

## DR. HIMANSHU KULKARNI'S CURRICULUM VITAE

*Founder Trustee and Executive Director, Advanced Center for Water Resources Development and Management (ACWADAM)*

Dr. Himanshu Kulkarni leads ACWADAM, a not-for-profit knowledge institution and think-tank working on groundwater since 1998. He is a hydrogeologist by qualification – PhD from Pune University in 1987 - and has been working on aquifers and groundwater across India's diverse groundwater typology for more than 35 years. He has been a CSIR research scholar, UNESCO scholar and a Fulbright Fellow at different times of his career.

ACWADAM has partnered with a variety of organisations on piloting and mainstreaming the ideas of participatory groundwater management and springshed management across India, neighbouring Nepal, Bhutan, Vietnam and has begun work in Africa. ACWADAM's work under Dr. Kulkarni has followed the principle of bringing communities closer to their aquifers and managing groundwater as a common pool resource through the process of Aquifer-based Participatory Groundwater Management. He has, through ACWADAM, steered the concept of hydrogeology based 'springshed' management that has now become so important from local to national levels in India and its neighbouring regions. Dr. Kulkarni has, before co-founding ACWADAM, worked at Pune University for 13 years, after which he also worked with the corporate sector for a couple of years.

Through ACWADAM's collaboration with educational institutions, Dr. Kulkarni works as adjunct faculty and course advisor at Shiv Nadar University for the post-graduate course on Water Science and Policy. He is also visiting faculty and a member of the Board of Studies at TISS, Mumbai. He has supervised 2 PhDs and many post-graduate dissertations. He continues to advise Government of India and has held many advisory positions on various committees of the Government. Dr. Kulkarni has anchored several international action research collaborations in the subject of groundwater, particularly in his lead role at ACWADAM.

### PERSONAL INFORMATION

**Full name:** Himanshu Chandrakant Kulkarni

**Date of birth:** 14 October 1960

Residential address: *B-7 Tarangan, Lane #12, Dahanukar Colony, Kothrud, Pune - 411029, India.*

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**Presently,** Executive Director & Secretary (and Founder Trustee), Advanced Center for Water Resources Development and Management (ACWADAM), Suvidya, 27 Kshipra society, Karvenagar, Pune-411052.

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### PROFESSIONAL EXPERIENCE (35 years)

- *Currently (for the last 22 years), Exe. Director & Honorary Secretary and one of the Founders of Advanced Center for Water Resources Development and Management (ACWADAM), a leading think tank on groundwater management and governance in India and other regions of the world. Leading the pursuit of ACWADAM's goal, "Bringing aquifers and communities closer to each other", through Training & Education, Action Research, Facilitation, Dissemination and Outreach. ACWADAM works on aquifer-based participatory groundwater management including spring-water management across India. The idea of taking the science of groundwater to groundwater users for improved availability of groundwater resources for domestic, agricultural and other purposes in large parts of India. Dedicated full time to the seeding, nurturing and growth of the organisation by running the organisation on a day-to-day basis and also taking it to new heights in the achievement of not only the organisation's objectives, but also the purpose of addressing one of India's foremost challenges, i.e. the challenge of incubating groundwater management and governance at various levels of practice and policy. Has been able to develop partnerships for ACWADAM with Civil Society, National and International Research Agencies, State and Central Government Bodies and even partnerships with grass-root institutions like Panchayats and Village Councils.*
- *Previously: Senior Manager, heading and co-ordinating the function of the water resources division of Maxworth Orchards India Limited, as head of hydrogeology division (with a team of 7 hydrogeologists). Work included managing water resources on "orchard sites" spread across a geographical area of more than 300000 km<sup>2</sup> across India.*
- *Began career through a thirteen-year stint including doctoral and post-doctoral research and post-graduate teaching as a Government of India CSIR Fellow, CSIR Post-doctoral Associate and CSIR*

