Ministero dell'Università e della Ricerca

Segretariato Generale

Direzione Generale per il coordinamento e la valorizzazione della ricerca e dei suoi risultati

PRIN: PROGETTI DI RICERCA DI RILEVANTE INTERESSE NAZIONALE – Bando 2020
Prot. 20205L79R8

PART A

1. Research project title

Towards a holistic approach to sustainable risk management in agriculture

2. Duration (months)

36 months

3. Main ERC field

SH - Social Sciences and Humanities

4. Possible other ERC field

LS - Life Sciences

5. ERC subfields

1.	SH1_12 Agricultural economics; energy economics; environmental economics
2.	
3.	

6. Keywords

nº	Testo inglese
1.	agricultural economics and policy
2.	risk management
3.	applied economics
4.	economic behaviour
5.	econometrics

7. Principal Investigator

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8. List of the Research Units

nº	Associated Investigator	Qualification	University/ Research Institution	e-mail address
1.	SEVERINI Simone	Professore Ordinario (L. 240/10)	Università degli Studi della TUSCIA	severini@unitus.it
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5.	ARATA Linda	Ricercatore a t.d. - t.pieno (art. 24 c.3-a L. 240/10)	Università Cattolica del Sacro Cuore	linda.arata@unicatt.it

9 - Substitute Principal Investigator (To be identified among one of the research units participating in the project).

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10. Brief description of the proposal

Risks concern all economic activities. However, over the last years, they have been increasing in width and depth, in the agricultural sector, where all stakeholders have been affected. In fact, experiences of unexpected events have wide consequences, and when they are associated with negative outcomes tend to reduce the willingness to invest, innovate and, in turn, challenge the productivity and competitiveness of the whole agri-food system. This calls for improvements in Risk Management (RM), a complex phenomenon interconnected with many dynamics and choices.
The state of knowledge on RM in agriculture is partial, and the current approach is evolving. Hence, more research is needed.

This project aims to fill some gaps through a holistic approach and forefront methodologies. We will use Italy as a case study. However, results can be of interest to other EU countries.

We will quantify and qualify risks considering their dynamic nature and how they are evolving due to climate changes, in policies and agro-environmental regulations. The project will analyse, through incentivized and contextualized economic experiments, how behavioural factors affect farmers' adoption of RM strategies. We will deepen also on exogenous determinants of risk management choices, by means of Machine Learning techniques, discrete choice and structural equation modelling. The project will also develop feasibility studies on innovative RM tools envisaged by the post-2020 Common Agricultural Policy (e.g. reserve funds for crises, whether-indexed and catastrophe insurances), through quantile and non-parametric statistics. Finally, we plan to use econometric and mathematical programming models to explore the potential implications stemming from the introduction of new RM policy and tools as well as new risk scenarios.

The project foresees a high degree of integration between WPs and RUs and several outcomes and applications, which will be devoted not only to animate the scientific debate but also to provide evidence and recommendations for policymakers, entrepreneurs, business associations, insurance companies and other social groups.

The project is expected to have relevant scientific, technological, and socio-economic impacts. It will improve the understanding of RM, and will test innovative approaches and methodologies that can be applied also outside the agri-food sector. Moreover, it will provide data, information, and methods that will help to design new RM tools to tailor farmers' demand and match their needs. These achievements will foster a more sustainable, resilient and competitive primary production, capable of coping with the global challenges.

The high socio-economic impact of the project will be ensured by a strong and continuous engagement of stakeholders and an intense exploitation and dissemination of the results.

11. Total cost of the research project identified by items

Associated Investigator	item A.1	item A.2.1	item B	item C	item D	item E	sub-total	Total
SEVERINI Simone	35.734	160.000	117.440	3.000	20.000	5.000	341.174	**341.174**
TRESTINI Samuele	31.613	60.000	54.968	3.000	0	4.000	153.581	**153.581**
RAFFAELLI Roberta	30.798	60.000	54.479	3.000	18.000	4.000	170.277	**170.277**
SANTERAMO Fabio Gaetano	29.744	60.000	53.846	0	0	7.000	150.590	**150.590**
ARATA Linda	30.914	60.000	54.548	3.000	0	4.000	152.462	**152.462**
Total	**158.803**	**400.000**	**335.281**	**12.000**	**38.000**	**24.000**	**968.084**	**968.084**

N.B. The Item B and TOTAL columns will be filled in automatically

- item A.1: enhancement of months/person of permanent employees
- item A.2.1: cost of contracts of non-employees, specifically to recruit
- item B: overhead (flat rate equal to 60% of the total personnel cost, A.1+A.2.1, for each research unit)
- item C: cost of equipment, tools and software products
- item D: cost of consulting and similar services
- item E: other operating costs

PART B

B.1

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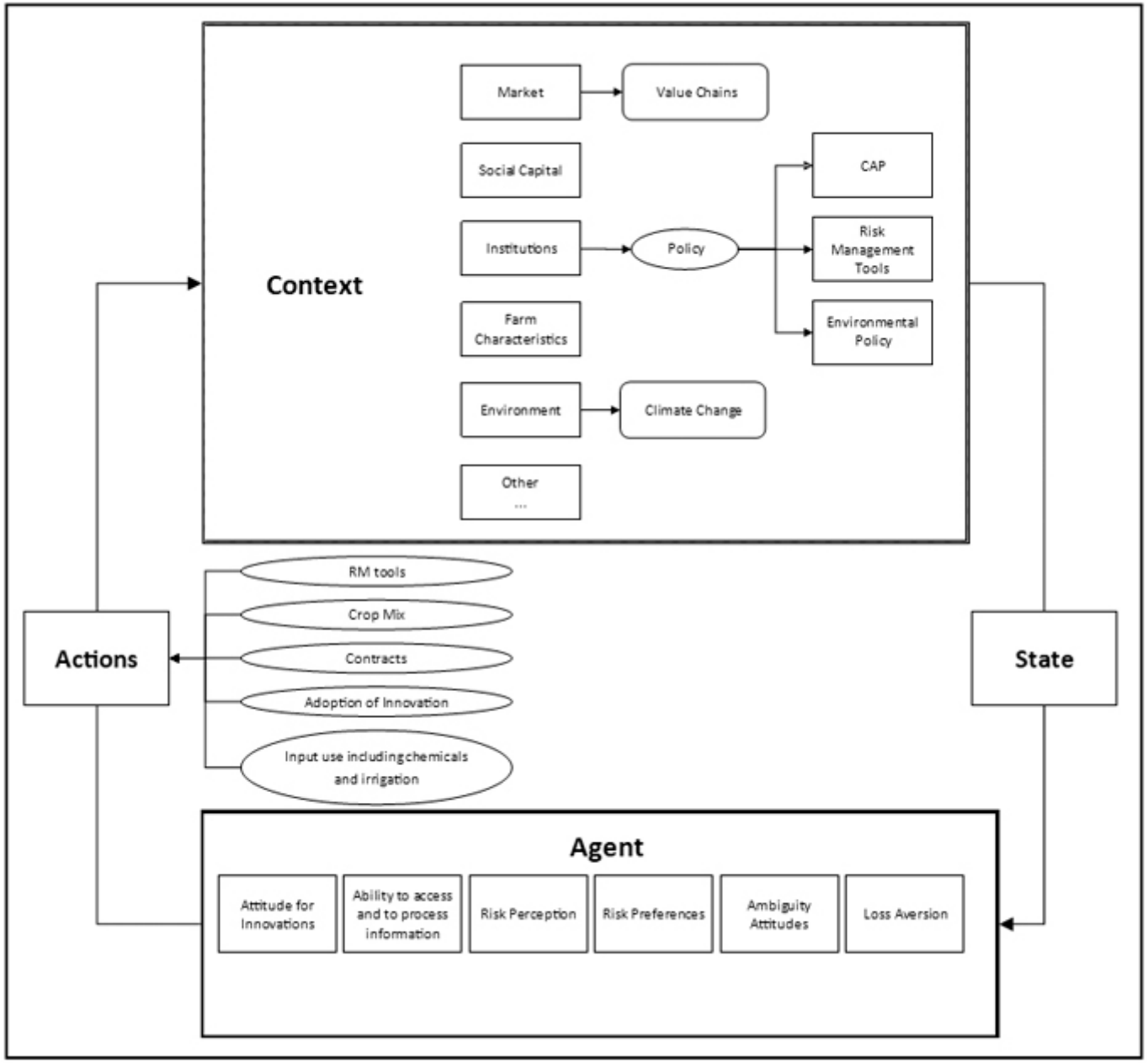
1. State of the art

Risk concerns all economic activities. Agriculture is one of the most vulnerable being exposed to a plethora of risks caused by weather, pests and diseases, prices, changes in government policies, global markets, and other factors (Hardaker et al. 2015).
Risk in agriculture causes wide volatility in farmers' income and wellbeing and makes difficult to make prediction and to take optimal decisions. Furthermore, experiences of negative events reduce the willingness to invest and to innovate (Sckokai and Moro 2009). This, in turn, negatively affects firms' productivity and competitiveness (Vigani and Kathage 2019) and could push them to quit the business. This has negative consequences along the value chain (Cafiero 2008) affecting all stakeholders of the agro-food system.
Over the years, risk in agriculture has been increasing in its width and depth, unveiling the need for improving Risk Management (RM) as recognized by the (European Commission 2017) "[…] it is important to set up a robust framework for the farming sector to successfully prevent or deal with risks and crises, with the objective of enhancing its resilience and, at the same time, providing the right incentives to crowd-in private initiatives".
RM refers to the actions taken to manage potential problems and reduce detrimental consequences of risky events, increasing the chances of success of the business (Kahan 2013). Unfortunately, the state of knowledge on RM in agriculture is partial, and the current approach is evolving to consider the current approach to RM in agriculture is still relatively simple, partial and inappropriate to multi-faced global challenges: changes in climate, more frequent extreme events, unstable and volatile markets, food security needs, and food safety threats. Improving the state of knowledge on RM is relevant: successfully managing risks helps in finding a right balance among productivity, environmental care, market resiliency to climate change, and capability to secure safe and quality food.
A holistic approach to analyse RM is needed to contribute to the state of knowledge because the scientific literature has not been fully able to account for the complex and intervening factors affecting RM decisions in a coherent and connected set of research activities so far. This is probably the reason why evidences on RM are often controversial.
RM in agriculture is a complex phenomenon: numerous RM actions are available, and farmers' decisions are affected by several factors, heterogenous across space and time and interacting with each other (Figure 1).
The influence of risk preferences on decisions making has been investigated (Iyer et al. 2020). However, the literature on the influence of other behavioural factors (i.e., subjective probabilities, risk perception and preferences, ambiguity attitudes, loss aversion and time preferences) while influencing farmers' decisions (Colen et al. 2016), is scant (Cerroni 2020). Similar considerations apply to the attitude for innovations and ability to gather and process information.

Figure 1 – Graphical representation of the environment in which RM takes place.



Economic agents (including farmers) can take several actions to manage risk including adoption of specific RM tools (Cai, de Janvry and Sadoulet 2020; Santeramo 2019), changes in production mix and diversification, subscription of production contracts, use of risk decreasing input such as pest control chemicals and irrigation (Cerroni 2020).
The context affects strongly farmers' decisions. Farm structural characteristics, social capital and market prices play an important role in the decision process. In addition, differently from other sectors, agricultural sector has a strong linkage with the physical environment and is heavily dependent on the public policies, such as the EU Common Agricultural Policy (CAP). The recently released Farm-to-Fork strategy (F2FS) and the CAP reform proposals (European Commission 2018) are likely to strongly influence the relationship between farming and risk. The CAP will continue to support several insurance schemes. However, the F2FS has set very

ambitious environmental targets for EU agriculture (reduction of 50% in the use of pesticides and of 20% in fertilizers by 2030). This will have consequences on the risk faced by farmers because the use of chemicals is intimately related to risk in agriculture and its management (Möhring et al. 2020).
Based on this background, we believe that focusing on Italy would help deriving generalizable results. The Italian case study is interesting for several reasons: (i) farmers rarely rely upon the whole available set of RM tools, especially in central and southern regions; (ii) the Italian agriculture is highly heterogeneous across the country and this may require differentiated RM actions; (iii) Italian policymakers are strongly interested in increasing the adoption of RM actions (Santeramo et al. 2016).

2. Detailed description of the project: methodologies, objectives and results that the project aims to achieve and its interest for the advancement of knowledge, as well as methods of dissemination of the results achieved

The project aims at enhancing knowledge in the area of RM through a holistic approach able to investigate all relevant aspects affecting RM choices using forefront methodologies. Specific objectives and expected results are organized in the following work packages (WP):

WP1: Risk qualification and quantification
WP2: Behavioural factors influencing farmers' adoption of risk management strategies
WP3: Explaining risk management choices
WP4: Feasibility studies and design of innovative risk management tools
WP5: Potential implications of new policies, RM tools and risk scenarios
WP6: Stakeholder engagement, exploitation and dissemination of results.
Furthermore, WP7 is aimed at the project and data management.

WP1. RISK QUALIFICATION AND QUANTIFICATION
This is a key step in developing a correct RM strategy. This should be done not only considering the current situation (Task 1.a) but also future conditions including more binding environmental constrains (Task 1.b) and changes in climate (Task 1.c).

Task 1.a. Whole farm risk analysis and its determinants.
This task contributes to the literature of risk quantification and qualification through an innovative approach that allows addressing two additional and essential issues.
The method of moments estimation, introducing multiple moments, allows for relaxing the arbitrary restrictions on the relationship between inputs and income (Antle 2010; Bozzola and Finger 2020). However, the dynamic dimension affecting RM choices has not been analysed so far, although this is a crucial element in risk analysis given that past choices affect current choices. Similarly, the effort to assess causality is limited. This is due to the difficulties encountered in treating endogeneity problems and causality in the empirical analyses.
We will bridge this gap by using panel Vector Auto-Regressive analysis (Love and Zicchino 2006) that allows not only to treat endogeneity but also to introduce the dynamic dimension and to assess causality.
The analysis will use individual farm data from the Italian Farm Accountancy Data Network (FADN) and meteorological figures (Italian Air Force meteorological service). The analysis will focus on groups of farms allowing to compare results across different economic dimensions and types of farming to spotlight the factors shaping risk.

Task 1.b. Assessment of farm risk in case of introduction of more binding environmental constraints.
The task addresses the potential relationship between chemical use (both pesticides and fertilizers) and agricultural production. The relevance of the topic is twofold. First, the scientific literature provides controversial results: some studies show pesticides as risk increasing while others as risk decreasing (Möhring et al. 2020). The literature agrees that although fertilisers are risk increasing, farmers tend to over-apply them, leading to a "fertilizer paradox" (Paulson and Babcock 2010). Second, findings will show whether the policy objective of reducing chemical use (F2F) can affect the extent and nature of risk faced by farmers.
The analysis will use econometric techniques based on Möhring et al. (2020a). Following Saha, Shumway and Havenner (1997) we will estimate the parameters of a primal production function properly integrated by an appropriate damage abatement function related to the impact of inputs (e.g. pesticides). Special attention will be devoted to the choice of the indicators representing pesticide and fertilizer use (Möhring, Gaba and Finger 2019) and to potential endogeneity issues. Indeed, the use of chemicals may affect the production risk at the farm level and vice versa.
The analysis will be carried out on a representative sample of arable and viticulture farms (FADN). So far, no studies on this issue have been applied to the Italian case and these two sectors are very important for the Italian agri-food sector.

Task 1.c. Assessment of farm risk under climate change pressure including drought and extreme events.
Changes in climate have animated again the debate on how assessing risk and novel techniques have been proposed. The changes in climate are altering (generally worsening) the exposure of economic activities to extreme/catastrophic weather events and natural disasters (Hay 2007). These climatic anomalies, being not well perceived, nor forecasted, have severe impacts on agricultural production and call for adequate coping strategies. Assessing extreme risks would improve the understanding of the farmers' vulnerabilities to these. The rare events have a relatively low probability of occurrence and thus are positioned in the tails of the frequency distribution.
The objective of this task is to assess their probabilities, and how they impact the performances of agricultural activities, in terms of yields. The task, moving from the recent debate (Goodwin and Hungerford 2015; Ramsey 2020), will use flexible methods to model the tails of distributions of yields, price, and weather variables and how these affect yields (Goodwin and Hungerford 2015; Ramsey 2020). In particular will use quantile regressions and copula-based methods to assess how yields and weather variables are related in the tails of the distributions.
Data and data sources are described in Figure 5.

