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Governance's effects on innovation processes: the experience of EIP AGRI's Operational Groups (OGs) in Italy

FRANCESCA GIARÈ, ANNA VAGNOZZI

CREA - Research Centre for Agricultural Policies and Bioeconomy, Italy

Abstract. In this programming period, the most important initiative of the European agriculture innovation policy is the European Innovation Partnership for Agricultural Productivity and Sustainability (EIP AGRI) that is based on an interactive approach to innovation. The paper defines the theoretical framework of this approach and attempts to understand how the governance has facilitated or hindered this intervention. A comparative analysis of the Rural Development Programmes of four Italian Regions (Veneto, Emilia-Romagna, Umbria and Basilicata) was conducted, with particular attention to the rules and implementation criteria of the specific actions that financed the EIP AGRI projects (Sub-measures 16.1 and 16.2). The analysis shows the effects of regional governance on crucial factors of the EIP AGRI theoretical approach: co-creation of innovation between research and practice, centrality of farms and territories' needs, promotion of relations and networks, interactive action between the actors in the innovation chain. The Regions have paid different attention to the characteristics of this approach to the innovation; some factors are pursued by all Regions, while others have not yet been transposed and implemented. Some of these are clear and have been implemented through adequate rules and criteria, while for others, the appropriate implementation methods have not been identified and so the EIP AGRI projects are not consistent with the approach. The main notable conclusion is that all the Regions examined are substantially consistent with the dimensions of interactive approach that emerge from the international literature. Nevertheless, different methods and degrees of consistency have been highlighted.

Keywords: agricultural innovation process, innovation governance, EIP-AGRI, multi-actor approach, interactive approach.

JEL codes: Q16, Q18, O13.

1. INTRODUCTION AND BACKGROUND

In the European programming period 2014-2020, knowledge, innovation and other related themes (education, information, advisory, etc.) have a central role for the agricultural policy. Many novelties regarded the approach chosen for the implementation of the interventions (Vagnozzi, 2015); they are briefly outlined below:

- knowledge and innovation are the first and cross-cutting priority of the rural development policy; they are supports and, at the same time, multipliers for the other aims and actions;

- different components of the classical Agricultural Knowledge and Innovation System (AKIS) are involved in the interventions; roles and tasks are established for each one (for instance, information and advisory);
- the need to create bridges between agricultural/forestry operators and the research results is emphasized;
- the cooperation and creation of blended partnerships are the most important instruments to promote innovation on farms and to stimulate research driven by their needs.

In this context, the most innovative initiative is certainly the European Innovation Partnership for Agricultural Productivity and Sustainability (EIP AGRI) that is one of the EIPs launched with the strategic European Commission document “Europe 2020” (2010) and defined with the Communication “Flagship Initiative Innovation Union” (2010). The first inserted Smart growth among the three main priorities of the European Union with the aim of developing an economy based on knowledge and innovation. The second chose the European Innovation Partnerships as instruments of innovation promotion and established their main characteristics: challenge-driven; acting across the whole research and innovation chain; streamlining, simplifying and better coordinating existing instruments and initiatives.

The EIP AGRI was first described first of all in a European Communication of 2012 and has been the object of other official documents that have clarified its operative aspects and proceeding implementation (2014). Its financing has been envisaged in the EU Regulation for rural development (reg. UE 1305/2013) for the period 2014-2020. This Regulation establishes the contents and modality of EIPAGRI implementation and, in art.55, declares that it has the same development aims as the rural policy (reg. EU 1305/2013, art.55 «promote a resource efficient, economically viable, productive, competitive, low emission, climate friendly and resilient agricultural and forestry sector; help deliver a steady and sustainable supply of food, feed and biomaterials») plus the specific goal to create collaboration among AKIS actors for disseminating innovations.

The European Commission has chosen to implement EIP AGRI taking into account the principal elements of the interactive approach to innovation (Leeuwis and Van den Ban, 2004; Matera, Giarè, Klerkx, 2015) taking on board the scientific results of recent decades:

- the positive co-existence between innovation from research and innovation arising from practice (Ingram *et al.*, 2018);

- the importance of producing tailor-made innovations analyzing the socio-economic context and farmers’ problems/opportunities (Sewell *et al.*, 2017);
- the need to provide frequent interactions among different rural actors (Klerkx, van Mierlo, Leeuwis, 2012; Hermans, Klerkx, Roep, 2015) in order to promote effective development actions.

