Monitoring drought and salinity stress in agriculture by remote sensing for a sustainable future

Wen, W.

References

Aadhar, S., & Mishra, V. (2017). High-resolution near real-time drought monitoring in South Asia. Sci. Data, 4, 170145. https://doi.org/10.1038/sdata.2017.145.

Abatzoglou, J.T., McEvoy, D.J., & Redmond, K.T. (2017). The west wide drought tracker: drought monitoring at fine spatial scales. Bull. Am. Meteorol. Soc., 98, 1815-1820. https://wrcc.dri.edu/wwdt/about.php.

Abbas, A., Khan, S., Hussain, N., Hanjra, M.A., & Akbar, S. (2013). Characterizing soil salinity in irrigated agriculture using a remote sensing approach. Phys. Chem. Earth, 55-57, 43-52. https://doi.org/10.1016/j.pce.2010.12.004.

Acevedo, M.F.B., Groen, T.A., Hecker, C.A., & Skidmore, A.K. (2017). Identifying leaf traits that signal stress in TIR spectra. ISPRS J. Photogramm. Remote Sens., 125, 132-145. https://doi.org/10.1016/j.isprsjprs.2017.01.014.

AghaKouchak, A., Farahmand, A., Melton, F.S., Teixeira, J., Anderson, M.C., Wardlow, B.D., & Hain, C.R. (2015). Remote sensing of drought: progress, challenges and opportunities. Rev. Geophys., 53, 452-480. https://doi.org/10.1002/2014RG000456.

Alexander, A., Zbyněk, M., Julie, O., Alexander, G., Uwe, R., & Gina, M. (2015). Meta-analysis assessing potential of steady-state chlorophyll fluorescence for remote sensing detection of plant water, temperature and nitrogen stress. Remote Sens. Environ., 168, 420-436. https://doi.org/10.1016/j.rse.2015.07.022.

Allbed, A., & Kumar, L. (2013). Soil salinity mapping and monitoring in arid and semi-arid regions using remote sensing technology: a review. Adv. Remote Ses., 02, 373-385. http://dx.doi.org/10.4236/ars.2013.24040.

Anami, B.S., Malvade, N.N., & Palaiah, S. (2020). Classification of yield affecting biotic and abiotic paddy crop stresses using field images. Inf. Process. Agric., 7, 272-285. https://doi.org/10.1016/j.inpa.2019.08.005.

Anderegg, W.R.L., Trugman, A.T., Bowling, D.R., Salvucci, G., & Tuttle, S.E. (2019). Plant functional traits and climate influence drought intensification and land–atmosphere feedbacks. Proc. Natl. Acad. Sci. U.S.A., 116, 14071-14076. https://doi.org/10.1073/pnas.1904747116.

Anderson, K., Ryan, B., Sonntag, W., Kavvada, A., & Friedl, L. (2017). Earth observation in service of the 2030 agenda for sustainable development. Geo-Spat. Inf. Sci., 20, 77-96. https://doi.org/10.1080/10095020.2017.1333230.

Andrew, S.C., Gallagher, R.V., Wright, I.J., & Mokany, K. (2022). Assessing the vulnerability of plant functional trait strategies to climate change. Glob. Ecol. Biogeogr., 31, 1194-1206. https://doi.org/10.1111/geb.13501.

Angon, P.B., Tahjib-Ul-Arif, M., Samin, S.I., Habiba, U., Hossain, M.A., & Brestic, M. (2022). How do plants respond to combined drought and salinity stress? A systematic review. Plants (Basel), 11, 2884. https://doi.org/10.3390/plants11212884.

Arun-Chinnappa, K.S., Ranawake, L., & Seneweera, S. (2017). Impacts and management of temperature and water stress in crop plants. In P.S. Minhas, J. Rane, & R.K. Pasala (Eds.), Abiotic Stress Management for Resilient Agriculture (pp. 221-233). Singapore: Springer Singapore. https://doi.org/10.1007/978-981-10-5744-1_9.

Asner, G.P., Scurlock, J.M.O., & Hicke, J.A. (2003). Global synthesis of leaf area index observations: implications for ecological and remote sensing studies. Glob. Ecol. Biogeogr., 12, 191-205. https://doi.org/10.1046/j.1466-822X.2003.00026.x.

Asrar, G., Kanemasu, E.T., Jackson, R.D., & Pinter, P.J. (1985). Estimation of total above-ground phytomass production using remotely sensed data. Remote Sens. Environ., 17, 211-220. https://doi.org/10.1016/0034-4257(85)90095-1.

Atzberger, C. (2013). Advances in remote sensing of agriculture: context description, existing operational monitoring systems and major information needs. Remote Sens., 5, 949-981. https://doi.org/10.3390/rs5020949.

Atzori, G., Nissim, W.G., Caparrotta, S., Masi, E., Azzarello, E., Pandolfi, C., Vignolini, P., Gonnelli, C., & Mancuso, S. (2016). Potential and constraints of different seawater and freshwater blends as growing media for three vegetable crops. Agric. Water Manag., 176, 255-262. https://doi.org/10.1016/j.agwat.2016.06.016.

Audil, G., Ajaz Ahmad, L., & Noor Ul Islam, W. (2019). Biotic and abiotic stresses in plants. In O. Alexandre Bosco de (Ed.), Abiotic and Biotic Stress in Plants (p. Ch. 1). Rijeka: IntechOpen. https://doi.org/10.5772/intechopen.85832.

Ayers, R.S., & Westcot, D.W. (1985). Water quality for agriculture. Food and Agriculture Organization of the United Nations Rome. https://www.waterboards.ca.gov/water_issues/programs/tmdl/records/state_board/1985/ref2648.pdf.

Azad, N., Rezayian, M., Hassanpour, H., Niknam, V., & Ebrahimzadeh, H. (2021). Physiological mechanism of salicylic acid in Mentha pulegium L. Under salinity and drought stress. Braz. J. Bot., 44, 359-369. https://doi.org/10.1007/s40415-021-00706-y.

Bai, H., & Purcell, L. (2018). Aerial canopy temperature differences between fast-and slow-wilting soya bean genotypes. J. Agron. Crop Sci., 204, 243-251. https://doi.org/10.1111/jac.12259.

Baret, F., Madec, S., Irfan, K., Lopez, J., Comar, A., Hemmerlé, M., Dutartre, D., Praud, S., & Tixier, M.H. (2018). Leaf-rolling in maize crops: from leaf scoring to canopy-level measurements for phenotyping. J. Exp. Bot., 69, 2705-2716. https://doi.org/10.1093/jxb/ery071.

Bartels, D., & Sunkar, R. (2005). Drought and salt tolerance in plants. Crit. Rev. Plant Sci., 24, 23-58. https://doi.org/10.1080/07352680590910410.

Bartosz Mickiewicz, Ekaterina Volkova, & Jurczak, R. (2022). The Global Market for Potato and Potato Products in the Current and Forecast Period. Eur. Res. Stud., 740-751. https://doi.org/10.35808/ersj/3062.

Basso, B., & Liu, L. (2019). Seasonal crop yield forecast: methods, applications, and accuracies. (pp. 201-255). https://doi.org/10.1016/bs.agron.2018.11.002.

Bayat, B., van der Tol, C., & Verhoef, W. (2016). Remote sensing of grass response to drought stress using spectroscopic techniques and canopy reflectance model inversion. Remote Sens., 8, 557-581. https://doi.org/10.3390/rs8070557.

Bayat, B., van der Tol, C., & Verhoef, W. (2018). Integrating satellite optical and thermal infrared observations for improving daily ecosystem functioning estimations during a drought episode. Remote Sens. Environ., 209, 375-394. https://doi.org/10.1016/j.rse.2018.02.027.

Becker-Reshef, I., Barker, B., Whitcraft, A., Oliva, P., Mobley, K., Justice, C., & Sahajpal, R. (2023). Crop type maps for operational global agricultural monitoring. Sci. Data, 10, 172. https://doi.org/10.1038/s41597-023-02047-9.

Becker-Reshef, I., Justice, C., Barker, B., Humber, M., Rembold, F., Bonifacio, R., Zappacosta, M., Budde, M., Magadzire, T., Shitote, C., Pound, J., Constantino, A., Nakalembe, C., Mwangi, K., Sobue, S., Newby, T., Whitcraft, A., Jarvis, I., & Verdin, J. (2020). Strengthening agricultural decisions in countries at risk of food insecurity: The GEOGLAM Crop Monitor for Early Warning. Remote Sens. Environ., 237, 11153. https://doi.org/10.1016/j.rse.2019.111553.

Behmann, J., Steinrücken, J., & Plümer, L. (2014). Detection of early plant stress responses in hyperspectral images. ISPRS J. Photogramm. Remote Sens., 93, 98-111. https://doi.org/10.1016/j.isprsjprs.2014.03.016.

Ben Ahmed, C., Magdich, S., Ben Rouina, B., Boukhris, M., & Ben Abdullah, F. (2012). Saline water irrigation effects on soil salinity distribution and some physiological responses of field grown Chemlali olive. J. Environ. Manage., 113, 538-544. https://doi.org/10.1016/j.jenvman.2012.03.016.

Ben Rouina, B., Trigui, A., d'Andria, R., Boukhris, M., & Chaieb, M. (2007). Effects of water stress and soil type on photosynthesis, leaf water potential and yield of olive trees (Olea europaea L. cv. Chemlali Sfax). Aust. J. Exp. Agr., 47, 1484-1490. https://doi.org/10.1071/Ea05206.

Berger, K., Atzberger, C., Danner, M., D'Urso, G., Mauser, W., Vuolo, F., & Hank, T. (2018). Evaluation of the PROSAIL model capabilities for future hyperspectral model environments: A review study. Remote Sens., 10, 85-101. https://doi.org/10.3390/rs10010085.

Berger, K., Machwitz, M., Kycko, M., Kefauver, S.C., Van Wittenberghe, S., Gerhards, M., Verrelst, J., Atzberger, C., van der Tol, C., Damm, A., Rascher, U., Herrmann, I., Paz, V.S., Fahrner, S., Pieruschka, R., Prikaziuk, E., Buchaillot, M.L., Halabuk, A., Celesti, M., Koren, G., Gormus, E.T., Rossini, M., Foerster, M., Siegmann, B., Abdelbaki, A., Tagliabue, G., Hank, T., Darvishzadeh, R., Aasen, H., Garcia, M., Pocas, I., Bandopadhyay, S., Sulis, M., Tomelleri, E., Rozenstein, O., Filchev, L., Stancile, G., & Schlerf, M. (2022). Multi-sensor spectral synergies for crop stress detection and monitoring in the optical domain: A review. Remote Sens. Environ., 280, 113198. https://doi.org/10.1016/j.rse.2022.113198.

Berni, J., Zarco-Tejada, P.J., Suarez, L., & Fereres, E. (2009). Thermal and narrowband multispectral remote sensing for vegetation monitoring from an unmanned aerial vehicle. IEEE Trans. Geosci. Remote Sens., 47, 722-738. https://doi.org/10.1109/tgrs.2008.2010457.

Bernstein, L., & Ayers, A. (1949). Salt tolerance of cabbage and broccoli. In, United States Salinity Laboratory Report to Collaborators, Riverside, CA (p. 39). https://www.ars.usda.gov/arsuserfiles/20360500/pdf_pubs/P1567.pdf.

Biju, S., Fuentes, S., & Gupta, D. (2018). The use of infrared thermal imaging as a non-destructive screening tool for identifying drought-tolerant lentil genotypes. Plant Physiol. Biochem., 127, 11-24

Bontemps, S., Defourny, P., Radoux, J., Van Bogaert, E., Lamarche, C., Achard, F., Mayaux, P., Boettcher, M., Brockmann, C., & Kirches, G. (2013). Consistent global land cover maps for climate modelling communities: current achievements of the ESA's land cover CCI. In, Proceedings of the ESA living planet symposium, Edimburgh (pp. 9-13). https://articles.adsabs.harvard.edu/pdf/2013ESASP.722E..62B.

Boryan, C., Yang, Z., Mueller, R., & Craig, M. (2011). Monitoring US agriculture: the US department of agriculture, national agricultural statistics service, cropland data layer program. Geocarto Int., 26, 341-358. https://doi.org/10.1080/10106049.2011.562309.

Botha, E.J., Zebarth, B.J., & Leblon, B. (2006). Non-destructive estimation of potato leaf chlorophyll and protein contents from hyperspectral measurements using the PROSPECT radiative transfer model. Can. J. Plant. Sci., 86, 279-291. https://doi.org/10.4141/P05-017.

Boussetta, S., Balsamo, G., Beljaars, A., Kral, T., & Jarlan, L. (2012). Impact of a satellite-derived leaf area index monthly climatology in a global numerical weather prediction model. Int. J. Remote Sens., 34, 3520-3542. https://doi.org/10.1080/01431161.2012.716543.

Bowman, W.D. (1989). The relationship between leaf water status, gas-exchange, and spectral reflectance in cotton leaves. Remote Sens. Environ., 30, 249-255. https://doi.org/10.1016/0034-4257(89)90066-7.

Broekhuizen, A. (2018). 'Storm duurt dagen, droogte duurt maanden'. In: Dutch Ministry of Infrastructure and Water Management

Bürling, K., Cerovic, Z.G., Cornic, G., Ducruet, J.-M., Noga, G., & Hunsche, M. (2013). Fluorescence-based sensing of drought-induced stress in the vegetative phase of four contrasting wheat genotypes. Environ. Exp. Bot., 89, 51-59. https://doi.org/10.1016/j.envexpbot.2013.01.003.

Butcher, K., Wick, A.F., DeSutter, T., Chatterjee, A., & Harmon, J. (2016). Soil salinity: A threat to global food security. Agron. J., 108, 2189-2200. https://doi.org/10.2134/agronj2016.06.0368.

Calvao, T., & Pessoa, M. (2015). Remote sensing in food production: a review. Emirates Journal of Food and Agriculture, 27. https://doi.org/10.9755/ejfa.v27i2.19272.

Cammalleri, C., McCormick, N., & Toreti, A. (2022). Analysis of the relationship between yield in cereals and remotely sensed fAPAR in the framework of monitoring drought impacts in Europe. Nat. Hazards Earth Syst. Sci., 22, 3737-3750. https://doi.org/10.5194/nhess-22-3737-2022.

Cammalleri, C., Verger, A., Lacaze, R., & Vogt, J.V. (2019). Harmonization of GEOV2 fAPAR time series through MODIS data for global drought monitoring. Int. J. Appl. Earth Obs. Geoinf., 80, 1-12. https://doi.org/10.1016/j.jag.2019.03.017.

Cárdenas-Pérez, S., Piernik, A., Chanona-Pérez, J.J., Grigore, M.N., & Perea-Flores, M.J. (2021). An overview of the emerging trends of the Salicornia L. genus as a sustainable crop. Environ. Exp. Bot., 191. https://doi.org/10.1016/j.envexpbot.2021.104606.

Carrão, H., Naumann, G., & Barbosa, P. (2016). Mapping global patterns of drought risk: An empirical framework based on sub-national estimates of hazard, exposure and vulnerability. Glob. Environ. Change, 39, 108-124. https://doi.org/10.1016/j.gloenvcha.2016.04.012.

Caruso, C.M., Maherali, H., & Martin, R.A. (2019). A meta-analysis of natural selection on plant functional traits. Int. J. Plant Sci., 181, 44-55. https://doi.org/10.1086/706199.

CBD (2022). Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity. In 15/4. Kunming-Montreal Global Biodiversity Framework. In. https://www.cbd.int/doc/decisions/cop-15/cop-15-dec-04-en.pdf.

Chaabouni, S., Kallel, A., & Houborg, R. (2021). Improving retrieval of crop biophysical properties in dryland areas using a multi-scale variational RTM inversion approach. International Journal of Applied Earth Observation and Geoinformation, 94, 102220. https://doi.org/10.1016/j.jag.2020.102220.

Chaves, M.M., Flexas, J., & Pinheiro, C. (2009). Photosynthesis under drought and salt stress: regulation mechanisms from whole plant to cell. Ann. Bot., 103, 551-560. https://doi.org/10.1093/aob/mcn125.

Chen, J., & Mueller, V. (2018). Coastal climate change, soil salinity and human migration in Bangladesh. Nat. Clim. Chang., 8, 981-985. https://doi.org/10.1038/s41558-018-0313-8.

