

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH NEW DELHI
Original Application NO 1156 OF 2024**

IN THE MATTER OF:-

News Item titled "Glacial Lakes multiply in Himachal Pradesh and Tibet, posing a threat to lives and infrastructure downstream" appearing in The Hindu dated 11.08.2024.

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Place : New Delhi

22/4/2025

Filed by:

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**BEFORE THE HONOURABLE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI
IN
Original Application No.1156/2024**

IN THE MATTER OF:

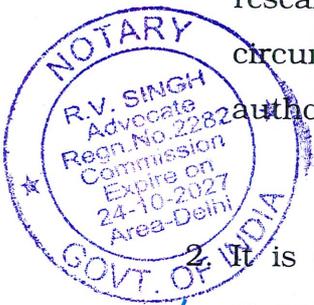
News Item titled "Glacial lakes multiply in Himachal Pradesh and Tibet, posing a threat to lives and infrastructure downstream" appearing in The Hindu dated 11.08.2024.

AFFIDAVIT ON BEHALF OF RESPONDENTS NO. 1 AND 2

MOST RESPECTFULLY SHOWETH:

I, Dr. Susan George K., aged 46 years, working as Scientist 'E' in the Ministry of Environment, Forest and Climate Change (MoEF&CC), Indira Paryavaran Bhawan, Jorbagh Road, New Delhi, do hereby solemnly affirm and declare as under:

1. That I am duly authorized by the Respondent No. 2 to swear this affidavit in the above-mentioned matter on behalf of Respondent No. 2 i.e., MoEF&CC and Respondent No. 1 i.e., Govind Ballabh Pant National Institute of Himalayan Environment (GBPNIHE), Almora, an autonomous research institute of MoEF&CC and I am conversant with the facts and circumstances of the case on the basis of official records, and as such authorized and competent to swear this affidavit.



It is submitted that a short affidavit is being filed by the answering respondent at this stage and craves leave and liberty to file a detailed

Counter Affidavit to the previously mentioned application, as and when required.

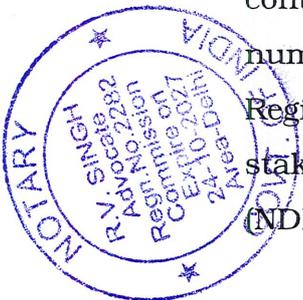
3. That, the instant original application is registered *suo-motu* by the Hon'ble NGT (PB) based on the news item titled "Glacial lakes multiply in Himachal Pradesh and Tibet, posing a threat to lives and infrastructure downstream" appearing in appearing in The Hindu dated 11.08.2024 and the Hon'ble Tribunal has impleaded *inter alia*, GBPNIHE and MoEF&CC as the answering respondents in the matter vide Order dated 12.09.2024.

4. That as stated in the aforementioned order, the matter relates to the reduction of glacier sizes, leading to an increase in moraine-dammed lakes in Himachal Pradesh and Trans Himalayan Region of Tibet, posing a potential threat to human life and infrastructure further downstream. The article explains that climate change has influenced the health of glaciers in the entire Himalayan region and has referred to a study by Himachal Pradesh Council for Science, Technology & Environment (HIMCOSTE), which revealed that the number of glacial lakes in the Satluj River catchment area nearly doubled between the years 2019 and 2023. This study which analysed multi-spectral satellite images states that the rise in glacial lakes in Himachal Pradesh's river basins can be disastrous downstream if the lakes burst their bounds for any reason. **The study concludes stating that the need for regular monitoring of existing and new formation of lakes are indispensable to avoid any possibility of catastrophe due to Glacial Lake Outburst Floods (GLOF) in the region.**



5. It is most respectfully submitted that, climate change, which has been identified to be the main cause of reduction in glacier sizes and increase in number of glacial lakes, is a complex and multifaceted global phenomenon. Government of India is committed to protect the glaciers and has made efforts to reduce the impact of climate change through several measures undertaken through its various Ministries, Departments and Institutes. A few measures, specific to glacial studies and monitoring, are mentioned below:

- i. Ministry of Jal Shakti (MoJS) has been assigned the responsibility in the Government of India for '**Glacial studies**' and '**Flood (control) management**', as specified in the Government of India (Allocation of Business) Rules, 1961. A copy of the relevant page of the Rules is annexed herein as **ANNEXURE-I**.
- ii. Organizations under MoJS like the Central Water Commission (CWC) and National Institute of Hydrology (NIH), Roorkee are contributing to glacial studies/ monitoring. CWC monitors a number of Glacial Lakes and Water Bodies in the Himalayan Region and reports the change in water spread area to various stakeholders including National Disaster Management Authority (NDMA) and State Disaster Management Authorities (SDMA).
- iii. The National Centre of Polar and Ocean Research (NCPOR), an autonomous Institute under Ministry of Earth Science (MoES), Geological Survey of India (GSI) under Ministry of Mines (MoM), Wadia Institute of Himalayan Geology (WIHG), an autonomous



research institute of the Department of the Science & Technology (DST) and Govind Ballabh Pant National Institute of Himalayan Environment (GBPNIHE), Almora under MoEF&CC are other organizations/ institutes engaged in glacial studies.

