PhD School - Politecnico di Milano

Regulations of the PhD Programme in

Science, Technology, and Policy for Sustainable Change (STEP-CHANGE)

Cycle XLI

1. General Information

PhD School - Politecnico di Milano

PhD Programme: Science, Technology, and Policy for Sustainable Change (STEP-CHANGE)

Course start: September 2025

Location of the PhD Programme: Milano Leonardo

Promoter Department: Dipartimento di Elettronica, Informazione e Bioingegneria (DEIB)

Scientific Disciplinary Sectors
- BIOS-05/A   Ecology
- CEAR-01/B   Hydrology and Hydraulic and Maritime Structures
- CEAR-04/A   Geomatics (Topography and Cartography confluiti)
- CEAR-08/C   Technological and Environmental Design of Architecture
- CEAR-08/D   Design
- CEAR-12/B   Urban and Landscape Planning
- IIND-01/F   Fluid Dynamics
- IIND-06/B   Energy Systems and Power Generation
- IIND-07/A   Thermal Engineering and Industrial Energy Systems
- IIND-07/B   Building Physics and Building Energy Systems
- IIND-03/B   Design Methods for Industrial Engineering
- IIND-05/A   Industrial Mechanical Plants
- IIND-07/D   Nuclear Power Plants
- IMAT-01/A   Materials Science and Technology
- ICHI-01/A   Applied Physical Chemistry
- ICHI-02/A   Chemical Plants
- IEGE-01/A   Business and Management Engineering
- IINF-04/A   Systems and Control Engineering
- IINF-05/A   Information Processing Systems
- PHIL-02/A   Logic and Philosophy of Science
- ECON-02/A   Economic Policy
- GSPS-06/A   Sociology of Cultural and Communication Processes

PhD School website: http://www.polimi.it/phd

PhD programme website: https://phd-step-change.polimi.it

2. General presentation

The PhD Programme in *Science, Technology, and Policy for Sustainable Change (STEP-CHANGE)* is designed to equip the next generation of scientific leaders with the tools to address the complex challenges of global change and guide society toward a sustainable, inclusive future. The programme focuses on accelerating the adoption of green technologies, advancing industrial decarbonisation, and formulating cross-sectoral sustainable policies.

STEP-CHANGE offers a dynamic, multicultural, and interdisciplinary research environment, with strong ties to leading international research institutions and private sector partners. Students will develop robust research capabilities and gain deep insights into the complexity of natural and human-made systems. They will be trained in advanced methodologies for analysing and modelling physical, industrial, societal, and digital processes that affect Earth's ecosystems.

Students will also learn to anticipate technological, ecological, and societal developments, and to design forward-looking, sustainable solutions. The programme encourages critical assessment of these innovations in terms of their environmental and societal impacts, as well as their ethical and philosophical implications.

Upon successful completion of the programme and final examination, graduates will be awarded the title of *PhD in Science, Technology, and Policy for Sustainable Change*.

STEP-CHANGE stems from the cooperation of 11 departments:
- DEIB   Department of Electronics, Information, and Bioengineering
- DENG   Department of Energy
- DIG   Department of Management, Economics, and Industrial Engineering
- DCMC   Department of Chemistry, Materials, and Chemical Engineering "Giulio Natta"
- DICA   Department of Civil and Environmental Engineering
- DABC   Department of Architecture, Built Environment, and Construction Engineering
- DESIGN   Department of Design
- DASTU   Department of Architecture and Urban Studies
- DAER   Department of Aerospace Science and Technology
- DMEC   Department of Mechanical Engineering
- DMAT   Department of Mathematics "Francesco Brioschi"

The programme lasts three years, is taught in English and is composed of three pillars:

- Basic Research, including methodological courses related to key aspects of theoretical and applied research in science, policy, and technology of sustainable change.

- Specific Research is designed to strengthen the PhD candidates' knowledge on specific topics aligned with their research interests and reinforce their presence in the international scientific community by participating in conferences and presenting scientific results to the academic community.