Chen, Q., Timmermans, J., Wen, W., & van Bodegom, P.M. (2022). A multi-metric assessment of drought vulnerability across different vegetation types using high-resolution remote sensing. Sci. Total Environ., 832, 154970. https://doi.org/10.1016/j.scitotenv.2022.154970.

Chevilly, S., Dolz-Edo, L., Martinez-Sanchez, G., Morcillo, L., Vilagrosa, A., Lopez-Nicolas, J.M., Blanca, J., Yenush, L., & Mulet, J.M. (2021). Distinctive traits for drought and salt Stress tolerance in melon (Cucumis melo L.). Front. Plant Sci., 12, 777060. https://doi.org/10.3389/fpls.2021.777060.

Ciais, P., Reichstein, M., Viovy, N., Granier, A., Ogée, J., Allard, V., Aubinet, M., Buchmann, N., Bernhofer, C., Carrara, A., Chevallier, F., De Noblet, N., Friend, A.D., Friedlingstein, P., Grünwald, T., Heinesch, B., Keronen, P., Knohl, A., Krinner, G., Loustau, D., Manca, G., Matteucci, G., Miglietta, F., Ourcival, J.M., Papale, D., Pilegaard, K., Rambal, S., Seufert, G., Soussana, J.F., Sanz, M.J., Schulze, E.D., Vesala, T., & Valentini, R. (2005). Europe-wide reduction in primary productivity caused by the heat and drought in 2003. Nature, 437, 529-533. https://doi.org/10.1038/nature03972.

Cochran, F., Daniel, J., Jackson, L., & Neale, A. (2020). Earth observation-based ecosystem services indicators for national and subnational reporting of the sustainable development goals. Remote Sens. Environ., 244, 1-111796. https://doi.org/10.1016/j.rse.2020.111796.

Colombo, R., Meroni, M., Marchesi, A., Busetto, L., Rossini, M., Giardino, C., & Panigada, C. (2008). Estimation of leaf and canopy water content in poplar plantations by means of hyperspectral indices and inverse modeling. Remote Sens. Environ., 112, 1820-1834. https://doi.org/10.1016/j.rse.2007.09.005.

Cook, B.I., Ault, T.R., & Smerdon, J.E. (2015). Unprecedented 21st century drought risk in the American Southwest and Central Plains. Sci. Adv., 1, e1400082. https://doi.org/10.1126/sciadv.1400082.

Cornelissen, J.H.C., Lavorel, S., Garnier, E., Díaz, S., Buchmann, N., Gurvich, D.E., Reich, P.B., Steege, H.t., Morgan, H.D., Heijden, M.G.A.v.d., Pausas, J.G., & Poorter, H. (2003). A handbook of protocols for standardised and easy measurement of plant functional traits worldwide. Aust. J. Bot., 51, 335-380. https://www.publish.csiro.au/bt/BT02124.

Corwin, D.L. (2020). Climate change impacts on soil salinity in agricultural areas. Eur. J. Soil Sci., 72, 842-862. https://doi.org/10.1111/ejss.13010.

Corwin, D.L., & Scudiero, E. (2019). Chapter One - Review of soil salinity assessment for agriculture across multiple scales using proximal and/or remote sensors. In D.L. Sparks (Ed.), Advances in Agronomy (pp. 1-130): Academic Press. https://doi.org/10.1016/bs.agron.2019.07.001.

Cramer, G.R., Ergul, A., Grimplet, J., Tillett, R.L., Tattersall, E.A., Bohlman, M.C., Vincent, D., Sonderegger, J., Evans, J., Osborne, C., Quilici, D., Schlauch, K.A., Schooley, D.A., & Cushman, J.C. (2007). Water and salinity stress in grapevines: early and late changes in transcript and metabolite profiles. Funct. Integr. Genomics, 7, 111-134. https://doi.org/10.1007/s10142-006-0039-y.

Croft, H., Chen, J.M., Luo, X., Bartlett, P., Chen, B., & Staebler, R.M. (2017). Leaf chlorophyll content as a proxy for leaf photosynthetic capacity. Glob. Change Biol., 23, 3513-3524. https://doi.org/10.1111/gcb.13599.

Dai, A. (2011). Drought under global warming: a review. Wiley Interdiscip. Rev. Clim. Change, 2, 45-65. https://doi.org/10.1002/wcc.81.

Dai, A. (2013). Increasing drought under global warming in observations and models. Nat. Clim. Chang., 3, 52-58. https://doi.org/10.1038/nclimate1633.

Dalezios, N., Blanta, A., Spyropoulos, N., & Tarquis, A. (2014). Risk identification of agricultural drought for sustainable agroecosystems. Nat. Hazards Earth Syst. Sci., 14, 2435. https://doi.org/10.5194/nhess-14-2435-2014.

Danner, M., Berger, K., Wocher, M., Mauser, W., & Hank, T. (2021). Efficient RTM-based training of machine learning regression algorithms to quantify biophysical & biochemical traits of agricultural crops. ISPRS J. Photogramm. Remote Sens., 173, 278-296. https://doi.org/10.1016/j.isprsjprs.2021.01.017.

Daryanto, S., Wang, L., & Jacinthe, P.A. (2016a). Global synthesis of drought effects on maize and wheat production. PLoS One, 11, e0156362. https://doi.org/10.1371/journal.pone.0156362.

Daryanto, S., Wang, L.X., & Jacinthe, P.A. (2016b). Drought effects on root and tuber production: A meta-analysis. Agric. Water Manag., 176, 122-131. https://doi.org/10.1016/j.agwat.2016.05.019.

Daryanto, S., Wang, L.X., & Jacinthe, P.A. (2017). Global synthesis of drought effects on cereal, legume, tuber and root crops production: A review. Agric. Water Manag., 179, 18-33. https://doi.org/10.1016/j.agwat.2016.04.022.

Dasgupta, S., Hossain, M.M., Huq, M., & Wheeler, D. (2015). Climate change and soil salinity: The case of coastal Bangladesh. Ambio, 44, 815-826. https://doi.org/10.1007/s13280-015-0681-5.

de Vos, A., Andres Parra González, & Bruning, B. (2021). Case Study: Putting Saline Agriculture into Practice – A Case Study from Bangladesh. Future of Sustainable Agriculture in Saline Environments: Routledge, Taylor & Francis Group, London. https://doi.org/10.1201/9781003112327.

de Vos, A., Bruning, B., van Straten, G., Oosterbaan, R., Rozema, J., & van Bodegom, P. (2016). Crop salt tolerance under controlled field conditions in The Netherlands, based on trials conducted at Salt Farm Texel. In: Salt Farm Texel. https://edepot.wur.nl/409817.

Deb, P., Moradkhani, H., Han, X., Abbaszadeh, P., & Xu, L. (2022). Assessing irrigation mitigating drought impacts on crop yields with an integrated modeling framework. J. Hydrol., 609, 127760. https://doi.org/10.1016/j.jhydrol.2022.127760.

Dente, L., Satalino, G., Mattia, F., & Rinaldi, M. (2008). Assimilation of leaf area index derived from ASAR and MERIS data into CERES-Wheat model to map wheat yield. Remote Sens. Environ., 112, 1395-1407. https://doi.org/10.1016/j.rse.2007.05.023.

Diepen, C.A.V., Wolf, J., Keulen, H.V., & Rappoldt, C. (1989). WOFOST: a simulation model of crop production. Soil Use Manag., 5, 16-24. https://doi.org/10.1111/j.1475-2743.1989.tb00755.x.

Dobrowski, S., Pushnik, J., Zarco-Tejada, P.J., & Ustin, S. (2005). Simple reflectance indices track heat and water stress-induced changes in steady-state chlorophyll fluorescence at the canopy scale. Remote Sens. Environ., 97, 403-414. https://doi.org/10.1016/j.rse.2005.05.006.

Dodig, D., Bozinovic, S., Nikolić, A., Zoric, M., Vancetovic, J., Ignjatovic-Micic, D., Delic, N., Weigelt-Fischer, K., Junker, A., & Altmann, T. (2019). Image-derived traits related to mid-season growth performance of maize under nitrogen and water stress. Front. Plant Sci., 10, 814. https://doi.org/10.3389/fpls.2019.00814.

Doraiswamy, P.C., Sinclair, T.R., Hollinger, S., Akhmedov, B., Stern, A., & Prueger, J. (2005). Application of MODIS derived parameters for regional crop yield assessment. Remote Sens. Environ., 97, 192-202. https://doi.org/10.1016/j.rse.2005.03.015.

Dresselhaus, T., & Hückelhoven, R. (2018). Biotic and abiotic stress responses in crop plants. Agronomy, 8, 267-273. https://doi.org/10.3390/agronomy8110267.

Dunn, R.J.H., Stanitski, D.M., Gobron, N., Willett, K.M., Ades, M., Adler, R., Allan, R., Allan, R.P., Anderson, J., Argüez, A., Arosio, C., Augustine, J.A., Azorin-Molina, C., Barichivich, J., Barnes, J., Beck, H.E., Becker, A., Bellouin, N., Benedetti, A., Berry, D.I., Blenkinsop, S., Bock, O., Bosilovich, M.G., Boucher, O., Buehler, S.A., Carrea, L., Christiansen, H.H., Chouza, F., Christy, J.R., Chung, E.S., Coldewey-Egbers, M., Compo, G.P., Cooper, O.R., Covey, C., Crotwell, A., Davis, S.M., de Eyto, E., de Jeu, R.A.M., VanderSat, B.V., DeGasperi, C.L., Degenstein, D., Di Girolamo, L., Dokulil, M.T., Donat, M.G., Dorigo, W.A., Durre, I., Dutton, G.S., Duveiller, G., Elkins, J.W., Fioletov, V.E., Flemming, J., Foster, M.J., Frey, R.A., Frith, S.M., Froidevaux, L., Garforth, J., Gupta, S.K., Haimberger, L., Hall, B.D., Harris, I., Heidinger, A.K., Hemming, D.L., Ho, S.-p., Hubert, D., Hurst, D.F., Hüser, I., Inness, A., Isaksen, K., John, V., Jones, P.D., Kaiser, J.W., Kelly, S., Khaykin, S., Kidd, R., Kim, H., Kipling, Z., Kraemer, B.M., Kratz, D.P., La Fuente, R.S., Lan, X., Lantz, K.O., Leblanc, T., Li, B., Loeb, N.G., Long, C.S., Loyola, D., Marszelewski, W., Martens, B., May, L., Mayer, M., McCabe, M.F., McVicar, T.R., Mears, C.A., Menzel, W.P., Merchant, C.J., Miller, B.R., Miralles, D.G., Montzka, S.A., Morice, C., Mühle, J., Myneni, R., Nicolas, J.P., Noetzli, J., Osborn, T.J., Park, T., Pasik, A., Paterson, A.M., Pelto, M.S., Perkins-Kirkpatrick, S., Pétron, G., Phillips, C., Pinty, B., Po-Chedley, S., Polvani, L., Preimesberger, W., Pulkkanen, M., Randel, W.J., Rémy, S., Ricciardulli, L., Richardson, A.D., Rieger, L., Robinson, D.A., Rodell, M., Rosenlof, K.H., Roth, C., Rozanov, A., Rusak, J.A., Rusanovskaya, O., Rutishäuser, T., Sánchez-Lugo, A., Sawaengphokhai, P., Scanlon, T., Schenzinger, V., Schladow, S.G., Schlegel, R.W., Schmid, M.E., Selkirk, H.B., Sharma, S., Shi, L., Shimaraeva, S.V., Silow, E.A., Simmons, A.J., Smith, C.A., Smith, S.L., Soden, B.J., Sofieva, V., Sparks, T.H., Stackhouse, P.W., Steinbrecht, W., Streletskiy, D.A., Taha, G., Telg, H., Thackeray, S.J., Timofeyev, M.A., Tourpali, K., Tye, M.R., van der A, R.J., van der Schalie, R.V.B.V., van der SchrierW. Paul, G., van der Werf, G.R., Verburg, P., Vernier, J.-P., Vömel, H., Vose, R.S., Wang, R., Watanabe, S.G., Weber, M., Weyhenmeyer, G.A., Wiese, D., Wilber, A.C., Wild, J.D., Wong, T., Woolway, R.I., Yin, X., Zhao, L., Zhao, G., Zhou, X., Ziemke, J.R., & Ziese, M. (2020). Global climate-state of the climate in 2019. State of the climate in 2019, 101, S9-S128. https://doi.org/10.1175/bams-d-20-0104.1.

Eallonardo Jr, A.S., Leopold, D.J., Fridley, J.D., & Stella, J.C. (2013). Salinity tolerance and the decoupling of resource axis plant traits. J. Veg. Sci., 24, 365-374. https://doi.org/10.1111/j.1654-1103.2012.01470.x.

Eckardt, N.A., Cutler, S., Juenger, T.E., Marshall-Colon, A., Udvardi, M., & Verslues, P.E. (2022). Focus on climate change and plant abiotic stress biology. The Plant Cell, 35, 1-3. https://doi.org/10.1093/plcell/koac329.

Efimova, M.V., Kolomeichuk, L.V., Boyko, E.V., Malofii, M.K., Vidershpan, A.N., Plyusnin, I.N., Golovatskaya, I.F., Murgan, O.K., & Kuznetsov, V.V. (2018). Physiological mechanisms of Solanum tuberosum L. Plants' tolerance to chloride salinity. Russ. J. Plant Physiol., 65, 394-403. https://doi.org/10.1134/S1021443718030020.

El-Hendawy, S., Al-Suhaibani, N., Alotaibi, M., Hassan, W., Elsayed, S., Tahir, M.U., Mohamed, A.I., & Schmidhalter, U. (2019a). Estimating growth and photosynthetic properties of wheat grown in simulated saline field conditions using hyperspectral reflectance sensing and multivariate analysis. Sci. Rep., 9, 1-15. https://doi.org/10.1038/s41598-019-52802-5.

El-Hendawy, S.E., Al-Suhaibani, N.A., Hassan, W.M., Dewir, Y.H., Elsayed, S., Al-Ashkar, I., Abdella, K.A., & Schmidhalter, U. (2019b). Evaluation of wavelengths and spectral reflectance indices for high-throughput assessment of growth, water relations and ion contents of wheat irrigated with saline water. Agric. Water Manag., 212, 358-377. https://doi.org/10.1016/j.agwat.2018.09.009.

El-Moneim, D.A., Alqahtani, M.M., Abdein, M.A., & Germoush, M.O. (2020). Drought and salinity stress response in wheat: physiological andTaNACgene expression analysis in contrasting Egyptian wheat genotypes. Plant Biotechnol. J., 47, 1-14. https://doi.org/10.5010/jpb.2020.47.1.001.

El hasini, S., Iben. Halima, O., El. Azzouzi, M., Douaik, A., Azim, K., & Zouahri, A. (2019). Organic and inorganic remediation of soils affected by salinity in the Sebkha of Sed El Mesjoune – Marrakech (Morocco). Soil Tillage Res., 193, 153-160. https://doi.org/10.1016/j.still.2019.06.003.

Elhag, M., & Bahrawi, J.A. (2017). Soil salinity mapping and hydrological drought indices assessment in arid environments based on remote sensing techniques. Geosci. Instrum. Methods Data Syst., 6, 149-158. https://doi.org/10.5194/gi-6-149-2017.

Elsayed, S., & Darwish, W. (2017). Hyperspectral remote sensing to assess the water status, biomass, and yield of maize cultivars under salinity and water stress. Bragantia, 76, 62-72. https://doi.org/10.1590/1678-4499.018.

ESA (2015). Sentinel-2 User Handbook. https://sentinels.copernicus.eu/documents/247904/685211/Sentinel-2_User_Handbook.pdf/8869acdf-fd84-43ec-ae8c-3e80a436a16c?t=1438278087000.

Eswar, D., Karuppusamy, R., & Chellamuthu, S. (2021). Drivers of soil salinity and their correlation with climate change. Curr. Opin. Environ. Sustain., 50, 310-318. https://doi.org/10.1016/j.cosust.2020.10.015.

Eyring, V., Bony, S., Meehl, G.A., Senior, C.A., Stevens, B., Stouffer, R.J., & Taylor, K.E. (2016). Overview of the Coupled Model Intercomparison Project Phase 6 (CMIP6) experimental design and organization. Geosci. Model Dev., 9, 1937-1958. https://doi.org/10.5194/gmd-9-1937-2016.

Fang, H., Baret, F., Plummer, S., & Schaepman-Strub, G. (2019). An overview of global leaf area index (LAI): methods, products, validation, and applications. Rev. Geophys., 57, 739-799. https://doi.org/10.1029/2018RG000608.

