

Dr. Devesh Sharma

Assistant Professor,
Department of Environmental Science,
Central University of Rajasthan, Ajmer, Rajasthan
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Education

Doctor of Engineering	Integrated Water Resource Management Asian Institute of Technology (AIT), Thailand Dissertation Title: Downscaling of General Circulation Model Precipitation for Assessment of Impact on Water Resources at Basin Level
Master of Engineering	Irrigation Water Management Engineering College of Technology and Agriculture Engineering, Rajasthan
Bachelor of Engineering	Agriculture Engineering, College of Technology and Agriculture Engineering, Rajasthan

Principal research interests

Climate Change and Impact on Water Resources, Hydrology, Watershed Development and Management, Groundwater Management, Integrated Water Resources Management, Modeling of Water Resources Systems

Academic Achievements

1. 1999 - Graduate Aptitude Test in Engineers (**GATE**) for master degree
2. 2001 - National Eligibility Test (**NET**)
3. 2003 - Scholarship awarded by **DANIDA** (Danish International Development Agency) during doctoral degree
4. 2010 – Scholarship awarded by **DAAD/BMBF** for summer school at Kiel University

Employment

Assistant Professor, Department of Environmental Science, Central University of Rajasthan, Ajmer, Rajasthan
01 August 2011 – till date

Assistant Professor, Department of Natural Resources, TERI University, New Delhi
Adjunct Professional, TERI, New Delhi
01 December 2008 – 31 July 2011

Consultant (Water Resources), International Water Management Institute, New Delhi
Project: Basin Focal Projects of the Challenge Program for Water and Food (CPWF) in Indo-Gangetic Basin

June 2008 – November 2008

Research Associate, Water Engineering and Management, Asian Institute of Technology, Bangkok, Thailand

Project: Regional Center for UNU Water Virtual Learning Centre: A distance based e-learning program on Integrated Water Resources Management (IWRM)
January 2007 - March 2008

Senior Research Fellow, College of Technology and Agriculture Engineering, Udaipur, Rajasthan, India

Project: Monitoring and Evaluation of Suitable Technologies for Soil and Water Conservation in Southern Rajasthan, India (ICAR sponsored).
June 2001 - December 2002

Course Taught:

Modelling of Water Resources System; Water Conservation; Groundwater Hydrology and Management; Water Resources Optimization and Water Quality Modelling; Environmental Geoscience and Atmospheric Science; Environmental Chemistry; Remote Sensing and GIS for environment Science; Climate Change and Clean Technology; Statistics, Environmental Modeling and Research Methodology; Management of Arid Lands and Desertification

Software Knowledge

- Water Resources Models: HEC-HMS, BTOPMC, HEC-ResSim, WEAP, SWAT, MIKE BASIN, MIKE 11, MIKE GIS, Visual MODFLOW, CROPWAT, EPANET, AquaCrop
- Geographical Information System (GIS): ArcGIS, ERDAS Imagine, ENVI, ILWIS

Publications

International/National Journal

1. **Devesh Sharma** and M.S. Babel. Application of downscaled precipitation for hydrological climate change impact assessment in the Ping River Basin of Thailand. Accepted to Climate Dynamics.
2. Mohammad Waheed Ibrahimzada and **Devesh Sharma**. Vulnerability Assessment on Water Resources in Amu Darya River Basin, Afghanistan. International Journal of Environmental Science, Volume 3(2), 802-812, ISSN 0976 – 4402, doi:10.6088/ijes.2012030132007.
3. **Devesh Sharma** (2012). Situation Analysis of Flood Disaster in South and Southeast Asia – A Need of Integrated Approach. International Journal of Science, Environment and Technology, Vol 1(3), 167-173, ISSN: 2277-663X
4. Mamta Mehra, **Devesh Sharma** and Prachi Kathuria (2012). Groundwater Use Dynamics: Analyzing Performance of Microirrigation System- A case study of Mewat District, Haryana, India. International Journal of Environmental Science, Volume 3(1), 471-480, ISSN 0976 – 4402, doi: 10.6088/ijes.2012030131045.
5. Wafa Singh and **Devesh Sharma** (2011). Situation Analysis of Water Supply System of Amritsar city, India. VATTEN 67:175–184, ISSN: 0042-2886.

