

DAFTAR PUSTAKA

- Abbass, K., Qasim, M. Z., Song, H., Murshed, M., Mahmood, H., & Younis, I. (2022). A review of the global climate change impacts, adaptation, and sustainable mitigation measures. *Environmental Science and Pollution Research*, 29(28), 42539-42559. <https://doi.org/10.1007/s11356-022-19718-6>.
- Afshar, M. H., Bulut, B., Duzenli, E., Amjad, M., & Yilmaz, M. T. (2022). Global spatiotemporal consistency between meteorological and soil moisture drought indices. *Agricultural and Forest Meteorology*, 316, 108848. <https://doi.org/10.1016/j.agrformet.2022.108848>.
- Agiel, H. M., Pratama, A., Mareta, L., & Birastrri, W. (2024, March). Uncertainty of Coupled Model Intercomparison Projects 6 (CMIP6) in Indonesia's maritime continental region for the historical period. In *IOP Conference Series: Earth and Environmental Science* (Vol. 1314, No. 1, p. 012020). IOP Publishing. <https://doi.org/10.1088/1755-1315/1314/1/012020>.
- Allan, R. P., Barlow, M., Byrne, M. P., Cherchi, A., Douville, H., Fowler, H. J., ... & Zolina, O. (2020). Advances in understanding large-scale responses of the water cycle to climate change. *Annals of the New York Academy of Sciences*, 1472(1), 49-75. <https://doi.org/10.1111/nyas.14337>.
- Araki, R., Mu, Y., & McMillan, H. (2023). Evaluation of GLDAS soil moisture seasonality in arid climates. *Hydrological Sciences Journal*, 68(8), 1109-1126. <https://doi.org/10.1080/02626667.2023.2206032>.
- Aryal, S. (2012). Rainfall and water requirement of rice during growing period. *The Journal of Agriculture and Environment*, 13, 1-4. <https://doi.org/10.3126/aej.v13i0.7576>.
- Bador, M., Boé, J., Terray, L., Alexander, L. V., Baker, A., Bellucci, A., ... & Vanniere, B. (2020). Impact of higher spatial atmospheric resolution on precipitation extremes over land in global climate models. *Journal of Geophysical Research: Atmospheres*, 125(13), e2019JD032184. <https://doi.org/10.1029/2019JD032184>.
- Beck, H. E., Zimmermann, N. E., McVicar, T. R., Vergopolan, N., Berg, A., & Wood, E. F. (2018). Present and future Köppen-Geiger climate classification maps at 1-km resolution. *Scientific data*, 5(1), 1-12. <https://doi.org/10.1038/sdata.2018.214>.

- Berg, A., & Sheffield, J. (2018). Climate change and drought: the soil moisture perspective. *Current Climate Change Reports*, 4, 180-191. <https://doi.org/10.1007/s40641-018-0095-0>.
- Bezdan, A., Bezdan, J., Blagojević, B., Baumgertel, A., Lazić, I., Tošić, M., & Djurdjević, V. (2024). Observed characteristics and projected future changes of extreme consecutive dry days events of the growing season in Serbia. *International Journal of Climatology*, 44(11), 4127-4141. <https://doi.org/10.1002/joc.8573>.
- Bhatla, R., Varma, P., Verma, S., & Ghosh, S. (2020). El Nino/La Nina impact on crop production over different agro-climatic zones of Indo-Gangetic Plain of India. *Theoretical and Applied Climatology*, 142, 151-163. <https://doi.org/10.1007/s00704-020-03284-3>.
- Cao, Z., Guo, L., Kang, S., Cheng, X., Li, Q., Lin, L., & Zhang, Y. (2020). Characteristics and applications of the ground-based X band low elevation angle brightness temperatures under low sea state based on measured data. *Remote Sensing*, 12(11), 1736. <https://doi.org/10.3390/rs12111736>.
- Carrijo, D. R., Akbar, N., Reis, A. F., Li, C., Gaudin, A. C., Parikh, S. J., ... & Linquist, B. A. (2018). Impacts of variable soil drying in alternate wetting and drying rice systems on yields, grain arsenic concentration and soil moisture dynamics. *Field Crops Research*, 222, 101-110. <https://doi.org/10.1016/j.fcr.2018.02.026>.
- Chatklang, S., Tongdeenok, P., & Kaewjampa, N. (2024). Investigating Hydrological Drought Characteristics in Northeastern Thailand in CMIP5 Climate Change Scenarios. *Atmosphere*, 15(9). <https://doi.org/10.3390/atmos15091136>.
- Chen, F. W., & Liu, C. W. (2012). Estimation of the spatial rainfall distribution using inverse distance weighting (IDW) in the middle of Taiwan. *Paddy and Water Environment*, 10, 209-222. <https://doi.org/10.1007/s10333-012-0319-1>.
- Chuan, N. M., Thiruchelvam, S., Ghazali, A., Mustapha, K. N., Sabri, R., Muda, N. Y. J., ... & Yahya, N. (2018). A Review of Key Activities in Hydro Meteorological Disaster Management. *International Journal of Engineering & Technology*, 7(4.35), 839-843.
- Chun, J. A., Li, S., Wang, Q., Lee, W. S., Lee, E. J., Horstmann, N., ... & Vang, S. (2016). Assessing rice productivity and adaptation strategies for Southeast Asia under climate change through multi-scale crop modeling. *Agricultural Systems*, 143, 14-21. <https://doi.org/10.1016/j.agsy.2015.12.001>.

