CURRICULUM VITAE

PARVEEN KUMAR

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Accomplished transdisciplinary researcher with 5+ years' professional and technical experience in multiple climate change, environmental science, and sustainable development projects.

Extensive knowledge of sustainability, global environmental change, climate change, integrated assessment modelling, low carbon economy, physical geography , urban planning, socio-ecological system, land use change, ecosystem services, local and regional development, governance, decision support systems, dynamic spatial modelling, and scenario analysis and adaptation pathways complemented by advanced study and practice in urban and environmental engineering.

Proven resource and highly analytical scientist working to solve complex problems while meeting target objectives.

EDUCATION AND CREDENTIALS

Doctor of Philosophy in Environmental Engineering, University of Trento, Trento, Italy
Dissertation: Spatial planning to integrate climate change adaptation at the local level: India as a case study.

Master of Science in Application of Geo-Information Science and Earth Observation, Faculty of Geo-Information Science and Earth Observation (ITC), University of Twente, Enschede, Netherlands
Research Dissertation: Multimodal accessibility indicators in GIS.

Bachelor of Science in Physical Planning, School of Planning and Architecture, New Delhi, India
Research Dissertation: Changing nature of governance process in urban development Projects: India.

PROFESSIONAL EXPERIENCE

Environmental Research Institute, MaREI Centre for Marine and Renewable Energy, UCC, Cork, Ireland
POSTDOCTORAL RESEARCHER (2017 to Present)

Manage research and design projects in the area of energy and climate risk modelling. Assess current GHG projects and practices of Ireland and provided key recommendation to EPA, Ireland and to the policy makers. Draft and execute scientific publications, reports, and working papers individually and within technical groups. Mentoring and training young researchers across various universities. Collect, analyse, interpret, and formulate conclusions on multiple data streams.

- Organized and produced ex-post and ex-ante analysis of 10+ energy efficiency policies and technologies to understand the current and future pathways to low carbon economy on behalf of Irish policy makers.
- Identified gaps of current policies to achieve implementation goals and tailor energy efficiency policies and technologies.
- Developed LEAP GHG Emission Tool_2050 for Ireland.
- Originated and instructed two workshops and one course on climate change vulnerability and risk assessment.

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Department of Environmental Engineering, Trento, Italy
RESEARCHER (2012-2015)

Assisted and served on Dr. Geneletti's team to coordinate land use, climate change, urban complexity, and ecosystem-based adaptation responses (EbA) to climate change projects. Leveraged Geo-Information Science Tools to perform spatial modelling and applied statistical analysis. Generated results of findings and progress reports for journals and workshop presentations. Investigated and tested multiple hypothesizes, compared results, and tested assumptions to develop new strategies.

- Collaborated on peer review of three journal articles on land use policy, climate change, vulnerability assessment, decision support system, urban planning, and policy analysis topics.
- Supervised implementation of novel research and design techniques to analyse climate change issues at multiple scales and evaluate large spatial and census data for 40 Indian cities.
- Facilitated scientific research and implementation through coordination of research activities with partner organization, to identify land use change, climate change vulnerability and EbA adaptation responses in Indian cities and regions.
- Oversaw coordination of three workshops for professionals, policy makers, researchers and key stakeholders on spatial decision support systems and climate change assessments.

Ashoka Trust for Research in Ecology and the Environment (ATREE), Bangalore, India
VISITING RESEARCHER (2014)

Evaluated EbA to climate change, land use change, food, and water security and socio-ecologic systems in collaboration with University of Massachusetts in USA and Azim Premji University in India. Developed, assessed, planned, and monitored physical development and climate change policies in multiple regions of India. Collected, organized, and validated multiple data sets to ensure accurate analysis and interpretation.