FAO (2002). The state of food insecurity in the world 2001. In. Rome, Italy. https://www.fao.org/3/y1500e/y1500e02.htm.

FAO (2009). High level expert forum—how to feed the world in 2050. In: Food and Agriculture Organization of the United Nations (FAO) Rome, Italy.

https://www.fao.org/fileadmin/templates/wsfs/docs/expert_paper/How_to_Feed_the_World_in_2050.pdf.
FAO (2011). The state of the world's land and water resources for food and agriculture: Managing systems at risk. In: Earthscan. https://www.fao.org/land-water/solaw2021/en/.
FAO (2017). AQUASTAT Database. In F.L.a.W. Division (Ed.). http://www.fao.org/aquastat/en/.
FAO (2022a). Halt soil salinization, boost soil productivity In, Proceedings of the Global Symposium on Salt-affected Soils. Rome. https://doi.org/10.4060/cb9565en.
FAO (2022b). The state of food security and nutrition in the world 2022. In. Rome, Italy. https://doi.org/10.4060/cc0639en.
FAO, & IIASA (2012). Crop suitability index (value) for high input level rain-fed white potato. In F.a. IIASA (Ed.). http://gisweb.ciat.cgiar.org/RTBMaps/docs/metadata/Menu_RTBCrops/Potato_Suitability_Index.pdf.
FAO, I., UNICEF, WFP and WHO (2020). The state of food security and nutrition in the world 2020. In, Transforming food systems for affordable healthy diets. Rome: FAO. https://doi.org/10.4060/ca9692en.
FAO/IIASA/ISRIC/ISSCAS/JRC (2012). Harmonized World Soil Database (version 1.2). In FAO (Ed.). Rome, Italy and Laxenburg, Austria.
Farooq, M., Hussain, M., Wakeel, A., & Siddique, K.H.M. (2015). Salt stress in maize: effects, resistance mechanisms, and management. A review. Agron. Sustain. Dev., 35, 461-481. https://doi.org/10.1007/s13593-015-0287-0.
Farooq, M., Wahid, A., Kobayashi, N., Fujita, D., & Basra, S.M.A. (2009). Plant drought stress: effects, mechanisms and management. Agron. Sustain. Dev., 29, 185-212. https://doi.org/10.1051/agro:2008021.
Fatima, A., Hussain, S., Hussain, S., Ali, B., Ashraf, U., Zulfiqar, U., Aslam, Z., Al-Robai, S.A., Alzahrani, F.O., Hano, C., & El-Esawi, M.A. (2021). Differential morphophysiological, biochemical, and molecular responses of maize hybrids to salinity and alkalinity stresses. Agronomy, 11, 1150. https://doi.org/10.3390/agronomy11061150.
Fischer, G., Nachtergaele, F., Prieler, S., Van Velthuizen, H., Verelst, L., & Wiberg, D. (2008). Global agro-ecological zones assessment for agriculture (GAEZ 2008). IIASA, Laxenburg, Austria and FAO, Rome, Italy, 10.
Flexas, J., Briantais, J.-M., Cerovic, Z., Medrano, H., & Moya, I. (2000). Steady-state and maximum chlorophyll fluorescence responses to water stress in grapevine leaves: a new remote sensing system. Remote Sens. Environ., 73, 283-297. https://doi.org/10.1016/S0034-4257(00)00104-8.
Fuentes, S., De Bei, R., Pech, J., & Tyerman, S. (2012). Computational water stress indices obtained from thermal image analysis of grapevine canopies. Irrig. Sci., 30, 523-536. https://doi.org/10.1007/s00271-012-0375-8.
Gamon, J.A., Penuelas, J., & Field, C.B. (1992). A narrow-waveband spectral index that tracks diurnal changes in photosynthetic efficiency. Remote Sens. Environ., 41, 35-44. https://doi.org/10.1016/0034-4257(92)90059-S.
Gao, B.C. (1996). NDWI—A normalized difference water index for remote sensing of vegetation liquid water from space. Remote Sens. Environ., 58, 257-266. https://doi.org/10.1016/S0034-4257(96)00067-3.
Gao, Y., & Li, D. (2012). Detecting salinity stress in tall fescue based on single leaf spectrum. Sci. Hortic., 138, 159-164. https://doi.org/10.1016/j.scienta.2012.02.018.
Garcia, A., Rizzo, C.A., Ud-Din, J., Bartos, S.L., Senadhira, D., Flowers, T.J., & Yeo, A.R. (1997). Sodium and potassium transport to the xylem are inherited independently in rice, and the mechanism of sodium: potassium selectivity differs between rice and wheat. Plant Cell Environ., 20, 1167-1174. https://doi.org/10.1046/j.1365-3040.1997.d01-146.x.

Garriga, M., Retamales, J.B., Romero-Bravo, S., Caligari, P.D., & Lobos, G.A. (2014). Chlorophyll, anthocyanin, and gas exchange changes assessed by spectroradiometry in Fragaria chiloensis under salt stress. J. Integr. Plant Biol., 56, 505-515. https://doi.org/10.1111/jipb.12193.

Genc, Y., Taylor, J., Lyons, G., Li, Y., Cheong, J., Appelbee, M., Oldach, K., & Sutton, T. (2019). Bread wheat with high salinity and sodicity tolerance. Front. Plant Sci., 10, 1280. https://doi.org/10.3389/fpls.2019.01280.

Gerhards, M., Rock, G., Schlerf, M., & Udelhoven, T. (2016). Water stress detection in potato plants using leaf temperature, emissivity, and reflectance. Int. J. Appl. Earth Obs. Geoinf., 53, 27-39. https://doi.org/10.1016/j.jag.2016.08.004.

Gerhards, M., Schlerf, M., Mallick, K., & Udelhoven, T. (2019). Challenges and future perspectives of multi-/hyperspectral thermal infrared remote sensing for crop water-stress detection: a review. Remote Sens., 11, 1240-1264. https://doi.org/10.3390/rs11101240.

Ghimire, B., Timsina, D., & Nepal, J. (2015). Analysis of chlorophyll content and its correlation with yield attributing traits on early varieties of maize (Zea mays L.). J. Maize Res. Dev., 1, 134-145. https://doi.org/10.3126/jmrd.v1i1.14251.

Ghosh, S.C., Asanuma, K., Kusutani, A., & Toyota, M. (2001). Effect of salt stress on some chemical components and yield of potato. Soil Sci. Plant Nutr., 47, 467-475. https://doi.org/10.1080/00380768.2001.10408411.

Ghulam, A., Li, Z.-L., Qin, Q., Yimit, H., & Wang, J. (2008). Estimating crop water stress with ETM+ NIR and SWIR data. Agric. For. Meteorol., 148, 1679-1695. https://doi.org/10.1016/j.agrformet.2008.05.020.

Gitelson, A.A., Vina, A., Ciganda, V., Rundquist, D.C., & Arkebauer, T.J. (2005). Remote estimation of canopy chlorophyll content in crops. Geophys. Res. Lett., 32, L08403. https://doi.org/10.1029/2005GL022688.

Gizaw, S.A., Garland-Campbell, K., & Carter, A.H. (2016). Evaluation of agronomic traits and spectral reflectance in Pacific Northwest winter wheat under rain-fed and irrigated conditions. Field Crops Res., 196, 168-179. https://doi.org/10.1016/j.fcr.2016.06.018.

Gizaw, S.A., Godoy, J.G.V., Pumphrey, M.O., & Carter, A.H. (2018). Spectral reflectance for indirect selection and genome-wide association analyses of grain yield and drought tolerance in north American spring wheat. Crop Sci., 58, 2289-2301. https://doi.org/10.2135/cropsci2017.11.0690.

Godfray, H.C., Beddington, J.R., Crute, I.R., Haddad, L., Lawrence, D., Muir, J.F., Pretty, J., Robinson, S., Thomas, S.M., & Toulmin, C. (2010). Food security: the challenge of feeding 9 billion people. Science, 327, 812-818. https://doi.org/10.1126/science.1185383.

Gopalakrishnan, T., Hasan, M., Haque, A., Jayasinghe, S., & Kumar, L. (2019). Sustainability of coastal agriculture under climate change. Sustainability, 11. https://doi.org/10.3390/su11247200.

Grieve, C.M., Grattan, S.R., & Maas, E.V. (2011). Plant Salt Tolerance. Agricultural Salinity Assessment and Management (pp. 405-459). https://doi.org/10.1061/9780784411698.ch13.

Griffin-Nolan, R.J., Bushey, J.A., Carroll, C.J.W., Challis, A., Chieppa, J., Garbowski, M., Hoffman, A.M., Post, A.K., Slette, I.J., Spitzer, D., Zambonini, D., Ocheltree, T.W., Tissue, D.T., & Knapp, A.K. (2018). Trait selection and community weighting are key to understanding ecosystem responses to changing precipitation regimes. Funct. Ecol., 32, 1746-1756. https://doi.org/10.1111/1365-2435.13135.

Griggs, D., Smith, M.S., Rockström, J., Öhman, M.C., Gaffney, O., Glaser, G., Kanie, N., Noble, I., Steffen, W., & Shyamsundar, P. (2014). An integrated framework for sustainable development goals. Ecol. Soc., 19. http://dx.doi.org/10.5751/ES-07082-190449.

Grzesiak, M., Rzepka, A., Hura, T., Grzesiak, S., Hura, K., Filek, W., & Skoczowski, A. (2007). Fluorescence excitation spectra of drought resistant and sensitive genotypes of triticale and maize. Photosynthetica, 45, 606-611. https://ps.ueb.cas.cz/pdfs/phs/2007/04/23.pdf.

Haboudane, D., Miller, J.R., Tremblay, N., Zarco-Tejada, P.J., & Dextraze, L. (2002). Integrated narrow-band vegetation indices for prediction of crop chlorophyll content for application to precision agriculture. Remote Sens. Environ., 81, 416-426. https://doi.org/10.1016/S0034-4257(02)00018-4.

Hackl, H., Mistele, B., Hu, Y.C., & Schmidhalter, U. (2013). Spectral assessments of wheat plants grown in pots and containers under saline conditions. Funct. Plant Biol., 40, 409-424. https://doi.org/10.1071/fp12208.

Harfi, M.E., Hanine, H., Rizki, H., Latrache, H., & Nabloussi, A. (2016). Effect of drought and salt stresses on germination and early seedling growth of different color-seeds of sesame (Sesamum indicum). Int. J. Agric. Biol., 18, 1088-1094. https://doi.org/10.17957/ijab/15.0145.

Hassani, A., Azapagic, A., & Shokri, N. (2020). Predicting long-term dynamics of soil salinity and sodicity on a global scale. Proc. Natl. Acad. Sci. U.S.A., 117, 33017-33027. https://doi.org/10.1073/pnas.2013771117.

Hassani, A., Azapagic, A., & Shokri, N. (2021). Global predictions of primary soil salinization under changing climate in the 21st century. Nature Commun., 12, 6663. https://doi.org/10.1038/s41467-021-26907-3.

He, N., Li, Y., Liu, C., Xu, L., Li, M., Zhang, J., He, J., Tang, Z., Han, X., Ye, Q., Xiao, C., Yu, Q., Liu, S., Sun, W., Niu, S., Li, S., Sack, L., & Yu, G. (2020). Plant trait networks: improved resolution of the dimensionality of adaptation. Trends Ecol. Evol., 35, 908-918. https://doi.org/10.1016/j.tree.2020.06.003.

He, X., Estes, L., Konar, M., Tian, D., Anghileri, D., Baylis, K., Evans, T.P., & Sheffield, J. (2019). Integrated approaches to understanding and reducing drought impact on food security across scales. Curr. Opin. Environ. Sustain., 40, 43-54. https://doi.org/10.1016/j.cosust.2019.09.006.

Hernández-Clemente, R., Navarro-Cerrillo, R.M., Suárez, L., Morales, F., & Zarco-Tejada, P.J. (2011). Assessing structural effects on PRI for stress detection in conifer forests. Remote Sens. Environ., 115, 2360-2375. https://doi.org/10.1016/j.rse.2011.04.036.

Hernández, E.I., Melendez-Pastor, I., Navarro-Pedreño, J., & Gómez, I. (2014). Spectral indices for the detection of salinity effects in melon plants. Sci. Agric., 71, 324-330. https://doi.org/10.1590/0103-9016-2013-0338.

Homolova, L., Maenovsky, Z., Clevers, J.G.P.W., Garcia-Santos, G., & Schaeprnan, M.E. (2013). Review of optical-based remote sensing for plant trait mapping. Ecol. Complex., 15, 1-16. https://doi.org/10.1016/j.ecocom.2013.06.003.

Hopmans, J.W., Qureshi, A.S., Kisekka, I., Munns, R., Grattan, S.R., Rengasamy, P., Ben-Gal, A., Assouline, S., Javaux, M., Minhas, P.S., Raats, P.A.C., Skaggs, T.H., Wang, G., De Jong van Lier, Q., Jiao, H., Lavado, R.S., Lazarovitch, N., Li, B., & Taleisnik, E. (2021). Critical knowledge gaps and research priorities in global soil salinity. (pp. 1-191). https://doi.org/10.1016/bs.agron.2021.03.001.

Houshmand, S., Arzani, A., & Mirmohammadi-Maibody, S.A.M. (2014). Effects of salinity and drought stress on grain quality of durum wheat. Commun. Soil Sci. Plant Anal., 45, 297-308. https://doi.org/10.1080/00103624.2013.861911.

Hrdinka, T., Novický, O., Hanslík, E., & Rieder, M. (2012). Possible impacts of floods and droughts on water quality. J. Hydro-environ. Res., 6, 145-150. https://doi.org/10.1016/j.jher.2012.01.008.

Hu, Q., Yang, J., Xu, B., Huang, J., Memon, M.S., Yin, G., Zeng, Y., Zhao, J., & Liu, K. (2020). Evaluation of global decametric-resolution LAI, FAPAR and FVC estimates derived from Sentinel-2 imagery. Remote Sens., 12. https://doi.org/10.3390/rs12060912.

Huang, J., Wang, H., Dai, Q., & Han, D. (2014). Analysis of NDVI Data for crop identification and yield estimation. IEEE J. Sel. Top. Appl. Earth Obs. Remote Sens., 7, 4374-4384. https://doi.org/10.1109/JSTARS.2014.2334332.

Huete, A.R. (1988). A soil-adjusted vegetation index (SAVI). Remote Sens. Environ., 25, 295-309. https://doi.org/10.1016/0034-4257(88)90106-X.

Hunt Jr, E.R., Rock, B.N., & Nobel, P.S. (1987). Measurement of leaf relative water content by infrared reflectance. Remote Sens. Environ., 22, 429-435. https://doi.org/10.1016/0034-4257(87)90094-0.

Hussain, T., Koyro, H.W., Zhang, W., Liu, X., Gul, B., & Liu, X. (2020). Low salinity improves photosynthetic performance in Panicum Antidotale under drought stress. Front. Plant Sci., 11, 481. https://doi.org/10.3389/fpls.2020.00481.

Ibrahim, W., Qiu, C.W., Zhang, C., Cao, F., Shuijin, Z., & Wu, F. (2019). Comparative physiological analysis in the tolerance to salinity and drought individual and combination in two cotton genotypes with contrasting salt tolerance. Physiol. Plant., 165, 155-168. https://doi.org/10.1111/ppl.12791.

ICBA (2015). Quinoa for Marginal Environments, Project brief International Centre for Biosaline Agriculture. In ICBA (Ed.). https://www.biosaline.org/sites/default/files/Projectbrieffiles/Quinoa-Project_Brief-Final-2.pdf.

Idowu, O., Marsalis, M., & Flynn, R.P. (2012). Agronomic principles to help with farming during drought periods - guide a147. https://pubs.nmsu.edu/_a/A147.pdf.

Idso, S.B., Jackson, R.D., Pinter, P.J., Reginato, R.J., & Hatfield, J.L. (1981). Normalizing the stress-degreed-day parameter for environmental variability. Agric. Meteorol., 24, 45-55. https://doi.org/10.1016/0002-1571(81)90032-7.

Ionita, M., Tallaksen, L.M., Kingston, D.G., Stagge, J.H., Laaha, G., Van Lanen, H.A.J., Scholz, P., Chelcea, S.M., & Haslinger, K. (2017). The European 2015 drought from a climatological perspective. Hydrol. Earth Syst. Sci., 21, 1397-1419. https://doi.org/10.5194/hess-21-1397-2017.