- Collier, C. G. (2000). Precipitation. In *Remote Sensing in Hydrology and Water Management* (pp. 111-132). Berlin, Heidelberg: Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-59583-7_6.
- Dadap, N. C., Cobb, A. R., Hoyt, A. M., Harvey, C. F., & Konings, A. G. (2019). Satellite soil moisture observations predict burned area in Southeast Asian peatlands. *Environmental Research Letters*, *14*(9), 094014. <https://doi.org/10.1088/1748-9326/ab3891>.
- Dadap, N. C., Cobb, A. R., Hoyt, A. M., Harvey, C. F., Feldman, A. F., Im, E. S., & Konings, A. G. (2022). Climate change-induced peatland drying in Southeast Asia. *Environmental Research Letters*, *17*(7), 074026. <https://doi.org/10.1088/1748-9326/ac7969>.
- Dai, M., Huang, S., Huang, Q., Zheng, X., Su, X., Leng, G., Li, Z., Guo, Y., Fang, W., & Liu, Y. (2022). Propagation characteristics and mechanism from meteorological to agricultural drought in various seasons. *Journal of Hydrology*, *610*, 127897. <https://doi.org/10.1016/j.jhydrol.2022.127897>.
- Dang, C., Liu, Y., Yue, H., Qian, J., & Zhu, R. (2021). Autumn crop yield prediction using data-driven approaches:-support vector machines, random forest, and deep neural network methods. *Canadian journal of remote sensing*, *47*(2), 162-181. <https://doi.org/10.1080/07038992.2020.1833186>.
- Deng, Y., Wang, S., Bai, X., Luo, G., Wu, L., Cao, Y., ... & Tian, S. (2020). Variation trend of global soil moisture and its cause analysis. *Ecological Indicators*, *110*, 105939. <https://doi.org/10.1016/j.ecolind.2019.105939>.
- Dey, S., Bhatt, D., Haq, S., & Mall, R. K. (2020). Potential impact of rainfall variability on groundwater resources: a case study in Uttar Pradesh, India. *Arabian Journal of Geosciences*, *13*, 1-11. <https://doi.org/10.1007/s12517-020-5083-8>.
- Douville, H., Raghavan, K., Renwick, J., Allan, R. P., Arias, P. A., Barlow, M., ... & Zolina, O. (2021). Water cycle changes. <https://doi.org/10.1017/9781009157896.010>.
- Du, Y., Wang, D., Zhu, J., Wang, D., Qi, X., & Cai, J. (2022). Comprehensive assessment of CMIP5 and CMIP6 models in simulating and projecting precipitation over the global land. *International Journal of Climatology*, *42*(13), 6859-6875. <https://doi.org/10.1002/joc.7616>.

- Eini, M. R., Motehayeri, S. M. S., Rahmati, A., & Piniewski, M. (2023). Evaluation of the accuracy of satellite-based rainfed wheat yield dataset over an area with complex geography. *Journal of Arid Environments*, 212, 104963. <https://doi.org/10.1016/j.jaridenv.2023.104963>.
- El Naqa, I., & Murphy, M. J. (2015). *What is machine learning?* (pp. 3-11). Springer International Publishing. https://doi.org/10.1007/978-3-319-18305-3_1.
- Elahi, E., Khalid, Z., Tauni, M. Z., Zhang, H., & Lirong, X. (2022). Extreme weather events risk to crop-production and the adaptation of innovative management strategies to mitigate the risk: A retrospective survey of rural Punjab, Pakistan. *Technovation*, 117, 102255. <https://doi.org/10.1016/j.technovation.2021.102255>.
- Elavarasan, D., & Vincent, P. D. R. (2021). A reinforced random forest model for enhanced crop yield prediction by integrating agrarian parameters. *Journal of Ambient Intelligence and Humanized Computing*, 12(11), 10009-10022. <https://doi.org/10.1007/s12652-020-02752-y>.
- FAOSTAT Production Data (FAO, diakses pada 2024); www.fao.org/faostat/en/#data.
- Filippi, P., Han, S. Y., & Bishop, T. F. (2025). On crop yield modelling, predicting, and forecasting and addressing the common issues in published studies. *Precision Agriculture*, 26(1), 1-19. <https://doi.org/10.1007/s11119-024-10212-2>.
- Foidl, H., & Felderer, M. (2019, August). Risk-based data validation in machine learning-based software systems. In *proceedings of the 3rd ACM SIGSOFT international workshop on machine learning techniques for software quality evaluation* (pp. 13-18). <https://doi.org/10.1145/3340482.3342743>.
- Furtak, K., & Wolińska, A. (2023). The impact of extreme weather events as a consequence of climate change on the soil moisture and on the quality of the soil environment and agriculture—A review. *Catena*, 231, 107378. <https://doi.org/10.1016/j.catena.2023.107378>.
- Ge, F., Zhu, S., Luo, H., Zhi, X., & Wang, H. (2021). Future changes in precipitation extremes over Southeast Asia: insights from CMIP6 multi-model ensemble. *Environmental Research Letters*, 16(2), 024013. <https://doi.org/10.1088/1748-9326/abd7ad>.