The positive effects of these aspects had already been verified in many experimental studies, also in Italy (Vagnozzi, 2007), but they have not been widely used in the development actions funded by public institutions. Currently the linear approach to innovation, which envisages a preeminent research role and considers farmers as passive actors, is still the most common (EC Guidelines, 12/2014). For this reason, it is crucial to understand what kind of concerns the public institutions should have to implement referring to the EIP AGRI initiative in coherence with European policy objectives (Schut *et al.*, 2016). Not only the regulatory and planning instruments are important, but also how the different actors are involved in the processes (McCarthy, Bonnin, Meredith, 2019) and the implementation choices concerning: the production sectors and technologies on which to spend, the projects’ selection to be financed (Hermans *et al.*, 2019), the animation actions to be undertaken. Usually this set of interventions is known as governance and is expressed in the official actions that follow the legislative and programming phases.

The two strategic documents for the future of Europe post 2020 (Green Deal) and agriculture in Europe (From Farm To Fork) recognize the important role of knowledge and innovation systems in accelerating change towards food sustainability and a specific focus will be assigned to the EIP-AGRI initiative (Van Oost, Vagnozzi, 2020). Some authors, indeed, showed the importance of PEI AGRI initiative for farmer’s participation in innovation process (Molina *et al.*, 2021) or for solving problems of agriculture practices such as increasing or maintaining soil organic carbon content (Costantini *et al.*, 2020). Other researches highlighted the role of Operational Groups (OG) as innovation intermediaries (Piñeiro *et al.*, 2021).

The theme of policy governance has been tackled by an extensive scientific literature that has focused on many different aspects as, for example, the role of public institutions in economic development (Rodrick, Subramanian, Trebbi, 2002; Acemoglu, Robinson, 2012). A study on rural development and cohesion policies in Italy (Mantino, 2014) widens the field of analysis and identifies four fundamental macro-variables: «a. the actors involved in policy making; b. the multi-level relationships between levels of government; c. the regula-

tory framework of policies; d. the degree of “community involvement (Goodwin, 2005)».

More recently, Marlinde *et al.* (2018) have highlighted that «Although recent CAP reforms have led to better integration of agricultural and rural policies there is a need for more recognition of the role of multi-actor governance in aligning farm modernization with sustainable rural development», pointing out the importance of governance as a set of coordinating and monitoring activities also for promoting a more participatory rural development.

This analysis aims to verify how the EIP AGRI initiative has been influenced by the different governance choices of some Italian Regions, in their role as managing authorities of the Development Rural Programmes (DRP), which are the same programming documents envisaged by the mentioned reg. EU 1305/2013.

In order to better analyze the relation mentioned above, a framework (Fig. 1) that summarizes the main aspects of the EIP AGRI implementation is proposed. It includes two different levels of analysis: the context (or external) factors related to contextual conditions that are specific commitments of the public institutions and the operative (or internal) factors concerning the characteristics of the actions that are the object of the intervention and their implementation processes. The EIP AGRI operative actions are the Operational Groups (OG), complex partnerships involved in projects designed to respond to farm problems or generate opportunities by using innovations. The assumptions of this article are that the regional choices of governance for the EIP AGRI

affect not only the context factors, but also the operative factors.

The first set consists of the main components of the European knowledge and innovation policy and the interactive approach to innovation:

- close relationship between knowledge/innovation and sustainable development,
- central focus on needs,
- support for the creation of networks,
- involvement of all AKIS actors,
- construction of common strategies,
- availability of farmers' services,
- dialectic between paradigm and niche model productions.

All the factors are mentioned above, except the last; it regards a condition (Ingram, 2017) present in many agricultural territories in which traditional and new production processes coexist. In these cases, public institutions should create an environment conducive to the coexistence of both knowledge systems and their positive comparison. It is especially important for the diffusion of innovation that is not facilitated by a conflictual environment or a closure approach.

The operative factors regard the OGs' projects for both the setting up and management. Indeed, they aim to spread innovations in rural areas using a specific *modus operandi*:

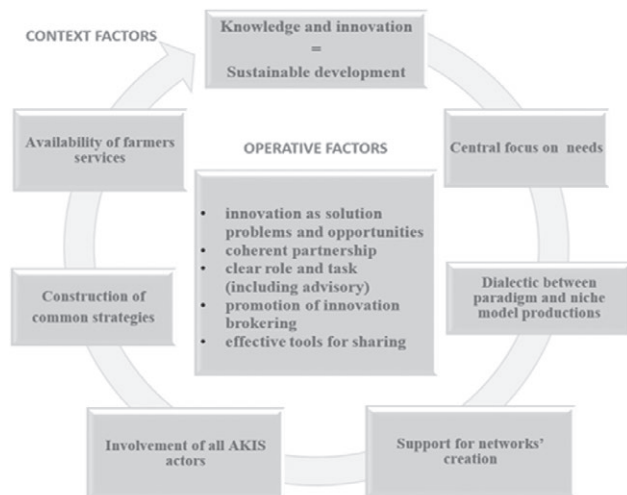
- being focused on the farmers and their needs,
- involving actors in line with the issues that have to be addressed,
- assigning to the project's partners tasks based on their actual abilities,
- using interactive methods and tools for the project management,
- using effective tools for sharing the innovative solutions (Aker, 2011; Leeuwis, Aarts, 2011).