- Development of the Doctoral Thesis, involving the PhD candidate in the development of leading-edge research competencies and production of original scientific work contributing to the scientific debate and having societal impacts.

Research within the STEP-CHANGE PhD Programme focuses on developing innovative methodologies and advancing applications across interdisciplinary, cross-cutting themes. Areas of investigation include the planning and management of natural resources under changing conditions; global environmental change and socio-technical systems; industrial green transition pathways and multisectoral dynamics; the impact assessment of technological transformations; and policy and decision-making processes. The programme also explores responsible research, ethics, and philosophy; the role of artificial intelligence

in addressing global change; climate-related techno-economic and financial risks; and ecological and epidemiological responses to environmental pressures. Further research themes include pro-environmental behaviour across citizens, institutions, and firms; digital carbon footprints, green IT, and digital sustainability; as well as the design of sustainable product–service systems and life cycle design for sustainable products.

Students are strongly encouraged to build an international academic profile by participating in research visits, joint projects, and international conferences. Spending at least one semester at a foreign research institution or international organisation is highly recommended. This international exposure, supported by the extensive global network of the eleven departments involved in the PhD programme, will be positively evaluated as part of the final assessment of the doctoral research.

A Coordinator and a Faculty Board run the PhD Programme. The Coordinator chairs the Faculty Board, coordinates the preparation of the annual Educational Programme, and organises educational activities of the PhD Programme (see Attachment A1). The Faculty Board is responsible for the Educational Programme as well as teaching and administrative activities related to the PhD Programme (see Attachment A2).

3. Objectives

The STEP-CHANGE PhD Programme is designed to train the next generation of scientific experts capable of developing feasible and effective pathways to ensure both the prosperity and preservation of our planet. This is achieved through cutting-edge and innovative scientific methods. By the end of the programme, PhD candidates are expected to have acquired the competencies and capacities necessary to support and inform the design of policies and strategies that drive innovation for sustainable development.

A key skill cultivated throughout the PhD experience is the ability to transfer knowledge effectively, adapting it to diverse contexts, audiences, and communication settings. This competency enables PhD graduates to collaborate efficiently within interdisciplinary teams and to disseminate their research findings both within their scientific community and to broader, more varied audiences.

The programme places strong emphasis on helping candidates communicate technical content clearly and effectively, both in writing and orally, and tailored to academic as well as non-academic stakeholders. This objective is supported by specific courses offered through the PhD School, including Technical Communication classes. Furthermore, candidates engage in experiential learning activities—learning by doing—which are a core component of the PhD journey.

4. Professional opportunities and job market

STEP-CHANGE graduates emerge with a unique blend of advanced transdisciplinary knowledge and practical skills, positioning them for a wide range of impactful careers. Their training equips them to tackle complex global challenges through integrated scientific and strategic approaches. As a result, they are well-prepared for roles as analysts, researchers, and strategic planners across a variety of settings, including universities, international research centres, public institutions, and international organisations.

In addition, their competencies are highly valued in R&D departments, regulatory agencies, policy think tanks, and innovation hubs, where they contribute to shaping evidence-based solutions and sustainable strategies. Their ability to navigate the interface between science, policy, and society also makes them

strong candidates for leadership positions in governmental bodies, non-governmental organisations, and multilateral institutions engaged in sustainability and development initiatives.

5. Enrolment

5.1 Admission requirements

Italian and International citizens are eligible for admission to the PhD Programme. They must have graduated with a degree in accordance with the pre-existing laws D.M. 3.11.1999 n. 509, or to have a Master of Science degree in accordance with D.M. 3.11.1999 n. 509, or a Master of Science in accordance with D.M. 22.10.2004 n. 270, or a similar academic title obtained abroad, equivalent in duration and content to the Italian title, with an overall duration of university studies of at least five years. Certified knowledge of the English language is a requirement for admission. More details can be found on the PhD School website. Admission to the PhD Programme is evaluated based on the candidates' curricula, motivation letters, and an illustrative report about the development of a possible PhD research. Individual interviews will be carried out with shortlisted candidates.

