

DR. URMILA RANA

(Assistant professor, Deptt. Of Botany)

([urmila.rana28@gmail.com](mailto:urmila.rana28@gmail.com))

## RESUME



**Personal Profile:** *At present I am working as Assistant Professor (Deptt. Of Botany) in Pitamber Dutt Barthwal Himalayan Post Graduate College, Kotdwar (Garhwal) Uttarakhand, since 2019. Before, this I worked in PG College New Tehri and Govt. Degree College Chinyarisaur, District Uttarkashi, Uttarakhand in 2019 and 2017-2018 respectively. I was also associated with H. N. B. Garhwal (Central) University, Srinagar Garhwal (Uttarakhand) and taught UG and PG classes of Botany before joining Govt. colleges since 2000-2001 and have 17 years teaching experience of Central University.*

I have my deep interest in Research and development field and was associated with various prestigious research Institutes viz. *High-Altitude Plant Physiology Research Centre, Srinagar Garhwal (HAPPRC) and G. B. Pant Institute of Himalayan Environment and Development Kosi, Katarmal, Almora (Uttarakhand)/ (GBPIHOD) before joining Higher Education Department and worked in various International and National funded R&D Research projects. During my Ph. D. and post-doctoral (as RAship) worked in remote marginalized, tough high altitudes of Western Himalaya regions as- Nanda Devi Biosphere Reserve, Niti Valley and Pranmati Watershed, Chamoli Garhwal, Uttarakhand. I feel honoured to work in a couple of prestigious international funded projects (Mac- Arthur Foundation, U.S.A., UNESCO, NORAD (Norway Govt.), ICIIMOD, MENRIS (Govt. of Nepal), and also worked in various national funded research projects.* The main focus of our R& D projects is grass root level research and the main beneficiary groups are the poor villagers.

I have successfully completed 05 International and 02 National Funded Research projects. During this period, I also done *one-month GIS Technical training from ICIMOD, Kathmandu, Nepal.* I participated and presented papers in various International, National, Regional seminars/ symposiums/ workshops/trainings etc. and published research papers/articles/ books etc. Apart from this I also associated with UOU, Haldwani, Nainital and worked for Unit Writing for B. Sc. And M. Sc. Students and write Practical/ Curricular books. At present I have published 43 research papers/ 02 articles (Hindi)/ 05 Books (Co-authored).

**Name of Candidate**      **Dr. Urmila Rana**  
**Father's Name**            ***Late Shri Shankar Singh Rana***  
**Permanent Address**      B-307 Sector-61, Indraprastha Villa  
   Noida (Gautambudh Nagar)  
   NOIDA (Uttar Pradesh)  
   Pin Code – 201 301.

**EDUCATIONAL HISTORY:**    **(M. Sc. Ph. D.)**

***1989 (Awarded): Ph. D., Botany (Plant Physiology).***

***Topic of Thesis: “Seasonal Studies on Vegetative propagation of Some Leguminous Tree Species”. (Plant Physiology)***

***1981 M. Sc. Botany***

***Topic of Dissertation;” Standing State of Nitrogen in a Sub- Montane Grassland”. (Plant Ecology).***

***1979 B. Sc. (ZBC).***

**PROFESSIONAL APPOINTMENTS:**

**A/ (Teaching Experience):**

***i) 22/02/2019 – Present Assistant Professor***

**Deptt. Of Botany, Dr. P.D.B. Himalayan Government Post Graduate College, Kotdwar.**

***- Taught- In - vitro Techniques and Industrial Applications***

***(M. Sc. V<sup>th</sup> Sem.) (Special Paper).***

***- Taught- Cytogenetics and Molecular Biology***

***(M. Sc. II<sup>nd</sup> Sem.)***

***- Taught- Molecular Biology and Biotechnology***

***(B. Sc. V<sup>th</sup> Sem.)***

- Taught- Microbiology Elementary plant Pathology and

Lichens. (B. Sc. I<sup>st</sup> year).

*ii)02/02/2019 to 21/01/2019: Assistant professor-*

*Post Graduate Degree College New Tehri (Tehri Garhwal)*

*-Taught- Seed Pathology (M. Sc. III<sup>rd</sup> Sem).*

*-Taught- Algae and Bryophyta (B. Sc. II<sup>nd</sup> Sem.).*

*iii)16/05/2017 to 01/01/2019: Assistant Professor-*

*Government Degree College Chinyarisaur, Uttarkashi.*

*-Taught- All the Papers of B. Sc. I<sup>st</sup>, II<sup>nd</sup> and III<sup>rd</sup> Years*

*And also organized all practical works of above Classes*

*(being single faculty and In-charge of Botany Deptt.)*

*iv)16/10/2000 to 15/05/2017- Guest Faculty-*

*Hemvati Nandan Bahuguna Garhwal University, B. G. R.*

*Campus Pauri (Garhwal) Uttarakhand.*

*- Taught U.G. and P.G botany, almost all papers (17 years).*

*B/ Research and Development / Administrative Experience):*

*January,1997 to March, 1999- Worked as Senior Research Associate in International*

*Funded Research project (R & D) by Mac- Arthur Foundation (U. S. A.)*

*through UNESCO.*

*1995 to 1997 - Worked as Senior Research Associate in National R & D Project funded by*

*Ministry of Environment and Forests, Govt. of India.*

*1992 to 1994 – worked as Research Associate in International R & D Project funded by*

*NORAD (Norway) and GBPIHED, Kosi, Almora (India).*

*1986 to 1991 – Worked as Project Supervisor in a National R & D Project funded by*

*Department of Non- Conventional Energy Sources (DOen Govt. of India and*

*HAPPRC (HNB Garhwal University), (U. P.).*

*1983 to 1986 - Worked as Junior Research Fellow in an International R & D Project funded*

*By Ford Foundation (U.S.A.) and HAPPRC (Garhwal University) Srinagar*

*Garhwal, U. P.*

**Note:** *(17 years R & D Experience since 1983 to 1999 excluding teaching).*

*September, 1993- Worked as Research associate and completed One Month GIS Technical*

*Training at ICIMOD, Kathmandu, Nepal sponsored and funded by*

*GBPIHED, Kosi, Almora (India) and MENRIS, Kathmandu, Nepal.*

**Teaching/Research/Administrative Experience- Overall, 17 years of Research and Development Experience and 22 years Teaching Experience-**

