New Planned Hydrological Structures (dams) in the Upper Himalayas Region and Their Consequences on the River Sediment Delivery.

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Submission Date : 10-Aug-2023

PROPOSAL DETAILS

(PDF/2023/003596)

Principal Investigator	Mentor & Host Institution
Dr. Shobhit Pipil shobitpipil@gmail.com Project Scientist(Department of Earth Science, IIT Kanpur) **Contact No** : +917007222393 **Date of Birth** : 25-Nov-1983 **Name of Father/Spouse :** Late Prahlad Kumar	**Rajiv Sinha** rsinha@iitk.ac.in Professor(Earth Sciences) **Indian Institute of Technology Kanpur** Kanpur iit, po kanpur, Kanpur nagar, Uttar pradesh-208016 **Contact No.** : +919935558218 **Registrar Email** : registrar@iitk.ac.in **No. of PHD Scholars** : 9 **No. Post-Doctoral Fellow** : 0

Details of Post Doctorate

Ph.D. (Physical Geography and Biogeography)[Degree Awarded on : 29-Jun-2022]

Network Scale Sediment Transport Modelling with the Perspective of Improved Sediment Connectivity and Delivery: A case of small dam removal.

Research Supervisor/Guide & Institution :

Dr Patrice Carbonneau, Associate Professor, Department of Geography, Durham University, United Kingdom,
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Brief details of Thesis work :

Sediment movement from the headwater region (source) to the catchment outlet (sink) constantly transforms the river geomorphology and produces various geomorphic features. The geomorphic diversity in the river supports hydro-morphic sediment conditions that formulate suitable physical habitats for the riverine ecosystem. Water, sediment, and organic matter must flow uninterrupted for a healthy ecosystem. However, humans have raised civil engineering structures on many rivers. River fragmentation (dam/weirs) in the European river has crossed the 630,000 mark, and the projected number is 1 million. Fragmentation restricts the free movement of discharge, sediment, organic matter, and riverine species. The impacts of dams on river geomorphology, discharge, and sediments are well documented. At the same time, the declining riverine species trend is a significant cause of concern.
Recent studies revealed a 95% decline since 1970 (in the living planet index). Dam removal is gaining momentum to reverse the negative impacts on the riverine ecosystem. Dam removal studies have shown positive outcomes on river geomorphology and ecology. However, it would only be admissible to remove some of the obstacles present on the river course; for example, a considerable cost is involved and the economic benefits offered during the lifespan of a dam. Political will is another obstacle in river restoration projects beyond the cost and benefits analysis of the dams and weirs.
The previous dam removal studies addressed site-specific geomorphological and ecological recovery, though case studies often lack long term monitoring. Thus, a few cases reported no significant differences in the river. Still, the presence of a dam or weirs footprint impacts the upstream and downstream river course, which turns a river's lotic environment into a lentic. In addition, the existence of multiple dams or weirs further deteriorates the river's condition by restricting water and matter movement. Thus, dam or weir removal impact assessment must be studied for the catchment and river network scale.
The current study is applied to the Eamont river catchment (396.2 km2), located in the lake district region, which receives maximum rainfall in the U.K. region. Hard rocks dictate the regional geology, and rivers are confined. Thus, no significant changes in river form have occurred in the Eamont catchment rivers. However, rivers of the Eamont catchment have high stream power and sediment continuity. 2 major and 20 small weirs interrupt the natural sediment transport. Additionally, enormous Ullswater and other lakes provide local sinks in the catchment. The catchment area and the number of obstacles present in the Eamont River catchment offer a suitable catchment setting to address the European river fragmentation case.
Two models and other tools are employed to quantify the impacts of multiple obstacles (dam and wires) on a river network. The tools can be briefly summarised in hierarchical processes and quantification bases. First, a semi-distributed hydrological model SWAT has quantified the distributed discharge for 166 reaches, at daily frequency, over 55 years (1960 – 2015). Second, SWAT model calibration and validation in SWAT-CUP, using the SUFI algorithm. Third, the DJI-4 drone's images were captured for gravel bars at low altitudes for higher ground resolution. Forth, the Metashape application processed orthophotos of gravel bars, which are further processed in BASEGRAIN to perform optical-granulometry and develop grain size distribution at the river network scale. Fifth, integration of hydrologic and grain size distribution information in the CASCADE framework for sediment connectivity, dam and weir removal impact analysis on sediment flux, at the network scale.
The CASCADE framework provided sediment entrainment, transport, and deposition pattern on the Eamont network. The study's key findings have highlighted that the Lowther River contributes more sediment than the Eamont River, despite the high entrainment in the headwater regions. The entrained sediment gets deposited in the Brothers water and Ullswater Lake on the Eamont River course. Whilst the Lowther River's significant deposition takes place in the Haweswater reservoir. The main reason why Lowther River provide high sediment flux is that it has a high gradient and transport power than Eamont.
Moreover, based on the geomorphological difference between the Eamont River and its tributary Lowther, the presence of multiple weirs with approximately similar sediment trap efficiency, the CASCADE simulation showed higher sediment flux would be released when weir removal activity was performed on the Lowther River.
The current study had presented an opportunity to analyse the multiple river obstacle (dam/ weirs) impacts on sediment flux and sediment connectivity at a network scale. Such an experiment can be applied to formulate the dam removal planning for a complex river catchment. However, future integration of the CASCADE framework with ecological modelling would improve the analysis of riverine ecosystem benefits.