5.2 Admission deadlines and positions available

The number of PhD positions is in the Call for admission to the 41th PhD cycle Programmes (http://www.polimi.it/phd). Each year, full scholarships are available for specific research topics as indicated in the call for admission. Private companies, foundations, and research institutions provide the financial support for oriented topics. Limited support is also available for research periods abroad, to attend conferences, and to participate in extracurricular training activities.

6. Contents

6.1 Requirements for the PhD title achievement

The PhD title in Science, Technology, and Policy for Sustainable Change is awarded upon successful completion of predefined training and research milestones. Candidates enrolled in the STEP-CHANGE programme must earn a minimum of 20 course credits (see Section 6.3), engage continuously in advanced study and research activities, publish their scientific findings in peer-reviewed journals, and submit a doctoral dissertation for evaluation by the Faculty Board and two external referees.

At the start of the programme, each PhD candidate is assigned a tutor, who is a member of the Faculty Board and will provide guidance and academic supervision throughout the entire doctoral journey. The tutor supports the candidate in developing a personalised study plan, which must be submitted for approval to the PhD Programme Coordinator (see also Section 6.4). The Faculty Board may also assign additional course credits to strengthen the candidate's preparation in specific areas closely related to their research topic.

Furthermore, candidates are required to demonstrate proficiency in the Italian language at a minimum A1 level of the Common European Framework of Reference for Languages (CEFR). This requirement must be fulfilled before registering for the final examination. Native Italian speakers and those who can provide certified evidence of A1-level Italian proficiency or higher will be exempt from this requirement.

6.2 Research development

The primary objective of PhD Programmes at Politecnico di Milano is to foster a research-oriented mindset, equipping candidates with deep expertise and advanced skills in a specific research domain. To achieve this, candidates are trained to develop problem-solving capabilities in complex, multidisciplinary contexts, including the ability to conduct in-depth problem analysis, devise original solutions, and assess their practical applicability. These competencies prepare PhD candidates to pursue research careers both in academia and in public or private organisations.

Within the STEP-CHANGE programme, PhD candidates are expected to produce original research contributions that significantly advance the current state of knowledge in science, technology, and policy for sustainable change. Their research output will be disseminated through international peer-reviewed journals and conference proceedings, culminating in a final doctoral dissertation prepared in accordance with the guidelines provided by the Faculty Board.

Each candidate conducts their research under the supervision of a primary supervisor, who provides ongoing guidance in developing and executing the research plan. A co-supervisor may be appointed to complement this support. The tutor and the supervisor must be affiliated with different departments, ensuring interdisciplinary oversight.

To enrich the doctoral experience, candidates are encouraged to engage in supplementary academic activities such as winter/summer schools, aimed at enhancing both research and transferable skills. The programme strongly supports the development of candidates' abilities to present and discuss their work within the scientific community. Therefore, active participation in international workshops and conferences is highly encouraged.

Furthermore, the programme places a strong emphasis on international mobility and collaboration. PhD candidates are strongly encouraged to undertake a research stay of at least six months abroad, which is positively evaluated during the final assessment. This experience allows candidates to expand their academic networks, refine their research, and gain valuable exposure to global scientific practices.

The standard duration of the PhD Programme is three years.

6.3 Objectives and learning activities

The PhD Programmes and the PhD School of Politecnico di Milano offer a variety of training opportunities to PhD candidates, including PhD courses, seminars, project workshops, and other activities. PhD courses cover research fundamentals (problems, theories, and methods), cross- disciplinary topics of interest across multiple PhD Programmes, and soft skill coaching. Additional training opportunities are offered through seminar cycles and workshops.

PhD Courses

The PhD School of Politecnico di Milano offers a catalogue of courses that train PhD candidates in soft and transferable skills. These courses prepare candidates to respond to the rapidly evolving needs of the global economy and society at large. Ten out of the twenty course credits shall be obtained through the courses offered by the PhD School (see Table A and B, as an example, and the school website).

The remaining ten credits shall be selected from the characterising courses of the PhD Programme (see Table C). These courses provide interdisciplinary knowledge on the science, technology, and policy for sustainable change as well as specialised methodological bases for specific topics relevant to the PhD

candidate's doctoral research.