IPCC, S.P. (2019). Climate change and land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems. In. https://www.ipcc.ch/srccl/download/.

ISRIC (2023). Soil Geographic Databases. In. https://www.isric.org/explore/soil-geographic-databases.

ITPS, & FAO (2015). Status of the world's soil resources (SWSR)—Main report. In. Rome, Italy. https://www.fao.org/3/i5199e/I5199E.pdf.

Ivanov, V. (1970). Main principles of fruit crop salt resistance determination. Pochvovedenie, 4, 78-85

Ivushkin, K., Bartholomeus, H., Bregt, A.K., Pulatov, A., Kempen, B., & de Sousa, L. (2019). Global mapping of soil salinity change. Remote Sens. Environ., 231. https://doi.org/10.1016/j.rse.2019.111260.

Jackson, R.D., Idso, S., Reginato, R., & Pinter Jr, P. (1981). Canopy temperature as a crop water stress indicator. Water Resour. Res., 17, 1133-1138. https://doi.org/10.1029/WR017i004p01133.

Jacquemoud, S., & Baret, F. (1990). PROSPECT: A model of leaf optical properties spectra. Remote Sens. Environ., 34, 75-91. https://doi.org/10.1016/0034-4257(90)90100-Z.

Jacquemoud, S.B., C.; Poilve, H.; Frangi, J.P (2000). Comparsion of four radiative transfer models to simulate plant canopies reflectance: direct and inverse mode. Remote Sens. Environ., 74, 471-481. https://doi.org/10.1016/S0034-4257(00)00139-5.

Jamil, A., Riaz, S., Ashraf, M., & Foolad, M.R. (2011). Gene expression profiling of plants under salt stress. Crit. Rev. Plant Sci., 30, 435-458. https://doi.org/10.1080/07352689.2011.605739.

Jarlan, L., Balsamo, G., Lafont, S., Beljaars, A., Calvet, J.C., & Mougin, E. (2008). Analysis of leaf area index in the ECMWF land surface model and impact on latent heat and carbon fluxes: Application to West Africa. J. Geophys. Res. Atmos., 113, D24117. https://doi.org/10.1029/2007jd009370.

Jefferies, R. (1995). Physiology of crop response to drought. Potato ecology and modelling of crops under conditions limiting growth (pp. 61-74): Springer. https://doi.org/10.1007/978-94-011-0051-9.

Ji, L., & Peters, A.J. (2003). Assessing vegetation response to drought in the northern Great Plains using vegetation and drought indices. Remote Sens. Environ., 87, 85-98. https://doi.org/10.1016/S0034-4257(03)00174-3.

Jiang, Y., & Carrow, R.N. (2007). Broadband spectral reflectance models of turfgrass species and cultivars to drought stress. Crop Sci., 47, 1611-1618. https://doi.org/10.2135/cropsci2006.09.0617.

Jiao, W., Wang, L., & McCabe, M.F. (2021). Multi-sensor remote sensing for drought characterization: current status, opportunities and a roadmap for the future. Remote Sens. Environ., 256, 112313. https://doi.org/10.1016/j.rse.2021.112313.

Jin, X., Kumar, L., Li, Z., Feng, H., Xu, X., Yang, G., & Wang, J. (2018). A review of data assimilation of remote sensing and crop models. Eur. J. Agron., 92, 141-152. https://doi.org/10.1016/j.eja.2017.11.002.

Jones, E., & van Vliet, M.T.H. (2018). Drought impacts on river salinity in the southern US: Implications for water scarcity. Sci. Total Environ., 644, 844-853. https://doi.org/10.1016/j.scitotenv.2018.06.373.

Jones, J.W., Hoogenboom, G., Porter, C.H., Boote, K.J., Batchelor, W.D., Hunt, L.A., Wilkens, P.W., Singh, U., Gijsman, A.J., & Ritchie, J.T. (2003). The DSSAT cropping system model. Eur. J. Agron., 18, 235-265. https://doi.org/10.1016/S1161-0301(02)00107-7.

Kalaji, H.M., Račková, L., Paganová, V., Swoczyna, T., Rusinowski, S., & Sitko, K. (2018). Can chlorophyll-a fluorescence parameters be used as bio-indicators to distinguish between drought and salinity stress in Tilia cordata Mill? Environ. Exp. Bot., 152, 149-157. https://doi.org/10.1016/j.envexpbot.2017.11.001.

Kanawapee, N., Sanitchon, J., Lontom, W., & Threerakulpisut, P. (2012). Evaluation of salt tolerance at the seedling stage in rice genotypes by growth performance, ion accumulation, proline and chlorophyll content. Plant Soil, 358, 235-249. https://doi.org/10.1007/s11104-012-1179-6.

Karthikeyan, L., Chawla, I., & Mishra, A.K. (2020). A review of remote sensing applications in agriculture for food security: Crop growth and yield, irrigation, and crop losses. J. Hydrol., 586. https://doi.org/10.1016/j.jhydrol.2020.124905.

Kasampalis, D., Alexandridis, T., Deva, C., Challinor, A., Moshou, D., & Zalidis, G. (2018). Contribution of remote sensing on crop models: A review. J. Imaging, 4. https://doi.org/10.3390/jimaging4040052.

Katschnig, D., Broekman, R., & Rozema, J. (2013). Salt tolerance in the halophyte Salicornia dolichostachya Moss: Growth, morphology and physiology. Environ. Exp. Bot., 92, 32-42. https://doi.org/10.1016/j.envexpbot.2012.04.002.

Keesstra, S., Mol, G., de Leeuw, J., Okx, J., Molenaar, C., de Cleen, M., & Visser, S. (2018). Soil-related sustainable development goals: four concepts to make land degradation neutrality and restoration work. Land, 7, 133. https://doi.org/10.3390/land7040133.

Klemas, V., & Smart, R. (1983). The influence of soil salinity, growth form, and leaf moisture on the spectral radiance of Spartina Alterniflora canopies. Photogramm. Eng. Remote Sens., 49, 77-83. https://www.asprs.org/wp-content/uploads/pers/1983journal/jan/1983_jan_77-83.pdf.

Kogan, F.N. (1995a). Application of vegetation index and brightness temperature for drought detection. Adv. Space Res., 15, 91-100. https://doi.org/10.1016/0273-1177(95)00079-T.

Kogan, F.N. (1995b). Droughts of the late 1980s in the United-States as derived from NOAA polar-orbiting satellite data. Bull. Am. Meteorol. Soc., 76, 655-668. https://doi.org/10.1175/1520-0477(1995)076<0655:Dotlit>2.0.Co;2.

Kogan, F.N. (1997). Global drought watch from space. Bull. Am. Meteorol. Soc., 78, 621-636. https://doi.org/10.1175/1520-0477(1997)078<0621:Gdwfs>2.0.Co;2.

Koohafkan, P. (2012). Water and cereals in drylands. Routledge. http://dx.doi.org/10.1017/S0014479709990366.

Kousik, A., Aditya Pratap, S., Saju, A., Subhasis, M., & Sujaya, D. (2022). Drought stress: manifestation and mechanisms of alleviation in plants. Drought - Impacts and Management. Rijeka: IntechOpen. https://doi.org/10.5772/intechopen.102780.

Kovar, M., Brestic, M., Sytar, O., Barek, V., Hauptvogel, P., & Zivcak, M. (2019). Evaluation of hyperspectral reflectance parameters to assess the leaf water content in soybean. Water, 11. https://doi.org/10.3390/w11030443.

Kramp, R.E., Liancourt, P., Herberich, M.M., Saul, L., Weides, S., Tielborger, K., & Majekova, M. (2022). Functional traits and their plasticity shift from tolerant to avoidant under extreme drought. Ecology, 103, e3826. https://doi.org/10.1002/ecy.3826.

Kriston-Vizi, J., Umeda, M., & Miyamoto, K. (2008). Assessment of the water status of mandarin and peach canopies using visible multispectral imagery. Biosyst. Eng., 100, 338-345. https://doi.org/10.1016/j.biosystemseng.2008.04.001.

Lassalle, G. (2021). Monitoring natural and anthropogenic plant stressors by hyperspectral remote sensing: Recommendations and guidelines based on a meta-review. Sci. Total Environ., 788, 147758. https://doi.org/10.1016/j.scitotenv.2021.147758.

Lassalle, G., Fabre, S., Credoz, A., Hédacq, R., Borderies, P., Bertoni, G., Erudel, T., Buffan-Dubau, E., Dubucq, D., & Elger, A. (2019). Detection and discrimination of various oil-contaminated soils using vegetation reflectance. Sci. Total Environ., 655, 1113-1124. https://doi.org/10.1016/j.scitotenv.2018.11.314.

Lavorel, S., & Garnier, E. (2002). Predicting changes in community composition and ecosystem functioning from plant traits: revisiting the Holy Grail. Funct. Ecol., 16, 545-556. https://doi.org/10.1046/j.1365-2435.2002.00664.x.

Lavorel, S., & Grigulis, K. (2012). How fundamental plant functional trait relationships scale-up to trade-offs and synergies in ecosystem services. J. Ecol., 100, 128-140. https://doi.org/10.1111/j.1365-2745.2011.01914.x.

Lazarevic, B., Satovic, Z., Nimac, A., Vidak, M., Gunjaca, J., Politeo, O., & Carovic-Stanko, K. (2021). Application of phenotyping methods in detection of drought and salinity stress in Basil (Ocimum basilicum L.). Front. Plant Sci., 12, 629441. https://doi.org/10.3389/fpls.2021.629441.

Le Hegarat-Mascle, S., Quesney, A., Vidal-Madjar, D., Taconet, O., Normand, M., & Loumagne, C. (2000). Land cover discrimination from multitemporal ERS images and multispectral Landsat images: A study case in an agricultural area in France. Int. J. Remote Sens., 21, 435-456. https://doi.org/10.1080/014311600210678.

Leng, G., & Hall, J. (2019). Crop yield sensitivity of global major agricultural countries to droughts and the projected changes in the future. Sci. Total Environ., 654, 811-821. https://doi.org/10.1016/j.scitotenv.2018.10.434.

Leone, A., Menenti, M., Buondonno, A., Letizia, A., Maffei, C., & Sorrentino, G. (2007). A field experiment on spectrometry of crop response to soil salinity. Agric. Water Manag., 89, 39-48. https://doi.org/10.1016/j.agwat.2006.12.004.

Lesk, C., Rowhani, P., & Ramankutty, N. (2016). Influence of extreme weather disasters on global crop production. Nature, 529, 84-87. https://doi.org/10.1038/nature16467.

Levy, D. (1992). The response of potatoes (Solunum tuberosum L.) to salinity: plant growth and tuber yields in the arid desert of Israel. Ann. Appl. Biol., 120, 547-555. https://doi.org/10.1111/j.1744-7348.1992.tb04914.x.

Li, J., Liu, Z., Lei, X., & Wang, L. (2021). Distributed fusion of heterogeneous remote sensing and social media data: A review and new developments. Proc. IEEE, 109, 1350-1363. https://doi.org/10.1109/JPROC.2021.3079176.

Li, P., Wu, J., & Qian, H. (2016). Regulation of secondary soil salinization in semi-arid regions: a simulation research in the Nanshantaizi area along the Silk Road, northwest China. Environ. Earth Sci., 75. https://doi.org/10.1007/s12665-016-5381-3.

Li, W., Migliavacca, M., Forkel, M., Denissen, J.M.C., Reichstein, M., Yang, H., Duveiller, G., Weber, U., & Orth, R. (2022). Widespread increasing vegetation sensitivity to soil moisture. Nature Commun., 13, 3959. https://doi.org/10.1038/s41467-022-31667-9.

Liang, S.L.W., J. D. (2020). Chapter 11 - Fraction of absorbed photosynthetically active radiation. In S. Liang, & J. Wang (Eds.), Advanced Remote Sensing (Second Edition) (pp. 447-476): Academic Press. https://doi.org/10.1016/B978-0-12-815826-5.00011-8.

Liao, Q., Gu, S.J., Kang, S.Z., Du, T.S., Tong, L., Wood, J.D., & Ding, R.S. (2022). Mild water and salt stress improve water use efficiency by decreasing stomatal conductance via osmotic adjustment in field maize. Sci. Total Environ., 805, 150364. https://doi.org/10.1016/j.scitotenv.2021.150364.

Lins, E., Nunes, F., Gasparoto, M., Junior, J., Bagnato, V., & Marcassa, L. (2005). Fluorescence spectroscopy to detect water stress in orange trees. In, SBMO/IEEE MTT-S International Conference on Microwave and Optoelectronics, 2005. (pp. 534-537): IEEE. https://doi.org/10.1109/IMOC.2005.1580118.

Liu, H.Q., & Huete, A. (1995). A feedback based modification of the NDVI to minimize canopy background and atmospheric noise. IEEE Trans. Geosci. Remote Sens., 33, 457-465. https://doi.org/10.1109/TGRS.1995.8746027.

Liu, X., Zhu, X., Pan, Y., Li, S., Liu, Y., & Ma, Y. (2016). Agricultural drought monitoring: progress, challenges, and prospects. J. Geogr. Sci., 26, 750-767. https://doi.org/10.1007/s11442-016-1297-9.

López-Lozano, R., & Baruth, B. (2019). An evaluation framework to build a cost-efficient crop monitoring system. Experiences from the extension of the European crop monitoring system. Agric. Syst., 168, 231-246. https://doi.org/10.1016/j.agsy.2018.04.002.

López-Lozano, R., Duveiller, G., Seguini, L., Meroni, M., García-Condado, S., Hooker, J., Leo, O., & Baruth, B. (2015). Towards regional grain yield forecasting with 1km-resolution EO biophysical products: strengths and limitations at pan-European level. Agric. For. Meteorol., 206, 12-32. https://doi.org/10.1016/j.agrformet.2015.02.021.

López-Serrano, L., Penella, C., San-Bautista, A., López-Galarza, S., & Calatayud, A. (2017). Physiological changes of pepper accessions in response to salinity and water stress. Span. J. Agric. Res., 15, e0804. https://doi.org/10.5424/sjar/2017153-11147.

Lorenz, C., & Kunstmann, H. (2012). The hydrological cycle in three state-of-the-art reanalyses: Intercomparison and performance analysis. J. Hydrometeorol., 13, 1397-1420. https://doi.org/10.1175/JHM-D-11-088.1.

Lu, B., Dao, P.D., Liu, J., He, Y., & Shang, J. (2020a). Recent advances of hyperspectral imaging technology and applications in agriculture. Remote Sens., 12, 2659-2703. https://doi.org/10.3390/rs12162659.

Lu, J., Carbone, G.J., Huang, X., Lackstrom, K., & Gao, P. (2020b). Mapping the sensitivity of agriculture to drought and estimating the effect of irrigation in the United States, 1950–2016. Agric. For. Meteorol., 292-293, 108124. https://doi.org/10.1016/j.agrformet.2020.108124.

Maas, E.V., & Grattan, S. (1999). Crop yields as affected by salinity. Agric. Drain., 38, 55-108. https://doi.org/10.2134/agronmonogr38.c3.

Maas, S.J. (1988). Use of remotely-sensed information in agricultural crop growth models. Ecol. Model., 41, 247-268. https://doi.org/10.1016/0304-3800(88)90031-2.

Madadgar, S., AghaKouchak, A., Farahmand, A., & Davis, S.J. (2017). Probabilistic estimates of drought impacts on agricultural production. Geophys. Res. Lett., 44, 7799-7807. https://doi.org/10.1002/2017gl073606.

Maes, W.H., Achten, W.M.J., Reubens, B., & Muys, B. (2011). Monitoring stomatal conductance of Jatropha curcas seedlings under different levels of water shortage with infrared thermography. Agric. For. Meteorol., 151, 554-564. https://doi.org/10.3390/plants10071345.

Maes, W.H., & Steppe, K. (2019). Perspectives for Remote Sensing with Unmanned Aerial Vehicles in Precision Agriculture. Trends Plant Sci., 24, 152-164. https://doi.org/10.1016/j.tplants.2018.11.007.

Mahajan, S., & Tuteja, N. (2005). Cold, salinity and drought stresses: an overview. Arch. Biochem. Biophys., 444, 139-158. https://doi.org/10.1016/j.abb.2005.10.018.