- Gobin, A., & Van de Vyver, H. (2021). Spatio-temporal variability of dry and wet spells and their influence on crop yields. *Agricultural and Forest Meteorology*, *308*, 108565.
<https://doi.org/10.1016/j.agrformet.2021.108565>.
- Guo, S., Guo, E., Zhang, Z., Dong, M., Wang, X., Fu, Z., ... & Yang, X. (2022). Impacts of mean climate and extreme climate indices on soybean yield and yield components in Northeast China. *Science of The Total Environment*, *838*, 156284.
<https://doi.org/10.1016/j.scitotenv.2022.156284>.
- Haleem, K., Khan, A. U., Khan, J., Ghanim, A. A., & Al-Areeq, A. M. (2023). Evaluating future streamflow patterns under SSP245 scenarios: insights from CMIP6. *Sustainability*, *15*(22), 16117.
<https://doi.org/10.3390/su152216117>.
- Han, Y., Liu, Z., Li, Y., Chen, Y., Qi, J., Feng, P., ... & Chen, Y. (2024). Response of hydrology and nutrient losses to different extreme rainfall conditions in a coastal watershed influenced by orchards. *Journal of Environmental Management*, *368*, 122137.
<https://doi.org/10.1016/j.jenvman.2024.122137>.
- Hardiman, S. C., Dunstone, N. J., Scaife, A. A., Smith, D. M., Ineson, S., Lim, J., & Fereday, D. (2019). The impact of strong El Niño and La Niña events on the North Atlantic. *Geophysical Research Letters*, *46*(5), 2874-2883.
<https://doi.org/10.1029/2018GL081776>.
- Henry, J. (2005). Tropical And Equatorial Climates. In: Oliver, J.E. (eds) *Encyclopedia of World Climatology*. Encyclopedia of Earth Sciences Series. Springer, Dordrecht. https://doi.org/10.1007/1-4020-3266-8_212.
- Holzman, M. E., Rivas, R., & Piccolo, M. C. (2014). Estimating soil moisture and the relationship with crop yield using surface temperature and vegetation index. *International Journal of Applied Earth Observation and Geoinformation*, *28*, 181-192. <https://doi.org/10.1016/j.jag.2013.12.006>.
- Hosseinzadehtalaei, P., Van Schaeybroeck, B., Termonia, P., & Tabari, H. (2023). Identical hierarchy of physical drought types for climate change signals and uncertainty. *Weather and Climate Extremes*, *41*, 100573.
<https://doi.org/10.1016/j.wace.2023.100573>.
- Huang, Z. (2024). Relationship between global warming and decreasing soil moisture: short-term and long-term impacts in mediterranean regions. *Theoretical and Natural Science*, *60*, 148-152.
<https://doi.org/10.54254/2753-8818/60/20241429>.

- Iizumi, T., & Sakai, T. (2020). The global dataset of historical yields for major crops 1981–2016. *Scientific Data*, 7(1), 97. <https://doi.org/10.1038/s41597-020-0433-7>.
- Isia, I., Hadibarata, T., Jusoh, M. N. H., Bhattacharjya, R. K., Shahedan, N. F., Bouaissi, A., Fitriyani NL & Syafrudin, M. (2022). Drought analysis based on standardized precipitation evapotranspiration index and standardized precipitation index in Sarawak, Malaysia. *Sustainability*, 15(1), 734. <https://doi.org/10.3390/su15010734>.
- Jarin, A. S., Islam, M. M., Rahat, A., Ahmed, S., Ghosh, P., & Murata, Y. (2024). Drought stress tolerance in rice: Physiological and Biochemical Insights. *International Journal of Plant Biology*, 15(3), 692-718. <https://doi.org/10.3390/ijpb15030051>.
- Jayawardena, A. W. (2015). Hydro-meteorological disasters: Causes, effects and mitigation measures with special reference to early warning with data driven approaches of forecasting. *Procedia IUTAM*, 17, 3-12. <https://doi.org/10.1016/j.piutam.2015.06.003>.
- Jeong, J. H., Resop, J. P., Mueller, N. D., Fleisher, D. H., Yun, K., Butler, E. E., ... & Kim, S. H. (2016). Random forests for global and regional crop yield predictions. *PloS one*, 11(6), e0156571. <https://doi.org/10.1371/journal.pone.0156571>.
- Jin, L., Zhang, J., Wang, R., Zhang, M., Bao, Y., Guo, E., & Wang, Y. (2019). Analysis for spatio-temporal variation characteristics of droughts in different climatic regions of the mongolian plateau based on SPEI. *Sustainability*, 11(20), 5767. <https://doi.org/10.3390/su11205767>.
- Jordan, M. I., & Mitchell, T. M. (2015). Machine learning: Trends, perspectives, and prospects. *Science*, 349(6245), 255-260. <https://doi.org/10.1126/science.aaa8415>.
- Karthikeyan, C., & Ponnusamy, K. A. (2018). *Advances in Rice Cultivation: A Complete Guide on Rice*. DAYA Publishing HOUSE.
- Khanal, S., Fulton, J., Klopfenstein, A., Douridas, N., & Shearer, S. (2018). Integration of high resolution remotely sensed data and machine learning techniques for spatial prediction of soil properties and corn yield. *Computers and electronics in agriculture*, 153, 213-225. <https://doi.org/10.1016/j.compag.2018.07.016>.

