



Francesco Sapino

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Summary of CV

This section describes briefly a summary of your career in science, academic and research; the main scientific and technological achievements and goals in your line of research in the medium -and long- term. It also includes other important aspects or peculiarities.

I obtained a bachelor's degree in Energetic Engineering at the Polytechnic of Turin and a master's degree in Environmental Economics (with honors) at the University of Turin. My MSc thesis included a visiting period at the University of Salamanca (USAL) aimed to realize a microeconomic model to evaluate the impact of the water price reform proposed by the University of Turin and the Piedmont Region Authority. After the visiting period, I joined the research group led by Dionisio Pérez-Blanco at USAL where I started a Ph.D. in Economics. I successfully obtained my doctoral degree with the "international mention" and the highest qualification (summa cum laude). My Ph.D. thesis, titled "Sustainable water management in the agricultural sector under deep uncertainty", develops a multisystem (hydro-economic) modeling framework that can advise and identify cost-effective and robust policies that reconcile public and private interests with collectively agreed environmental goals. During my Ph.D. I have been selected to participate in "2020 EAERE-ETH Winter school on Spatial Environmental and Resource Economics" and to present my works at relevant international conferences (AGU Fall meeting 2019, 2021, and 2022, EGU General Assembly 2020, IAHR World congress 2022, and MedGU 2022). I have also realized three visiting periods at the Polytechnic University of Valencia, at the IVM (Vrije Universiteit of Amsterdam), and at Fondazione CMCC in Venice. Each visiting period had the objective of collaborating with other researchers to produce a publication. In the last four years, I published six papers: three in JCR Q1 journals as first author, two in other JCR Q1 journals as second author, and one in a JCR Q3 journal as first author.

My research is focused on coupling human and natural systems in modeling frameworks that consider the co-evolution of the systems studied, to avoid unfavorable outcomes triggered by the possible two-way feedback between these systems. The modeling framework is applicable in different study cases (see my publications) to advise policies and evaluate the effect of water scarcity and management in the agricultural sector. The innovation proposed by this methodology is the consideration of the concept of deep uncertainty and therefore the use of multi-model ensemble, a technique to inform robust policies under uncertainty. I am also interested in behavioral economics and in the future, I would like to introduce the concept of this theory into agricultural modeling.

I collaborate with the successful realization of the project SWAN (Program of the attraction of the scientific talent) and ATACC (Spanish Ministry of the Environment), and I'm currently working on the TALANOA-WATER project (H2020) whose objective is to inform and catalyze the adoption of robust transformational adaptation strategies to water scarcity under climate change that contributes to the Integrated Water Resources Management (IWRM) objectives of social equity, economic efficiency, and environmental sustainability.

**Francesco Sapino**

Surname(s): **Sapino**
 Name: **Francesco**
 NIE: **[REDACTED]**
 ORCID: **0000-0002-9812-2334**
 ScopusID: **57216561622**
 Date of birth: **13/04/1992**
 Gender: **Male**
 Nationality: **Italy**
 Country of birth: **Italy**
 Aut. region/reg. of birth: **Piemonte**
 Contact province: **Salamanca**
 City of birth: **Moncalieri**
 Contact address: **Edificio F.E.S. Campus Miguel de Unamuno, Paseo Francisco Tomás y Valiente, s/n**
 Postcode: **37007**
 Contact country: **Spain**
 Contact aut. region/reg.: **Castile and León**
 Contact city: **Salamanca**
 Email: **fsapino@usal.es**
 Mobile phone: **[REDACTED]**

Current professional situation

Employing entity: Universidad de Salamanca **Type of entity:** University
Department: Economics and economic history, Faculty of economics and social science
Professional category: Researcher
Start date: 01/05/2019
Type of contract: Temporary employment **Dedication regime:** Full time contract

