

Silvia De Angeli, Ph.D.

• **Disaster Risk Reduction** • **Climate Change Mitigation and Adaptation** • **Natural Hazards Risk Assessment** • **Natural Hazards Exposure and Vulnerability** • **Geographic Information Systems** • **Environmental Sustainability**

Summary

I am a Post-doctoral fellow at Università di Genova (Department of Civil, Chemical and Environmental Engineering) investigating environmental sustainability and resilience, climate change mitigation and adaptation, natural hazards risk assessment with a main focus on exposure and vulnerability.

I received a Bachelor Degree in 2011 in Environmental Engineering, Università di Genova, analysing the systemic impact of flood on complex territorial systems. In 2014 I received a Master's degree in Environmental and Energy Engineering, Università di Genova, with a thesis on multi-hazard and multiusers risk scenarios in collaboration with CIMA Foundation and Vrije Universiteit Brussel. In 2018 I obtained a Ph.D. in Understanding and Managing Extremes at IUSS Pavia, focusing on the existing challenges in the assessment of the impacts of single and multiple natural hazards on territorial systems and identification of innovative solutions to address them. Furthermore, during the last year of my Ph.D., I spent an exchange period of 6 months as Post-graduate Researcher at King's College London - Geography Department, working on multi-hazard risk challenges. During my experience as Post-Doc Researcher at CIMA Research Foundation (Disaster Risk Assessment and Loss Data department), I worked on disaster risk reduction methodologies, specifically focusing on exposure and vulnerability analysis for flood risk assessment in a series of international activities. From November 2018 to August 2020 I worked as Senior Project Engineer at Stam S.r.l., managing and developing a series of national and international projects on energy, environment and security.

Academic experience

09/2020–ongoing, **Post-doctoral fellow**, University of Genoa (DICCA), Genoa (Italy)

Research Topic: Monitoring and reporting of the environmental ethical and social positive effects of the actions of the University of Genova on the pathway towards sustainability according to the goals of the three-years plan and to entry into national and international sustainability and Third-Mission rankings.

Teaching activities:

- Teaching support - Course of Hydraulic Constructions, Bachelor in Civil and Environmental Engineering (L-7), University of Genoa, A.Y. 2020/2021
- Examination commission - Course of Hydraulic Constructions, Bachelor in Civil and Environmental Engineering (L-7), University of Genoa, A.Y. 2020/2021
- Examination commission - Course of Integrated Risk Assessment and Management, Engineering for Natural Risk Management (LM-26), University of Genoa, A.Y. 2020/2021

10/2017–10/2018, **Post-doctoral fellow**, University of Genoa (DIBRIS) - CIMA Research Foundation, Savona (Italy)

Research Topic: Natural Hazard risk scenarios definition and characterization in a multi-scale and multihazard framework: definition and characterization of the elements exposed to different natural hazards, with a specific focus on sensible infrastructures.

Main activities: Involvement in the preparation of **16 Country Risk Profiles for Floods and Droughts for**

Sub-Saharan Africa, as part of the programme “Building Disaster Resilience to Natural Hazards in Sub-Saharan African Regions, Countries and Communities” from UNISDR. Main roles and responsibilities: research, processing and finalization of exposure and vulnerability data for each country, critical analysis of risk analysis results, support to the writing of the reports.

Work Experience

11/2018-07/2020, **Senior Project Manager**, Stam S.r.l., Genova (Italia), R&D area.

Main roles and activities:

- Development and management of EC co-funded projects (H2020, Life, Regional and National funds) dealing with: Risk Assessment from terroristic attacks (security) / Risk Assessment for industrial and environmental processes (safety) / Energy and Environment, including Indoor Comfort and Energy Efficiency, Wastewater treatment and management and Circular Economy.
- Project proposal preparation, including: Identification of project goals and proper strategies to achieve them / Design of Work Packages, development of Pert and Gantt project charts / Budget allocation / Business Model, Business Canvas and Exploitation Plan development.

04/2014–09/2014, **Risk Manager Trainee**, CIMA Research Foundation, Savona (Italy)

EU FP 7th RASOR Project development: analysis of relevant literature on vulnerability from natural hazards, development of a methodology for systemic vulnerability of territorial networks, development of a methodology for creation and analysis of risk scenarios, use of GIS for creation and analysis of risk scenarios.