- iv. Further, Department of Science and Technology (DST) has supported various R&D projects on Himalayan Glaciers under their National Mission for Sustaining Himalayan Ecosystem (NMSHE) / National Mission on Strategic Knowledge for Climate Change (NMSKCC), which were undertaken by premier institutes/ universities. That MoEF&CC has also funded glacial studies under the National Mission on Himalayan Studies (NMHS).

6. It is most respectfully submitted that, GBPNIHE i.e. Respondent No. 2 serves as a focal agency mandated to

- i. Undertake in-depth research and development studies on environmental problems of the Indian Himalayan Region (IHR);
- ii. Identify and strengthen the local knowledge of the environment and contribute towards strengthening researches of regional relevance in the scientific Institutions, Universities/NGOs and Voluntary agencies working in the Himalayan region, through interactive networking; and
- iii. Evolve and demonstrate suitable technological packages and delivery systems for sustainable development of the region in harmony with local perceptions.



7. That, it is pertinent to mention here that, the GBPNIHE is a research institute and has no regulatory or implementation role assigned to it under any of the environmental Acts of the country. That neither MoEF&CC nor GBPNIHE is mandated to monitor glaciers regularly and to set up early warning systems for flood-induced disaster management.
8. That, GBPNIHE's R&D activities are organized into four Thematic Centres namely:
- i. Centre for Land and Water Resource Management (CLWRM) **focused on research & studies pertaining to various land and water aspects such as ground water, surface water, water quality, water sustainability, hydrology, land use land cover (LULC) mapping, etc.;**
 - ii. Centre for Socio-Economic Development (CSED) **focused on identification of socio-economic issues and challenges of region with the objectives to promote activities that lead to ecological and economic security, and sustainable development in the IHR;**
 - iii. Centre for Biodiversity Conservation and Management (CBCM) aims to **assess and monitor biodiversity using state-of-the-art methodologies and to transform data and information into actionable knowledge that supports sustainable biodiversity management;** and,



iv. Centre for Environmental Assessment and Climate Change (CEA&CC) aims to **assess and monitor environment parameters and attributes (physical, biological, and socio-economic), impact of climate change on resources, critical ecosystem, and develop knowledge to combat climate change.**

9. It is respectfully submitted that, the GBPNIHE is a specialized research Institute with a mandate to cover the entire IHR and is functioning with limited financial and human resources, whose expertise are focused on its core research mandates.

10. It is most humbly submitted that, the Institute has not yet conducted any specific study related to systematic documentation of expansion of glacial lakes and glacial lake inventory in Himalayan region. However, in a recent study conducted by GBPNIHE, response of 25 glaciers to climate change and expansion of associated glacial lakes (>0.36 ha) in the Western Himalaya (Himachal, J&K and Ladakh) for a period 1990-2015 was studied. This study showed increase in number of glacial lakes and increase in lake area during the period. Several factors including, geomorphological factors, presence of debris cover and pro- and supra-glacial lakes, climate variability, anthropogenic factors and their interlinkages could be factors modifying the response of glaciers and lakes to a great extent under the changing scenario.

11. It is respectfully submitted that the scope and scale of issues emerging from the Himalayan region are vast, and the Institute's resources are very limited and, at times, insufficient to meet demands of core research programs. That, the annual plans of R&D activities of GBPNIHE are



designed based on stakeholder's need and consultation, with specific objectives and activities, guided by an apex body of the Institute, named Scientific Advisory Committee (SAC) constituted upon approval of MoEF&CC for a fixed period. GBPNIHE receives its core funding from the MoEF&CC, Government of India. The funding is allocated annually for sustaining the Institute's operational framework and executing its core research and development activities through its thematic centres and regional centres. That, the funding is substantially strengthened through external funding obtained from different agencies. However, this extramural funding is essentially project-specific, earmarked for predefined objectives and deliverables agreed upon with the funding agencies. The funds are allocated for specific tasks and activities for implementation of the R&D project and periodically monitored by the funding agencies.

12. That, in view of the aforementioned facts and circumstances, this Hon'ble Tribunal may kindly be pleased to pass appropriate order(s)/directions as may deem fit and proper in the interest of justice.

I Identified the deponent/executant
and signed in my presence.