*22 years teaching Experience in U.G and P.G Botany.*

*17 years Research and Development Experience.*

**Seminars/ Conference/ Symposiums/ Workshops:**

**1.** *Participated in **Regional Workshop** on Demonstration of Social Forestry Practices in field and development prospects for village women through Social Forestry training, organized by High Altitude Plant Physiology Research Centre, HNB Garhwal University, Srinagar Garhwal (U.P.), 10-15 June, 1983.*

**2.** *Participated in **Educational tour** organized for village women to show them different positive and negative aspects of human interventions with forests and forest- based resource (Garhwal-Kumaon Region Tour) organized by HAPPRC, HNB Garhwal University, Srinagar Garhwal (U.P.) 11-15 April, 1984.*

**3.** *Participated in **National Seminar of Young Scientist on Environmental Plant Physiology**, organized by **society for plant-Physiology and Biotechnology** and Garhwal University, Srinagar Garhwal, 27-29 May, 1991.*

4. Participated in ***GIS Technical Training Programme on Application of GIS for watershed Management*** organized by ***ICIMOD, NENRIS, Kathmandu, Nepal*** and ***Ministry of Environment & Forests, Govt of India***, 1-30 Sept, 1993.
5. Participated in ***3<sup>rd</sup> International Symposium on Sustainable Reconstruction of Highland and Headwater Region***, organized by ***Environmental Monitoring Society, ICIMOD, UNESCO, IUFRO, IECA etc, Delhi***, 6-8 October, 1995
6. Participated in ***National Seminar on Human Factor, Resource Management and Development*** organized by ***Indian Society for Human Ecology (ISHE). Delhi and Indian Institute of Bio-Social Research and Development (IBRAD), Calcutta***, 3-5 October, 1996.
7. Participated in ***Training Workshop on cultivation of Medicinal Plants by Farmers*** organized by ***SDRE Core group, Garhwal unit of GBPIHED, Srinagar Garhwal at World Heritage site Nanda Devi Biosphere Reserve, Village, Tolma***, 16-17 October, 1998.
8. Participated ***and presented paper in National Seminar on Woman Empowerment in Garhwal Himalayas "Constraints and Prospected*** at H.N.B. Garhwal university, Srinagar, Organized by ***SAP Department of Political Science, H.N.B. Garhwal University Srinagar Garhwal Uttarakhand***. November, 19-20, 2007.
9. Participated and ***presented paper in International Tropical Ecology Congress***, 2007 Dehradun Uttarakhand India, Organized by ***H.N.B. Garhwal University Srinagar Garhwal India in association with International Society for Tropical Ecology***. 2-5 December, 2007.
10. Active participation in ***Regional Seminar on "Intellectual Property and Innovation Management in knowledge Era"***, organized by N.R.D.C. New Delhi in collaboration with U.K. State council for Science and Technology (U COST) on 7<sup>th</sup> September 2009, at Pauri Garhwal.
11. Attended ***Annual Conference of Society Himalayan Action Research and Developing. (SHARAD) as a Member*** at H.N.B.G.U. Campus, Pauri Garhwal on 1-1-2010.
12. Participated in ***the One Day Capacity Building Programme for AWARENESS ON PC-PNTD ACT***, at Dr. B.G.R. Campus, Pauri (H.N.B.G.U.), sponsored by ***PARAJ SAMAJIK SANSTHAN, Upper Chopra, Pauri Project Shrinkhala-2010***, held on 20<sup>th</sup> February, 2010.

13. Participated in ***Environment National Seminar on Resource & Development of the India Himalaya; Issues and strategies for sustainable Development*** at held on 2-4 November, 2011 HNBGU, Srinagar Garhwal, organized by Deptt of Geography HNBGU Central University, Srinagar Garhwal (Uttarakhand).
14. Paper Presented in ***National Conference on Innovations in Ethnopharmacology, Recent Developments in Biological and Chemical Sciences for Societal Benefits***. Organized by Department of Zoology, LMS Govt. Post Graduate College, Pithoragarh, Uttarakhand, March, 1-3, 2013.
15. Participated in ***National Seminar of Challenges of Livelihood Restoration in Disaster-hit Regions of Uttarakhand***. Organized by Department of Geography HNBGU Central University, Srinagar Garhwal, 28 -29 November, 2014.
16. Participated and Paper Presented in ***National Conference on Higher Education and Prospects of Open University***. Organized by Uttarakhand Open University Haldwani (Nanital) and HNBGU Central University Pauri Campus 2 Dec. 2014.
17. Paper presented in ***National Seminar on Crop Diversity and Entrepreneurship Development in Himalayan Environment***, Organized by Department of Botany, RCU Government P.G College Uttarkashi Uttarakhand, 29 Sept. to 01 Oct, 2016.
18. Paper presented in ***International Seminar on The Himalayan Challenges: Towards Interdisciplinary Dialogues for Sustainability and Development***, Organized by Sri Dev Suman Uttarakhand University, Badshahithaul, Tehri Garhwal in collaboration with Doon University, Dehradun, 29 th November to 1<sup>st</sup> December, 2017.
19. Participated in ***National Seminar on The Himalayas: At the Cross- Roads of Environment and Development***, Organized by Department of Geography, H.N.B. Garhwal University B.G.R. Campus, Pauri (Garhwal) Uttarakhand. 26-27 May, 2019.
20. Participated/Worked as a ***resource in one day Orientation Program for CTE Faculty Members***” Organized by Dr, P.D.B.H. Post Graduate College, Kotdwar (Garhwal), 30-09-2019.

21. Participated in an ***International Conference on “Contemporary Issues of Climate Change, Conservation of Biodiversity and Natural Resources in Himalayan Environment***, Organized by ***Department of Zoology, Government Post- Graduate College, New Tehri (Tehri Garhwal), Uttarakhand-249001, India***. 14-15 November, 2019.

22. ***Paper presented “Impact of People’s Participation in Forest Management: A Case Study of Garhwal Himalaya***. In: ***National Seminar on Forest Fire and Climate Change: Challenges and Solutions***. Organized by ***UCOST, Govt. of Uttarakhand, UPSA and H.M.V.P.G. College, Raisi (Haridwar Uttarakhand***. 14-15 February, 2020.

