

# CURRICULUM VITAE

Family name: LUPIA  
 First names: Flavio  
 Date of birth: 22/10/1975  
 Nationality: Italian  
 Education:

INSTITUTION	DATE FROM (MM/YYYY)	DATE TO (MM/YYYY)	DEGREE(S) OR DIPLOMA(S) OBTAINED:
Florida International University (Miami, Florida) Hydrological Modeling and Geospatial Application Laboratory.	07/2009	08/2009	Visiting scientist on "Spatial Analysis and Geospatial Statistics Application"
University of Ferrara - Ferrara, ITALY	03/2004	10/2004	Post Graduate Master on Monitoring Technology for Environmental Geology (30/30 cum laude). Dissertation in GIS and Desertification.
Polytechnic of Milan - Milan, ITALY	09/2001	03/2004	B.S. in Computer Engineering Dissertation in Environmental GIS modelling.
University of Sannio - Benevento, ITALY	09/1996	03/2000	M.S. in Engineering Geology (110/110 cum laude). Dissertation in Earth Physics.

Language skills: Indicate competence from A1 (beginner) to C2 (proficient).

LANGUAGE	READING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
Italian			Mother tongue		
English	C2	C2	C2	C2	C2
French	B1	B1	A1	A1	A1

## Trainer

CRITERIA		
T4	Education > University diploma (4 years+)	M.S. in Engineering Geology (110/110 cum laude), dissertation in Earth Physics from the University of Sannio
	Prof. experience > 3 years OR PhD Statistics, economy or equivalent	> 18 years of professional experience
T5	> 3 years' experience in developing training courses or participating in the provisioning of training courses	2013-2024 (approx. 1000 hours): Designed, developed, and delivered training courses using open-source software for public and private entities, covering topics such as GIS, Cartography, Remote Sensing, and Statistical Variable Mapping.  2020-2024 (approx. 200 hours): Developed and delivered training programs at universities for undergraduate, PhD, and Master's levels, focusing on Geostatistics and Precision Agriculture, GIS for Economics, GIS for Statistical Mapping, and Satellite Data Analysis.
	English speaker in >4 training courses, workshops, international conferences, webinars in the last 3 years	<u>English language course:</u> - "Remote sensing and satellite data" at Università di Bologna – Course "Precision Field Cropping" - "Second cycle degree programme in Precise and Sustainable Agriculture" (2021-2024). - "Reusing geospatial data from administrative sources: options for agri-environmental analysis" at Università di Bologna – Course "Applications of Geospatial Information" (2021-2024). - "GIS for food and agriculture" at American University of Rome (2023). - "GIS Laboratory: an environmental application" at Univ. LUMSA (2023)
T9	English level C1	English level C2

## Lecturer

CRITERIA		
T4	Education > University diploma (4 years+)	M.S. in Engineering Geology (110/110 cum laude), dissertation in Earth Physics from the University of Sannio
	Prof. experience > 1 years OR Master degree from EMOS University or relevant field	> 18 years of professional experience
T6	English speaker in >4 training courses, workshops, international conferences, webinars in the last 3 years	<u>English language course:</u> - "Remote sensing and satellite data" at Università di Bologna – Course "Precision Field Cropping" - "Second cycle degree programme in Precise and Sustainable Agriculture" (2021-2024). - "Reusing geospatial data from administrative sources: options for agri-environmental analysis" at Università di Bologna – Course "Applications of Geospatial Information" (2021-2024). - "GIS for food and agriculture" at American University of Rome (2023). - "GIS Laboratory: an environmental application" at Univ. LUMSA (2023)
	English level C1	English level C2

## Membership of professional bodies:

Member of the Statistical Office of CREA

Registered evaluator for European Commission for Horizon 2020

Evaluator for European Commission for COST Actions programme

World Association of Soil and Water Conservation

Associazione Italiana di Agrometeorologia (AIAM)

**Other skills:**

ICT, project design, methodology development for agri-environmental analysis, spatial analysis, spatial decisions support systems, survey design, open data, statistical data production, data harmonization. Strong knowledge on Microsoft Windows Operative Systems, Visual Basic, Avenue, GIS, CAD and Image Processing software:

R, Rstudio, ArcGis 3.x - 8.x - 9.x; ESA SNAP, Erdas Imagine; Envi;, Autodesk Map 5.x., gvSIG, QGIS,. Good knowledge of software for hydro-logic modelling, BPMN modelling, statistical analysis.