Technical Details :

Research Area : Earth & Atmospheric Sciences (Earth & Atmospheric Sciences)

Project Summary :

Numerous dams are proposed in the Indian (Grumbine and Pandit, 2013; Baruah, 2023) region. The Himalayan region is sensitive to biodiversity threats or anthropogenic activity (Kotru et al., 2020). The environmental change in the pristine glacier can cause severe disasters (Shugar et al., 2021) and threaten the region's population (Grainger et al., 2021). However, the river fragmentation by the dam structures restricts the sediment entrainment and transport deposition pattern. In addition, the Dam also acts as a barrier to migratory species of the lotic system, which can be the biggest reason for the decline in fluvial biodiversity. The planned dams have a higher density in the upper Himalayan region, mainly in Uttarkashi, Chamoli, and Rudra Prayag. Moreover, these districts are more vulnerable to natural calamities such as landslides, cloudbursts, flash floods, avalanches, droughts, lightning, cold waves, and hailstorms. It is reported in the literature that there is a lack of geological, geomorphological, and ecological investigation for the planning of dams (Sati et al., 2019, 2020). Additionally, climate change impacts destabilise landscapes, and consequently, large amounts of sediments are being mobilised, causing filling up the reservoir, dam failure and degraded turbines (Li et al., 2022; Valdiya, 2014; Wamane, 2022). Method: The selection of SWAT model setup, parametrisation, and calibration within the SWAT-CUP model would provide the hydrological response and distributed hydrograph assessment—moreover, a focused effort for improving the SWAT model setup. Data collection to perform a Drone survey and BASEGRAIN analysis will establish catchment-wide sediment size distribution. GSD data acts as an essential input for the CASCADE model parametrisation. Finally, CASCADE based assessment will be performed with SWAT, BASEGRAIN and filed data on the Dam's sediment trap efficiency. The execution of the CASCADE model will provide grain-specific sediment flux information and reveal the network scale entrainment, transport, and sediment deposition pattern. Significance: In the age of climate change uncertainty and vulnerable parts of the Himalayan region, topography offers many challenges related to cloudbursts, landslides, and high discharge. The cumulative impact on river fragmentation structure and ecology must be considered for future assessment. The previous disaster event, such as Tapovan hydropower (Meena et al., 2021), is eye-opening and compels us to review the planned hydropower projects' vulnerability and ecological impact assessment, which would serve as a means to prevent cost and living in such disaster event. The proposed model integration novelty will assess river connectivity disruption caused by multiple dams, along with managing different hydropower schemes to preserve the near pristine conditions of sediment movement at the river network scale (Schmitt et al., 2016; Bizzi et al., 2021).

Objectives :

1) To quantify the hydrological fluctuation or hydrological response of the river catchments by employing hydrological assessment tools (SWAT or HEC-RAS), 2) To establish grain size distribution in a river catchment under consideration by deploying a drone and its processed orthoimages, 3). Finally, assessing and establishing longitudinal sediment connectivity in the river network and finding dis-connectivity caused by the Dam over the river network.

Keywords :

HYDROLOGY, SEDIMENT FLUX, OPTICAL GRANULOMETRY, SEDIMENT TRAP EFFICIENCY, DAM, RIVER

Expected Output and Outcome of the proposal :

The previous disaster event, such as Tapovan hydropower (Meena et al., 2021), is eye-opening and compels us to review the planned hydropower projects' vulnerability and ecological impact assessment. The proposed model integration (SWAT, Drone Image, and CASCADE Model) will assess river connectivity disruption caused by multiple dams and manage different hydropower schemes to preserve the near pristine conditions of sediment movement at the river network scale (Tangi et al., 2019). The primary purpose of executing the proposed modelling work is to assess the impacts of Dams in the Uttarakhand state's river catchment. However, the modelling framework will also assess climate change scenarios. Thus, the integrated modelling approach will deliver river fragmentation under baseline and future climate scenarios (Schmitt et al., 2018). The product of the research work will provide spatial-temporal hydrological conditions and grain-specific flux information that will highlight the zone of excessing sediment entrainment and sediment deposition. The key highlight of the study is to establish the sediment flux information that may indicate important information for the feasibility of the proposed hydrological structure. Himalayan states face flooding and high sediment flux in the river; hence, an integrated modelling approach to estimate high entrainment and transportation rate for the sediment would guide the policymaker.

