



Project Proposal for Ph.D.

Project Details (The research problem must clearly indicate the need for an interdisciplinary approach)

Project Title	Disaster Management as National Security: A Techno-Legal Framework for India
Project Summary (Minimum 500 and maximum 2000 characters)	India's disaster landscape presents a formidable governance challenge. The country faces an extraordinary spectrum of hazards - floods, cyclones, earthquakes, landslides, droughts, and increasingly, compound and cascading events amplified by climate change. Despite significant institutional progress since the Disaster Management Act of 2005 and the establishment of NDMA, a fundamental gap persists: India continues to treat disaster management primarily as a humanitarian response problem rather than as a core national security concern. This PhD research proposes to bridge that gap by developing an integrated techno-legal framework that reconceptualizes disaster management within India's national security architecture. The central argument is that the scale of disaster-induced mortality, economic loss, infrastructure disruption, and social displacement in India has long crossed the threshold at which these events constitute threats to national security - comparable in impact to conventional security challenges. Yet the legal, institutional, and technological apparatus for disaster management remains structurally disconnected from India's security establishment. Early warning systems, geospatial intelligence pipelines, critical infrastructure protection protocols, and civil-military coordination mechanisms operate in silos, governed by fragmented legislation and institutional mandates that were not designed for the speed, scale, or complexity of contemporary disaster risk. This research will pursue three objectives. First, it will undertake a comprehensive legal and policy analysis of India's existing disaster management framework - including the DM Act 2005, NDRF/SDRF guidelines, and relevant provisions - to identify structural gaps, jurisdictional ambiguities, and missed linkages between disaster governance and national security doctrine. Second, the research will examine how emerging technologies can be systematically embedded within a reformed legal architecture. The focus will be on how technology deployment intersects with questions of data sovereignty, inter-agency interoperability, last-mile delivery of warnings, and accountability in automated decision-making. The objective is not merely to catalogue technologies but to understand what legal and institutional conditions are necessary for their effective, equitable, and sovereign deployment at national scale. Third, the research will propose a unified techno-legal framework - a model architecture that integrates legislative reform, institutional restructuring, technology standards, and operational protocols into a coherent national strategy. This framework will address critical questions: How should disaster intelligence be classified and shared across civil and defense agencies? What legal provisions are needed for pre-emptive evacuation authorities informed by AI-generated forecasts? How can India ensure sovereign control over critical disaster data infrastructure? The methodology will combine doctrinal legal analysis, semi-structured interviews with policymakers and technologists, case studies of major Indian disasters, and technology architecture evaluation. The expected contribution is both scholarly - advancing the theorization of disaster-security nexus in the Indian context - and practical - offering a policy-ready framework for legislative and institutional reform.

Ph.D. Supervisors⁺
(Supervisor 1 and Supervisor 2 cannot be from the same department of IITD)

Role	Name of Faculty	Academic Unit in IITD/Institute/University	Email ID (Official)
Supervisor 1	Manabendra Saharia	Civil Engineering, IIT Delhi	msaharia@iitd.ac.in
Supervisor 2	Sandeep Kumar	Electrical Engineering and School of Artificial Intelligence, IIT Delhi	ksandeep@ee.iitd.ac.in

*Supervisor 1 must be from IIT, Delhi.
+All cells in this table are mandatory fields that need to be filled by faculty for consideration of proposal.
§The date of superannuation of supervisors should be at least three years from the date of registration of selected candidates.

Project requirements (Student qualifications, experience required, etc) *The candidate will be shortlisted based on common shortlisting criteria decided by ScRC (SIRe)
• Work experience or Degree in Disaster Management or National Security • Any legal degree (LLB/LLM)

Source of fellowship/funding and project number (CSIR/UGC/DBT/ICMR/ICAR/NEET-PG/DST-INSPIRE/IRD/FITT Project details, if any)
Candidate with his/her own fellowship /institute assistantship

Role of Faculty Members involved:	
Supervisor-1	Manabendra Saharia (Disaster Management, Geospatial Technology, Sustainable Development)
Supervisor-2	Sandeep Kumar (AI, Technological applications)

- Note :-**
- 1. Approval from the respective DRC/CRC/ScRC of your Department/Centre/School will be required for using the "Full-time Institute Assistantship (Category-wise) (FIA)" for selecting the students in SIRe.
 - 2. Declaration:- Faculty members, please ensure that you have at least 3 years of service left before superannuation along with adequate sitting space & lab facilities for the SIRe student.
 - 3. PI/s are also encouraged to submit joint proposals with AIIMS, NII, JNU and institutes with which IITD has an existing MoU. If the Co-PI (Supervisor 2) is from outside IITD, kindly share his/her detailed CV.
 - 4. If a research scholar is to be considered for selection under the project fellowship, then the project should have a minimum of two-year duration remaining.
 - 5. A candidate applying with a valid JRF/INSPIRE/any national level fellowship should have at least two-year validity from the date of joining the Ph.D. program.
 - 6. The third supervisor’s name (if required) can be added only after the formation of Student Research Committee (SRC) subject to a strong recommendation of SRC and subsequent approval from the competent authority.
 - 7. If Institute fellowship is being sought, then DRC approval of the parent department of Supervisor 1 is required at the time of selection.