Mahmood, U., Hussain, S., Hussain, S., Ali, B., Ashraf, U., Zamir, S., Al-Robai, S.A., Alzahrani, F.O., Hano, C., & El-Esawi, M.A. (2021). Morpho-physio-biochemical and molecular responses of maize hybrids to salinity and waterlogging during stress and recovery phase. Plants (Basel), 10, 1345. https://doi.org/10.3390/plants10071345.

Mantri, N., Patade, V., Penna, S., Ford, R., & Pang, E. (2012). Abiotic stress responses in plants: present and future. Abiotic stress responses in plants: metabolism, productivity and sustainability (pp. 1-19). https://doi.org/10.1007/978-1-4614-0634-1_1.

Martin, A.R., Isaac, M.E., & Manning, P. (2015). REVIEW: Plant functional traits in agroecosystems: a blueprint for research. J. Appl. Ecol., 52, 1425-1435. https://doi.org/10.1111/1365-2664.12526.

Masante D., B.P., McCormick N. (2018). Drought in Central-Northern Europe – August 2018. In (pp. 1-13): Report of the Copernicus European Drought Observatory (EDO) and Emergency Response Coordination Center (ERCC) Analytical Team https://edo.jrc.ec.europa.eu/documents/news/EDODroughtNews201808_Central_North_Europe.pdf.

Masuka, B., Araus, J.L., Das, B., Sonder, K., & Cairns, J.E. (2012). Phenotyping for abiotic stress tolerance in maize. J. Integr. Plant Biol., 54, 238-249. https://doi.org/10.1111/j.1744-7909.2012.01118.x.

Matese, A., Baraldi, R., Berton, A., Cesaraccio, C., Di Gennaro, S.F., Duce, P., Facini, O., Mameli, M.G., Piga, A., & Zaldei, A. (2018). Estimation of water stress in grapevines using proximal and remote sensing methods. Remote Sens., 10. https://doi.org/10.3390/rs10010114.

McKee, T.B., Doesken, N.J., & Kleist, J.R. (1993). The relationship of drought frequency and duration to time scales. 8th Conference on Applied Climatology, 179-184. https://www.droughtmanagement.info/literature/AMS_Relationship_Drought_Frequency_Duration_Time_Scales_1993.pdf.

Meena, M.D., Yadav, R.K., Narjary, B., Yadav, G., Jat, H.S., Sheoran, P., Meena, M.K., Antil, R.S., Meena, B.L., Singh, H.V., Singh Meena, V., Rai, P.K., Ghosh, A., & Moharana, P.C. (2019). Municipal solid waste (MSW): Strategies to improve salt affected soil sustainability: A review. Waste Manage., 84, 38-53. https://doi.org/10.1016/j.wasman.2018.11.020.

Mehrabi, Z., Delzeit, R., Ignaciuk, A., Levers, C., Braich, G., Bajaj, K., Amo-Aidoo, A., Anderson, W., Balgah, R.A., Benton, T.G., Chari, M.M., Ellis, E.C., Gahi, N.Z., Gaupp, F., Garibaldi, L.A., Gerber, J.S., Godde, C.M., Grass, I., Heimann, T., Hirons, M., Hoogenboom, G., Jain, M., James, D., Makowski, D., Masamha, B., Meng, S., Monprapussorn, S., Muller, D., Nelson, A., Newlands, N.K., Noack, F., Oronje, M., Raymond, C., Reichstein, M., Rieseberg, L.H., Rodriguez-Llanes, J.M., Rosenstock, T., Rowhani, P., Sarhadi, A., Seppelt, R., Sidhu, B.S., Snapp, S., Soma, T., Sparks, A.H., Teh, L., Tigchelaar, M., Vogel, M.M., West, P.C.,

Wittman, H., & You, L. (2022). Research priorities for global food security under extreme events. One Earth, 5, 756-766. https://doi.org/10.1016/j.oneear.2022.06.008.
Metternicht, G.I., & Zinck, J.A. (2003). Remote sensing of soil salinity: potentials and constraints. Remote Sens. Environ., 85, 1-20. https://doi.org/10.1016/s0034-4257(02)00188-8.
Meyer, S.J., Hubbard, K.G., & Wilhite, D.A. (1993). A crop-specific drought index for corn: I. Model development and validation. Agron. J., 85, 388-395. https://doi.org/10.2134/agronj1993.00021962008500020040x.
Mi, N., Cai, F., Zhang, Y.S., Ji, R.P., Zhang, S.J., & Wang, Y. (2018). Differential responses of maize yield to drought at vegetative and reproductive stages. Plant Soil Environ., 64, 260-267. https://doi.org/10.17221/141/2018-Pse.
Mimi, Z.A., & Jamous, S.A. (2010). Climate change and agricultural water demand: Impacts and adaptations. Afr. J. Environ. Sci. Technol., 4, 183-191. https://doi.org/10.4314/ajest.v4i4.56351.
Mishra, A.K., Ines, A.V.M., Das, N.N., Khedun, C.P., Singh, V.P., Sivakumar, B., & Hansen, J.W. (2015). Anatomy of a local-scale drought: Application of assimilated remote sensing products, crop model, and statistical methods to an agricultural drought study. J. Hydrol., 526, 15-29. https://doi.org/10.1016/j.jhydrol.2014.10.038.
Mittler, R. (2006). Abiotic stress, the field environment and stress combination. Trends Plant Sci., 11, 15-19. https://doi.org/10.1016/j.tplants.2005.11.002.
Miyashita, K., Tanakamaru, S., Maitani, T., & Kimura, K. (2005). Recovery responses of photosynthesis, transpiration, and stomatal conductance in kidney bean following drought stress. Environ. Exp. Bot., 53, 205-214. https://doi.org/10.1016/j.envexpbot.2004.03.015.
Mkhabela, M.S., Bullock, P., Raj, S., Wang, S., & Yang, Y. (2011). Crop yield forecasting on the Canadian Prairies using MODIS NDVI data. Agric. For. Meteorol., 151, 385-393. https://doi.org/10.1016/j.agrformet.2010.11.012.
Mohammed, W.E., & Algarni, S. (2020). A remote sensing study of spatiotemporal variations in drought conditions in northern Asir, Saudi Arabia. Environ. Monit. Assess., 192, 784. https://doi.org/10.1007/s10661-020-08771-8.
Mokhtari M. H., Sodaeezadeh H. R., Hakimzadeh M. A., & F., T. (2014). Application of visible and near-infrared spectrophotometry for detecting salinity effects on wheat leaves (Triticum aestivum L.). Agric. Eng. Int: CIRG Journal, 16, 35-42. https://cigrjournal.org/index.php/Ejounral/article/view/2814/1964.
Möller, M., Alchanatis, V., Cohen, Y., Meron, M., Tsipris, J., Naor, A., Ostrovsky, V., Sprintsin, M., & Cohen, S. (2007). Use of thermal and visible imagery for estimating crop water status of irrigated grapevine. J. Exp. Bot., 58, 827-838. https://doi.org/10.1093/jxb/erl115.
Moreno-Martínez, Á., Camps-Valls, G., Kattge, J., Robinson, N., Reichstein, M., van Bodegom, P., Kramer, K., Cornelissen, J.H.C., Reich, P., Bahn, M., Niinemets, Ü., Peñuelas, J., Craine, J.M., Cerabolini, B.E.L., Minden, V., Laughlin, D.C., Sack, L., Allred, B., Baraloto, C., Byun, C., Soudzilovskaia, N.A., & Running, S.W. (2018). A methodology to derive global maps of leaf traits using remote sensing and climate data. Remote Sens. Environ., 218, 69-88. https://doi.org/10.1016/j.rse.2018.09.006.
Mosley, L.M. (2015). Drought impacts on the water quality of freshwater systems; review and integration. Earth Sci. Rev., 140, 203-214. https://doi.org/10.1016/j.earscirev.2014.11.010.
Motohka, T., Nasahara, K.N., Oguma, H., & Tsuchida, S. (2010). Applicability of green-red vegetation index for remote sensing of vegetation phenology. In, Remote Sens. (pp. 2369-2387). https://doi.org/10.3390/rs2102369.
Movahhedi Dehnavi, M., Zarei, T., Khajeeyan, R., & Merajipoor, M. (2017). Drought and salinity impacts on bread wheat in a hydroponic culture: A physiological comparison. J. Plant Physiol. Breed., 7, 61-74. https://journals.tabrizu.ac.ir/article_6357_3ae4427db5a73b02b33f0f30fde7e8ae.pdf.

Mukhopadhyay, R., Sarkar, B., Jat, H.S., Sharma, P.C., & Bolan, N.S. (2021). Soil salinity under climate change: challenges for sustainable agriculture and food security. J. Environ. Manage., 280, 111736. https://doi.org/10.1016/j.jenvman.2020.111736.

Mulder, M., Hack-ten Broeke, M., Bartholomeus, R., van Dam, J., Heinen, M., van Bakel, J., Walvoort, D., Kroes, J., Hoving, I., Holshof, G., Schaap, J., Spruijt, J., Supit, I., de Wit, A., Hendriks, R., de Haan, J., van der Voort, M., & van Walsum, P. (2018). Waterwijzer Landbouw: instrumentarium voor kwantificeren van effecten van waterbeheer en klimaat op landbouwproductie. Stowa. https://edepot.wur.nl/464525.

Munns, R. (2002). Comparative physiology of salt and water stress. Plant Cell Environ., 25, 239-250. https://doi.org/10.1046/j.0016-8025.2001.00808.x.

Munns, R. (2005). Genes and salt tolerance: bringing them together. New Phytol., 167, 645-663. https://doi.org/10.1111/j.1469-8137.2005.01487.x.

Munns, R., James, R.A., Sirault, X.R., Furbank, R.T., & Jones, H.G. (2010). New phenotyping methods for screening wheat and barley for beneficial responses to water deficit. J. Exp. Bot., 61, 3499-3507. https://doi.org/10.1093/jxb/erq199.

Munns, R., & Tester, M. (2008). Mechanisms of salinity tolerance. Annu. Rev. Plant Biol., 59, 651-681. https://doi.org/10.1146/annurev.arplant.59.032607.092911.

Mura, M.D., Prasad, S., Pacifici, F., Gamba, P., Chanussot, J., & Benediktsson, J.A. (2015). Challenges and opportunities of ultimodality and data fusion in remote sensing. Proc. IEEE, 103, 1585-1601. https://doi.org/10.1109/JPROC.2015.2462751.

Mwamahonje, A., Eleblu, J.S.Y., Ofori, K., Feyissa, T., Deshpande, S., & Tongoona, P. (2021). Evaluation of traits' performance contributing to drought tolerance in sorghum. Agronomy, 11. https://doi.org/10.3390/agronomy11091698.

Myneni, R.B., Hoffman, S., Knyazikhin, Y., Privette, J.L., Glassy, J., Tian, Y., Wang, Y., Song, X., Zhang, Y., Smith, G.R., Lotsch, A., Friedl, M., Morisette, J.T., Votava, P., Nemani, R.R., & Running, S.W. (2002). Global products of vegetation leaf area and fraction absorbed PAR from year one of MODIS data. Remote Sens. Environ., 83, 214-231. https://doi.org/10.1016/S0034-4257(02)00074-3.

Naumann, J.C., Anderson, J.E., & Young, D.R. (2008a). Linking physiological responses, chlorophyll fluorescence and hyperspectral imagery to detect salinity stress using the physiological reflectance index in the coastal shrub, Myrica cerifera. Remote Sens. Environ., 112, 3865-3875. https://doi.org/10.1016/j.rse.2008.06.004.

Naumann, J.C., Young, D.R., & Anderson, J.E. (2007). Linking leaf chlorophyll fluorescence properties to physiological responses for detection of salt and drought stress in coastal plant species. Physiol. Plant., 131, 422-433. https://doi.org/10.1111/j.1399-3054.2007.00973.x.

Naumann, J.C., Young, D.R., & Anderson, J.E. (2008b). Leaf chlorophyll fluorescence, reflectance, and physiological response to freshwater and saltwater flooding in the evergreen shrub, Myrica cerifera. Environ. Exp. Bot., 63, 402-409. https://doi.org/10.1016/j.envexpbot.2007.12.008.

Nawar, S., Buddenbaum, H., & Hill, J. (2015). Digital mapping of soil properties using multivariate statistical analysis and ASTER data in an arid region. In, Remote Sens. (pp. 1181-1205). https://doi.org/10.3390/rs70201181.

NCEI, & NOAA (2021). Monthly drought report for annual 2021. https://www.ncei.noaa.gov/access/monitoring/monthly-report/drought/202113.

Negacz, K., Bruning, B., & Vellinga, P. (2021). Achieving multiple sustainable development goals through saline agriculture. Future of Sustainable Agriculture in Saline Environments (pp. 13-28). https://doi.org/10.1201/9781003112327-2.

Negacz, K., Malek, Ž., de Vos, A., & Vellinga, P. (2022). Saline soils worldwide: Identifying the most promising areas for saline agriculture. J. Arid Environ., 203. https://doi.org/10.1016/j.jaridenv.2022.104775.

Neilson, E.H., Edwards, A.M., Blomstedt, C., Berger, B., Møller, B.L., & Gleadow, R.M. (2015). Utilization of a high-throughput shoot imaging system to examine the dynamic phenotypic responses of a C4 cereal crop plant to nitrogen and water deficiency over time. J. Exp. Bot., 66, 1817-1832. https://doi.org/10.1093/jxb/eru526.

Nemeskéri, E., Molnár, K., Vígh, R., Nagy, J., & Dobos, A. (2015). Relationships between stomatal behaviour, spectral traits and water use and productivity of green peas (Pisum sativum L.) in dry seasons. Acta Physiol. Plant, 37, 34. https://doi.org/10.1007/s11738-015-1776-0.

Niinemets, U. (2015). Is there a species spectrum within the world-wide leaf economics spectrum? Major variations in leaf functional traits in the Mediterranean sclerophyll Quercus ilex. New Phytol., 205, 79-96. https://doi.org/10.1111/nph.13001.

Niu, X., Ray A. Bressan, Paul M. Hasegawa, & Pardo, J.M. (1995). lon homeostasis in NaCl stress environments. Plant Physiol., 109, 735-742. https://doi.org/10.1104/pp.109.3.735.

Oki, T., & Kanae, S. (2006). Global hydrological cycles and world water resources. Science, 313, 1068-1072. https://doi.org/10.1126/science.1128845.

Oosterbaan, R.J. (2019). The potato variety "927" tested at the Salt Farm Texel,The Netherlands, proved to be highly salt tolerant. In. https://www.researchgate.net/profile/Rj-Oosterbaan/publication/335789831_The_potato_variety_927_tested_at_the_Salt_Farm_TexelThe_Netherlands_proved_to_be_highly_salt_tolerant/links/5d7b474c4585155f1e3f0133/The-potato-variety-927-tested-at-the-Salt-Farm-Texel-The-Netherlands-proved-to-be-highly-salt-tolerant.pdf.

Ors, S., & Suarez, D.L. (2017). Spinach biomass yield and physiological response to interactive salinity and water stress. Agric. Water Manag., 190, 31-41. https://doi.org/10.1016/j.agwat.2017.05.003.

Oshunsanya, S.O., Nwosu, N.J., & Li, Y. (2019). Abiotic stress in agricultural crops under climatic conditions. Sustainable Agriculture, Forest and Environmental Management (pp. 71-100). https://doi.org/10.1007/978-981-13-6830-1_3.

Oukarroum, A., Schansker, G., & Strasser, R.J. (2009). Drought stress effects on photosystem I content and photosystem II thermotolerance analyzed using Chl a fluorescence kinetics in barley varieties differing in their drought tolerance. Physiol. Plant., 137, 188-199. https://doi.org/10.1111/j.1399-3054.2009.01273.x.

Palosuo, T., Kersebaum, K.C., Angulo, C., Hlavinka, P., Moriondo, M., Olesen, J.E., Patil, R.H., Ruget, F., Rumbaur, C., Takáč, J., Trnka, M., Bindi, M., Çaldağ, B., Ewert, F., Ferrise, R., Mirschel, W., Şaylan, L., Šiška, B., & Rötter, R. (2011). Simulation of winter wheat yield and its variability in different climates of Europe: A comparison of eight crop growth models. Eur. J. Agron., 35, 103-114. https://doi.org/10.1016/j.eja.2011.05.001.

Panigada, C., Rossini, M., Meroni, M., Cilia, C., Busetto, L., Amaducci, S., Boschetti, M., Cogliati, S., Picchi, V., Pinto, F., Marchesi, A., & Colombo, R. (2014). Fluorescence, PRI and canopy temperature for water stress detection in cereal crops. Int. J. Appl. Earth Obs. Geoinf., 30, 167-178. https://doi.org/10.1016/j.jag.2014.02.002.

