


STAFF DETAILS:

Name	Srivatsan V Raghavan	
Present Appointment	Senior Research Fellow	
Education	PhD University College London (UCL),UK MS Tufts University, USA MSc University of Madras, India	
Email ID	tmsvs@nus.edu.sg	
Tel and Fax	+658408 3020 ; +65 6776 1455	
Work Experience/ Professional Activities	<p>Aug 2008- till date:</p> <p>TMSI Outreach Director</p> <p>Treasurer- Asia Oceania Geosciences Society (AOGS) (2016-2018)</p> <p>Singapore (NUS) representative at the ASEAN-India Project on “Enhancing Local Level Climate Change Adaptation in Southeast Asia (Phase 1)” (Nominated by National Environment Agency, Singapore)</p> <p>Represented Singapore at the China-ASEAN Climate Change Meeting, Kunming, China, June 2014 (Nominated by A-STAR, Singapore)</p> <p>Represented Singapore at the 30th IPCC Plenary Session, Antalya, Turkey, April 2009 (Nominated by the Ministry of Environment and Water Resources, Singapore)</p> <p>Presented a public talk at the CAN! Green Campaign organized by Dr. Amy Khor, then Minister of State, Ministry of Health, Singapore, November 2009</p> <p>Presented a Radio interview at 93.8 Live on climate change related topics, July 2009 (Selected by AOGS)</p> <p>Co-author for the ‘Climate Change Technical Primer’ – commissioned by the National Climate Change Secretariat, Prime Minister’s Office, Singapore</p> <p>https://www.nccs.gov.sg/sites/nccs/files/ClimateChange_HowItAffectsYou.pdf</p>	
Research Interest	Climatology, Regional Climate Modelling, Climate Change Impacts and Adaptation, Hydrology, Food Security, Climate risk assessments, Sustainability	

Publications	<p><u>RECENT JOURNAL PAPERS</u></p>
	<p>Vu, M.T., *Raghavan, V.S., Liong, S.Y. and Mishra, A. (2018): ‘Constructing short duration IDF curves using coupled dynamical-statistical approach to assess climate change impacts’, <i>International Journal of Climatology</i>, Accepted, Jan 2018</p>
	<p>Vu, M.T., Raghavan, V.S., Liong, S.Y. and Mishra, A. (2017): ‘Uncertainties in gridded precipitation observations in characterizing spatio-temporal drought and wetness over Vietnam’, <i>International Journal of Climatology</i>, doi.10/1002/joc.5317</p>
	<p>Ng, H.L., Li, R, Raghavan, V.S. and Liong, S.Y. (2017): Investigating the relationship between Aerosol Optical Depth and Precipitation over Southeast Asia with Relative Humidity as an influencing factor, <i>Scientific Reports (Nature)</i>, doi:10.1038/s41598-017-10858-1</p>
	<p>Raghavan, V.S., Liu, J., Nguyen, N.S., Vu, M.T. and Liong, S.Y. (2017): ‘Evaluations of precipitation uncertainties in the CMIP5 multi model historical simulations over Southeast Asia’, <i>Theoretical and Applied Climatology</i>, doi.10.1007/s00704-017-2111-z</p>
	<p>Naufan, I., Sivakumar, B., Woldemeskel, F. M., Raghavan, V.S., Vu, M.T. and Liong, S.Y. (2017): ‘Spatial connections in Regional Climate Model rainfall outputs at different temporal scales: Application of network theory’, <i>Journal of Hydrology</i>, doi: /10.1016/j.jhydrol.2017.05.029</p>
	<p>Hur, J., *Raghavan, V.S., Nguyen, N.S. and Liong, S.Y. (2017): ‘Are satellite estimates good proxies of gauge precipitation over Singapore?’ <i>Theoretical and Applied Climatology</i>, doi: 10.1007/s00704-017-2132-7</p>
	<p>Vu, M.T., Vo, N.D., Gourbesville, P., Raghavan, V.S. and Liong, S.Y. (2017): ‘Hydro-Meteorological Drought Assessment under climate change impact over Vu Gia-Thu Bon river basin, Vietnam’, <i>Hydrological Sciences Journal</i>, doi: 10.1080/02626667.2017.1346374</p>
	<p>Raghavan, V.S., Vu, M.T. and Liong, S.Y. (2017): ‘Ensemble climate projections of mean and extreme rainfall over Vietnam using PRECIS’, <i>Global and Planetary Change</i>, doi:10.1016/j.gloplacha.2016.12.003</p>
	<p>Vu, M.T., Raghavan V.S. and Liong, S.Y. (2016): ‘Deriving short duration rainfall IDF curves from a Regional Climate Model’, <i>Natural Hazards</i>, doi: 10.1007/s11069-016-2670-9</p>
<p>Raghavan, V.S., Vu, M. T. and Liong, S.Y. (2016): ‘Regional Climate Simulations over Vietnam using the WRF model’, <i>Theoretical and Applied Climatology</i>, Vol. 126, 161-182. doi: 10.1007/s00704-015-1557-0</p>	