**Present position:** Director of Research/project manager at Council for agricultural research and economics, Rome (Italy).

**Years within the firm:** 18

**Key qualifications:**

More than 18 years' experience developed in the framework of national and international projects focussed mainly on the analysis of the relationships between agriculture and environment and in the production of agricultural statistics. He has particular experience in the development of GIS and Remote Sensing methodologies for the analysis of agri-environmental issues as well as in the field of agricultural land use mapping. Currently he is managing few national projects on irrigation water consumption modelling, soil carbon estimation, urban agriculture mapping, land use dataset integration and quality assessment and open data for administrative data. In the statistical fields he worked at national and international level on data integration and harmonisation, data analysis, quality assessment of statistics, modelling and estimation with particular focus on agriculture and land cover/land use, and he has strong experience in feasibility studies and project design, GIS systems planning and management, ICT systems design.

## Professional experience (selected references):

DATE FROM –TO (MM/YYYY)	LOCATION	COMPANY	POSITION	DESCRIPTION
2021 – 2024	Italy	Università di Bologna	Visiting Lecturer	Course (4 editions 10 h/each) on “Remote sensing and satellite data” at Università di Bologna – Course “Precision Field Cropping” - “Second cycle degree programme in Precise and Sustainable Agriculture”. English language course.
2021 – 2024	Italy	Università di Bologna	Visiting Lecturer	Course (4 editions 2 h/each) on “Reusing geospatial data from administrative sources: options for agri-environmental analysis” at Università di Bologna – Course “Applications of Geospatial Information” - 2nd level Professional Master programme in Space missions science, design and applications. English language course.
2015 - 2024	Italy			Course (500 h) – Course on Precision agriculture with open-source software. Several courses carried out in Italy. Italian language course.
2015 - 2024	Italy			Course (500 h) – Course on Remote sensing and GIS with open-source software. Several courses carried out in Italy. Italian language course.
2023	Italy	American University of Rome	Adjunct Professor	Course (50h) “GIS for food and agriculture” at American University of Rome - Master “M.A. Food Studies: Policies for sustainable production and consumption”. English language course.
2023	Italy	University LUMSA	Visiting Lecturer	Course (2 h) “GIS Laboratory: an environmental application” at Univ. LUMSA. Master in Management of Sustainable Development Goals (MSDG) English language course.
1/09/2020 – 31/03/2022	Italy / Luxembourg	GOPA Worldwide Consultants GmbH	Senior Expert	Coordinator of Task 2 - Analysis of LUCAS data related to agriculture and contributor for the methodologies on estimating area and spatial distribution of Grassland, Land lying in fallow and Agroforestry. Contribution to Task 3 - Assess robustness of land use statistics Contribution to Task 4 - Exploratory analysis of LUCAS parameters and specific LC/LU combinations
15/01/2019 – 31/12/2021	Italy / Luxembourg	GOPA Worldwide Consultants GmbH	Senior Expert	Coordinator of Task 9 - Comparing National Data on land cover and land use from Grants 2012/2015 with complete analysis and comparison of the grants submitted by EU countries. Coordinator of Task 10 - Description of LUCAS production process by using Business Process Modelling Notation (BPMN 2.0) and Generic Statistical Business Process Model (GSBPM) Contribution to the task for the Comparisons of LUCAS survey results with other data sources Contribution to the task for the Alignment of LUCAS survey micro-data for different years
2016 - 2017	Italy / Luxembourg	GOPA Worldwide Consultants GmbH	Senior Expert	Activities within the project Methodological support in the area of statistics on agriculture and fisheries: - Harmonization of crop statistics of Member States. - Development of tools for improving quality of statistics on crop yields. - Contribution to the development of agrostatistical models for data validation.
2016	Italy / Luxembourg	GOPA Worldwide Consultants GmbH	Junior Expert	Harmonization and classification matching between FAO forest surveys and Land Use and Cover Area frame Survey 2015 (LUCAS 2015). Contribution to data harmonization of the LUCAS SURVEYS 2009, 2012 e 2015. Realization of Quality Report LUCAS 2015.
2014 – 2015	Italy / Luxembourg	GOPA Worldwide Consultants GmbH	Junior Expert	Cooperation with experts contracted by GOPA for the realization of the Quality Report LUCAS 2012 and 2009.
2012	Ethiopia	GOPA Worldwide Consultants GmbH	Trainer	Trainer Course (50 h) “Remote Sensing and GIS” at the Oromiya Bureau of Finance and Economic Development (BoFED), Addis Ababa (Ethiopia) English language course.
2012	Italy / Luxembourg	GOPA Worldwide Consultants GmbH	Consultant / GIS & RS expert	Analysis and redesign of some of the processes and ICT systems of central and local statistical offices involved in the data collection and integration at local and central level. Quality assessment of the spatial database on environmental and socio-economical variables created for Oromiya Bureau of Finance and Economic Development (BoFED). Training course on GIS and Remote Sensing