WP2. BEHAVIOURAL FACTORS INFLUENCING FARMERS' ADOPTION OF RISK MANAGEMENT STRATEGIES

Task 2.a. Mapping out the role of behavioural factors on farmers' decision to adopt risk management strategies.
This task consists of a systematic review of the international literature investigating the influence of behavioural factors on farmers' decisions to adopt existing and innovative RM strategies. The review will focus on: subjective probabilities, risk and ambiguity attitudes, loss aversion and time preferences. Except for risk attitudes, these behavioural factors have received scant attention in the literature (Cerroni 2020). Two distinct aspects will be explored. First, the extent to which such behavioural factors influence the decisions to adopt existing and innovative RM strategies. Second, the mapping of different methods used in the wider economic literature to elicit the behavioural factors of interest in this WP. The aim is to identify those elicitation methods that have been recently used to explore farmers' behavioural drivers of decision making under risk and uncertainty.

Task 2.b. Elicitation of behavioural factors affecting farmers' adoption of risk management strategies.
This task aims at eliciting farmers' subjective probabilities, risk and ambiguity attitudes, loss aversion and time preferences. Such behavioural factors have been never jointly and systematically investigated in the literature exploring farmers' behaviour under risk and uncertainty. This investigation will be done by using two incentivized economic experiments at the national level through an online platform.. Thanks to the systematic literature review (Task 2.a), the most promising experimental elicitation techniques used in the economic literature will be used.
Possible elicitation methods are: scoring rules to elicit subjective probability distributions regarding agricultural outcomes (Harrison et al. 2017), the Chakravarty and Roy (2009) multi price list format (MPL) to elicit ambiguity preference, and Tanaka, Camerer and Nguyen (2010) MPL to elicit probabilistic and non-probabilistic risk preferences as well as loss aversion.
The experiments will be designed as both contextualized and non-contextualized experiments to test whether adding context to standard experiments improves the external validity of elicited behavioural factors. This issue is addressed very limitedly in the literature.
Given the substantial differences in RM strategies that can be adopted for arable and perennial crops, the experiments will be differentiated for two groups of farms. Each experiment will involve roughly 300 Italian farms belonging to the FADN database. The chance to pair data collected through the incentivized online experiments with secondary FADN data represents another novel aspect of the project. This will allow exploring whether elicited behavioural factors are good predictors of farmers' decisions at farm level.

WP3. EXPLAINING RISK MANAGEMENT CHOICES
Given the heterogeneity of RM tools, this analysis looks at traditional and more innovative RM tools in different tasks.

Task 3.a. Assessing the determinants of the participation to insurance schemes by using Machine Learning.
The insured value worldwide remains low despite farm insurances offer a way to cope with production risk and are strongly supported by governments (Cai, de Janvry and Sadoulet 2020).
Analysing which factors explain farmers' reasons for insurance schemes is the objective of this task. This objective is relevant because results can support insurance companies and policymakers to create contracts that satisfy farmers' needs.
Farmer's choices are affected by a potentially huge number of factors including external and exogenous factors such as environment and social capital. Unfortunately, traditional methodologies cannot satisfactorily use this large set of variables because of some problems such as multicollinearity and overfitting.
We will use two Machine Learning (ML) approaches (i.e. Shrinkage and Boosting) (Hastie, Tibshirani and Friedman 2009; Storm, Baylis and Heckelei 2019) to explore the issue. These methodologies can efficiently use large set of variables by performing variable selection and ensuring high performance. Obtaining a parsimonious model with high accuracy allow to improve our understanding on the factors affecting the participation to insurance schemes and, in this way, to design better insurance products.
The proposed methodology envisions different application potentialities because it paves the way to use ML and to account for social capital, never considered in this field, in future economic investigations.
The analysis will use data from FADN together with data from the Italian Institute of Statistics (ISTAT), the Ministry of the Interior and the Italian Agrometeorological service to account for social capital and local weather conditions respectively.

Task 3.b. Farmers' preferences for the characteristics of innovative RM tools.
Great interest is directed towards innovative risk management tools aiming to protect against biotic threats (e.g., plant pests and diseases) and extreme weather conditions (Vroege, Dalhaus and Finger 2019) such as insurance, mutual fund and index-based insurances.
We will investigate farmers' preferences for specific characteristics of such innovative RM tools, a relevant but still under-investigated topic.
We will use the Discrete Choice Experiment (DCE) that is a methodology to elicit the individual preferences towards specific RM tools and can provide insights for a more tailored design useful for insurance companies, mutual funds' managing bodies, policy makers. However, only a few DCE have been carried out among European farmers. As a novel contribution, this task will make use of an online DCE to investigate a sample of roughly 300 Italian farmers belonging to the FADN. Preliminary, focus groups with relevant stakeholders (i.e. farmers, insurance companies, policymakers) will provide the list of characteristics to investigate within the DCE, in addition to individual risk preferences. Also, the effect of other farms and farmers' characteristics will be considered using FADN data. Notably, the possibility to pair primary data (DCE) with secondary data (FADN) represents a remarkable novelty.
The results of this task will provide marginal values for the investigated characteristics of the innovative tools and insights regarding the (potential) demand for these.

Task 3.c. Determinants of the adoption of innovative RM tools.
Understanding the decision to adopt innovations by entrepreneurs is a relevant issue for RM. Despite this, the use of consolidated frameworks to study their interaction and simultaneous effect is rare (Giampietri, Yu and Trestini 2020).This task aims at developing and applying a comprehensive conceptual framework able to explain which factors (i.e. farm's internal and external factors, farmer's attitudes and other behavioural traits, etc.) affect farmer decision to adopt available or innovative RM tools at the farm level.
Frameworks such as Diffusion of Innovation Theory, Technology–Organization–Environment framework and Theory of Planned Behaviour will inspire this analysis (Roger 1995). The task will analyse farmers' decision to adopt for the first time RM tools including yield insurances, mutual funds and index-based insurances. As a novel contribution, the analysis will integrate individual Italian farm data (FADN) with primary data from a survey among the roughly 300 farmers involved in Task 3b. The field investigation allows to collect relevant antecedents of farmers' decisions. The analysis will apply a structural equation model (SEM) (Bollen 1989) to simultaneously estimate several possible causal relationships between different factors.

WP4. FEASIBILITY STUDIES AND DESIGN OF INNOVATIVE RISK MANAGEMENT TOOLS
While the results of previous WPs are very important for improving the knowledge on RM, the practical implementation of new tools will benefit from feasibility studies. Two separate tasks refer to two sets of tools.

Task 4.a. Feasibility study of innovative crisis measures and RM tools envisaged by the new Common Agricultural Policy.
While reducing annual direct payments, the post-2020 CAP aims to enlarge the support to innovative RM tools. A national basic coverage against catastrophic events and a new reserve fund for crises have been proposed and are important tools because provide coverage also of non-insurable risks.
The task will develop a feasibility study of these measures and tools that will be implemented by the post-2020 CAP (starting from 2023). The economic sustainability of these RM strategies and tools will be investigated (for the first time) through the analysis of the economic losses and the level of risk for a sample of farms at the national level (FADN) providing insights on key aspects such as farmers' contribution rates and compensations.
This will also identify options for the simplification of RM tools that can be used to design the National Strategic Plan of the forthcoming new CAP. Findings will be useful for the design and setting up of these new instruments.

Task 4.b. Feasibility study on whether-indexed and catastrophe insurances.
The use of insurance tools to cope with extreme and catastrophic events is more and more debated (Bucheli, Dalhaus and Finger 2020), due to the increasing amount of available data on weather conditions and the higher frequency of natural disasters. This task will develop feasibility studies for indexed insurance and catastrophe insurance focusing on two crops that seem more suited for these instruments: wheat and tomato.
The index-based insurance allows covering territories and crops for which the information base is quite scarce because farm-level data is difficult to collect and monitor. The feasibility will be investigated through quantile regressions, fed by data on agronomic performance (yields) and on climate dynamics (Conradt, Finger and Bokusheva 2015). These models can highlight which indexes, and trigger mechanisms, may be successfully adopted by insurance companies.
The catastrophe insurance would be a novel instrument in many EU countries (Vedenov, Epperson and Barnett 2006). These are potentially relevant because these allow to cover extreme events (i.e. systemic in nature and with an impact of high magnitude) that, being more and more frequent, are a threat for the entire agri-food sector. Quantile regressions explore the dynamics of the tails and thus allow us to investigate how rare events are connected with less frequent yield realizations: these information will allow to model and price insurance contracts to cope with catastrophic events.

WP5. POTENTIAL IMPLICATIONS OF NEW POLICIES, RM TOOLS AND RISK SCENARIOS
The introduction of new policy, RM instruments and risk scenarios will have consequences on the use of inputs (including chemicals) (Task 5.a), the choice of contracts (Task 5.b), farm production choices and economic performances (Task 5.c).

Task 5.a. Impact of risk management choices on the use of chemicals.
This task will investigate the effect of RM tools on farm chemicals adoption. Limited evidences exist on this issue, thus making it worth of investigation. This analysis is relevant because it allows to investigate the potential interaction between two important agricultural policy objectives: supporting the adoption of RM tools and reducing the use of chemicals (both pesticides and fertilisers). These two policy goals are not independent of each other. If, for example, a reduction in the use of chemicals increases farm risk, then the environmental target is partially in contrast with the target of reducing agricultural risk through supporting the adoption of RM tools. In addition, the adoption of some RM tools such as insurance may support moral hazard behaviour because, for example, insured farmers may apply higher levels of risk increasing inputs.
We will apply counterfactual methods (Cerulli 2015) comparing farms that do participate in a RM strategy with "similar" farms that do not participate. The net effect will be the increase/decrease in the use of chemicals due to the uptake of RM tools. Besides the counterfactual methods, the link between RM tools adoption and farmer chemical application will be investigated. Using FADN data, the analysis will consider different types of farming (e.g. arable crops and viticulture) to assess whether the effect is more pronounced in specific agricultural sectors.

Task 5.b. Assessing farmers' preferences for contract farming.
Contract farming (CF) represents a means to reduce farmers' risks and uncertainty. However its spread is still scarce in Europe (Bellemare 2018).
To facilitate the expansion of CF in Europe it is important to understand farmer decision to adopt it. Previous studies have shown that such decision depends on farm and farmers' socioeconomic characteristics and behavioural drivers (Cerroni 2020).
Based on the extant literature, this task will examine farmers' decisions to be involved in CF in the domain of arable crops in Italy. The analysis will particularly focus on the role of behavioural drivers (i.e., attitude towards risk and uncertainty, subjective probabilities, time preferences, and trust).
Data will be collected from an online survey with approximately 150 FADN farmers. The analysis will make also use of contextualized and incentivized field experiments. In addition, the effect of control variables (e.g. farm and farmer's characteristics), provided by the FADN database, will be considered. This analysis represents a novelty for the agricultural sector, thus it could be inspiring for further applications all over Europe.

Task 5.c. Assessing the potential impact of the introduction of innovative RM tools on farm production choices and economic results through Positive Mathematical Programming models.
Positive Mathematical Programming (PMP) is one of the most applied tools to simulate farmers' behaviour as it overcomes common problems of linear programming. It uses the observed behaviour of farmers to reproduce production choices, in order to perform simulations on future scenarios. Recently risk has been included in PMP models using exogenous risk aversion coefficients or recovering these within the PMP framework (Arata et al. 2017).
To advance the knowledge, this task proposes using more flexible DARA (Decreasing Absolute Risk Aversion) utility functions considering different levels of risk preference using the output of WP2.
The analysis will be developed on four groups of arable crop FADN farms located in different areas of Italy. We will simulate the impact of: i) reduction in the level CAP basic direct payment to support the development of a compulsory Income Stabilization Tools; introduction of ii) revenue insurance schemes for key farm activities and iii) more binding environmental requirements on irrigation water and chemical inputs (fertilizers and pesticides). The latter simulation will include the introduction of the eco-schemes support foreseen within the new CAP.
Findings will focus on effects on production patterns, input use (irrigation water and use of chemicals), and farm economic performances.

WP6. STAKEHOLDER ENGAGEMENT, EXPLOITATION AND DISSEMINATION
Since the project wants to contribute to improving the RM practices, it pursues strong stakeholder engagement and exploitation and dissemination of the results.

Task 6.a. Stakeholder engagement.
The project ensures that farmers, policymakers, institutions in the insurance sector, scientists and other stakeholders (e.g. MIPAAF; ASNACODI; ISMEA and CREA) can contribute with ideas, feedback and relevant information/data. The interaction will also allow to adjust the design of the project for example including additional issues perceived as relevant. Farmers will be involved in 5 focus groups along the project life. The first will be carried out at the outset of the project to draw on stakeholders' views on the issues under investigation. The other focus groups will be carried out along the project as specified in Figure 6 and will aim at discussing with

stakeholders preliminary WP' results, deriving new recommendations and refining the implementation of WPs.

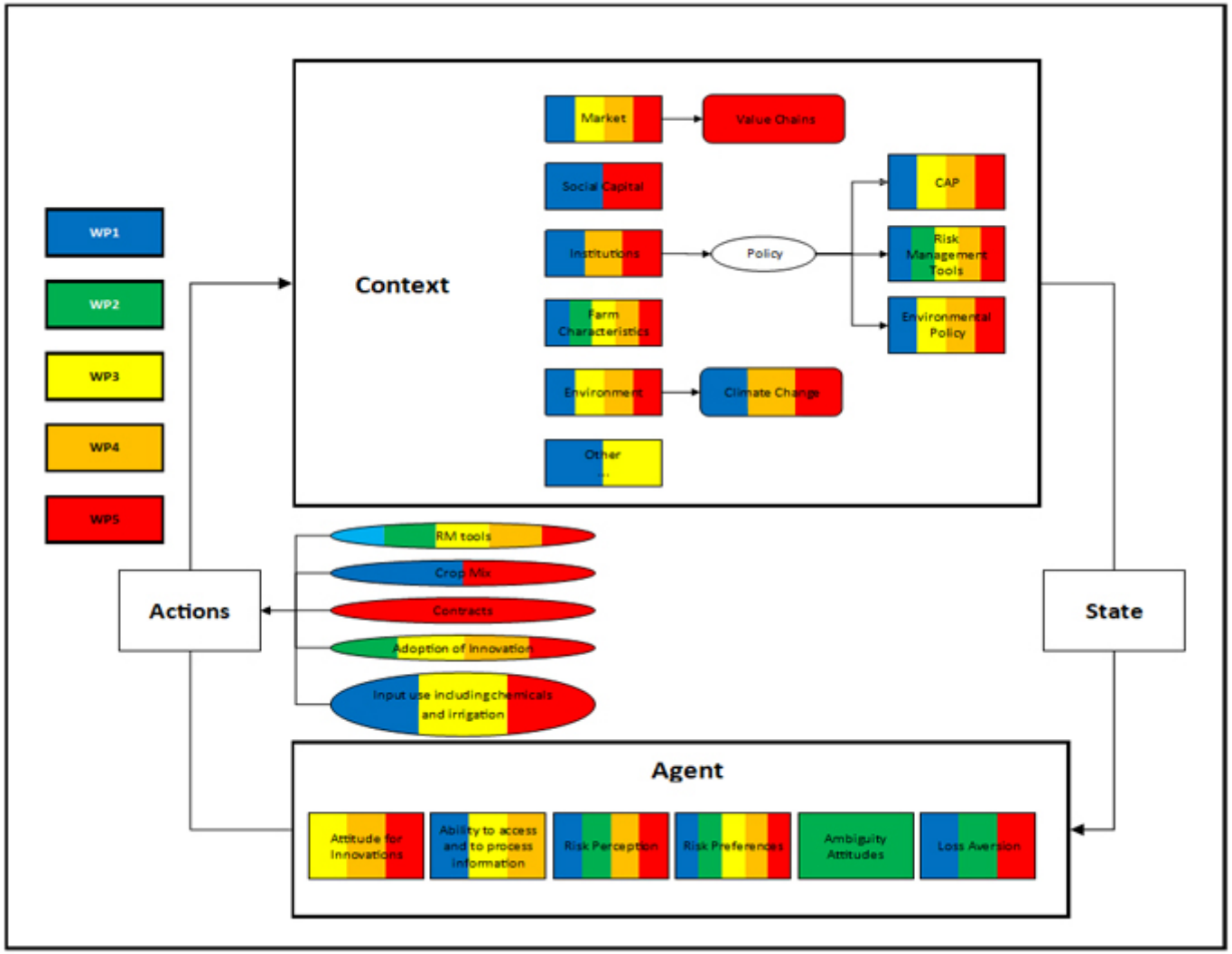
Task 6.b. Exploitation and Dissemination (ED).
ED activities will rely on the findings from the other WPs, combining them in coherent ways to communicate conclusions effectively. We will increase the impact and follow-up of ED by adjusting our plan to link up with important moments in the ongoing CAP reform discussions. Achievements will be regularly monitored checking communication efficiency and the project's impact.
One external project communication manager will be appointed to manage communication by different means. A project' webpage will be realized in English and Italian. Twitter will be also used for dissemination purposes. A collection of policy briefs (both in English and Italian) will summarise WPs findings into easy-to-read documents that will be made available on the project webpage. UNITUS will define the templates, will develop GIFs, videos-pillows, photos and infographics, will disseminate the briefs, and coordinates the press releases. All partners will share the writing of the policy briefs and the research papers that will be disseminated as presentations targeted to professionals and scholars.
One book will be published in the last month of the project. It will contain the most relevant results, targeted to practitioners of the sector and, therefore, it will be in Italian to make available the results of the project also to those not familiar with English.
Two seminars will be held to present midterm project results at the end of the first and second years. These will be organised in conjunction with scientific associations and open to professionals of the sector to enhance attendance, impact and feedback. A final seminar will present the results within an organized section of a scientific international conference (e.g., AIEAA, EAAE, SIDEA). These seminars allow for both dissemination and comparison of the results among specialized scholars encouraging the development of new ideas.