03/2014–08/2014, **Occasional collaboration agreement**, Stefania Traverso, Geospatial Intelligence and GIS Advisor, Genova (Italy)

Analysis of worldwide legislation concerning geospatial data management and services for interoperability between systems

02/2014–07/2014, **Assistant to the Consultant Technician of the Public Prosecutor of Savona**, Savona, Italy

Technical consultancy on the landslide event and the train accident in Andora (SV), Italy (17.01.2014)

01/2011–02/2011, **Undergraduate Internship**, CIMA Research Foundation, Savona (Italy)

Knowledge and use of ArcGIS and OWIS platform, 3D building extrusion, element at risk identification and classification, vulnerability studies and damage maps creation.

Education

09/2014–02/2018, **Doctor of Philosophy (PhD) - UME (Understanding and Managing Extremes) Graduate School - Weather-Related Risk (WRR) Programme**, Istituto Universitario di Studi Superiori Pavia (IUSS), Pavia (Italy)

RESEARCH TOPIC: "Modelling of Single and Multiple Hazards Impacts on Complex Territorial Systems." The main objective is the analysis of the ways in which hazards and hazard interactions can impact a territorial system. The analysis starts from multi-hazard interactions, but touches also exposure, vulnerability and impact assessment in a multi-hazard perspective. A specific focus is dedicated to exposed elements characterization in a single-hazard and multi-hazard perspective.

ATTENDED COURSES: Earth sciences and natural disasters /Probability and statistics /Introduction to disaster risk reduction and emergency response /Extreme value theory /Law and economics /Risk and emergency management legislation /Remote sensing, crowdsourcing and telecommunications / Social vulnerability and disaster resilience / Economic impact analysis of natural hazards and terrorism /Epidemiology in natural disasters /Modelling and forecasting of hydrometeorological risk /Media management and communication.

01/2017–06/2017, **Study Abroad Internship – Postgraduate Research**, King's College London, London (United Kingdom)

PROGRAMME OF THE TRAINEESHIP: contribution to a methodological framework to study the potential impact of different natural hazards and natural hazard interactions on the built environment. Supervisors: Prof. B. D. Malamud, Dr. F. Taylor.

09/2011–02/2014, **Master Degree in Environmental and Energy Engineering 110 with honors**, 7 February 2014, Università di Genova, Genova (Italy)

MASTER THESIS: "Development of a multi-hazard and multi-users risk scenario methodology and application to a study case." In collaboration with CIMA Foundation, Savona, Italy and Vrije Universite Brussel, Belgium. Supervisors: Prof. G. Boni, Prof. M. Kervyn, Doc. R. Rudari, Eng. S. Traverso.

02/2013–07/2013, **Erasmus Exchange, Master in Geography, Terrestrial Ecosystems and Environmental Change**, Vrije Universiteit, Brussels (Belgium)

ATTENDED EXAMS:

- Natural Hazards
- Natural Risk Management
- Dynamics and Modelling of Glacial Systems
- Surface Water Hydrology

09/2008–09/2011, **Bachelor of Science in Environmental Engineering 110 with honors**, 30 September 2011, Università di Genova, Genova (Italy)

BACHELOR THESIS: "Digital Earth Action: vulnerability assessment of infrastructure networks finalized to emergency management." In collaboration with CIMA Foundation, Savona, Italy. Supervisors: Prof. L. Ferraris, Doc. E. Trasforini, Eng. S. Traverso.

Seminars and Schools

07/2015, **IEEE Geoscience and Remote Sensing Society 2015 Summer School (GR4S) on "Data Fusion for Risk Mapping"**, University of Pavia, Pavia (Italy)

05/2015, **Spring School on land use and the vulnerability of socio- ecosystems to climate change: remote sensing and modelling techniques**, University Ca' Foscari, Venezia (Italy)

10/2012, **Short course on "Spatial Multicriteria Analysis for Environmental Decision-making"**, Dr.

Davide Geneletti, Department of Civil and Environmental Engineering, University of Trento, Trento (Italy)

Certifications

26/01/2018, **Initiating and Planning Projects**, University of California Irvine on Coursera. [Link to Certificate](#)

09/2016, **IELTS – CEFR level C1**, British Council

09/04/2015, **R programming**, Johns Hopkins University on Coursera. [Link to Certificate](#)

05/2008, **FIRST certificate**, Cambridge English Language Assessment

Skills

Excellent written and oral communication skills. Ability to manage multiple projects and tasks simultaneously. Strong organizational skills. Good experience in writing grant proposals. Excellent in team working and managing.