DATE FROM –TO (MM/YYYY)	LOCATION	COMPANY	POSITION	DESCRIPTION
06/2008	Italy	Advanced Computer Systems S.p.A.	GIS and Remote Sensing Expert	Development of a methodology for mapping the water and land degradation risk by using an impacts matrix derived from land use transition analysis
02/2006 - 07/2008	Italy	Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA)	Consultant (Expert on territorial analysis)	Development of a methodology for land degradation risk assessment. Development of a methodology for land degradation risk prediction based on climate change scenarios and based on irrigation network expansion. Research on water and soil degradation and agriculture impacts. Development of a methodology for spatial analysis of agro-forestry resources for bio-energy chains. Development of a methodology for land suitability of energy crops. Development of a methodology for impacts of pesticides on water quality
03/2006 - present	Italy	Council for Agricultural Research and Economics (CREA)	Researcher and Project manager	<p><b>Research and technical assistance activities</b></p> <p>Analysis on water management in agriculture and development of decision support system for sustainable irrigation water use (national and international projects). Analysis on desertification, soil degradation and land use mapping of irrigated areas by GIS and Remote Sensing tools. Integration of GIS tools and models for climate change impact analysis on irrigated land use. Analysis on pesticides use in agriculture and their environmental impact through spatial analysis tools. Team member of H2020 projects on the use of new technologies for: improving IACS and LPIS systems, development of modelling system for CAP payments, development of systems for integration of FADN and IACS data. Member of the working group of statistical data quality of the Italian National Institute of Statistics. Member of the working group “VGI producers and users; data quality and reliability” (project ICT COST Action IC1203). Member of the working group “Map validation activities” (project ICT COST Action TD1202). Member of the OECD Joint Working Party on Agriculture and the Environment. Member of the working group “Capacity development for national users (GIS, data collection, database management, web services, data evaluation, reporting)” - project “Sustainable management of water resources in rural areas in Uzbekistan”.</p> <p><b>Projects leadership</b></p> <p>(2023-2024) CREA coordinator of the EFSA project on Priority Pests (Main actions: EU statistics integration on crops area and production; Massive production of maps on crop area and production for EU27). (2019-2022) CREA coordinator of the EU CEF program project “Open LOD platform based on HPC capabilities for Integrated Administration of Common Agriculture Policy (Open IACS)”. Principal investigator GEOSTA project funded by Eurostat (Focus: water consumption data integration and modelling) Coordination of the international project MARSALa awarded by Eurostat aimed at the development of model for the irrigation water estimation at farm level by using agriculture census data. Coordination of the project MARSALa_2012 funded by Italian Institute of Statistics Statistical aimed at the estimation of farm irrigation consumption in Italy. Coordination of the project NAGRIPES funded by Eurostat for developing a methodology to estimate the non-agricultural use of pesticides in Italy. Coordination of the project for strengthening the use of spatial statistics and geomatics within INEACREA, project funded by INEACREA.</p>
03/2005 - 02/2006	Italy	Consorzio AGRITAL Ricerche	Consultant (Expert on agricultural and territorial analysis)	Environmental and agricultural data collection and processing by using GPS and GIS tools. Satellite image processing for analysis of desertification processes. Project reporting at universities and public institutions.
07/2000 – 12/2003	Italy	Free-lance, Catanzaro	Free-lance Geologist	Studies and surveys applied to civil engineering; Consultant with small start-up company for the development of prototype for water river pollution analysis.