This analysis aims to verify how the first Italian Regions that have launched the EIP AGRI initiative – Basilicata, Emilia-Romagna, Umbria and Veneto – established the implementation governance and whether it can be considered consistent with the approach recommended by the European Commission (Maziliauskas, Baranauskienė, Pakeltienė, 2018) and with the general objectives of the Rural Development Programmes (RDP).

1.1. The context: the EIP AGRI in Italy

In Italy, the rural development policy is realized at regional level through 21 Rural Development Programmes (RDP); EIP AGRI was planned by all the regions, except Valle d'Aosta, within specific parts of the RDPs named Sub-measures 16.1 and 16.2. In Janu-

Fig. 1. EIP AGRI Iniziative: contextual and operative factors for Interactive Approach.



Source: our elaboration.

ary 2019, the total planned budget for EIP AGRI was around 245 million euro, 1.3% of total RDPs budget. By June 2019, only 7 Regions and 2 Autonomous Provinces have selected OGs for a total number of 266. The other Regions are committed to setting up the administrative procedures for selecting, but are lagging behind due to their complexity for selecting OGs. The final Italian objective is 626 OGs.

The Italian Regions are using different options to select OGs. Emilia-Romagna, Umbria and Bolzano A.P. adopted a single phase (only one call for selecting OG projects), while the other regions used the double phase: the first, called “setting-up”, has the goal of helping the beneficiaries to draft the ideas and partnerships, the second consists in the real call for selecting the OG projects (Ascione, Ugati, 2017). There are many other differences in the procedures for selecting the Italian OGs that are not relevant for this analysis, but it is important to highlight that the above-mentioned Sub measures are characterized by a high bureaucratic complexity (Zezza *et al.*, 2017).

To facilitate the implementation of rural development policy, reg. EU 1305/2012 envisaged the establishment of National Rural Networks (NRN) in the European Member States. The Italian NRN is a support also for the implementation of EIP AGRI, organizing workshops and other meetings addressed to:

- regional officers, with the aim of clarifying the EIP AGRI approach, facilitating exchange on the OGs implementation and trying common solutions;
- OGs partnerships, aimed to share information, exchange experiences, create links among actors, mainly on specific problems or opportunities.

The Regions participated differently in the various events; those which are the subject of this analysis have been more active than the others. NRN also created a specific toolkit aimed to support regional administrations in implementing the intervention and collecting information. It contains a project form, in accordance with the common European PEIAGRI format, a proposal for the cooperation agreement, an OGs regulation scheme and a proposal for collection of the minimum information for monitoring.

2. MATERIAL AND METHODS

The study was conducted using the case study method, through interviews with relevant actors, literature analysis, and contents analysis of documents. The case studies were carried out according to the methodology defined by Yin (2018), which allows comparison of the

observed cases through in-depth interviews, to identify the “mechanisms” that generate certain results and/or impacts. This methodology is normally applied in new and innovative situations or in the analysis of pilot programmes, in policies based on partnership logic during the definition process, and when it is believed that “the success” of an intervention is strictly dependent on a specific situation; these are cases in which the result is not easily definable *a priori* because it depends on several variables. Therefore, this methodology allows the characteristics of a case to be recognized and to identify micro-ethnography, which is generally constructed according to the grounded theory (Glaser, Strauss, 1967; Henwood, Pidgeon, 1995): the analysis is certainly oriented by pre-notions that act as “sensitizing concepts” in the initial phase of analysis, but these pre-notions must be put aside during data collection, observation, coding, categorization and elaboration. The pre-notions influence each other during field work, questioning them, enriching them, radically changing their meaning and content.

After conducting the interviews, the work adopted a predominantly inductive approach. The analysis process was divided into three phases (Fig. 2): a) a desk analysis on RDPs documents (programmes, selection criteria approved by the Monitoring Committee, calls for Measures 16.1 and 16.2, other documents published by the Regions for the measures implementation) and OG projects (SFC forms, project posters, regional and NRN publications) was performed in order to understand the choices made at regional level, using assigned labels according to the recent literature on innovation pathways and interviews with regional referents; b) a comparative analysis was made, aimed at highlighting elements of convergence or divergence between regional choices taking into account the EIP AGRI characteristics; c) finally an analysis of the results obtained in the two previous phases was conducted considering the literature available on the topic aimed at the assessment of compliance with the framework (Fig. 1).