Scientist at the Department of Geology, Savitribai Phule Pune University, Maharashtra, India, one of the leading campuses offering a programme in Geological Sciences. Taught at the University and conducted research leading to *publication and review of research for leading scientific journals such as "Hydrogeology Journal" (Springer-Verlag), "Groundwater", "Pedosphere" and "Journal Geological Society of India" and other journals of international repute. Reviewed Science and Technology Projects for Department of Science and Technology (Govt. of India).*

- Continues to teach and guide research at graduate, post-graduate and doctoral levels on hydrogeology and groundwater management at Pune along with co-supervision of undergraduate and post-graduate dissertations at various institutions: Fergusson College, Savitribai Phule Pune University, Tata Institute of Social Sciences and Shiv Nadar University in India. Was also involved in co-supervision of research with faculty at University at Wageningen, The Netherlands and Oxford University, UK.
- Also, conducting and co-ordinating online versions of trainings on groundwater for civil society, practitioners, policy makers and students at various Universities during the COVID-19 pandemic.
- Supervised and co-supervised more than 20 MSc dissertations at Fergusson College, Savitribai Phule Pune University, Tata Institute of Social Sciences and Shiv Nadar University – all in the subject of Hydrogeology, Groundwater Management and Groundwater Governance.
- Two PhDs awarded to students under Dr. Kulkarni's supervision under the Savitribai Phule Pune University – in the subject of Hydrogeology – the first in 2003 and the second in 2013..

### QUALIFICATION

- **Ph.D. in Geology (Hydrogeology of Deccan basalt) from University of Pune – 1987 – under Junior and Senior Research Fellowships of the Council of Scientific and Industrial Research (CSIR) through the first CSIR National Entrance Test in 1983.**
- *Post-doc research in the subject of hydrogeology of the Deccan basalt – aquifer characterisation through a CSIR Research Associateship.*
- **M.Sc. in Geology** with a First Class from Department of Geology, University of Pune – 1983 and **B.Sc. in Geology** with a First Class from Fergusson College under University of Pune – 1981.
- **Fulbright Scholar** under Indo-American Environment Leadership Program for a study in the USA (July - August 2007), dealing with groundwater management initiatives, especially in the Western United States – hosted at ISET, Boulder, Colorado.
- **UNESCO Scholarship for PGTC\_2001 (Post graduate training course in groundwater tracing techniques):** Joanneum Research & Technical University, Graz, Austria – 2001.
- Research Fellow (doctoral) and Research Associate (post-doc) and Scientist of the Council of Scientific and Industrial Research (CSIR) – 1983 to 1996.
- *First Class at Secondary and Higher Secondary Education at Shri Shivaji Preparatory Military School and Abasaheb Garware College, Pune.*
- Extracurricular activities like sport, dramatics, quiz, elocution and music, complimenting curricular excellence.

### KEY CREDENTIALS

- Member, Drafting Committee, India's National Water Policy, Ministry of Jal Shakti (Water Resources), Government of India, 2019-20.
- Member, Advisory Committee, Water Strategy Development, Government of MP.
- Jury Member, FICCI Water Awards, 2019 & 2020.
- Lead Author (along with Dr. Akhilesh Gupta, Adviser, DST, Govt. of India), Report of Working Group 1: Inventory and Revival of Springs in the Himalayas for Water Security, as part of the NITI Aayog (Government of India) initiative on Sustainable Development in Indian Himalayan Region, 2018.
- Special presentations in Jaipur and Chennai on "Groundwater Management in India" during two workshops for teams conducting Scientific Audit of the national programme on Groundwater Management and Governance, on invitation from the office of Comptroller and Auditor General of India, August 2018.
- Member, Committee on drafting the Water Policy for the state of Karnataka, India through the Karnataka Jnana Aayoga. *Chaired the sub-committee on 'Groundwater and its interaction with surface water', 2017-18.*
- Member, State Advisory Board on Water Resources Planning, Government of Maharashtra & 2030 WRG, 2018 - current.
- Member, High Level Committee on reforming and restructuring CWC and CGWB, the two apex institutions dealing with surface water and groundwater under Ministry of Water Resources, Government of India, 2015-

16. *Chaired and co-chaired the sub-groups on Groundwater and Capacity Building respectively. Also, played a major role in drafting out the main report.*