6. **Devesh Sharma**, M.S. Babel, Virendra Kumar (2010). "An Approach for Efficient Rainwater Management for Agriculture in Arid Region of Rajasthan, India". International Journal of Water Resources and Environmental Management, Serial Publication, Volume (1), pp. 39-52, ISSN: 2229-5933.
7. **Devesh Sharma**, A. Das Gupta, M. S. Babel (2007). Spatial disaggregation of bias-corrected GCM precipitation for improved hydrologic simulation: Ping River Basin, Thailand. Published in Hydrology and Earth System Sciences, Volume 11(4), 1373-1390, doi:10.5194/hess-11-1373-2007
8. Virendra Kumar, R.V. Mishra and **Devesh Sharma** (2003). Mathematical model for prediction of sediment yield from watersheds. Indian Journal of Soil Conservation. Vol. 31(1), P: 74-79, ISSN: 0970-3349
9. **Devesh Sharma** and Virendra Kumar (2003). Prediction of onset and withdrawal of effective monsoon dates and subsequent dry spells in an arid region of Rajasthan. Indian Journal of Soil Conservation. Volume 31(3), 223-228, ISSN: 0970-3349
10. **Devesh Sharma** and Virendra Kumar (2002). Application of SCS model with GIS databases for estimation of runoff in an arid watershed. Indian Journal of Soil Conservation. Vol. 30(2), 141-145, ISSN: 0970-3349

Conference/Symposium/workshop

1. Mohammad Waheed and **Devesh Sharma** (2011). Assessing the impact of Climate Change on water balance of the Amu Darya River, Afghanistan. International Conference on Green Chemistry organized by Central University of Rajasthan, 7-9 December, Jaipur, Rajasthan
2. **Devesh Sharma** (2011). International Workshop on Adaptation and mitigation options for tackling the impacts of climate change on water resources jointly organised by the Department of Civil Engineering, ITM University, Gurgaon and Water sciences Division, UNESCO, New Delhi, March 14-15.
3. **Devesh Sharma** (2010). Critical Issues on Groundwater in India. International Forum for Sustainable Asia and the Pacific, Japan, 12 July.
4. **Devesh Sharma** and Aastha Gulati (2009). Impact of climate change on floods in south Asia: a need of integrated floods management wheel approach. International Conference on climate change & sustainable management of natural resources, ITM Universe, Gwalior (M.P.), India, 10-12 November.
5. Bharat R Sharma and **Devesh Sharma** (2008). Impact of Climate Change on Water Resources and Glacier Melt and Potential Adaptations for Indian Agriculture. 33rd Indian Agricultural Universities Association Vice Chancellors" Annual Convention on "Climate Change and its Effect on Agriculture", Anand Agricultural University, Anand (Gujarat), India, December 4-5, 2008.
6. **Devesh Sharma** (2008). Impact of Climate Change on Floods: Imperatives for Prevention and Preparedness in South Asia. Workshop on Regional Cooperation for Flood Mitigation, NASC Complex, Pusa, New Delhi, 03 November 2008.
7. M. S. Babel, Velma I. Grover, **Devesh Sharma** and Shahriar Md. Wahid (2007). Capacity Development in IWRM through E-learning – Initial Experiences of Water Virtual Learning Centre at AIT, Thailand. XIII World Water Congress, Montpellier, France, 1-4 September 2008.
8. **Devesh Sharma**, Virendra Kumar and K.D. Sharma (2007). Distributed Numerical

Rainfall Runoff Modelling in Small Arid Watershed Using Remote Sensing and Geographic Information System. CD Proceedings of International Agricultural Engineering Conference held at Asian Institute of Technology, Bangkok, Thailand, 3-6 December 2007.

