

WON-HO NAM

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PRESENT POSITION

- **ASSOCIATE PROFESSOR** **APR 2020 – PRESENT**
School of Social Safety and Systems Engineering, Hankyong National University, Anseong, Republic of Korea
- **DIRECTOR** **DEC 2019 – PRESENT**
National Agricultural Water Research Center, Hankyong National University, Anseong, Republic of Korea

PROFESSIONAL EXPERIENCE

- **ASSISTANT PROFESSOR** **MAR 2016 – MAR 2020**
Department of Bioresources and Rural Systems Engineering, College of Agriculture and Life Science, Hankyong National University, Anseong, Republic of Korea
- **POST-DOCTORAL RESEARCH ASSOCIATE** **DEC 2014 – FEB 2016**
National Drought Mitigation Center, School of Natural Resources, University of Nebraska-Lincoln, Lincoln, Nebraska, USA *funded by* University of Nebraska-Lincoln
- **POST-DOCTORAL RESEARCH ASSOCIATE** **APR 2014 – MAR 2015**
School of Natural Resources, University of Nebraska-Lincoln, Lincoln, Nebraska, USA *funded by* University of Nebraska-Lincoln
- **VISITING POST-DOCTORAL RESEARCH ASSOCIATE** **DEC 2013 – NOV 2014**

School of Natural Resources, University of Nebraska-Lincoln, Lincoln, Nebraska, USA, *funded by* Post-doctoral Fellowships Program for Young Global Researchers, National Research Foundation of Korea

■ **SENIOR RESEARCHER** **MAR 2013 – NOV 2013**

Research Institute for Agriculture and Life Sciences, College of Agriculture and Life Sciences, Seoul National University, Seoul, Republic of Korea

■ **RESEARCH ASSOCIATE** **MAR 2005 – FEB 2013**

Rural Water and Information Engineering Laboratory, Rural System Engineering Major, Department of Landscape Architecture and Rural System Engineering, Seoul National University, Seoul, Republic of Korea

EDUCATION

■ **DOCTOR OF PHILOSOPHY** **MAR 2008 – FEB 2013**

Agricultural and Rural Systems Engineering, Department of Landscape Architecture and Rural System Engineering, Rural System Engineering Major, Seoul National University, Republic of Korea

Dissertation: Sustainability and operations evaluation of agricultural reservoirs based on probability theory

■ **MASTER OF SCIENCE IN ENGINEERING** **MAR 2006 – FEB 2008**

Agricultural and Rural Systems Engineering, Department of Landscape Architecture and Rural System Engineering, Rural System Engineering Major, Seoul National University, Republic of Korea

Thesis: Development of web-based GIS for hydrological and meteorological data provision in real time

■ **BACHELOR OF SCIENCE IN ENGINEERING** **MAR 2002 – FEB 2006**

Agricultural Engineering, College of Agriculture and Life Science, Department of Landscape Architecture and Rural System Engineering, Rural System Engineering Major, Seoul National University, Republic of Korea

Thesis: Drought analysis using soil water balance model

RESEARCH EXPERIENCE

- 2023–2020: Development of advanced analysis of drought for upland crops and assessing the variability of moisture conditions based on effective soil moisture *funded by* Rural Development Administration (RDA), Republic of Korea (PI: Won-Ho Nam)
- 2021–2019: Development of mega drought adaptation and emergency response plan *funded by* Korean Ministry of Interior and Safety (MOIS), Republic of Korea (PI: Won-Ho Nam)
- 2020–2018: Development of an agricultural-drought monitoring model using satellite images(I) *funded by* Korea Institute of Planning and Evaluation for Technology in Food, Agriculture and Forestry (IPET), Republic of Korea (PI: Won-Ho Nam)
- 2020–2018: Development and application of recurrent agricultural water management system based on ICT, Bigdata for drought contingency plan *funded by* Korea Institute of Planning and Evaluation for Technology in Food, Agriculture and Forestry (IPET), Republic of Korea
- 2020–2017: Development and application of drought disaster monitoring system in Korea *funded by* National Research Foundation of Korea (NRF), Republic of Korea (PI: Won-Ho Nam)
- 2019–2017: Assessment of upland drought and establishment system for anticipatory response to drought *funded by* Rural Development Administration (RDA), Republic of Korea (PI: Won-Ho Nam)
- 2018–2016: Development of LPWA network and machine learning based smart farm management platform *funded by* Korea Institute of Planning and Evaluation for Technology in Food, Agriculture and Forestry (IPET), Republic of Korea (PI: Won-Ho Nam)
- 2019–2016: Development of the new technology of agricultural drought monitoring based on ICT *funded by* Korea Institute of Planning and Evaluation for Technology in Food, Agriculture and Forestry (IPET), Republic of Korea (PI: Won-Ho Nam)
- 2018–2016: Development of agricultural drought risk and response management system *funded by* Korea Institute of Planning and Evaluation for Technology in Food, Agriculture and Forestry (IPET), Republic of Korea
- 2017–2016: Application of drought indices according to extreme weather events and climate change in North Korea *funded by* Hankyong National University, Republic of Korea (PI: Won-Ho Nam)

