Economia agro-alimentare /
Food Economy

An International Journal on Agricultural and Food Systems

Vol. 25, Iss. 2, Art. 4, pp. 69-96 - ISSN 1126-1668 - ISSNe 1972-4802
DOI: 10.3280/ecag2023oa14940

The efficiency of agricultural spending in Italy: A territorial analysis

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Abstract

This paper assesses the efficiency of public agricultural expenditure in each Italian region through the analysis of regional budgets, both as a whole and in relation to specific agricultural policy measures. The degree of integration/complementarity between regional funds and Community funds of the second pillar of the CAP is also evaluated, in order to determine whether European resources are used by the Regions as a substitute for or in addition to regional measures. In Italy, public agricultural funding comes from three sources: the EU, the State, and the regions. While the literature on the effectiveness and efficiency of public spending in agriculture focuses on EU funds, the present research also takes into consideration the agricultural spending of Regions. This original analysis of agricultural spending at the regional level has been made possible by the databank of the CREA (Council for Agricultural Research and Economics), which has been gathering information on the allocations, payments, and remaining balances of regional accounts since 1990. The expenditure items for the agricultural sector included in the regional budgets were reclassified according to an original methodology created by the INEA (National Institute of Agricultural Economics, today CREA). The results show that the overall efficiency of public expenditure has improved

Article info

Type:
Article
Submitted:
16/11/2022
Accepted:
08/05/2023
Available online:
14/09/2023

JEL codes:
E61, E62, E64, H71, H72, O13, O18, Q18, R11, R12, R58

Keywords:
Rural development
Regional disparities
Rural policies
Policy evaluation
Regional budget
CREA database
Policies and Bioeconomy

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over the last two decades (from less than 40% in 2000 to just over 50% in 2019). This improvement is quite evident in the South and the Islands and less so in the North. Agricultural policy measures that can be defined as "short term measures" (contributions to public and private entities involved in agricultural and forestry activities for running costs, such as salaries, telephone, electricity, etc.) show a good spending capacity, while measures requiring planning, such as business investments, still present difficulties. As regards integration/complementarity between regional funds and EU Fund for Rural Development Programmes (RDPs), the regions have been classified depending or whether or not they differentiate between the RDP financing and Budget financing. In the most recent period of 2014-2020, most regions have tended to target both sources of funding to support the same types of priority activities.

Managing Editor: Lucia Briamonte, Biagio Pecorino, Angelo Frascarelli

Introduction

Public funding plays an important role in the Italian agri-food sector. That funding is provided through a governance system made up of three main levels of decision-making and sources of funding: the EU, the State, and the regions (Briamonte, Vaccari, 2021). Funding is therefore subject to European regulations, national laws, and regional laws, and to the agricultural policy objectives and interventions decided at the European, national, and regional level. The EU support to this sector consists mainly of the CAP (pillars I and II). The main objective of the CAP is to respond to the challenges posed to European agriculture, namely: economic sustainability (food security, price stability, productivity growth), environmental sustainability (biodiversity, habitat conservation, climate change), and social sustainability (vitality of rural areas, agricultural diversification, rural development). National support occurs through structural and territorial interventions (support for supply chains, food districts, energy efficiency, National Strategy for Inner Areas, interventions on water networks, waste reduction) and through tax and social security benefits. Regional support for the agricultural sector depends on the needs of the sector at the regional level and can involve investments in farms, infrastructure, and agricultural services.

The CREA, through the Research Centre for Policies and Bioeconomy (CREA PB), has been gathering information on public support for agriculture since the 1990s (Sotte, 1993; Sotte, 2000; Briamonte and D'Oronzio, 2004), fuelling interest in this issue and facilitating debate on public spending, including the systems to steer it (Reviglio, 2007; Comite, 2008) and how

to reduce inefficiencies (Iacovone, 2014). This includes information on expenditure by territory and sources of funding (European, national or regional), which allows an assessment of the efficiency and effectiveness of agricultural expenditure at the regional level. Thanks to the CREA database's reclassification of the expenditure items of regional budgets for the agri-food sector, the regional budget is not a mere accounting obligation to be fulfilled, it has become a tool for improving knowledge of financial flows and the final recipient of funding. The decentralization of agricultural policies at the regional level requires analysis in order to verify the efficiency of public spending at the regional level.

The present article analyses the efficiency of public regional spending in agriculture overall and for individual interventions. The policy interventions taken into consideration concern development services (technical assistance, research, promotion), investments (in farms and in processing companies), infrastructure, and forestry activities. The paper aims to give answers to the following questions: 1) Are regional financial resources used efficiently? 2) Which interventions receive regional funding? In particular, do we want to investigate whether they are used for short-term interventions or for structural interventions? 3) Do interventions financed through RDP funds add to those financed through regional budgets or do they replace them?

The reclassification of regional expenditure by CREA allows us to analyse the efficiency of expenditure (in terms of the Regions' spending capacity) for specific regional agricultural policy interventions. In the literature the focus is on EU policies capacity spending. In this study we not intend to analyse the effectiveness of policies and, then, we not intend to investigate to which extent have the objectives of the regional policies been achieved at minimum costs and to which extent have the objectives of the regional policies been achieved. This paper is intended to be a useful basis for answering these research questions in a later study.

1. Background

Although it has declined over the last twenty years, public support still represents a significant share of the added value of national agricultural (34% in 2019, down from 55% in 2000) (Briamonte, Vaccari, 2021). In 2019, this amounted to about 12 billion euros, of which 64% came from EU resources, 4% from State transfers, and 16% from regional expenditure, with the remaining 16% deriving from tax and social security benefits. The Common Agricultural Policy (CAP) (the first and second pillars) is the predominant source of EU funding and remained fairly constant throughout the period considered (roughly EUR 7.9 billion in 2009 to 7.2 billion in

2019). Public funding has been distributed differently to the Italian regions, thus contributing to a varying degree to their respective performance in terms of agricultural added value. When all sources of funding are considered (CAP, national and regional), the regions of the North receive the most funding (ibid.).

As regards the efficiency and effectiveness of public spending, the best expenditure capacity is often due to the method of resource management. Among the measures of the CAP, which are heavily interdependent and complementary to those financed by regional budgets, the Rural Development Programmes (RDPs) are an extraordinary measure that aims to reduce territorial disparities by concentrating resources on intervention priorities. Some authors (Uthes *et al.*, 2016) suggest that spending priorities are generally in line with regional needs. By contrast, Mantino *et al.* (2022) have questioned the extent to which "development support for investment addresses the territorial differences of rural areas, in particular as regards the differences between rich and intensive areas on the one hand and marginal and peripheral areas (rural areas) on the other hand", finding "the distributive effects of RDP investment support measures appear to be clearly unequal, particularly in the areas of agricultural and agro-industrial competitiveness. They are mainly allocated to areas that are already dynamic and highly competitive", thus negating the structural and territorial character of Community funds that aim to reduce the gaps between rich and poor areas.