For the documentary analysis, a scheme was created by which the documents were “interrogated”, according to labels taken from the literature and implemented through the content analysis method (Losito, 2002; Arosio, 2010, 2013). This procedure, frequently used in social research, allows the analysis to be conducted according to the “investigation” method (Losito, 2007): the text is examined with the aim of identifying the prevailing aspects and relocating them to categories identified *a priori* by the researcher.

As mentioned above, the first Regions that activated the EIP AGRI initiative were analyzed: Basilicata,

Emilia-Romagna, Umbria and Veneto; they cover different geographical positions (Northern, Central and Southern Italy) and present one or two phases in the implementation of measures (setting up and OG constitution). The people interviewed were selected among regional managers or officers and other actors involved in the EIP AGRI implementation, based on their qualities: individuals who are proficient and well-informed about the specific phenomenon (Cresswell *et al.*, 2011). Due to the short time elapsed since the start of the OG activities, the work did not focus on their results, but was limited to the observation of their characteristics in terms of types of partners, it identified problems and needs, innovations to be adopted, etc. For this reason, the OG partners were not considered as actors to be interviewed. A total of 11 interviews were conducted: in each Region, the person responsible for Measure 16; in addition, in Region Veneto 2 officials dealing with the OGs, in Emilia-Romagna 1 official dealing with the OGs and 3 researchers of regional bodies (Crpv and Crpa), in Umbria 1 referent of regional body (Parco Tecnologico). The interview was focused on the RDP definition process, choice of criteria to select the OGs and their compliance with EIP AGRI purposes, presence of intermediate entities to facilitate the implementation process, information and support activities, criteria and selection process, participation in national or international events, compliance with expectations of the regions, difficulties of OGs in the project implementation.

According to the concept of “theoretical sampling” (Strauss and Corbin, 1990), we analyzed the interviews and proceeded to identify core categories of analysis, compared to those obtained from the literature and regional documents.

3. RESULTS – THE DIFFERENT CHOICES OF GOVERNANCE

The analysis of the regional official documents (RDPs, texts of calls, guidelines, etc.) and the interviews have pointed out that the governance pathways for EIP AGRI implementation are set up according to these steps:

1. negotiation activities with the European Commission;
2. drafting of Rural Development Programmes (RDPs) and following institutional choices;
3. definition of eligibility and selection criteria for calls;
4. animation activities.

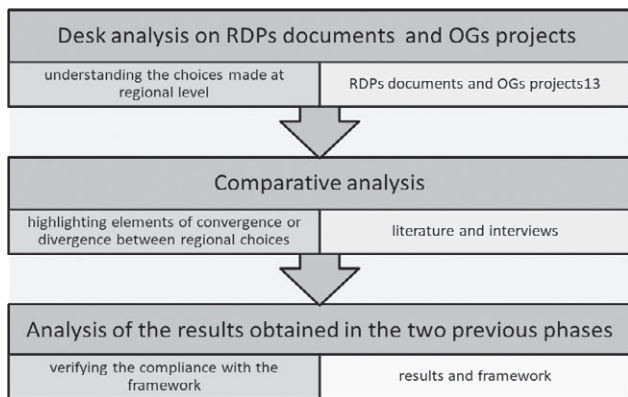
These four phases have been temporarily or permanently accompanied by support/technical bodies.

The different governance pathways for each phase can be identified relying on regional choices related to EIP AGRI OGs implementation. As mentioned above, these choices are made during and after the approval of the RDPs and the Measures/Sub-measures of which it is composed. They concern implementation of the EIP AGRI initiative especially with regard to the OGs' projects.

The step related to *negotiation activities with the European Commission* influenced the regional choices only in Emilia-Romagna (ER) and Umbria (U) Regions. In the first case, ER was oriented to promote large OGs aimed at solving problems relevant in terms both of potential number of enterprises and of actors involved. The European Commission, instead, recommended to the Regions to focus their attention on specific and precise problems and appropriate partnerships. Therefore, the ER Region has adapted its official documents (RDP, selection criteria, calls etc.) modifying the previous design. In the second case, U had also included in the RDP priority issues concerning the OG projects, but the European Commission requested that this approach be changed to more general contents. These recommendations have not been addressed by the others Regions. The analysis of this phase highlights the inconsistent behaviour of European officers, who do not seem to have provided the same advice to all the Regions.

Analyzing the behaviour for *the RDP and institutional drafting choices*, it is possible to recognize two approaches: that based on *participated choice* and that based on *knowledge and experience*. The first one was applied in Basilicata (B) and Emilia-Romagna, it consisted of organized structured discussions with stakeholders (producer organizations, scientific bodies, environmental organizations etc.) held during specific meetings or using the existing permanent committee. This approach enabled common choices to be shared, to pro-

Fig. 2. Analysis Process.



