

7.3.1 Institutional Distinctiveness of HNB Garhwal University (Mountain centric studies)

Nestled in the serene lap of the Himalayas, our university stands as a beacon of knowledge, uniquely attuned to the needs of the hill populations and dedicated to addressing the concerns specific to the Himalayan region. The geographical setting of our university offers unparalleled opportunities for in-depth exploration of the natural environment, which is rich not only in diverse flora and fauna but also steeped in a profound historical, cultural, and socioeconomic identity.

At the heart of our university's vision is the commitment to encourage research specifically tailored to the challenges and opportunities presented by mountainous terrain. Since its inception, every department of university has been steadfastly working towards this vision. Departments like Botany & Microbiology, Zoology, Forestry & Natural Resources, and Environmental Science have earned acclaim for their pioneering work in ecological research, biodiversity studies, and the conservation of natural resources. The Department of Zoology, for instance, has conducted comprehensive biodiversity analyses focusing on fish and avian species, while the Department of Biotechnology delves deep into the microbial diversity of extreme areas using advanced techniques like meta-genomics, the Department of Environmental Science integrates diverse disciplines to study the environment comprehensively.

Central to our mission is the High Altitude Plant Physiology Research Centre (HAPPRC), which tirelessly promotes the cultivation of high altitude medicinal and aromatic plants. Through their efforts, not only have commercially viable models for medicinal plant cultivation emerged, but the center has also established Nature Interpretation Sites, such as *Baniyakund* in district Rudraprayag and *Ghesh* at Chamoli district fostering environmental awareness and enabling field research and germplasm maintenance. Its high Altitude research station located at Tungnath (Altitude 3690 msl) is a unique station working on propagation of the endangered species. The Department of Chemistry works on natural products chemistry, synthetic organic chemistry, nanotechnology, natural dyes and green chemistry, which add to the conservation of the mountain region.

The department of Geology works on climate change affects on the Himalayan cryosphere and interaction between the glaciers and impact of the changes on the freshwater water resources, ecological processes and the mountain land surface (associated hazards etc.) with the high end remote sensing and advanced field-based techniques. It is monitoring glaciers of the Uttarakhand Himalaya to assess the glacier dynamics as well as impact on natural resources and population. Data set are being provided to policy makers in formulating national programmes on water resources, climate changes and mitigation measures. The publication of the faculty and its research scholars has been outstanding. The faculty members often represent their work on climate change and disasters as experts in national news channels.

Department of Rural Technology focuses on harnessing local resources and identifying sectors for technology intervention. Initiatives like mushroom and bee culture not only impart technical knowledge but also empower local communities for income generation sustainably. Cultivation of Local Millets, Ground Nut and Cross Cropping by Seed Science Department is also an important experiential learning. Department of Economics delves into the major economic issues facing the mountainous regions, concentrating on socio-economic research related to agriculture, women empowerment, tribal studies, MSME, poverty, self-employment, and microfinance. Department of Commerce is dedicated to research in Entrepreneurship and Small Business Development.

The Department of Sociology and Social Work and Political Science not only orient students towards socio-political, international issues but their research also highlights the regional and national socio-ecological and human problems and solutions. Preserving the unique socio-political, cultural fabric of the hill region is a vital focus of our doctoral research initiatives therefore, the Department of History & Archaeology conducts archaeological explorations, unearthing the rich historical heritage of Uttarakhand and exhibiting its findings in the 'Museum of Himalayan Archaeology and Ethnography', established in 1980. This museum showcases a plethora of artifacts, including terracotta art, sculptures, manuscripts, coins, paintings, inscriptions, and other ethnographic materials. It is also preserving the cultural heritage through 3 D printing in collaboration with Virginia Commonwealth University, USA. 'Museum of Himalayan Cultural Heritage' houses artifacts of the tribal culture of Uttarakhand. 'Centre for Folk Performing Arts and Culture' promotes folk arts, music, and instruments indigenous to Uttarakhand and the Department of Drawing and Painting exposes students to the intricacies of the 'Garhwal School of Painting' and traditional arts.