In the present research, the focus is on regional support for investments. According to the OECD New Rural Paradigm (OECD, 2022) the effectiveness of rural polices is heavily influenced by the proportion of financial investments in the total policy support. We therefore seek to determine: 1) whether regional resources are used to implement structural changes, and 2) whether the EU resources provided to regions are used to replace the measures decided at the local level or to supplement them (Mantino, 2022; Mantino *et al.*, 2022; Uthes *et al.*, 2016; De Filippis *et al.*, 2013; Henke, De Filippis, 2010; Scoppola, 2005; Terluin, Venema, 2003), and how this affects regional spending capacity.

2. Materials and methods

The CREA classifies the budgets of the administrations that fund the agricultural sector in order to measure the results of sector policies by region. The data and information collected are fed into the regional expenditure database, through which the CREA analyses public intervention in agriculture (Sotte, 1993). The official sources of the data are regional budgets, regional accounts, and information from other institutions, such as ministries

and funder agencies (such as the AGEA) (Finuola, 1995; Briamonte, Vaccari, 2021). The basic unit of data for regional information is the budgetary chapter, to which financial information, allocations, commitments, payments (on an accrual basis and residual accounts) and remaining balances are attached.

The database has information for the last 30 years. The present research refers to the data for the last 20 years (2000-2019) and focuses on support from regional sources, which, as mentioned, represents 16% of total funding for the agricultural sector.

The CREA, in collaboration with the regional administrations, has established the "Monitoring Network", a highly decentralised operational structure throughout the national territory. The Monitoring Network is made up of the regional offices of the Research Centre for Agricultural Policies and Bioeconomy of the CREA, who work in liaison with regional administrations. Each year, the CREA regional offices systematically classify their budgets and balance sheets item by item according to the nine codes of the CREA methodology: economic-functional, support expenditure, final beneficiaries, expenditure management, decision-making function, financial means, productive sectors, environmental protection, and natural disaster.

In the present research, we use the economic-functional code (SPEECFU) to identify and distinguish agricultural policy intervention types. The economic-functional classification framework identifies two types of agricultural policy transfer: economic, i.e. policies that allow the provision of funding, and functional, i.e. in relation to the objectives that the policy itself aims to pursue. The identification of all the possible agricultural policy measures implemented by the regions is very complex. The classification codes allow the categorization of regional policies, regardless of the specific characteristics of each of them and the time period in which they are implemented.

In order to assess each region's capacity for expenditure, the present analysis took into account both the total payments of the budgets (on the balance sheet and on the accrual account) and the total allocations (those of the reference year together with the remaining balances carried over from previous years).

The calculated index is the expenditure capacity (CS) which is given by the ratio between payments (PT) and total allocations (ST):

CS = total payments /total allocations
where
CS = expenditure capacity
PT = total payments (on accrual basis + residual accounts)
ST = total allocations (on accrual basis + remaining balances carried over from previous years)

RDP interventions are compared for two programming periods, 2007-2013 and 2014-2020, for which data and information are available. The measures of the RDPs for each period have been reclassified according to the functional economic codes (SPEECFU) of the CREA methodology, thus rendering them comparable.

Table 1 - Reclassification of Economic-functional and RDP measures

CREA Economic functional Reclassification	**Measures PSR 2007/2013**	**Measures PSR 2014-2020**
Development services	Measures relating to training and information, counselling, management services, cooperation for the development of new products, food quality, promotion, animation and technical assistance (measures 111; 114; 115; 124; 131; 132; 133; 331; 341; 511).	Measures relating to knowledge and information transfer, quality of agricultural and food products, cooperation, Leader (CLLD) and technical assistance (measures 1; 3; 16; 19; 20).
Farm investments	Measures relating to the modernisation of agricultural holdings, improving the economic value of forests, adding value to agricultural and forestry products, diversification, business development, local development and competitiveness in general (measures 121; 121 Health Check; 122; 123; 311; 312; 411).	Investment measures, Farm and business development, Investments in forestry (measures 4; 6; 8).
Direct payments/ Environmental protection	Measures relating to the setting-up of young farmers, restoration of production potential, farm restructuring for the reform of the COM, compensation paid to farmers in mountain areas, Natura 2000 payments and agri-environment and implementation of local	Measures relating to advice, farm management assistance, compensation to farmers in areas with natural handicaps, restoration of agricultural production potential damaged by natural disasters and prevention measures, agri-climate payments environmental, organic farming

CREA Economic functional Reclassification	**Measures PSR 2007/2013**	**Measures PSR 2014-2020**
	development strategies (measures 112; 126; 144; 211; 213; 214; 214; 412).	and animal welfare (measures 2; 212; 5; 10; 11; 14).
Forest activities	Measures to restore forest potential and prevention actions (measure 226).	Measure relating to Silvo-environmental and climate services and forest protection (measure 15).
Infrastructure	Measures relating to infrastructure for development and adaptation, non-productive investment, promotion of tourism, basic services for the economy and the rural population, renewal and development of villages, conservation and improvement of rural heritage implementation of local development strategies (measures 125; 125 Health Check; 216; 216 Health Check; 227; 313; 321; 321 Health Check; 322; 323; 413).	Measure concerning basic services and village renewal in rural areas (measure 7).
Associations	Measures relating to cooperation projects management of local action group and capacity building (measures 421; 431).	Measures relating to the establishment of producer groups and organisations and support for local development Leader (measure 9; 19).

Source: Our elaborations on the CREA-PB database.

The classification of each intervention as either economic or functional revealed the orientations of each region's use of financial resources as well as the changes that occurred between the two RDP programming periods (2007-2013 and 2014-2020)[1].

Subsequently, a synthetic index was calculated based on the ratio between the average percentages of the impact of the RDPs and regional budgets. The index has made it possible to assess the complementarity of regional budgets

1. www.reterurale.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/16412.

with the RDPs, or to determine whether a region used the RDP funding to replace the regional budget for ordinary needs.

In order to compare regional interventions and RDP interventions, the RDP measures have been reclassified on the basis of the economic-functional codes used for regional measures. The analysis of the budget data, classified with the CREA methodology, allows the comparisons between the spending policies of the 19 regions and the two autonomous provinces, and the 21 Rural Development Programmes.

3. Results

3.1. *Efficiency of expenditure in Italian regions*

In this paragraph the focus is on efficiency of expenditure in the Italian regions in the period 2000-2019. The efficiency of expenditure is measured through the expenditure capacity index which is given by the ratio between regional payments and regional total allocations.