## Annex – Scientific work

### Publications:

- Pulighe, G., Di Fonzo, A., Gaito, M., Giuca, S., Lupia, F., Bonati, G., & De Leo, S. (2024). Climate change impact on yield and income of Italian agriculture system: A scoping review. *Agricultural and Food Economics*, 12(1), 23. <https://doi.org/10.1186/s40100-024-00317-7>
- Lupia F, Arsanjani JJ, Fonte CC, Pulighe G. Perspectives on "Earth Observation and GIScience for Agricultural Applications". *ISPRS International Journal of Geo-Information*. 2022; 11(7):372. <https://doi.org/10.3390/ijgi11070372>
- Gallinelli D, Pulighe G, Rizzi D, Lupia F. Reusability of IACS/LPIS Geospatial Data to Estimate the Utilized Agricultural Area. *Chemistry Proceedings*. 2022; 10(1):61. <https://doi.org/10.3390/IOGAG2022-12241>
- Ali, A.; Rondelli, V.; Martelli, R.; Falsone, G.; Lupia, F.; Barbanti, L. Management Zones Delineation through Clustering Techniques Based on Soils Traits, NDVI Data and Multiple Year Crop Yields. *Agriculture* 2022, 12, 231. <https://doi.org/10.3390/agriculture12020231>
- Pulighe G, Lupia F, Chen H, Yin H. Modeling Climate Change Impacts on Water Balance of a Mediterranean Watershed Using SWAT+. *Hydrology*. 2021; 8(4):157. <https://doi.org/10.3390/hydrology8040157>
- Ali, A., Martelli, R., Scudiero, E., Lupia, F., Falsone, G., Rondelli, V., & Barbanti, L. (2021). Soil and climate factors drive spatio-temporal variability of arable crop yields under uniform management in Northern Italy. *Archives of Agronomy and Soil Science*, 1-15., DOI: 10.1080/03650340.2021.1958320
- Pulighe, G.; Lupia, F. Food First: COVID-19 Outbreak and Cities Lockdown a Booster for a Wider Vision on Urban Agriculture. *Sustainability* 2020, 12, 5012.
- Pulighe, G.; Bonati, G.; Colangeli, M.; Traverso, L.; Lupia, F.; Altobelli, F.; Marta, A.D.; Napoli, M. Predicting Streamflow and Nutrient Loadings in a Semi-Arid Mediterranean Watershed with Ephemeral Streams Using the SWAT Model. *Agronomy* 2020, 10, 2. [doi.org/10.3390/agronomy10010002](https://doi.org/10.3390/agronomy10010002)
- Ali, A.; Martelli, R.; Lupia, F.; Barbanti, L. Assessing Multiple Years' Spatial Variability of Crop Yields Using Satellite Vegetation Indices. *Remote Sens*. 2019, 11, 2384.
- Pulighe, G.; Lupia, F. Multitemporal Geospatial Evaluation of Urban Agriculture and (Non)-Sustainable Food Self-Provisioning in Milan, Italy. *Sustainability* 2019, 11, 1846.
- Pulighe, G., Bonati, G., Colangeli, M., Morese, M. M., Traverso, L., Lupia, F., ... & Fava, F. (2019). Ongoing and emerging issues for sustainable bioenergy production on marginal lands in the Mediterranean regions. *Renewable and Sustainable Energy Reviews*, 103, 58-70.
- Anna Dalla Marta, Ada Baldi, Anna Lenzi, Flavio Lupia, Giuseppe Pulighe, Emanuele Santini, Simone Orlandini & Filiberto Altobelli (2018) A methodological approach for assessing the impact of urban agriculture on water resources: a case study for community gardens in Rome (Italy), *Agroecology and Sustainable Food Systems*, DOI: 10.1080/21683565.2018.1537323
- Minghini M., Delucchi L., Sarretta A., Lupia F., Napolitano M., Palmas A., (2018). Collaborative mapping response to disaster through OpenStreetMap: the case of 2016 Italian earthquake. *GEAM Anno LIV*, n. 2, Agosto 2017 (151).
- Lupia, F.; Baiocchi, V.; Lelo, K.; Pulighe, G., (2017). Exploring Rooftop Rainwater Harvesting Potential for Food Production in Urban Areas. *Agriculture* 2017, 7, 46.
- Campisano A. & Lupia F. (2017): A dimensionless approach for the urban-scale evaluation of domestic rainwater harvesting systems for toilet flushing and garden irrigation, *Urban Water Journal*, DOI: 10.1080/1573062X.2017.1279192
- Pulighe, G., Fava, F., & Lupia, F. (2016). Insights and opportunities from mapping ecosystem services of urban green spaces and potentials in planning. *Ecosystem Services*, 22, 1-10.
- Pulighe, G., Bonati, G., Fabiani, S., Barsali, T., Lupia, F., Vanino, S., Roggero, P. (2016). Assessment of the Agronomic Feasibility of Bioenergy Crop Cultivation on Marginal and Polluted Land: A GIS-Based Suitability Study from the Sulcis Area, Italy. *Energies*, 9(12), 895. [doi:10.3390/en9110895](https://doi.org/10.3390/en9110895).
- Pulighe G., Lupia F., (2016). Mapping spatial patterns of urban agriculture in Rome (Italy) using Google Earth and web-mapping services. *Land Use Policy*, 59, 49-58. <http://dx.doi.org/10.1016/j.landusepol.2016.08.001>
- Antoniou V, Fonte CC, See L, Estima J, Arsanjani JJ, Lupia F, Minghini M, Foody G, Fritz S. Investigating the Feasibility of Geo-Tagged Photographs as Sources of Land Cover Input Data. *ISPRS International Journal of Geo-Information*. 2016; 5(5):64.
- Altobelli F., Lupia F., Vuolo F., D'Urso G., De Michele C., Falanga Bolognesi S., Dalla Marta A. (2015). Crop Water Footprint: a methodological approach for its estimation based on Irrigation Advisory Services Data. *Italian Journal of Agrometeorology Water footprint applications for water resource management in agriculture (Special Issue):110-December 2015*
- Pulighe G., Baiocchi V., Lupia F. (2015). Horizontal accuracy assessment of very high-resolution Google Earth images in the city of Rome, Italy. *International Journal of Digital Earth* DOI: 10.1080/17538947.2015.1031716
- Fonte C., Bastin L., See L.M. Foody G.M., Lupia F. (2015). Usability of VGI for Validation of Land Cover Maps. *International Journal of Geographical Information Science* DOI: <http://dx.doi.org/10.1080/13658816.2015.1018266>
- Pulighe G., Vanino S., Lupia F., Altobelli F., (2014). Spatialised agricultural nitrogen balance of Veneto region, Northern Italy: sources identification, assessment and policy relevance. *GlobalNEST International Journal (Impact Factor: 0.7)*. 03/2014; 16(2):294-306
- Altobelli F., Lupia F., Vanino S., Namdarian I. (2011). Building of national database on water volume consumption for rice cultivation. *Italian Journal of Agrometeorology - Rivista italiana di agrometeorologia Anno 16-n.1- Gennaio 2011*. Patron editore, Bologna. ISSN 2038-5625