First/Second Year

The expected education path of the PhD candidate and associated credits are summarised below. The candidate's training activities must be completed by the end of the second year, with at least ten credits obtained by the end of the first year.

Course	Details or Reference	Number of credits
PhD School Courses	See Table A and B, and the School website	10
Courses characterising the PhD Programme	See Table C	10

Third year

The third year shall be devoted entirely to the research and development of the PhD candidate's dissertation.

Additional training opportunities

Additional training may be arranged in agreement with the supervisor and/or the tutor to acquire valuable expertise for developing doctoral research. This includes courses offered by the PhD School or the other PhD Programmes at Politecnico di Milano, courses offered by other Universities' PhD Programmes, summer/winter schools (e.g. IDEA LEAGUE), and seminar cycles. These additional training activities will not contribute to the required 20-course credits but will be considered in the annual evaluation of the candidate's performance. These courses and workshops shall be included in the study plan as "additional training activities".

Table A: SELECTION OF PHD COURSES OFFERED BY THE PHD SCHOOL – GROUP A

COURSE	LECTURER	A.Y.	CREDITS
INTRODUCTION TO ACADEMIC RESEARCH	P. Volontè	2025/26	5
INNOVATIVE TEACHING SKILLS	D. Shendrikova	2025/26	5
PROJECT MANAGEMENT BASICS	A. Fuggetta	2025/26	5
ADVANCED INTERACTION SKILLS FOR ACADEMIC PROFESSIONALS	M. Arnaboldi	2025/26	5
SCIENTIFIC COMMUNICATION IN ENGLISH	P. Biscari	2025/26	5
ETHICS OF ARTIFICIAL INTELLIGENCE	D. Rocchi	2025/26	5

Table B: SELECTION OF PHD COURSES OFFERED BY THE PHD SCHOOL – GROUP B

COURSE	LECTURER	A.Y.	CREDITS
DIGITAL HUMANISM	V. Schiaffonati	2025/26	5
HOW TO SUPPORT COMPLEX DECISIONS: APPROACHES AND TOOLS	A. Oppio	2025/26	5
SUSTAINABILITY METRICS, LIFE CYCLE ASSESSMENT AND ENVIRONMENTAL FOOTPRINT	M. Lavagna	2025/26	5
THE COPERNICUS GREEN REVOLUTION FOR SUSTAINABLE DEVELOPMENT	D. Oxioli	2025/26	5
SCIENCE DIPLOMACY FOR RESEARCHERS. FILLING THE GAP BETWEEN SCIENCE AND POLICY WITHIN THE GLOBAL CHALLENGES	D. Shendrikova	2025/26	5

Table C: PHD COURSES CHARACTERISING THE PHD PROGRAMME

SSD	COURSE	LECTURER	A.Y.	PHD PROGRAMME	CREDITS
IINF-04/A	PERSPECTIVES IN SCIENCE, TECHNOLOGY, AND POLICY OF SUSTAINABLE CHANGE	A.Castelletti - multiple instructors	2025/26	STEP-CHANGE	5
IINF-04/A	SOCIAL DATA ANALYTICS FOR BEHAVIOURAL MODELLING	S. Ricart	2025/26	STEP-CHANGE	5
GSPS-08/A	SOCIAL AND POLITICAL CHALLENGES OF SUSTAINABILITY	R. Chesta	2025/26	STEP-CHANGE	5
CEAR-04/A	EARTH OBSERVATIONS FOR GLOBAL CHANGE	L. Biagi	2025/26	STEP-CHANGE	5
IINF-05/A	REINFORCEMENT LEARNING	M. Restelli - multiple instructors	2025/26	IT	5
IINF-05/A	LEARNING THEORY	A. Metelli - multiple instructors	2025/26	IT	5
MATH-06/A	STOCHASTIC DYNAMIC PROGRAMMING	O. Jabali - multiple instructors	2025/26	IT	5