DEPONENT

(डा. सूसन जॉर्ज के.)
(Dr. Susan George K.)
वैज्ञानिक 'ई'/Scientist 'E'
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
M/o Environment, Forest and Climate Change
भारत सरकार, नई दिल्ली
Govt. of India, New Delhi

VERIFICATION

Verified at.....on this.....^{21 APR 2025} day of April, 2025 that the contents of this affidavit based on official record(s) maintained and information available in the office are true and correct, no part of it is false and nothing has been concealed there from.

Solemnly affirmed before me read over & explained to the deponent.


Notary Public, Delhi

(डा. सूसन जॉर्ज के.)
(Dr. Susan George K.)
वैज्ञानिक 'ई'/Scientist 'E'
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
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Govt. of India, New Delhi

DEPONENT

7. ^{21 APR 2025}



Annexure-1

MINISTRY OF JAL SHAKTI (JAL SHAKTI MANTRALAYA)¹

A. DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT AND GANGA REJUVENATION (JAL SANSADHAN, NADI VIKAS AUR GANGA SANRAKSHAN VIBHAG)²

I. GENERAL

1. Development, conservation and management of water as a national resource; overall national perspective of water planning and coordination in relation to diverse uses of water and interlinking of rivers.³
2. National Water Resources Council.
3. General policy, technical assistance, research and development training and all matters relating to irrigation, including multi-purpose, major, medium, minor and emergency irrigation works; hydraulic structures for navigation and hydro-power; tube wells and groundwater exploration and exploitation; protection and preservation of ground water resources; conjunctive use of surface and ground water, irrigation for agricultural purposes, water management, command area development; management of reservoirs and reservoir sedimentation; flood (control) management, drainage, drought proofing, water logging and sea erosion problems; dam safety.
4. Regulation and development of inter-State rivers and river valleys. Implementation of Awards of Tribunals through Schemes, River Boards.
5. Water laws, legislation.
6. Water quality assessment.
7. Cadre control and management of the Central Water Engineering Services (Group A).
- 7A. Conservation, development, management and abatement of pollution of rivers.⁴
- 7B. Glacial Studies.⁵

II. INTERNATIONAL ASPECTS

8. International organisations, commissions and conferences relating to water resources development and management, drainage and flood control.
9. International Water Law.
10. Matters relating to rivers common to India and neighbouring countries; the Joint Rivers Commission with Bangladesh, the Indus Waters Treaty 1960; the Permanent Indus Commission.
11. Bilateral and external assistance and cooperation programmes in the field of water resources development.

¹ Inserted vide Amendment series no.350 dated 14.06.2019.

² Previously modified vide Amendment series no.306 dated 31.07.2014.

³ Previously modified vide Amendment series no.306 dated 31.07.2014.

⁴ Inserted vide Amendment series no.354 dated 24.04.2020 (moved from entry no. 32).

⁵ Inserted vide Amendment series no. 375 dated 10.03.2024.

III. ORGANISATIONS AND BODIES UNDER THE DEPARTMENT

12. Central Water Commission.
13. Central Soil and Materials Research Station.
14. Central Groundwater Board.
15. Central Ground Water Authority.
16. Central Water and Power Research Station.
17. Farakka Barrage Project.
18. Ganga Flood Control Commission.
19. Farakka Barrage Project Control Board.
20. Sardar Sarovar Construction Advisory Committee.
21. Brahmaputra Board.
22. Narmada Control Authority.
23. Betwa River Board.
24. National Institute of Hydrology.
25. National Water Development Agency.
26. Bansagar Control Board.
27. Tungabhadra Board.
28. Upper Yamuna River Board.
29. Water and Power Consultancy Services (India) Ltd. (WAPCOS).
30. National Projects Construction Corporation Limited.
31. National Council for Rejuvenation, Protection and Management of River Ganga (National Ganga Council); National Mission for Clean Ganga.¹
32. **Omitted.**²
33. National River Conservation Directorate.³
- 33A. National Water Informatics Centre (NWIC).⁴
- 33B. North Eastern Regional Institute of Water and Land Management (NERIWALM).⁵

¹ Substituted vide Amendment Series no. 354 dated 24.04.2020 (Previously inserted vide Amendment series no.306 dated 31.07.2014).

² Omitted vide Amendment Series no. 354 dated 24.04.2020 (moved as entry 7A. Earlier modified vide amendment series no. 350 dated 14.06.2019 by shifting part entry from MoEFCC (Previously inserted here vide Amendment series no.306 dated 31.07.2014).

³ Inserted (Transferred from MoEFCC) vide amendment series no. 350 dated 14.06.2019.

⁴ Inserted vide Amendment Series no. 354 dated 24.04.2020.

⁵ Inserted vide Amendment Series no. 354 dated 24.04.2020.