Source: our elaboration.

mote farmers' participation, to limit possible controversies on implementation of the initiative (B) and to adapt calls for the OGs selection in order to respond to emerging needs (ER). For example, the ER standing committee requested: greater importance for internal areas, more weight for social criteria, greater weight for projects with high use of training activities; these demands were taken into account in the calls. These two Regions designed the RDPs in agreement with the managing authority of the European Regional Development Fund (ERDF) to operate a demarcation between the ERDF and the European Agricultural Fund for Rural Development (EAFRD), positioning the agri-food sector (ER) and Bio-economy (B) into S3 Strategy (ERDF) and interventions for the agricultural sector in the RDP (EAFRD). However, collaboration between the two-managing authorities was more intense in the programming phase than in the implementation one.

The second approach is characteristic of Veneto (V) and Umbria (U). These Regions chose to construct the RDP's specific measures and the decisions process starting from socio-economic analysis of the agricultural sector, through platforms to measure consensus (V) or based on previous experiences, mainly related to Measure 124 of RDP 2007-2013 period (U). Consequently, the Veneto Region rewarded the projects' quality and compliance with the needs; Umbria Region gave priority to the importance of productive sectors and technical/economic solutions for regional agriculture (in terms of farm numbers and production hectares).

The definition of eligibility and selection criteria of the calls for applications is an important element within the implementation phase (Fig. 3). In terms of eligibility, the Regions analyzed considered the participation

of farmers in the OGs as compulsory, with different degrees of importance: while Umbria requested at least one farmer, Veneto and Emilia-Romagna mentioned in general the term farmers, just Basilicata demanded at least five farmers for each OG. With regard to the minimum number of participants, the regions acted differently: U and V requested at least 2 components for each OG, B at least six and ER provided no indication. In all the Regions, except V, at least one research organization had to be involved in the project.

Furthermore, also about the advisory, Regions acted differently, with B providing for a maximum expenditure of 5% of the total amount for consulting activities and other Regions that did not provide indications on intervention costs. The presence of an advisory body or consultant is not compulsory in any Region.

Emilia-Romagna and Umbria gave a significant role to the project's contents, with a weight ranging from 30% to 43% for ER and 30% as maximum point for U. However, while the former Region has split the criteria into different items and points (management issues, actions with reference to needs/opportunities, costs, real impact on agricultural holdings, indicators and dissemination), Umbria did not provide specifications of the criteria, entrusting the evaluation task to a committee of experts named by Managing Authorities. However, U is the only Region that requests a direct connection between the innovations chosen in the OG projects and the weight of the agricultural regional characteristics and problems and recognizes an important score (30%) to this connection.

Basilicata rewards the attention to impact on agricultural practice (30%) and needs (24%). Veneto is more concentrated on planning quality (14.3%) and external/

Fig. 3. Main selection criteria OGs projects for Regions.

	Basilicata	Emilia-Romagna	Umbria	Veneto
Farmers in partnership	compulsory	<u>compulsory</u>	<u>compulsory</u>	compulsory
Researchers in partnership	compulsory	<u>compulsory</u>	<u>compulsory</u>	not compulsory
Advisors in partnership	not compulsory	<u>not compulsory</u>	<u>not compulsory</u>	not compulsory
Scientific and technical contents	20%	30%- 43%	30%	not envisaged
Link to needs and problems	impact on agricultural practice (30%) consistent with needs (24%)	consistent with Focus area RDP (9%)	connection with regional characteristics and problems (30%)	impact on agricultural practice (7.1%) consistent with PSR needs (7.1%)
Consistency partnership composition	0.1	0.11	not envisaged	0.071
Information and diffusion	0.16	10 -15 %	0.2	0.1

Source: our elaboration.

internal coherence of the project (14.3%); the experimentation and evidence of the innovations' effectiveness (17.9%) are also very important.

Partnership composition is central to the EIP AGRI approach: the project has to involve a heterogeneous group of actors coherent with the identified contents and needs. This consistency is scored by all Regions except Umbria.

Communication and dissemination are significant elements for transferring innovations and all Regions considered it in the selection criteria even if with different approaches. U rewarded especially information activities (web, newsletters, meetings, etc.), ER took into account the presence of a dissemination plan as criterion of the project quality and gave a maximum point of 15% to the presence of training/advisor activities for transferring results, B and V provided a score of 16% and 10% respectively for information activities and advisory actions.

Another important action of governance for the results of the OGs is represented by *the animation activity*. It is central for all Regions that realized it at the beginning and during the implementation. However, the aims of this activity are quite different: ER and U have focused their actions on organization aspects and administrative rules, B and V also on the methodological approach and partnership creation.