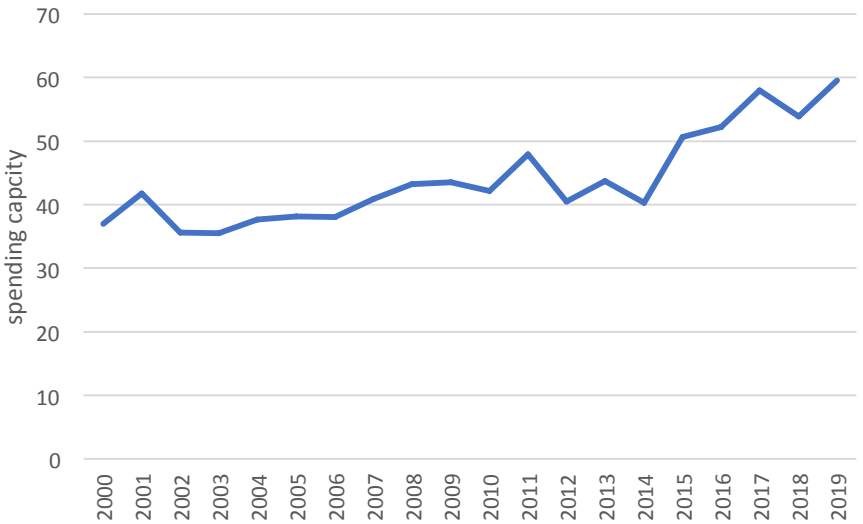
The literature review (Lombardi, 1997; Briamonte, D'Oronzio, 2004; Briamonte *et al.*, 2020; Cesaro, 2006; Gaudio, 1996; Fantini, 2003; Pergamo, 2008; Zaccaria, 2005; Ievoli e Rubertucci, 2014; Nencioni e Vaccari, 2001) shows that the evaluating the efficiency of expenditure was quite difficult because the regional budget structure corresponded more to accounting needs than to the economic purpose of the expenditure. The literature review revealed also that the economic destination of expenditures facilitated the monitoring and verification of results. The CREA methodology makes it possible to calculate the expenditure capacity index for each regional economic-functional intervention.

The efficiency analysis was carried out for spending capacity as a whole and for specific policy interventions implemented in individual regions according to a new aggregation proposal.

Figure 1 shows the development of expenditure capacity in Italy. It is clear that in the second half of the last twenty years there have been more positive results. But does this apply to all regions?

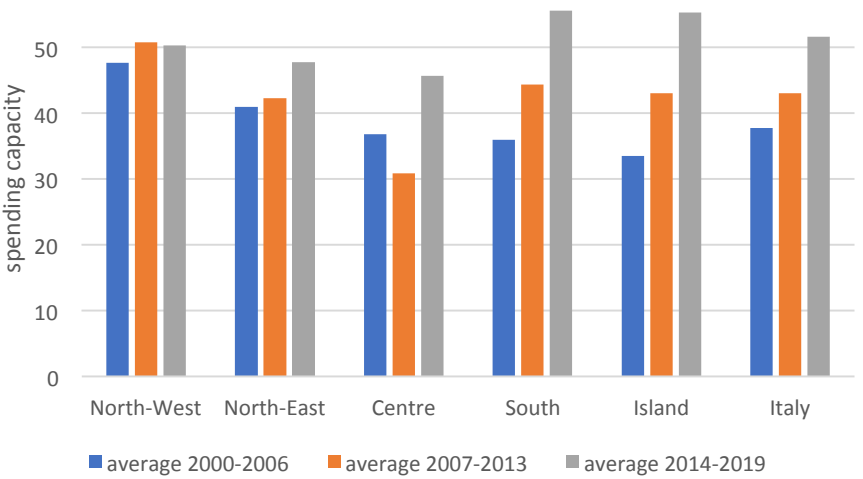
The period 2000-2019 has been divided into three periods: 2000-2006; 2007-2013; 2014-2019. The expenditure capacity of the Italian regions, aggregated by territorial constituency, is represented in Figure 2. The expenditure capacity for the North-West constituency remains constant over the three periods, while in the North-East, in the Centre and, above all, in the South and the Islands it increases in the last period.. Overall spending capacity grew from the first period to the last, with a final spending capacity of just over 50%. The South and the Islands have higher values than the Italian average in the last period. In the North, spending capacity was initially higher than in other circumscriptions (2000-2006).

Figure 1 - Trend in the spending capacity for public funding provided by the Italian regions (2000-2019)



Source: Our elaborations on the CREA - PB database.

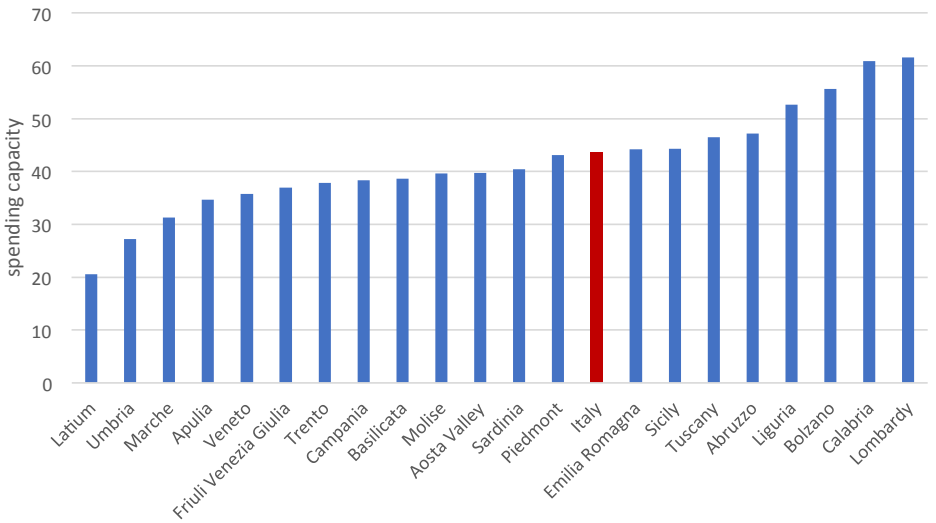
Figure 2 - Trend in spending capacity by district (2000-2019)



Source: Our elaborations on the CREA - PB database.

In the previous period (2007-2013) a larger number of regions had a higher spending capacity than the Italian average (Figure 3): Lombardy, Calabria, Bolzano, Liguria, Tuscany, Abruzzo, Emilia Romagna, and Sicily. Only

Figure 3 - Spending capacity by region (2007-2013)

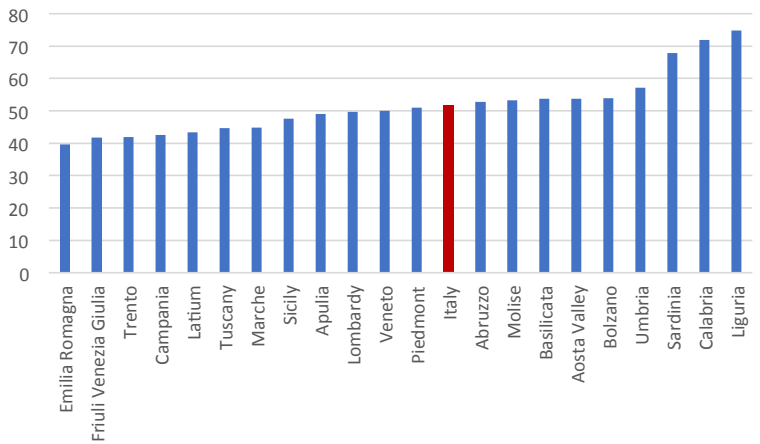


Source: Our elaborations on the CREA - PB database.

Calabria, Bolzano, and Liguria had an expenditure capacity that is higher than the national average in both periods.

Regional spending capacity (Figure 4) in the last period (2014-2019) is higher than the Italian average to a greater extent in Liguria, Calabria and

Figure 4 - Spending capacity by region (2014-2019)



Source: Our elaborations on the CREA - PB database.

