

Andrea Di Guardo, PhD

WORK EXPERIENCE

02/2006–Present **Founder**

Informatica ambientale s.r.l., Milan (Italy)
www.iambientale.it

Informatica ambientale is a small company focused on the sustainability assessment of human interaction with the environment, promoting the responsible use of natural resources. Informatica ambientale provides innovations for safeguarding the environment, enhancing the agriculture resilience and improving the sustainability of companies; it also combines research and knowledge transfer activities, thanks to a tight collaboration with Universities and Research Institutes.

Informatica ambientale main activities are:

- design and implementation of Environmental Modelling Systems, covering different matrices (air, soil, surface water and groundwater) and stakeholder needs;
- design and implementation of Environmental Decision Support Systems (E-DSS);
- multi-tier territorial analysis with GIS techniques, integrated with DSSs and numerical modelling;
- management of scarce natural resources, such as water for irrigation (www.irrismart.it);
- implementation of sensor networks to acquire territorial data from external sources, using IoT techniques;
- design and implementation of Life Cycle Assessments and Environmental Footprint evaluations;
- assessment of sustainability of organizations, products, territories;
- design of complex environmental software systems.

Business or sector Environmental services

06/2017–Present **Post-doc research fellow**

Department of Earth and Environmental Sciences (DISAT)
University of Milano Bicocca

My activities as post-doc research fellow at the Department of Earth and Environmental Sciences of the University of Milano Bicocca are focused on Ecology and Sustainability fields. I follow several regional, national and international projects and I regularly publish my research work in international peer-reviewed journals.

Main research activities are related to:

- territorial vulnerability to chemical substances used in agriculture;
- human and environmental exposure evaluation to chemical mixtures in agriculture;
- sustainability of agricultural practices with a focus on developing new LCA methods;
- design and implementation of DSSs and mathematical models for the evaluation of irrigation needs.

Business or sector Education

- 2020–Present **Lead Auditor in Voluntary Sustainability Certification Schemes and in Carbon and Water Footprint Analysis**
Milan (Italy)
I am Lead Auditor for voluntary Sustainable Certification Schemes in the Agriculture sector and in Carbon and Water Footprint according to relative ISO standard.
I am certified Lead Auditor in Quality Management Systems and I successfully passed the exams for ISO/IEC 17021-1 (*Requirements for bodies providing audit and certification of management systems*) and ISO 19011 (*Guidelines for auditing management systems*) standards.
- 2019–Present **Member of the Editorial Board of Science of the Total Environment journal**
Milan (Italy)
Since 2019, I joined the Editorial board of the STOTEN (Science of the Total Environment) journal, published by Elsevier, which, with its IF 10.75, is one of the leading journals in the Environmental sector.
- 2008–Present **Reviewer for several Scientific Journals in the Environmental sector**
Milan (Italy)
Reviewer for:
- Nature (IF 49.96)
 - Science of The Total Environment (STOTEN - IF 10.75)
 - Journal of Cleaner Production (IF 9.29)
 - Environmental Pollution (IF 8.71)
 - Chemosphere (IF 7.09)
 - Environmental Modelling and Software (EMS - IF 5.29)
 - Environmental Impact Assessment Review (IF 4.55)
 - Pest Management Science (IF 4.84)
 - International Journal of Geographical Information Science (IF 4.186)
 - Environmental Science and Pollution Research (IF 4.223)
- 2023–Present **Member of the scientific, technical and ethic board of EQUALITAS**
Milan (Italy)
Supervision of technical and scientific activities of the EQUALITAS certification standard, which aims to promote the sustainability of the agrifood and wine supply chains bringing together businesses, society and the market. I am co-chair of environmental indicators activities.
- 2012–Present **Member of the scientific board of the VIVA project**
Milan (Italy)
Supervisor of scientific and technical activities within the “VIVA Sustainable Wine”, a national project, supported by the Italian Ministry of the Environment and the Italian Ministry of Agriculture, which aims to spread sustainable wine-growing practices in Italian wine makers.