9. **Devesh Sharma**, A. Das Gupta, M. S. Babel (2006). Application of bias-correction techniques on ECHAM4/OPYC SRES scenarios for Thailand. Proceedings of an International Perspective on Environmental and Water Resources Conference (CDROM), ASCE-EWRI, 18-20 December, New Delhi, India.
10. **Devesh Sharma**, A. Das Gupta, M. S. Babel (2006). Trends in extreme rainfall and temperature indices for two river basins of Thailand. 3rd APHW International Conference on “Wise Water Resources Management towards Sustainable Growth and Poverty Reduction”, Bangkok, 16-18 October.
11. Devesh Sharma (2006). Application of Geographic Information System for Rainwater Management in Small Arid Watershed of Rajasthan, India. Conference Proceeding of Map Asia.
12. **Devesh Sharma**, A. Das Gupta, M. S. Babel (2005). Spatial rainfall disaggregation approach using multiplicative random cascade model in two river basins of Thailand. International Workshop on Numerical Simulation for Disastrous Phenomena organized by SET/AIT and GSIC/TOKYO TECH, Asian Institute of Technology, Thailand, 8 December.
13. **Devesh Sharma**, Virendra Kumar and P.K. Singh (2003). Efficient rainwater management for crop production in an arid watershed of Rajasthan. CD Proceedings of XXXVII ISAE annual convention & symposium held at College of Technology and Engineering, MPUAT, Udaipur, P: V 45-54.
14. Amit Kumar, **Devesh Sharma** and Virendra Kumar (2003). Determination of drainage coefficient based on crop tolerance to waterlogging for Udaipur region. CD Proceedings of XXXVII ISAE annual convention & symposium held at College of Technology and Engineering, MPUAT Udaipur, P: III-53-56.
15. **Devesh Sharma** and Virendra Kumar (2002). Methodology and planning issues for selection of appropriate wastewater treatment technologies in developing countries using decision tree criteria. Hydrology and Watershed Management: Proceedings of International Conference: With a Focal Theme on Water Quality and Conservation for Sustainable Development, Hyderabad, December 18-20, Vol. 2, 345-353, BS Publications, ISBN 81-7800-043-1.
16. **Devesh Sharma** and Virendra Kumar (2002). Application of satellite data and GIS for estimation of runoff in small and region watershed. Paper presented at XXXVI Annual Convention of ISAE held at IIT Kharagpur on January 28-30: Paper No. SWE-2001-III-17.

Book Chapter

1. A. Mohanty, M. Mishra, **D. Sharma**, W. Ibrahimzada (2012). Assessing the Hydrological Impacts of Climate Change on the Amu Darya River, Afghanistan. Chapter 3 in Climate Change Modeling for Local Adaptation in the Hindu Kush-Himalayan Region, Community, Environment and Disaster Risk Management, Vol 11, Emerald Group Publishing Limited, ISBN: 9781780524863, pp 33-52.
2. S.K. Jain, B.R. Sharma, A. Zahid, M. Jin, J.L. Shreshtha, V. Kumar, S.P. Rai, J.Hu, Y. Luo, and **D. Sharma** (2009). “A Comparative Analysis of the Hydrogeology of the Indus-Gangetic and Yellow River basins”. Groundwater Governance in the Indo-

Gangetic and Yellow River Basins: Realities and Challenges. CRC Press, ISBN: 9780415465809.

3. Amit Kumar, **Devesh Sharma**, Mahesh Kothari and Virendra Kumar (2005). Determination of drainage coefficient based on crops tolerance to waterlogging for Udaipur Region. Drainage and Irrigation Water Management, Himanshu Publications, ISBN 81-7906-099-3.
4. **Devesh Sharma**, Virendra Kumar. P.K. Singh and Mahesh Kothari (2005). Efficient rainwater management for crop production in an arid region watershed of Rajasthan. Hydrology and Watershed Management, Himanshu Publications, ISBN 81-7906-097-7.