23, Paper presented in: ***National Conference on Natural and Agricultural Sciences- Issues, challenges and Opportunities, (3<sup>rd</sup> PSRM meet)***. Organized by ***Association of Plant Science Researches, Dehradun, Uttarakhand, PLANTICA, MSME and ISO (9001-2015***, 26-27 September, 2020.

24. Participated in ***“International Webinar” on “Biodiversity Conservation Through Environmental Education for Sustainable Development***, 29 July, 2020. Organized by ***Dr. P.D.B.H. Govt. Post Graduate College, Kotdwara, District- Pauri Garhwal Uttarakhand in Collaboration with Traffic India***.

25. ***Participated in “International Webinar” on “Water Crisis in the Himalayan Region: Addressing by IQRC Govt. Degree College Chinyarisaur (Uttarkashi)***, August, 30, 2020.

26. ***Participated in “One Day Webinar’ on “National Educational Policy- 2020***, organized by ***“National Service Scheme Unit, S.B.S. Govt. P.G. College, Rudrapur***, September, 22, 2020.

27. Participated ***and Paper presented*** in: ***National Conference on “Natural and Agricultural Sciences- Issues, Challenges and Opportunities***, organized by ***Association of Plant Science Researches, Dehradun, Uttarakhand, PLANTICA, MSME, and ISO (9001-2015)***, 26-27 September, 2020.

28. Participated and ***Paper presented in: International Conference: Role of Yoga, Peace, ITC and Environmental Education for Sustainable Development*** Organized by ***College of Teacher Education (CTE) & Department of B. Ed. Dr. PDBH Post Graduate College Kotdwara (Garhwal) Uttarakhand***, March, 2021, 23-24.

29. Participated in **National Webinar on Geoinformatics Technology & Disaster Management Sustainable Development (Career Opportunities)** Organized by **Department of Geography, Dr. Pitamber Dutt Barthwal Himalayan Govt. P. G. College, Kotdwar, Uttarakhand** on 10 September, 2021.

30. Participated and **Paper presented in: National Conference on “Conservation and Sustainable Development of Himalayan Westlands Ecosystem in Uttarakhand”**, Organized by **Department of Zoology and Botany, Government PG College New Tehri, Tehri Garhwal, Uttarakhand 249001**, 24-25 September, 2021.

31. Participated in **One Day workshop on Nuclear Science and Technology**, key note speaker **Dr. B. S. Tomar**, organized by **Deptt. Of Physics and Deptt. Of Chemistry PDB Himalayan Govt. PG College Kotdwar**, 21 October, 2021.

### **Publications: A- Research Publication- List of Publication” / Papers**

#### **Published:**

1. **U. Rana**, M. Gairola, and A.R. Nautiyal (1987), Seasonal variation in rooting of *Dalbergia sissoo* and auxin effects on it, **Indian Journal of Forestry**. 10(3): 220-222. ISSN 0971-9431

2. **U. Rana**, M. Gairola, and A.R. Nautiyal (1989), Coat imposed dormancy in *Acacia farnesiana* seeds. **Seed Research** 17(2): 122-127. ISSN 0379-5594

A.R. Nautiyal, A.N. Purohit, M. Gairola and **U. Rana** (1989). People's participation in Hills – A Socio-scientific Analysis, **Proceedings National Symposium** on Promotion of Fodder and Fuel wood Trees, **BAIF publication. Pune**, pp. 202-209.

3. M. Gairola, **U. Rana** and A.R. Nautiyal (1990), Biomass production potential of some mountain tree species under high density plantation. **Journal of Tree sciences**. 9(2): 75-77. ISSN 0970-7662

4. **Urmila Rana**, K.K. Sen. and Yogeshwar Kumar (1994). Making Power sector and water management more sustainable in remote mountain villages- An attempt in Pranmati Watershed (Distt. - Chamoli). **HIMA PARYAVARAN, News Letter, December, 6(2): 9-11. GBPIHED, Kosi, Almora. (U.P). ISSN 0970-8421**

5. S. Ghosh, **U. Rana**, and K.K. Sen. (1995). Environmental Monitoring in Pranmati Watershed Uttar Pradesh. In: R.B. Singh and M.J. Haigh (eds.) Sustainable Reconstruction of Highland and Headwater Regions. **Proceedings of 3rd International Symposium on Headwater Control, New Delhi**. (October, 6-8, 1995). **Oxford & IBH Publ. pp.** 339-348.



6. **Urmila Rana**, (1996). *Abies Pindrow*- An Endangered tree of the central Himalaya. *Himalaya: Man, and Nature*. 18(7): 40-44.
7. S Ghosh, **U. Rana**, K.S. Rao & K.K. Sen (1996). GIS Applications for Mountain Terrain some Considerations and Options. Paper presented in **National Symposium on Remote Sensing for Natural Resources, Pune, December, 4-6**
8. S. Ghosh, **U. Rana**, K. K. Sen., K.S. Rao and K G. Saxena (1996). Application of GIS for land- use / land - cover changes analysis in a mountain terrain. **Journal of the Indian Society of Remote Sensing (Photonirvachak)** 24 (3): 193-201. ISSN 0255-660
9. **U. Rana**, (1997). Oak fodder lopping in natural vegetation: A case study. *Envis Bulletin Himalayan Ecology and Development*, 5 (1): 3-6. ISSN 0971-7447
10. K.S. Rao and **U. Rana** (1997). Application of multi-purpose nitrogen fixing tree species for afforestation /restoration of degraded waste land in Central Himalaya. *Indian Journal of Forestry*, 123 (4): 338-340. ISSN 0971-9431.
11. Ghose, S, Sen., K.K., Rana, U. Rao, K.S. and Saxena, K.G. (1997) Database development Management and Rural Development of Pranmati Watershed. In: GIS Application to Natural Resource Management and Development Planning in Rural Area- Pranmati Watershed Garhwal Himalayas, India, **Published by UNEP, ICIMOD and GBPIHED, ISSN 1021- 6529.**
12. Ghose, S, Sen., K.K., **Rana**, U. Rao, K.S. and Saxena, K.G. (1997). Database Development and Management for Micro-Level Development Planning. In: GIS Application to Natural Resource Management and Development Planning in Rural Area- Pranmati Watershed Garhwal Himalayas, India, **Published by UNEP, ICIMOD and GBPIHED. ISSN 1021-6529.**
13. Ghose, S, Sen., K.K., **Rana**, U. Rao, K.S. and Saxena, K.G. (1997). GIS Application in Monitoring Land - Cover / Land-Use Changes. In: GIS Application to Natural Resource Management and Development Planning in Rural Area- Pranmati Watershed Garhwal Himalayas, India, **Published by UNEP, ICIMOD and GBPIHED. ISSN 1021-6529**
14. Ghose, S, Sen., K.K., **Rana**, U. Rao, K.S. and Saxena, K.G. (1997) Application of GIS and Remote - Sensing Technologies of Forest Management In: GIS Application to Natural Resource Management and Development Planning in Rural Area- Pranmati Watershed Garhwal Himalayas, India, **Published by UNEP, ICIMOD and GBPIHED. ISSN 1021-6529.**