Reference Details :

S.No	Reference Details
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New Planned Hydrological Structures (dams) in the Upper Himalayas Region and Their Consequences on the River Sediment Delivery.

Methodology:

Any pristine river system subject to hydrological structure construction loses its natural hydrological response (Chow et al., 1988). The hydrological structures (dam/weir/barrage) release-controlled discharge in the downstream river, and thus river hydrology becomes secondary. The controlled discharge can be quantified in hydrological simulation software based on thematic / weather-related information and catchment data for the model parametrisation. The model uncertainty of a hydrological model must be improved and quantified through a model calibration process (SWAT-CUP).

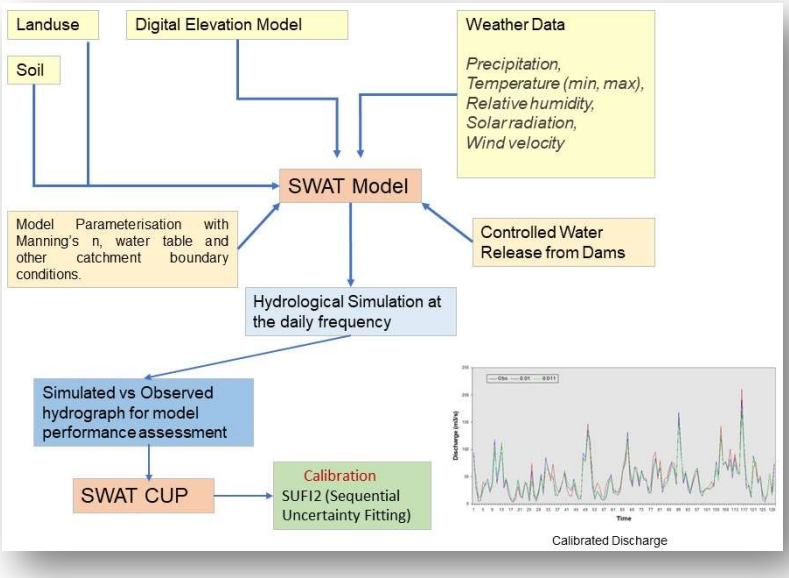

Figure 1 SWAT model calibration in the SWAT CUP model using the SUFI2 algorithm (Abbaspour, 2013, p. 2012).

In the current methodology, SWAT (Soil & Water Assessment Tool) can be the preferred tool (Abbaspour et al., 2019), and Indian region data is in the open domain (SWAT data for India: https://swat.tamu.edu/data/india-dataset/). The data available in the public domain serves as an essential input for a hydrological model such as Digital Elevation Model (SRTM 30m), Land use and Soil thematic, and soil physical property dataset (Fischer et al., 2008; Fao/liasa/Isric/Isscas/Jrc, 2012). Though, modeling environment would require parametrization with the known boundary conditions.

The controlled hydrology of the river system adversely impacts the geomorphology of the river system by obstructing sediment movement in the downstream river reaches. In such scenarios, sediment entrainment process requires grain size distribution (GSD) in the river reaches because sediment transport process requires transport capacity available in the river reach along with its geomorphological parameters. The Grain size (D_{50}) information is conventionally collected in the field and processed at the lab by granulometric analysis (sieve test). However, applying the quadcopter drone can speed up the river sampling data collection and processing time (Carbonneau et al., 2005; Detert and Weitbrecht, 2013). The GSD data is crucial because any misleading information at the network scale can overestimate the sediment flux leaving the river

catchment. It can explain better in a scenario where a river reach is initialized with fine grain size and high transport capacity, resulting in the high sediment flux estimation if river reach is not sediment limited.