- Kirilenko, A. P. (2022). Geographic Information System (GIS) Making Sense of Geospatial Data. In *Applied Data Science in Tourism: Interdisciplinary Approaches, Methodologies, and Applications* (pp. 513-526). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-88389-8_24.
- Knotters, M., & Heuvelink, G. B. M. (2010). *A disposition of interpolation techniques* (No. 190). Wettelijk Onderzoekstaken Natuur & Milieu.
- Knutti, R., Furrer, R., Tebaldi, C., Cermak, J., & Meehl, G. A. (2010). Challenges in combining projections from multiple climate models. *Journal of Climate*, 23(10), 2739-2758. <https://doi.org/10.1175/2009JCLI3361.1>.
- Kottek, M., Grieser, J., Beck, C., Rudolf, B., & Rubel, F. (2006). World map of the Köppen-Geiger climate classification updated. <https://doi.org/10.1127/0941-2948/2006/0130>.
- Kumar, P. R., & Kamra, A. K. (2012). Variability of lightning activity in south/southeast Asia during 1997–98 and 2002–03 El Nino/La Nina events. *Atmospheric Research*, 118, 84-102. <https://doi.org/10.1016/j.atmosres.2012.06.004>.
- Kuśmierk-Tomaszewska, R., & Źarski, J. (2021). Assessment of meteorological and agricultural drought occurrence in central Poland in 1961–2020 as an element of the climatic risk to crop production. *Agriculture*, 11(9), 855. <https://doi.org/10.3390/agriculture11090855>.
- Kuwayama, Y., Thompson, A., Bernknopf, R., Zaitchik, B., & Vail, P. (2019). Estimating the impact of drought on agriculture using the US Drought Monitor. *American Journal of Agricultural Economics*, 101(1), 193-210. <https://doi.org/10.1093/ajae/aay037>.
- Laborte, A. G., Gutierrez, M. A., Balanza, J. G., Saito, K., Zwart, S. J., Boschetti, M., ... & Nelson, A. (2017). RiceAtlas, a spatial database of global rice calendars and production. *Scientific data*, 4(1), 1-10. <https://doi.org/10.1038/sdata.2017.74>.
- Lal, P., Shekhar, A., Gharun, M., & Das, N. N. (2023). Spatiotemporal evolution of global long-term patterns of soil moisture. *Science of The Total Environment*, 867, 161470. <https://doi.org/10.1016/j.scitotenv.2023.161470>.
- Lavane, K., Kumar, P., Meraj, G., Han, T. G., Ngan, L. H. B., Lien, B. T. B., ... & Kanga, S. (2023). Assessing the effects of drought on rice yields in the Mekong Delta. *Climate*, 11(1), 13. <https://doi.org/10.3390/cli11010013>.

- Lehner, F., Deser, C., Maher, N., Marotzke, J., Fischer, E. M., Brunner, L., ... & Hawkins, E. (2020). Partitioning climate projection uncertainty with multiple large ensembles and CMIP5/6. *Earth System Dynamics*, *11*(2), 491-508. <https://doi.org/10.5194/esd-11-491-2020>.
- Li, N., Skaggs, T. H., Ellegaard, P., Bernal, A., & Scudiero, E. (2024). Relationships among soil moisture at various depths under diverse climate, land cover and soil texture. *Science of The Total Environment*, *947*, 174583. <https://doi.org/10.1016/j.scitotenv.2024.174583>.
- Liang, S., & Wang, J. (Second Eds.). (2020). *Advanced remote sensing: terrestrial information extraction and applications*. Academic Press. <https://doi.org/10.1016/B978-0-12-815826-5.00016-7>.
- Liang, Z., Chen, X., Wang, C., & Zhang, Z. (2024). Response of Soil Moisture to Four Rainfall Regimes and Tillage Measures under Natural Rainfall in Red Soil Region, Southern China. *Water*, *16*(10), 1331. <https://doi.org/10.3390/w16101331>.
- Liu, D., Wang, G., Mei, R., Yu, Z., & Yu, M. (2014). Impact of initial soil moisture anomalies on climate mean and extremes over Asia. *Journal of Geophysical Research: Atmospheres*, *119*(2), 529-545. <https://doi.org/10.1002/2013JD020890>.
- Liu, W., Wang, J., Xu, F., Li, C., & Xian, T. (2022). Validation of four satellite-derived soil moisture products using ground-based in situ observations over northern China. *Remote Sensing*, *14*(6), 1419. <https://doi.org/10.3390/rs14061419>.
- Liu, X., Yuan, X., & Zhu, E. (2021). Global warming induces significant changes in the fraction of stored precipitation in the surface soil. *Global and Planetary Change*, *205*, 103616. <https://doi.org/10.1016/j.gloplacha.2021.103616>.
- Lloyd-Hughes, B. (2014). The impracticality of a universal drought definition. *Theoretical and applied climatology*, *117*, 607-611. <https://doi.org/10.1007/s00704-013-1025-7>.
- Lobell, D. B., & Gourdji, S. M. (2012). The influence of climate change on global crop productivity. *Plant physiology*, *160*(4), 1686-1697. <https://doi.org/10.1104/pp.112.208298>.
- Maeda, E. E., Utsumi, N., & Oki, T. (2012). Decreasing precipitation extremes at higher temperatures in tropical regions. *Natural Hazards*, *64*, 935-941. <https://doi.org/10.1007/s11069-012-0222-5>.