Finally, a crucial element for immaterial initiatives acting on human capital and its cultural aspects is *the availability of a (public) organization capable of supporting* the entire system and its components. The four Regions have at their disposal some support/technical organizations, experts in the OG topics, but only Umbria has involved its own organization (Agrifood Technological Park) for supporting the initiative; the others did not involve their structures in the governance pathway, so in ER and B they are part of OG partnerships. The choice of Umbria guaranteed support for the partners during the creation of the OGs and in the following activities.

In order to have a complete overview, some available data on the implementation of the OGs of the four Regions were analyzed. It is a descriptive analysis on the ongoing situation and it does not provide information about the effects of the OG projects; however, it may be useful to understand the first results of the above-mentioned governance choices (Tab. 1 and Tab. 2).

The data show two approaches: the presence of OGs with considerable economic resources and a broad partnership (Umbria) and OGs with smaller economic resources and fewer participants (Emilia-Romagna). These choices could generate different effects on the projects results, but now it is impossible to understand which choice is the most effective.

Tab. 1. The EIP AGRI budget per Regions, OGs selected, average budget per Og.

Regions	Planned budget (€)	OG (n)	Granted Budget(€)	Average budget per OG
Basilicata	2.800.000	11	2.800.000	254.545
Emilia-Romagna	40.822.601	93	19.039.153	204.722
Veneto	30.836.270	56	23.763.598	424.350
Umbria	8.800.000	17	7.668.553	451.091
Total	83.258.871	177	53.271.304	300.968

Source: our elaboration from National Operational Groups Database (March 2019).

Tab. 2. Partner number OG per Region and tipology.

Region	Farms	Research institutes	Advisories	SME	NGO	Other	Total	Average participants per OG
Basilicata	50	36	5	3	0	25	119	11
Emilia-Romagna	377	198	19	36	0	80	710	8
Umbria	175	42	23	21	0	33	294	23
Veneto	51	30	9	19	0	39	148	8
Italia	686	324	65	94	0	201	1370	9

Source: our elaboration from National Operational Groups Database (March 2019).

Tab. 3. The OGs projects per contents.

Regions	Field crops	Tree crops	Fodder crops	Forest crops	Total	% on total regional OG		
Basilicata	1	3		1	5	45,5		
Emilia-Romagna	10	23	1	1	35	37,6		
Umbria	1	3		1	5	29,4		
Veneto	7	18		4	29	51,8		
Totale	19	47	1	7	74	41,8		

Regione	Cattle	Pigs	Other livestock	Livestock products	Total	% on total regional OG	
Basilicata			1	1	2	18,2	4
Emilia-Romagna	12	8	3	2	25	26,9	33
Umbria	1			1	2	11,8	10
Veneto	4		2	3	9	16,1	18
Totale	17	8	6	7	38	21,5	65

Regions	Technical Innovation	Socio-economic innovation	% on total regional OGs (a)	% on total regional OGs (b)
	(a)	(b)		
Basilicata	4	7	36,4	63,6
Emilia-Romagna	85	8	91,4	8,6
Umbria	6	11	35,3	64,7
Veneto	37	19	66,1	33,9
Totale	132	45	74,6	25,4

Source: our elaboration from National Operational Groups Database (March 2019).

The information on project contents (Tab. 3) shows that Basilicata, Emilia-Romagna and Veneto invested mainly in crops, and particularly in tree crops, then in livestock. This choice is consistent with the specific regional productive orientation: olive oil production in B, fruit growing in ER, wine growing in V.

U, instead, focused mainly on cross cutting themes. This situation is consistent with the aims declared by the regional representatives in the first phase of EIP AGRI intervention: they promoted innovative actions on the most important regional productive sectors favouring transversal issues common to all. Regarding the cross-cutting themes, B and U have chosen to spread socio-economic innovations, while ER and V focused mainly on technical innovations.

4. DISCUSSION

The comparison between the results of analysis and the framework that summarizes the main aspects of the EIP AGRI implementation shows:

- Regions have paid different attention to the characteristics of the interactive approach to innovation;

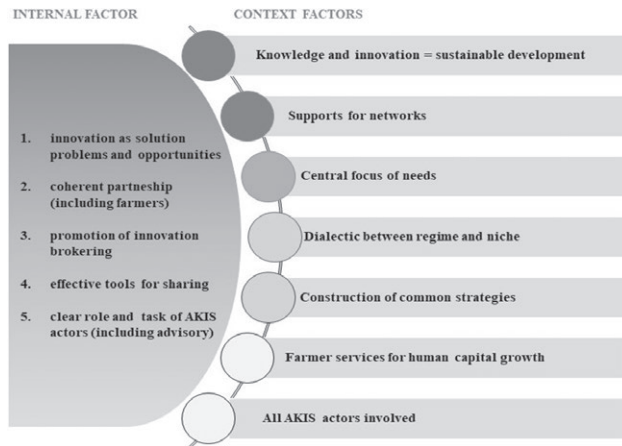
- some interactive approach factors are pursued by all Regions, while others have not yet been transposed and implemented.