Natural languages: *Italian* (mother tongue), *English* (C1 – Proficient User – Certifications: Cambridge First

Certificate in English (FCE) / IELTS - CEFR Level C1), *French* (B2 – Independent user)

Digital skills

- Good command of office suite (Word, Excel, Power Point, Access)
- Good knowledge of MATLAB environment, SQL and GIS software, • Knowledge of R and Python programming languages

Projects

H2020 DRIMPAC (Unified DR interoperability framework enabling market participation of active energy consumers) – 2018-2021 – GA n. 768559 (<http://www.drimpac-h2020.eu/>)

CONTRIBUTION: support in the definition and implementation of Dissemination Activities.

H2020 InfraStress (Improving resilience of sensitive industrial plants & infrastructures exposed to cyberphysical threats, by means of an open testbed stress-testing system) – 2019-2021 – GA n. 833088 (<https://www.infrastress.eu/>)

CONTRIBUTION: project management, support in the development of a critical infrastructure vulnerability assessment tool from terroristic attacks.

RISC-KIT (Resilience-Increasing Strategies for Coasts – toolkit) – FP7 EU Project (2013 - 2017)

CONTRIBUTION: Evaluation of direct and indirect impacts from coastal flooding in Bocca di Magra, Italy, applying the INDRA model; Multi Criteria Assessment with local stakeholders for the selection of suitable DRR measures for coastal flooding in Bocca di Magra, Italy.

RASOR (Rapid Analysis And Spatialization Of Risk) project – FP7 EU Project (2013-2016)

CONTRIBUTION: Database design, exposure elements classification, selection and definition of vulnerability curves for different natural hazards, definition of impact indicators.

Flood Risk Modelling for Malawi /WB contract number 7175945, CIMA Research Foundation

(2016) *CONTRIBUTION:* Evaluation of risk indicators and risk profile for Northern and Central Malawi and three selected hotspots.

Publications

Peer reviewed Journals

“Remote Sensing-Based Methodology for the Quick Update of the Assessment of the Population Exposed to Natural Hazards”, Giorgio Boni, **Silvia De Angeli**, Angela Celeste Taramasso, Giorgio Roth, *Remote Sensing*, Vol. 12, Issue 23, pp. 3943, December 2020.

“Coastal Risk Assessment Framework: Comparison of modelled fluvial and marine inundation impacts, Bocca di Magra, Ligurian coast, Italy”, **Silvia De Angeli**, Mirko D'Andrea, Giacomo Cazzola, Daniele Dolia, Enrico Duo, Nicola Rebor, *Coastal Engineering*, Vol. 134, pp. 229-240, April 2018.

“What if the 25 October 2011 event that struck Cinque Terre(Liguria) had happened in Genoa, Italy? Flooding scenarios, hazard mapping and damage estimation”, Francesco Silvestro, Nicola Rebor, Lauro Rossi, Daniele Dolia, Simone Gabellani, Flavio Pignone, Eva Trasforini, Roberto Rudari, **Silvia De Angeli**, Cristiano Masciulli. *Natural Hazards Earth Systems Science*, Vol. 16, pp. 1737-1753, 2016.

Conference proceedings

“Application of an Earth-Observation-based building exposure mapping tool for flood damage assessment”, **Silvia De Angeli**, Eva Trasforini, Fabio Dell'Acqua. FLOODrisk 2016 - 3rd European Conference on Flood Risk Management, Lyon, France, 17th-21st October 2016.

“Impact of modelling scale on probabilistic flood risk assessment: the Malawi case”, Roberto Rudari, Joost Beckers, **Silvia De Angeli**, Lauro Rossi, Eva Trasforini. FLOODrisk 2016 - 3rd European Conference on Flood Risk Management, Lyon, France, 17th-21st October 2016.

Conference abstracts

“Probabilistic Flood Risk Assessment in Sub-Saharan African Countries”, **Silvia De Angeli**, Eva Trasforini, Roberto Rudari, Lauro Rossi and Lorenzo Campo. EGU General Assembly 2018, Vienna, Austria, 8-13 April 2018.

“Analysis of temporal and spatial overlapping of hazards interactions at different scales”, **Silvia De Angeli**, Faith Taylor, Eva Trasforini, Roberto Rudari, Lauro Rossi. EGU General Assembly 2017, Vienna, Austria, 23-28 April 2017.