Research Report

1. Cai, X.; Sharma, B. R.; Matin, M. A.; **Sharma, D.**; Gunasinghe, S. 2010. An assessment of crop water productivity in the Indus and Ganges river basins: Current status and scope for improvement. Colombo, Sri Lanka: International Water Management Institute. 30p. (IWMI Research Report 140). doi: 10.5337/2010.232
2. Special Study Report on “Impact of Climate Change on Water Resources”, December 2003
3. Project Report on “Water Resources Situation Analysis to Promote Sustainable Groundwater Development of Mewat District, Haryana, India”, (Sponsored by IGES, Japan) - June 2011

Project Involvement

1. UN Water Virtual Learning Centre (UN-WVLC): An e-learning program on Integrated Water Resources Management (United Nations University-International Network on Water, Environment and Health) – *Project Associate*
2. Vulnerability assessment of freshwater resources in South and Southeast Asia (UNEP funded Project) – *Team member*
3. Flood Study and Water Supply Study for two River Basins in Thailand – *Team member*
4. Challenge Program for Water and Food (CPWF) in Indo-Gangetic Basin (Basin Focal Project) - *Consultant*
5. Groundwater Governance in Asia – Development of Course material (IWMI, New Delhi) - *Consultant*
6. Third Party Independent groundwater resources assessment – *Team Member*
7. Water Vision-2030 for Arunachal Pradesh State – *Team Member*
8. Coastal vulnerability assessment and strategies for better preparedness towards impacts of climate change and sea level rise: State of West Bengal – *Team Member*
10. Water Resources Situation Analysis to Promote Sustainable Groundwater Development of Mewat District, Haryana, India ((Sponsored by IGES, Japan & Project Amount 17,230 USD) – *Project Investigator*
11. Assessment of Climate Change Impacts on Water Resources in the Luni River Basin, Rajasthan, India, using CORDEX results – Project in collaboration with Swedish Meteorological and Hydrological Institute (Sida funded project, 2.1 million SEK, project partner)

Training Attended

1. "Economic Instruments of Water Resource Management – Recent Developments". 8-10 January, 2009. Organized by Indira Gandhi Institute of Development Research (IGIDR), Mumbai
2. WATER SUMMIT. Feb.19-21, 2009. G B Pant University of Agriculture & Technology, Pantnagar
3. "Coastal Hydrology" 14-26 December, 2009. Jointly organized by CHAGWARM, Andhra University, Visakhapatnam & NIH, Kakinada. Supported by DST
4. "Field methods and eco-hydrological models for integrated water management in rural areas" in Kiel, Germany, from September 15–30, 2010. Supported by DAAD/BMBF
5. Attended Training for Trainers on "Integrated Water Resources Management for Drought Risk Management" at Nairobi, Kenya, from 10-14th September 2012. Supported by Water CapNet.
6. Attended Training Workshop on "South Asia CORDEX" at Indian Institute of Tropical Management, Pune, from 17-20th October 2012, Supported by World Climate Research Programme, Switzerland.

Workshop/Conference Attended

1. Workshops on 'Corporate Social Responsibility and Sustainable Water Management' and 'Rainwater Harvesting' organized by CII in partnership with Ministry of Water Resources at Silver Oak Hall, IHC, New Delhi, on 17 March, 2009.
2. International Digital Governance and Hotspot Geoinformatics Workshop- Part 1, June 1-3, 2009, TERI University, New Delhi
3. Australia-India Workshop on the Future of Water Security under Climate Change, organized by the Australia-India Institute, University of Melbourne, Australia, New Delhi, September 14, 2009
4. "Tackling Water and Food Crisis in South Asia: Insights from Indus- Gangetic Basin" International Workshop organized by IWMI, December 2-3, 2009 at India Habitat Centre, New Delhi
5. Sustainable Cities Symposia TERI and the University of Birmingham at Winterbourne House & Garden, University of Birmingham 11 -15 October 2010
6. The Yamuna River: A Confluence of Waters, A Crisis of Need. 3-4 January, 2011. Workshop organized by TERI and Yale University, TERI University, New Delhi
7. Water Security and Climate Change: Challenges and Opportunities. 13-15 April 2011, India Water Forum organised by TERI, Stein Auditorium, India Habitat Centre, New Delhi
8. Water and Environmental Issues of Ganga River Basin Management Plan. 4th November 2011. Workshop organized by IIT Delhi and North India Chapter of EWRI of ASCE