Sardinia, while on the opposite side those with a "low" spending capacity below the Italian average are Le Marche, Campania, Friuli Venezia Giulia, Trento, and Emilia Romagna. The remaining regions have an average spending capacity.

Table 2 summarizes the spending capacity of the individual Italian regions for each economic-functional intervention. This capacity is high, medium or low if it is above, equal to or below the Italian average, respectively.

The analysis of the spending capacity in the Italian regions shows that the interventions which allow the regions to be defined as having "high spending capacity" are "income aid" and "investments" in the case of Liguria, "forestry activities" and contributions to "associative bodies" in the case of Calabria and, finally, good performance in various interventions ("income aid", "development services", "investments", "infrastructure") in the case of Sardinia.

Table 2 - Degree of spending capacity of each region based on the new classification of economic-functional interventions

Region	Forestry activities	Direct aid	Hydrogeological defense	Infrastructure	Association bodies	Development services	Investment
Marche	low	low	low	low	low	low	low
Veneto	low	low	low	low	high	low	low
Abruzzo	low	medium	high	low	high	low	low
Basilicata	high	low	low	low	low	low	medium
Bolzano	medium	medium	medium	low	high	medium	low
Calabria	high	low		low	high	medium	low
Campania	medium	low	high	low	low	low	low
Emilia Romagna	low	low		low	high	low	low
Friuli Venezia Giulia	low	medium	low	low	low	low	medium
Latium	low	low	low	low	medium	low	low
Liguria	low	high				low	low
Lombardy	medium	low	medium	low	high	high	medium
Molise	medium	low		low		medium	low
Piedmont	medium	low		low		low	low
Apulia	high	high	low	low	low	low	low
Sardinia		high		medium	low	high	medium
Sicily	medium	low		low	low	low	low
Tuscany	low	medium		low		high	low
Trento	low	low	low	low	high	low	low
Umbria	high	high		low	low	low	medium
Aosta Valley	low	high	low	low	high	medium	medium

Source: Our elaborations on the CREA-PB database.

On the other hand, the interventions that contribute most to defining regions as having "low spending capacity" are "investment", "infrastructure", "development services", "income aid".

In particular, the intervention "Associative Bodies" occurs in the highest number of regions with "high spending capacity": Veneto, Abruzzo, Bolzano, Calabria, Emilia-Romagna, Lombardy, Trento and Aosta Valley. Conversely, the intervention "hydrogeological defence" occurs in the least number of regions with "high spending capacity": Abruzzo and Campania. The regions with high spending capacity in the intervention "forestry activities" are Calabria, Basilicata, Puglia and Umbria, while the interventions "direct aid" occur in Liguria, Puglia, Sardinia, Umbria, and the Aosta Valley and "development services" occur in Lombardy, Tuscany and Sardinia.

3.2. *Expenditure on agricultural policy interventions*

The aggregation of the main interventions shows a different composition of payments according to the programming period.

In particular, while in the first programming period "investments" represent the first item of expenditure, followed by "forestry activities" and "infrastructure", in the second and third periods it is "development services" that becomes the predominant item, representing in the period 2014-2019 32% of payments made to agriculture from regional budgets.

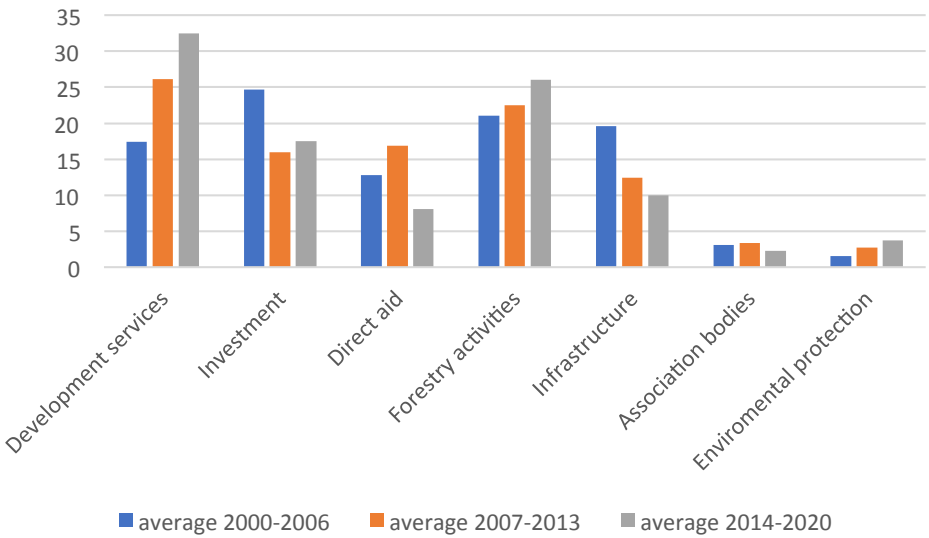
"Forestry activities" remains the second item of expenditure (26% and 22% in the third and second periods respectively), while "investments" become the fourth item in 2007-2013 absorbing 16% of payments and the third item in 2014-2020 with 17.5% of regional payments.

The different composition can be explained by the change in the governance of payments to the agricultural sector from the European Union: starting in the 2007-2013 programming period, it no longer passed through regional budgets, but from the regional Payment Agencies that report to the AGEA.

Even if we look at appropriations, the behaviour in the various programmes remains the same.

In the 2014-2019 period, investments deriving from the implementation of Community programs do not pass through the regional budget, so the regions that have incurred investment expenditure with own funds higher than the national average are those regions that direct programming towards medium-long term structural interventions. This group includes: Bolzano, Emilia-Romagna, Trento, Marche, Friuli, Veneto, Tuscany, Campania, Sicily, Aosta Valley.

Figure 5 - Payments by type of expenditure in the periods 2000-2006, 2007-2013 and 2014-2019



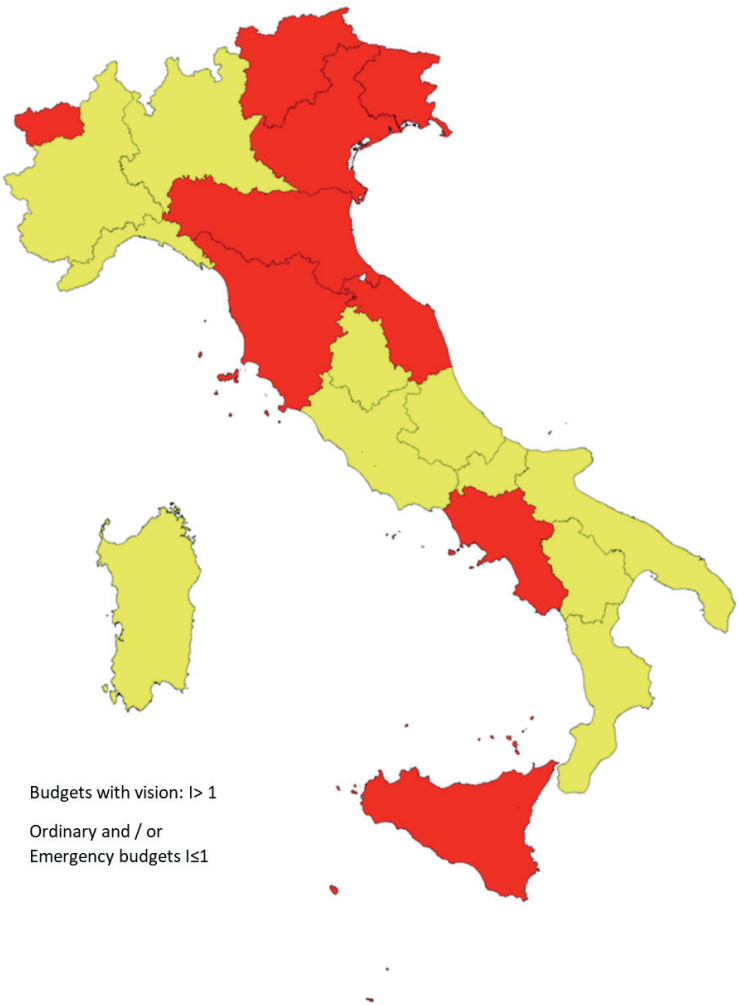
Source: Our elaborations on the CREA-PB database.

