VISHAL K. MEHTA

Co-founder & Senior Consultant
Leafbird Consulting LLC

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Skills

- **Management and fundraising -** *Two decades of experience in raising funds for research projects in several countries, and in managing international teams.*
- **Facilitation -** *Experienced facilitator for multi-stakeholder planning for climate change and other risks*
- **Natural resources management -** *Integrated water and energy balance modeling at field, watershed and regional scale. Proficient with WEAP (Water Evaluation and Planning), LEAP (Long-range Energy Analysis and Planning), IHA decision support systems. Experienced with many standard hydrologic software. Regularly build custom tools in open source software.*
- **GIS and statistical analysis-** *Proficient with environmental applications of multivariate statistics, geostatistics and machine learning using R, GRASS, Splus, ArcGIS, QGIS, Manifold, IDRISI and PostGIS.*
- **Remote sensing-** *Satellite imagery for land-use, and water fluxes.*

Summary

Dedicated, collaborative leader in water resources and earth sciences. International experience in 10+ countries. Skilled in project management, facilitation, climate change and water systems modeling. Twenty years of experience. Published in peer reviewed journals. Interested in driving science-based policies for conservation. Enjoys teamwork towards practical solutions. Enjoys cross-disciplinary work with creative people.

Education

2003 - 2007 — PhD in Soil, Crop and Atmospheric Sciences.
Cornell University
Major: Environmental Information Science. Dissertation: "Forest disturbance assessment and evapotranspiration modeling for water management in India"

1999 - 2001 — M.S. in Biological and Environmental Engineering
Cornell University
Major: Soil and Water Engineering. Thesis: "Application of a GIS-based distributed model to two Catskills watersheds"

1993 - 1997 — B.E. in Mechanical Engineering
National Institute of Engineering, India
Thesis: "Performance of centrifugal pumps as turbines for micro-hydropower generation"

Work experience

2024-present — Cofounder & Senior Consultant
Leafbird Consulting, LLC
Climate, Energy, Land and Water Resources consulting.

2008 - 2023 — Senior Scientist
Stockholm Environment Institute
SEI is one of the top three global environmental think tanks.
Developing integrated water-energy-emissions tools for California State Govt; Forecasting seasonal and climate-change impacts for private water suppliers in the US; Developing groundwater tools for Bengaluru, India. Researching climate and landuse change impacts on watersheds in 10+ countries; Co-hosting "Water Stories" podcast; Developing climate change trainings.

2007-08 - 2007-10 — Consultant
EDesign Dynamics
Designed the hydraulics of rainwater harvesting in New York.

2006-08 - 2006-11 — Consultant
Arghyam Trust, India (http://arghyam.org/)
Developed web-based delivery of 100 yrs of climate information and derived evapotranspiration for the India Water Portal; Created online tutorials and spreadsheets on water budgeting.

2005-10 - 2006-07 — Senior Research Associate
ATREE, India (www.atree.org)
Researched landuse change impacts in forests of southern India; Managed field research teams; Developed automated scripts to krige annual rainfall in the Western Ghats.

2003 - 2004 — Graduate Teaching Assistant
Cornell University, USA.
Taught courses in GIS and spatial analysis, hydrology and renewable energy systems.

2002 - 2003 — Research Associate
ATREE, India (www.atree.org)
Researched impacts of mining on southern Indian riverbasin; applied satellite imagery for landcover and landuse change.

1998 - 1999 — Research Fellow
SAMVADA, India

Countries of work experience

USA, India, UK, Thailand, Ecuador, Nepal, Tanzania, Uganda, Kenya, China, Philippines

Selected grants, awards and honors

DWR SGMA Planning Grant (2017-2020), Cities Alliance Catalytic Fund (2015-2017), PI. US Department of Agriculture (2016-2018), co-PI .California Water Foundation (2014-2015), PI. Sida Institutional Programmatic Funds (2011-2014), PI. Arghyam Trust capacity building grant (2009), PI. Cornell Einaudi Center Research Travel Grants (2004, 2005, 2006). International Foundation for Science Grant (IFS Sweden, 2005). Cornell Bradfield Award (2005). Cornell Center for Environment Grant (2005). Alpha-Epsilon National Honor Society for Agricultural Engineering (2000). Vice-President, Cornell BEE Graduate Students Association (2001). SLK Endowment Scholarship and Gold Medal for Engineering, India (1997).