The objectives of the WP7 (Project and data management) are described in the following section.

3. Project development, with identification of the role of each research unit, with regards to related modalities of integration and collaboration

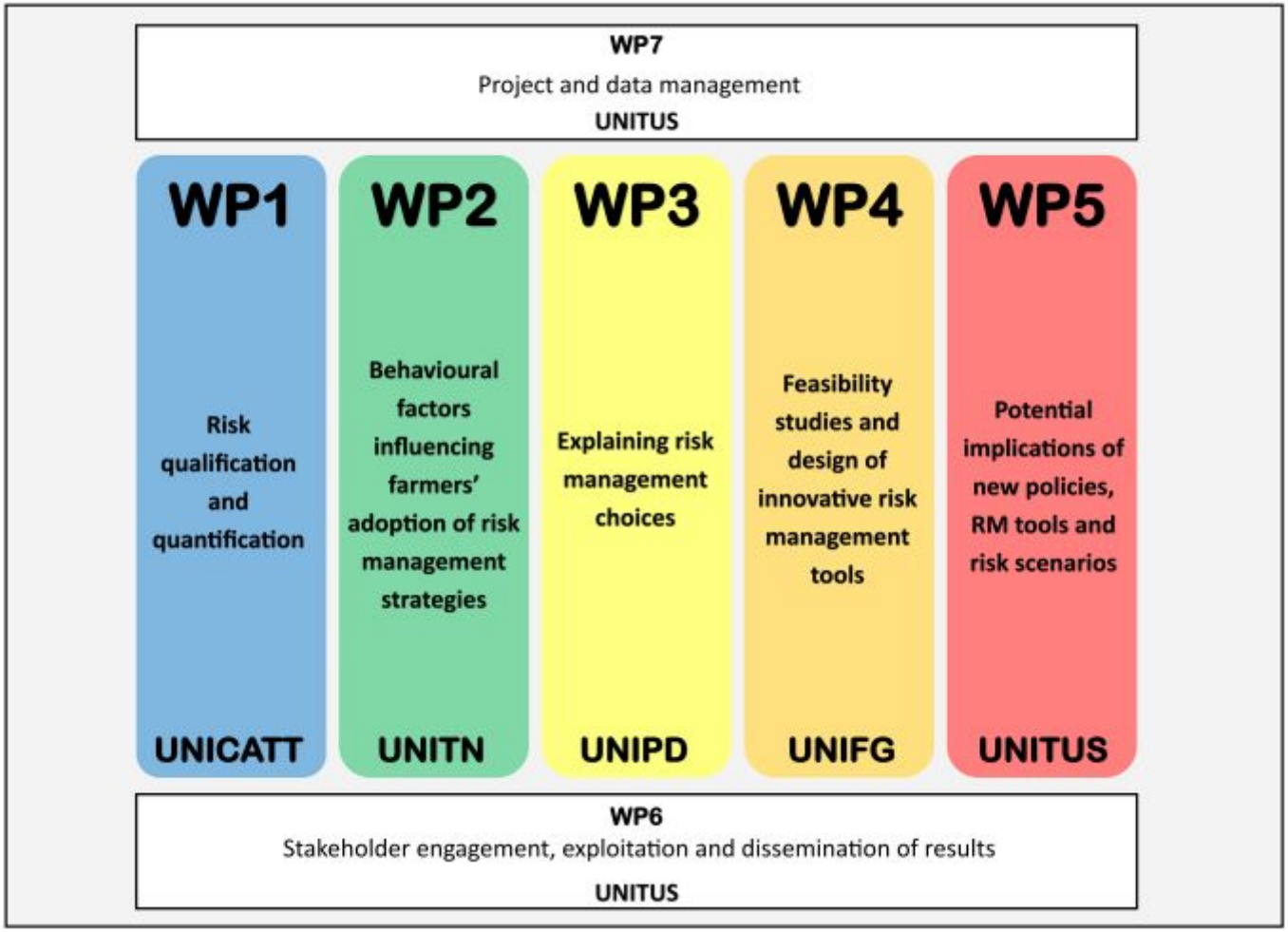
The project will be developed according to a project and data management plan to ensure a strong integration and collaboration among the RUs by defining management procedures. These include monitoring of progress, communication, RM, decision-making and conflict resolution. The plan will ensure a high-quality approach, adherence to ethics rules and regularly updating the plan.
There will be two meetings of the leaders of the RUs per year (Steering Committee). However, discussions in smaller groups will be fostered to facilitate interaction (World Café approach). Each deliverable will be subject to an internal peer-to-peer review process. We will develop a shared workspace (cloud) to ensure data availability and security within the partners. We establish ethical approval from each RU in line with the code of conduct for scientific practice and integrity code of each partner.
Because the research topic is addressed using a holistic approach, we investigate all relevant elements affecting the RM choices and integrate these coherently (Figure 2). This allows a critical discussion of the obtained results especially when more than one RU, using different approaches or point of view, addressed related topics.

Figure 2 – Extent of the areas of research covered by the project by WP.



There is a high degree of integration between WPs. The five RUs are jointly responsible for the execution of the research project, as well as the development of single WPs, and are involved in research activities according to their specific knowledge and expertise. The Principal Investigator and the Associated Investigators share similar backgrounds in agricultural economics and policy, albeit they developed expertise for different empirical approaches. These include, among others, stated preference methods (DCE) and experimental economics (e.g. UNITN), feasibility studies (e.g. UNIPD), econometric techniques (e.g. UNICATT and UNIFG), Machine learning techniques and mathematical programming models (e.g. UNITUS). This ensures the integration of the different RUs. Figure 3 describes the linkages among WPs.

Figure 3 - Linkages among WPs.



WP7 affects all other WPs. In turn, all other WPs feed WP6. Stakeholders have a three-fold role in the project:
- Maintaining the focus of the research activities on the concrete needs of the stakeholders;
- Representing a source of valuable information to understand the needs of the agricultural sector and to address the most relevant issues;
- Representing the final recipient of the expected outcomes in terms of knowledge and policy recommendations.

The project promotes equal opportunities between men and women ensuring a gender balance within the project and in the engagement of stakeholders. Two out of the five leaders of the RUs are female scientists. Similarly, two out of the four members of the international scientific advisory board are female. Furthermore, we encourage the participation of young scientists. The leader of one RUs is a female less than 40 years old. Finally, we will hire one Researcher and five Post-docs to be recruited among qualified young scientists promoting equal opportunities between men and women.

Figure 4 describes the leading and involved RUs for each task.

Figure 4 - Involvement of the RUs in the different tasks.

Work Packages (WPs) and Tasks	Leading + Involved RU
WP1. Risk qualification and quantification	UNICATT
Task 1.a. Whole farm risk analysis and its determinants	UNITUS
Task 1.b. Assessment of farm risk in case of introduction of more binding environmental constraints	UNICATT
Task 1.c. Assessment of farm risk under climate change pressure including drought and extreme events	UNIFG
WP2. Behavioural factors influencing farmers' adoption of risk management strategies	UNITN
Task 2.a. Mapping out the role of behavioural factors on farmers' decision to adopt risk management strategies	UNITN/ UNICATT/ UNIPD
Task 2.b. Elicitation of behavioural factors affecting farmers' adoption of risk management strategies	UNITN/ UNICATT/ UNIPD
WP3. Explaining risk management choices	UNIPD
Task 3.a. Assessing the determinants of the participation to insurance schemes by using Machine Learning	UNITUS
Task 3.b. Farmers' preferences for the characteristics of innovative RM tools.	UNITN/ UNIPD
Task 3.c. Determinants of the adoption of innovative RM tools.	UNIPD
WP4. Feasibility studies and design of innovative risk management tools	UNIFG
Task 4.a. Feasibility study of innovative crisis measures and RM tools envisaged by the new Common Agricultural Policy	UNIPD/ UNITUS
Task 4.b. Feasibility study on whether-indexed and catastrophe insurances	UNIFG
WP5. Potential implications of new policies, RM tools and risk scenarios	UNITUS
Task 5.a. Impact of risk management choices on the use of chemicals	UNICATT
Task 5.b. Assessing farmers' preferences for contract farming	UNIPD / UNITN
Task 5.c. Assessing the potential impact of the introduction of innovative RM tools on farm production choices and economic results through Positive Mathematical Programming models	UNITUS
WP6. Stakeholder engagement, Exploitation and Dissemination	UNITUS
Task 6.a. Stakeholder engagement	UNIPD/ UNIFG/ UNICATT/ UNITN/ UNITUS
Task 6.b. Exploitation and Dissemination	UNIPD/ UNIFG/ UNICATT/ UNITN/ UNITUS

WP7. Project and data management.	UNIPD/ UNIFG/ UNICATT/ UNITN/ UNITUS

Integration and collaboration among RUs are key elements of the project. This will be pursued by means of an intense and continuous flow of information between WPs and tasks that is explained as follows.
The results of Task 1.a feed the analyses in WP2, WP3, WP5 and, thanks to the activities of WP6, provides insights for developing RM's policy recommendations. Task 1.b.' results, related to the assessment of farm risk in case of introduction of more binding environmental constraints, feed Task 5.a and WP6. Task 1.c. provides results on the assessment of farm' risk under climate change pressure. Its findings feed the analyses of WP3, WP4 and activities in WP6.
WP2 results will inform analyses in WP3, WP4 and WP5. Results will define the parameters used in the impact analysis by PMP models (Task 5.c).
The outcomes of WP3 are linked to other WPs. Task 3.a. uses data on farmers' subjective characteristics from WP2 to interpret the result of the analysis. The outcomes of this task feed WP5 and WP6. Activities from Task 3.b. will be pursued in coordination with WP6: focus groups with relevant stakeholders will permit to identify the list of characteristics to investigate. The results of this task will feed WP6 providing insights for the design of more tailored RM instruments. Findings from Task 3.c. (Investigating the determinants of the adoption of innovative RM tools) feed WP4 and WP5. Furthermore, it provides robust evidence to inform policymakers and other stakeholders in WP6. This will support the development of policy interventions and strategies that can foster the adoption of RM tools.
Results of WP4 (particularly feasibility studies) are expected to provide key elements that could be discussed with stakeholders within WP6.
WP5, taking account the results of the previous WPs, assesses the potential implications of the new policy, tools and scenarios. Results stemming from Task 5.a will be of interest for policymakers who have to find a balance between potentially contrasting policy objectives related to fostering environmental protection and RM. Results of Task 5.b feed WP6 allowing to inform key-stakeholders facilitating the design of better target strategies/policies and, in this way, encouraging farmers' participation in contract farming. As already said, results of WP2 will define key parameters for the models developed in Task 5.c. Results of this task, referring to potential implications in terms of production choice, use of input such as irrigation water and chemicals, farm economic performances, are all aspects of great interest for stakeholders and will be discussed with stakeholders within WP6.
Dissemination to stakeholders, including providers of RM tools, professionals working at Institutions managing RM policies, and farmers' organizations, will take place within WP6.
The project relies on an array of data and different data sources described in Table 5.

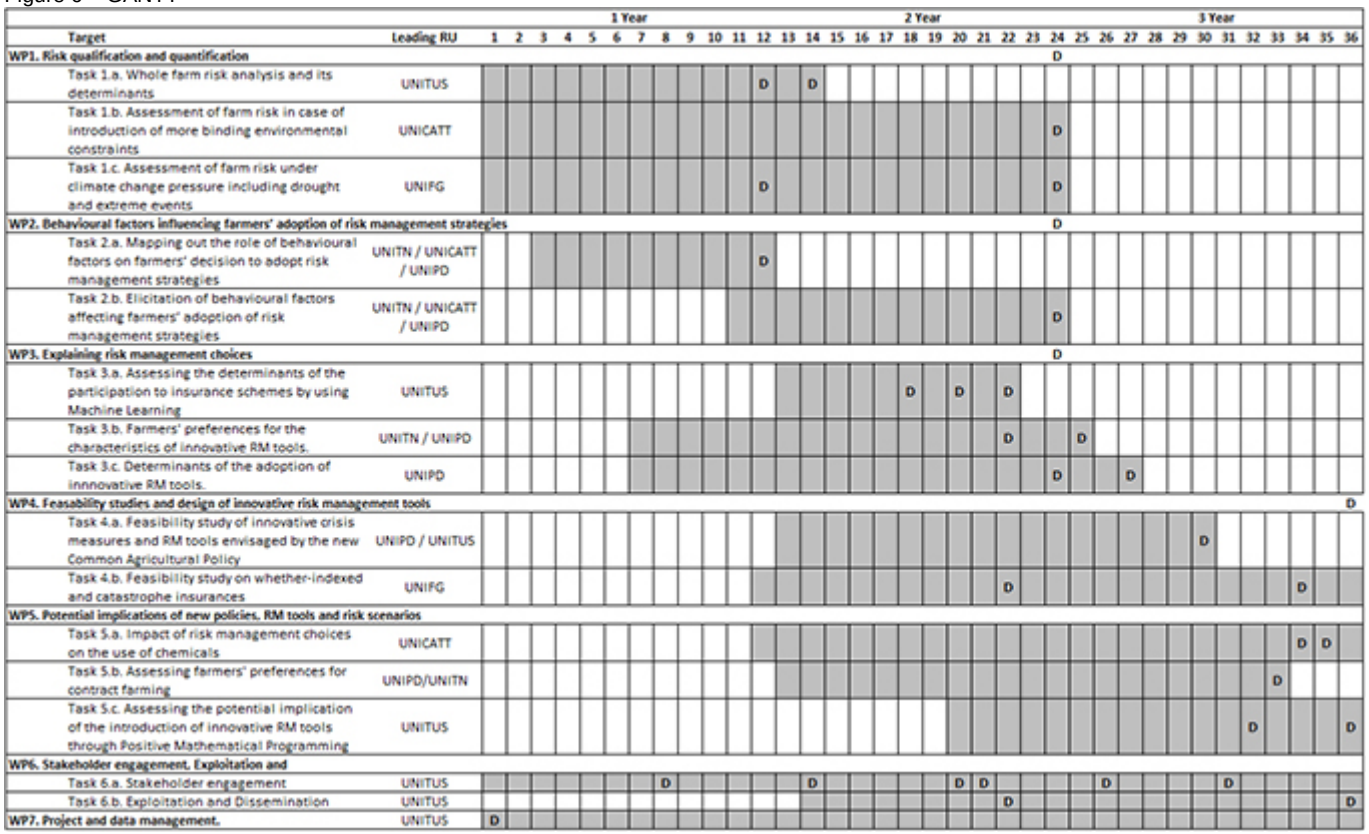
Figure 5 - Data and Data Sources.