- Collaborated on peer review of one journal article on climate change, vulnerability assessment, and ecosystem services topics.
- Advised on key climate change vulnerability indicators and ecosystem services to mitigate carbon emissions and vulnerability leading to develop decision support system to policy makers.
- Authored article detailing innovative solutions to extensive range of complex data analysis gaps.
- Mediated positive collaborations and knowledge transfers with multiple stakeholders including individuals, public and private intuitions, and local communities.

Spatial Decision, New Delhi, India
SPATIAL PLANNER AND GEOSPATIAL SPECIALIST (2011)

Supported R&D and field teams to design projects and provide technical support. Aided in multi-faceted decision-making strategies to increase base capacity building for urban planning institutions.

- Executed urban planning service programs for land use development including regulatory plan implementation, infrastructure investment projects, and partnership opportunities.

Gherzi Eastern LTD., New Delhi, India
SPATIAL PLANNER (2008-2009)

Oversaw spatial development operations at key project sites in various national locations. Formulated predictions of development costs while leveraging combinatorial principals to urban local bodies. Served as policy and methodological expert to provide transportation management guidance. Managed multiple concurrent projects with cross-functional staff. Coordinated and delegated with government, private companies, funding agencies, local communities, and key stakeholders to complete projects.

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- Analysed and forecasted land use strategies with local authorities, leading to draft land use plan for Lucknow Industrial Development Authority, Uttar Pradesh, India.
- Tracked and mitigated transportation policies and delivered recommendations on policy interventions.

Career Notes:

Spatial Planner, Boston Infrastructure and Development PVT. LTD., New Delhi, India
Policy Analyst Intern, Department of Physical Planning, School of Planning and Architecture, New Delhi, India
Planning Facilitator, Center for Urban and Regional Excellence (CURE), New Delhi, India
South Asia Youth Environment Network Intern, United Nations Environment Programme (UNEP) and Centre for Environment Education (CEE), Ahmedabad, India
Environmental Policy Analyst Inter, HP State Environment Protection and Pollution Control Board, New Shimla, India

SELECT PUBLICATIONS AND CONFERENCES

Published:

1. **Kumar, P.**, Geneletti, D., Nagendra, H., (2016). Spatial assessment of climate change vulnerability at city scale: A study in Bangalore, India. Land Use Policy, 58, 514-532.
2. **Kumar, P.**, Geneletti, D. (2015). How are climate change concerns addressed by spatial plans. An evaluation framework and an application to Indian cities. Land Use Policy, 42(0), 210-226.
3. **Kumar, P.**, (2012). Spatial planning and climate change. Impact Assessment and Project Appraisal, 30(4).

In Process:

1. **Kumar, P.**, Rogan, F., Gallachóir, B. (manuscript in preparation for climate policy). Assessment of current GHG emission projections and practices: A case study of Ireland.
2. **Kumar, P.**, Daly, C., Rogan, F., Gallachóir, B. (manuscript in preparation for Transport Review). The importance of taking a holistic approach to climate policy: Decarbonizing Irish Transport Sector.
3. **Kumar, P.**, Geneletti, D. (manuscript in preparation for synopsis series of UNFCCC on the application of indigenous/traditional knowledge to address climate change challenges). Assessing the effects of potential ecosystem-based adaptation action for climate change impact: A case study of Darjeeling in West Bengal state, India.
4. **Kumar, P.**, Geneletti, D., Bawa, K. (manuscript submitted to Journal of Mountain Research and Development). Linking climate change vulnerability and perception of people in mountain communities: A case study of Lesser Himalayan region of India.

Conference Papers:

1. **Kumar, P.**, (2012). Current urban planning policies and planning tools in vulnerability context from various scales. European Urban Summer School 2012, University of Westminster, London, United Kingdom.
2. **Kumar, P.**, (2011). Mobility or accessibility – what should be the thought behind integrated land-use transport planning, The Urban Mobility India (UMI) Conference & Expo, December 2011, New Delhi, India.