- Maniruzzaman, M., Mainuddin, M., Bell, R. W., Biswas, J. C., Hossain, M. B., Yesmin, M. S., ... & Yu, Y. (2024). Dry season rainfall variability is a major risk factor for cropping intensification in coastal Bangladesh. *Farming System*, 2(2), 100084. <https://doi.org/10.1016/j.farsys.2024.100084>.
- Marjani, S., Alizadeh-Choobari, O., & Irannejad, P. (2019). Frequency of extreme El Niño and La Niña events under global warming. *Climate Dynamics*, 53, 5799-5813. <https://doi.org/10.1007/s00382-019-04902-1>.
- Massagony, A., Tam Ho, T., & Shimada, K. (2023). Climate change impact and adaptation policy effectiveness on rice production in Indonesia. *International Journal of Environmental Studies*, 80(5), 1373-1390. <https://doi.org/10.1080/00207233.2022.2099110>.
- Massagony, A., Tam Ho, T., & Shimada, K. (2023). Climate change impact and adaptation policy effectiveness on rice production in Indonesia. *International Journal of Environmental Studies*, 80(5), 1373-1390. <https://doi.org/10.1080/00207233.2022.2099110>.
- McKee, T. B., Doesken, N. J., & Kleist, J. (1993, January). The relationship of drought frequency and duration to time scales. In *Proceedings of the 8th Conference on Applied Climatology* (Vol. 17, No. 22, pp. 179-183). <https://climate.colostate.edu/pdfs/relationshipofdroughtfrequency.pdf>.
- Młyński, D., Wałęga, A., Petroselli, A., Tauro, F., & Cebulska, M. (2019). Estimating maximum daily precipitation in the upper Vistula basin, Poland. *Atmosphere*, 10(2), 43. <https://doi.org/10.3390/atmos10020043>.
- Moccia, B., Mineo, C., Ridolfi, E., Russo, F., & Napolitano, F. (2022). SPI-based drought classification in Italy: influence of different probability distribution functions. *Water*, 14(22), 3668. <https://doi.org/10.3390/w14223668>.
- Moradi, S., Li, F., Mengen, D., Vereecken, H., & Montzka, C. (2024). *Examining the Impact of Modeling Resolution on Soil Moisture Simulation Using Multi-Faceted Remote Sensing Data* (No. EGU24-11072). Copernicus Meetings. <https://doi.org/10.5194/egusphere-egu24-11072>.
- Mulcahy, J. P., Jones, C. G., Rumbold, S. T., Kuhlbrodt, T., Dittus, A. J., Blockley, E. W., ... & Tang, Y. (2022). UKESM1. 1: Development and evaluation of an updated configuration of the UK Earth System Model. *Geoscientific Model Development Discussions*, 2022, 1-45. <https://doi.org/10.5194/gmd-16-1569-2023>.

- Murthy, C. S., Yadav, M., Mohammed Ahamed, J., Laxman, B., Prawasi, R., Sesha Sai, M. V. R., & Hooda, R. S. (2015). A study on agricultural drought vulnerability at disaggregated level in a highly irrigated and intensely cropped state of India. *Environmental monitoring and assessment*, 187, 1-14. <https://doi.org/10.1007/s10661-015-4296-x>.
- Nandgude, N., Singh, T. P., Nandgude, S., & Tiwari, M. (2023). Drought prediction: a comprehensive review of different drought prediction models and adopted technologies. *Sustainability*, 15(15), 11684. <https://doi.org/10.3390/su151511684>.
- Nguyen, P. L., Alexander, L. V., Thatcher, M. J., Truong, S. C., Isphording, R. N., & McGregor, J. L. (2024). Selecting CMIP6 global climate models (GCMs) for Coordinated Regional Climate Downscaling Experiment (CORDEX) dynamical downscaling over Southeast Asia using a standardised benchmarking framework. *Geoscientific Model Development*, 17(19), 7285-7315. <https://doi.org/10.5194/gmd-17-7285-2024>.
- Nielsen-Gammon, J. W., Banner, J. L., Cook, B. I., Tremaine, D. M., Wong, C. I., Mace, R. E., ... & Kloesel, K. (2020). Unprecedented drought challenges for Texas water resources in a changing climate: what do researchers and stakeholders need to know?. *Earth's Future*, 8(8), e2020EF001552. <https://doi.org/10.1029/2020EF001552>.
- Okwuashi, O., & Ndehedehe, C. (2017). Tide modelling using support vector machine regression. *Journal of Spatial Science*, 62(1), 29-46. <https://doi.org/10.1080/14498596.2016.1215272>.
- Olanrewaju, C. C., & Reddy, M. (2022). Assessment and prediction of flood hazards using standardized precipitation index—A case study of eThekweni metropolitan area. *Journal of Flood Risk Management*, 15(2), e12788. <https://doi.org/10.1111/jfr3.12788>.
- Ona, B. J., Raghavan, S. V., Nguyen, N. S., Ngai, S. T., & Nguyen, T. H. (2024). Changes in Future Rainfall over Southeast Asia Using the CMIP6 Multi-model Ensemble. *Journal of Atmospheric Science Research*, 7(2), 62-82. <https://doi.org/10.30564/jasr.v7i2.6335>.
- Paria, A., & Jana, S. (2022, August). Prediction of crops production using random forest regression. In *Proceedings of International Conference on Computational Intelligence, Data Science and Cloud Computing: IEM-ICDC 2021* (pp. 97-106). Singapore: Springer Nature Singapore. https://doi.org/10.1007/978-981-19-1657-1_8.