Task	Data	Source
WP1. Risk qualification and quantification		
1.a.	Individual data of all Italian FADN farms. From 2008 to the most recent available data.	CREA-PB
1.b.	Individual data of all Italian FADN farms. From 2008 to the most recent available data.	CREA-PB
1.c.	Historical climatic data and data on anomalies and historical yield data on selected crops	ISTAT and CNR
WP2. Behavioural factors influencing farmers' adoption of risk management stra		
2.a.	Results of scientific reseach published in academic journals	Scopus, Web of Science, Google Scholar
2.b.	Primary data from an online experiments with a sample of 300 farmers, paired with secondary data from the FADN by CREA-PB.	CREA-PB and Project survey
WP3. Explaining risk management choices		
3.a.	Individual data of all Italian FADN farms. From 2008 to the most recent available data.	CREA-PB
3.b.	Primary data from an online discrete choice experiment with a sample of 300 farmers. This data will be paired with secondary data from the FADN by CREA-PB.	CREA-PB and Project survey
3.c.	Individual data of all Italian FADN farms. From 2008 to the most recent available data integrated with survey data.	CREA-PB and Project survey
WP4. Feasibility studies and design of innovative risk management tools		
4.a.	Individual data of all Italian FADN farms. From 2008 to the most recent available data.	CREA-PB
4.b.	Historical climatic data and data on anomalies and historical yield data on selected (subregional level)	ISTAT and CNR
WP5. Potential implications of new policies, RM tools and risk scenarios		
5.a.	Individual data of all Italian FADN farms. From 2008 to the most recent available data.	CREA-PB
5.b.	Individual data of all Italian FADN farms. From 2008 to the most recent available data integrated with survey data.	CREA-PB and Project survey
5.c.	Individual data of three groups of Italian FADN farms. From 2008 to the most recent available data integrated with survey data.	CREA-PB and Project survey

The project team will seek a dialogue with international scientists who are not partners of the consortium but are active in the area of RM also outside the area of agricultural economics. This is because some of the project results are expected to be of interest and applied in the broad field of economics. This will be done by presenting research results to scientific conferences and submitting papers to scientific journals (See Deliverables).
Furthermore, the project will benefit from the activities of the international scientific advisory board formed by four international professionals with significant expertise and strong scientific interest in our research topics. They are working at qualified research institutes and formally agreed to play this role and are:
- Prof. Luisa Menapace, Technical University of Munich, Germany (luisa.menapace@tum.de),
- Prof. J. Cordier AgroCampus Ouest, France (jean.cordier@agrocampus-ouest.fr),
- Prof. I. Bardaji, Universidad Politécnica de Madrid, Spain (isabel.bardaji@upm.es),
- Dott. C. Zaccarini Bonelli, ISMEA, Italy (c.zaccarini@ismea.it).

The scientific collaboration with the advisors will be intense, although they will not benefit from any funding from the project. The advisory board is aimed at reviewing the quality and relevance of the activities of the project and to eventually propose changes in the research program and activities. Their advice provides a third-party perspective that combats decision making for being self-centred.
The project will also benefit from a stable involvement of three institutions that work in the field that are:
CREA-PB (Consiglio per la Ricerca in agricoltura e l'analisi di Economia Agraria –Politiche e Bio-Economia), an institution working in the area of agricultural policy;
ISMEA (Istituto di Servizi per il Mercato Agricolo Alimentare), a research institution working in the field of agricultural market and farm insurance;
ASNACODI (Associazione Nazionale Condifesa), the main association of farmers organized into consortia of farmers seeking coverage by means of insurances and mutual funds.
These have already formally agreed to support the project ensuring the involvement of their top fonctionnaires and key stakeholders (including Italian Ministry of Agriculture and insurance companies) within WP6.
Figure 6 illustrates the chronological development of the project.

Figure 6 – GANTT



4. Possible application potentialities and scientific and/or technological and/or social and/or economic impact, with indications of the possible use of research infrastructures

The project foresees several expected outcomes and applications summarized in Figure 7. These are of great interest not only for researchers but also for other stakeholders including policymakers, entrepreneurs, business associations, insurance companies and other social groups such as environmental associations.

Figure 7 - Expected Outcomes, Applications, Impacts and Stakeholders involved

Task	Expected outcomes	Applications and impact	Stakeholders involved					
			Researchers	Policy-makers	Entrepreneurs	Business associations	Insurance	Others*
1.a	Qualification and quantification of the risk. Identification of factors affecting risk.	Policy recommendations on: - the need for additional RM strategies and tool to cope with the faced risk; - developing measures and tool to influence the risk faced	x	x	x	x	x	
1.b	Classification of the impact of chemicals use on farmers risk	policy recommendations about the effect of the environmental targets of the CAP on the risk faced by the	x	x	x			
1.c	Identification and assessment of the risks connected to changing climatic conditions	Realization of geographical and sectorial "maps of risks" of interest for researchers and stakeholders, and policy briefs	x	x			x	
2.a	Identification of the role of behavioural factors on farmers' decisions to adopt RM strategies the most promising approches to elicit	Advancement of the knowledge about the relevance of behavioural factors in estimating risk attitudes	x					
2.b	Elicitation of farmers' subjective probabilities, risk and ambiguity attitudes, loss aversion and time preferences	Policy recommendations on tailored educational- or nudging-based programs aimed at increasing farmers' uptake of optimal RM strategies. Impact on farmers'	x	x	x	x	x	
3.a	Application of Machine Learning in the field of insurance. Identification of the factors affecting farmers' participation to insurance schemes.	Fostering the use of Machine Learning in the field of insurance and agricultural economics. Policy recommendations on the design of insurance schemes and policies. The expected impact is fostering farmers' participation to insurance schemes.	x	x			x	
3.b	Identification of the most preferred characteristics of innovative RM tools	Recommendations to policy-makers or other key-stakeholders on designing more tailored RM tools to foster	x	x	x	x	x	
3.c	Identification of the factors affecting the adoption of existing and innovative RM tools for the first time. Providing a comprehensive conceptual framework to analyse farmers' adoption of innovation (i.e. first adoption of	Recommendations to policy-makers or other key-stakeholders on how to incentivize, for the first time, the adoption of RM tools (both existing and innovative) among potential beneficiaries.	x	x	x	x		
4.a	Sustainability assessment and feasibility study of innovative crisis measures and RM strategies and tools (envisaged by the post-2020 CAP). Analysis of farms' losses and risk profile.	Policy recommendations on how to design/set up managinf rules for the new RM strategies and tools.	x	x		x		
4.b	Evaluation of the feasibility and sustainability of whether-indexed and catastrophe insurances for selected sectors and areas	Technical and policy reccomandations on the implemetability and the design of whether-indexed and catastrophe insurances	x	x	x	x	x	
5.a	Relationship between RM tools and use of chemicals	policy recommendations about the relationship between the environmental targets of the CAP and the risk	x	x	x		x	x

5.b	Identification of behavioural drivers of farmers' involvement in contract farming.	Recommendations to key-stakeholders (e.g. traders, producers' consortia) on more tailored strategies to encourage farmers' participation in contract farming.	x		x	x		
5.c	Assessment of the potential impact of the introduction of innovative RM tools at farm level (Task 5.c).	Impacts on farm production choices, input use (water and chemicals) and economic results. Policy recommendations regarding indirect effects of the application of new RM tools and instruments.	x	x	x	x	x	x
6.a	Development of ideas, feedback and relevant information through stakeholders' engagement.	Adjustment of the designing of the project such as including additional issues perceived as relevant by stakeholders	x	x	x	x	x	x
6.b	Presentation and critical discussion of the project findings with scientific community and sthakeholders.	Advancements of the knowledge of RM. Contribution to the develpment of new RM tools and policies, to fostering the use of RM tools and the discussion of concurrent CAP reform.	x	x	x	x	x	x

*Others include other stakeholders including environmental groups.

The project foresees several deliverables described in Figure 8 that will be developed during the project life as specified in Table 7. Many of these will be publicly available to foster the impact of the project.

Figure 8 - List of Deliverables

WP number	Deliverable number	Deliverable	Leading RU	Due date (month)
WP1	D1.1	Report on the qualification and quantification of the risk and on the factors affecting risk (Task 1.a).	UNITUS	12
WP1	D1.2	Preliminary technical report on risks due to the chaning climatic conditions (Task 1.c)	UNIFG	12
WP1	D1.3	Paper submitted to a scientific journal on the qualification and quantification of the risk and on the factors affecting risk (Task 1.a).	UNITUS	14
WP1	D1.4	Conference paper/paper submitted to a journal on the effect of the use of chemicals on the risk faced by farmers	UNICATT	24
WP1	D1.5	Final report on risks due to the changing climatic conditions with "maps of risks" (Task 1.c)	UNIFG	24
WP1	D1.6	Policy brief on quallification and quantification of risk faced by farmers.	UNICATT	24
WP2	D2.1	Report on the conducted systematic literature review	UNITN	12
WP2	D2.2	Report on the two economic experiments	UNITN	24
WP2	D2.3	Policy brief on behavioural factors influencing farmers' adoption of risk management strategies	UNITN	24
WP2	D2.4	Paper submitted to a scientific journal on behavioural factors influencing farmers' adoption of risk management strategies	UNITN	24
WP3	D3.1	Report assessing the performances of machine learning in comparison with traditional econometric analyses (Task 3.a).	UNITUS	18
WP3	D3.2	Report on the identification of the factors affecting farmers' participation to insurance schemes (Task 3.a).	UNITUS	20
WP3	D3.3	Paper submitted to a scientific journal on the factors affecting farmers' participation to insurance schemes by using Machine Learning (Task 3.a)	UNITUS	22
WP3	D3.4	Report on the identification of farmers' preferences for the characteristics of innovative RM tools (Task 3.b).	UNITN	22
WP3	D3.5	Policy brief on factors affecting risk management choices.	UNIPD	24
WP3	D3.6	Report on the identification of determinants of farmers' adoption of innovative RM tools (Task 3.c).	UNIPD	24
WP3	D3.7	Paper submitted to a scientific journal on the investigation of farmers' preferences for the characteristics of innovative RM tools (Task 3.b).	UNITN	25
WP3	D3.8	Paper submitted to a scientific journal on the investigation of the determinants fo farmers' adoption of innovative RM tools (Task 3.c).	UNIPD	27
WP4	D4.1	Preliminary technical report on the design of whether-indexed and catastrophe insurances for selected sectors and areas	UNIFG	22
WP4	D4.2	Policy brief on the feasibility of innovative crisis measures and RM tools envisaged by the new CAP (Task 4.a).	UNIPD	30
WP4	D4.3	Final report on the design of whether-indexed and catastrophe insurances	UNIFG	34
WP4	D4.4	Policy brief on the feasibility studies of innovative RM tools.	UNIFG	36
WP5	D5.1	Report on farmers' preferences for contract farming (Task 5.b).	UNIPD	30
WP5	D5.2	Report on the potential impact of the introduction of innovative RM tools at farm level (Task 5.c).	UNITUS	32
WP5	D5.3	Paper submitted to a scientific journal on the investigation of farmers' preferences for contract farming (Task 5.b).	UNIPD	33
WP5	D5.4	Conference paper/paper submitted to a journal on the effect of the adoption of risk managment tools on the use of chemicals in agriculture	UNICATT	34

WP5	D5.5	Policy brief on the relationship between environmental targets and risk stabilisation targets of the agricultural policies	UNICATT	35
WP5	D5.6	Paper submitted to a scientific journal regarding the analysis of potential impact of the introduction of innovative RM tools at farm level by PMP models (Task 5.c)	UNITUS	36
WP6	D6.1	Report on the farm survey	UNITN	8
WP6	D6.2	Focus group minutes (5)	UNITUS	along the project
WP7	D6.3	Course on RM organised for young researchers	UNITUS	22
WP6	D6.5	Publication of the project book	All	36
WP7	D7	Project and data management plan agreed by alla RUs	UNITUS	1

The heterogeneous and large amount of outputs expected from this project will have relevant scientific, technological and socio-economic impacts.

The project will contribute to the scientific literature in the RM by improving the understanding of the topic and providing new approaches and forefront methodologies that can be applied also outside the farm sector. The external international scientific advisory board will play an additional positive role in ensuring the quality of the research activities that will be developed within the project. The contribution to the scientific literature will be disseminated by participation in scientific conferences, sector-specific professional meetings, and scientific publications. Furthermore, a course focused on RM analysis linked to project's activities will be organised for young researchers. This will provide the basis to increase future participation of Italian scientists in this field of analysis and thus to keep this research field alive.

The technological impact of the project regards providing data, information, and methodologies that can be used for technological developments referring to: i) the design of new RM tools to cope with risk sources that are overlooked by existing tools; ii) tailoring existing tools and policies on farmers' risk preferences and needs; iii) adjustments needed to overcome existing constraints limiting the use of such tools and policies.

The socio-economic impact of the projects beyond the scientific community will be guaranteed by the nature and extent of the addressed research topics and the strong involvement of relevant stakeholders. All considered topics are relevant to understand how RM choices are taken and what can be the practical impacts of these choices. The strong involvement, since the outset of the project, of relevant stakeholders will allow to steer the project activities towards what is needed in practice. The engagement of the previously mentioned institutions shows the great expectations they have regarding the usefulness of the results of the project.
The results of the project will provide improved capacities to implement satisfactory RM strategies and tools, innovative tailored and useful RM tools, and directions for designing and implementing more effective RM policies. Hence, the exploitation of project results can help increasing the resilience and economic viability of the farming sector. It will contribute: (i) to pursue a primary production based on sustainability, (ii) to cope with the faced global challenges, (iii) to maintain the agricultural production resilience and competitiveness over time.

Each WP will contribute to this overall goal as follows.
Qualification and quantification of the risk (WP1) is key because it strongly affects farmers' choices. In recent decades, the price and yield risks in the agricultural sector of the EU have been increasing due to the changes in the CAP (i.e. lower guaranteed prices) and to the impact of climate change, especially the increase in the number of extreme weather events. Uncertainty causes suboptimal production decisions and, in the medium run, discourages investments leading to a decrease in productivity. This is a warrant issue and represents a threat for the whole European economy. A deep analysis of the different components of agricultural risk and a special focus on the extreme weather events helps in understanding better the recent dynamics of risk as well as finding suitable strategies and policy tools to face the risky environment. In addition, the investigation of the role of chemicals on production risk sheds light on the potential of changing input use as a farm strategy to cope with risk. The results of these analyses will contribute to the scientific literature because the research questions cover issues not properly addressed yet or still controversial. This is the basis for developing suitable and efficient RM strategies, as well as appropriate policies promoting more sustainable production techniques.

Investigating the extent to which behavioural factors such as subjective probabilities, risk and ambiguity attitudes, loss aversion and time preferences factors influence farmers' decisions (WP2) will facilitate the understating of farmers' past and future decisions to adopt innovative RM strategies. Also, the project will explore potential differences in the role of behavioural factors on decision making between male and female entrepreneurs. This will open the possibility to identify tailored educational- or nudging-based programs aimed at using deviations from standard economic theories frameworks (i.e., expected utility theory) to increase farmers' uptake of optimal RM strategies and increase the welfare of rural communities. Special attention will be paid to ensure that female will not be discriminated in this regard. Understanding the relevance of behavioural factors such subjective probabilities and beliefs will contribute to a new strand of studies combining experimental elicitations and real-world business decisions.

Investigating the determinants of farmers' participation in insurance schemes (WP3) is expected to contribute to make the entire insurance system more effective, to facilitate the adoption of innovation (mutual funds or index-based insurances) and to support the design of more tailored instruments. Findings will contribute to improve key-stakeholders' ability to meet farmer social (e.g. ensuring a good standard of living) and economic (e.g. preserving farm sustainability and competitiveness) development needs, in addition to improving the efficiency of public expenditure and inspiring other researches at EU level. The active involvement (focus groups, surveys) of stakeholders (farmers, policy-makers) when designing/running the experiments represents an important moment of knowledge-sharing and results' dissemination.

The assessment of the feasibility of new instruments (WP4) will help their development and uptake and, in this way, will help coping with new risks, such as the extreme events and the catastrophic events. The WP will provide very important results on how technological improvements aimed at collecting large amount of data may help filling the scarce and dis-aggregated use of information. The results will have great relevance also for economic sectors, other than agriculture, that are more and more exposed to new risks.