- Member, committee to review drafts of the following water legislations under Ministry of Water Resources: *Model bill on Conservation, Protection and Regulation of Ground Water, 2011, Draft National Water Framework Law, and Draft River Basin Management – 2015-17.* Also, Member, Committee on reviewing Draft Water Framework Law and Draft Model Bill on Groundwater Protection and Management, 2011, MoWR, GoI.
- Chairman working group on *Sustainable Groundwater Management*, on invitation from Planning Commission, Government of India, in preparation of 12<sup>th</sup> Five Year Plan. *Wrote up major sections of the Working Group Report on groundwater for the 12<sup>th</sup> Plan – 2010-11.* (Chairman, CGWB – GoI, was the Co-chair of the Working Group).
- Member, Steering Committee, Water Resources, Planning Commission, Government of India –2010-11; Member, High Level Committee to Study Water Logging and Soil Salinisation constituted by Planning Commission, Government of India, for Government of Punjab–2011-2013.
- Current and past Memberships: *International Association of Hydrogeologists, International Association of Hydrological Sciences; Geological Society of India; Indian Society of Remote Sensing; Indian Society of Geomatics.*

### RESEARCH: INTERNATIONAL COLLABORATIONS

- Transition to Groundwater Sustainability: EU Project with partners from across 6 continents. Project anchored by UNESCO-IHE, Netherlands – ongoing.
- Delivered two invited lectures on ‘Groundwater Management and Governance in India’, in Paris (French Agency for Biodiversity) and Montpellier (IM2E – French Institute for Water and Environment) in November 2018 on invitation from experts in France.
- SDC-UNDP project on Strengthening State Strategies for Climate Action in India – ACWADAM’s role was to develop capacity and conduct dialogue on participatory groundwater management, spring-water revival and provide oversight on the development of Water Policies in certain states – Helvetas was the co-ordinating agency – 2017 to 2019.
- Reviving springs and providing access to solar powered irrigation pumps (SPIP) through community based water use planning: Multiple approaches to solving agricultural water problems in mid hills and Terai in Nepal and India – collaboration with ICIMOD, Nepal. Programme support was through CGIAR’s WLE Programme.
- Collaborative Applied Research and Partnership in Kailash Sacred Landscape (India and Nepal) Understanding Springs using Springshed Hydrogeology Approach – collaboration with ICIMOD, Nepal – lead researcher on the programme for ACWADAM.
- Improving livelihoods with innovative cropping systems on the East India Plateau 2012 – 2016. Supported by ACIAR and led by University of Western Sydney in partnership with Pradan. ACWADAM led the theme on groundwater management.
- AGRAR 2006. Managed Aquifer Recharge: an assesment of its role and effectiveness in watershed management. ACWADAM was one of the patners (HK was the co-ordinator and lead researcher from ACWADAM) – 2003-2006. Lead agency was British Geological Survey under DFID support.
- COMMAN 2005. Community Management of Groundwater Resources in Rural India – International collaboration between various International Agencies and Indian Partners – ACWADAM was one of the patners (HK was the co-ordinator and lead researcher from ACWADAM) – 2002-2005. Lead was British Geological Survey under DFID support.
- Research collaboration between Department of Geology, SPPU, Pune and British Geological Survey – ‘Sustainable Groundwater Development of hard-rock aquifers: the possible conflict between irrigation and drinking water supplies from the Deccan Basalts of India’ – lead researcher on India side – under the ODA programme – 1991-1995. The project was co-ordinated through British Council.
- Presented research findings in more than 10 national and international symposia on groundwater, including conferences and symposia in USA, UK, The Netherlands, Germany, Japan, South Africa, Bhutan, Nepal and Vietnam.