The diagram (Fig. 4) shows the main results using different colour intensities: the intensity is stronger for the aspects addressed and less so for factors that have not yet been implemented.

The *support role of innovation to promote sustainable development* is considered central by all Regions, which have connected their RDPs' aims with the diffusion of knowledge and innovation. The references to the various focus areas envisaged in the RDPs and in the texts of the calls provide some evidence of this. Each focus area responds to specific goals such as farm competitiveness, biodiversity maintenance, solutions for facing climate change or actions for water use efficiency, etc. The Regions have chosen the most strategic ones for local agriculture and included new focus areas in the latest calls following the stakeholders' requests. Moreover, in the calls a high score was often reserved for the consistency between OG projects and the general RDP aims, or the agricultural needs or characteristics of local agriculture.

The *creation and strengthening of the networks* have been important for all Regions. Veneto funded a spe-

Fig. 4. Contextual and operative factors for Interactive Approach: evidence from case studies.



Source: our elaboration.

cific phase for the construction of the projects (setting up phase), to help consolidation of the partnership and be consistent with the project goals. The other Regions spent some months before the calls to conduct animation activities and meetings with potential beneficiaries. According to the interviewees, the most important result of EIP AGRI initiatives in their Regions is the creation of networks among the OGs' participants. This also applies in local contexts where cooperation, association and any other form of relationship among agricultural actors are not so frequent. In the opinion of the stakeholders, the OGs novelty concerns the way in which the partners work together.

The *focus on needs* is an important dimension of the interactive approach to innovation; scientific findings based on analysis in different contexts highlight that a process "from problem/need for innovation" allows real problems and "tailor made" solutions to be identified. As shown above, the regional governance has given enough importance to the presence of farmers in the partnerships, but it does not seem that the tools have been found to promote the effective involvement of farmers in the project activities.

Also, the *dialectic between the productive approaches of regime and niche* or the *construction of common strategies* are pursued in the regional pathways. However, it is complex to manage these processes involving all the actors potentially interested in all the phases, mediating among different needs and promoting coherent actions. By way of example, Emilia-Romagna has a Standing Committee for agriculture, but management of the dialogue and implementation of the common choices require public offices to assign human resour-

ces and dedicated structures. Umbria has an internal organization (Agrifood Technological Park) with the role of intermediary between the Region itself and the other AKIS stakeholders, but this role is often interpreted more as a support for administrative and technical issues rather than as a strategic and mediating one.

The contextual factors less pursued by regional policy are: the *promotion of a holistic approach to the Agricultural Knowledge and Innovation System* and the *enhancement of services with the aim of human capital growth*, especially concerning farms. The causes of this "carelessness" are manifold; the most important is the Regions' lack of an independent political strategy. Therefore, after the 2008 economic crisis, the Regions reduced their funding for agri-food knowledge and innovation. In this period the activities related to AKIS were financed only by the European Union and were organized according to the rules of European funds and programmes. In the absence of an independent and local organization of AKIS, the RDPs' current approach does not allow a system of innovation and knowledge to be built. Indeed, information, education, demonstration activities, advisory and the testing of innovations are provided in separated sections of the programmes (Measures) with their own implementing rules and are often also managed by different offices and heads. Therefore, among the RDPs' interventions, it is possible to affirm that the OGs are the more systemic and articulated form of initiative for innovation in Italy. However, the presence of all AKIS actors in the OG' partnerships, especially advisory and education actors, is only rarely guaranteed. This aspect is an important lack also with regard to the growth of agricultural human capital that is usually promoted by a group of actors involving different components of extension services (information, education, demonstration, etc.).

The *operative factors* of OGs have a tendency rather similar to environmental factors. The first aspects of the interactive approach, the control of needs (both problems and opportunities) and construction of the partnership are well defined. In addition, the brokering function to find specific skills and coherent actors was carried out in all Regions. These are the main positive results that the stakeholders have reported to us during the interviews. The OGs are a good experiment to construct networks and start up relations between local or similar interest actors.

The second aim of the OGs approach (diffusion of the innovative solutions to farms not included in OGs partnerships) presents some critical issues. The most common idea among the stakeholders interviewed is that the innovation experience of the farms within the

OGs can easily be made available to other farms with similar structures and productive problems which are outside the OGs. Instead, to carry out this principle, the interactive approach needs to be implemented through tools adequate to communicate and share the results externally. It requires the engagement of professionals with specific methodological expertise as advisors and trainers (inside OGs), in order to promote the adoption of innovations.