IINF-04/A	MODEL PREDICTIVE CONTROL	Farina - multiple instructors	2025/26	IT	5
IEGE-01/A	ANALYTICS FOR SOCIETY	A. Fiori	2025/26	DADS	5
IINF-05/A	INTERPRETABILITY AND EXPLAINABILITY IN MACHINE LEARNING	P. Secchi	2025/26	DADS	5
CEAR-04/A	ADVANCED GEOGRAPHYCAL INFORMATION SYSTEMS	D. Carrion	2025/26	IAI	5
CEAR-01/A	MODELLING EXTREMES AND DEPENDENCE IN MULTIVARIATE PROBLEMS	C. De Michele	2025/26	IAI	5
CEAR-04/A	MONTECARLO-MARKOV CHAINS STATISTICAL METHODS	G. Venuti - multiple instructors	2025/26	IAI	5
CEAR-01/A	SUSTAINABLE WATER AND FOOD SECURITY	M.C. Rulli	2025/26	IAI	5
ICHI-01/B	DATA SCIENCE IN CHEMICAL ENGINEERING	A. Cuoci - multiple instructors	2025/26	CIIC	5
CHEM-06/A	PYTHON DRIVING LICENSE	G. Raos - multiple instructors	2025/26	CIIC	5
IIND-05/A	MODELLING AND DATA ANALYSIS OF COMPLEX SYSTEMS	M. Macchi	2025/26	IGES	5
IEGE-01/A	ADVANCED ECONOMETRICS	R. Mosconi	2025/26	IGES	5
IIND-07/D	SMART ENERGY FOR THE FUTURE	F. Di Maio	2025/26	STEN	5
IIND-05/B	STATISTICS IN THE BIG DATA ERA	P. Tsiamyrtzis	2025/26	IMEC	5

IIND-03/B	AUGMENTED AND VIRTUAL REALITY FOR HUMAN-CENTRIC TESTS IN ENGINEERING	F. Ferrise - multiple instructors	2025/26	IMEC	5
IIND-05/B	ARTIFICIAL INTELLIGENCE IN DECISION-MAKING AND CONTROL OF INDUSTRIAL APPLICATIONS	A. Matta - multiple instructors	2025/26	IMEC	5
IIND-02/A	AI APPLICATIONS TO INDUSTRIAL ROBOTICS	L. Roveda	2025/26	IMEC	5
IIND-02/A	ADVANCED ROBOTICS AND HUMAN-ROBOT INTERACTION: PERCEPTION, CONTROL AND INTELLIGENCE	M. Gandolla - multiple instructors	2025/26	IMEC	5
CEAR-08/C	CIRCULAR TRANSITION IN THE CONSTRUCTION SECTOR	C. Talamo - multiple instructors	2025/26	ABC	5
IIND-01/D	THE ADVANCED AIR MOBILITY REVOLUTION	G. Quaranta	2025/26	IAERO	5

6.4 Presentation of the study plan

PhD candidates must submit the study plan for approval to the PhD Programme Coordinator following the procedures established by the Faculty Board. The study plan may be revised periodically (approximately every three months) to adapt to possible changes in the course offerings or other needs related to the PhD candidate's career development.

6.5 Yearly evaluations

At the end of each year, the PhD candidate's progress is evaluated by the Faculty Board, which decides on the candidate's admission to the following PhD year. Evaluation in the third year establishes the candidate's admission to the final PhD defence.

Positively evaluated candidates may proceed with enrolment to the following year. Candidates with a negative assessment are qualified either as "Repeating candidate" or "not able to carry on with the PhD". In the former case, candidates are allowed to repeat the PhD year at most once, and the PhD scholarship (if any) is suspended until completion of the repetition year. In the latter case, candidates are excluded from the PhD Programme and forfeit their scholarship. If the Faculty Board holds appropriate to assign an exclusion evaluation without the opportunity for a repetition year, such assessment must be validated by the PhD School and adequately motivated.

After the third year, candidates who have achieved satisfactory results but need more time to complete their dissertation may obtain a prorogation for up to 1 additional year.

At the end of month six (first year), candidates will present their PhD research topic to an evaluation board composed by the Tutor and the Supervisor who will review and evaluate it.