The Centre for Mountain Tourism and Hospitality Studies (CMTHS) is dedicated to researching and promoting eco-tourism, pilgrimage, heritage, and adventure tourism, Yoga is devoted to take it to masses, for promotion of mental and physical well-being. Department of Physical Education organizes rallies, runs, and sports activities, encouraging health, sportsmanship, and fitness among the youth, to tap their potential for excellence in sports. Education department works in close collaboration with schools of neighbouring areas for experiential teaching and learning. Our commitment to knowledge dissemination is reflected in the formation of a Registered Society for *Himalayan Action Research and Development*, to conducting seminars and workshops on various mountain-centric aspects (sharadpauri.org). The society also brings out prestigious 'Journal of Mountain Research', a peer-reviewed international journal listed in Web of Science and UGC CARE Group II (jmr.sharadpauri.org) and 'Himalayan Journal of Social Science and Humanities' (hjssh.sharadpauri.org).

In essence, our university stands as a bastion of mountain-centric research, holistic education, and community connect, ensuring that the unique challenges and opportunities of the Himalayan region are not only studied and researched comprehensively but also transformed into avenues for sustainable development and prosperity.



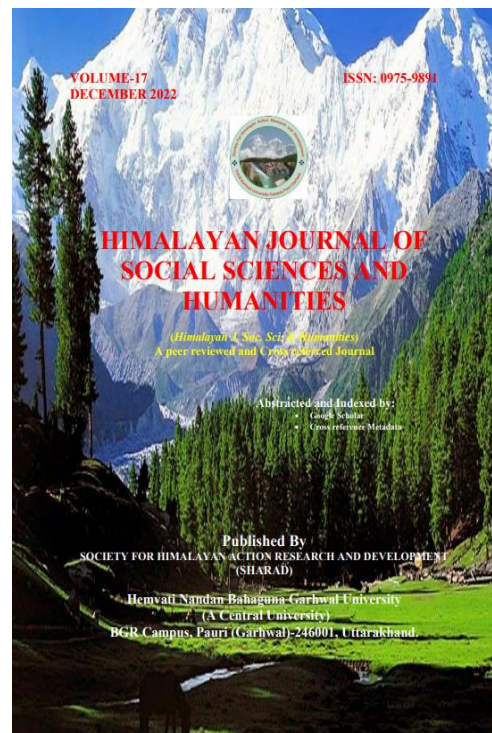
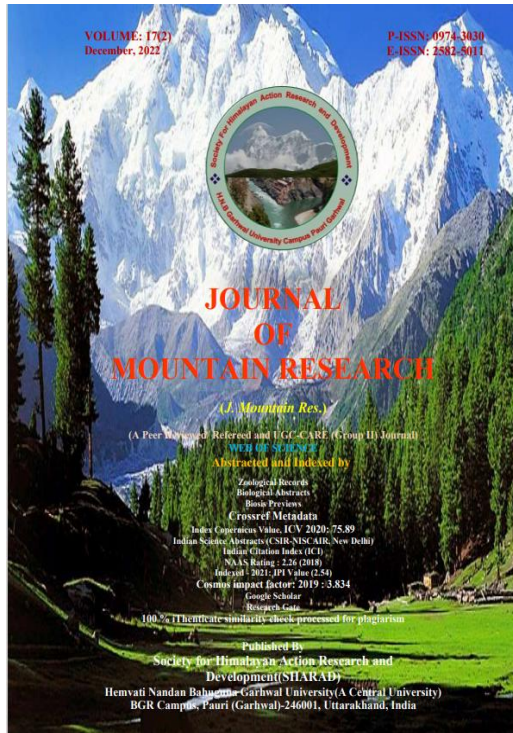
Figure 1. Field photograph showing installation of stakes in debris-covered region (a) in partial debris-covered (b) and clean ice parts (c& d) of Satopanth glacier at an altitude of 3950, 4500 and 4590 m amsl respectively. (d) Network of installed stakes in the year 2019 to assess the glacier health/dynamics.



Figure 2. Measurement of ice thickness of Satopanth glacier, Uttarakhand Himalaya using Ground Penetrating Radar.



National Seminar organised by Society (October 2018)



Community reach program on Apiculture



Mushroom spawn Lab (Rural Technology Department)



Fish Culture Pond Zoology Department Chauras Campus