- Pen, S., Rad, S., Ban, L., Brang, S., Nuth, P., & Liao, L. (2024). An Analysis of Extreme Rainfall Events in Cambodia. *Atmosphere*, 15(8), 1017. <https://doi.org/10.3390/atmos15081017>.
- Peng, J., Loew, A., Merlin, O., & Verhoest, N. E. (2017). A review of spatial downscaling of satellite remotely sensed soil moisture. *Reviews of Geophysics*, 55(2), 341-366. <https://doi.org/10.1002/2016RG000543>.
- Prabhakar, S. V. R. K. (2021). A succinct review and analysis of drivers and impacts of agricultural land transformations in Asia. *Land Use Policy*, 102, 105238. <https://doi.org/10.1016/j.landusepol.2020.105238>.
- Qin, T., Feng, J., Zhang, X., Li, C., Fan, J., Zhang, C., ... & Yan, D. (2023). Continued decline of global soil moisture content, with obvious soil stratification and regional difference. *Science of The Total Environment*, 864, 160982. <https://doi.org/10.1016/j.scitotenv.2022.160982>.
- Ramos, A. P. M., Osco, L. P., Furuya, D. E. G., Gonçalves, W. N., Santana, D. C., Teodoro, L. P. R., ... & Pistori, H. (2020). A random forest ranking approach to predict yield in maize with uav-based vegetation spectral indices. *Computers and Electronics in Agriculture*, 178, 105791. <https://doi.org/10.1016/j.compag.2020.105791>.
- Rasheed, M. W., Tang, J., Sarwar, A., Shah, S., Saddique, N., Khan, M. U., ... & Sultan, M. (2022). Soil moisture measuring techniques and factors affecting the moisture dynamics: A comprehensive review. *Sustainability*, 14(18), 11538. <https://doi.org/10.3390/su141811538>.
- Ray, D. K., Gerber, J. S., MacDonald, G. K., & West, P. C. (2015). Climate variation explains a third of global crop yield variability. *Nature communications*, 6(1), 5989. <https://doi.org/10.1038/ncomms6989>.
- Razuqi, A. P. D. A. H. (2020). SPATIAL INTERPOLATION IN DIGITAL MAPS. *PalArch's Journal of Archaeology of Egypt/Egyptology*, 17(1), 385-394. https://www.researchgate.net/profile/Azhar-Razuqi/publication/371250881_2020_SPATIAL_INTERPOLATION_IN_DIGITAL_MAPS/links/647a5e682cad460a1bee4052/2020-SPATIAL-INTERPOLATION-IN-DIGITAL-MAPS.pdf.
- Rebala, G., Ravi, A., Churiwala, S., Rebala, G., Ravi, A., & Churiwala, S. (2019). Machine learning definition and basics. *An introduction to machine learning*, 1-17. https://doi.org/10.1007/978-3-030-15729-6_1.

- Redfern, S. K., Azzu, N., & Binamira, J. S. (2012). Rice in Southeast Asia: facing risks and vulnerabilities to respond to climate change. *Build Resilience Adapt Climate Change Agri Sector*, 23(295), 1-14.
- Santos, R. M., & Bakhshoodeh, R. (2021). Climate change/global warming/climate emergency versus general climate research: comparative bibliometric trends of publications. *Heliyon*, 7(11). <https://doi.org/10.1016/j.heliyon.2021.e08219>.
- Sarkar, T. K., Roy, D. K., Kang, Y. S., Jun, S. R., Park, J. W., & Ryu, C. S. (2024). Ensemble of Machine Learning Algorithms for Rice Grain Yield Prediction Using UAV-Based Remote Sensing. *Journal of Biosystems Engineering*, 49(1), 1-19. <https://doi.org/10.1007/s42853-023-00209-6>.
- Segal, M. R. (2004). Machine learning benchmarks and random forest regression. https://escholarship.org/content/qt35x3v9t4/qt35x3v9t4_noSplash_3bc7fbb8348b76e0ad2a408fe58dfd94.pdf.
- Sehler, R., Li, J., Reager, J. T., & Ye, H. (2019). Investigating relationship between soil moisture and precipitation globally using remote sensing observations. *Journal of Contemporary Water Research & Education*, 168(1), 106-118. <https://doi.org/10.1111/j.1936-704X.2019.03324.x>.
- Sekhar, C. S. C. (2018). Climate change and rice economy in Asia: Implications for trade policy. In *The State of Agricultural Commodity Markets (SOCO)* (Vol. 2018). Rome, Italy: FAO. <https://www.fao.org/3/CA2207EN/ca2207en.pdf>.
- Senan, S., Thomas, J., Vema, V. K., Jainet, P. J., Nizar, S., Sivan, S., & Sudheer, K. P. (2022). A study of the influence of rainfall datasets' spatial resolution on stream simulation in Chaliyar River Basin, India. *Journal of Water and Climate Change*, 13(12), 4234-4254. <https://doi.org/10.2166/wcc.2022.273>.
- Shahhosseini, M., Hu, G., Huber, I., & Archontoulis, S. V. (2021). Coupling machine learning and crop modeling improves crop yield prediction in the US Corn Belt. *Scientific reports*, 11(1), 1606. <https://doi.org/10.1038/s41598-020-80820-1>.
- Shi, Z., Huang, H., Wu, Y., Chiu, Y. H., & Qin, S. (2020). Climate change impacts on agricultural production and crop disaster area in China. *International Journal of Environmental Research and Public Health*, 17(13), 4792. <https://doi.org/10.3390/ijerph17134792>.