Performed tasks: My research is focused on coupling human and natural systems in modeling frameworks that consider the co-evolution of the systems studied, to avoid unfavorable outcomes triggered by the possible two-way feedback between these systems. The modeling framework is applicable in different study cases (see my publications) to advise policies and evaluate the effect of water scarcity and management in the agricultural sector. The innovation proposed by this methodology is the consideration of the concept of deep uncertainty and therefore the use of multi-model ensemble, a technique to inform robust policies under uncertainty. I collaborate with the successful realization of the project SWAN (Program of the attraction of the scientific talent) and ATACC (Spanish Ministry of the Environment), and I'm currently assigned to the H2020's TALANOA-WATER project working on the hydro-economic modeling (WP3: modeling) of four Living Laboratories (Spain, Tunisia, Lebanon, and Egypt)



Education

University education

1st and 2nd cycle studies and pre-Bologna degrees

- 1** **University degree:** Master
Name of qualification: MSc in Environmental Economics
Degree awarding entity: University of Turin
Date of qualification: 20/03/2019
- 2** **University degree:** Bachelor
Name of qualification: B. Energetic Engineering
Degree awarding entity: Polytechnic of Turin **Type of entity:** University
Date of qualification: 29/07/2016

Doctorates

Doctorate programme: PhD in Economics
Degree awarding entity: Universidad de Salamanca **Type of entity:** University
Date of degree: 10/02/2023
European doctorate: Yes **Date of certificate:** 10/02/2023
Thesis title: Sustainable water management in the agricultural sector under deep uncertainty
Thesis co-director: C. Dionisio Pérez Blanco; Carlos Gutiérrez Martín
Obtained qualification: Summa cum Laude

Language skills

Language	Listening skills	Reading skills	Spoken interaction	Speaking skills	Writing skills
French	B1	C1	A1	A1	A1
Spanish	C1	C1	C1	C1	B2
English	C1	C1	C1	C1	C1
Italian	C2	C2	C2	C2	C2



Scientific and technological activities

Scientific production

Publications, scientific and technical documents

- 1 Francesco Sapino; C. Dionisio Pérez Blanco; Pablo Saiz Santiago. A Hydro-Economic Model to Calculate the Resource Costs of Agricultural Water Use and the Economic and Environmental Impacts of their Recovery. *Water Economics and Policy*. 2023. Available on-line at: <<https://doi.org/10.1142/S2382624X22400124>>.

Type of production: Scientific paper **Format:** Journal
- 2 Francesco Sapino; Toon Haer; Pablo Saiz Santiago; C. Dionisio Pérez Blanco. A multi-agent cellular automata model to explore water trading potential under information transaction costs. *Journal of Hydrology*. 618, pp. 129195 - 129195. 2023. Available on-line at: <<https://www.sciencedirect.com/science/article/pii/S0022169423001373>>. ISSN 0022-1694

Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
- 3 C. Dionisio Pérez-Blanco; Francesco Sapino; Pablo Saiz-Santiago. First-degree price discrimination water bank to reduce reacquisition costs and enhance economic efficiency in agricultural water buyback. *Ecological Economics*. 205, pp. 107694 - 107694. 2023. Available on-line at: <<https://www.sciencedirect.com/science/article/pii/S092180092200355X>>. ISSN 0921-8009

Type of production: Scientific paper **Format:** Journal
- 4 C. Dionisio Pérez Blanco; Francesco Sapino. Economic Sustainability of Irrigation-Dependent Ecosystem Services Under Growing Water Scarcity. *Insights From the Reno River in Italy*. *Water Resources Research*. 58 - 2, Wiley Online Library, 02/02/2022. Available on-line at: <<https://onlinelibrary.wiley.com/doi/abs/10.1029/2021WR030478>>.

Type of production: Scientific paper **Format:** Journal
- 5 Francesco Sapino; C. Dionisio Pérez-Blanco; Carlos Gutiérrez-Martín; Alberto García-Prats; Manuel Pulido-Velazquez. Influence of crop-water production functions on the expected performance of water pricing policies in irrigated agriculture. *Agricultural Water Management*. 259, pp. 107248 - 107248. 2022. Available on-line at: <<https://www.sciencedirect.com/science/article/pii/S0378377421005254>>. ISSN 0378-3774

Type of production: Scientific paper **Format:** Journal
- 6 Francesco Sapino; C. Dionisio Pérez Blanco; Carlos Gutiérrez Martín; Vito Frontuto. An ensemble experiment of mathematical programming models to assess socio-economic effects of agricultural water pricing reform in the Piedmont Region, Italy. *Journal of Environmental Management*. 267, 01/08/2020. Available on-line at: <<https://doi.org/10.1016/j.jenvman.2020.110645>>.

Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes

Works submitted to national or international conferences

- 1** **Title of the work:** A hydroclimatic-micro-macroeconomic model to assess climate change adaptation in the agricultural sector.
Name of the conference: AGU Fall Meetin 2022
City of event: Chicago, United States of America
Date of event: 12/12/2022
End date: 16/12/2022
Organising entity: AGU: American Geophysical Union
Francesco Sapino; Ramiro Parrado; C. Dionisio Pèrez Blanco.
- 2** **Title of the work:** The Long Way to Full Cost Recovery of Agricultural Water. A Methodology to Calculate Resource Cost
Name of the conference: The 39th IAHR World Congress
City of event: Granada, Andalusia, Spain
Date of event: 19/06/2022
End date: 24/06/2022
Organising entity: IAHR: International Association for Hydro-Environment Engineering and Research
Francesco Sapino; C. Dionisio Pérez Blanco.
- 3** **Title of the work:** Price Discrimination Water Bank to Minimize Public Costs and Efficiency Losses of Agricultural Water Buyback. Insightful Results from the Duero River Basin in Spain.
Name of the conference: AGU Fall Meeting 2021
City of event: New Orleans, United States of America
Date of event: 06/12/2021
End date: 17/12/2021
Organising entity: AGU: American Geophysical Union
Francesco Sapino; C. Dionisio Pérez Blanco.
- 4** **Title of the work:** Influence of crop-water production function on the expected performance of water conservation policies
Name of the conference: EGU General Assembly 2020
Corresponding author: Yes
City of event: online,
Date of event: 04/05/2020
End date: 08/05/2020
Organising entity: EGU: European Geoscience Union
Francesco Sapino; C. Dionisio Pérez Blanco; Carlos Gutiérrez Martín; Manuel Pulido Velazquez; Alberto García Prats.
- 5** **Title of the work:** A microeconomic multi-model ensemble experiment to assess socio-economic effects of agricultural water pricing reform in the Piedmont Region, Italy
Name of the conference: AGU fall meeting 2019
Corresponding author: Yes
City of event: San Francisco, United States of America
Date of event: 09/12/2019
End date: 13/12/2019
Organising entity: AGU: American Geophysical Union
City organizing entity: United States of America



Francesco Sapino; C. Dionisio Pérez Blanco; Carlos Gutiérrez Martín; Vito Frontuto.

Other achievements

Stays in public or private R&D centres

- 1** **Entity:** Fondazione CMCC (Centro Euro-Mediterraneo sui Cambiamenti Climatici) **Type of entity:** Foundation
Faculty, institute or centre: ECIP Division
City of entity: Venice, Veneto, Italy
Start-End date: 05/09/2022 - 29/10/2022 **Duration:** 2 months
Goals of the stay: Doctorate
Provable tasks: Micro-macroeconomics models integration: during the research stay Francesco Sapino and members of the ECIP Division of CMCC coupled a regionalized CGE model with a microeconomic model that describes farmers behavior
- 2** **Entity:** Vrije Universiteit (VU) **Type of entity:** University Research Institute
Faculty, institute or centre: IVM (Institute for Environmental Studies)
City of entity: Amsterdam, Holland
Start-End date: 27/09/2021 - 30/10/2021 **Duration:** 1 month
Goals of the stay: Doctorate
Provable tasks: Creation of a modeling framework that couples a microeconomic mathematical programming model with an ABM (Agent-Based Model) to evaluate the transaction costs in a water market. Paper published: <https://doi.org/10.1016/j.jhydrol.2023.129195>
- 3** **Entity:** Universidad Politécnica de Valencia **Type of entity:** University
City of entity: Valencia, Valencian Community, Spain
Start-End date: 25/11/2019 - 04/12/2019
Goals of the stay: Doctorate
Provable tasks: Creation of a multi-attribute mathematical programming model that allow for deficit irrigation as an adaptation strategy for farmers. Paper published: <https://doi.org/10.1016/j.agwat.2021.107248>