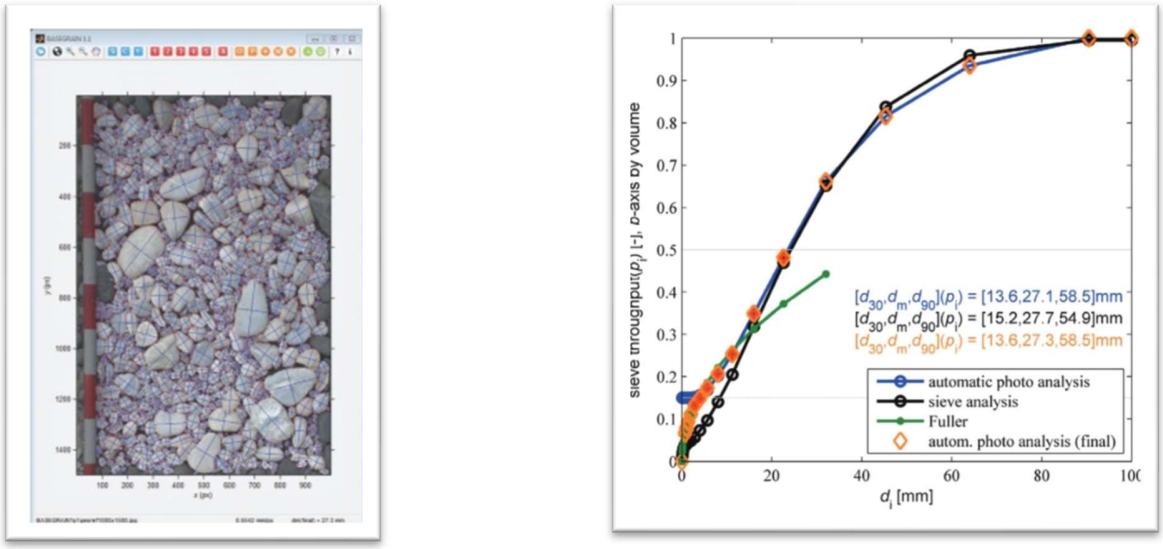

Figure 2. shows the automatic object detection of grain size on vertical images and grading curve for sub-surface results estimation in BASEGRAIN.

River connectivity is crucial in maintaining the continued water supply, sediment and nutrients; therefore, it provides aquatic biodiversity and ecological services (Seliger and Zeiringer, 2018). Assessment of river connectivity and dis-connectivity through tools would deliver information regarding river restoration policy and planning. However, the catchment-wide river diversity information is often limited or not in the public domain, which restricts the application of a highly parameterized model. When river catchment information is limited, a parsimonious sediment connectivity tool such as CASCADE (CAtchment Sediment Connectivity And DElivery) can provide connectivity information for planners and policymakers (Tangi et al., 2019a, 2022). The river channel pattern and geomorphology are determined by sediment size, sediment supply, and river geomorphological factors such as gradient, confinement and hydrological drag (Bizzi et al., 2022). The CASCADE model employs the graph theory to provide information on sediment connectivity between river sources, which sinks into the river system (Schmitt et al., 2016). The sediment connectivity and dis-connectivity assessment at the river network scale affected by the dam structure was assessed through its sediment trap efficiency measurement calculated by the empirical model of Brune and Brown (Brown, 1943; Brune, 1953; Verstraeten and Poesen, 2000). The disruption in the sediment movement and other anthropogenic factors influence on sediment connectivity and delivery can be analyzed and interpreted for the dam site feasibility assessment for baseline and future climate scenarios could be possible; therefore, river management and planner would be able to prevent or cure the incidents like Tapovan disaster.

The hydrological assessment of the river in the SWAT model and GSD data collection/processing serves as a crucial input for the CASCADE model. The CASCADE model relies on external observed or simulated discharge (Q) data at the river network scale. In addition, GSD data provides D_{16}, D_{50} and D_{84} grain fractions for the CASCADE model input, Figure 2. The grain fraction information helps to drive the grain size deposition and transportation for Clay/Sand/Cobbles/Boulder fractions.

In addition to the CASCADE implementation within the data-poor region, it also performs virtual removal of Dams, resulting in consequences on sediment delivery and connectivity, Figure 3. The outcome of the CASCADE model becomes advantageous in the presence of multiple dam structures on the river network and provides optimal solutions to increase sediment delivery at the river system (Schmitt et al., 2016).

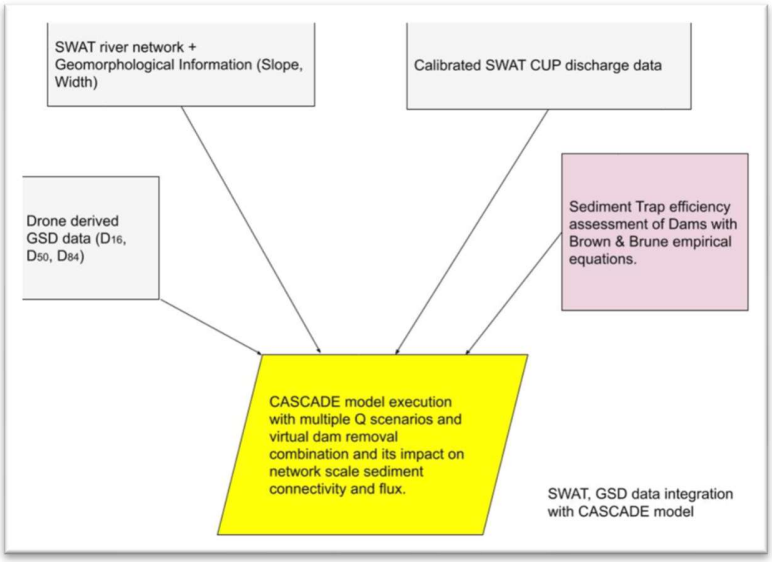

Figure 3 SWAT, drone derived GSD data integration with CASCADE model for assessing sediment connectivity and dis-connectivity imposed by dam structure on the river network scale.

