East	19,448	24,193	21,774	21,415	20,739	32,407	40,475	22,475
North-West	25,171	11,336	25,712	29,411	30,327	22,321	47,972	41,440
Central Italy	21,128	23,024	21,794	13,401	8,481	11,477	29,463	42,187
South Italy	24,341	28,454	14,506	17,561	13,885	11,713	26,525	27,948
Islands	20,971	22,074	27,821	19,702	10,569	9,536	54,550	28,538
Labour Cost per Unit (Labour Costs/Annual Work Units; €)								
North-East	3,861	4,916	5,483	4,535	7,478	7,796	8,006	4,605
North-West	4,442	3,174	4,563	4,325	6,446	4,981	6,345	4,549
Central Italy	4,797	4,022	7,615	5,029	4,049	4,254	6,724	4,947
South Italy	4,858	3,495	7,551	4,704	7,243	5,545	6,455	5,482
Islands	3,360	4,431	8,967	9,002	2,727	5,907	4,277	5,004

Source: elaboration on Italian on-line FADN Database (2012-2014)

Conclusions

The accounting data collected by the Italian FADN have been used for a number of analyses based on the assessment of the economic results of agricultural holdings. Each holding is georeferenced and this makes it possible to conduct territorial analyses based on specific spatial characteristics. In this paper, the classification set out in the National Strategy of Inner Areas has been applied to the FADN sample for the period 2012-2014 in order to compare the performance and profitability of four important Types of Farming

(COP, viticulture, fruit sector and dairy sector) in the five macro-regions corresponding to the Level 1 of Italian NUTS (North-East, North-West, Central Italy, South Italy and Islands). The comparison has been made on the basis of the Income Statement results.

The economic performance of agricultural holdings in Inner Areas and Centres is not the same because of different farming techniques, production systems and market conditions. In general, in every macro-region, the profitability decreases from North to South and the difference in terms of costs and revenues per hectare is not the same in all the selected Types of Farming.

The lowest differences between Inner Areas and Centres are observed in the holdings specialized in COP: revenues and costs per hectare are very similar and the values of the most important aggregates and indexes are comparable in all the macro-regions. It seems that the localization and the distance from the Centres has no influence on the economic performance and structure of this Type of Farming. On the contrary, in terms of Net Income per hectare, the holdings specialized in vineyards and fresh fruits located in Inner Areas have relatively good performances when compared to those in the Centres. This is observed in almost all the macro-regions, except the fresh fruit sector of South Italy and Islands, probably influenced by the exclusion of citrus, one of the most important cultivations in this area. The highest value is observed in the North-East, where the high specialization in areas suited to the production of apples has led to the improvement of the whole chain, ensuring high revenues for the holders, even in the case of high land fragmentation (Marongiu, 2013). Strategic projects based on already competitive agricultural systems and the strengthening between these and other sectors (in particular environment and tourism) have a great potential for the socio-economic growth of

Inner Areas and can become an important development opportunity.

As concerns the dairy sector, the Net Income per LSU in Inner Areas is similar or higher than the values observed in the Centres but, in general, the net land profitability (Net Income per hectare) is lower. This is partially due to the more extensive dairy systems characterizing the Inner Areas, where the number of livestock units per hectare is low if compared to the Centers (except for holdings in South Italy). This means a different pressure on the ecosystem in intermediate and remote areas, mainly composed of grassland and permanent pastures, sometimes with a high level of biodiversity. In this case, the Strategy could be developed around interactions between the dairy sector and the environment, given the importance of this activity in the protection of biodiversity and preservation of specific ecosystems.

The opportunities to create synergies between the agricultural sector and other activities is highlighted by the different incidence of other gainful activities on the total revenues. This percentage is higher in Inner Areas and this is partially due to rural livelihood diversification and the presence of important natural assets, cultural resources and landscapes positively affecting the diversification structure. With regard to this aspect, the project included in the Strategy should reinforce all the synergies in order to make the agricultural sector more attractive for youngsters and avoid the abandonment of farmland in marginal areas.

Another piece of evidence emerging from the analysis is the different importance of public subsidies in the holdings located in Inner Areas. In some cases, as in the dairy sector in northern Italy, subsidies are very important, being linked to enhancing-nature measures and having a strong impact on the maintenance of low-input systems. Given the low profitability, the continuation of

traditional dairy systems in Inner Areas could depend strongly on this kind of subsidy.

Inner Areas will be included in the next Rural Development Policy: the synergy between the Strategy for Inner Areas and the measures provided by the Rural Development Plans can guarantee a higher level of efficacy in the interventions.

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