6.6 PhD dissertation preparation

The main objective of the PhD career is the development of an original research contribution. The doctoral dissertation is expected to advance knowledge in the candidate's research field.

The PhD study and research work are expected to be carried out full time during the PhD Programme. Stages or study periods in (Italian or International) companies or external Institutions may complete the candidate's preparation.

The doctoral dissertation must be concordant with interdisciplinary cross-cutting research topics of STEP-CHANGE (see 2).

The candidate must present an original dissertation, discuss its innovation with respect to the state-of-the-art, and its relevance to sustainable change and policy-making. The dissertation shall also include an executive summary in the form of a policy brief.

At the conclusion of the PhD candidate's studies, the Faculty Board performs a final evaluation of the candidate. Candidates who receive a positive evaluation will submit their dissertation to two external referees. If the evaluation provided by the external referees is positive (or after the candidate completes any revisions required by the external reviewers), candidates will defend their dissertation in a final exam in front of a committee composed of at least three members, at least two of which must be external experts in the candidate's field of research.

6.7 Technical-scientific communication

As part of their PhD journey, each candidate is expected to gain hands-on experience with all three key modes of technical-scientific communication outlined below:

1. *Oral presentation to experts in the specific field and topic* - This mode focuses on building the ability to effectively communicate complex research content within a limited timeframe, emphasizing the core aspects of the work and defending methodological choices before a highly competent audience. This skill is typically developed by presenting research results at least once at an international conference or specialized workshop.

2. *Oral presentation to stakeholders with general field knowledge but not specific topic expertise* - This mode aims to cultivate the ability to transfer scientific content with appropriate depth and clarity over a longer or unrestricted timescale. It targets the communication of research outcomes to collaborators or stakeholders outside the immediate academic context, such as in corporate or interdisciplinary settings. This competence is usually acquired through participation in targeted training programs with defined learning objectives and timelines.

3. *Written communication for a community of experts* - This mode is designed to develop the candidate's capacity to structure and convey content—more extensive than a typical report but more concise than a thesis or monograph—with the appropriate level of technical and scientific detail. It typically takes the form of a scientific article, technical note, or contribution to conference proceedings intended for a relevant expert audience.

To meet these requirements, each candidate must: i) eeliver at least one oral presentation at an international conference or workshop; ii) complete at least one formal training activity focused on stakeholder engagement or knowledge transfer; iii) produce and submit at least one scientific or technical publication addressed to a community of experts.

Any exceptions to these requirements must be explicitly justified and approved by the Faculty Board.

7. PhD Secretary Services

The secretary service of the PhD Programme can be reached at phd-step-change@polimi.it

8. Internationalisation and interdisciplinarity

Carrying out study and research activities in international Universities and Research Centres is strongly recommended. Politecnico di Milano supports joint PhD paths with International Institutions, as well as Joint and Double PhD programmes. Further information is available on the PhD School website and on the PhD Programme website.

Attachment A1 – PhD Programme Coordinator

SHORT BIO

Andrea Castelletti is Full Professor of Natural Resources Management and Environmental Systems Analysis and Management at Politecnico di Milano, Italy, and Director of the Division on Technologies for Climate Transitions at the Euro-Mediterranean Center on Climate Change (CMCC). He earned his MSc in Environmental Engineering and PhD in Information Engineering from Politecnico di Milano in 1999 and 2005, respectively. Over the years, he has held visiting scholar positions at renowned institutions including Princeton University, Cornell University, Lancaster University, and the University of Western Australia, where he also served as Adjunct Professor at the Centre for Water Research from 2007 to 2015. At Politecnico di Milano, Professor Castelletti leads the Environmental Intelligence Lab and currently chairs the PhD Programme in Science, Technology, and Policy for Sustainable Change. His research interests span a wide range of topics including water systems planning and control under uncertainty, decision-making in complex engineering systems, big environmental data analytics, smart sensing, and information theory for environmental decision-making. He has conducted over 15 years of in-depth research on water resource systems in Vietnam, particularly focusing on the Red River and Mekong River basins, where he has developed innovative methods for sustainable and robust infrastructure design and operation. Professor Castelletti has been involved in numerous national and international research projects, including several funded by the EU Horizon 2020 programme. He is co-author of two international books on integrated water resource management and has published more than 200 scientific contributions in international journals, books, and conference proceedings. His work has been widely recognized: in 2023, he was named Italian National Champion for the Frontiers Planet Prize; in 2021, his research on strategic hydropower planning in the Mekong received the ASPEN Institute Award for best Italy–US collaboration. Earlier in his career, he received a Senior Fellowship from the Japanese Society for the Promotion of Science in 2009, the Early Career Excellence Award from the International Environmental Modelling and Software Society (iEMSs) in 2010, the Italy–Canada Innovation Prize in 2013, the EFARRI Award in 2016, and in 2018, he was awarded the Biennial Medal by iEMSs. He currently serves as an Editor for Water Resources Research and Environmental Research: Water. More information is available at http://www.ei.deib.polimi.it.