Vu, M.T., Aribarg, T., Supratid, S., **Raghavan, V.S.** and Liong, S.Y. (2016): 'Statistical Downscaling of Rainfall using Artificial Neural Network: Significantly wetter Bangkok?' *Theoretical and Applied Climatology*, Vol.126, 453-467. doi: 10.1007/s00704-015-1580-1

Vo, N.D., Gourbesville, P., Vu, M.T., **Raghavan, V.S.** and Liong, S.Y. (2016): 'A Deterministic Hydrological Approach To Estimate Climate Change Impact On River Flow: Vu Gia-Thu Bon Catchment, Vietnam', *Journal of Hydro-Environment Research*, Vol.11, 59-74. doi:10.1016/j.jher.2015.11.001

INVITED PRESENTATIONS

'Distributional Impacts of Climate Change and Food Security in Southeast Asia' - 9th ASAE International Conference Transformation in Agricultural and Food Economy in Asia, Bangkok, Thailand, January 2017

'Status of climate modelling over Southeast Asia and some results' – Ministry of Disaster Management and Climate Change, Vientiane, Lao P.D. R., March 2016

'Regional climate modelling and observational uncertainties over Southeast Asia'- Workshop on Uncertainty Quantification in Climate Modeling and Projection, ICTP, Trieste, July 2015

'Regional climate modelling and observational uncertainties over Southeast Asia'- ASEAN-India Project on "Enhancing Local Level Climate Change Adaptation in Southeast Asia (Phase 1), Inception workshop, UKM, Kuala Lumpur, February 2015

'Climate Change Downscaling Approaches and Applications' - United Nations University Training Program, Colombo, Srilanka, April 2015

'Regional Climate Modelling over Southeast Asia', CGIAR Climate Change and Food Security (CCAFS) Workshop, Ho Chi Minh City, November 2014 (**KEY NOTE LECTURE**)

'Dynamical Downscaling using Regional climate model' - 4th Southeast Asia Climate Analysis and Modelling (SEACAM) Workshop, Centre for Climate Research, Singapore (co-organized by the Hadley Centre, UKMO), Feb 2014

'High Resolution Vietnam Climate Projections' - Commonwealth Scientific Industrial and Research Organization (CSIRO), Melbourne, December 2012

'Dynamical Downscaling over Southeast Asia, Regional Climate Modelling Workshop', Institute of Mathematical Sciences, National University of Singapore, March 2011

'Harnessing the Cloud for Parallel Computing in Scientific Research', Cloud Asia 2010, Singapore, May 2010

[BOOK/ BOOK CHAPTERS](#)

Liong S.Y., **Raghavan, V.S.** and Vu, M.T. (2013): 'Climate Change and its impacts on basin hydrology', **Data Assimilation for Atmospheric, Oceanic and Hydrological Applications, Volume 2**, Springer, ISBN: 978-3-642-35087-0

Nguyen, N.S., He, S., **Raghavan, V.S.**, Doan, D.C. and Liang, S.Y. (2012): 'Rainfall Forecast with Ensemble Performance of Translation Model and Numerical Weather Prediction', **Advances in Geosciences**, Vol. 29, Hydrological Science, World Scientific Publishing Company

Raghavan, V.S. in Todd, Martin C. et al. (2011): Climate change impacts on hydrology in Africa: Case studies of basin water resources. In: African climate and climate change: physical, social and political perspectives. **Advances in global change research (43)**. Springer, pp. 123-154. ISBN 9789048138418, 204 pp, 123-153

Vu, M. T., Liang, S. Y., **Raghavan, V. S.** and Liew, S. C. (2011): 'A novel methodology for developing inundation maps under climate change scenarios using one-dimensional model', **Advances in Geosciences**, Vol. 23, Hydrological Science, World Scientific Publishing Company.

[SCIENTIFIC/TECHNICAL REPORTS](#)

Raghavan, V.S., Hur, J., Liang, S.Y. (2017): 'Assessment of climate change using SWAT model over Vietnam', under the Climate Change Projections and Assessments of Impacts: Modelling and Capacity Building Programme of the ASEAN-India Green Climate Fund commissioned project. Report submitted to the ASEAN Secretariat.

Raghavan, V.S., Hur, J., Liang, S.Y. (2017): 'Impacts of climate change on forests over Southeast Asia – A study on the carbon dynamics using the LPJ model', under the Climate Change Projections and Assessments of Impacts: Modelling and Capacity Building Programme of the ASEAN-India Green Climate Fund commissioned project. Report submitted to the ASEAN Secretariat.