- **2016–2015:** Using the North American Drought Monitor to track the movement of livestock into the United States *funded by* United States Department of Agriculture (USDA), USA (PI: Michael J. Hayes)
- **2016–2015:** Improving United States drought monitor (USDM): Integrating soil moisture data and developing a drought blends portal *funded by* United States Department of Agriculture (USDA), USA (PI: Michael J. Hayes)
- **2016–2015:** Develop a companion product to the vegetation drought response index (VegDRI) tool called the “Canada VegDRI” *funded by* United States Geological Survey (USGS), USA (PI: Tsegaye Tadesse)
- **2015:** Soil climatology for the Central United States called the “SoilClim model” *funded by* a joint international project in the Czech Republic (PI: Michael J. Hayes and Miroslav Trnka)
- **2015:** Drought information services in support the National Integrated Drought Information System (NIDIS) *funded by* National Oceanic and Atmospheric Administration (NOAA) and the NIDIS, USA (PI: Michael J. Hayes)
- **2016–2014:** Seasonal prediction of hydro-climatic extremes in the Greater Horn of Africa under evolving climate conditions to support adaptation strategies (NASA-GHA project) *funded by* National Aeronautics and Space Administration (NASA), USA (an international, and multinational project) (PI: Tsegaye Tadesse)
- **2015–2014:** The quick drought response index (Quick DRI): An integrated approach to maximizing the use of NASA data sets for rapid response agricultural drought monitoring *funded by* NASA Earth Science Applications: Water Resources, USA (PI: Brian D. Wardlow, Mark D. Svoboda and Michael J. Hayes)
- **2015–2014:** Enhancing decision support for drought risk in the United States: A NDMC decision support tool called the “Drought Risk Atlas” *funded by* National Oceanic and Atmospheric Administration (NOAA), Climate Program Office-Sectoral Applications Research Program (SARP): Coping with Drought and the National Integrated Drought Information System (NIDIS), USA (PI: Mark D. Svoboda and Michael J. Hayes)
- **2015–2014:** Model-based decision making tools developer: Development of a decision support system on climate-related useful information for agricultural decision makers called the “CropClimate” *funded by* University of Nebraska-Lincoln, USA (PI: Guillermo A. Baigorria)

- 2014–2013: Water supply vulnerability of agricultural reservoirs in response to climate change considering the outlook for future water resources *funded by* National Research Foundation of Korea (NRF), Republic of Korea (PI: Won-Ho Nam)
- 2013: Development of risk management system for water supply vulnerability in agricultural water resources *funded by* IS Technologies, Republic of Korea
- 2013: A study on survey of agricultural infrastructure in North Korea using GIS *funded by* Rural Research Institute at Korea Rural Community Corporation (KRC), Republic of Korea
- 2013: Development and application of water footprint assessment for agriculture in South Korea *funded by* Rural Research Institute at Korea Rural Community Corporation (KRC), Republic of Korea
- 2013: Development of intelligent for management of irrigation and drainage *funded by* the Ministry for Food, Agriculture, Forestry, and Fisheries (MIFAFF), Republic of Korea
- 2013–2011: Development of pilot operating system for smart water management of rural water district *funded by* Rural Research Institute at Korea Rural Community Corporation (KRC), Republic of Korea
- 2013–2010: Development of improved farming methods to reduce agricultural NPS pollution *funded by* Rural Research Institute at Korea Rural Community Corporation (KRC), Republic of Korea
- 2012: Evaluation on agricultural water supply considering land use planning in Saemangeum reclaimed area *funded by* Rural Research Institute at Korea Rural Community Corporation (KRC), Republic of Korea
- 2012–2011: Extraction of paddy rice field in North Korea using time-series satellite images *funded by* Korea Aerospace Research Institute (KARI), Republic of Korea
- 2012–2010: Irrigation component and system evaluation and integrated operational program development for automated irrigation system *funded by* Rural Development Administration (RDA), Republic of Korea
- 2011–2010: Integration module development for agricultural reservoirs operation to river flow management system *funded by* Korea Water Resources Corporation (K-water), Republic of Korea
- 2011–2009: Irrigation facility inspection and assessment technology development using wireless sensor network *funded by* the Ministry for Food, Agriculture, Forestry, and Fisheries (MIFAFF), Republic of Korea