References

Kristin Sicke
(ksicke@ycfcwcd.org, +1 530-723-3467)
Executive Officer, Yolo Subbasin Groundwater Agency, California

Dr. Max Stevenson (MStevenson@scwa2.com, +1 530-681-6004)
Streamkeeper, Solano County Water Agency &Putah Creek Coordinating Council, California

Dr. Steve DeGloria
(sdd4@cornell.edu, +1 607-227-5825) Professor Emeritus, Crop and Soil Sciences, Cornell University

Dr. David Yates
(yates@ucar.edu, +1 303-809-6604)
Scientist III, Research Applications Lab, National Center for Atmospheric Research, Colorado

Languages

English, Hindi, Gujarati, Spanish, Kannada, German (beginner)

Volunteering

Davis Public Library

Davis AYSO Soccer

Developed and implemented innovative micro-hydropower solutions for remote rural communities in India and Nepal.

Selected Work

- Cloud computing: Forecasting physical and legal water supply for California water supply and Colorado Springs Utilities.
- Podcasts "Water Stories" and "City Health & Well-being": Hosting podcasts on sustainability from around the world.
- Climate change and water quality: Updated water supply plans for the City of West Palm Beach, Florida
- City Health and Well-being: Worked with governments and citizens in Nakuru, Kenya and Udan Thani, Thailand
- Climate change seminar: Designed interactive weeklong workshop for Humphrey Fellows at UCD
- Online course on integrated water resources management: Developed for the Aga Khan Development Network
- Bangalore Urban Metabolism Project: Informing better governance for urban sustainability (http://bangalore.urbanmetabolism.asia) with partners IISc and IIM
- SGMA: Implementing SGMA with 20+ water managing entities in Yolo County, California
- Water Resources East Anglia (UK): Facilitated regional water plan among diverse stakeholders for a major water supply company in the UK
- Climate change impacts and adaptation for California water supply: Working with California state agencies
- Google Earth applications : Developed for visualizing complex climate, demography and ecosystem information for California. Precursor to Cal-adapt.
- India Water Portal : Developed web-based climate services delivering 100 yrs of data
- Protected forests in Southern India: Researched Land-use change and forest ecohydrology
- New York City watersheds : Modeled runoff and land-management in watersheds supplying water to New York City

Journal Publications : US

1. Yates, D., Mehta, V., Huber-Lee, A., McCluskey, A. and Purkey, D. (2021) **Exploring the water-energy nexus in California via an integrative modeling approach**. Journal of Water Resources Planning and Management, 147(12).

2. V. K. Mehta, C. A. Young, S. R. Bresney, D. S. Spivak, and J. M. Winter. (2018) **How can we support the development of robust Groundwater Sustainability Plans?** California Agriculture, 2(1):54-64.

3. Purkey, D. R., Escobar Arias, M. I., Mehta, V. K., Forni, L., Depsky, N. J., Yates, D. N., Stevenson, W. N. (2018) **A Philosophical Justification for a Novel Analysis-Supported, Stakeholder-Driven Participatory Process for Water Resources Planning and Decision Making.** Water 10(8).

4. M. Winter, C. A. Young, V. K. Mehta, A. C. Ruane, M. Azarderakhsh, A. Davitt, K. McDonald, V. R. Haden, and C. Rosenzweig. (2017) **Integrating water supply constraints into irrigated agricultural simulations of California**. Environmental Modelling & Software 96:335-346.

5. L. G. Forni, S. E. Galaitsi, V. K. Mehta, M. I. Escobar, D. R. Purkey, N. J. Depsky, and N. A. Lima. (2016) **Exploring scientific information for policy making under deep uncertainty**. Environmental Modelling & Software, 86:232-247.

6. Rheinheimer, D., J. Viers, J. Sieber, M. Kiparsky, V. Mehta, and S. Ligare. (2014) **Simulating High-Elevation Hydropower with Regional Climate Warming in the West Slope, Sierra Nevada.** Journal of Water Resources Planning and Management 140(5): 714–23.

7. Mehta, V.K., Haden, V.R.,Joyce, B.A., Purkey, D.R., Jackson, L.E. (2013) **Irrigation demand and supply given projections of climate and land-use change in Yolo County, California**. Agricultural Water Management 117: 70-82.

8. Vergis, S., and Mehta, V.K. (2012) **"Technology innovation and policy: a case study of the California ZEV mandate"**. In "Paving the Road to Sustainable Transport: Governance and innovation in low-carbon vehicles". Eds M.Nilson, K. Hillman, A. Rickne, T. Magnusson. P.136-158.

9. Mehta, V.K., Rheinheimer, D.E., Yates,D. ,Purkey, D. R., Viers, J. H., Young, C.A., Mount. J. F. (2011) **Potential impacts on hydrology and hydropower production under climate warming of the Sierra Nevada.** Journal of Water and Climate Change 2(1): 29–43.

10. Joyce, B.A., Mehta, V.K., Purkey, D.R., Dale, L.L., Hanemann, M. (2011) **Modifying agricultural water management to adapt to climate change in California's central valley**. Climatic Change 109(1):299-316.