Plan:

The proposed research will be carried out in the timeline in Table 1 First-year activity will include the SWAT model setup, parametrisation, and calibration within the SWAT-CUP model. Moreover, the second part of the first-year work will focus on improving the SWAT model setup and field data collection. The third major work that would fall under field data collection is to perform a Drone survey and BASEGRAIN analysis. This activity will provide insight into catchment-wide sediment size distribution. Thus, first- and second-year data collection and processing will serve as the essential input for the CASCADE model parametrisation. Finally, CASCADE model assessment will be performed with SWAT, BASEGRAIN and filed data of the Dam's sediment trap efficiency. The research outcome will be documented and published in a scientific journal.

Project activities	**1 - 6**	**6 - 12**	**13 -18**	**19 - 24**
SWAT model setup and parametrisation				
SWAT model calibration with SWAT CUP				
Field Data Collection (Drone Survey)/ sediment trap efficiency assessment				
CASCADE model implementation for Network scale sediment connectivity assessment & Analysis				
Final Report & Publication				

Table 1 Research activities will be performed in the allocated period.

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PROFORMA FOR BIO-DATA (to be uploaded)

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3. Institution: Indian Institute of Technology Kanpur

4. Date of Birth: 25/11/1983

5. Gender (M/F/T): Male

6. Category Gen/SC/ST/OBC: SC

7. Whether differently abled (Yes/No): No

8. Academic Qualification (Undergraduate Onwards)

	Degree	Year	Subject	University/Institution	% of marks
1.	PhD	2022	Geography	Durham University, U.K.	
2.	P.G. Diploma	2007	Water Resources	IIRS, Dehradun, India	A grade
3.	M.Sc	2006	Earth Science	Jiwaji University, India	69.26
4.	B.Sc	2004	Biology	Bundelkhand University, India	65.15

9. Ph.D thesis title, Guide's Name, Institute/Organization/University, Year of Award.

Network Scale Sediment Transport Modelling with the Perspective of Improved Sediment Connectivity and Delivery: A case of small dam removal., Dr Patrice Carbonneau, Durham University, United Kingdom, June 2022.

10. Work experience (in chronological order).

S.No.	Positions held	Name of the Institute	From	To	Pay Scale
1	Project Scientist	IIT Kanpur	Nov 2014	Sept 2016	28000/-
2	GIS Expert	AMS, Jaipur	Dec 2013	Oct 2014	38000/-

11. Professional Recognition/ Award/ Prize/ Certificate, Fellowship received by the applicant.

S.No	Name of Award	Awarding Agency	Year
1	Research Doctoral Studentship	European Commision	2017 - 2020

12. Publications *(List of papers published in SCI Journals, in year wise descending order).*

S.No.	Author(s)	Title	Name of Journal	Volume	Page	Year

13. Detail of patents.

S.No	Patent Title	Name of Applicant(s)	Patent No.	Award Date	Agency/Country	Status

14. Books/Reports/Chapters/General articles etc.

S.No	Title	Author's Name	Publisher	Year of Publication

15. Any other Information (maximum 500 words)

Undertaking by the Principal Investigator

To

The Secretary
SERB, New Delhi

Sir

I SHOBHIT PIPIL

herby certify that the research proposal titled New Planned Hydrological Structures (dams) - in the Upper Himalayas Region and Their Consequences on the River Sediment Delivery.

submitted for possible funding by SERB, New Delhi is my original idea and has not been copied/taken verbatim from anyone or from any other sources. I further certify that this proposal has been checked for plagiarism through a plagiarism detection tool i.e. _____ approved by the Institute and the contents are original and not copied/taken from any one or many other sources. I am aware of the UGCs Regulations on prevention of Plagiarism i.e. University Grant Commission (Promotion of Academic Integrity and Prevention of Plagiarism in Higher Educational Institutions) Regulation, 2018. I also declare that there are no plagiarism charges established or pending against me in the last five years. If the funding agency notices any plagiarism or any other discrepancies in the above proposal of mine, I would abide by whatsoever action taken against me by SERB, as deemed necessary.

Signature of PI with date

Name / designation

Shobhit Pipil
Project Scientist
Earth Science Department
IIT Kanpur 208016

10/08/2023 11:35

Undertaking by the Fellow

I, SHOBHIT PIPIL, Son/Daughter/Wife of Shri. LATE PRAHLAD kUMAR, resident of -- 570 JAWALA COMPOUND JHANSI agree to undertake the following, If I am offered the SERB N-PDF

1. I shall abide by the rules and regulations of SERB during the entire tenure of the fellowship.
2. I shall also abide by the rules, discipline of the institution where I will be implementing my fellowship
3. I shall devote full time to research work during the tenure of the fellowship
4. I shall prepare the progress report at the end of each year and communicate the same to SERB through the mentor
5. I shall send two copies of the consolidated progress report at the end of the fellowship period.
6. I further state that I shall have no claim whatsoever for regular/permanent absorption on expiry of the fellowship.