- 2011–2008: Development of web-GIS based drought management system *funded by* Korea Rural Community Corporation (KRC), Republic of Korea
- 2011–2008: Water quality impact assessment of low concentration manure application in forestry watershed *funded by* Rural Development Administration (RDA), Republic of Korea
- 2010: Analysis of land-use change and water requirement for paddy rice affected by climate change *funded by* Rural Research Institute at Korea Rural Community Corporation (KRC), Republic of Korea
- 2009: A study on integrated operation strategy development of agricultural reservoirs considering four major rivers restoration project in Korea *funded by* Korea Water Resources Corporation (K-water), Republic of Korea
- 2009–2008: Soil moisture change monitoring and modeling on conifer forest *funded by* Korea Research Foundation, Republic of Korea
- 2009–2006: Rural amenity resources development *funded by* Rural Development Administration (RDA), Republic of Korea
- 2008: A study on the investigation measure of using water in the rural area *funded by* Korea Rural Community Corporation (KRC), Republic of Korea
- 2008: North Korea drought monitoring using time series MODIS satellite imagery *funded by* Korea Aerospace Research Institute (KARI), Republic of Korea
- 2008–2007: Drought information system (focus on guideline for water supply) *funded by* Korea Water Resources Corporation (K-water), Republic of Korea
- 2008–2006: Application technique on rural amenity resources database *funded by* Rural Development Administration (RDA), Republic of Korea
- 2007: Construction of rural agricultural water resource information system, *funded by* Korea Rural Community Corporation (KRC), Republic of Korea
- 2007–2006: Estimating agricultural water requirement in North Korea using time-series satellite data *funded by* Korea Aerospace Research Institute (KARI), Republic of Korea
- 2007–2006: An analysis and mapping of the drought characteristics in North Korea *funded by* Institute for Peace and Unification Studies (IPUS) at Seoul National University, Republic of Korea