- 02/2012–07/2019 **Adviser, member of the board of management**
Parco Regionale Adda Sud, Lodi (Italy), Regional Authority
<http://www.parcoaddasud.it>
I served as Public Official in the board of management of one of the biggest regional parks in Italy, the “Parco Regionale dell’Adda Sud”. My duties were to control and decide about the main activities of the Authority, with particular focus on economic (annual financial statement supervision) and management (approval of technical proposals) procedures.
Business or sector Government authority
- 01/2000–02/2006 **Senior researcher**
Poliedra – Politecnico di Milano, Milan (Italy)
www.poliedra.polimi.it
Poliedra is a consortium of the Politecnico di Milano and its core themes are environmental sustainability, mobility, participation, decision support systems, smart cities and communities. I was a project manager in the field of Decision Support Systems applied to environmental issues and to innovative mobility field.
Moreover, I expanded my competences in the field of computer science applied to environmental priorities, such as EIA, EAS, innovative mobility, participation of citizens in environmental decisions.
I also acquired expertise in the field of Environmental Multi-Criteria Analysis applied to several environmental matrices, in particular the reservoir management system.
Business or sector Education
- 10/1999–12/1999 **Researcher**
Politecnico di Milano, Milan (Italy)
At the end of my Master thesis training, I concluded the research activities with a post degree fellowship in the field of optimal use of natural resources and in particular reservoir management with the aid of mathematical modelling and multi-criteria analysis.
Business or sector Education
- 1998–2000 **Freelance environmental consultant with focus on GIS and territorial analysis and model frameworks.**
Milan (Italy)
I began my work activities as a consultant in environmental software design for several public authorities and universities.
Main activities relate to the design and development of custom software for analysis of air and groundwater contamination and the design of new modelling systems and indices.
Business or sector Environmental consultancy

EDUCATION AND TRAINING

2014-2016 **Philosophy Doctor in Environmental Sciences**

Università degli Studi di Milano-Bicocca, Milan (Italy)

In 2014, after 15 years from my master degree I decided to enroll in a doctorate in Environmental Sciences in order to complete my education and experience until that time acquired. I studied in particular the environmental fate of pollutants from agricultural activities in soil, air, surface and groundwater with focus on the interaction between modelling and monitoring data. I also focused my doctorate on the evaluation of territorial vulnerability to chemical (pesticides, fertilizers, veterinary medicines, waste treatment sludges) used in agriculture and on the Environmental Risk Assessment of pesticide mixtures.

1992-1999 **Master of Science degree in Environmental Engineering**

Politecnico di Milano, Milan (Italy)

The five-years Master degree in Environmental Engineering, held at the Politecnico di Milano, gives me the ability to have a broad vision of the environmental problems and to investigate solutions in a holistic way. Main subjects of studies were: environmental modelling (in several fields such as air and water pollution, hydrology), environmental planning, innovative transport systems, natural resources management, decision support systems for public Authority.

My master Thesis has been focused on the "Identification of PARMAX (Periodic Auto Regressive Mobile Average with eXogenous data) black-box models for predicting water supplies in a reservoir management system". During this period, I also accomplished to my civil service obligations.

Various periods **Qualification for the engineer profession (1999)**

Politecnico di Milano, Milan (Italy)

I am a qualified engineer in Italy since 1999.

Energy certifier of buildings (2010)

Politecnico di Milano, Milan (Italy)

I am a qualified energy certifier of residential and commercial buildings, member of the regional list of professionals.

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C1	C1	C1
TOEFL - Test Of English as a Foreign Language					
French	A1	B1	A1	A1	A1

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2: Proficient user
[Common European Framework of Reference for Languages](#)

Communication skills I have very good communication skills gained through several years of interaction with high-profile customers such as full University professors, CEOs, executives of public authorities.

Organisational / managerial skills In more than 20 years of job-related activities (and also in the rest of my life) I have learned to understand how people interact with each other and how to get the best out of whoever works with me. I can manage teams and working groups, I have a thorough experience in project management and I have a strong aptitude for innovation.