15. Ghose, S, Sen., K.K., **Rana, U.** Rao, K.S. and Saxena, K.G. (1997). Application of GIS for Agricultural Development. In: GIS Application to Natural Resource Management and Development Planning in Rural Area- Pranmati Watershed Garhwal Himalayas, India, *Published by UNEP, ICIMOD and GBPIHED. ISSN 1021-6529.*
16. Ghose, S, Sen., K.K., **Rana, U.** Rao, K.S. and Saxena, K.G. (1997) Potential of GIS Technologies for Monitoring Impacts of Development Activities. In: GIS Application to Natural Resource Management and Development Planning in Rural Area- Pranmati Watershed Garhwal Himalayas, India, *Published by UNEP, ICIMOD and GBPIHED. ISSN 1021-652.*
17. Maikhuri, R.K, **Rana, U.** and Rao, K.S. (1998), Indigenous knowledge system on edible oil resources in central Himalaya : A case study , In : Bhasin, M.K. and S.L. Malik (eds.), contemporary studies in Human Ecology: Kamla Raj Prakashan, Delhi, pp-123-127, *(Proceedings of National Seminar on Human Factor, Resource Management and Development, October, 3-5, New Delhi.)*
18. Maikhuri, R.K., **U. Rana,** K.S. Rao, S. Nautiyal and K.G. Saxena (2001), Promoting ecotourism in the buffer zone areas of Nanda Devi Biosphere reserve: An option to resolve people-policy conflict. *International Journal of sustainable Development and International Journal of sustainable Development and world Ecology* 7:333-343. ISSN 1350-4509
19. K.K. Sen., R.L. Semwal, **U. Rana,** S. Nautiyal, R.K. Maikhuri, K.S. Rao and K.G. Saxena (2002). Patterns and implications of land use/cover change: a case study in Pranmati watershed (Garhwal Himalaya, India). *Mountain Research and Development* 22(1): 56-62. ISSN 0276-4741.
20. Semwal, R.L, S. Nautiyal, K.K. Sen., **U. Rana,** R.K. Maikhuri, K.S. Rao and K.G. Saxena (2004). Patterns and ecological implications of agricultural land-use changes: a case study from central Himalaya, India. *Agriculture, Ecosystems and Environment*, 102:81-92. ISSN 0167-8809.
21. **U. Rana** and A.R. Nautiyal (2006). Impact of Auxin and Sucrose treatment on rooting hypocotyl cuttings of some Leguminous tree species. *Journal of Mountain Research*. 1:8 93. ISSN 0974-3030.

**22. Urmila Rana** and A.R. Nautiyal (2006) Impact of auxin and sucrose treatment on rooting of hypocotyl cuttings of sum Leguminous tree species. *Journal of Mountain research*, 1:87-93. **ISSN 0974-3030**.

**23. Urmila Rana**, A.R. Nautiyal and S.S. Bisht (2007). Coat imposed dormancy in *Mimosa Himalayan* Seeds. *Journal of Mountain Research*. Vol 2 pp 61-62. **ISSN 0974-3030**.

**24. Urmila Rana** and Kala Sudha (2007). Women participation in development programs in Uttarakhand. *Paper presented in National Seminar on "women employment in Garhwal Himalaya"*. Constrains and Prospects, held on 19-20 November 2007, organized by the SAP Department of Political Science HNB Garhwal University, Srinagar Garhwal, Uttarakhand.

**25. U. Rana** and K.S. Rao (2007) Traditional as well as scientific based Cropping Pattern of high attitudes of western Himalayas in sustainability of *tropical agriculture session paper presented in International Tropical Ecology congress 2007*, held at Forest Research Institute/ Wildlife Institute of India, Dehradun, Uttarakhand, India from 2-5 December 200, organized by *HNB Garhwal University Srinagar (Garhwal) India and International Society for Tropical Ecology*.

**26. M.S. Rana** and **U. Rana** (2010) Studies on Cerospora in Garhwal Himalaya, Uttarakhand India, *J. Mountain Res. 5*: 95-99. **ISSN 0974-3030**.

**27. U. Rana** (2013) Implications and impacts of GIS Garhwal Himalaya Region, *Paper presented in: National conference on Innovation in Ethnopharmacology and recent development in Biological and chemical Science* organized by Deptt. Of Zoology LMS Govt PG College Pithoragarh, Uttarakhand, March 1-3-2013.

**28. Urmila Rana** (2014) Restoration and rehabilitation practices in unutilized areas of Garhwal Himalaya region of Uttarakhand **paper presented in National Seminar on** challenges Of Livelihood Restoration in Disaster-hit region of Uttarakhand organized by department of Geography H.N.B.G.U. Srinagar on 28-29 November 2014.

**29. Urmila Rana** (2014) The Role of Open University in Rural Education. *National Conference on higher education and prospects of Open University* held on 2<sup>nd</sup> December 2014, organized by Uttarakhand Open University, Haldwani (Nanital), HNBGU Pauri Campus (Uttarakhand).

**30. Urmila Rana** (2014) Restoration and Rehabilitation Practices in Unstabilized Area of Garhwal Regions of Uttarakhand. *Paper presented in National Seminar* on “Challenges of Livelihood Restoration in Disaster hit Regions of Uttarakhand”, 28-29 November, 2014 at H.N.B.G.U. Srinagar Garhwal (Uttarakhand).

**31. Urmila Rana** (2016) Crop Diversity in High Hilly Areas of Garhwal Himalaya: A case Study, *Paper presented* in: 'Three days National Seminar on Crop Diversity and entrepreneurship Development in Himalayan Environment, 29<sup>th</sup> September to 01 October 2016. Organized by Deptt. Of Botany RCU Govt. Post Graduate College, Uttarkashi.