PUBLICATIONS

■ **INTERNATIONAL JOURNAL PUBLICATIONS (PEER-REVIEWED PAPERS)**

1. Yassen, A.N., **Nam, W.H.***, Hong, E.M., 2020. Impact of climate change on reference evapotranspiration in Egypt. *Catena* 194: 104711, Nov. 2020.
DOI:10.1016/j.catena.2020.104711
2. Yoon, D.H., **Nam, W.H.***, Lee, H.J., Hong, E.M., Feng, S., Wardlow, B.D., Tadesse, T., Svoboda, M.D., Hayes, M.J., Kim, D.E., 2020. Agricultural drought assessment in East Asia using satellite-based indices. *Remote Sensing* 12 (3): 444, Feb. 2020.
DOI:10.3390/rs12030444
3. Cho, G.H., Ahmad, M.J., Lee, S., Choi, K.S., **Nam, W.H.**, Kwon, H.J., 2019. Influence mechanism of climate change on paddy farming practices and irrigation water demand. *Paddy and Water Environment* 17 (3): 359–371, July 2019.
DOI:10.1007/s10333-019-00731-4
4. **Nam, W.H.**, Baigorria, G.A., Hong, E.M., Kim, T.G., Choi, Y.S., Feng, S., 2018. The fingerprint of climate change and urbanization in South Korea. *Atmosphere* 9 (7): 273, July 2018. DOI:10.3390/atmos9070273
5. **Nam, W.H.**, Tadesse, T., Wardlow, B.D., Hayes, M.J., Svoboda, M.D., Hong, E.M., Pachepsky, Y., Jang, M.W., 2018. Developing the vegetation drought response index for South Korea (VegDRI-SKorea) to assess the vegetation condition during drought events. *International Journal of Remote Sensing* 39 (5): 1548–1574, Mar. 2018.
DOI:10.1080/01431161.2017.1407047
6. **Nam, W.H.**, Kim, T.G., Hong, E.M., Choi, J.Y., Kim, J.T., 2017. A Wireless Sensor Network (WSN) application for irrigation facilities management based on Information and Communication Technologies (ICTs). *Computers and Electronics in Agriculture* 143: 185–192, Dec. 2017. DOI:10.1016/j.compag.2017.10.007
7. **Nam, W.H.**, Kim, T.G., Hong, E.M., Choi, J.Y., 2017. Regional climate change impacts on irrigation vulnerable season shifts in agricultural water availability for South Korea. *Water* 9 (10): 735, Oct. 2017. DOI:10.3390/w9100735
8. Hong, E.M., Shelton, D., Pachepsky, Y.A., **Nam, W.H.**, Coppock, C., Muirhead, R., 2017. Modeling the interannual variability of microbial quality metrics of irrigation water in a Pennsylvanian stream. *Journal of Environmental Management* 187: 253–264, Feb. 2017.
DOI:10.1016/j.jenvman.2016.11.054

9. Kim, H.D., Kim, J.T., **Nam, W.H.***, Kim, S.J., Choi, J.Y., Koh, B.S., 2016. Irrigation canal network flow analysis by a hydraulic model. *Irrigation and Drainage* 65 (S1): 57–65, Oct. 2016. DOI:10.1002/ird.1992
10. Hong, E.M., Choi, J.Y., **Nam, W.H.***, Kim, J.T., 2016. Decision support system for real-time operation and management of an agricultural water supply. *Irrigation and Drainage* 65 (2): 197–209, Apr. 2016. DOI:10.1002/ird.1935
11. **Nam, W.H.**, Hong, E.M., Choi, J.Y., 2016. Assessment of water delivery efficiency in irrigation canals using performance indicators. *Irrigation Science* 34 (2): 129–143, Mar. 2016. DOI:10.1007/s00271-016-0488-6
12. **Nam, W.H.**, Hong, E.M., Baigorria, G.A., 2016. How climate change has affected the spatio-temporal patterns of precipitation and temperature at various time scales in North Korea. *International Journal of Climatology* 36 (2): 722–734, Feb. 2016. DOI:10.1002/joc.4378
13. Hong, E.M., **Nam, W.H.***, Choi, J.Y., Pachepsky, Y.A., 2016. Projected irrigation requirements for upland crops using soil moisture model under climate change in South Korea. *Agricultural Water Management* 165: 163–180, Feb. 2016. DOI:10.1016/j.agwat.2015.12.003
14. **Nam, W.H.**, Baigorria, G.A., 2015. Analysing changes to the spatial structures of precipitation and temperature under different ENSO phases in the Southeast and Midwest United States. *Meteorological Applications* 22 (4): 797–805, Oct. 2015. DOI:10.1002/met.1526
15. **Nam, W.H.***, Hayes, M.J., Svoboda, M.D., Tadesse, T., Wilhite, D.A., 2015. Drought hazard assessment in the context of climate change for South Korea. *Agricultural Water Management* 160: 106–117, Oct. 2015. DOI:10.1016/j.agwat.2015.06.029
16. **Nam, W.H.**, Choi, J.Y., Hong, E.M., 2015. Irrigation vulnerability assessment on agricultural water supply risk for adaptive management of climate change in South Korea. *Agricultural Water Management* 152: 173–187, Apr. 2015. DOI:10.1016/j.agwat.2015.01.012
17. **Nam, W.H.**, Hong, E.M., Choi, J.Y., 2015. Has climate change already affected the spatial distribution and temporal trends of reference evapotranspiration in South Korea? *Agricultural Water Management* 150: 129–138, Mar. 2015. DOI:10.1016/j.agwat.2014.11.019
18. Hong, E.M., Choi, J.Y., **Nam, W.H.**, Kang, M.S., Jang, J.R., 2014. Monitoring nutrient accumulation and leaching in plastic greenhouse cultivation. *Agricultural Water Management* 146: 11–23, Dec. 2014. DOI:10.1016/j.agwat.2014.07.016