### Participation in lectures and training courses:

- 2017 – 2024 Several course on GIS – Master-post graduate courses at Italian and American Universities.
- 2015-2017 (150 h) – Course on Precision agriculture with open-source software. Several courses carried out in Italy.
- 2015-2017 (150 h) – Course on Remote sensing with open-source software. Several courses carried out in Italy.
- 2012 (50 hours) - Course on "Remote Sensing and GIS" at the Oromiya Bureau of Finance and Economic Development (BoFED), Addis Ababa (Ethiopia)
- 2012 - Short training and demonstration of geospatial analysis in the agro-environmental field with open source GIS tools. In the framework of the workshop addressed to the BoFED (Addis Ababa (Ethiopia)) delegates in Italy.

- 2011 (15 hours) - Advanced course of Microsoft Excel 2007, Basic course of Microsoft Access 2007, Advanced course of Microsoft Access 2007,
- 2012 (15 hours) - Advanced course of Microsoft Access 2007 and VBA at the Italian Institute for Agricultural Economics, Rome (Italy)
- 2012 (15 hours) - Course "R – open source tool for statistical analysis" at the Italian Institute for Agricultural Economics, Rome (Italy)
- 2010 (20 hours) - GIS base course with QGIS and gvSIG at the participants of the field trip to the El Ferlo desert (Senegal).
- 2005 - Training course on the use of ArcGIS for environmental analysis at private scientific association.