**32. Urmila Rana** (2017). Challenges of Biodiversity in Garhwal Himalayan Region. *Paper presented* in: *International Seminar* on “The Himalayan Challenge: Towards Interdisciplinary Dialogues for Sustainability and Development” 29<sup>th</sup> November to 1<sup>st</sup> December, 2017, organized by Sri Dev Suman Uttarakhand University, Badshahithaul, Tehri Garhwal in collaboration with Doon University, Dehradun.

**33. Urmila Rana**, Mamta Rawat, Shweta Kukreti and A. S. Kaintura (2020) Beekeeping Practices and Organic Honey Production: A Case Study in Garhwal Himalaya, *Paper presented* in: *National Conference* on “Natural and Agricultural Sciences- Issues, Challenges and Opportunities, 26-27 September, 2020 (3rdPSRM meet). Organized by Association of Plant Science Researches, Dehradun Uttarakhand, PLANTICA, MSME and ISO (9001-2015) (on-line).

**34. Urmila Rana** (2021) Himalaye Priyavaran Avam Uska Sanrakshan *Paper presented* in *International Conference*, Role of Yoga, Peace, ITC and Environmental Education for sustainable Development, Organized by College of Teacher Education (CTE) & Department of B. Ed. P. PDBHG. College Kotdwar (Garhwal) Uttarakhand. On March, 23 and 24, 2021.

**35. Urmila Rana.** (2021) Traditional Use of Some Valuable Rare Medicinal Plants and Herbs in Nanda Devi Biosphere Reserve by Bhotia Tribes. Paper presented in National Conference on “Conservation and Sustainable Development of Himalayan Westlands Ecosystem in Uttarakhand”, 24-25 September, 2021, Organized by Department of Zoology and Botany, Government PG College New Tehri, Tehri Garhwal Uttarakhand 249001.

## Chapter in Edited Books:

- 36.** Maikhuri, R.K, **Rana, U.** and Rao, K.S. (1998), Indigenous knowledge system on edible oil resources in central Himalaya A case study , In : Bhasin, M.K. and S.L. Malik (eds.), contemporary studies in Human Ecology: Kamla Raj Prakashan, Delhi, pp-123-127, (*Proceedings of National Seminar on Human Factor, Resource Management and Development, October, 3-5, New Delhi.*)
- 37.** Maikhuri, R.K., **U. Rana,** R. Semwal and K.S. Rao (2000). Agriculture of Uttarakhand: Issues and management prospects for economic development. In: Sati; M.C. and S.P. Sati (eds.) *Uttaranchal Statehood Dimensions for Development. Indus Publishing Co., New Delhi, pp. 151-167.*
- 38.** Maikhuri, R.K., **U. Rana,** K.S. Rao, S. Nautiyal and K.G. Saxena (2001), Promoting ecotourism in the buffer zone areas of Nanda Devi Biosphere reserve: An option to resolve people-policy conflict. *International Journal of sustainable Development and International Journal of sustainable Development and world Ecology* 7:333-343. ISSN 1350-4509
- 39.** K.K. Sen., R.L. Semwal, **U. Rana,** S. Nautiyal, R.K. Maikhuri, K.S. Rao and K.G. Saxena (2002). Patterns and implications of land use/cover change: a case study in Pranmati watershed (Garhwal Himalaya, India). *Mountain Research and Development* 22(1): 56-62. ISSN 0276-4741
- 40.** Maikhuri, R.K., S. Nautiyal, **U. Rana,** S. Tiwari, K.S. Rao and K.G. Saxena (2000). Garhwal Himalaya: Nanda Devi Biosphere buffer **zone-socio-ecological** profile. In Ramakrishnan, P.S., U. Chandrashekar, C. Elouard, C.Z. Guitmota, R.K. Maikhuri, K.S. Rao and K.G. Saxena (eds.) *Mountain Biodiversity, Land use Dynamics and traditional Ecological knowledge.* UNESCO and oxford & IBH Publishing Co. Pvt. Ltd. New Delhi, pp. 219-226. ISBN 81-204-1370-9.
- 41.** Maikhuri, R.K, S. Nautiyal, **U. Rana,** S. Tiwari, K.S. Rao and K.G. Saxena (2000) Garhwal Himalaya: Nanda Devi Biosphere Buffer Zone –Traditional Agro ecosystem. In Ramakrishnan, P.S., U. Chandrashekar, C. Elouard, C.Z. Guitmota, R.K. Maikhuri, K.S. Rao and K.G. Saxena (eds.) *Mountain Biodiversity, Land use Dynamics and traditional Ecological knowledge.* UNESCO and oxford & IBH Publishing Co. Pvt. Ltd. New Delhi, pp. 219-226. ISBN 81-204-1370-9.

**42.** Maikhuri, R.K, S. Nautiyal, **U. Rana**, S. Tiwari, K.S. Rao and K.G. Saxena (2000) Garhwal Himalaya: Nanda Devi Biosphere Buffer Zone –Traditional Agro ecosystem. In Ramakrishnan, P.S., U. Chandrashekar, C. Elouard, C.Z. Guitmota, R.K. Maikhuri, K.S. Rao and K.G. Saxena (eds.) *Mountain Biodiversity, Land use Dynamics and traditional Ecological knowledge, UNESCO and Oxford & IBH publishing co. Pvt. Ltd. New Delhi, pp. 227-238. ISBN 81-204- 1370-9.*

**43.**Maikhuri, R.K., S. Nautiyal, **U. Rana**, S. Tiwari, K.S. Rao and K.G. Saxena (2000). Garhwal Himalaya: Nanda Devi Biosphere Buffer Zone-Animal husbandry. In Ramakrishnan, P.S., U. Chandrashekar, C. Elouard, C.Z. Guitmota, R.K. Maikhuri, K.S. Rao and K.G. Saxena (eds.) *Mountain Biodiversity, Land use Dynamics and traditional Ecological knowledge. UNESCO and oxford & IBH publishing co. Pvt. Ltd. New Delhi, pp. 240-252. ISBN 81-204-1370-.9*