19. **Nam, W.H.**, Choi, J.Y., 2014. Development of an irrigation vulnerability assessment model in agricultural reservoirs utilizing probability theory and reliability analysis. *Agricultural Water Management* 142: 115–126, Aug. 2014. DOI:10.1016/j.agwat.2014.05.009
20. Hong, E.M., Choi, J.Y., Yoo, S.H., **Nam, W.H.**, 2013. Monitoring of shallow groundwater salinity in livestock manure applications to reclaimed tidal land. *Irrigation and Drainage* 62 (S1): 63–74, Oct. 2013. DOI:10.1002/ird.1787
21. Yoo, S.H., Choi, J.Y., **Nam, W.H.**, Hong, E.M., 2012. Analysis of design water requirement of paddy rice using frequency analysis affected by climate change in South Korea. *Agricultural Water Management* 112: 33–42, Sep. 2012. DOI:10.1016/j.agwat.2012.06.002
22. **Nam, W.H.**, Choi, J.Y., Yoo, S.H., Jang, M.W., 2012. A decision support system for agricultural drought management using risk assessment. *Paddy and Water Environment* 10 (3): 197–207, Sep. 2012. DOI:10.1007/s10333-012-0329-z
23. **Nam, W.H.**, Choi, J.Y., Yoo, S.H., Engel, B.A., 2012. A real-time online drought broadcast system for monitoring soil moisture index. *KSCE Journal of Civil Engineering* 16 (3): 357–365, Mar. 2012. DOI:10.1007/s12205-012-1357-3

■ **KOREAN JOURNAL PUBLICATIONS (PEER-REVIEWED PAPERS)**

24. Shin, J.H., **Nam, W.H.**^{*}, Bang, N.K., Kim, H.J., 2020. Assessment of irrigation efficiency and water supply vulnerability using SWMM. *Journal of the Korean Society of Agricultural Engineers* 62 (6): 00-00, Nov. 2020 (in Korean).
25. Lee, H.J., **Nam, W.H.**^{*}, Yoon, D.H., Jang, M.W., Kim, T., Kim, D.E., 2020. Estimation of water storage in small agricultural reservoir using Sentinel-2 satellite imagery. *Journal of the Korean Society of Agricultural Engineers* 62 (6): 00-00, Nov. 2020 (in Korean).
26. Bang, N.K., **Nam, W.H.**^{*}, Shin, J.H., Kim, H.J., Kang, K., Baek, S.C., Lee, K.Y., 2020. Water balance analysis of pumped-storage reservoir during non-irrigation period for recurrent irrigation water management. *Journal of the Korean Society of Agricultural Engineers* 62 (4): 1-12, July 2020 (in Korean).
27. Yoon, D.H., **Nam, W.H.**^{*}, Lee, H.J., Hong, E.M., Kim, T., 2020. Drought hazard assessment using MODIS-based Evaporative Stress Index (ESI) and ROC analysis. *Journal of the Korean Society of Agricultural Engineers* 62 (3): 51–61, May 2020 (in Korean).
28. Shin, J.H., **Nam, W.H.**^{*}, Bang, N.K., Kim, H.J., An, H.U., Do, J.W., Lee, K.Y., 2020. Assessment of water distribution and irrigation efficiency in agricultural reservoirs using