- Sillmann, J., Kharin, V. V., Zhang, X., Zwiers, F. W., & Bronaugh, D. (2013). Climate extremes indices in the CMIP5 multimodel ensemble: Part 1. Model evaluation in the present climate. *Journal of geophysical research: atmospheres*, *118*(4), 1716-1733. <https://doi.org/10.1002/jgrd.50203>.
- Singh, R. J., Kumar, G., Sharma, N. K., Deshwal, J. S., & Madhu, M. (2024). Extreme rainfall storm-induced surface runoff and sediment dynamics of conservation tillage-based agro-geotextiles emplaced on sloping croplands of the Indian Himalayan Region. *Physics and Chemistry of the Earth, Parts A/B/C*, *135*, 103644. <https://doi.org/10.1016/j.pce.2024.103644>.
- Sobh, M. T., Hamed, M. M., Nashwan, M. S., & Shahid, S. (2022). Future projection of precipitation bioclimatic indicators over Southeast Asia using CMIP6. *Sustainability*, *14*(20), 13596. <https://doi.org/10.3390/su142013596>.
- Son, N. T., Chen, C. F., & Chen, C. C. (2022). Remote sensing time series analysis for early rice yield forecasting using random forest algorithm. In *Remote Sensing of Agriculture and Land Cover/Land Use Changes in South and Southeast Asian Countries* (pp. 353-366). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-92365-5_20.
- Spinoni, J., Naumann, G., Carrao, H., Barbosa, P., & Vogt, J. (2014). World drought frequency, duration, and severity for 1951–2010. *Int. J. Climatol*, *34*(8), 2792-2804. <https://doi.org/10.1002/joc.3875>.
- Stern, D. I., & Kaufmann, R. K. (2014). Anthropogenic and natural causes of climate change. *Climatic change*, *122*, 257-269. <https://doi.org/10.1007/s10584-013-1007-x>.
- Stuecker, M. F., Tigchelaar, M., & Kantar, M. B. (2018). Climate variability impacts on rice production in the Philippines. *PloS one*, *13*(8), e0201426. <https://doi.org/10.1371/journal.pone.0201426>.
- Subash, N., Singh, S. S., & Priya, N. (2011). Extreme rainfall indices and its impact on rice productivity—a case study over sub-humid climatic environment. *Agricultural Water Management*, *98*(9), 1373-1387. <https://doi.org/10.1016/j.agwat.2011.04.003>.
- Sun, P., Liu, R., Yao, R., Shen, H., & Bian, Y. (2023). Responses of agricultural drought to meteorological drought under different climatic zones and vegetation types. *Journal of Hydrology*, *619*, 129305. <https://doi.org/10.1016/j.jhydrol.2023.129305>.
- Supharatid, S., & Nafung, J. (2021). Projected drought conditions by CMIP6 multimodel ensemble over Southeast Asia. *Journal of Water and Climate Change*, *12*(7), 3330-3354. <https://doi.org/10.2166/wcc.2021.308>.

- Tanteliniaina, M. F. R., Chen, J., Adyel, T. M., & Zhai, J. (2020). Elevation dependence of the impact of global warming on rainfall variations in a tropical island. *Water*, *12*(12), 3582. <https://doi.org/10.3390/w12123582>.
- Tate, E. L., & Gustard, A. (2000). Drought definition: a hydrological perspective. In *Drought and drought mitigation in Europe* (pp. 23-48). Dordrecht: Springer Netherlands. https://doi.org/10.1007/978-94-015-9472-1_3.
- Tebaldi, C., Debeire, K., Eyring, V., Fischer, E., Fyfe, J., Friedlingstein, P., ... & Ziehn, T. (2021). Climate model projections from the scenario model intercomparison project (ScenarioMIP) of CMIP6. *Earth System Dynamics*, *12*(1), 253-293. <https://doi.org/10.5194/esd-12-253-2021>.
- Tebaldi, C., Debeire, K., Eyring, V., Fischer, E., Fyfe, J., Friedlingstein, P., ... & Ziehn, T. (2021). Climate model projections from the scenario model intercomparison project (ScenarioMIP) of CMIP6. *Earth System Dynamics*, *12*(1), 253-293. <https://doi.org/10.5194/esd-12-253-2021>.
- Teh, Y. Y., Wong, J. L., & Lee, M. L. (2023). Effect of fines content on soil moisture responses to wetting & drying cycles. *Physics and Chemistry of the Earth, Parts A/B/C*, *129*, 103313. <https://doi.org/10.1016/j.pce.2022.103313>.
- Thirumalai, K., DiNezio, P. N., Okumura, Y., & Deser, C. (2017). Extreme temperatures in Southeast Asia caused by El Niño and worsened by global warming. *Nature communications*, *8*(1), 15531. <https://doi.org/10.1038/ncomms15531>.
- Tian, Z., Gao, W., Kool, D., Ren, T., Horton, R., & Heitman, J. L. (2018). Approaches for estimating soil water retention curves at various bulk densities with the extended van Genuchten model. *Water Resources Research*, *54*(8), 5584-5601. <https://doi.org/10.1029/2018WR022871>.
- United States Geological Survey. (n.d.). *Generalized world precipitation map*. U.S. Geological Survey. <https://www.usgs.gov/media/images/generalized-world-precipitation-map>.
- Venkatappa, M., Sasaki, N., Han, P., & Abe, I. (2021). Impacts of droughts and floods on croplands and crop production in Southeast Asia—An application of Google Earth Engine. *Science of the Total Environment*, *795*, 148829. <https://doi.org/10.1016/j.scitotenv.2021.148829>.
- Wang, C., Fu, B., Zhang, L., & Xu, Z. (2019). Soil moisture–plant interactions: an ecohydrological review. *Journal of Soils and Sediments*, *19*, 1-9. <https://doi.org/10.1007/s11368-018-2167-0>.