**44.** Maikhuri, R.K., S. Nautiyal, **U. Rana**, S. Tiwari, K.S. Rao and K.G. Saxena (2000). Garhwal Himalaya: Nanda Devi Biosphere Buffer Zone-Forest ecosystems. In Ramakrishnan, P.S., U. Chandrashekar, C. Elouard, C.Z. Guitmota, R.K. Maikhuri, K.S. Rao and K.G. Saxena (eds.) *Mountain Biodiversity, Land use Dynamics and traditional Ecological knowledge. UNESCO and oxford & IBH publishing co. Pvt. Ltd. New Delhi, pp. 253-264. ISBN 81-204-1370-9.*

**45.** Maikhuri, R.K., S. Nautiyal, **U. Rana**, S. Tiwari, K.S. Rao and K.G. Saxena (2000). Garhwal Himalaya: Nanda Devi Biosphere Buffer Zone-Reserve people conflicts. In Ramakrishnan, P.S., U. Chandrashekar, C. Eouard, C.Z. Guitmota, R.K. Maikhuri, K.S. Rao and K.G. Saxena (eds.) *Mountain Biodiversity, Land use Dynamics and traditional Ecological knowledge. UNESCO and Oxford & IBH publishing co. Pvt. Ltd. New Delhi, pp. 299-309. ISBN 81-204-1370-.9*

**46.** Maikhuri, R.K., S. Nautiyal, **U. Rana**, S. Tiwari, K.S. Rao and K.G. Saxena (2000). Garhwal Himalaya: Nanda Devi Biosphere Buffer Zone-Ecosystem rehabilitation and conflict resolution. In Ramakrishnan, P.S., U. Chandrashekar, C. Elouard, C.Z. Guitmota, R.K. Maikhuri, K.S. Rao and K.G. Saxena (eds.) *Mountain Biodiversity, Land use Dynamics and traditional Ecological knowledge, UNESCO and oxford & IBH publishing co. Pvt. Ltd. New Delhi, pp. 310-324. ISBN 81-204-1370-9.*

**Hindi Articles (Published):**

1. **Urmila Rana** (1983) *Van Vaniki Easeke Chhetra tatha Upadeyetaye*. SAITAHIC GARHWAL MANDAL, Svantra Aanka, Pauri Garhwal (UP).

2. **Urmila Rana** (1993), *Kathmandu ke Aetihasic Mandir*, AAKANKCHHA, (Quarterly Published), Pauri Garhwal (UP).

**Papers (Accepted):**

1. **Rana, U.**, K.K. Sen., R.K. Maikhuri, K.S. Rao and K.G. Saxena, Management and tree structure of the community forests of the Pranmati watershed in Garhwal Himalaya, India (In press: *Mountain Research & Development*).

2. **U. Rana** and A.R. Nautiyal. Impacts of Auxin and sucrose treatment on rooting of hypocotyl cuttings of four leguminous tree species.

**Papers –to be Communicated:**

1. **U. Rana**, K.S. Rao, and K.G. Saxena-Altitudinal pattern of resource utilization: a case study from central Himalaya (Man in India).

2. **U. Rana** and R. K. Maikhuri. Degraded land rehabilitation through women's participation: A case study from Nanda Devi Biosphere Reserve (Society and Natural Resources.)

3. **U. Rana**. Water imbibition and scarification studies in two hard coated species of family Leguminosae.

4. K.S. Rao, and **U. Rana**. Altitudinal pattern of resource uses of medicinal plants: a case study of Pranmati Watershed, Central Himalaya.

5. **Urmila Rana** and A.R. Nautiyal. Effect of water stress on seed germination and early seedling growth in two *Dalbergia Sissoo* species.

6. **Urmila Rana**. Agro forestry practices in Himalayan Hill Villages-prospects, problems and constraints.

7. **U. Rana**, R.K. Maikhuri, K.S. Rao and K.G. Saxena. In-depth socio- economic studies of marginalized *Bhotiya tribes*: A case study from Nanda Devi Biosphere Reserve in central Himalaya, India.

8. **U. Rana** and A.R. Nautiyal. Anatomical studies of root initiation in some leguminous tree

species with the help of Hypocotyl Cuttings.

**Books: Published: - (Seven) (A–Research and Development Publication)-**

**1.** K.G. Saxena, K.S. Rao, Anita Panda, **Urmila Rana**, K.K. Sen., Nehal A. Farooquee and B.S. Majila (1994). **Sustainable Rural Development Opportunities and Constraints** (A micro level analysis of Pranmati watershed in Uttar Pradesh Himalaya). *Himavikas Publication No.6., (GBPIHED, Kosi, Almora (U.P.) 263 – 643).*

**2.** K.G. Saxena, Yogeshwar Kumar, K.S. Rao, K.K. Sen., **Urmila Rana**, B.S. Majila, Anoop Pharshwan, G.S. Singh and Nihal A. Farooquee (1994). **Hydropower Management for Sustainable Rural Development in Remote Unelectrified Zones of Himalaya** (Microhydel Adapting the Technology and Management with People's participation in Pranmati Watershed of the Ganga Catchment). *Himavikas Publication No.7. GBPIHED, Kosi, Almora (U.P) 263-643.*

**3.** Ghosh, S., Sen., K.K., **Rana, U.** Rao, K.S., and K.G. Saxena (1997) **GIS Application to Natural Resource Management and Development Planning in a Rural Area- Pranmati Watershed Garhwal Himalaya** (Menris case study series No. 5) *UNEP, ICIMOD and GBPIHED. ISBN- 1021- 6529.*

**4.** **Mountain Biodiversity Land Use Dynamics and Traditional Ecological Knowledge** (2000). P.S. Ramakrishnan et al., (eds.) *Oxford & IBH Publishing Co. Pvt. Ltd. New Delhi. ISSN. 81-204-1370-9. ISSN. 81-204-1370-9.*

**(B- Curricular Related Publications):**

*Uttarakhand Open University Curricular Text and Practical Book (Unit Writing).*

**5. B.Sc. I<sup>st</sup> Year, Laboratory Course– (2017).** School of Sciences. Uttarakhand Open University (BSCBO-104-1(001665). Published by Uttarakhand Open University, Haldwani, Nainital-263139, (Units).

**6. Text Book for Degree Students B. Sc. III<sup>rd</sup> Year (2019).** School of Sciences, Uttarakhand Open University, Haldwani Nainital -263139.