- SWMM model. *Journal of the Korean Society of Agricultural Engineers* 62 (3): 1–13, May 2020 (in Korean).
29. Kwon, H.J., **Nam, W.H.**, Choi, G.S., 2020. An irrigation reliability assessment of agricultural reservoir to establish response plan of future climate change adaptation. *Journal of the Korean Society of Agricultural Engineers* 62 (2): 111–120, Mar. 2020 (in Korean).
 30. Mun, Y.S., **Nam, W.H.***, Jeon, M.G., Kim, H.J., Kang, K., Lee, J.C., Ha, T.H., Lee, K., 2020. Evaluation of regional drought vulnerability assessment based on agricultural water and reservoirs. *Journal of the Korean Society of Agricultural Engineers* 62 (2): 97–109, Mar. 2020 (in Korean).
 31. Lee, H.J., **Nam, W.H.***, Yoon, D.H., Hong, E.M., Kim, T., Park, J.H., Kim, D.E., 2020. Percentile approach of drought severity classification in Evaporative Stress Index for South Korea. *Journal of the Korean Society of Agricultural Engineers* 62 (2): 63–73, Mar. 2020 (in Korean).
 32. Jeon, M.G., **Nam, W.H.***, Mun, Y.S., Kim, H.J., 2020. Assessment and validation of new global grid-based CHIRPS satellite rainfall products over Korea. *Journal of the Korean Society of Agricultural Engineers* 62 (2): 35–48, Mar. 2020 (in Korean).
 33. An, H., Kang, H., **Nam, W.H.**, Lee, K., 2020. Estimation of irrigation return flow from paddy fields based on the reservoir storage rate. *Korean Journal of Agricultural Science* 47 (1): 19–28, Mar. 2020 (in Korean).
 34. Mun, Y.S., **Nam, W.H.***, Kim, T., Hong, E.M., Sur, C., 2020. Evaluation and comparison of meteorological drought index using multi-satellite based precipitation products in East Asia. *Journal of the Korean Society of Agricultural Engineers* 62 (1): 85–95, Jan. 2020 (in Korean).
 35. Kang, H.S., An, H.U., **Nam, W.H.**, Lee, K.Y., 2019. Estimation of agricultural reservoir water storage based on empirical method. *Journal of the Korean Society of Agricultural Engineers* 61 (5): 1–10, Sep. 2019 (in Korean).
 36. Yang, M.H., **Nam, W.H.***, Kim, T., Lee, K., Kim, Y., 2019. Machine learning application for predicting the strawberry harvesting time. *Korean Journal of Agricultural Science* 46 (2): 381–393, June 2019 (in Korean).
 37. Lee, H.J., **Nam, W.H.***, Yoon, D.H., Hong, E.M., Kim, D.E., Svoboda, M.D., Tadesse, T., Wardlow, B.D., 2019. Satellite-based Evaporative Stress Index (ESI) as an indicator of agricultural drought in North Korea. *Journal of the Korean Society of Agricultural Engineers* 61 (3): 1–14, May 2019 (in Korean).

38. Mun, Y.S., **Nam, W.H.***, Jeon, M.G., Kim, T., Hong, E.M., Hayes, M.J., Tadesse, T., 2019. Application of meteorological drought index using Climate Hazards group InfraRed Precipitation with Station (CHIRPS) based on global satellite-assisted precipitation products in Korea. *Journal of the Korean Society of Agricultural Engineers* 61 (2): 1–11, Mar. 2019 (in Korean).
39. Jeon, M.G., **Nam, W.H.***, Hong, E.M., Ok, J., Cho, H., Hwang, S., Han, K.H., Jung, K.H., Zhang, Y.S., Hong, S.Y., 2019. Comparison of reference evapotranspiration estimation methods with limited data in South Korea. *Korean Journal of Agricultural Science* 46 (1): 137–149, Mar. 2019 (in Korean).
40. Yoon, D.H., **Nam, W.H.***, Lee, H.J., Hong, E.M., Kim, T., Kim, D.E., Shin, A.K., Svoboda, M.D., 2018. Application of Evaporative Stress Index (ESI) for satellite-based agricultural drought monitoring. *Journal of the Korean Society of Agricultural Engineers* 60 (6): 119–129, Nov. 2018 (in Korean).
41. Bang, N.K., **Nam, W.H.***, Hong, E.M., Hayes, M.J., Svoboda, M.D., 2018. Assessment of the meteorological characteristics and statistical drought frequency for the extreme 2017 spring drought event across South Korea. *Journal of the Korean Society of Agricultural Engineers* 60 (4): 37–48, July 2018 (in Korean).
42. Yoon, D.H., **Nam, W.H.***, Hong, E.M., Kim, T., Ho, C.H., Hayes, M.J., 2018. A comparison of the impact of regional anthropogenic climatic change in urban and rural areas in South Korea (1955-2016). *Journal of the Korean Society of Agricultural Engineers* 60 (3): 37–50, May 2018 (in Korean).
43. **Nam, W.H.**, Kwon, H.J., Choi, K.S., 2018. Reevaluation of design frequency of drought and water supply safety for agricultural reservoirs under changing climate and farming methods in paddy field. *Journal of the Korean Society of Agricultural Engineers* 60 (1): 121–131, Jan. 2018 (in Korean).
44. **Nam, W.H.**, Hong, E.M., Choi, J.Y., Kim, T.G., Hayes, M.J., Svoboda, M.D., 2017. Assessment of the extreme 2014–2015 drought events in North Korea using weekly Standardized Precipitation Evapotranspiration Index (SPEI). *Journal of the Korean Society of Agricultural Engineers* 59 (4): 65–74, July 2017 (in Korean).
45. Kim, T.G., Suh, K., **Nam, W.H.**, Lee, J.M., Hwang, S.W., Yoo, S.H., Hong, S.O., 2016. Design and implementation of reference evapotranspiration database for future climate scenarios. *Journal of the Korean Society of Rural Planning* 22 (4): 71–80, Dec. 2016 (in Korean).
46. **Nam, W.H.**, Tadesse, T., Wardlow, B.D., Jang, M.W., Hong, S.Y., 2015. Satellite-based hybrid drought assessment using vegetation drought response index in South Korea (VegDRI-