- Wang, T., Tu, X., Singh, V. P., Chen, X., & Lin, K. (2021). Global data assessment and analysis of drought characteristics based on CMIP6. *Journal of Hydrology*, 596, 126091. <https://doi.org/10.1016/j.jhydrol.2021.126091>.
- Wasko, C., Nathan, R., & Peel, M. C. (2020). Changes in antecedent soil moisture modulate flood seasonality in a changing climate. *Water Resources Research*, 56(3), e2019WR026300. <https://doi.org/10.1029/2019WR026300>.
- Werndl, C. (2016). On defining climate and climate change. *The British Journal for the Philosophy of Science*. <https://doi.org/10.1093/bjps/axu048>.
- Wilhite, D. A. (2019). Integrated drought management: moving from managing disasters to managing risk in the Mediterranean region. *Euro-Mediterranean Journal for Environmental Integration*, 4, 1-5. <https://doi.org/10.1007/s41207-019-0131-z>.
- Wilhite, D. A., & Glantz, M. H. (1985). Understanding: the drought phenomenon: the role of definitions. *Water international*, 10(3), 111-120. <https://doi.org/10.1080/02508068508686328>.
- Wu, M., Chen, Y., Wang, H., & Sun, G. (2015). Characteristics of meteorological disasters and their impacts on the agricultural ecosystems in the northwest of China: a case study in Xinjiang. *Geoenvironmental Disasters*, 2, 1-10. <https://doi.org/10.1186/s40677-015-0015-8>.
- Wu, Z., Feng, H., He, H., Zhou, J., & Zhang, Y. (2021). Evaluation of soil moisture climatology and anomaly components derived from ERA5-land and GLDAS-2.1 in China. *Water Resources Management*, 35, 629-643. <https://doi.org/10.1007/s11269-020-02743-w>.
- Xu, F., Bento, V. A., Qu, Y., & Wang, Q. (2023). Projections of global drought and their climate drivers using CMIP6 global climate models. *Water*, 15(12), 2272. <https://doi.org/10.3390/w15122272>.
- Yao, N., Li, Y., Liu, Q., Zhang, S., Chen, X., Ji, Y., ... & Feng, P. (2022). Response of wheat and maize growth-yields to meteorological and agricultural droughts based on standardized precipitation evapotranspiration indexes and soil moisture deficit indexes. *Agricultural Water Management*, 266, 107566. <https://doi.org/10.1016/j.agwat.2022.107566>.
- Yoon, J. H., & Leung, L. R. (2015). Assessing the relative influence of surface soil moisture and ENSO SST on precipitation predictability over the contiguous United States. *Geophysical Research Letters*, 42(12), 5005-5013. <https://doi.org/10.1002/2015GL064139>.

- Yuan, S., Stuart, A.M., Laborte, A.G. *et al.* Southeast Asia must narrow down the yield gap to continue to be a major rice bowl. *Nat Food* **3**, 217–226 (2022). <https://doi.org/10.1038/s43016-022-00477-z>.
- Yuan, X., Liu, S., Feng, W., & Dauphin, G. (2023). Feature Importance Ranking of Random Forest-Based End-to-End Learning Algorithm. *Remote Sensing*, *15*(21), 5203. <https://doi.org/10.3390/rs15215203>.
- Zeleňáková, M., Sol'áková, T., Milanović, M., Gocić, M., & Abd-Elhamid, H. F. (2023). Drought Risks Assessment Using Standardized Precipitation Index. *Engineering Proceedings*, *57*(1), 38. <https://doi.org/10.3390/engproc2023057038>.
- Zhang, B., Xu, Q., Gao, D., Jiang, C., Liu, F., Jiang, J., & Ma, Y. (2019). Higher soil capacity of intercepting heavy rainfall in mixed stands than in pure stands in riparian forests. *Science of the Total Environment*, *658*, 1514-1522. <https://doi.org/10.1016/j.scitotenv.2018.12.171>.
- Zhang, M., Zhai, G., He, T., & Wu, C. (2023). A growing global threat: Long-term trends show cropland exposure to flooding on the rise. *Science of The Total Environment*, *899*, 165675. <https://doi.org/10.1016/j.scitotenv.2023.165675>.
- Zhang, Q., Gu, X., Singh, V. P., Kong, D., & Chen, X. (2015). Spatiotemporal behavior of floods and droughts and their impacts on agriculture in China. *Global and Planetary Change*, *131*, 63-72. <https://doi.org/10.1016/j.gloplacha.2015.05.007>.
- Zhang, R., Shangguan, W., Liu, J., Dong, W., & Wu, D. (2024). Assessing meteorological and agricultural drought characteristics and drought propagation in Guangdong, China. *Journal of Hydrology: Regional Studies*, *51*, 101611. <https://doi.org/10.1016/j.ejrh.2023.101611>.
- Zhang, S., & Chen, J. (2021). Uncertainty in projection of climate extremes: A comparison of CMIP5 and CMIP6. *Journal of Meteorological Research*, *35*(4), 646-662. <https://doi.org/10.1007/s13351-021-1012-3>.
- Zhou, K., Li, J., Zhang, T., & Kang, A. (2021). The use of combined soil moisture data to characterize agricultural drought conditions and the relationship among different drought types in China. *Agricultural Water Management*, *243*, 106479. <https://doi.org/10.1016/j.agwat.2020.106479>.
- Zhou, Z., Zhang, L., Chen, J., She, D., Wang, G., Zhang, Q., ... & Zhang, Y. (2023). Projecting global drought risk under various SSP-RCP scenarios. *Earth's Future*, *11*(5), e2022EF003420. <https://doi.org/10.1029/2022EF003420>.