Raghavan, V.S., Jiang, Ze., Hur, J., Liu., J and Liang, S.Y. (2017): 'Distributional Impacts of Climate Change and Food Security in Southeast Asia', ERIA Discussion paper series, ERIA-DP-2016-41, Economic Research Institute for ASEAN and East Asia, Jakarta, Indonesia

Jiang, Z., **Raghavan V.S.**, Hur, J., Sun, Y., Liong, S.Y., Nguyen, Q. and Van, P.D.T. (2016): 'Impacts of Climate Change on Rice Yields in Mekong River Delta, Vietnam', Center for Environmental Sensing and Modeling (CENSAM), Singapore MIT Alliance for Research and Technology (SMART), Singapore

Raghavan, V.S., Hur, J., Liong, S.Y. (2016): 'Historical Climate Change, Climate Vulnerability and Climate Change Projections for Singapore and Southeast Asia', under the Climate Change Projections and Assessments of Impacts: Modelling and Capacity Building Programme of the ASEAN-India Green Climate Fund commissioned project. Report submitted to the ASEAN Secretariat.

Liong, S. Y., Sun, Y., Wendi, D., Kim, D.E., Doan, C.D., **Raghavan, V.S.**, Vu, M.T. and Liew, S.C. (2016): Chapter 7- Eco-hydrological Model of Nee Soon Swamp Forest, Nee Soon Swamp Forest Biodiversity and Hydrology Baseline Studies Phase 2 project commissioned by National Parks, Govt. of Singapore – CONFIDENTIAL (due to non-disclosure agreement)

Liong, S.Y., Nguyen, N.S. and **Raghavan, V.S.** (2015): Quarterly Reports on 'Impacts of climate change on extreme rainfall and drainage design', as a part of the project commissioned by Public Utilities Board, Govt. of Singapore – CONFIDENTIAL (due to non-disclosure agreement)

Liong, S.Y., Liew, S.C., **Raghavan, V.S.**, Liu, J., Vu, M.T. and Nguyen, N.S. (2015): Constructing IDF Curves using Proxy Data from Downscaled Reanalysis, Technical Report, Willis Research Network, London, UK

Raghavan, V.S. in Raizan, R et al. (2014): A Regional Climate Modelling Experiment for Southeast Asia: Using PRECIS regional climate model and selected CMIP3 Global Climate Models. Technical Report of the Southeast Asia Climate Analyses and Modeling Framework, by Centre for Climate Research Singapore and Hadley Centre, UKMO.

Liong, S.Y. and **Raghavan, V.S.** (2014): Final Report on 'High Resolution Regional Climate Change Impact Study, Vol I, as a part of the Coastal Inundation Risk Map Study for Singapore' – Submitted to the Building and Construction Authority, Govt. of Singapore, CONFIDENTIAL (due to non-disclosure agreement)

Liong, S.Y. and **Raghavan, V.S.** (2009): Final Report on 'Study on the Climate Change Impacts over Singapore, Vol II, as a part of the Vulnerability Study-Phase I, Submitted to the National Environment Agency, Govt. of Singapore, CONFIDENTIAL (due to non-disclosure agreement)

Murnane, R., Kleinn, J., Nishijima, K., Vickery, P. and **Raghavan, V.S.** (2011): 'Risk Assessment on Tropical Cyclones, Chapter 4.1, Report presented at the 7th International Workshop on Tropical Cyclones, La Reunion.

RECENT CONFERENCE PROCEEDINGS

Raghavan, V.S., J. Ze., Hur, J., Nguyen, N.S., Liu, J., and Liong, S.Y. (2017): 'Distributional Impacts of Climate Change and Food Security in Southeast Asia', 9th ASAE International Conference Transformation in Agricultural and Food Economy in Asia, Bangkok, Thailand, January 2017

Takamatsu, M., Kawasaki, A., Vu, M.T., **Raghavan, V.S.** and Liong, S.Y. (2017): 'Assessment of Future Rainfall Change and Its Impact on Water Resources in the Mekong River 3S Sub-basins', Conference Proceedings of the World Water and Environmental Congress, EWRI 2017, Sacramento, California, USA, January 2017

Hur, J., ***Raghavan V.S.**, Nguyen, N.S. and Liong, S.Y. (2016): 'Evaluations of satellite rainfall over Singapore', Procedia Engineering, 12th International Conference on Hydroinformatics, Incheon, Korea, August 2016

Vu, M.T., Vo., N.D., Gourbesville, P., **Raghavan, V.S.** and Liong, S.Y. (2015): 'Impact of climate change on hydrological drought over a coastal river basin in Vietnam', E proceedings of the 36th IAHR World Congress, The Hague, Netherlands, July 2015