Membership of Professional Bodies

1. The Association of Hydrologists of India (Life)
2. SaciWATERs-CapNet Network (SCaN)

Student Supervised

Master of Science – 23

Courses/Workshop/Seminar Organized

1. International Training programme on “Integrated approach towards sustainable development” from 05-07-2010 to 24-07-2010 at TERI University (Sponsored by Ministry of External Affairs, Government of India)
2. One day project workshop entitled “Groundwater situation analysis in Mewat district” on 25th March 2011 at TERI University (Sponsored by IGES, Japan)
3. International Training programme on “Integrated approach towards sustainable development” from 04-07-2011 to 23-07-2011 at TERI University (Sponsored by Ministry of External Affairs, Government of India)
4. National Workshop on “Climate Change- Adaptation and Mitigation for Sustainable Development” on 10-11th October 2011 at Central University of Rajasthan, Kishangarh, Rajasthan.

Invited Reviewer (Journal/student research/Project proposal)

1. Journal of Agribusiness in Developing and Emerging Economies
2. International Journal of Ecology and Development (IJED)
3. International Agricultural Engineering Journal
4. The Kasetsart Journal (Natural Science)
5. International Journal of Water
6. Environment, Sustainability and Development
7. Journal of Irrigation and Drainage
8. Journal of Water Resources Management
9. International Journal of Climatology
10. Invited as Reviewer to conduct mid semester progress review for ME students at Gujarat Technological University, Ahmadabad (18th April 2011)
11. Invited Reviewer by Agence nationale de la recherche (ANR), French Call for proposals (May 2011)

Invited Lectures

1. “Monitoring, Evaluation, and Impact Assessment of Watershed Programmes”. Haryana Institute of Public Administration (HIPA), 12th May 2010
2. “Integrated Water Resources Management” delivered during International Training programme on Integrated approach towards sustainable development at TERI University, July 2010
3. “Issues and Action for Better Groundwater Management in Asia”. Regional Water KnowledgeHub for Groundwater Management for Asia Pacific Water Forum, Japan, 12th July 2010.

4. “Groundwater Management in Asia – Potential Research Areas”. Sponsored by Groundwater Knowledge Hub, International Forum for Sustainable Asia and the Pacific (IGES), Japan, 13th July 2010.
5. Presentation on Water Resources Modelling. Symposium on Sustainable Cities, University of Birmingham, Birmingham, UK, 11-15th October 2010
6. “Introduction to General Circulation Model” delivered during short term course on Flood estimation in a changing climate at IIT, Roorkee, 7th March 2011
7. “Downscaling Techniques” delivered during short term course on Flood estimation in a changing climate at IIT Roorkee, 7th March 2011
8. “Water for Agriculture in India - The Challenge of Climate Change”. Shivaji College, Delhi University, 16th March 2011
9. “Integrated Water Resources Management” delivered during International Training programme on Integrated approach towards sustainable development at TERI University, July 2011
10. “Unit Hydrograph and Application” delivered at IIT Delhi, November 3, 2011
11. “Integrated Water Resources Management” delivered during International Training programme on Integrated approach towards sustainable development at TERI University, 16th July 2012
12. “Climate Change and Water Resources” delivered during International Training programme on Integrated approach towards sustainable development at TERI University, 16th July 2012