Pankova, Y.I., & Konyushkova, M.V. (2014). Effect of global warming on soil salinity of the arid regions. Russ. Agric. Sci., 39, 464-467. https://doi.org/10.3103/s1068367413060165.

Patane, C., Saita, A., & Sortino, O. (2013). Comparative effects of salt and water stress on seed germination and early embryo growth in two cultivars of sweet sorghum. J. Agron. Crop Sci., 199, 30-37. https://doi.org/10.1111/j.1439-037X.2012.00531.x.

Paul, K., Pauk, J., Kondic-Spika, A., Grausgruber, H., Allahverdiyev, T., Sass, L., & Vass, I. (2019). Co-occurrence of mild salinity and drought synergistically enhances biomass and grain retardation in wheat. Front. Plant Sci., 10, 501. https://doi.org/10.3389/fpls.2019.00501.

Peguero-Pina, J.J., Morales, F., Flexas, J., Gil-Pelegrín, E., & Moya, I. (2008). Photochemistry, remotely sensed physiological reflectance index and de-epoxidation state of the xanthophyll cycle in Quercus coccifera under intense drought. Oecologia, 156, 1. https://doi.org/10.1007/s00442-007-0957-y.

Peñuelas, J., Filella, I., Biel, C.,, Serrano, L., & Save, R. (1993). The reflectance at the 950–970 nm region as an indicator of plant water status. Int. J. Remote Sens., 1887-1905. https://doi.org/10.1080/01431169308954010.

Pérez-Harguindeguy, N., Díaz, S., Garnier, E., Lavorel, S., Poorter, H., Jaureguiberry, P., Bret-Harte, M.S., Cornwell, W.K., Craine, J.M., Gurvich, D.E., Urcelay, C., Veneklaas, E.J., Reich, P.B., Poorter, L., Wright, I.J., Ray, P., Enrico, L., Pausas, J.G., de Vos, A.C., Buchmann, N., Funes, G., Quétier, F., Hodgson, J.G., Thompson, K., Morgan, H.D., ter Steege, H., Sack, L., Blonder, B., Poschlod, P., Vaieretti, M.V., Conti, G., Staver, A.C., Aquino, S., & Cornelissen, J.H.C. (2013). New handbook for standardised measurement of plant functional traits worldwide. Aust. J. Bot., 61, 167-234. https://doi.org/10.1071/bt12225.

Pérez-Priego, O., Zarco-Tejada, P.J., Miller, J.R., Sepulcre-Cantó, G., & Fereres, E. (2005). Detection of water stress in orchard trees with a high-resolution spectrometer through chlorophyll fluorescence in-filling of the O/sub 2/-A band. IEEE Trans. Geosci. Remote Sens., 43, 2860-2869. https://doi.org/10.1109/TGRS.2005.857906.

Perianes-Rodriguez, A., Waltman, L., & Van Eck, N.J. (2016). Constructing bibliometric networks: A comparison between full and fractional counting. Journal of Informetrics, 10, 1178-1195. https://doi.org/10.1016/j.joi.2016.10.006.

Perry de Louw, V.K., Harry Massop, Ab Veldhuizen (2020). Beregening: Deltafact. In. Amersfoort Alterra - Soil, water and land use. https://library.wur.nl/WebQuery/wurpubs/fulltext/535694.

Pires, I.S., Negrao, S., Oliveira, M.M., & Purugganan, M.D. (2015). Comprehensive phenotypic analysis of rice (Oryza sativa) response to salinity stress. Physiol. Plant., 155, 43-54. https://doi.org/10.1111/ppl.12356.

Poss, J., Russell, W., & Grieve, C. (2006). Estimating yields of salt-and water-stressed forages with remote sensing in the visible and near infrared. J. Environ. Qual., 35, 1060-1071. https://doi.org/10.2134/jeq2005.0204.

Qadir, M., Quillerou, E., Nangia, V., Murtaza, G., Singh, M., Thomas, R.J., Drechsel, P., & Noble, A.D. (2014). Economics of salt-induced land degradation and restoration. Nat. Resour. Forum, 38, 282-295. https://doi.org/10.1111/1477-8947.12054.

Radanielson, A.M., Gaydon, D.S., Li, T., Angeles, O., & Roth, C.H. (2018). Modeling salinity effect on rice growth and grain yield with ORYZA v3 and APSIM-Oryza. Eur. J. Agron., 100, 44-55. https://doi.org/10.1016/j.eja.2018.01.015.

Radwan, T.M., Blackburn, G.A., Whyatt, J.D., & Atkinson, P.M. (2021). Global land cover trajectories and transitions. Sci. Rep., 11, 12814. https://doi.org/10.1038/s41598-021-92256-2.

Rahimzadeh-Bajgiran, P., Omasa, K., & Shimizu, Y. (2012). Comparative evaluation of the Vegetation Dryness Index (VDI), the Temperature Vegetation Dryness Index (TVDI) and the improved TVDI (iTVDI) for water stress detection in semi-arid regions of Iran. ISPRS J. Photogramm. Remote Sens., 68, 1-12. https://doi.org/10.1016/j.isprsjprs.2011.10.009.

Rahimzadeh Bajgiran, P., Darvishsefat, A.A., Khalili, A., & Makhdoum, M.F. (2008). Using AVHRR-based vegetation indices for drought monitoring in the Northwest of Iran. J. Arid Environ., 72, 1086-1096. https://doi.org/10.1016/j.jaridenv.2007.12.004.

Rahman, M.H., Lund, T., & Bryceson, I. (2011). Salinity impacts on agro-biodiversity in three coastal, rural villages of Bangladesh. Ocean Coast. Manag., 54, 455-468. https://doi.org/10.1016/j.ocecoaman.2011.03.003.

Rahman, M.M. (2020). Impact of increased salinity on the plant community of the Sundarbans Mangrove of Bangladesh. Community Ecol., 21, 273-284. https://doi.org/10.1007/s42974-020-00028-1.

Ramírez-Valiente, J.A., Deacon, N.J., Etterson, J., Center, A., Sparks, J.P., Sparks, K.L., Longwell, T., Pilz, G., & Cavender-Bares, J. (2018). Natural selection and neutral evolutionary processes contribute to genetic divergence in leaf traits across a precipitation gradient in the tropical oak Quercus oleoides. Mol. Ecol., 27, 2176-2192. https://doi.org/10.1111/mec.14566.

Ranjbarfordoei, A., Samson, R., & Van Damme, P. (2006). Chlorophyll fluorescence performance of sweet almond [Prunus dulcis (Miller) D. Webb] in response to salinity stress induced by NaCl. Photosynthetica, 44, 513-522. https://doi.org/10.1007/s11099-006-0064-z.

Rauff, K.O., & Bello, R. (2015). A review of crop growth simulation models as tools for agricultural meteorology. Agricultural Sciences, 6, 1098-1105. https://doi.org/10.4236/as.2015.69105.

Reddy, I.N.B.L., Kim, B.-K., Yoon, I.-S., Kim, K.-H., & Kwon, T.-R. (2017). Salt Tolerance in Rice: Focus on Mechanisms and Approaches. Rice Sci., 24, 123-144. https://doi.org/10.1016/j.rsci.2016.09.004.

Renault, D., & Wallender, W.W. (2000). Nutritional water productivity and diets. Agric. Water Manag., 45, 275-296. https://doi.org/10.1016/S0378-3774(99)00107-9.

Rhee, J., Im, J., & Carbone, G.J. (2010). Monitoring agricultural drought for arid and humid regions using multi-sensor remote sensing data. Remote Sens. Environ., 114, 2875-2887. https://doi.org/10.1016/j.rse.2010.07.005.

Richards, L.A. (1954). Diagnosis and improvement of saline and alkali Soils. Soil Sci., 78, 154. https://journals.lww.com/soilsci/Citation/1954/08000/Diagnosis_and_Improvement_of_Saline_and_Alkali.12.aspx.

Richter, K., Rischbeck, P., Eitzinger, J., Schneider, W., Suppan, F., & Weihs, P. (2008). Plant growth monitoring and potential drought risk assessment by means of Earth observation data. Int. J. Remote Sens., 29, 4943-4960. https://doi.org/10.1080/01431160802036268.

Rischbeck, P., Elsayed, S., Mistele, B., Barmeier, G., Heil, K., & Schmidhalter, U. (2016). Data fusion of spectral, thermal and canopy height parameters for improved yield prediction of drought stressed spring barley. Eur. J. Agron., 78, 44-59. https://doi.org/10.1016/j.eja.2016.04.013.

Römer, C., Wahabzada, M., Ballvora, A., Pinto, F., Rossini, M., Panigada, C., Behmann, J., Léon, J., Thurau, C., & Bauckhage, C. (2012). Early drought stress detection in cereals: simplex volume maximisation for hyperspectral image analysis. Funct. Plant Biol., 39, 878-890. https://doi.org/10.1071/FP12060.

Romero-Trigueros, C., Nortes, P.A., Alarcón, J.J., Hunink, J.E., Parra, M., Contreras, S., Droogers, P., & Nicolás, E. (2017). Effects of saline reclaimed waters and deficit irrigation on Citrus physiology assessed by UAV remote sensing. Agric. Water Manag., 183, 60-69. https://doi.org/10.1016/j.agwat.2016.09.014.

Rondeaux, G., Steven, M., & Baret, F. (1996). Optimization of soil-adjusted vegetation indices. Remote Sens. Environ., 55, 95-107. https://doi.org/10.1016/0034-4257(95)00186-7.

Rosenzweig, C., Elliott, J., Deryng, D., Ruane, A.C., Muller, C., Arneth, A., Boote, K.J., Folberth, C., Glotter, M., Khabarov, N., Neumann, K., Piontek, F., Pugh, T.A., Schmid, E., Stehfest, E., Yang, H., & Jones, J.W. (2014). Assessing agricultural risks of climate change in the 21st century in a global gridded crop model intercomparison. Proc. Natl. Acad. Sci. U.S.A., 111, 3268-3273. https://doi.org/10.1073/pnas.1222463110.

Rossini, M., Fava, F., Cogliati, S., Meroni, M., Marchesi, A., Panigada, C., Giardino, C., Busetto, L., Migliavacca, M., & Amaducci, S. (2013). Assessing canopy PRI from airborne imagery to map water stress in maize. ISPRS J. Photogramm. Remote Sens., 86, 168-177. https://doi.org/10.1016/j.isprsjprs.2013.10.002.

Rozema, J., & Flowers, T. (2008). Ecology. Crops for a salinized world. Science, 322, 1478-1480. https://doi.org/10.1126/science.1168572.

Rud, R., Shoshany, M., & Alchanatis, V. (2011). Spectral indicators for salinity effects in crops: a comparison of a new green indigo ratio with existing indices. Remote Sens. Lett., 2, 289-298. https://doi.org/10.1080/01431161.2010.520343.

Rud, R., Shoshany, M., & Alchanatis, V. (2013). Spatial–spectral processing strategies for detection of salinity effects in cauliflower, aubergine and kohlrabi. Biosyst. Eng., 114, 384-396. https://doi.org/10.1016/j.biosystemseng.2012.11.012.

Sack, L., & Buckley, T.N. (2020). Trait multi-functionality in plant stress response. Integr. Comp. Biol., 60, 98-112. https://doi.org/10.1093/icb/icz152.

Salmon, J.M., Friedl, M.A., Frolking, S., Wisser, D., & Douglas, E.M. (2015). Global rain-fed, irrigated, and paddy croplands: A new high resolution map derived from remote sensing, crop inventories and climate data. Int. J. Appl. Earth Obs. Geoinf., 38, 321-334. https://doi.org/10.1016/j.jag.2015.01.014.

Sánchez, E., Scordia, D., Lino, G., Arias, C., Cosentino, S.L., & Nogués, S. (2015). Salinity and water stress effects on biomass production in different Arundo donax L. Clones. Bioenergy Res., 8, 1461-1479. https://doi.org/10.1007/s12155-015-9652-8.

Sankaran, S., Zhou, J.F., Khot, L.R., Trapp, J.J., Mndolwa, E., & Miklas, P.N. (2018). High-throughput field phenotyping in dry bean using small unmanned aerial vehicle based multispectral imagery. Comput. Electron. Agric., 151, 84-92. https://doi.org/10.1016/j.compag.2018.05.034.

Saqib, M., Akhtar, J., Abbas, G., & Nasim, M. (2013). Salinity and drought interaction in wheat (Triticum aestivum L.) is affected by the genotype and plant growth stage. Acta Physiol. Plant, 35, 2761-2768. https://doi.org/10.1007/s11738-013-1308-8.

Sarlikioti, V., Driever, S., & Marcelis, L. (2010). Photochemical reflectance index as a mean of monitoring early water stress. Ann. Appl. Biol., 157, 81-89. https://doi.org/10.1111/j.1744-7348.2010.00411.x.

Satir, O., & Berberoglu, S. (2016). Crop yield prediction under soil salinity using satellite derived vegetation indices. Field Crops Res., 192, 134-143. https://doi.org/10.1016/j.fcr.2016.04.028.

Sayago, S., Ovando, G., & Bocco, M. (2017). Landsat images and crop model for evaluating water stress of rainfed soybean. Remote Sens. Environ., 198, 30-39. https://doi.org/10.1016/j.rse.2017.05.008.

Sayar, R., Bchini, H., Mosbahi, M., & Khemira, H. (2010). Response of durum wheat (Triticum durum Desf.) growth to salt and drought stresses. Czech J. Genet. Plant. Breed., 46, 54-63. https://doi.org/10.17221/85/2009-CJGPB.

Schittenhelm, S., Sourell, H., & Lopmeier, F.J. (2006). Drought resistance of potato cultivars with contrasting canopy architecture. Eur. J. Agron., 24, 193-202. https://doi.org/10.1016/j.eja.2005.05.004.

Schlemmer, M.R., Francis, D.D., Shanahan, J.F., & Schepers, J.S. (2005). Remotely measuring chlorophyll content in corn leaves with differing nitrogen levels and relative water content. Agron. J., 97, 106-112. https://doi.org/10.2134/agronj2005.0106.

Schwalm, C.R., Anderegg, W.R.L., Michalak, A.M., Fisher, J.B., Biondi, F., Koch, G., Litvak, M., Ogle, K., Shaw, J.D., Wolf, A., Huntzinger, D.N., Schaefer, K., Cook, R., Wei, Y., Fang, Y., Hayes, D., Huang, M., Jain, A., & Tian, H. (2017). Global patterns of drought recovery. Nature, 548, 202-205. https://doi.org/10.1038/nature23021.

Scott, G., & Rajabifard, A. (2017). Sustainable development and geospatial information: a strategic framework for integrating a global policy agenda into national geospatial capabilities. Geo-Spat. Inf. Sci., 20, 59-76. https://doi.org/10.1080/10095020.2017.1325594.

Sepulcre-Canto, G., Zarco-Tejada, P.J., Jimenez-Munoz, J.C., Sobrino, J.A., de Miguel, E., & Villalobos, F.J. (2006). Detection of water stress in an olive orchard with thermal remote sensing imagery. Agric. For. Meteorol., 136, 31-44. https://doi.org/10.1016/j.agrformet.2006.01.008.

Sepulcre-Canto, G., Zarco-Tejada, P.J., Jimenez-Munoz, J.C., Sobrino, J.A., Soriano, M.A., Fereres, E., Vega, V., & Pastor, M. (2007). Monitoring yield and fruit quality parameters in opencanopy tree crops under water stress. Implications for ASTER. Remote Sens. Environ., 107, 455-470. https://doi.org/10.1016/j.rse.2006.09.014.

Serbin, S.P., Singh, A., Desai, A.R., Dubois, S.G., Jablonski, A.D., Kingdon, C.C., Kruger, E.L., & Townsend, P.A. (2015). Remotely estimating photosynthetic capacity, and its response to temperature, in vegetation canopies using imaging spectroscopy. Remote Sens. Environ., 167, 78-87. https://doi.org/10.1016/j.rse.2015.05.024.

Serbin, S.P., Singh, A., McNeil, B.E., Kingdon, C.C., & Townsend, P.A. (2016). Spectroscopic determination of leaf morphological and biochemical traits for northern temperate and boreal tree species. Ecol. Appl., 24, 1651-1669. https://doi.org/10.1890/13-2110.1.