Results of the assessment of the potential implications of introducing new RM tools and new scenarios (WP5) are of great interest for stakeholders. This will help identify the best directions for changes. A relevant example

is the assessment of whether the introduction of new RM tools will imply a change in the use of inputs such as water and chemicals that can have consequences on the environment. This will inform policymakers on potential synergies/conflicts between agricultural and environmental policies. Very important is also the assessment of the potential implications on production choices (due to its impact on market prices) and on farm economic performances. These results will be used by policymakers to design measures intended to avoid or to reduce potentially negative side-effects of the introduction of new RM tools and policies.

5. Financial aspects: costs and funding for each research unit

nº		Total cost (euro)	Co-funding (item A.1) (euro)	MUR funding (other items) (euro)
1.	SEVERINI Simone	341.174	35.734	305.440
2.	TRESTINI Samuele	153.581	31.613	121.968
3.	RAFFAELLI Roberta	170.277	30.798	139.479
4.	SANTERAMO Fabio Gaetano	150.590	29.744	120.846
5.	ARATA Linda	152.462	30.914	121.548
	Total	**968.084**	**158.803**	**809.281**

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-Vedenov D V, Epperson JE, Barnett BJ. Designing catastrophe bonds to securitize systemic risks in agriculture: the case of Georgia cotton. J Agric Resour Econ 2006:318–38.
-Vigani M, Kathage J. To risk or not to risk? Risk management and farm productivity. Am J Agric Econ 2019;101:1432–54.
-Vroege W, Dalhaus T, Finger R. Index insurances for grasslands – A review for Europe and North-America. Agric Syst 2019;168:101–11.

B.2

1. Scientific Curriculum of the Principal Investigator

PERSONAL INFORMATION
SIMONE SEVERINI Nationality: Italian
Date of birth: 28 January 1963
Place of residence: Viterbo, Italy

WORK EXPERIENCE
From Jan. 11th, 2021, currently. Full Professor. Academic discipline: Agricultural Economics and Rural Appraisal (SSD: AGR/01 – Economia ed Estimo Rurale); Academic Recruitment Field: Agricultural Economics and Rural Appraisal (SC: 07/A1 – Economia Agraria ed Estimo).
Università della Tuscia – DAFNE. Via S. C. De Lellis, snc - 01100 Viterbo, Italy
Main activities and responsibilities: Teaching “Agricultural Policy and Markets” (MSc); member of the Doctoral program board; teaching “Forestry economics and appraisal” (Bachelor). Research. Supervision of post-doc. Delegate of the Rector for International Relations.
From Dec. 2005 to Jan. 2021. Associate Professor (AGR/01). Università della Tuscia. Viterbo, Italy
From Dec. 1995 to Dec. 2005. Researcher (AGR/01). Università della Tuscia. Viterbo, Italy.

RESEARCH AREAS
Analysis of agricultural policy with an emphasis on ex-ante and ex-post evaluation of CAP policies (including direct payments and market measures) and risk management policies; resilience and sustainability of farming systems. He has applied mathematical programming, econometric and stochastic simulation methods at the individual farm level. The focus of research and evaluation is on production choices, income level, variability and distribution, risk analysis and management. He has extensively worked on the economics of irrigation.

QUALITY AND IMPACT OF PUBLICATIONS
ORCID ID: 0000-0001-5501-3552
7 of his articles since 2013 are published on journals belonging to Class A of the scientific area 13 (Economics and statistics).

2 awarded papers:
- Cortignani R., Severini S. (2012). “A constrained optimization model based on generalized maximum entropy to assess the impact of reforming agricultural policy on the sustainability of irrigated areas”. Agricultural Economics, 43 (6): 621-633, has been awarded as “Best Article published in the journal Agricultural Economics” in the year 2012.
- Severini S., Tantari A. and Di Tommaso G. (2016). Do CAP direct payments stabilise farm income? Empirical evidences from a constant sample of Italian farms. Agricultural and Food Economics 4(6): 1-17. “Editors’ Pick” by the Editors of the journal.

The commission for the “Abilitazione Scientifica Nazionale” (National competition to be eligible for) to become full professor in the area Agricultural Economics and Policy (sector 07/A1) has evaluated the impact of his overall scientific production as Excellent (5/5 positive evaluations).

The scientific production has been intense:
Google Scholar reports 174 papers; 1031 citations (571 since 2016); H index: 16 (13 since 2016); i10-index: 26 (16 since 2016).

The CINECA website reports 73 products of which 48 since 2011.

Scopus reports: 34 documents; 335 citations (by 279 documents); h-index 11. 68% of these citations have been reported in the last 4 years only. This exceeds the thresholds to be a member of the commission for the “Abilitazione Scientifica Nazionale” that are: 6 articles in the last 10 years; 40 citations and an H-index of 4 in the last 15 years.
14 papers have been published in journals belonging to Q1.

The topics of his publications are coherent with the topic of the research project. According to Scopus, one of the most contributed Topics (2015–2019), with 7 documents, is “Crop Insurance; Weather Derivatives; Basis Risk”.

ACADEMIC RESPONSIBILITIES
Delegate of the Rector for International Relations. Nov. 2019 - currently.

SCIENTIFIC RESPONSIBILITIES
- President Elect of the Italian Association of Agricultural and Applied Economics (AIEAA). June 2020 - currently. https://www.aieaa.org/
- Member of the Editorial Board of the journal Bio-based Agricultural and Applied Economics (BAE). June 2016 - June 2020.

DEGREE OF SUCCESS IN RESEARCH PROJECTS
2018-Currently. Principal Investigator of the Research Unit of the University of Tuscia within the European (Horizon 2020) research project: “Towards SUstainable and REsilient EU FARMing systems (SURE-Farm)”. The project, coordinated by Wageningen University, using resilience thinking, develops a comprehensive resilience enabling framework and applies several assessment tools including: participatory approaches, farm surveys, structured interviews, focus groups, workshops and the Resilience Assessment Tool (ResAT). Emphasis is given also to the role of risk management in enhancing the resilience of the farming systems. The project provides a thorough analysis of the complex challenges to Europe’s agricultural sector and an assessment of relevant policies novel and risk-management tools for farmers.
2001-02. Principal investigator of the Research Unit of the University of Tuscia, in the Research Program of Relevant National Interest (PRIN) ("The new agricultural negotiation within the World Trade Organization and the process of reform of the agricultural policies of the European Union".

PARTICIPATION TO OTHER RESEARCH PROJECTS
2012-13. Member of the team of the project: “Analysis of the income of Italian farms by means of the FADN database” within a project regarding the policies related to natural disasters” (Funded by the Italian Ministry of Agriculture).
2009-11. Member of the team of the project AGROSCENARI: economic analysis on the adaptation of Italian agriculture to Climate Changes (Funded by the Italian Ministry of Agriculture).
2008-13. Member of the project "WFD: cost recovery of water services in agriculture" (Funded by the Italian Ministry of Research).
2004-06, PON ATAS: economic modelling of water and land use in agriculture (Funded by Italian Institute of Agricultural Economics).
2002-04, MONIDRI INEA: economic analysis and integrated modelling of water use optimization in agriculture (Funded by the Italian Government).

PARTICIPATION TO POLICY EVALUATIONS AND STUDIES

For the European Parliament:
- Research for AGRI Committee. “The EU farming employment: current challenges and future prospects”. European Parliament, Policy Department for Structural and Cohesion Policies, Brussels. Available at: http://bit.ly/2qPyjAV.

For the European Commission:
- «Evaluation study of the impact of the CAP measures towards the general objective “viable food production” « (2018). COGEA S.r.l. – Roma (Italy).
- «Evaluation of the structural effects of direct support”. Evaluation of CAP measures concerning sectors subject to past or present direct support – Lot 1: Horizontal issues. Agrosynergie EEIG. Bruxelles, 2013.
- “Evaluation of income effects of direct support”. Evaluation des mesures de la PAC relatives aux secteurs ayant bénéficié de soutien direct – Lot 1: Questions horizontales. Agrosynergie EEIG. Bruxelles, Oct. 2010. http://ec.europa.eu/agriculture/eval/reports/income/fulltext_en.pdf
- «Évaluation des effets sur les marchés du découplage partiel». Evaluation des mesures de la PAC relatives aux secteurs ayant bénéficié de soutien direct – Lot 1. COGEA S.r.l. – Roma (Italy). 2010.
- «Évaluation des mesures de la PAC relatives au secteur du riz». Rapport Final. COGEA s.r.l.. Rome (Italy), Nov. 2009.
- “Évaluation des mesures de la PAC relatives au secteur du tabac brut”. Rapport Final. COGEA s.r.l.. Roma, Aug. 2009.
- “Evaluation de l’activation des paiments directs sur les cultures de fruits et légumes dans le modèle régional”. Contrat n° 30-CE-0035027/00-37. Agrosynergie EEIG, Bruxelles. April 2008.

EDUCATION AND TRAINING
- Dottorato di Ricerca in Agricultural policy. Università della Tuscia, Viterbo (Italy). 1998.
- Master of Sciences in Agricultural and Resource Economics. Department of Agr. and Res. Economics, University of Arizona, Tucson (USA). 1997.
- Specialization in Agro-Food Economics. SMEA - Università Cattolica del Sacro Cuore, Cremona (Italy). 1991.
- Degree in Agricultural Science. Università della Tuscia, Viterbo (Italy). 1988.

PARTICIPATION IN SCIENTIFIC COMMITTEES
- 173rd Seminar of the European Association of Agricultural Economists (EAAE): “Sustainable and resilient farming systems in the European Union”. Sept. 26-27, 2019 – Bucharest, Romania
- 171st Seminar of the EAAE: “Measuring and evaluating farm income and well-being of farm families in Europe”. 5–6 Sept. 2019, Taenikon, Switzerland.
- 156th EAAE seminar “Prospects for agricultural insurance in Europe”, 3-4 October 2016, Wageningen UR, The Netherlands.
- 3rd AIEAA Conference: "Between Crisis and Development: Which Role for the Bio-Economy". Parma (Italy), 6-7 June 2013.
- Chairman of the Scientific Committee of 7th Conference of the AIEAA: “Science policy dialogue to face agri-food system challenges”. June 2018; Conegliano (TV), Italy.

EVALUATION OF RESEARCH PROJECT PROPOSAL within the EU Framework Programs FP6, FP7 and Horizon 2020.

REVIEWER FOR SCIENTIFIC JOURNALS in the field of agricultural economics and policy including: Agricultural Economics, Agricultural Finance Review, Australian Journal of Agricultural Economics, Agriculture and Food Economics, Bio-Based and Agricultural Economics, Economics and Policy of Energy and the Environment, European Review of Agricultural Economics, Journal of Policy Modeling.

OTHER ACTIVITIES
Instructor for the annual Summer School Risk Analysis and Risk Management in Agriculture, Wageningen University & Research (Netherlands). 2017.

Date: Viterbo, 24-01-2021

2. Scientific Curriculum of the associated investigators

1. TRESTINI Samuele

CURRENT POSITION
Associate Professor, Agricultural Economics and Rural Appraisal (SSD: agr/01 – Economia ed Estimo Rurale), TESAF Dep., University of Padova, Italy (May 2015-current).
Adjunct Associate Professor at the Department of “Crop & Soil Sciences” of the University of Georgia (US) from (June 2017 –current).

ACADEMIC RESPONSIBILITIES
Vice Director of the TeSAF Dep. – University of Padova, Italy (2015 – 2019; 2019 – current).
Director of “Centro InterUniversitario di Contabilità e Gestione Agraria, Forestale ed Ambientale” (2018 – current).

RESEARCH AREAS
Analysis of agricultural policy referring to policy design and evaluation including farmer behaviour under agricultural policy reforms, with particular attention to measures risk management and agri-environmental policies. The focus of research and evaluation is on the feasibility of policy measures and farm farm-level choices on sustainable practices, adoption of innovations, risk management strategies, using micro-data of the individual farm (e.g. FADN) and ad-hoc surveys. Recently he has performed researches in the agri-food sectors concerning agent-based risk preferences and behaviour under risk.

QUALITY AND IMPACT OF PUBLICATIONS
The scientific production has been intense since 2003:
- According with ANVUR, 4 articles have been published in journals belonging to Class A of the scientific area 13.
- The commission for the “Abilitazione Scientifica Nazionale” (National competition to be eligible for) to become a full professor in the Academic recruitment field of Agricultural Economics and Appraisal (settore concorsuale: 07/A1 – Economia Agraria ed Estimo) (Call 2016) has evaluated the impact of his overall scientific production as Excellent (measured using the indicators referred to in Article 6 and Annexes A and B of the ASN).

- Scopus database reports 22 publications(21 in the last 10 years) with 309 citations and h-index of 6. Among these, 7 publications have been published in journals in Q1. These scientific production is higher than the bibliometric threshold necessary to be qualified to compete for the role of full professor and appointed member of the recruitment commission in the sector 07/A1 (Agricultural Economics and Appraisal).
- CINECA reports 88 publications;
- Google Scholar reports 65 publications with 710 citations and h-index of 8.

PREVIOUS POSITIONS
Assistant Professor, Agricultural Economics and Policy, Department of Land Environment Agriculture and Forestry, University of Padova, Italy (September 2007- April 2015).
Research Fellow, Department of Land Environment Agriculture and Forestry, University of Padova, Italy (March 2006- August 2007)
Visiting scholar, University College of Dublin, Department of Agri-Business & Rural Development (January 2005 - June 2005).

UNIVERSITY SERVICE
Member of Board of Doctoral Programs of the LERH Doctoral School of the Department of Land Environment Agriculture and Forestry (2009-2013; 2016 - current).
Member of the Doctoral examination board of the LERH Doctoral School oof the Department of Land Environment Agriculture and Forestry (2010).

CURRENT TEACHING ACTIVITY
Agrifood Economics and Policy (64 h, 8 ECTS) MSc Sustainable Agriculture of the University of Padova, Italy
Food Market (32 h, 4 ECTS) within the course of “Food Legislation and Food Markets” at the BSc Food Safety of the University of Padova, Italy
Food Legislation and Food Markets (32 h, 4 ECTS) BSc Food Science at the University of Padova, Italy
Principles of Economics (64 h, 8 ECTS) BSc Animal Production at the Faculty of Agriculture, University of Padova, Italy
Zooeconomy (8h, 1 ECTS) School of Specialization in Health Animal, Breeding and Animal Productions, University of Padova, Italy

MEMBERSHIPS
The Italian Society of Agricultural Economics (SIDEA), Italian Society of Agri-food Economics (SIEA), Agricultural Economics Society (AES), European Association of Agricultural Economics (EAAE).

REASEARCH PROJECTS - PARTICIPATION
2006:“The sustainability of organic agriculture. Economic evaluations, environmental and human health (SABIO)”, financed by the Italian Ministry of Agriculture, Food and Forestry.
2006: FP6 European project "ITAES - Integrated Tools to design and implement Agro Environmental Schemes" coordinated by Prof. Pierre Dupraz, INRA Rennes.
2007: “Socio-economic study on the possibility of a switch of production of raw tobacco in Italy – Ri.P.Ta” financed by the European Union based on Regulation (CE) n. 2182/2002;
2009-2010: “Strategies for the commercial valorisation of pelagic fish in the Adriatic: management of fishing methods”, financed by the Italian Ministry of Agriculture, Food and Forestry.
2010. “Innovative Trajectories of Grana Padano cheese”, financed by the Rural Development Plan of Veneto Region (Italy).