**Language and Additional Skills: (Both read and write as below)**



*Hindi (Mother tongue) and English.*

**Additional Skills:**

**i) Supervised M.Sc. Dissertations/Seminars/Assignments:**

A) Conducted PG Seminars/ Assignments: 56 M. Sc. Botany & M.Sc. Forestry).

B) PG Dissertations: 25 as per curriculum.

**ii) Professional Qualification:** Worked as *JRF, SRF& RA ship* in  
different *International & National R & D Project*.

**iii) Internal Examiner for B. Sc.** (13) Deptt. Of Botany H. N. B. G. Univ.  
& M. Sc. classes Pauri Campus & B. Sc. PG College Kotdwar.

**iv) External Examiner for B.Sc.** 08 (eight) Deptt. Of Botany,  
(All Semester)

**v) Paper Setting-** for M.Sc. IV<sup>th</sup> Semester- (Self-Study Course) -  
02 (two) - 2013-14 & 2014-15) and for M.Sc. &  
B.Sc. classes Govt. Degree Colleges.

**vi) Trainings:** a) GIS Technical Training- One Month.  
b) Training Workshop on different sessions for  
demonstration of practical experiments for B. Sc and M. Sc.  
Students enrolled in Uttarakhand Open University  
organized by school of Sciences UOU Haldwani and  
H. N. B. Garhwal University Campus Pauri Garhwal  
(21/05/2016 to 27/05/2016) and (03/05/2017 to 11/05/2017).

**Detail of Experience: (Research Projects Done):**

1. Research and Demonstration in Social Forestry and training of Women in forestry and Related Sciences. (A case study of semi-urbanized village) sponsored by **Ford Foundation and HAPPRC**, (Garhwal University), Srinagar Garhwal (U.P.) from **1983 to 1986**.
2. Energy Plantation Demonstration units in Hill Village (Extension Programme of Biomass Research unit for Mountain Tree Species), Sponsored by **Department of Non-Conventional Energy Sources (DOEN) Govt., of India** and HAPPRC (HNB, Garhwal University), Srinagar Garhwal (U.P.) from September **1986 to 1991**.
3. Application of GIS for watershed Management (A case study from Pranmati Watershed). Project Report submitted for Technical training in GIS Techniques- **GBPIHED, Kosi, Almora (India) and MENRIS, Kathmandu, Nepal** (September, 1993).
4. Environmental Information System (ENVIS), sponsored by **Ministry of Environment and Forests, Govt. of India**. (From January, 1995 to April, 1995).
5. Slopping Land Agricultural Techniques (SALT) sponsored by **International Centre for Mountain Development (ICIMOD), Kathmandu, Nepal** (From May 1995 to December, 1996).
6. Biodiversity conservation and ecosystem rehabilitation emphasizing traditional knowledge system in the critical villages of Nanda Devi Biosphere Reserve, Garhwal Himalaya. Sponsored and funded by **Mac-Arthur Foundation (U. S. A.) through UNESCO**. (From January, 1997 to March, 1999).

Other Skills-, (*Unit Writing for Uttarakhand Open University, MPDD Cell, UOU Haldwani Nainital, Uttarakhand*)-

**1- Programme name- B.Sc. First Botany, Course IV practical Examination courses of**

**I, II, III, block-3- Pteridophytes, Gymnosperms and Palaeobotany**, Unit 9, 10 and 11

**(03units).**

**2- Unit Writing for Uttarakhand Open University, MPDD Cell, UOU Haldwani (Nainital)**

**Programme name- B. Sc. III Botany:**

**Course II - Economic Botany, Genetics and plant breeding (02 Units)**

**(a) Block-3- Plant breeding unit 10 and 12. (02 Units).**

***(b) Course-III- Plant Physiology and Bio chemistry***

***Block-I- Plant water relationship, Unit I and II. (02 Units).***

***Unit Writing*** for Uttarakhand Open university, MPDD Cell, UOU Haldwani.

***3- Programme name- M. Sc. Botany, (M. Sc. I<sup>st</sup> & M. Sc. II<sup>nd</sup>)***

***Course- Cytogenetics and Plant Breeding, (MSCBOT- 507)***

***Block- 1 Introduction of Plant Breeding &***

***Block- 3- Cytogenetics, Unit 3 & 10.***

(a) Unit-3- ***Plant Breeding Methods.*** (01Unit).

(b) Unit-10- ***Linkage and Crossing over and Mutation.*** (01Unit).

***Seminar/Symposium /Workshops/Conference/ Webinar:***

***1.Participated in Regional Workshop*** on Demonstration of Social Forestry Practices in field and development prospects for village women through Social Forestry training, organized by High Altitude Plant Physiology Research Centre, HNB Garhwal University, Srinagar Garhwal (U.P.), 10-15 June, 1983.

***2.Participated in Educational tour organized*** for village women to show them different positive and negative aspects of human interventions with forests and forest- based resource (Garhwal-Kumaon Region Tour) organized by HAPPRC, HNB Garhwal University, Srinagar Garhwal (U.P.) 11-15 April, 1984.

***3. Participated in National Seminar of Young Scientist*** on Environmental Plant Physiology, organized by society for plant-Physiology and Biotechnology and Garhwal University, Srinagar Garhwal, 27-29 May, 1991.

***4. Participated in GIS Technical Training Programme on Application of GIS*** for watershed Management organized by ICIMOD, NENRIS, Kathmandu, Nepal and Ministry of Environment & Forests, Govt of India, 1-30 Sept, 1993.

***5. Participated in 3<sup>rd</sup> International Symposium on Sustainable Reconstruction of Highland and Headwater Region,*** organized by Environmental Monitoring Society, ICIMOD, UNESCO, IUFRO, IECA etc, Delhi, 6-8 October, 1995

***6. Participated in National Seminar on Human Factor, Resource Management and***

*Development* (IBRAD), Calcutta, 3-5 October, 1996.

7. Participated in **Training Workshop on cultivation of Medicinal Plants by Farmers** organized by SDRE Core group, Garhwal unit of GBPIHED, Srinagar Garhwal at World Heritage site Nanda Devi Biosphere Reserve, Village, Tolma, 16-17 October, 1998.

8. Participated and presented paper in *National Seminar on Woman Empowerment in Garhwal Himalayas "Constraints and Prospected* November 19-20,2007 at H.N.B. Garhwal university, Srinagar, Organized by SAP Department of Political Science, H.N.B. Garhwal University Srinagar Garhwal Uttarakhand.