PUBLICATIONS: PAPERS / BOOKS OF RELEVANCE (only a selection provided here)  
(Detailed list can be provided separately)

Peer-reviewed papers:

1. Kulkarni, H., Shah, M. and Vijay Shankar, P. S. 2015. Shaping the contours of groundwater governance in India. *Journal of Hydrology: Regional Studies*, v.4(A), September 2015, 172–192, <http://dx.doi.org/10.1016/j.ejrh.2014.11.004>.
2. Shah, M. and Kulkarni, H. 2015. Urban water systems in India: typologies and hypotheses. *Special Article, Economic and Political Weekly, L (30), July 25, 2015, 57-69.*
3. Moench, M. Kulkarni, H. and Burke, J. 2012. Trends in local groundwater management institutions. *Thematic paper 7, Groundwater Governance: A Global Framework for Country Action, GEF ID 3726.* [www.groundwatergovernance.org](http://www.groundwatergovernance.org)
4. Kulkarni, H., Shah, M. and Vijay Shankar, P. S. 2015. Shaping the contours of groundwater governance in India. *Journal of Hydrology: Regional Studies* (2015), <http://dx.doi.org/10.1016/j.ejrh.2014.11.004> (pre-print).
5. Kulkarni, H. and Vijay Shankar, P. S. 2014. Groundwater resources in India: an arena for diverse competition. *Local Environment: The International Journal of Justice and Sustainability*, v. 19(9), 990-1011. <http://dx.doi.org/10.1080/13549839.2014.964192>.
6. Kulkarni, H. and Vijay Shankar, P. S. (2009) Groundwater: towards and aquifer management framework. *Commentary, Economic and Political Weekly, February 7, 2009.*
7. Kulkarni, H. (2005) Groundwater overdraft: a physical perspective. In: *COMMAN 2005. Community Management of Groundwater Resources in Rural India – Research Report, R. Calow and D. Macdonald (eds), British Geological Survey Commissioned Report CR/05/36N., pp. 1-13.*
8. Kulkarni, H., Vijay Shankar, P.S., Deolankar, S.B. and Shah Mihir (2004) Groundwater demand management at local scale in rural areas of India: a strategy to ensure water well sustainability based on aquifer diffusivity and community participation. *Hydrogeology Journal (Springer)*, v. 12(2), pp. 184-196.
9. Kulkarni, H., Deolankar S. B., Lalwani A., Joseph B. and Pawar S. (2000) Hydrogeological framework of Deccan basalt ground water systems, India. *Hydrogeology Journal (Springer - Verlag)*, v. 8(4), pp. 368-378.
10. Kulkarni, H. and Deolankar S.B. (1993) Ground water abstraction from shallow unconfined Deccan basaltic aquifers of Maharashtra, India. In *Selected Papers in Environmental Hydrogeology: Y Sakura (ed.); Int. Assoc. Hydrogeol. - Verlag Heinz Heise Publ., v. 4 (Section 3), pp. 107-120.*
11. Tambe, S., Rawat, G. S., Bhutia, N. T., Sherpa, P. N., Dhakal, S., Pradhan, S., **Kulkarni, H.** and Arrawatia, M. L. 2020. Building sustainability in the Eastern Himalaya: linking evidence to action. *Environment, Development and Sustainability*, 22: 5887-5903.
12. Kulkarni, H. and Gokhale, R. 2020. Managing Deccan Basalt aquifers: understanding aquifer heterogeneity, iniquitous access and groundwater competition. *e-Journal of Geohydrology, INC-IAH, v.1 (2): 9-23*

Books / Book Chapter

- **(I) Chapter for Handbook on Climate Change**  
Kulkarni, H. and Thakkar, H. (2012) Framework for India's strategic water resource management under a changing climate, pp. 328-340; (in ed: Dubash, N.). *Handbook on Climate Change in India*, Oxford University Press.
- **(II) Chapter for India Rural Development Report, 2013-14**  
Kulkarni, H., Vijay Shankar, P.S. and Patil, S. (2015) The relevance of groundwater typology in India's rural development. Chapter 2, IDFC Rural Development Network 2014. India Rural Development Report 2013/14. Orient BlackSwan, Delhi.
- **(VI) Chapter for Clean and Sustainable Groundwater in India**  
Kulkarni, H., Aslekar, U. and Joshi, D. (2018) Specific Yield of Unconfined Aquifers in Revisiting Efficiency of Groundwater. In: D. Saha et al. (eds.), *Clean and Sustainable Groundwater in India*. Springer Nature Singapore Pte Ltd. 2018. Springer Hydrogeology, DOI 10.1007/978-981-10-4552-3\_10.
- **(VIII) Paper for Chapter in Book on Groundwater of South Asia**  
Kulkarni, H., Aslekar, U. and Patil, S. (2018) Groundwater Management in India: Status, Challenges and a Framework for Responses. In: Mukherjee, A. (ed.), *Groundwater of South Asia*. Springer Nature Singapore Pte Ltd. 2018. Springer Water, DOI <https://doi.org/10.1007/978-981-10-3889-1>.