RECENT PUBLICATIONS

Finizio, A., Tosadori, A., **Di Guardo, A.**, 2024. Analisi spazio-temporale del rischio da miscele di prodotti fitosanitari nelle acque superficiali di regione Lombardia. Atti delle Giornate Fitopatologiche, 2024, 1, 389-398

Tosadori, A., **Di Guardo, A.**, Finizio, A., 2024. Spatial distributions and temporal trends (2009–2020) of chemical mixtures in streams and rivers across Lombardy region (Italy). Science of the Total Environment, 919, 170839

Finizio, A., **Di Guardo, A.**, Menaballi, L., Barra Caracciolo, A., & Grenni, P., 2023. MIX-TOOL: uno strumento applicativo per la valutazione del rischio ecotossicologico da miscele di pesticidi nelle acque superficiali. Notiziario CNR-IRSA, vol. 1, giugno 2023, ISSN 2465-017X

Calliera, M., **Di Guardo, A.**, L'Astorina, A., Polli, M., Finizio, A., Capri, E. 2023. Integrating Environmental and Social Dimensions with Science-Based Knowledge for a Sustainable Pesticides Management—A Project of Lombardy Region in Italy. Sustainability, 15, 7843

Di Guardo, A., Capri, E., Calliera, M., & Finizio, A., 2022. MIMERA: An online tool for the sustainable pesticide use at field scale. Sci Total Environ., 846, 157285.

Finizio, A., **Di Guardo, A.**, Menaballi, L., Barra Caracciolo, A., & Grenni, P., 2022. Mix-Tool: An Edge-of-Field Approach to Predict Pesticide Mixtures of Concern in Surface Water From Agricultural Crops. Environ. Toxicol. Chem., 41(8), 2028-2038.

Finizio, A., **Di Guardo, A.**, Petrangeli, A. B., Barra Caracciolo, A., Grenni, P., 2022. *Applicazione del modello di additività dose/concentrazione a scenari di riferimento italiani* in Grenni, p., Santoro, S., Valutazione degli effetti combinati delle miscele di sostanze chimiche. Notiziario dei metodi analitici, IRSA-CNR, volume 1, febbraio 2022, ISSN 2465-017X

Finizio A., Grenni P., Bruna Petrangeli, A.B., Barra Caracciolo, A., Santoro, S., **Di Guardo, A.**, 2022. Use of large datasets of measured environmental concentrations for the ecological risk assessment of chemical mixtures in Italian streams: A case study. Sci Total Environ., 806, 150614

Acutis, M., Tadiello, T., Perego, A., **Di Guardo, A.**, Schillaci, C., Valkama, E., 2022. EX-TRACT: An excel tool for the estimation of standard deviations from published articles. Environmental Modelling & Software, 147, 105236.

Di Guardo, A., Volpi, E., Finizio, A. 2020. Analysis of large-scale monitoring data to identify spatial and temporal trend of risk for terbuthylazine and desethyl-terbuthylazine in surface water bodies of Po plain (Italy), Sci Total Environ., 740,140121

Di Guardo, A., Monchiero, M. 2018. Risparmio idrico e sistemi di irrigazione a minor impatto in orticoltura e floricoltura, Protezione delle Colture, 11 (3), 2-6.

Monchiero, M., **Di Guardo, A.**, 2018 Risparmio idrico e water footprint in viticoltura e indicatore VIVA. Protezione delle Colture, 11 (3), 17-21.

Di Guardo, A. and Finizio, A. 2018. A new methodology to identify surface water bodies at

risk by using pesticide monitoring data: The glyphosate case study in Lombardy Region (Italy). *Sci Total Environ.* 610–611, 421–429

Di Guardo, A. and Finizio, A. 2017. Sustainable use of Veterinary Pharmaceuticals on the territory (SUSTPharm): linking available database of manure management and environmental fate models. *Sci Total Environ.* 575, 1014–1026

Lamastra, L., Balderacchi, M., **Di Guardo, A.**, Monchiero, M., Trevisan, M., 2016. A novel fuzzy expert system to assess the sustainability of the viticulture at the wine-estate scale, *Sci Total Environ.* 572, 724–733

Di Guardo, A. and Finizio, A. 2016. A moni-modelling approach to manage groundwater risk to pesticide leaching at regional scale, *Sci Total Environ* 545–546, 200–209

Di Guardo, A. and Finizio, A. 2015. A client–server software for the identification of groundwater vulnerability to pesticides at regional level, *Sci Total Environ* 530–531, 247–256

Acutis, M., Alfieri, L., Giussani, A., Provolo, G., **Di Guardo, A.**, Colombini, S., Bertoncini, G., Castelnuovo, M., Sali, G., Moschini, M., Sanna, M., Perego, A., Carozzi, M., Chiodini, M.E., Fumagalli, M., 2014. ValorE: an integrated and GIS-based decision support system for livestock manure management in the Lombardy region (northern Italy). *Land Use Pol.*, 41, 149–162