REASEARCH PROJECTS - SCIENTIFIC RESPONSABILITY
2011-2014. "Cultivation of pomegranates, processing of fruits into juice: technical-economic assessment of the sustainability of the supply chain”, financed by the Italian Ministry of Agriculture, Food and Forestry.
From 2016. " The management of market volatility through the implementation of the "Income stabilization Tool" (IST) under the CAP Post-2013”, financed by the University of Padova, PRAT Project.
2016-2017: “New trading instruments in the agricultural commodities market - NEWCOM” FSE, cod. 2105/47/2121/2015.
2016-2017: “Development of innovative mutual funds for the income stabilization of dairy farms – MILKFUND”- cod. 2105-26-2121-2015.
2017-2018: “Mapping the flow of agrifood firm to improve the reuse of wastes - Mappatura dei flussi delle aziende dell’agroalimentare per il riutilizzo degli scarti", Centro studi di economia e tecnica dell’energia Giorgio Levi Cases, Università degli Studi di Padova.
2018- current: "Pomegranate Add Value – VA_MO", EIP Project financed under the Rural Development Program of Veneto Region - Measure 16.
2018- current: "Sustainability of dairy farms for the future: competitiveness, environment and society towards the emerging needs of community – STALLA.4.0", EIP Project financed under the Rural Development Program of Veneto Region - Measure 16.
2018- current: "Risk management 2.0: monitoring, research, process, technologies and network communications for the competitiveness of a quality agriculture – ITA 2.0", EIP Project financed under the Rural Development Program of Trento Province - Measure 16.
2018 – current: Local research unit of “Sistemi alternativi per l’allevamento del coniglio da carne: valutazione economica, sanitaria, del benessere e percezione del consumatore” (IZS VE 16/17 RC) coordinate by “IZS delle Venezie”, financed by Ministero della Salute- Direzione Generale della Sanità Animale e dei Farmaci Veterinari.
2018 – 2019: " Model for a sustainable and participatory-based development of viticulture in the Euganean Hills - MoSVit", EIP Project financed under the Rural Development Program of Veneto Region - Measure 16.

2018 – 2020: Research unit of “Conferenza regionale dell’Agricoltura e Sviluppo Rurale”, financed by Regione del Veneto.
2019 – current: Scientific responsibility of "Social Innovation for Sustainable Development of Viticulture in the Alta Marca - INNOSOSS", EIP Project financed under the Rural Development Program of Veneto Region - Measure 16.
2020 – current: “Ricerca delle determinanti sensoriali e chimico-fisiche per l'individuazione dei modelli enologici di più alto pregio e valore commerciale del Conegliano Valdobbiadene Prosecco Superiore DOCG” FSE project, cod. 2105/0030/1463/2019.
2020 – current: " Studio di fattibilità per la realizzazione e gestione di un fondo mutualistico per la copertura del rischio collegato alle infestazioni parassitarie. ", financed by Veneto Region.

EDUCATION
Ph.D. on Agri-food Economics and Policy - Department of Land Environment Agriculture and Forestry , University of Padova, Italy (2006).
M.Sc. (five years Degree) Agricultural Science - Faculty of Agriculture, University of Padova, Italy (2002).
ERASMUS student, EU Erasmus Mobility Program, ENSAM Agro del Montpellier (2000).

OTHER ACTIVTIES
Member of the “Scientific Evaluation Commitee” at the Ministry Agricultural Food and Forestry Policy (2011-2012).
Member of the Technical-Scientific Committee of TERGEO project (Unione Italiana Vini - UIV) (2016 - 2018).
Member of the Technical-Scientific Committee of ALCAVE (Dairy Products Association of Veneto) (since 2016).
Member of the Advisory Board of DIVA Project, Horizon 2020 research and innovation programme under grant agreement No 777890.
Member of the Scientific Committee of:
- "The Common Agricultural Policy of the European Union – the present and the future" (Stare Jabonki, Polonia, 5-7 December 2017) organized by the Instytut Ekonomiki Rolnictwa i Gospodarki ywnociowej - Pastwowy Instytut Badawczy (IERiG-PIB) (Institute of Agricultural and Food Economics - National Research Institute), Poland;
Member of the Program Committee of:
- “LOCALE vs GLOBALE - Le imprese agroalimentari in un contesto internazionale in evoluzione”, XXVIII SIEA Conference, University of Parma, Italy 24 -25 september 2020

JOURNAL SERVICES
- Member of the Journal Topic board (Topic Editors) of the Journal “Sustainability” (https://www.mdpi.com/journal/sustainability/topic_editors)
- Member of the Reviewer Board of the Journal “Agriculture” (https://www.mdpi.com/journal/agriculture/submission_reviewers)
- Reviewer for several scientific journals in the field of agricultural economics and policy: Agricultural Finance Review, Climate Risk Management, European Review of Agricultural Economics, Agriculture and Human Values, New MEDIT, Revista de la Facultad de Ciencias Agrarias, Agricultural and Food Economics, Italia Review of Agricultural Economics, Food Economy, Italian Journal of Food Safety, Italian Journal of Food Science, Sustainability MDPI, Economics MDPI, Agriculture MDPI, Journal of Risk and Financial Management, SAGE Open, Journal of Wine Research.

2. RAFFAELLI Roberta

CURRENT ACADEMIC POSITION
Professor of Agricultural Economics, Department of Economics and Management (DEM), University of Trento
Academic Director of the PhD Program on Sustainability: Economics, Environment, Management and Society (SUSTEEMS)

FIELDS OF SPECIALIZATION
Consumers’ preferences for sustainable goods and services, farmers' risk preferences, discrete choice modelling, multifunctionality of agriculture, agriculture and climate change.

ACADEMIC CAREER
Full Professor in Agricultural Economics at Department of Economics and Management, University of Trento (November 2018)
Italian National Scientific Qualification as Full Professor in Agricultural Economics and Rural Appraisal (settore scientifico disciplinare 07/A1 Economia agraria ed estimo rurale) (2014)
Associate Professor in Agricultural Economics at Department of Economics, University of Trento (September 2005)
Academic qualification as associate professor in Agricultural Economics (2004)
Researcher in Agricultural Economics at the Faculty of Economics, University of Trento (October 1994)

EDUCATION
Ph.D. in Agricultural Economics and Policy, University of Modena (Italy) (1993)
Master of Science in Agricultural Economics and Business, Department of Agricultural Economics and Business (Guelph Ontario – Canada) (1991)
Specialization Degree in Economics of the Agri-food System at Scuola di Specializzazione in Economia Agro-alimentare (SMEA), Catholic University of Piacenza, Cremona (1989)
Bachelor Degree (four years) in Economics, University of Trento (1987)

INTERNATIONAL EXPERIENCE
Visiting professor at the Department of Agricultural and Resources Economics, Colorado State University, Fort Collins (USA) (2017)
Short visiting periods at Wissenschaftszentrum Weihenstephan für Ernährung, Landnutzung und Umwelt - Technische Universität München, Freising (2015 and 2017)
Erasmus Teaching Staff Mobility Program at Wissenschaftszentrum Weihenstephan für Ernährung, Landnutzung und Umwelt - Technische Universität München, Freising (2013)
Research assistant at Department of Agricultural Economics and Business, University of Guelph, Ontario-Canada (1991)

COORDINATION OF RESEARCH PROJECTS
“Community on Food Consumer Science - COMFOCUS H2020 project – WP leader for the Department of Economics and Management, University of Trento (2020-2024)
Beyond organic: the preferences of Italian consumers for organic pasta with additional sustainable attributes - Project co-funded by CREA – Principal Investigator (2014-2018)
ENVIROCHANGE project on the effects of climate change on the agriculture in Trentino and elicitation of consumers’ risk preferences (competitive call named Grandi Progetti della Provincia Autonoma di Trento) – Principal Investigator for the Department of Economics and Management (2008-2011)
The value of Alpine pasture and grazing for tourists – Project funded by the Department of Economics and Management, University of Trento - Principal Investigator (2008-2011)

PARTICIPATION TO RESEARCH PROJECTS
The multifunctional value of sheep farming for the tourists in Regional Park of Porto Conte (Alghero) – Project co-funded by Regione Sardegna - Member of the research group (2014-2016)
EBC-RISK Project on elicitation of risk perception and preferences of Trentino farmers (post-doc 2010 - Reintegration) - Project co-funded by the Autonomous Province of Trento– Supervisor of Luisa Menapace (2010-2012)
OPENLOC project on public policies and local development (competitive call named Grandi Progetti della Provincia Autonoma di Trento 2008-2011 - Member of the research group (2009-2011)
Listen the Voice of the Village project – Competitive Central Europe call – Member of the Core Group (2009-2011)
Ecocypre, Fortis, Efomi projects on the evaluation of multifunctional services provided by Trentino forests (competitive call named Grandi Progetti della Provincia Autonoma di Trento 2002-2005) – Member of the research group (2002-2005)
European Project Life-Tovel - Member of the research group for the socio-economic study of the area (2003-2004)
European Project Proterra (1997-2001) – Member of the research group for the economic valorization of agricultural products of terracing landscapes (2001)

CURRENT TEACHING ACTIVITY
Non-market evaluation of environmental goods (PhD level)
Stated preference methods for consumers’ preferences investigations (MSc level)
Economics of the Agri-food System (BA level)
Wine Economics and Marketing (BA level)

OTHER ACADEMIC DUTIES AT THE UNIVERSITY OF TRENTO
Member of the Committee in charge for the proposal of a new interdisciplinary PhD program in Sustainability: Economics, Environment, Management and Society (2019)
Member of the Commission for Human Resources (CRU) of the Department of Economics and Management (since 2018)
Member of the Board (Giunta) of the Department of Economics and Management (since 2018)
Coordinator of the agro-environmental teaching at the Department of Economics and Management (since 2018)
Director’s delegate for promoting and coordinating foreign languages teaching and learning at the Department of Economics and Management (2018-2020)
Member of the Steering Committee of the M.Sc. Degree in Sustainability Management and Tourism (MaST) and responsible for the innovation in the teaching methods inside MaST (since 2014)
Member of the Emergency Evacuation Team of the Department of Economics and Management (since 2011)
Member of the Doctoral program in Development Economics and Local Systems – DELOS University of Trento (XXXI to XXXV cycle) (2015-2020)
Member of the Doctoral program in Economics and Management – University of Trento (XX to XV cycle) (2004-2009)
Member of the Doctoral program in Environment and Mountain Economics – University of Trento (XV to XIX cycle) (2000-2003)

PARTICIPATION IN SCIENTIFIC COMMITTEES
Member of the Scientific Committee of the Istituto Nazionale di Studi su Agribusiness e Sostenibilità (INAS) (since 2016)
Member of the Program Committee for 6th Conference of the Italian Association of Agricultural and Applied Economics (AIEAA) Economics and Politics of Migration: Implications for Agriculture and Food - Piacenza 15-16 June, 2017
Member of the Program Committee for the 1st Conference of the Italian Association of Agricultural and Applied Economics (AIEAA) Towards Sustainable Bio-economy: Economic Issues and Policy Changes - Trento 4-5 June, 2012
Member of the Scientific and Organizing Committee of the International Research Workshop on Risk elicitation and Stated Preference Methods for Climate Change Research, Trento, 21-22 October 2010

Member of the Scientific Committee of the International Short Course in Experimental Design for Stated Choice Data, Trento, 29 October - 1 November 2010.

PUBLIC ENGAGEMENT
Member of the Board of Directors of the Fondazione Edmund Mach, San Michele all'Adige (since 2021)
Member of the "Commissione censuaria locale" Trento (since 2015)
Member of Focus group for the definition of the new Agrifood Strategy inside the Smart Specialization Strategy of the Autonomous Province of Trento (2014)
Member of the Steering Group "Evaluation Plan of the Provincial Policies 2007-2013" Autonomous Province of Trento (2007-2013)
Member of the research group for the Ex-ante evaluation of the Rural Development Plan of the Autonomous Province of Trento 2007-2013 (2007)
Member of the Technical Committee for the Agricultural Sector of the Autonomous Province of Trento (2003-2013)
Member of the research group for the Ex-ante evaluation of the Rural Development Plan of the Autonomous Province of Trento 2000-2006 (2000)

MEMBERSHIPS
Italian Association of Agricultural and Applied Economics (AIEAA) (since 2011)
European Association of Agricultural Economists (EAAE) (since 2004)
Accademia degli Agiati di Rovereto (since 2003)
Società Italiana di Economia Agraria (1994-2015)

REVIEWER FOR
Agricultural and Resource Economics Review, Agricultural Economics, Applied Economic Perspectives & Policy, Australian Journal of Agricultural Economics, Bio-based and Applied Economics, British Food Journal, Climatic Change, Economia Agro-alimentare, European Review of Agricultural Economics, Journal of Choice Modelling, Journal on Food System Dynamics, Rivista di Economia Agraria;
National Science Center, Poland (2018) and International Foundation for Science, Stockholm, Sweden (2016);
International Conference of Agricultural Economists 2018, all the Conferences of the Italian Association of Agricultural and Applied Economics (AIEAA) 2012-2020; Convegno Ceset 2013, Third International Choice Modelling Conference, 2013; XX Convegno SIEA 2012; Second International Choice Modelling Conference 2011; XLVII Convegno SIDEA 2010.

PUBLICATIONS
Quantity and quality of the scientific production:
• 16 publications, 438 citations, 9 of h-index in Scopus since 1995
• 69 documents, 1070 citations, 12 of h-index in Google Scholar since 1990
• 71 documents in CINECA since 1992
• 9 articles published in "Class A" journals for Economics and Statistics (Area 13)
• 11 out of 16 publications included in Scopus are published in journals classified Q1 Scimago.

The bibliometric indicators are above the thresholds established for designation as commissioner in the academic recruitment field: AGRICULTURAL ECONOMICS AND APPRAISAL (SETTORE CONCORSUALE: 07/A1 – ECONOMIA AGRARIA ED ESTIMO). These thresholds are: 10 articles in the last 10 years; 40 citations; 4 of H-index.

3. SANTERAMO Fabio Gaetano

FABIO GAETANO SANTERAMO
BARLETTA, ITALY
fabio.santeramo@unifg.it
Italian
Date of birth: 31 May 1983

WORK EXPERIENCE
University of Foggia – DAFNE. Via Napoli, 25 - 71121 Foggia, Italy
Associate Professor in Agricultural Economics and Policy
Teaching "Economy of Information and Financial Intermediaries", "Environmental and Agricultural Economics and Policy", "Topics in Agrifood Economics and Policy" to undergraduate students.
Research. Supervision of post-doc.

May 2014 – October 2019

University of Foggia – DAFNE. Via Napoli, 25 - 71121 Foggia, Italy
Assistant Professor in Agricultural Economics and Policy
Teaching “Environmental and Agricultural Economics and Policy”, “Topics in Agrifood Economics and Policy” to undergraduate students.
Researches are in the areas of Agricultural Economics and Policy, Economics of Risk, Climate change, Development Economics. The analyses, based on quantitative and econometrics methods, have focused on Risk Management, Food Security, Price Analysis, Trade Policies.