Research dissertations:

1. **Kumar, P. (2015).** Spatial planning to integrate climate change adaptation at the local level. Ph.D. diss., University of Trento, Italy.
2. **Kumar, P. (2011).** Multimodal accessibility indicators in GIS. MSc. diss., University of Twente, Faculty of Geo-Information and Earth Observation (ITC), The Netherlands.
3. **Kumar, P. (2007).** Changing nature of public-private partnership in urban development Projects-India. Undergraduate diss., School of Planning and Architecture, New Delhi. India.

Journal Reviewer: Nature Communication, Urban Climate, Regional Environmental Change, Forest Ecosystems, Journal of Hydrology, International Journal of Disaster Risk Science, Journal of Environmental Assessment Policy and Management, and Sustainability

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PROFESSIONAL ASSOCIATIONS

International Geospatial Society
Society for Urban Ecology
International Sustainable Development Research Society

TEACHING EXPERIENCE

Courses

Spatial multi-criteria analysis for environmental decision making. University of Trento, Italy, 2012-2014.
Climate change vulnerability. ATREE, India, April-2014.

Invited Lectures

Urban Risk Assessment, UNU-IHE, BONN, Germany, Sep-2018.
Planning Policy. Amity University, India, Feb-2019.

AWARDS AND FUNDING

Ph.D. Research grant - University of Trento, Italy (2012-2015)
Erasmus Mundus scholarship (European Commission) - University of Twente, Netherland (2009-2011)
Merit Scholarships (Government of Himachal Pradesh) - School of Planning and Architecture, New Delhi, India (2002-2007)

CERTIFICATIONS AND COURSES

World Risk and Adaptation Futures: Urbanization, UNU-EHS, UNFCCC and Munich Re, Bonn, Germany (2018)
Emission Trading Systems – ETS, Summer University, Remote Course (2016)
Disasters and Ecosystems: Resilience in a Changing Climate, United Nations Environment Programme and the Cologne University of Applied Science, Germany, (2015)
Landscape Democracy- Researching the Right to Landscape and Collaborative Landscape Practices, University of Copenhagen, Denmark (2014)
Climate Change, University of Melbourne, Australia (2013)
Climate Literacy: Navigating Climate Change Conversations, University of British Columbia, Canada (2013)
Sustainability and Economics, KTH Stockholm, SUPELEC Paris, and UNITN Trento, (2012)
Agricultural Landscapes Responding to Multiple Drivers Challenges for Landscape Ecology in Europe IALE-Europe and University of Evora, Portugal (2012)
Spatial decision support systems and applications in environmental planning and assessment, University of Trento, Italy (2012)
Geo-Statistics, University of Trento, Italy (2012)

TECHNICAL SKILLS

Field	Scientific Research and Design, Primary and Secondary Survey, Group Discussion, Expert Interviews, GPS Technology
Software	Microsoft Office Suite, Data Analysis, Dynamic Spatial Modelling, Energy Modelling (LEAP), Remote Sensing Analysis (ERDAS Imagine 9.1, GRASS, ILWIS 3.7, IDRISI), GIS Analysis and Modelling (ArcGIS 10, Quantum GIS, GRASS, InVEST), Transport Analysis (GIS-T, Omni-TRANS, FLOWMAP), Land Use Analysis (Metronamica, Community-Viz, Space

	Syntax), Decision Support Analysis (Accord, DANA, Definite, and SMCA-ILWIS), Statistics Analysis (SPSS, R, JMP, Python), HTML, CSS
Project Management	Advisory and Decision Making, Policy Analysis and Strategy Formulation, Stakeholder Management, Knowledge Transfer
Technical Expertise	Land Use Change, Climate Change, Vulnerability Assessments, Policy Analysis, Mitigation and Adaptation, Urban and Regional Planning, Governance, GHG emissions quantification, Deprivation and Poverty, Trade-off Analysis, Socio-ecological System, Scenario Analysis, Spatial Statistics, Application of GIS/RS, and Dynamic Spatial Modelling