11. Young, C. A., Escobar-Arias, M. I., Fernandes, M., Joyce, B., Kiparsky, M., Mount, J. F., Mehta, V. K., Purkey, D. R., Viers, J. H., and Yates, D. (2009) **Modeling the hydrology of climate change in California's Sierra Nevada for subwatershed scale adaptation**. Journal of the American Water Resources Association 45(6):1409-1423.

12. Mehta, V.K., M. T. Walter, E. S. Brooks, T. S. Steenhuis, M. F. Walter, M. Johnson, J. Boll, and D. Thongs. (2004) **Application of SMR to modeling watersheds in the Catskill Mountains**. Environmental Modeling and Assessment, 9(2):77-89.

13. Johnson, M.S., Coon, W.F., Mehta, V.K., Steenhuis, T.S., Brooks, E.S., Boll, J. (2003) **Application of two hydrologic models with different runoff mechanisms to a hillslope dominated watershed in the northeastern US: a comparison of HSPF and SMR.** Journal of Hydrology 284:57-76.

14. Walter, M.T., Mehta, V.K., Marrone, A.M., Boll, J., P. Gerard-Marchant, Steenhuis, T.A., Walter, M.F. (2003) **Simple estimation of the prevalence of Hortonian Flow in the New York City watersheds.** ASCE J. Hydrologic Engineering 8(4):214-218.

15. Walter, M.T., Steenhuis, T.S., Mehta, V.K., Thongs, D., Zion, M., Schneiderman, E. 2002. **A Refined conceptualization of TOPMODEL for shallow subsurface flows.** Hydrological Processes 16(10):2041-2046.

Please see: https://www.researchgate.net/profile/Vishal_Mehta3/publications

Journal publications : international

1. Cinderby S., Archer, D., Mehta, V.K, Neale, C., Opiyo, R., Pateman, R.M., Muhoza, C., Adeline, C. and Tukhanen, H. (2021) **Assessing Inequalities in Wellbeing at a Neighbourhood Scale in Low-Middle-Income-Country Secondary Cities and Their Implications for Long-Term Livability**. Front. Sociol. 6:729453.

2. Tomer, S.K., Sekhar, M., Balakrishnan, K., Malghan, D., Thiyaku, S., Gautam, M. and Mehta, V. (2020) **A model-based estimate of the groundwater budget and associated uncertainties in Bengaluru, India**. Urban Water Journal, 18(1), 1-11.

3. Sekhar, M.; Tomer, S.K.; Thiyaku, S.; Giriraj, P.; Murthy, S.; Mehta, V.K. (2018) **Groundwater Level Dynamics in Bengaluru City, India**. *Sustainability 10*, 26.

4. Mehta, V.K., Goswami, R., Kemp-Benedict, E., Sekhar, M. Malghan, D. (2014) **Metabolic urbanism and Environmental Justice: The Water Conundrum in Bangalore, India**. *Environmental Justice 7(5). 130-137*.

5. Mehta, V.K., Goswami, R., Kemp-Benedict, E., Sekhar, M. Malghan, D. (2013) **The Social Ecology of Water Use in Bangalore**. Economic and Political Weekly XLVIII (15): 40-50.

6. Mehta V.K., Aslam, O., Dale, L., Miller, N., Purkey, D. (2013) **Scenario-based water resources planning for utilities in the Lake Victoria region.** Physics and Chemistry of the Earth. Special Issue: Hydrology, land-use and climate in the Nile Basin: recent modelling experience. 61-62: 22-31.

7. Mehta V.K., Sullivan, P.J., Walter, M.T., Krishnaswamy, L., DeGloria, S.D. (2008). **Impacts of disturbance on soil properties in a dry tropical forest in southern India.** Ecohydrology 1(2):161-175

8. Mehta, V.K., Sullivan, P.J., Walter, M.T., Krishnaswamy, L., DeGloria, S.D., 2008. **Ecosystem Impacts of disturbance in a dry tropical forest in southern India.** Ecohydrology 1(2):149-160.

9. Krishnaswamy, J., Bunyan, M., Mehta, V.K., Patil, N., Karanth, K.U., 2006. **Impact of Iron-ore Mining on sediment response in a tropical catchment in Kudremukh, Western Ghats, India.** Forest Ecology and Management 224:187-198.

10. Krishnaswamy, J., Mehta, V. K., Joshi, P., Rakesh, K. N., and Suparsh, P. N. 2006. **Comparative Hydrology in Forested South India: Methodological Approaches to Unique Challenges.** *In* Krishnaswamy, S. Lele and R. Jayakumar (eds.) *Hydrology and Watershed Services in the Western Ghats of India. Effects of Land Use and Land Cover Change*. Tata McGraw-Hill, New Delhi p. 265-295.