The main notable conclusion – based on the analysis of governance choices for the implementation of the OGs intervention in Italy – is that all the Regions examined are substantially consistent with the dimensions of interactive approach that emerge from the international literature. Nevertheless, different methods and degrees of consistency have been highlighted.

5. CONCLUSIONS

A variety of topics were discussed in this work and a multitude of policy implications exist for each topic.

First, it is possible to suggest a more precise definition of innovation needs, to be carried out with an appropriate methodology. From the study of RDPs, it seems that the innovation needs are often analyzed using non-specific tools and data but instead using general information collected for the analysis of the RDP context (number of farms, utilized agricultural area, economic dimension, crops type, etc.). This type of data – generally indicators of quantitative nature – is a characteristic of possible weakness; it isn't enough to identify real problems or needs to face. On the contrary, the analysis of a more complex problematic situation, using quantitative and qualitative data and directly involving the actors, mainly farmers, allows specific problems to address to be identified introducing tailor-made innovations. There are several approaches to the needs analysis which can be used effectively to identify innovation needs through the engagement of all actors involved in the agricultural sector. The choice of some Regions to set up a public agricultural committee composed of a heterogeneous type of stakeholders could be useful to correct an inaccurate needs analysis or to identify rules, criteria, procedures to implement the innovation actions and reduce disputes among stakeholders or between stakeholders and the regional administration.

Another important aspect of governance of these processes concerns the need to connect public investments addressed to farms with public innovation actions in a more strategic way, in order to build a more coherent rural development policy. For example, the Rural

Development Programmes provide some financial support for the purchase of machinery and equipment or for the improvement of agricultural structures which are not part of actions aimed at implementing farms innovation (EIP AGRI or others). Greater consistency between the possibility to invest in machinery or structures and product, process or organizational innovations would make the entire rural development intervention more effective.

In the general framework above, it has been highlighted how some context or external elements useful for a correct application of the EIP AGRI approach are still inadequate, mainly regarding the involvement in OGs of all AKIS actors, the construction of a common strategy and some agricultural extension services. For a long time, different authors – mentioned above – have explained that to adopt a systemic approach is one of the most important opportunities for public institutions to make such innovation actions more effective and efficient. The diffusion and adoption of innovation are positively influenced by multiple factors that concern many areas of action – research, information, education, advisory – and many specific tools – web, mass media, demonstration, tailor-made advisory, ICT. In the presence of coordinated interventions or programmes:

- the effects are enhanced,
- the novelties adopted by the farms are more adequate for the conditions and needs,
- the adoption becomes also a growth opportunity for farmers and agricultural workers.

Based on these scientific pieces of evidence, the EU policy has already indicated in the development of the AKIS the future of innovation interventions. The draft regulation of the Common Agricultural Policy for the next programming period promotes a holistic intervention. This general approach should be applied with actions that do not fragment the area of innovation diffusion of the different interventions into many separate “measures”, each with its own rules and financial procedures. The same approach has positive effects also within projects for the diffusion/adoption of innovations – such as the EIP AGRI OGs projects covered by this article.

Another element shown by the previous analysis is the increased attention that policy makers should pay to education and training activities, especially for their effects on human cultural growth. These interventions are often used as if they were information instruments; when farmers and other agricultural workers attend training initiatives, they often do not increase their knowledge and skills because the education actions are structured in traditional ways, many using classroom activities and few practical experiences. The

actions financed by public policies should focus more on increasing the beneficiaries' autonomous choice by using adequate tools to do so. Moreover, advisory is an area of action which should be strengthened both in regional AKIS and in innovation projects. The improvement includes more widespread presence in the projects, recognizing their role in supporting farmers and accompanying innovative change and providing the tools useful for the role and skill of specific advisors. Consultancy work is often considered only for the good oral suggestions to farmers and not for the various instruments that make the advisor's work more effective. With these tools, agricultural workers could be followed up to the adoption and use of innovation solutions.

Regarding the methodology used in this work, it is important to highlight the limited number of actors involved in the interviews and the exclusion of OGs partners, due the specific focus of the analysis and the brief experience of OGs at the time of writing the article. However, this shortcoming has been remedied by the availability of numerous official and unofficial regional implementation documents.

The first results show the usefulness of an approach based on a qualitative method and focused on the governance of the process rather than on the procedure, in order to verify the consistency of the implementation of the EIP AGRI with the principles that guide it. Further analysis could be performed with a similar approach with the aim of verifying the consistency in OGs results when they terminate their activities.

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