Date: 09/08/2023 **Signature**

10/08/2023 11:35

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Email : rsinha@iitk.ac.in, rsinha1965@gmail.com

My Research interests

- Earth Surface dynamics: Terrain characterisation and landscape analysis using Earth Observation data,Soil moisture and crop water stress estimation using drone-based thermal imaging, wetland hydrology, connectivity and dynamics
- River science: River dynamics, flood risk assessment, sediment dynamics, river response to climate change, rivers and ancient civilization
- Groundwater structure and dynamics: Historical time series analysis, Aquifer stratigraphy
- Fluvial sedimentology and stratigraphy: Late Quaternary stratigraphic development in Himalayan basins
- Palaeoclimatic reconstructions: High resolution Holocene paleoclimatic reconstruction using a multi-proxy approach

My skills and expertise

- Remote sensing and GIS analysis
- Drone-based imaging and data analysis: optical, thermal and hyperspectral
- Hydrological modeling
- Stratigraphic analysis of drill cores
- Geoelectrical surveys

Professional Experience

- Apr’14- present: Professor, Department of Earth Sciences, IIT Kanpur
- June'94- Apr 2014: Department of Civil Engineering, IIT Kanpur
- Apr.'93-June'94: Scientist, National Institute of Hydrology, Roorkee

Education

- Doctor of Philosophy (Fluvial geomorphology and Sedimentology), University of Cambridge, UK
- 1992 Master of Technology (Applied Geology) University of Roorkee, India,1987
- Bachelor's in Science, (Geology) Patna University,

India, 1983

Professional Affiliations

Member, Editorial Board:

- Journal of Sedimentary Research (SEPM) (2012-15)
- Quaternary International (Elsevier) (2010-2015)
- Earth Surface Processes & Landforms (Wiley Interscience) (2010-present)
- Current Science, Indian Academy of Sciences, Bangalore (2015-present)
- The Open Geology Journal (Bentham)
- Indian Journal of Polar Research (NESA)
- Journal of Indian Association of Sedimentologists

Memberships of professional societies

- International Association of Sedimentologists (IAS) (National Correspondent)
- Society for Sedimentary Geology (SEPM)
- Quaternary Research Association, UK
- Geological Society of India
- India Society for Prehistoric and Quaternary Studies
- Indian Society of Hydraulics
- Indian Society of Remote Sensing

Awards and Honours

- Fellow, Indian Academy of Sciences, Bangalore (2021)
- Fellow, National Academy of Sciences, Allahabad (2016)
- Lalit Mohan Kapoor Chair, IIT Kanpur (2018-present)
- Pandit Girish Ranjan and Sushma Rani Pathak Chair, IIT Kanpur (2014-16)
- COFUND Senior Research Fellowship at Durham University (2014)
- S.S. Merh Award for contributions in Quaternary Geology, Geological Society of India (2006)
- National Mineral Award, Ministry of Mines, Govt. of India (2002)
- Alexander von Humboldt Fellowship for post-doctoral research in Germany (2000)

Special Achievements

- Selected for the XVI Indian Scientific Expedition to Antarctica (Dec.'96-Mar'97) (1998)
- Anchored and directed a film on SAVE SOIL, USE FLYASH (2000, 17.20 minutes), produced by TV Centre, IIT Kanpur, sponsored by Flyash Mission, DST, New Delhi.

- Career Award for Young Teachers, All India Council for Technical Education (1998)
- Lundgren Research Award & Cambridge Philosophical Society Research Award, Cambridge University, UK (1992)
- Nehru Scholarship for doctoral research at Cambridge University, UK (1989)
- University Gold Medal, M.Tech(1987)

Contact:

303B Western Laboratory Extension, Department of Earth Sciences, IIT Kanpur, Kanpur-208016,INDIA;
Phone : +91-512-679-7317;**Email** : rsinha@iitk.ac.in, rsinha1965@gmail.com

010/ 3720972 **हाई स्कूल परीक्षा–अंक पत्र** 1235136

माध्यमिक शिक्षा परिषद् उत्तर प्रदेश, द्वारा संचालित वर्ष १९९८ की हाई स्कूल परीक्षा में निम्नलिखित परीक्षार्थी द्वारा प्राप्त अंकों का विवरण :

अनुक्रमांक	परीक्षार्थी का नाम	जन्मतिथि	क्रमांक
0864486	SHOBHIT PIPIL	25/11/83	3713983

विद्यालय/केन्द का नाम	परीक्षा प्रवर्ग,	संस्था/व्यक्ति
VARNI JAIN INTER COLL LALITPUR	FULL EXAM	REGULAR

विषय	अधिकतम अंक	प्रश्न-पत्रवार प्राप्तांक			योग	सम्पूर्ण योग एवं परीक्षा फल
HINDI	100	1/17 2/08 3/16			041	277
ENGLISH	100	1/28 2/12			040	PASSED
MATHEMATICS TWO	100	1/15 2/18			033	SECOND DV
SCIENCE TWO	100	1/27 2/17	44	P/10	054	
SOCIAL SCIENCE	100	1/21 2/30			051	CAT ME-B
BIOLOGY	100	1/20 2/27	47	P/11	058	

जांचकर्त्ता के हस्ताक्षर

दिनांक 19/7/98

नोट–आवश्यक सूचना पीछे मुद्रित है।

प्रधानाचार्य के हस्ताक्षर

मुहर

प्रधानाचार्य
श्री वर्णी जैन इण्टर कालेज
ललितपुर.