Liong, S.Y., Vu, M.T., Liew, S.C. and **Raghavan, V.S.** (2015): 'Can Regional Climate Models provide proxies for sustainable water resources management over data sparse regions', THA2015, International Conference on Climate Change, and Water & Environment Management in Monsoon Asia, January 2015, Bangkok, Thailand

Vu, M.T., **Raghavan, V.S.** and Liong, S.Y. (2014): 'Overcoming Serious Data Problems over Trans-Boundary Regions with proxy data from Regional Climate Model', IAHR-APD, Hanoi, Vietnam, September 2014

Vu, M.T., **Raghavan, V.S.**, Nguyen, Q.K. and Liong, S.Y. (2014): 'Projected Future Droughts over Central Highland, Vietnam, using Regional Climate Models', IAHR-APD, Hanoi, Vietnam, September 2014

Liong, S.Y., Liew, S.Y., Vu, M.T., **Raghavan, V.S.** and Phan, V.T. (2014): 'Searching for Proxy Precipitation Data in data sparse Southeast Asia', IAHR-APD, Hanoi, Vietnam, September 2014

Vu, M. T., **Raghavan, V. S.** and Liong, S. Y. (2014): 'Drought Assessment of future stream flow over the Dakbla river basin in Vietnam', 2014 International SWAT Conference, Recife, Brazil, July 2014

Liong, S.Y., Liew, S.C., **Raghavan, V.S.**, Vu, M.T. and Nguyen, N.S. (2013): 'IDF Curves at Ungauged Sites under anticipated Changing Climate', 35th IAHR World Congress (Chengdu) Handbook, Beijing: Tsinghua University Press, September 2013

	<p>Vu, M. T., Raghavan, V.S., Liong, S. Y. and Pham T. H. L. (2012): ‘Ensemble regional climate projections over Vietnam – model intercomparison study’, 4th International Conference on Estuaries & Coasts, Hanoi, Vietnam, October 2012</p> <p>Raghavan, V.S., Vu, M.T., Nguyen, N.S., Wang, C. and Liong, S.Y. (2012): ‘Simulations of the Indian Monsoon in global and regional climate models’, 10th International Conference on Hydroinformatics, Hamburg, Germany, July 2012</p> <p>Raghavan, V.S., Vu, M.T., Liew, S.C. and Liong, S.Y. (2012): ‘Regional Climate Simulations over Southeast Asia using PRECIS’, 10th International Conference on Hydroinformatics, Hamburg, Germany, July 2012</p> <p>Raghavan, V.S., Li, S., Zehua, F., Vu., M.T., Nguyen, N.S., Huang, J. and Liong, S.Y. (2012): ‘Hydrological Response in a changing climate over Haihe river basin in Northern China’, 10th International Conference on Hydroinformatics, Hamburg, Germany, July 2012</p> <p>Raghavan, V.S., Vu, M.T., Nguyen, N.S., Wang, C. and Liong, S.Y. (2012): ‘Evaluations of the WRF model simulation of rainfall over the Indian Sub-continent’, 10th International Conference on Hydroinformatics, Hamburg, Germany, July 2012</p> <p>Liew, S.C., Raghavan, V.S., Liong, S.Y. and Sanders, R. (2012): ‘Development of IDF curves- Incorporating Climate Change Projections’, 10th International Conference on Hydroinformatics, Hamburg, Germany, July 2012</p>
<p>Awards and Honors</p>	<p><u>BEST PAPER AWARD: 18th Congress of the IAHR-APD, Jeju, Korea, August 2012</u> Liew, S.C., Liong, S.Y. and Raghavan, V.S.: ‘A novel approach, using regional climate model, to derive present and future IDF curves for data scarce sites’</p> <p><u>BEST POSTER AWARD: Asia Oceania Geosciences Society, Brisbane, June 2013</u> Vu, M.T, Raghavan, V.S. and Liong, S.Y.: ‘Use of Regional Climate Model Data for Data Sparse Trans-Boundary Regions’</p>
<p>Others</p>	<p><u>RECENT PROJECTS</u></p> <p>‘Macro index for insurance for the agriculture sector in Indonesia’, International Finance Corporation (2017)</p> <p>‘High Resolution Regional Climate Modelling over Southeast Asia’: Center for Environmental Sensing and Modeling (CENSAM), SMART, Singapore (2011-2018)</p>

	<p><i>'The Inextricable Climate-Crop Coupling: Is Southeast Asia well prepared On Food Security?': CENSAM SMART (Singapore-MIT Alliance) Research Initiative 2015 (2015-2017)</i></p> <p><i>'Climate Change Projections and Assessment of Impacts; Modelling and Capacity Building Programme-India-ASEAN Region': ASEAN-India Framework (2016-2018)</i></p>
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