The regions belonging to this group can be defined as "with vision" in view of the fact that they make long-term investments. The remaining regions do not use the regional budget for medium-long term expenditure, but for ordinary or emergency management (payment of salaries, natural disasters). This group can be defined as "for ordinary or emergency management" (Figure 6).

Looking at the behaviour of regional budgets in relation to appropriations, Le Marche, Veneto, Abruzzo, Bolzano, Emilia-Romagna, Friuli V.G., Puglia, Sicily, Tuscany, Trento, and Umbria are the regions with an above-average incidence of investment appropriations. This group of regions "with vision" is more numerous than the one built on the basis of payments. This means that with respect to appropriations, the objectives of the budgets then change in implementation: the efficiency of management therefore also affects effectiveness.

How do the two groups behave with regard to expenditure on the other items? (Figures 7 and 8). All the regions that invest with an index much higher than the Italian average (greater than 2) (Emilia-Romagna, Bolzano, Trento, Marche, and Friuli), also allocate an above-average percentage to direct aid.

Figure 6 - Classification of regions by investment expenditure (I) in the agricultural sector (2014-2020)

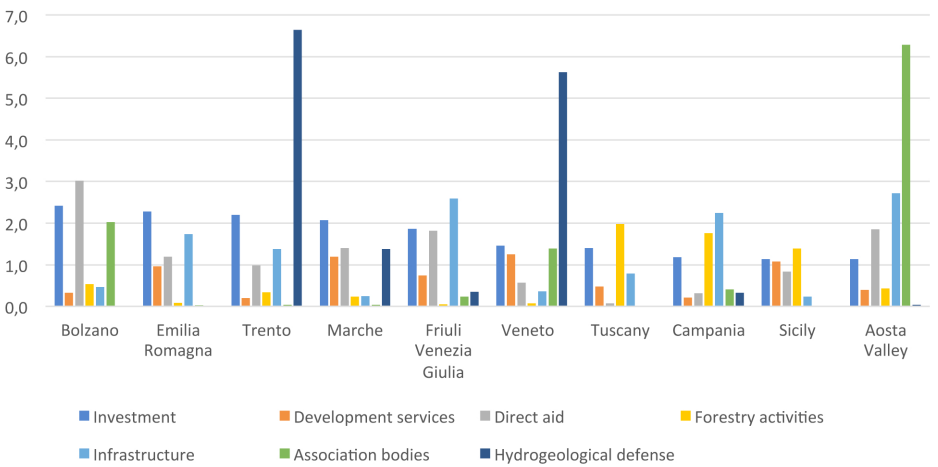


Source: Our elaborations on the CREA-PB database.

It is recalled that expenditure on financing the management of agricultural holdings in the short term is classified as direct aid. In addition, Trento, Friuli and Emilia Romagna allocate a percentage higher than the national average to infrastructure spending while only Trento allocates a percentage considerably higher than the national average to environmental protection.

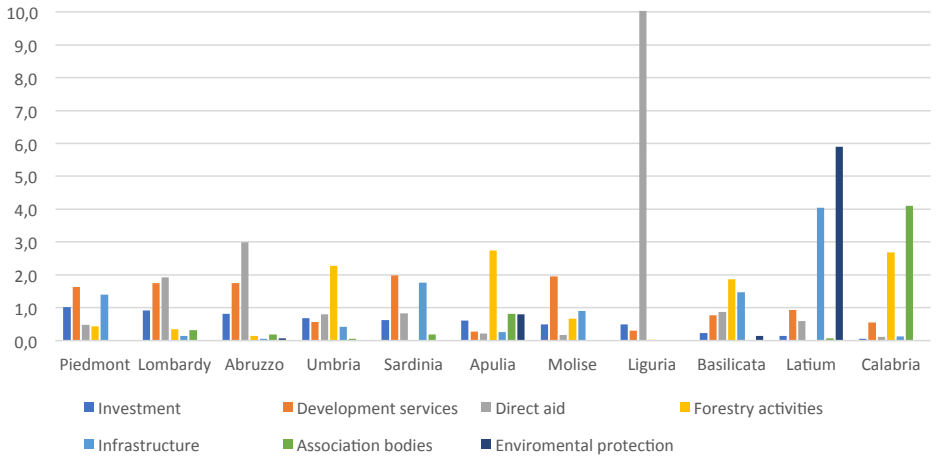
As regards the group of regions with budgets for day-to-day management, some regions allocate a percentage higher than the national average to "forestry activities" (Calabria, Puglia, Umbria, Basilicata, Sicily, and Campania). For the Calabria region, it is the expenses for the payment of forestry workers. Lazio, Campania, Valle d'Aosta and Sardinia finance "infrastructure"; Liguria, Valle d'Aosta, Lombardy and Abruzzo allocate resources to "direct aid"; Calabria and Valle d'Aosta are the only two regions that finance "associative bodies" (for example the Calabria regional agricultural development agency - ARSAC); finally, Piedmont, Abruzzo, Lombardy, Sardinia, and Molise finance "development services".

Figure 7 - Regions with vision (2014-2020)



Source: Our elaborations on the CREA-PB database.

Figure 8 - Regions for ordinary and/or emergency management (2014-2020)



Source: Our elaborations on the CREA - PB database.

3.3. *Comparison between Rural Development Programmes (RDP-PSR) and ordinary funds of the regions*

In addition to the efficiency of agricultural expenditure in the regions and the impact of agricultural policy interventions, this analysis also concerns whether Community funds in the European Agricultural Fund for Rural Development (EAFRD) are effectively extraordinary in the regions or replace the resources to be allocated to ordinary interventions (Mantino, 2022; Mantino *et al*., 2022; Terluin & Venema, 2003) and, finally, whether the implementation of the RDPs has influenced the choices of the Regions in the use of the financial resources of the autonomous regional budgets.