## BUILDING CAPACITY THROUGH TRAINING AND EDUCATION

1. Designed a 15-day training programme, 'Basic Training in Hydrogeology and Groundwater', for Civil Society. ACWADAM has been conducting this biannual training programme for the last 12 years in Pune. Leads the ACWADAM faculty in the training, mainly through sessions dealing with improving conceptual clarity around aquifers and groundwater management. The training is often bilingual and covers topics that are part of most post-graduate curricula on groundwater in mainstream systems of education.
2. Designed and helped conduct modular, thematic trainings on hydrogeology and groundwater on multiple topics such as: *hydrogeology and watershed management, hydrogeology and spring-water management, groundwater quality, groundwater measurement and monitoring, groundwater in river basins, groundwater and agriculture, groundwater in urban water supplies etc.*
3. Designed the subject content on, 'Groundwater resources management and development', for the post-graduate course on 'Water Policy and Governance' at the School of Habitat Studies in the Tata Institute of Social Sciences, Mumbai. Leads ACWADAM team that conducts two thirds of the lectures and field-work for students taking the course during their third semester.
4. Advisor, post-graduate course and curriculum development for the sandwich international programme - post-graduate, diploma and certificate – 'Water Science and Policy' at Shiv Nadar University, Greater Noida, U.P. Leads ACWADAM team in conducting two modules on aquifers – concepts, groundwater problems and management in India – during the first year and in co-ordinating field exposure for students on 'Participatory, aquifer-based groundwater management' in Pune during semester 3. Also advising Shiv Nadar University on water-related research and outreach.
5. Design and part of international team conducting the annual 15-day regional training on 'Springshed Management for Socio-Ecological Resilience in the Hindu Kush Himalayas' at ICIMOD, under the Himalayan University Consortium.

## KEY IMPACTS & OUTCOMES OF WORK

- Capacity building, training and education
  - Participated in skill building - more than a thousand individuals from nearly 200 organisations trained as part of ACWADAM's training in groundwater management.
  - Sustained capacity building and hand-holding with 50 odd leading NGOs in India and with various departments of State Governments
  - Influence on leading institutions and curricula – also participating in mainstream education and training through interaction with 4-5 top institutions of the country
- Outcomes of Action Research
  - Worked across the diverse groundwater typology in India and its neighbourhood.
  - Worked directly with implementing partner organisations 'on the ground' through a substantive research-based approach.
  - Influenced key decisions on 'aquifer-based' participatory groundwater management in many locales by engaging with communities.
  - Hydrogeology of river basins – mainly mapping and estimates on groundwater resources
- PGWM: a nuanced approach to aquifer-based and community-centric groundwater management
  - Led the conceptual development of this approach with multiple partners.
  - Helped many donors establish focused programmes on groundwater management.
  - Leading the embedding of PGWM progressively into mainstream programmes
- Springs Initiative
  - Helped developed a hydrogeological approach to understanding and managing springs in the mountain regions of India.
  - Capacity building, conceptualisation and research on springs.
  - Leading the thinking on scaling out spring-management approaches.
- Partnerships with Government Institutions – key outcomes on programmes on Water Management
  - Led the design of the 'aquifer mapping' programme under Government of India's 12<sup>th</sup> Plan
  - Inclusion of groundwater management in various programmes for their effective impact – MGNREGS, Watershed Management etc.
  - Led ACWADAM's evolution as one of India's leading think-tanks on groundwater management and governance.
- Policy inputs at the invitation of Government of India and various State Governments