Other writing

Peer reviewed reports

Ramprasad, A., V.K. Mehta, R. Gowrish. **A Digitalisation Roadmap for Climate-Smart Agriculture in India**. G20 Task Force 6 Accelerating SDG's. May 2023. India.
https://t20ind.org/research/a-digitalisation-roadmap-for-climate-smart-agriculture-in-india/

Groves, David G., Evan Bloom, David R. Johnson, David Yates, and Vishal Mehta. **Addressing Climate Change in Local Water Agency Plans**. 2013. RAND Corporation 76p.
https://www.rand.org/pubs/research_reports/RR491.html

Groves, David G. V.K. Mehta, et al. *Developing Robust Strategies for Climate Change and Other Risks: A Water Utility Framework*. 2014. *Water Research Foundation Report #4262.*

Vulnerability and Adaptation to Climate Change in California Agriculture. 2009. Publication # CEC-500-2012-031. California Energy Commission.

Adaptation Strategies for Agricultural Sustainability in Yolo County, California. 2009. Publication # CEC-500-2012-032. California Energy Commission.

Mehta, V.K., D. Beaudette, D. Purkey, T. Downing, S. Bharwani. 2009. Climate Adaption Planning in California Using Google Earth ®/weADAPT®: A Pilot Study. California Energy Commission, Energy-Related Environmental Research Program.

Selected online articles

- The search for water: How Bengaluru households cope with water insecurity
- Collaborative approach needed to manage groundwater (from Sacramento Bee op-ed)
- A tale of two cities: inequalities in urban wellbeing in the Global South
- Managing fluorosis risk in Kenya: learning from community medicine in India
- Bangalore is running out of water. How can data help find solutions?
- Water Stories podcast: https://www.sei.org/featured/water-stories-podcast/
- City Health and Well-being podcast: https://www.sei.org/featured/city-health-wellbeing-podcast/
- Adapting to the 'new normal': SEI helps California cope with drought
- Creating a shared understanding of 'sustainability' among California water users

Fiction

Vishal K. Mehta and Mana Roy, 2016. **"The *Haathi* and the Cow"**. ISBN 978-1-36-721025-7. Self-published children's book.

Youtube videos

http://bangalore.urbanmetabolism.asia/category/videos/

https://youtu.be/msLEY2OejYk

Selected Conferences and Workshops

- K Matheswaran, M Shrestha, C Apirumanekul, Mehta VK et al. **"A web-platform to assess the implications of climate and development uncertainties in managing water resources allocation and use in Lower Mekong region."** AGU Fall meeting, 2018, San Francisco.
- Veysey, J., Ghosh, E., Mehta, VK, Chingcuanco, D. **"Quantifying climate change impacts on hydropower availability and the electricity supply mix in Mindanao, Philippines."** International Energy Workshop, 2018. Gothenburg, Sweden.
- Mehta, V.K., Kemp-Benedict, E., Wang, D., Malghan, D. **"Web-based urban Metabolic Mapping for Bangalore, India."** AGU Fall meeting. December 2012, San Francisco.
- Sekhar, M. Mehta, V.K., Kemp-Benedict, E., Malghan, D., Gebbert, S. **"The coupled social hydrology of Bangalore city, India."** AGU Fall meeting. December 2012, San Francisco.
- Yates, D., Sieber, J., Heaps, C, Purkey,D., Mehta, V.K. **" Integrated Water and Energy Analysis at Decision Relevant Scales"**. Invited presentation, AGU Fall meeting. December 2012, San Francisco.
- Yates, D., Mehta, V.K., Sieber, J., Heaps, C. **"Developing an integrated energy-water-emissions framework. The California case study."** Side event, World Water Week. August 2012, Stockholm, Sweden.
- Malghan, D., Mehta, V.K. and Kemp-Benedict, E. **"Imagining Bangalore",** Workshop presentation on formal participatory planning using the scenarios framework. February 2012, Bangalore, India.
- Mehta, V.K. **"Decision Support for Urban Environmental Planning"**. Invited presentation, 6th International Public Policy and Management Conference. December 2011, Bangalore, India.
- Mehta, V.K., Purkey, D., Aslam, O., Miller, N. and Dale, L. **"Scenario based water resources planning for utilities in the Lake Victoria region".** AGU Fall meeting. December 2010, San Francisco.
- Mehta, V.K., Miller, N. and Dale, L. **"Climate vulnerability assessment of water utilities in the Lake Victoria basin"**. Side event, 15th International African Water and Sanitation Congress. March 2010, Kampala, Uganda.