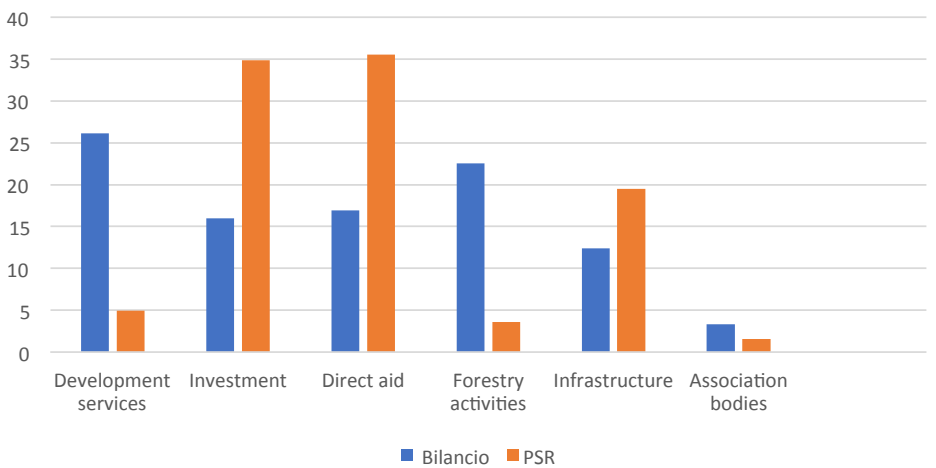
One of the objectives of the European structural funds is to strengthen economic, social and territorial cohesion by reducing the gap between the more advanced regions and those lagging behind. This objective is also pursued through the use of the EAFRD (European Agricultural Fund for Rural Development) which finances the RDPs in implementation of the rural development policy and interventions that are not purely sectoral for agriculture. The same does not happen for regional budgets. Consequently, the different fields and content of the RDPs and Budgets are also taken into account when comparing the two funding sources.

In this regard, the calculations carried out aim to evaluate the use of regional public expenditure through a comparison between payments made with regional budgets and payments with RDPs. The comparison makes it

possible to detect the use of expenditure disbursed through the RDPs and specifically allows us to determine if the latter has performed a function of integration, replacement, or summation to the ordinary regional funds. The reference periods for the analysis coincide with those of the last two programming periods of the European Agricultural Fund for Rural Development (EAFRD): 2007-2013 and 2014-2020.

In general, at the national level in the period 2007-2013, expenditure on development services and forestry activities was mainly supported by regional budgets. Otherwise, RDP payments mainly concerned business investment and direct aid/environmental protection.

Figure 9 - Percentage incidence of support for economic-functional activities (2007-2013)

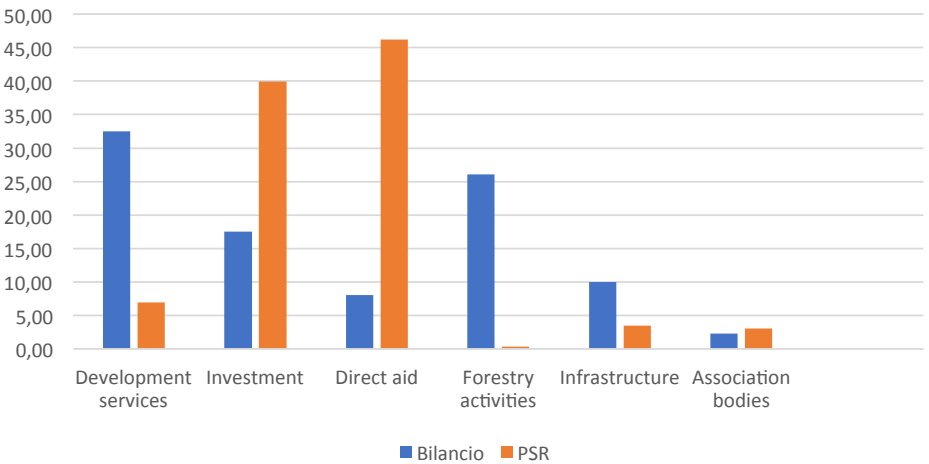


Source: CREA – "Agricultural expenditure of the Regions" database and the tenders archive of the National Rural Network.

In the period 2014-2020, the distribution of public expenditure remains roughly the same as in the previous period, but the differences between the percentage incidences are much more marked: it is very clear that for forestry activities, the expenditure disbursed comes from regional budgets. Only for infrastructure is there a change in the financing disbursed through the RDP.

The two Figures 9 and 10 represent the payments disbursed in Italy for agricultural policy interventions. To better distinguish which interventions were financed by the ordinary regional funds and which by the RDPs, a synthetic index was developed (given by the value deriving from the average of the incidences of the individual interventions). A further objective of the

Figure 10 - Percentage incidence of support for economic-functional activities (2014-2020)



Source: CREA – "Agricultural expenditure of the Regions" database and the tenders archive of the National Rural Network.

synthetic index was to identify the Regions that have opted for interventions other than those of the RDP.

The ratio between the percentage effects of the financial breakdown of RDP public expenditure on the regional budgets shows values which, if close to one, indicate how the destinations of funding in the field RDP follow the same public spending choices made by the Regions with their own budgets. In the case of this result, it can be deduced that the RDP financing ended up being complementary or replaced ordinary expenses incurred by the Regions, losing in part the extraordinary and incentive function of EU co-financed programming for rural development.

Where the value is less than one, the activity is mainly financed from the balance sheet. If the value is much higher than one, the activities are financed almost exclusively through the RDP. The value different to one indicates, therefore, that the Region has decided to intervene with activities, which, although integrated, differ from those supported through the RDP, which is instead used to finance measures to stimulate economic development.

The following table shows that in most regions the values of the indices are not close to one; consequently there is a differentiation in the methods of payment between regional budgets and RDP. In the RDP field, payments for business investment and direct aid are becoming increasingly important in relative weight. Unlike regional resources, the significant relative weight is recorded for development services, forestry, and infrastructure.

Table 3 - Index of expenditure on interventions in agriculture (%) (2007-2013)

Regions	Development services	Investment	Direct aid/Hydrogeological defense	Forestry activities	Infrastructure	Association bodies
Abruzzo	0,13	2,04	2,12	0,09	1,93	13,06
Basilicata	0,18	2,19	2,41	0,49	1,24	-
Bolzano	0,05	0,7	2,74	0,04	3,77	0,39
Calabria	1,37	4,51	11,56	0,06	5,24	0,08
Campania	0,26	4,83	4,44	0,13	1,15	0,66
Emilia-Romagna	0,13	1,23	2,79	0,28	1,15	0,62
Friuli-Venezia Giulia	0,13	2,67	1,92	0,2	0,43	2,87
Latium	0,07	6,28	2,45	1,13	0,71	1,08
Liguria	0,13	4,04	0,33	1,52	46,15	0,56
Lombardy		5,5	0,81	0,22	5,86	0,2
Marche	0,33	0,81	1,2	0,62	17,86	3,26
Molise	0,1	0,81	3,92	0,57	3,75	-
Piedmont	0,3	1,99	18,39	0,02	0,52	-
Apulia	0,26	1,47	1,64	0,21	0,99	1,6
Sardinia	0,04	0,98	5,18	7,37	1,86	0,68
Sicily	0,2	2,86	1,09	0,16	1,56	1,38
Tuscany	0,32	1,83	4,03	0,3	0,99	-
Trento	0,14	0,7	1,58	0,11	2,1	12
Umbria	0,16	3,78	30,85	0,16	0,52	1,16
Aosta Valley	0,25	0,28		3,57	0,43	1,74
Veneto	0,19	3,29	1,11	0,32	1,91	0,5
Italy	0,19	2,18	1,81	0,16	1,58	0,47

Source: CREA – "Agricultural expenditure of the Regions" database and the tenders archive of the National Rural Network.