“Risk analysis based on hazards interactions”, Lauro Rossi, Roberto Rudari, Eva Trasforini, **Silvia De Angeli**, Joost Becker. EGU General Assembly 2017, Vienna, Austria, 23-28 April 2017.

"A Gis-Based, Rapid and Holistic Flash Flood Risk Assessment for Emergency Management Services", Luca Cenci, Giuseppe Squicciarino, Laura Rossello, **Silvia De Angeli**, Eva Trasforini, Roberto Rudari, Giorgio Boni. 15th Plinius Conference on Mediterranean Risks, Giardini Naxos, Italy, 8–11 June 2016.

"Analysis of the impacts of EC-Earth Global Circulation Model in the RCP45 climate change scenario on maximum daily streamflow quantiles at global scale", Francesco Silvestro, Lorenzo Campo, Roberto Rudari, Christian Herold, **Silvia De Angeli**, Simone Gabellani, Mirko D'Andrea, Denisa Rodila. EGU General Assembly 2015, Vienna, Austria, 17-22 April 2016.

"Use of crowd source, Open Data and EO-based information in flood damage assessment: the 2014 urban flood in Genoa", Eva Trasforini, **Silvia De Angeli**, Mattia Fiorini, Lauro Rossi, Roberto Rudari. EGU General Assembly 2015, Vienna, Austria, 12-17 April 2015.

"Assessment of infrastructure functional damages caused by natural-technological disasters", Marco Massabo, Eva Trasforini, Stefania Traverso, Roberto Rudari, **Silvia De Angeli**, Francesca Cecinati, Valentina Cerutti. EGU General Assembly 2013, Vienna, Austria, 7-12 April 2013.

"The digital Earth action: an augmented knowledge of reality for risk scenarios representation and operational evaluation of damages", Giorgio Boni, Francesca Cecinati, Valentina Cerutti, **Silvia De Angeli**, Fabio Gardella, Roberto Rudari, Franco Siccardi, Eva Trasforini, Stefania Traverso. 13° European Geophysical Society Plinius Conference on Mediterranean Storms, Savona, Italy, September 2011.

Invited talks and seminars

15 December 2020, University of Genoa, CRISI, FRATTURE, CAMBIAMENTI RIFLESSI LETTERARI, CULTURALI E LINGUISTICI, Giornate di studio Assegnisti Dipartimento Lingue e Culture Moderne (Unige): *"Non tutti i mali vengono per nuocere"* - I concetti di resilienza e adattamento nell'ambito dei disastri naturali e del cambiamento climatico, S. De Angeli.

26 November 2019, SMAU Genova, Live Streaming: *Sicurezza e qualità della vita nel territorio: monitoraggio ambientale e delle infrastrutture critiche, smart mobility, efficientamento energetico*, S. De Angeli.

17 February 2017, King's College London, Department of Geography, Environmental Dynamics Seminar Series, Natural Hazard Seminar: *The RASOR Platform and the evaluation of the impact of natural hazard interactions on the built environment*, S. De Angeli.

27 January 2012, CIMA Foundation, Savona, Aphrodite Seminar: *The Digital Earth Action: an augmented knowledge of a virtual reality for risk scenarios representation and operational evaluation of damages*, S. Traverso, S. De Angeli, F. Cecinati, V. Cerutti, F. Gardella.

Editorial activities

2021, **Guest editor of the special issue 'Remote Sensing for Flood Monitoring and Risk Assessment' on Water, MDPI (2021)**

January 2021 – ongoing, **EGUsphere moderator, EGU, Copernicus Publications**

Other relevant activities

April 2018, **Co-convener of EGU 2018 session on multi-hazard risk assessment**

SESSION NH9.5/GMPV6.7/HS11.37/SM3.18/SSS13.61, Single and multi-hazard risk assessment and mitigation in developing countries: Challenges and opportunities for innovation (co-organized) | PICO Convener: Faith Taylor | Co-Conveners: Andreas Günther , Bruce D. Malamud , Massimiliano Pittore , Silvia De Angeli , Anna Lo Jacomo , Stefano Terzi / Vienna, Wed, 11 Apr 2018.

I authorize to use the personal data contained inside my Curriculum Vitae in agreement with art. 13 UE 2016/679 (GDPR).