Durham University
Student Registry

Inspiring the extraordinary

28 June 2022

To Whom It May Concern

Name:	Shobhit Pipil
University ID Number:	000682868
Date of Birth:	25th November 1983

This is to certify that the above named person has successfully completed the following programme of study detailed below:-

Award:	Doctor of Philosophy
Programme Title:	Geography and Biological Sciences
Programme Outcome:	Higher Degree
Date of Award:	29th June 2022
College:	Ustinov College
Date of Admission:	1st May 2017
Date of Leaving:	10th April 2022
Mode of Study:	Full-Time

Signature:

Student Services Team

University Stamp:

Durham University Student Registry The Palatine Centre Stockton Road Durham DH1 3LE
Telephone +440191 334 6435 www.durham.ac.uk/student.registry
Durham University is the trading name of the University of Durham

भारत सरकार के अधीन पदों पर नियुक्ति के लिये आवेदन करने वाले अनुसूचित जाति/अनुसूचित जनजाति के अभ्यर्थियों द्वारा दिए जाने वाले

प्रमाण-पत्र का प्रारूप

प्रमाणित किया जाता है कि श्री/श्रीमति/कु. शोभित पिपिल

पुत्र/पुत्री/श्री/श्रीमती प्रहलाद कुमार निवासी ग्राम/कस्बा ग्रा० तालपुरा जिला/संभाग

U.P. राज्य/संघ क्षेत्र चमार अनुसूचित जाति/जनजाति

से सम्बन्धित हैं जो निम्नलिखित आदेश के अंतर्गत अनुसूचित जाति/अनुसूचित जनजाति के रूप में मान्यता प्राप्त हैं :

- संविधान (अनुसूचित जाति) आदेश, 1950
- संविधान (अनुसूचित जनजाति) आदेश, 1950
- संविधान (अनुसूचित जाति) (संघ क्षेत्र) आदेश, 1951
- संविधान (अनुसूचित जनजाति), संघ क्षेत्र आदेश, 1951

अनुसूचित जाति एवं अनुसूचित जनजाति सूची (परिशोधन) आदेश, 1956, मुंबई रिआर्गनाइजेशन एक्ट 1968, पंजाब रिआनाईजेशन एक्ट 1966, हिमाचल प्रदेश राज्य अधिनियम 1970 पूर्वोत्तर क्षेत्र (रिआर्गनाइजेशन) एक्ट, 1971 एवं अनुसूचित जाति एवं अनुसूचित जनजाति आदेश (संशोधन) अधिनियम, 1976 द्वारा यथा संशोधित

- संविधान (जम्मू एवं कश्मीर) अनुसूचित जाति आदेश, 1956, संविधान (अंडमान एवं निकोबार द्वीप समूह)
- संविधान जनजाति आदेश 1956 अनुसूचित जाति एवं अनुसूचित जनजाति

आदेश (संशोधन) अधिनियम, 1976 द्वारा यथा संशोधित

- संविधान (दादरा एवं नागर हवेली) अनुसूचित जाति आदेश, 1962
- संविधान (दादरा एवं नागर हवेली) अनुसूचित जनजाति आदेश, 1962
- संविधान (पांडिचेरी) अनुसूचित जाति आदेश, 1964
- संविधान (उत्तर प्रदेश) अनुसूचित जनजाति आदेश, 1968
- संविधान (गोवा दमन एवं द्वीप) अनुसूचित जाति आदेश, 1868
- संविधान (गोवा दमन एवं द्वीप) अनुसूचित जनजाति आदेश, 1868
- संविधान (नागालैण्ड) अनुसूचित जनजाति आदेश, 1970
- संविधान (सिक्किम) अनुसूचित जाति आदेश, 1978
- संविधान (सिक्किम) अनुसूचित जनजाति आदेश, 1978
- संविधान (जम्मू एवं कश्मीर) अनुसूचित जनजाति आदेश, 1989
- संविधान (अनुसूचित जाति) आदेश (संशोधन) अधिनियम, 1990
- संविधान (अनुसूचित जनजाति) आदेश (संशोधन) अध्यादेश, 1991
- संविधान (अनुसूचित जनजाति) आदेश (द्वितीय संशोधन) अधिनियम, 1991
- संविधान (अनुसूचित जनजाति) आदेश (संशोधन) अध्यादेश, 1996

यह उन अनुसूचित जाति, अनुसूचित जनजाति के मामले में लागू है जो एक राज्य/संघ क्षेत्र प्रशासन में प्रत्यावर्तित हुए हैं।

यह प्रमाण पत्र श्री/श्रीमती/कुमारी..... के पिता/माता

श्री/श्रीमती.....निवासी ग्राम/कस्बा.....