9. Participated and presented paper in *International Tropical Ecology Congress*, 2007 Dehradun Uttarakhand India 2-5 December 2007, Organized by H.N.B. Garhwal University Srinagar Garhwal India in association with International Society for Tropical Ecology.

10. Active participation in *Regional Seminar on "Intellectual Property and Innovation Management in knowledge Era"*, organized by N.R.D.C. New Delhi in collaboration with U.K. State council for Science and Technology (U COST) on 7<sup>th</sup> September 2009, at Pauri Garhwal.

11. Attended *Annual Conference of Society Himalayan Action Research and Developing. (SHARAD) as a Member* on 1-1-2010 at H.N.B.G.U. Campus, Pauri Garhwal.

12. Participated in *the One Day Capacity Building Programme for AWARENESS ON PC-PNTD ACT*, held on 20<sup>th</sup> February 2010 at Dr. B.G.R. Campus, Pauri (H.N.B.G.U.), sponsored by PARAJ SAMAJIK SANSTHAN, Upper Chopra, Pauri Project Shrinkhala-2010.

13. Participated in *Environment National Seminar on Resource & Development of the India Himalaya; Issues and strategies for sustainable Development at held on 2-4 November, 2011* HNBGU, Srinagar Garhwal, organized by Deptt of Geography HNBGU Central University, Srinagar Garhwal (Uttarakhand).

14. Paper Presented in *National Conference on Innovations in Ethnopharmacology, Recent Developments in Biological and Chemical Sciences for Societal Benefits. Organized by Department of Zoology, LMS Govt. Post Graduate College, Pithoragarh, Uttarakhand, March, 1-3, 2013.*

15. Participated in National Seminar of Challenges of Livelihood Restoration in Disaster-

hit Regions of Uttarakhand. Organized by Department of Geography HNBGU Central University, Srinagar Garhwal, 28 -29 November,2014.

**16.** Participated and Paper Presented in *National Conference on Higher Education and Prospects of Open University*. Organized by Uttarakhand Open University Haldwani (Nanital) and HNBGU Central University Pauri Campus 2 Dec. 2014.

**17.** Paper presented in *National Seminar on Crop Diversity and Entrepreneurship Development in Himalayan Environment*, 29 Sept- to 1 Oct 2016. Organized by Department of Botany, RCU Government P.G College Uttarkashi Uttarakhand.

**18.** Paper presented in *International Seminar on The Himalayan Challenges: Towards Interdisciplinary Dialogues for Sustainability and Development*, 29<sup>th</sup> November to 1<sup>st</sup> December, 2017. Organized by Sri Dev Suman Uttarakhand University, Badshahithaul, Tehri Garhwal in collaboration with Doon University, Dehradun.

**19.** Participated in *National Seminar on The Himalayas: At the Cross- Roads of Environment and Development*, 26-27 May, 2019. Organized by Department of Geography, H.N.B. Garhwal University B.G.R. Campus, Pauri (Garhwal) Uttarakhand. re

**20.** Participated/Worked as a *resource in one day Orientation Program for CTE Faculty Members*” Organized by Dr, P.D.B.H. Post Graduate College, Kotdwar (Garhwal), 30-09-2019.

**21.** Participated in an *International Conference on “Contemporary Issues of Climate Change, Conservation of Biodiversity and Natural Resources in Himalayan Environment*, 14-16 November, 2019. Organized by Department of Zoology, Government Post Graduate College, New Tehri (Tehri Garhwal), Uttarakhand-249001, India.

**22.** Paper presented “*Impact of People’s Participation in Forest Management: A Case Study of Garhwal Himalaya*. 14-15 February, 2020. In: National Seminar on Forest Fire and Climate Change: Challenges and Solutions. Organized by UCOST, Govt. of Uttarakhand, UPSA and H.M.V.P.G. College, Raisi (Haridwar Uttarakhand.

**23,** Paper presented in: *National Conference on Natural and Agricultural Sciences-Issues, challenges and Opportunities*, 26-27 September, 2020. (3<sup>rd</sup> PSRM meet). Organized by Association of Plant Science Researches, Dehradun, Uttarakhand, PLANTICA, MSME and ISO (9001-2015).

**25.** Participated in “*International Webinar*” on “*Water Crisis in the Himalayan Region: Addressing by IQRC Govt. Degree College Chinyarisaur (Uttarkashi)*”, August, 30, 2020.

27. Participated and Paper presented in: ***National Conference on “Natural and Agricultural Sciences- Issues, Challenges and Opportunities***, 26-27 September, 2020, organized by Association of Plant Science Researches, Dehradun, Uttarakhand, PLANTICA, MSME, and ISO (9001-2015).

29. Participated and Paper presented in: National Conference on “Conservation and Sustainable Development of Himalayan Westlands Ecosystem in Uttarakhand” 24-25 September, 2021. Organized by Department of Zoology and Botany, Government PG College New Tehri, Tehri Garhwal, Uttarakhand 249001.

Research project proposal submitted for Centre of Excellence on “Plant Tissue Culture”. (*One Year Diploma Course*). September, 2020 to PDBH Govt. P.G. College, Kotdwar-Deptt. Of Botany Pauri Garhwal, Uttarakhand.

**M. Sc. Botany -** **Around Twenty (20) B.G.R. Campus Pauri.** HNB Garhwal.  
central University, Srinagar Garhwal, Uttarakhand).

**M.Sc. Environment Science - Four (04) Birla Campus Srinagar.**

**Membership (Journal):**

1. *Mountain Research and Development (Life Time Membership).*

2. *PLANTICA*

**Country Visited: (One)**

*Nepal (Kathmandu). (For GIS technical training one month).*

**Hobbies:** Book Reading (especially old Historical literature), Writing poetry and articles, singing, listening Hindi classical and melodious music, Drawing, Painting, knitting, cooking, tracking and Making Dolls/Soft toys.

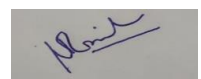
**AWARDS/HONORS/APPRICIATIONS-**

GIS Technical trainee award.

DECLARATION: All the above-mentioned information's are true as per record and/ my knowledge.

Date: 24<sup>th</sup> October, 2021.

Place: Kotdwar (Pauri Garhwal) Uttarakhand



Sign