Sgherri, C., Navari-Izzo, F., Pardossi, A., Soressi, G., & Izzo, R. (2007). The influence of diluted seawater and ripening stage on the content of antioxidants in fruits of different tomato genotypes. J. Agric. Food Chem., 55, 2452-2458. https://doi.org/10.1021/jf0634451.

Shinozaki, K., Uemura, M., Bailey-Serres, J., Bray, E., & Weretilnyk, E. (2015). Responses to abiotic stress. Wiley Blackwell. ISBN 9781118502198.

Shivers, S.W., Roberts, D.A., & McFadden, J.P. (2019). Using paired thermal and hyperspectral aerial imagery to quantify land surface temperature variability and assess crop stress within California orchards. Remote Sens. Environ., 222, 215-231. https://doi.org/10.1016/j.rse.2018.12.030.

Shrivastava, P., & Kumar, R. (2015). Soil salinity: A serious environmental issue and plant growth promoting bacteria as one of the tools for its alleviation. Saudi J. Biol. Sci., 22, 123-131. https://doi.org/10.1016/j.sjbs.2014.12.001.

Singh, A. (2021). Soil salinization management for sustainable development: A review. J. Environ. Manage., 277, 111383. https://doi.org/10.1016/j.jenvman.2020.111383.

Singh Parihar, J., Justice, C., Soares, J., Leo, O., Kosuth, P., Jarvis, I., Williams, D., Bingfang, W., Latham, J., & Becker-Reshef, I. (2012). GEO-GLAM: A GEOSS-G20 initiative on global agricultural monitoring. In, 39th COSPAR Scientific Assembly (p. 1451). India. https://ui.adsabs.harvard.edu/abs/2012cosp...39.1451S/abstract.

Smith, A.B. (2020). U.S. Billion-dollar Weather and Climate Disasters, 1980 - present (NCEI Accession 0209268). In N.N.C.f.E. Information (Ed.): NOAA National Centers for Environmental Information. https://doi.org/10.25921/stkw-7w73.

Smith, M.N., Stark, S.C., Taylor, T.C., Ferreira, M.L., de Oliveira, E., Restrepo-Coupe, N., Chen, S., Woodcock, T., dos Santos, D.B., & Alves, L.F. (2019). Seasonal and drought-related changes in leaf area profiles depend on height and light environment in an Amazon forest. New Phytol., 222, 1284-1297. https://doi.org/10.1111/nph.15726.

Song, C., White, B.L., & Heumann, B.W. (2011). Hyperspectral remote sensing of salinity stress on red (Rhizophora mangle) and white (Laguncularia racemosa) mangroves on Galapagos Islands. Remote Sens. Lett., 2, 221-230. https://doi.org/10.1080/01431161.2010.514305.

Souza, R., Machado, E., Silva, J., Lagôa, A., & Silveira, J. (2004). Photosynthetic gas exchange, chlorophyll fluorescence and some associated metabolic changes in cowpea (Vigna unguiculata) during water stress and recovery. Environ. Exp. Bot., 51, 45-56. https://doi.org/10.1016/S0098-8472(03)00059-5.

Stagakis, S., González-Dugo, V., Cid, P., Guillén-Climent, M.L., & Zarco-Tejada, P.J. (2012). Monitoring water stress and fruit quality in an orange orchard under regulated deficit irrigation using narrow-band structural and physiological remote sensing indices. ISPRS J. Photogramm. Remote Sens., 71, 47-61. https://doi.org/10.1016/j.isprsjprs.2012.05.003.

Stamatiadis, S., Tsadilas, C., & Schepers, J.S. (2010). Ground-based canopy sensing for detecting effects of water stress in cotton. Plant Soil, 331, 277-287. https://doi.org/10.1007/s11104-009-0252-2.

Steidle Neto, A.J., Lopes, D.d.C., Silva, T.G.F.d., Ferreira, S.O., & Grossi, J.A.S. (2017). Estimation of leaf water content in sunflower under drought conditions by means of spectral reflectance. Eng. Agric. Environ. Food, 10, 104-108. https://doi.org/10.1016/j.eaef.2016.11.006.

Stuyt, L.C.P.M., Blom-Zandstra, M., & Kselik, R. A. L. (2016). Inventarisatie en analyse zouttolerantie van landbouwgewassen op basis van bestaande gegevens. Wageningen Environmental Research rapport. https://doi.org/10.18174/391931.

Stylinski, C., Gamon, J., & Oechel, W. (2002). Seasonal patterns of reflectance indices, carotenoid pigments and photosynthesis of evergreen chaparral species. Oecologia, 131, 366-374. https://doi.org/10.1007/s00442-002-0905-9.

Su, B., Huang, J., Fischer, T., Wang, Y., Kundzewicz, Z.W., Zhai, J., Sun, H., Wang, A., Zeng, X., Wang, G., Tao, H., Gemmer, M., Li, X., & Jiang, T. (2018). Drought losses in China might double between the 1.5 degrees C and 2.0 degrees C warming. Proc. Natl. Acad. Sci. U. S. A., 115, 10600-10605. https://doi.org/10.1073/pnas.1802129115.

Suarez, D.L., Celis, N., Anderson, R.G., & Sandhu, D. (2019). Grape rootstock response to salinity, water and combined salinity and water stresses. Agronomy, 9, 321. https://doi.org/10.3390/agronomy9060321.

Suárez, L., Zarco-Tejada, P., González-Dugo, V., Berni, J., Sagardoy, R., Morales, F., & Fereres, E. (2010). Detecting water stress effects on fruit quality in orchards with time-series PRI airborne imagery. Remote Sens. Environ., 114, 286-298. https://doi.org/10.1016/j.rse.2009.09.006.

Suarez, L., Zarco-Tejada, P.J., Berni, J.A.J., Gonzalez-Dugo, V., & Fereres, E. (2009). Modelling PRI for water stress detection using radiative transfer models. Remote Sens. Environ., 113, 730-744. https://doi.org/10.1016/j.rse.2008.12.001.

Suarez, L., Zarco-Tejada, P.J., Sepulcre-Canto, G., Perez-Priego, O., Miller, J.R., Jimenez-Munoz, J.C., & Sobrino, J. (2008). Assessing canopy PRI for water stress detection with diurnal airborne imagery. Remote Sens. Environ., 112, 560-575. https://doi.org/10.1016/j.rse.2007.05.009.

Summy, Y., Payal, M., Akanksha, D., Akdasbanu, V., Disha, P., & Mohini, P. (2020). Effect of Abiotic Stress on Crops. In H. Mirza, F. Marcelo Carvalho Minhoto Teixeira, F. Masayuki, & N. Thiago Assis Rodrigues (Eds.), Sustainable Crop Production (p. Ch. 1). Rijeka: IntechOpen. https://doi.org/10.5772/intechopen.88434.

Sun, L., Gao, F., Anderson, M.C., Kustas, W.P., Alsina, M.M., Sanchez, L., Sams, B., McKee, L., Dulaney, W., White, W.A., Alfieri, J.G., Prueger, J.H., Melton, F., & Post, K. (2017). Daily mapping of 30 m LAI and NDVI for grape yield prediction in California vineyards. Remote Sens., 9. https://doi.org/10.3390/rs9040317.

Sun, P., Grignetti, A., Liu, S., Casacchia, R., Salvatori, R., Pietrini, F., Loreto, F., & Centritto, M. (2008). Associated changes in physiological parameters and spectral reflectance indices in olive (Olea europaea L.) leaves in response to different levels of water stress. Int. J. Remote Sens., 29, 1725-1743. https://doi.org/10.1080/01431160701373754.

Sytar, O., Brestic, M., Zivcak, M., Olsovska, K., Kovar, M., Shao, H., & He, X. (2017). Applying hyperspectral imaging to explore natural plant diversity towards improving salt stress tolerance. Sci. Total Environ., 578, 90-99. https://doi.org/10.1016/j.scitotenv.2016.08.014.

Tanirbergenov, S., Saljnikov, E., Suleimenov, B., Saparov, A., & Cakmak, D. (2020). Salt affected soils under cotton-based irrigation agriculture in southern Kazakhstan. Zemljiste i biljka, 69, 1-14. https://doi.org/10.5937/ZemBilj2002001T.

Tao, H., Borth, H., Fraedrich, K., Su, B., & Zhu, X. (2014). Drought and wetness variability in the Tarim River Basin and connection to large-scale atmospheric circulation. Int. J. Climatol., 34, 2678-2684. https://doi.org/10.1002/joc.3867.

Tedeschi, A., Lavini, A., Riccardi, M., Pulvento, C., & d'Andria, R. (2011). Melon crops (Cucumis melo L., cv. Tendral) grown in a mediterranean environment under saline-sodic conditions:

Part I. Yield and quality. Agric. Water Manag., 98, 1329-1338. https://doi.org/10.1016/j.agwat.2011.04.007.

Thenkabail, P.S., Biradar, C.M., Noojipady, P., Dheeravath, V., Li, Y., Velpuri, M., Gumma, M., Gangalakunta, O.R.P., Turral, H., Cai, X., Vithanage, J., Schull, M.A., & Dutta, R. (2009). Global irrigated area map (GIAM), derived from remote sensing, for the end of the last millennium. Int. J. Remote Sens., 30, 3679-3733. https://doi.org/10.1080/01431160802698919.

Thenot, F., Méthy, M., & Winkel, T. (2002). The Photochemical Reflectance Index (PRI) as a water-stress index. Int. J. Remote Sens., 23, 5135-5139. https://doi.org/10.1080/01431160210163100.

Tilley, D.R., Ahmed, M., Son, J.H., & Badrinarayanan, H. (2007). Hyperspectral reflectance response of freshwater macrophytes to salinity in a brackish subtropical marsh. J. Environ. Qual., 36, 780-789. https://doi.org/10.2134/jeq2005.0327.

Tilman, D., Balzer, C., Hill, J., & Befort, B.L. (2011). Global food demand and the sustainable intensification of agriculture. Proc. Natl. Acad. Sci. U.S.A., 108, 20260-20264. https://doi.org/10.1073/pnas.1116437108.

Timmermans, J., Verhoef, W., van der Tol, C., & Su, Z. (2009). Retrieval of canopy component temperatures through Bayesian inversion of directional thermal measurements. Hydrol. Earth Syst. Sci., 13, 1249-1260. https://doi.org/10.5194/hess-13-1249-2009.

Tokarz, B., Wójtowicz, T., Makowski, W., Jędrzejczyk, R.J., & Tokarz, K.M. (2020). What is the difference between the response of grass pea (Lathyrus sativus L.) to salinity and drought stress? A physiological study. Agronomy, 10, 833. https://doi.org/10.3390/agronomy10060833.

Toker, C., Gorham, J., & Cagirgan, M.I. (1999). Assessment of response to drought and salinity stresses of barley (Hordeum vulgare L.) mutants. Cereal Res. Commun., 27, 411-418. https://doi.org/10.1007/BF03543557.

Touch, S., Pipatpongsa, T., Takeda, T., & Takemura, J. (2015). The relationships between electrical conductivity of soil and reflectance of canopy, grain, and leaf of rice in northeastern Thailand. Int. J. Remote Sens., 36, 1136-1166. https://doi.org/10.1080/01431161.2015.1007254.

Trenberth, K.E., Dai, A., van der Schrier, G., Jones, P.D., Barichivich, J., Briffa, K.R., & Sheffield, J. (2013). Global warming and changes in drought. Nat. Clim. Chang., 4, 17-22. https://doi.org/10.1038/nclimate2067.

Tsegai, D., Medel, M., Augenstein, P., & Huang, Z. (2022). Drought in numbers 2022-restoration for readiness and resilience. In S. Alexander, & G. Lipton (Eds.). https://www.unccd.int/sites/default/files/2022-05/Drought%20in%20Numbers.pdf.

Tucker, C.J. (1979). Red and photographic infrared linear combinations for monitoring vegetation. Remote Sens. Environ., 8, 127-150. https://doi.org/10.1016/0034-4257(79)90013-0.

Turhan, A., Kuscu, H., Ozmen, N., Sitki Serbeci, M., & Osman Demir, A. (2014). Effect of different concentrations of diluted seawater on yield and quality of lettuce. Chil. J. Agric. Res., 74, 111-116. http://dx.doi.org/10.4067/S0718-58392014000100017

UN (2015). Transforming our world: the 2030 Agenda for Sustainable Development. United Nations: New York, NY, USA. https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf.

UN (2022). The Sustainable Development Goals: Report 2022. In: UN. https://unstats.un.org/sdgs/report/2022/The-Sustainable-Development-Goals-Report-2022.pdf.

van Dijk, M., Morley, T., Rau, M.L., & Saghai, Y. (2021). A meta-analysis of projected global food demand and population at risk of hunger for the period 2010-2050. Nat. Food, 2, 494-501. https://doi.org/10.1038/s43016-021-00322-9.

Van Eck, N.J., & Waltman, L. (2011). Text mining and visualization using VOSviewer. ISSI Newsletter, 7, 50-54. https://arxiv.org/ftp/arxiv/papers/1109/1109.2058.pdf.

Van Eck, N.J., & Waltman, L. (2014). Visualizing bibliometric networks. Measuring scholarly impact (pp. 285-320): Springer. https://doi.org/10.1007/978-3-319-10377-8_13.

van Straten, G., Bruning, B., de Vos, A.C., González, A.P., Rozema, J., & van Bodegom, P.M. (2021). Estimating cultivar-specific salt tolerance model parameters from multi-annual field tests for identification of salt tolerant potato cultivars. Agric. Water Manag., 252, 106902. https://doi.org/10.1016/j.agwat.2021.106902.

van Vliet, M.T.H., & Zwolsman, J.J.G. (2008). Impact of summer droughts on the water quality of the Meuse river. J. Hydrol., 353, 1-17. https://doi.org/10.1016/j.jhydrol.2008.01.001.

Vannoppen, A., Gobin, A., Kotova, L., Top, S., De Cruz, L., Vīksna, A., Aniskevich, S., Bobylev, L., Buntemeyer, L., Caluwaerts, S., De Troch, R., Gnatiuk, N., Hamdi, R., Reca Remedio, A., Sakalli, A., Van De Vyver, H., Van Schaeybroeck, B., & Termonia, P. (2020). Wheat yield estimation from NDVI and regional climate models in Latvia. Remote Sens., 12. https://doi.org/10.3390/rs12142206.

Vereecken, H., Weihermuller, L., Jonard, F., & Montzka, C. (2012). Characterization of crop canopies and water stress related phenomena using microwave remote sensing methods: a review. Vadose Zone J., 11, vzj2011.0138ra. https://doi.org/10.2136/vzj2011.0138ra.

Verhoef, W. (1984). Light scattering by leaf layers with application to canopy reflectance modeling: The SAIL model. Remote Sensing of Environment, 16, 125-141. https://doi.org/10.1016/0034-4257(84)90057-9.

Verrelst, J., Camps-Valls, G., Muñoz-Marí, J., Rivera, J.P., Veroustraete, F., Clevers, J.G.P.W., & Moreno, J. (2015). Optical remote sensing and the retrieval of terrestrial vegetation bio-geophysical properties – A review. ISPRS J. Photogramm. Remote Sens., 108, 273-290. https://doi.org/10.1016/j.isprsjprs.2015.05.005.

Verrelst, J., Malenovský, Z., Van der Tol, C., Camps-Valls, G., Gastellu-Etchegorry, J.-P., Lewis, P., North, P., & Moreno, J. (2019). Quantifying vegetation biophysical variables from imaging spectroscopy data: A review on retrieval methods. Surv. Geophys., 40, 589-629. https://doi.org/10.1007/s10712-018-9478-y.

Violle, C., Navas, M.-L., Vile, D., Kazakou, E., Fortunel, C., Hummel, I., & Garnier, E. (2007). Let the concept of trait be functional! Oikos, 116, 882-892. https://doi.org/10.1111/j.0030-1299.2007.15559.x.

Vogelmann, J.E., Rock, B.N., & Moss, D.M. (1993). Red edge spectral measurements from sugar maple leaves. Int. J. Remote Sens., 14, 1563-1575. https://doi.org/10.1080/01431169308953986.

Wagg, C., Hann, S., Kupriyanovich, Y., & Li, S. (2021). Timing of short period water stress determines potato plant growth, yield and tuber quality. Agric. Water Manag., 247, 106731. https://doi.org/10.1016/j.agwat.2020.106731.

Wallach, D., Makowski, D., Jones, J.W., & Brun, F. (2006). Working with dynamic crop models: evaluation, analysis, parameterization, and applications. Elsevier. ISBN: 9780080461939.