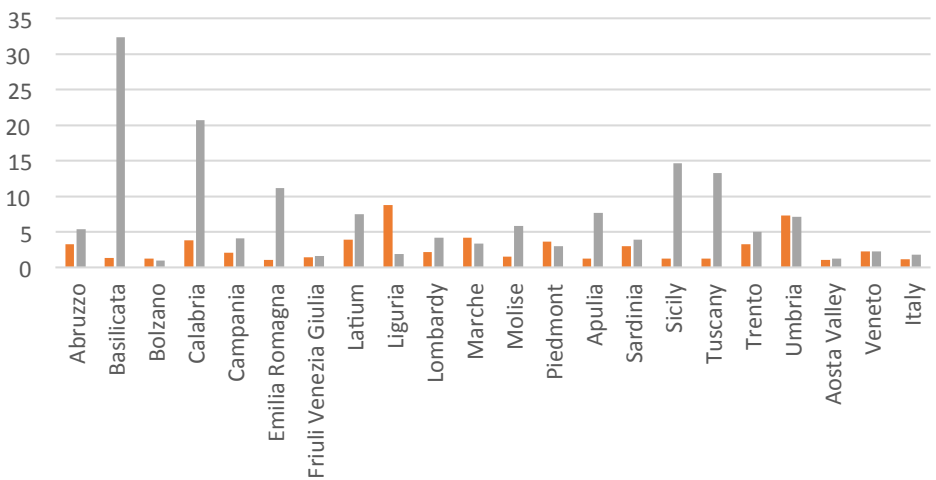
Table 4 - Index of expenditure on interventions in agriculture (%) (2014-2020)

Regions	Development services	Direct aid/Hydrogeological defense	Forestry activities	Infrastructure	Association bodies
Abruzzo	0.16	1.48	-	15.29	6.64
Basilicata	0.29	5.33	-	0.46	144.56
Bolzano	0.18	2.33	-	0.85	0.38
Calabria	0.24	65.08	0.01	0.88	0.17
Campania	0.60	9.95	0.06	0.19	2.46
Emilia-Romagna	0.29	4.40	-	0.23	49.66
Friuli-Venezia Giulia	0.21	1.97	-	0.15	3.77
Latium	0.10	1.88	-	0.13	11.67
Liguria	0.98	0.13	-	-	-
Lombardy	0.12	2.57	-	1.76	14.13
Marche	0.21	2.97	0.01	4.00	7.46
Molise	0.08	21.94	-	0.95	-
Piedmont	0.23	12.34	0.01	0.35	-
Apulia	1.21	11.73	-	0.04	3.57
Sardinia	0.05	9.90	-	0.04	6.92
Sicily	0.08	8.39	-	0.55	62.36
Tuscany	0.53	63.29	0.01	0.41	-
Trento	0.51	1.27	-	0.28	17.69
Umbria	0.66	6.84	0.01	1.22	23.99
Aosta Valley	0.31	3.98	-	0.19	0.10
Veneto	0.27	1.15	0.00	0.99	1.79
Italy	0.21	3.92	0.01	0.35	1.37

Source: CREA – "Agricultural expenditure of the Regions" database and the tenders archive of the National Rural Network.

Figure 11 shows the differences between the two programming periods: the last period is more differentiated than the previous one for almost all the regions. The regions with the lowest values near the horizontal axis (=1) are those that have not differentiated the destination of payments of the RDP budget payments. These regions make the same choices as regional budgets in the allocation of public expenditure financed by the RDP. Between the two periods considered, the first (2007-2013) shows differences in the behaviour of the less marked regions in the choice of spending through the two different funds (regional budgets and RDP) and the general choices in the distribution of expenditure by functional economic type do not change, except for in Liguria and Umbria. In most cases, in the last period 2014-2020 the Regions have chosen to allocate RDP funding to differentiated economic-functional activities. This concerns in particular five regions (in descending order: Basilicata, Calabria, Sicily, Tuscany, and Emilia Romagna). Only Liguria recorded a reverse trend. In general, the tendency is to target the two sources of funding in support of the same types of activities considered to be priorities by the regions.

Figure 11 - Regional budget and RDP payments indices



Source: CREA – "Agricultural expenditure of the Regions" database and the tenders archive of the National Rural Network.

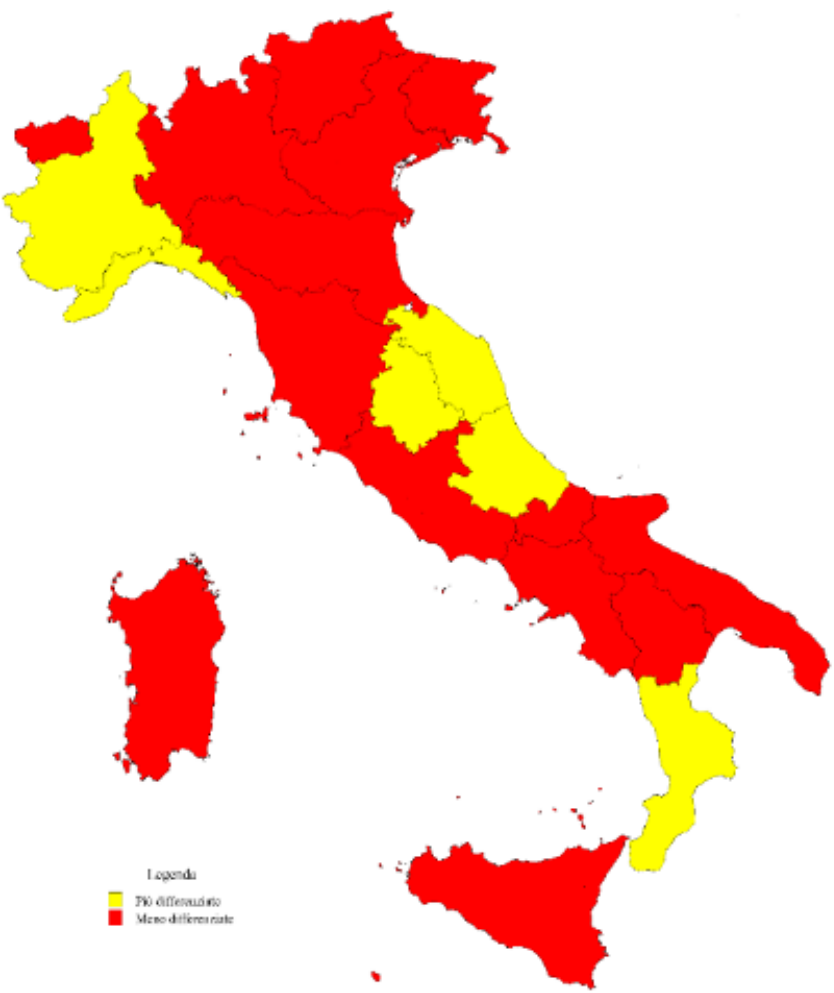
Below, we have developed maps showing the most and least differentiated regions in the different programming periods in the use of expenditure, broken down by functional economic type.