Quality and Impact of Publications
The commission for the “Abilitazione Scientifica Nazionale” (National competition to be eligible for) to become full professor in the area Agricultural Economics and Policy (sector 07/A1) (Call 2016, session IV) has evaluated the impact of his overall scientific production as Excellent (5/5 positive evaluation).
Thresholds: 6 documents, 21 citations, 3 of h-index
The scientific production is prolific:
44 documents, 414 citations, 13 of h-index in Web of Science since 2011
52 documents, 567 citations, 14 of h-index in Scopus since 2009, of which 24 articles are Q1
117 documents, 1207 citations, 18 of h-index in Google Scholar since 2003
71 documents in CINECA since 2011
The quality and impact of publication can be assessed as follows:
15 articles published in journal belonging to Class A of the scientific area 13 since 2012
2 of his articles have been awarded by international sceintific societies

AWARDS
Best Poster presented at the 171st EAAE Seminar, Tänikon (Switzerland) - 2019
Co-author of one Chapter of the Best Book in Wine Economics – OIV - 2019
Best Paper published in 2018 in Agricultural Economics – IAAE - 2019
Awards of Merit – AAWE Conference, Vienna (Austria) - 2019
AISSA Award - best Italian PhD dissertation in Agricultural Economics - 2017
SIDEA Antonio Cioffi Award - best Italian PhD dissertation in Agricultural Economics - 2017
AIEAA Antonio Cioffi Award for research by a Young Researcher - 2016
NCSU Thank a Teacher Award for outstanding teaching performance - 2015

ACADEMIC RESPONSIBILITIES
Non-U.S. Universities and Institutions Representative of IATRC Executive Committee – 2021-
Editor in Chief for Agriculture and Food Security – 2019-
Co-Editor in Chief for Bio-Based Applied Economics – 2018-
Coordinator of the Summer School “Econometrics in Agriculture” (UniFg) - 2018-currently
Member of Commissione dipartimentale Assicurazione della Qualità della Ricerca e della Terza Missione (UniFg) - 2017-2019
Member of Gruppo Gestione e Assicurazione della Qualità STAGR (UniFg) - 2016-
Member of Collegio Docenti del Dottorato SUSTEEM (UniTn) - 2019-
Enrollment – Albo degli Esperti di Valutazione ANVUR –- 2019-

External Reviewer of PhD theses:
Università Politecnica delle Marche, University of Rome Sapienza, University of Naples “Federico II” - 2017

DEGREE OF SUCCESS IN RESEARCH PROJECTS
PI – Project: The effects of COVID-19 pandemic on critical supply chains (IATRC) - 2020
PI – Project: Food Risk: Perception, Communication, Policies (UniFg) - 2019-2020
PI – Project: Participation of Large Farms in Crop Insurance markets (ISMEA-UniFg) - 2019
PI – Project: The trade effects of SPSs and RTAs (IATRC) - 2019
PI – Project: Cross-Price Elasticities for Oils and Fats in the US and the EU (ICCT) - 2018
PI – Work Package on Quality Schemesbrand (Apulian Region) - 2017-2020
PI – Project: Participation in Southern Italy Crop Insurance markets (ISMEA-UniFg) - 2017-
PI – Project: The role of SPSs on trade creation and trade diversion (IATRC) - 2017

PI – Project: Cross-Price Elasticities for Oils and Fats in the US and the EU (ICCT) - 2016
PI – Project: Estimation of Demand and Supply, and Identification Strategies (IFPRI) - 2013

PARTICIPATION IN OTHER RESEARCH PROJECTS
Innovative Management of Risks in Agri-food Supply Chains (Apulian Region) - 2018-
Acquacoltura Pugliese 4.0 (FEAMP 2014/2020) - 2020-
Impact Evaluation of CAP on Italian Agricultural Sector - 2019
Food Security in Mediterranean area (7thFP SUSTAINMED) - 2010-2012
Agroenergy supply chains (funds: PRIN) - 2009-2010

POLICY EVALUATIONS AND STUDIES
For the European Commission:
Management of food crises – cases study on xylella and peaches oversupply - 2018
Risk Management in EU Agriculture – cases study - 2017
For International Institutions:
FAO/IPC (Food and Nutrition Security Measurement) - 2016
CIHEAM (Assessing Crop Insurance Participation in Italy) - 2016
FAO, ESS Division (Assessing Food and Nutrition Security Composite Indicators) - 2013
CIHEAM (Designing Crop Insurance Policies in Italy) - 2013
For National Institutions:
Participation of Large Farms in Crop Insurance markets - 2019-2020
Participation in Southern Italy Crop Insurance markets - 2017-2018
DARE Puglia (Food Safety and Certification in Seafood Markets) - 2014
Confagricoltura Puglia (Evaluating the Impact of Agricultural Subsidies) - 2011

EDUCATION AND TRAINING
PhD in Economics, North Carolina State University (USA) - 2012-2016
MSc in Economics, Iowa State University (USA) - 2008-2010.
Doctorate in Agricultural Economics, University of Naples “Federico II” (Italy) - 2006-2010
MA in Agricultural Economics and Policy, University of Naples “Federico II” (Italy) - 2006-2007
MSc in Sustainable Agriculture and Rural Development, University of Bari (Italy) - 2005-2006
BA in Agricultural Science, University of Bari (Italy) - 2001-2005

OTHER ACTIVITIES Instructor for the annual Summer School Risk Analysis and Risk Management in Agriculture,
Wageningen University & Research (Netherlands) – 2017-currently
Member of the Scientific Committee of the following seminars and Congresses:
10th AIEAA Conference, Rome 2021 (Italy) - 2021
16th ETAGRO Conference on Agricultural Economics of the Hellenic Association, Athens 2020 (Greece) - 2020
9th AIEAA Conference, Bari 2020, (Italy) - 2020

4th International Conference on Economic Research ECONALANYA 2020 (Turkey) - 2020
3rd International Conference on Economic Research ECONALANYA 2019 (Turkey) - 2019
2nd International Conference on Economic Research ECONALANYA 2018, (Turkey) - 2018
6th AIEAA Conference, Piacenza, 15-16 June 2017, (Italy) - 2017
1st International Conference on Economic Research ECONALANYA 2017, (Turkey) - 2017
126th EAAE Seminar, 27-29 June 2012, Capri, (Italy) - 2012
Co-Chair of the IATRC Symposium, 23-23 June 2019, Sevilla, (Spain) - 2019Evaluator of research project proposals for:
National Oceanic Atmospheric Administration (NOAA) – National Marine Fisheries Service (NMFS) – USA
National Science Centre – Expert of the Panel for Social Science – Poland
Evaluator – Progetti FISR – Ministero dell’Istruzione e Ministero dell’Università e Ricerca
Evaluator – Progetti COST – European Cooperation in Science & Technology - EU

Reviewer for several scientific journals in the field of agricultural economics and policy including:
Agricultural Economics, American Journal of Agricultural Economics, Applied Economic Perspectives & Policy, Applied Economics, European Review of Agricultural Economics, Food Policy, Food Research International

4. ARATA Linda

PERSONAL INFORMATION
Home address Strada Farnesiana 108, 20122, Piacenza, Italy
Nationality Italian
Date of Birth 17-08-1985
Telephone number +39 0523 599447
Email linda.arata@unicatt.it

WORKING EXPERIENCE

October 2018-now: Researcher (Type A) at the Department of Agricultural and Food Economics, Università Cattolica del Sacro Cuore, Piacenza, Italy.
Research and teaching. Teaching “Principles of Economics”, undergraduate students; teaching “Food Economics” undergraduate students.

2014-September 2018: Post-doc at the Department of Agricultural and Food Economics, Università Cattolica del Sacro Cuore, Piacenza, Italy

October 2016-April 2017: Consultant in the Global Perspectives Studies team, Agricultural Development Economics Division (ESA), FAO, Rome.

January 2015-May 2015: Visiting Researcher at the Production Economics Group, Institute for Food and Resource Economics (ILR) University of Bonn, Germany.

SHORT VISITING PERIOD

September 2019,
3-8 February 2020: Universidad del País Vasco, Bilbao, Spain. Working on Discrete Choice Modelling. The visiting period has been founded by the call “Bando Leonardo da Vinci, 1st edition”.

RESEARCH AREAS
modelling farmer behaviour under price and yield uncertainty by means of farm-level mathematical programming models. Evaluation of agricultural production risk worldwide by econometric techniques. Matching analysis to assess the effects of the agri-environmental measures supported by the EU Common Agricultural Policy (CAP) on farmer technical and economic performances. Economic evaluation of environmental goods supported by the CAP by applying discrete choice modelling techniques.

QUALITY AND IMPACT OF PUBLICATIONS
The quality and impact of publication can be assessed as follows.
4 of her articles have been published since 2016 in journals belonging to Class A of the scientific area 13.
Since 2016 10 papers are available in Scopus, of which 8 have been published in journals in Q1 in Scopus.
In Google Scholar 10 papers are available since 2016, 69 citations, h-index of 5.
In Cineca 10 papers are available since 2016 plus 4 chapters in books.
In Scopus 10 papers are available since 2016, with 40 citations and h-index of 3.
Habilitation demand to “ II fascia” has been submitted for the academic recruitment field: Agricultural Economics and Appraisal (Settore concorsuale 07/A1 –Economia Agraria ed Estimo) –academic discipline: Agricultural Economics and Rural Appraisal (settore scientifico disciplinare AGR/01 –Economia ed Estimo Rurale). The candidate fullfills the criteria required for the habilitation to II fascia in the academic recruitment field, which are:
- Minimum number of papers published in the last 5 years: 3
- Minimum number of citations in the last 10 years: 14
- H-index of the last 10 years: 2

AWARDS
2019 Prize of Università Cattolica del Sacro Cuore for “high quality papers” for the paper: Arata, L., Sckokai, P. (2016). Impact of Agri-environmental Schemes on Farm Performances in five EU

Member States: a DID-Matching Approach. Land Economics, vol. 92, n. 1, pp. 167-186.

2015 Best PhD thesis award in Agricultural Economics of the Italian Association of the Agricultural Sciences Societies

2014 Best PhD thesis award of the Italian Society of Agricultural Economics

PARTICIPATION IN EUROPEN UNION RESEARCH PROJECTS AS MEMBER OF A RESEARCH UNIT
Since 2019: Member of the Università Cattolica del Sacro Cuore research unit for the European Union research project –Horizon 2020 - "MIND STEP - Modelling INdividual Decisions to Support The European Policies related to Agriculture"

2017-2020: Member of the Università Cattolica del Sacro Cuore research unit for the European Union research project European Research Area NETwork on Sustainable Animal Production (ERA-NET SusAn), "PEGaSUS: Bridging the gaps in the phosphorus value chain" (2017-2020).

RESPONSIBLE FOR SCIENTIFIC RESEARCH COMMITTED BY QUALIFIED PRIVATE AND PUBLIC INSTITUTIONS
May-December 2017: Fondazione ENI Enrico Mattei (FEEM): Economic Valuation of Ecosystem Services Provided by the Peri-Urban Agriculture of Milan. Part of the EU research project "Economic Valuation of Ecosystem Services -EcoValue"

October 2016 - April 2017: Full-time consultant at Global Perspectives Studies team, Agricultural Development Economics Division (ESA), FAO, Roma.

EDUCATION

February 2014: PhD in Agricultural Economics. Label Doctor Europaeus
Doctoral School on the Agro-Food System, Università Cattolica del Sacro Cuore, Piacenza, Italy

September- December 2011 and
May-July 2012: Visiting PhD at Wageningen University, the Netherlands

June 2010: Master of Science in 'Management, Economics and Consumer Studies', Wageningen University, the Netherlands (9 with distinction)

April 2010: Two-year Second-Level Degree in 'Economics of the Agri-food System' Università Cattolica del Sacro Cuore, Cremona, Italy (110/110 cum laude)

December 2008: One-year Master Degree SMEA in ''Economics of the Agri-food System' Università Cattolica del Sacro Cuore, Cremona, Italy (70/70 cum laude)

September 2007: Bachelor degree in 'Agricultural Sciences and Technologies', Università Cattolica del Sacro Cuore, Piacenza, Italy (110/110 cum laude)

REVIEWER FOR SCIENTIFIC JOURNALS
Australian Journal of Agricultural and Resource Economics, Bio-based and Applied Economics, Ecological Economics, European Review of Agricultural Economics, Canadian Journal of Agricultural Economics, Food Policy

3. Main Principal Investigator's scientific publications (Max. 20)

1. Marino Maria, Rocchi Benedetto, Severini, Simone (2021). Conditional income disparity between farm and non-farm households in the European Union: a longitudinal analysis.. JOURNAL OF AGRICULTURAL ECONOMICS, ISSN: 1477-9552, doi: 10.1111/1477-9552.12420 - **Articolo in rivista**
2. Biagini, Luigi, Antonioli, Federico, Severini, Simone (2020). The Role of the Common Agricultural Policy in Enhancing Farm Income: A Dynamic Panel Analysis Accounting for Farm Size in Italy. JOURNAL OF AGRICULTURAL ECONOMICS, vol. 71, p. 652-675, ISSN: 0021-857X, doi: 10.1111/1477-9552.12383 - **Articolo in rivista**

3. Reidsma, Pytrik, Meuwissen, Miranda, Accatino, Francesco, Appel, Franziska, Bardaji, Isabel, Coopmans, Isabeau, Gavrilescu, Camelia, Heinrich, Florian, Krupin, Vitaliy, ManevskaTasevska, Gordana...(2020). How do stakeholders perceive the sustainability and resilience of EU farming systems?. EUROCHOICES, vol. 19, p. 18-27, ISSN: 1478-0917, doi: 10.1111/1746-692X.12280 - **Articolo in rivista**

4. Rocchi, Benedetto, Marino, Maria, Severini, Simone (2020). Does an Income Gap between Farm and Nonfarm Households Still Exist? The Case of the European Union. APPLIED ECONOMIC PERSPECTIVES AND POLICY, ISSN: 2040-5790, doi: 10.1002/aepp.13116 - **Articolo in rivista**

5. Spiegel, Alisa, Soriano, Bárbara, Mey, Yann, Slijper, Thomas, Urquhart, Julie, Bardají, Isabel, Vigani, Mauro, Severini, Simone, Meuwissen, Miranda (2020). Risk Management and its Role in Enhancing Perceived Resilience Capacities of Farms and Farming Systems in Europe. EUROCHOICES, vol. 19, p. 45-53, ISSN: 1478-0917, doi: 10.1111/1746-692X.12284 - **Articolo in rivista**

6. Cinzia Zinnanti, Emanuele Schimmenti, Valeria Borsellino, Giulio Paolini, Severini S (2019). Economic performance and risk of farming systems specialized in perennial crops: An analysis of Italian hazelnut production. AGRICULTURAL SYSTEMS, vol. 176, 102645, ISSN: 0308-521X, doi: 10.1016/j.agsy.2019.102645 - **Articolo in rivista**

7. Miranda P.M. Meuwissen, Peter H. Feindt, Alisa Spiegel, Catrien J.A.M. Termeer, Erik Mathijs, Yann de Mey, Robert Finger, Alfons Balmann, Erwin Wauters, Julie Urquhart, Mauro Vigani, Katarzyna Zawaliska, Hugo Herrera, Phillipa Nicholas-Davies, Helena Hansson, Wim Paas, Thomas Slijper, Isabeau Coopmans, Willemijn Vroege, Anna Ciechomska...(2019). A framework to assess the resilience of farming systems. AGRICULTURAL SYSTEMS, vol. 176, 102656, ISSN: 0308-521X, doi: 10.1016/j.agsy.2019.102656 - **Articolo in rivista**

8. Severini S, Biagini L, Finger R (2019). Modeling agricultural risk management policies – The implementation of the Income Stabilization Tool in Italy. JOURNAL OF POLICY MODELING, vol. 41, p. 140-155, ISSN: 0161-8938, doi: 10.1016/j.jpolmod.2018.03.003 - **Articolo in rivista**

9. Severini S, Di Tommaso G, Finger R (2019). Effects of the Income Stabilization Tool on farm income level, variability and concentration in Italian agriculture. AGRICULTURAL AND FOOD ECONOMICS, vol. 7, p. 1-22, ISSN: 2193-7532, doi: 10.1186/s40100-019-0141-9 - **Articolo in rivista**

10. Cortignani R, Severini S, Dono G (2017). Complying with greening practices in the new CAP direct payments: an application on Italian specialized arable farms. LAND USE POLICY, vol. 61, p. 265-275, ISSN: 0264-8377, doi: 10.1016/j.landusepol.2016.11.026 - **Articolo in rivista**

11. Severini S, Tantari A, Di Tommaso G (2017). Effect of agricultural policy on income and revenue risks in Italian farms. Implications for the upload of risk management policies. AGRICULTURAL FINANCE REVIEW, vol. 77, p. 295-311, ISSN: 0002-1466, doi: 10.1108/AFR-07-2016-0067 - **Articolo in rivista**

12. Severini S, Tantari A, Di Tommaso G (2016). Do CAP direct payments stabilise farm income? Empirical evidences from a constant sample of Italian farms.. AGRICULTURAL AND FOOD ECONOMICS, vol. 2016, p. 1-17, ISSN: 2193-7532, doi: 10.1186/s40100-016-0050-0 - **Articolo in rivista**

13. Severini S, Tantari A, Di Tommaso G (2016). The instability of farm income. Empirical evidences on aggregation bias and heterogeneity among farm groups.. BIO-BASED AND APPLIED ECONOMICS, vol. 5, p. 63-81, ISSN: 2280-6180, doi: 10.13128/BAE-16367 - **Articolo in rivista**

14. Severini S, Tantari A (2015). The distributional impact of agricultural policy tools on Italian farm household incomes. JOURNAL OF POLICY MODELING, vol. 37, p. 124-135, ISSN: 0161-8938, doi: 10.1016/j.jpolmod.2015.01.004 - **Articolo in rivista**

15. Severini S, Tantari A (2013). The effect of the EU farm payments policy and its recent reform on farm income inequality. JOURNAL OF POLICY MODELING, vol. 35, p. 212-227, ISSN: 0161-8938, doi: http://dx.doi.org/10.1016/j.jpolmod.2012.12.002 - **Articolo in rivista**

16. Severini S, Tantari A (2013). The impact of agricultural policy on farm income concentration: the case of regional implementation of the CAP direct payments in Italy. AGRICULTURAL ECONOMICS, vol. 44, p. 275-286, ISSN: 0169-5150, doi: 10.1111/agec.12010 - **Articolo in rivista**