SELECTED PUBLICATIONS

1. A. Carlino, R.J. Schmitt , A. Clark, and **A. Castelletti**, Rethinking energy planning to mitigate the impact of African hydropower, Nature Sustainability, 2024.

2. W. Arnold, M. Giuliani, and **A. Castelletti**, Floating photovoltaics may reduce the risk of hydro-dominated energy development in Africa, Nature Energy, 9, 602–611, 2024.

3. A. Carlino, M. Wildemeersch, C.J. Chawanda, M. Giuliani, S. Sterl, W. Thiery, A. van Griensven, and **A. Castelletti**, Declining cost of renewables and climate change curb the need for African hydropower expansion, Science, 10.1126/science.adf5848, 2023.

4. Giuliani, M., J.R. Lamontagne, M. Heiazi, P.M. Reed, and **A. Castelletti**, The unintended consequences of climate mitigation for African river basins, Nature Climate Change, 12(2), 187-192, 2022.

5. Schmitt, R.J.P. , M. Giuliani, S. Bizzi, G.M. Kondolf, G.C. Daily, and **A. Castelletti**, Strategic basin and delta planning increases the resilience of the Mekong Delta under future uncertainty, Proceedings of the National Academy of Sciences, 118 (36) e2026127118, 2021.

Attachment A2 - PhD Faculty Board

Description of the composition of the Faculty Board

NAME	AFFILIATION	SCIENTIFIC DISCIPLINARY SECTOR
Abbà Antonella	DAER	IIND-01/F
Aste Niccolò	DABC	IIND-07/B
Baraldi Piero	DENG	IIND-07/D
Biagi Ludovico Giorgio Aldo	DICA	CEAR-04/A
Cagno Enrico	DIG	IIND-05/A
Campioli Andrea	DABC	CEAR-08/C
Capelli Laura Maria Teresa	DCMC	ICHI-01/A
Casagrandi Renato	DEIB	BIOS-05/A
Cascini Gaetano	DMEC	IIND-03/B
Castelletti Andrea	DEIB	IINF-04/A
Colombo Emanuela	DENG	IIND-07/A
Fraternali Piero	DEIB	IINF-05/A
Giuliani Matteo	DEIB	IINF-04/A
Lorenzi Stefano	DENG	IIND-07/D
Manzolini Giampaolo	DENG	IIND-06/B
Masi Maurizio	DCMC	ICHI-01/A
Pastore Maria Chiara	DASTU	CEAR-12/B
Pernici Barbara	DEIB	IINF-05/A
Rizzo Francesca	DESIGN	CEAR-08/D
Rocco Matteo	DENG	IIND-07/A
Rulli Maria Cristina	DICA	CEAR-01/B
Schiaffonati Viola	DEIB	PHIL-02/A
Tajoli Lucia	DIG	ECON-02/A
Tavoni Massimo	DIG	IEGE-01/A
Valente Giovanni	DMAT	PHIL-02/A
Vicenzo Antonello	DCMC	IMAT-01/A
Volontè Paolo	DESIGN	GSPS-06/A