The differentiation between the Regions was calculated by means of an index, given by the ratio between the percentage effects of payments made through the RDP and payments made through regional budgets. Subsequently,

a synthetic index was calculated (sum of the indices differentiated by type of support/6) in order to evaluate the different behaviours of the Regions and to make a comparison between the two programming periods.

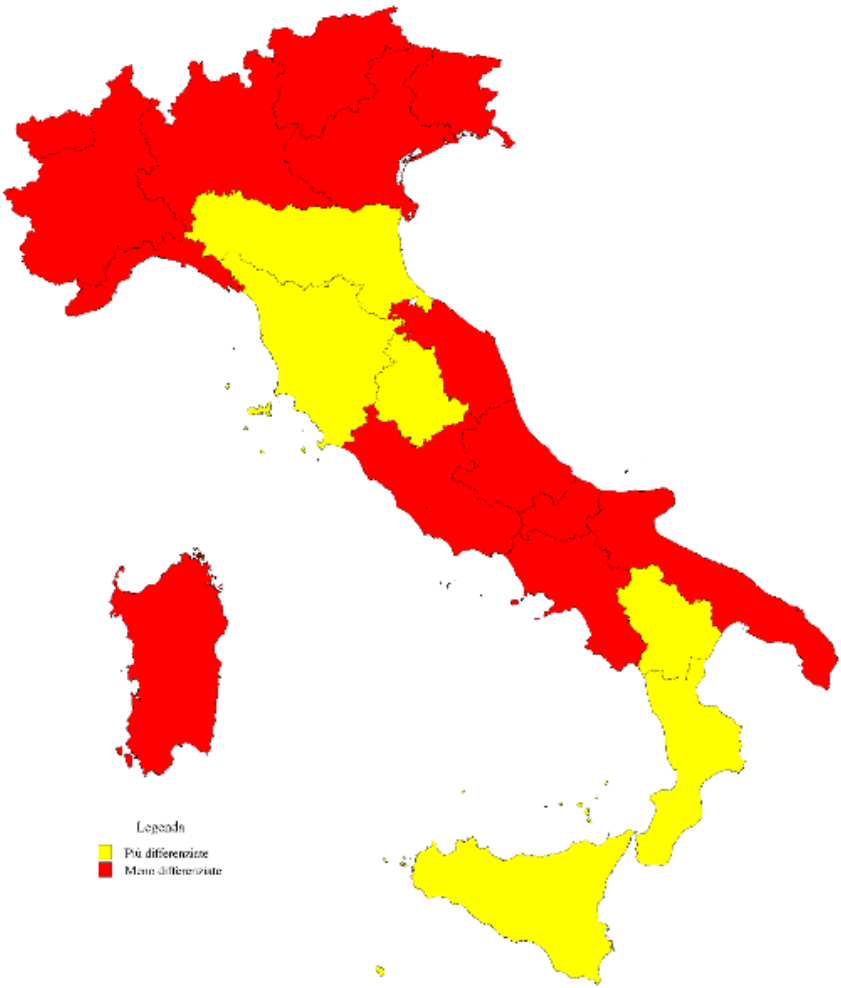
Based on these indices, it was possible to classify Italian regions into two types: the Regions which differentiate between the financing choices of RDP and budget financing, and the regions which do not differentiate. Below are the two maps of Italy, where the two types of situations are represented.

Figure 12 - Regions with differentiation 2007-2013



Source: CREA – "Agricultural expenditure of the Regions" database and the tenders archive of the National Rural Network.

Figure 13 - Regions with differentiation 2014-2020



Source: CREA – "Agricultural expenditure of the Regions" database and the tenders archive of the National Rural Network.

Conclusions

In the last twenty years, the spending capacity of Italian regions has improved. This improvement is most evident in the South and the Islands. In the Northwest, spending capacity has remained constant throughout the period (2000-2019); while in the Northeast and the Centre, the increase in

spending capacity is lesser. Despite spending faster than in the past, there are only three regions with "high spending capacity" and four with "low spending capacity". The 13 remaining regions have an average spending capacity. In the periods considered, the regions with high spending capacity were 4 and 7 always had low spending capacity. Nine regions had a variable trend.

The agricultural policy interventions with the lowest value in terms of spending capacity were "infrastructure", "farm investment", and "development services". By contrast, the agricultural policy interventions with high spending capacity are related to "direct aid" and "forestry activities". Contributions to "associative bodies" more frequently have an average spending capacity. It can be concluded that, while improving in general, the spending capacity of regions still remains anchored in interventions that can be described as "ordinary," which do not require programming.

In the 2007-2013 period, the interventions financed by the regions' budgets or RDPs were quite similar, so that the resources add up and each region finances the policies deemed important for the territory.

In the period 2014-2020, the regions have differentiated interventions by financing them with different Funds: "investments" and "infrastructure" with the RDPs, however the "development services" and other current expenditure interventions with the regional budgets.

In both 2007-2013 and 2014-2020, Italian regions concentrated resources on three types of interventions: "farm investments", "direct aid", and "infrastructure". In Italy, spending on "investments" absorbed 34.90% of payments, while "direct aid" accounted for 35.53% and "infrastructure" interventions for 19.47%. As many as 89.9 percent of payments are concentrated in these types of interventions (these choices are strongly conditioned by the provisions contained in EU regulations, which in particular in the 2007-2013 period bound the regions to allocate a minimum share for interventions with environmental purposes, sustainable development, and to a lesser extent interventions to develop the competitiveness of the agricultural sector.

In the following period, expenditure on "investment" absorbed 56.31% of payments, "direct aid" 30.86%, and "infrastructure" 3.47%. Overall, 90.64% of payments are concentrated in these three types of interventions, but "farm investments", unlike the period 2007-2013, saw the percentage increase. In most regions, "direct aid" is above average.

In the final programming period, the regions changed their way of distributing spending by distinct types of functional economic interventions, showing a shift from a more managerial to a more visionary phase, where support for more structural interventions became a priority. In fact, regions focused spending mainly on "business investments".

In the two periods considered, there were always six regions that showed differentiation in interventions, but only Calabria and Umbria remain "differentiated" in both periods: Emilia Romagna, Tuscany, and Sicily move from undifferentiated to differentiated; while Piedmont, Liguria, Marche and Abruzzo followed the reverse path, from differentiated to undifferentiated.

Compared with what was shown in the context section, where investment support was directed to the richest productive areas (Mantino *et al*., 2022), the present research also confirms that the regions that allocate the most resources to supporting investment are in the north. The regions that most use their own resources from their budgets are the autonomous provinces of Trento and Bolzano, Emilia R., Friuli V.G. and Lombardy. On the opposite side, southern regions have replaced support for business and structural investment with Community resources (which are also insufficient).

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