जिला संभाग.....प्रदेश/संघ क्षेत्र.....

को जारी अनुसूचित जाति/अनुसूचित जनजाति प्रमाण पत्र के आधार पर जारी किया गया जो..... जाति/जनजाति

से सम्बन्धित हैं जो.....राज्य/संघ क्षेत्र में.....

द्वारा जारी.....दिनांक.....द्वारा मान्यता अनुसूचित जाति/जनजाति के हैं।

श्री / श्रीमती / कुमारी और / या उनका परिवार सामान्यत: ग्राम / कस्बा ग्रा० तालपुरा जिला/संभाग झांसी

U.P. राज्य / संघ U.P. क्षेत्र U.P में रहता है।

राज्य/संघ क्षेत्र

स्थान : झांसी

दिनांक : 13-08-12

सं० 365114024462/11

29-03-11 की जाति चमार है

हस्ताक्षर

पदनाम

13-08-12

(कार्यालय की मोहर)

जो शब्द लागू न हों उन्हें काट दें कृप्या राष्ट्रपति को विहिर्दिष्ट आदेश उद्हधृत करें। जो अनुच्छेद लागू न हों उसे काट दें।)

टिप्पणी : यहां प्रायुक्त "सामान्यत:" रहते हैं का वही आशय है जो लोक अभ्यावेदन अधिनियम 1950 के खंड-20 का है।

अनुसूचित जाति/जनजाति प्रमाण पत्र जारी करने वाले अधिकृत प्राधिकारियों की सूची :-

डिस्ट्रिक्ट मजिस्ट्रेट/अतिरिक्त जिला मजिस्ट्रेट/अपर मजिस्ट्रेट/जिलाधीश/उपायुक्त/एडिशनल डिप्टी कलेक्टर/प्रथम श्रेणी के स्टाइपेंडरी मजिस्ट्रेट सब डिवीजनल मजिस्ट्रेट/तालुक मजिस्ट्रेट/एक्जीक्यूटिव मजिस्ट्रेट

चीफ प्रेसीडेंसी मजिस्ट्रेट/एडिशनल चीफ प्रेसीडेंसी मजिस्ट्रेट/प्रेसीडेंसी मजिस्ट्रेट।

राजस्व अधिकारी जो तहसीलदार रैंक के नीचे का न हो।

उस क्षेत्र का सब डिवीजनल ऑफीसर जहां अभ्यर्थी और/या उसका परिवार साधारणतया रहता है।

5. प्रशासक/प्रशासक का सचिव/विकास अधिकारी (लक्षद्वीप समूह)

अपर नगर मजिस्ट्रेट, झांसी / जिलाधिकारी, झांसी

टिप्पणी:तमिलनाडू राज्य के अनुसूचित जनजाति के अभ्यर्थियों को केवल राजस्व मंडलीय अधिकारी द्वारा जारी किया गया प्रमाण पत्र प्रस्तुत करें।

14-8-12

Department of Earth Sciences IIT Kanpur
Sl. No.: 7206
Date: 10/8/23

Endorsement Certificate from the Mentor & Host Institute

This is to certify that:

I. The applicant, Dr. SHOBHIT PIPIL, will assume full responsibility for implementing the project.
II. The fellowship will start from the date on which the fellow joins University/Institute where he/she implements the fellowship. The mentor will send the joining report to the SERB. SERB will release the funds on receipt of the joining report.
III. The applicant, if selected as SERB-N PDF, will be governed by the rules and regulations of the University/ Institute and will be under administrative control of the University/ Institute for the duration of the Fellowship.
IV. The grant-in-aid by the Science & Engineering Research Board (SERB) will be used to meet the expenditure on the project and for the period for which the project has been sanctioned as indicated in the sanction letter/ order.
V. No administrative or other liability will be attached to the Science & Engineering Research Board (SERB) at the end of the Fellowship.
VI. The University/ Institute will provide basic infrastructure and other required facilities to the fellow for undertaking the research objectives.
VII. The University/ Institute will take into its books all assets received under this sanction and its disposal would be at the discretion of Science & Engineering Research Board (SERB).
VIII. University/ Institute assume to undertake the financial and other management responsibilities of the project.
IX. The University/ Institute shall settle the financial accounts to the SERB as per the prescribed guidelines within three months from the date of termination of the Fellowship.

Dated:

Signature of the Mentor: Rajiv Sinha

Name & Designation: RAJIV SINHA, Professor

forwarded.

10/8/23
Head, ES Department.

Dated: 10/08/2023

Signature of the Registrar of University/Head of Institute

Seal of the Institution

स्थानापन्न कुलसचिव
Officiating Registrar
भारतीय प्रौद्योगिकी संस्थान कानपुर
Indian Institute of Technology Kanpur