Walter, A., Studer, B., & Kölliker, R. (2012). Advanced phenotyping offers opportunities for improved breeding of forage and turf species. Ann. Bot., 110, 1271-1279. https://doi.org/10.1093/aob/mcs026.

Wang, D., Chen, Y., Jarin, M., & Xie, X. (2022). Increasingly frequent extreme weather events urge the development of point-of-use water treatment systems. npj Clean Water, 5, 36. https://doi.org/10.1038/s41545-022-00182-1.

Wang, D., Poss, J.A., Donovan, T.J., Shannon, M.C., & Lesch, S.M. (2002a). Biophysical properties and biomass production of elephant grass under saline conditions. J. Arid Environ., 52, 447-456. https://doi.org/10.1006/jare.2002.1016.

Wang, D., Wilson, C., & Shannon, M. (2002b). Interpretation of salinity and irrigation effects on soybean canopy reflectance in visible and near-infrared spectrum domain. Int. J. Remote Sens., 23, 811-824. https://doi.org/10.1080/01431160110070717.

Wang, J., Li, X., Lu, L., & Fang, F. (2013a). Estimating near future regional corn yields by integrating multi-source observations into a crop growth model. Eur. J. Agron., 49, 126-140. https://doi.org/10.1016/j.eja.2013.03.005.

Wang, J., Zhen, J., Hu, W., Chen, S., Lizaga, I., Zeraatpisheh, M., & Yang, X. (2023a). Remote sensing of soil degradation: Progress and perspective. Int. Soil Water Conserv. Res. https://doi.org/10.1016/j.iswcr.2023.03.002.

Wang, J.L., Huang, X.J., Zhong, T.Y., & Chen, Z.G. (2013b). Climate change impacts and adaptation for saline agriculture in north Jiangsu Province, China. Environ. Sci. Policy, 25, 83-93. https://doi.org/10.1016/j.envsci.2012.07.011.

Wang, X., Ji, M., Zhang, Y., Zhang, L., Akram, M.A., Dong, L., Hu, W., Xiong, J., Sun, Y., Li, H., Degen, A.A., Ran, J., & Deng, J. (2023b). Plant trait networks reveal adaptation strategies in the drylands of China. BMC Plant Biol., 23, 266. https://doi.org/10.1186/s12870-023-04273-0.

Wang, X.P., Zhao, C.Y., Guo, N., Li, Y.H., Jian, S.Q., & Yu, K. (2015). Determining the Canopy Water Stress for Spring Wheat Using Canopy Hyperspectral Reflectance Data in Loess Plateau Semiarid Regions. Spectrosc. Lett., 48, 492-498. https://doi.org/10.1080/00387010.2014.909495.

Wardlow, B.D., Tadesse, T., Brown, J.F., & Gu, Y. (2008). The Vegetation Drought Response Index (VegDRI): A New Drought Monitoring Approach for Vegetation. GIsci. Remote Sens., 45, 16-46. https://doi.org/10.2747/1548-1603.45.1.16.

Webber, H.A., Madramootoo, C.A., Bourgault, M., Horst, M.G., Stulina, G., & Smith, D.L. (2010). Adapting the CROPGRO model for saline soils: the case for a common bean crop. Irrig. Sci., 28, 317-329. https://doi.org/10.1007/s00271-009-0189-5.

Wei, Y., Jin, J., Jiang, S., Ning, S., & Liu, L. (2018). Quantitative response of soybean development and yield to drought stress during different growth stages in the huaibei plain, China. Agronomy, 8. https://doi.org/10.3390/agronomy8070097.

Weiss, M., Baret, F., & Jay, S. (2016). S2ToolBox Level 2 products LAI, FAPAR, FCOVER, Version 1.1. https://step.esa.int/docs/extra/ATBD_S2ToolBox_L2B_V1.1.pdf.

Weiss, M., Jacob, F., & Duveiller, G. (2020). Remote sensing for agricultural applications: a meta-review. Remote Sens. Environ., 236, 111402. https://doi.org/10.1016/j.rse.2019.111402.

Wengert, M., Piepho, H.P., Astor, T., Grass, R., Wijesingha, J., & Wachendorf, M. (2021). Assessing spatial variability of barley whole crop biomass yield and leaf area index in Silvoarable agroforestry systems using UAV-borne remote sensing. Remote Sens., 13, 2751. https://doi.org/10.3390/rs13142751.

West, H., Quinn, N., & Horswell, M. (2019). Remote sensing for drought monitoring & impact assessment: Progress, past challenges and future opportunities. Remote Sens. Environ., 232, 111291. https://doi.org/10.1016/j.rse.2019.111291.

Wheeler, T., & von Braun, J. (2013). Climate change impacts on global food security. Science, 341, 508-513. https://doi.org/10.1126/science.1239402.

Whitcraft, A.K., Becker-Reshef, I., Justice, C.O., Gifford, L., Kavvada, A., & Jarvis, I. (2019). No pixel left behind: Toward integrating earth observations for agriculture into the United Nations Sustainable Development Goals framework. Remote Sens. Environ., 235. https://doi.org/10.1016/j.rse.2019.111470.

Wilcox, K.R., Blumenthal, D.M., Kray, J.A., Mueller, K.E., Derner, J.D., Ocheltree, T., & Porensky, L.M. (2021). Plant traits related to precipitation sensitivity of species and communities in semiarid shortgrass prairie. New Phytol., 229, 2007-2019. https://doi.org/10.1111/nph.17000.

Williams, J.R., Jones, C.A., Kiniry, J.R., & Spanel, D.A. (1989). The EPIC crop growth model. Trans. ASABE, 32, 497-511. https://www.ars.usda.gov/ARSUserFiles/30980500/The%20EPIC%20Crop%20Growth%20Model.pdf.

Winkel, T., Méthy, M., & Thénot, F. (2002). Radiation use efficiency, chlorophyll fluorescence, and reflectance indices associated with ontogenic changes in water-limited Chenopodium quinoa leaves. Photosynthetica, 40, 227-232. https://doi.org/10.1023/A:1021345724248.

Wocher, M., Berger, K., Danner, M., Mauser, W., & Hank, T. (2020). RTM-based dynamic absorption integrals for the retrieval of biochemical vegetation traits. Int. J. Appl. Earth Obs. Geoinf., 93, 102219. https://doi.org/10.1016/j.jag.2020.102219.

Wright, I.J., Reich, P.B., & Westoby, M. (2003). Least-cost input mixtures of water and nitrogen for photosynthesis. Am. Nat., 161, 98-111. https://doi.org/10.1086/344920.

Wu, B., Gommes, R., Zhang, M., Zeng, H., Yan, N., Zou, W., Zheng, Y., Zhang, N., Chang, S., Xing, Q., & van Heijden, A. (2015). Global crop monitoring: A satellite-based hierarchical approach. Remote Sens., 7, 3907-3933. https://doi.org/10.3390/rs70403907.

Wu, B., Zhang, M., Zeng, H., Tian, F., Potgieter, A.B., Qin, X., Yan, N., Chang, S., Zhao, Y., Dong, Q., Boken, V., Plotnikov, D., Guo, H., Wu, F., Zhao, H., Deronde, B., Tits, L., & Loupian, E. (2023). Challenges and opportunities in remote sensing-based crop monitoring: a review. Natl. Sci. Rev., 10, nwac290. https://doi.org/10.1093/nsr/nwac290.

Xu, H., Tian, Z., He, X., Wang, J., Sun, L., Fischer, G., Fan, D., Zhong, H., Wu, W., Pope, E., Kent, C., & Liu, J. (2019). Future increases in irrigation water requirement challenge the water-food nexus in the northeast farming region of China. Agric. Water Manag., 213, 594-604. https://doi.org/10.1016/j.agwat.2018.10.045.

Yadav, J.S.P. (2003). Managing soil health for sustained high productivity. J. Indian Soc. Soil Sci., 51, 448-465. https://www.indianjournals.com/ijor.aspx?target=ijor:jisss&volume=51&issue=4&article=012.

Yang, L., Jia, K., Liang, S., Liu, M., Wei, X., Yao, Y., Zhang, X., & Liu, D. (2018). Spatio-temporal analysis and uncertainty of fractional vegetation cover change over northern China during 2001–2012 based on multiple vegetation data sets. Remote Sens., 10, 549. https://doi.org/10.3390/rs10040549.

Yang, X., Lu, M., Wang, Y., Wang, Y., Liu, Z., & Chen, S. (2021). Response mechanism of plants to drought stress. Horticulturae, 7, 50. https://doi.org/10.3390/horticulturae7030050.

Yeo, A. (1998). Molecular biology of salt tolerance in the context of whole-plant physiology. J. Exp. Bot., 49, 915-929. https://doi.org/10.1093/jexbot/49.323.915.

Yoshizumi, Y., Li, M.-s., & Akihiro, I. (2010). Assessment of photochemical reflectance index as a tool for evaluation of chlorophyll fluorescence parameters in cotton and peanut cultivars under water stress condition. Agric. Sci. China, 9, 662-670. https://doi.org/10.1016/S1671-2927(09)60141-3.

Zakharova, L., Meyer, K.M., & Seifan, M. (2019). Trait-based modelling in ecology: A review of two decades of research. Ecol. Model., 407, 108703. https://doi.org/10.1016/j.ecolmodel.2019.05.008.

Zarco-Tejada, P.J., Berni, J.A., Suárez, L., Sepulcre-Cantó, G., Morales, F., & Miller, J.R. (2009). Imaging chlorophyll fluorescence with an airborne narrow-band multispectral camera for vegetation stress detection. Remote Sens. Environ., 113, 1262-1275. https://doi.org/10.1016/j.rse.2009.02.016.

Zarco-Tejada, P.J., Camino, C., Beck, P.S.A., Calderon, R., Hornero, A., Hernández-Clemente, R., Kattenborn, T., Montes-Borrego, M., Susca, L., Morelli, M., Gonzalez-Dugo, V., North, P.R.J., Landa, B.B., Boscia, D., Saponari, M., & Navas-Cortes, J.A. (2018). Previsual symptoms of Xylella fastidiosa infection revealed in spectral plant-trait alterations. Nature Plants, 4, 432-439. https://doi.org/10.1038/s41477-018-0189-7.

Zarco-Tejada, P.J., Catalina, A., González, M., & Martín, P. (2013a). Relationships between net photosynthesis and steady-state chlorophyll fluorescence retrieved from airborne hyperspectral imagery. Remote Sens. Environ., 136, 247-258. https://doi.org/10.1016/j.rse.2013.05.011.

Zarco-Tejada, P.J., González-Dugo, V., & Berni, J.A.J. (2012). Fluorescence, temperature and narrow-band indices acquired from a UAV platform for water stress detection using a micro-hyperspectral imager and a thermal camera. Remote Sens. Environ., 117, 322-337. https://doi.org/10.1016/j.rse.2011.10.007.

Zarco-Tejada, P.J., González-Dugo, V., Williams, L.E., Suárez, L., Berni, J.A.J., Goldhamer, D., & Fereres, E. (2013b). A PRI-based water stress index combining structural and chlorophyll effects: Assessment using diurnal narrow-band airborne imagery and the CWSI thermal index. Remote Sens. Environ., 138, 38-50. https://doi.org/10.1016/j.rse.2013.07.024.

Zarco-Tejada, P.J., Miller, J.R., Harron, J., Hu, B., Noland, T.L., Goel, N., Mohammed, G.H., & Sampson, P. (2004). Needle chlorophyll content estimation through model inversion using hyperspectral data from boreal conifer forest canopies. Remote Sens. Environ., 89, 189-199. https://doi.org/10.1016/j.rse.2002.06.002.

Zarco-Tejada, P.J., Miller, J.R., Noland, T.L., Mohammed, G.H., & Sampson, P.H. (2001). Scaling-up and model inversion methods with narrowband optical indices for chlorophyll content estimation in closed forest canopies with hyperspectral data. IEEE Trans. Geosci. Remote Sens., 39, 1491-1507. https://doi.org/10.1109/36.934080.

Zargar, A., Sadiq, R., Naser, B., & Khan, F.I. (2011). A review of drought indices. Environ. Rev., 19, 333-349. https://doi.org/10.1139/a11-013.

Zhang, F., & Zhou, G. (2015). Estimation of canopy water content by means of hyperspectral indices based on drought stress gradient experiments of maize in the north plain China. Remote Sens., 7, 15203-15223. https://doi.org/10.3390/rs71115203.

Zhang, F., Zhou, G.S., & Nilsson, C. (2015). Remote estimation of the fraction of absorbed photosynthetically active radiation for a maize canopy in Northeast China. J. Plant Ecol., 8, 429-435. https://doi.org/10.1093/jpe/rtu027.

Zhang, H., Han, M., Comas, L.H., DeJonge, K.C., Gleason, S.M., Trout, T.J., & Ma, L. (2019). Response of maize yield components to growth stage-based deficit irrigation. Agron. J., 111, 3244-3252. https://doi.org/10.2134/agronj2019.03.0214.

Zhang, H., Xu, N., Wu, X., Wang, J., Ma, S., Li, X., & Sun, G. (2018). Effects of four types of sodium salt stress on plant growth and photosynthetic apparatus in sorghum leaves. J. Plant Interact., 13, 506-513. https://doi.org/10.1080/17429145.2018.1526978.

Zhang, J., Mu, Q., & Huang, J. (2016). Assessing the remotely sensed Drought Severity Index for agricultural drought monitoring and impact analysis in North China. Ecol. Indic., 63, 296-309. https://doi.org/10.1016/j.ecolind.2015.11.062.

Zhang, J., Zhang, Z., Chen, J., Chen, H., Jin, J., Han, J., Wang, X., Song, Z., & Wei, G. (2020). Estimating soil salinity with different fractional vegetation cover using remote sensing. Land Degrad. Dev., 32, 597-612. https://doi.org/10.1002/ldr.3737.

Zhang, L., Chen, B., Zhang, G., Li, J., Wang, Y., Meng, Y., & Zhou, Z. (2013). Effect of soil salinity, soil drought, and their combined action on the biochemical characteristics of cotton roots. Acta Physiol. Plant, 35, 3167-3179. https://doi.org/10.1007/s11738-013-1350-6.

Zhang, L., Zhou, Z., Zhang, G., Meng, Y., Chen, B., & Wang, Y. (2017). Monitoring cotton (Gossypium hirsutum L.) leaf ion content and leaf water content in saline soil with

hyperspectral reflectance. Eur. J. Remote Sens., 47, 593-610. https://doi.org/10.5721/EuJRS20144733.
Zhou, D., Ni, Y., Yu, X., Lin, K., Du, N., Liu, L., Guo, X., & Guo, W. (2021). Trait-based adaptability of Phragmites australis to the effects of soil water and salinity in the Yellow River Delta. Ecol. Evol., 11, 11352-11361. https://doi.org/10.1002/ece3.7925.
Zhou, J., Zhou, J., Ye, H., Ali, M.L., Nguyen, H.T., & Chen, P. (2020). Classification of soybean leaf wilting due to drought stress using UAV-based imagery. Comput. Electron. Agric., 175, 105576. https://doi.org/10.1016/j.compag.2020.105576.
Zhu, X., Wang, T.J., Skidmore, A.K., Darvishzadeh, R., Niemann, K.O., & Liu, J. (2017). Canopy leaf water content estimated using terrestrial LiDAR. Agric. For. Meteorol., 232, 152-162. https://doi.org/10.1016/j.agrformet.2016.08.016.
Zhu, Y., Qu, Y., Liu, S., & Chen, S. (2014). A reflectance spectra model for copper-stressed leaves: advances in the PROSPECT model through addition of the specific absorption coefficients of the copper ion. Int. J. Remote Sens., 35, 1356-1373. https://doi.org/10.1080/01431161.2013.876123.
Zinnert, J.C., Nelson, J.D., & Hoffman, A.M. (2012). Effects of salinity on physiological responses and the photochemical reflectance index in two co-occurring coastal shrubs. Plant Soil, 354, 45-55. https://doi.org/10.1007/s11104-011-0955-z.
Zscheischler, J., Westra, S., van den Hurk, B.J.J.M., Seneviratne, S.I., Ward, P.J., Pitman, A., AghaKouchak, A., Bresch, D.N., Leonard, M., Wahl, T., & Zhang, X. (2018). Future climate risk from compound events. Nat. Clim. Chang., 8, 469-477. https://doi.org/10.1038/s41558-018-0156-3.