17. Cortignani R, SEVERINI S (2012). A constrained optimization model based on generalized maximum entropy to assess the impact of reforming agricultural policy on the sustainability of irrigated areas. AGRICULTURAL ECONOMICS, vol. 43, p. 621-633, ISSN: 0169-5150, doi: 10.1111/j.1574-0862.2012.00608.x - **Articolo in rivista**

18. Dono G, Giraldo L, SEVERINI S (2012). The cost of irrigation water delivery: an attempt to reconcile the concepts of cost and efficiency. WATER RESOURCES MANAGEMENT, vol. 26, p. 1865-1877, ISSN: 0920-4741, doi: 10.1007/s11269-012-9991-6 - **Articolo in rivista**

19. DONO G, GIRALDO L, SEVERINI S (2010). PRICING OF IRRIGATION WATER UNDER ALTERNATIVE CHARGING METHODS: POSSIBLE SHORTCOMINGS OF A VOLUMETRIC APPROACH. AGRICULTURAL WATER MANAGEMENT, vol. 97 (11), p. 1795-1805, ISSN: 0378-3774, doi: 10.1016/j.agwat.2010.06.013 - **Articolo in rivista**

20. CORTIGNANI R, SEVERINI S (2009). Modeling farm-level adoption of deficit irrigation using Positive Mathematical. AGRICULTURAL WATER MANAGEMENT, vol. 96, p. 1785-1791, ISSN: 0378-3774, doi: 10.1016/j.agwat.2009.07.016 - **Articolo in rivista**

4. Main scientific publications of the associated investigators (Max. 20, for each research unit)

1. **TRESTINI Samuele**

1. Elisa Giampietri, Xiaohua Yu, Samuele Trestini (2020). The role of trust and perceived barriers on farmer's intention to adopt risk management tools. BIO-BASED AND APPLIED ECONOMICS, vol. 9, p. 1-24, ISSN: 2280-6172, doi: 10.13128/bae-8416 - **Articolo in rivista**
2. Giampietri E., Bugin G., Trestini S. (2020). Exploring the interplay of risk attitude and organic food consumption. INTERNATIONAL JOURNAL ON FOOD SYSTEM DYNAMICS, vol. 11, p. 189-201, ISSN: 1869-6945, doi: 10.18461/ijfsd.v11i3.49 - **Articolo in rivista**
3. Giampietri E., Trestini S. (2020). Analysing farmers' intention to adopt web marketing under a technology-organisation-environment perspective: A case study in Italy. ZEMEDELSKA EKONOMIKA, vol. 66, p. 226-233, ISSN: 0139-570X, doi: 10.17221/355/2019-AGRICECON - **Articolo in rivista**
4. Laura Onofri, Samuele Trestini, Vasco Boatto (2020). Who's Afraid of Biotic Threats? An Econometric Analysis of Veneto Wine Grapes Farmers' Propensity to Insure. AGRICULTURE, ISSN: 2077-0472 - **Articolo in rivista**
5. Stiletto A., Giampietri E., Trestini S. (2020). Heterogeneity in consumer preferences for ready-to-eat pomegranate: an empirical study in Italy. BRITISH FOOD JOURNAL, vol. ahead-of-print, ISSN: 0007-070X, doi: 10.1108/BFJ-08-2019-0655 - **Articolo in rivista**
6. Altobelli F., Monteleone A., Cimino O., Dalla Marta A., Orlandini S., Trestini S., Toulios L., Nejedlik P., Vucetic V., Cicia G., Panico T., Cavallo C., D'Urso G., Del Giudice T., Giampietri E. (2019). Farmers' willingness to pay for an environmental certification scheme: Promising evidence for water saving. OUTLOOK ON AGRICULTURE, vol. 48, p. 136-142, ISSN: 0030-7270, doi: 10.1177/0030727019841059 - **Articolo in rivista**
7. Coletta A., Giampietri E., Santeramo F. G., Severini S., Trestini S. (2018). A preliminary test on risk and ambiguity attitudes, and time preferences in decisions under uncertainty: Towards a better explanation of participation in crop insurance schemes. BIO-BASED AND APPLIED ECONOMICS, vol. 7, p. 265-277, ISSN: 2280-6180, doi: 10.13128/bae-7679 - **Articolo in rivista**
8. PENONE, CARLOTTA, Trestini, Samuele (2018). Price transmission of US soybean futures into Italian spot market. CALITATEA-ACCES LA SUCCES, vol. 19, p. 370-374, ISSN: 1582-2559 - **Articolo in rivista**
9. Sartore, S., Mulatti, P., Trestini, S., Lorenzetto, M., Gagliazzo, L., Marangon, S., Bonfanti, L. (2018). The economic implications of sylvatic rabies eradication in Italy. ZOONOSES AND PUBLIC HEALTH, vol. 65, p. 147-157, ISSN: 1863-1959, doi: 10.1111/zph.12383 - **Articolo in rivista**
10. Trestini Samuele, Chinchio Eleonora (2018). Simulation of a mutual fund to stabilise the income of farms belonging to a dairy cooperative. RIVISTA DI ECONOMIA AGRARIA, vol. 73, p. 37-52, ISSN: 2281-1559 - **Articolo in rivista**
11. Trestini, Samuele, Penone, Carlotta (2018). Transmission of futures prices to the Italian spot market: Are there opportunities to hedge corn price risk?. ECONOMIA AGRO-ALIMENTARE, vol. 20, p. 193-204, ISSN: 1126-1668, doi: 10.3280/ECAG2018-002005 - **Articolo in rivista**
12. Trestini, Samuele, Szathvary, Serena, Pomarici, Eugenio, Boatto, Vasco (2018). Assessing the risk profile of dairy farms: application of the Income Stabilisation Tool in Italy. AGRICULTURAL FINANCE REVIEW, vol. 78, p. 195-208, ISSN: 0002-1466, doi: 10.1108/AFR-06-2017-0044 - **Articolo in rivista**
13. TRESTINI, SAMUELE, POMARICI, EUGENIO, Giampietri, Elisa (2017). Around the economic sustainability of italian viticulture: Do farm strategies tackle income risks?. CALITATEA-ACCES LA SUCCES, vol. 18, p. 461-467, ISSN: 1582-2559 - **Articolo in rivista**
14. Trestini, Samuele, Giampietri, Elisa, Boatto, Vasco (2017). Toward the implementation of the income stabilization tool: An analysis of factors affecting the probability of farm income losses in Italy. NEW MEDIT, vol. 16, p. 24-30, ISSN: 1594-5685 - **Articolo in rivista**
15. Serena Szathvary, Samuele Trestini (2014). A Hedonic Analysis of Nutrition and Health Claims on Fruit Beverage Products. JOURNAL OF AGRICULTURAL ECONOMICS, vol. 65, p. 505-517, ISSN: 0021-857X, doi: 10.1111/1477-9552.12056 - **Articolo in rivista**
16. V. Boatto, S. Trestini (2013). The role of post-2013 common agricultural policy on the sustainability of Italian beef production. ACS. AGRICULTURAE CONSPECTUS SCIENTIFICUS, vol. 78, p. 137-141, ISSN: 1331-7768 - **Articolo in rivista**
17. Boatto V., Defrancesco E., Trestini S. (2011). The price premium for wine quality signals: does retailers' information provision matter?. BRITISH FOOD JOURNAL, vol. 113, p. 669-679, ISSN: 0007-070X, doi: 10.1108/00070701111131764 - **Articolo in rivista**
18. DEFRANCESCO E, GATTO P., RUNGE F, TRESTINI S (2008). Factors affecting farmers' participation in agri-environmental measures: A northern Italian perspective. JOURNAL OF AGRICULTURAL ECONOMICS, vol. 1, p. 114-131, ISSN: 0021-857X, doi: 10.1111/J.1477-9552.2007.00134.X - **Articolo in rivista**
19. Samuele Trestini, Elisa Giampietri, Magdalena miglak-Krajewska (2018). The adoption of agricultural insurance to manage farm risk: preliminary evidences from a field survey among Italian and Polish farmers. In: (a cura di): Wigierprof M. Kowalski A., The CAP and national priorities within the EU budget after 2020. vol. 73.1, p. 93-101, Warsaw:IAFE-NRI, doi: 10.30858/pw/9788376587516.8 - **Contributo in volume (Capitolo o Saggio)**
20. Trestini, Samuele, Giampietri, Elisa (2018). Re-adjusting risk management within the CAP: evidences on the implementation of the Income Stabilisation Tool in Italy. In: (a cura di): Marek Wigier and Andrzej Kowalski, The Common Agricultural Policy of the European Union – the present and the future. EU Member States point of view. p. 106-115, INSTITUTE OF AGRICULTURAL AND FOOD ECONOMICS - NATIONAL RESEARCH INSTITUTE, ISBN: 9788376587431, doi: 10.30858/pw/9788376587431.9 - **Contributo in volume (Capitolo o Saggio)**

2. **RAFFAELLI Roberta**

1. Moser, Riccarda, I. Pertot, Y. Elad, Raffaelli, Roberta (2008). Farmers' attitudes toward the use of biocontrol agents in IPM strawberry production in three countries.. BIOLOGICAL CONTROL, vol. 47, p. 125-132, ISSN: 1049-9644, doi: http://dx.doi.org/10.1016/j.biocontrol.2008.07.012 - **Articolo in rivista**
2. Menapace, Luisa, Raffaelli, Roberta (2020). Unraveling hypothetical bias in discrete choice experiments. JOURNAL OF ECONOMIC BEHAVIOR & ORGANIZATION, vol. 2020 176, p. 416-430, ISSN: 0167-2681, doi: 10.1016/j.jebo.2020.04.020 - **Articolo in rivista**
3. Cerroni Simone, Notaro Sandra, Raffaelli Roberta (2019). Beliefs and preferences for food-safety policies: A discrete choice model under uncertainty. EUROPEAN REVIEW OF AGRICULTURAL ECONOMICS, vol. 2019 46, p. 769-799, ISSN: 1464-3618, doi: 10.1093/erae/jby038 - **Articolo in rivista**
4. Menapace, Luisa, Raffaelli, Roberta (2017). Preferences for locally grown products: evidence from a natural field experiment. EUROPEAN REVIEW OF AGRICULTURAL ECONOMICS, vol. 2017 44, p. 255-284, ISSN: 1464-3618, doi: doi: 10.1093/erae/jbw017 - **Articolo in rivista**
5. Menapace, Luisa, Colson, Gregory, Raffaelli, Roberta (2016). A comparison of hypothetical risk attitude elicitation instruments for explaining farmer crop insurance purchases. EUROPEAN REVIEW OF AGRICULTURAL ECONOMICS, vol. 2016, p. 113-135, ISSN: 0165-1587, doi: 10.1093/erae/jbv013 - **Articolo in rivista**
6. Menapace, Luisa, Colson, Gregory, Raffaelli, Roberta (2015). Climate Change Beliefs and Perceptions of Agricultural Risks: An Application of the Exchangeability Method. GLOBAL ENVIRONMENTAL CHANGE-HUMAN AND POLICY DIMENSIONS, vol. 2015, p. 70-81, ISSN: 0959-3780, doi: http://dx.doi.org/10.1016/j.gloenvcha.2015.07.005 - **Articolo in rivista**
7. Menapace, Luisa, Colson, Gregory, Raffaelli, Roberta (2015). La percezione degli agricoltori del rischio associato al cambiamento climatico. AGRIREGIONIEUROPA, vol. 2015 11, p. 62-65, ISSN: 1828-5880 - **Articolo in rivista**
8. R. Moser, Raffaelli, Roberta (2014). Does Attribute Cut-off Elicitation Affect Choice Consistency? Contrasting Hypothetical and Real-Money Choice Experiments. JOURNAL OF CHOICE MODELLING, vol. 11, p. 16-29, ISSN: 1755-5345, doi: 10.1016/j.jocm.2014.02.003 - **Articolo in rivista**
9. R. Moser, Raffaelli, Roberta, Notaro, Sandra (2014). Testing hypothetical bias with a real choice experiment using respondents' own money. EUROPEAN REVIEW OF AGRICULTURAL ECONOMICS, vol. Vol. 41, p. 25-46, ISSN: 0165-1587, doi: 10.1093/erae/jbt016 - **Articolo in rivista**
10. De Salvo, Maria, Raffaelli, Roberta, Moser, Riccarda (2013). The impact of climate change on permanent crops in an Alpine region: A Ricardian analysis. AGRICULTURAL SYSTEMS, vol. 2013, p. 23-32, ISSN: 0308-521X, doi: 10.1016/j.agsy.2013.02.005 - **Articolo in rivista**
11. L. Menapace, G. Colson, Raffaelli, Roberta (2013). Risk Aversion, Subjective Beliefs, and Farmer Risk Management Strategies. AMERICAN JOURNAL OF AGRICULTURAL ECONOMICS, vol. 95, p. 384-389, ISSN: 1467-8276, doi: 10.1093/ajae/aas107 - **Articolo in rivista**
12. Moser, Riccarda, Raffaelli, Roberta (2012). Consumer preferences for sustainable production methods in apple purchasing behaviour: a non-hypothetical choice experiment. INTERNATIONAL JOURNAL OF CONSUMER STUDIES, vol. vol.36, p. 141-148, ISSN: 1470-6423, doi: 10.1111/j.1470-6431.2011.01083.x - **Articolo in rivista**
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5. Main staff involved (max 10 professors/researchers for each research unit, in addition to the PI or associated investigator), highlighting the time commitment expected

List of the Research Units

Unit 1 - SEVERINI Simone

Personnel of the research unit

nº	Surname Name	Qualification	University/ Research Institution	e-mail address	Months/person expected
1.	SEVERINI Simone	Professore Ordinario (L. 240/10)	Università degli Studi della TUSCIA	severini@unitus.it	3,0
2.	SENNI Saverio	Professore Associato confermato	Università degli Studi della TUSCIA	senni@unitus.it	2,0
3.	BIAGINI Luigi	Assegnista	Università degli Studi della TUSCIA	l.biagini@unitus.it	3,0

Unit 2 - TRESTINI Samuele

Personnel of the research unit

nº	Surname Name	Qualification	University/ Research Institution	e-mail address	Months/person expected
1.	TRESTINI Samuele	Professore Associato (L. 240/10)	Università degli Studi di PADOVA	samuele.trestini@unipd.it	5,0

Unit 3 - RAFFAELLI Roberta

Personnel of the research unit

nº	Surname Name	Qualification	University/ Research Institution	e-mail address	Months/person expected
1.	RAFFAELLI Roberta	Professore Ordinario (L. 240/10)	Università degli Studi di TRENTO	roberta.raffaelli@unitn.it	3,5
2.	RIPPO Ruggiero	Dottorando	Università degli Studi di TRENTO	ruggiero.rippo@unitn.it	2,5

Unit 4 - SANTERAMO Fabio Gaetano

Personnel of the research unit

nº	Surname Name	Qualification	University/ Research Institution	e-mail address	Months/person expected
1.	SANTERAMO Fabio Gaetano	Professore Associato (L. 240/10)	Università degli Studi di FOGGIA	fabiogaetano.santeramo@gmail.com	5,0

Unit 5 - ARATA Linda

Personnel of the research unit

nº	Surname Name	Qualification	University/ Research Institution	e-mail address	Months/person expected
1.	ARATA Linda	Ricercatore a t.d. - t.pieno (art. 24 c.3-a L. 240/10)	Università Cattolica del Sacro Cuore	linda.arata@unicatt.it	3,0
2.	BOCCALETTI Stefano	Professore Associato confermato	Università Cattolica del Sacro Cuore	stefano.boccaletti@unicatt.it	1,0
3.	RAMA Daniele	Professore Ordinario	Università Cattolica del Sacro Cuore	daniele.rama@unicatt.it	2,0

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6. Information on the new contracts for personnel to be specifically recruited

nº	Associated or principal investigator	Number of expected RTD contracts	Number of research grants expected	Number of PhD scholarships expected	Overall expected time commitment (months)
1.	SEVERINI Simone	1	1	0	60
2.	TRESTINI Samuele	0	1	0	30
3.	RAFFAELLI Roberta	0	1	0	24
4.	SANTERAMO Fabio Gaetano	0	1	0	30
5.	ARATA Linda	0	1	0	30
	Total	**1**	**5**	**0**	**174**

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Date 25/01/2021 ore 09:49