- SKorea). *Journal of the Korean Society of Agricultural Engineers* 57 (4): 1–9, July 2015 (in Korean).
47. Hong, E.M., **Nam, W.H.***, Choi, J.Y., 2015. Climate change impacts on agricultural drought for major upland crops using soil moisture model -focused on the Jeollanam-do-. *Journal of the Korean Society of Agricultural Engineers* 57 (3): 65–76, May 2015 (in Korean).
 48. Hong, E.M., Choi, J.Y., **Nam, W.H.***, Lee, S.H., Choi, J.K., Kim, J.T., 2015. Analysis of water loss rate and irrigation efficiency in irrigation canal at the Dong-Jin district. *Journal of the Korean Society of Agricultural Engineers* 57 (2): 93–101, Mar. 2015 (in Korean).
 49. **Nam, W.H.**, Hong, E.M., Choi, J.Y., Cho, J.P., Hayes, M.J., 2015. Uncertainty characteristics in future prediction of agrometeorological indicators using a climatic water budget approach. *Journal of the Korean Society of Agricultural Engineers* 57 (2): 1–13, Mar. 2015 (in Korean).
 50. **Nam, W.H.**, Kim, T.G., Hong, E.M., Hayes, M.J., Svoboda, M.D., 2015. Water supply risk assessment of agricultural reservoirs using irrigation vulnerability model and cluster analysis. *Journal of the Korean Society of Agricultural Engineers* 57 (1): 59–67, Jan. 2015 (in Korean).
 51. **Nam, W.H.***, Hayes, M.J., Wilhite, D.A., Svoboda, M.D., 2015. Projection of temporal trends on drought characteristics using the Standardized Precipitation Evapotranspiration Index (SPEI) in South Korea. *Journal of the Korean Society of Agricultural Engineers* 57 (1): 37–45, Jan. 2015 (in Korean).
 52. Hong, E.M., Choi, J.Y., **Nam, W.H.**, Lee, S.H., Yoo, S.H., 2015. Impact assessment of liquid manure application on soil and shallow groundwater in poplar experimental site. *Journal of the Korean Society of Agricultural Engineers* 57 (1): 25–35, Jan. 2015 (in Korean).
 53. Kim, T.G., Lee, J.J., **Nam, W.H.**, Suh, K., 2014. Development of RESTful web service for loading data focusing on daily meteorological data. *Journal of the Korean Society of Agricultural Engineers* 56 (6): 93–102, Nov. 2014 (in Korean).
 54. **Nam, W.H.**, Hong, E.M., Jang, M.W., Choi, J.Y., 2014. Projection of consumptive use and irrigation water for major upland crops using soil moisture model under climate change. *Journal of the Korean Society of Agricultural Engineers* 56 (5): 77–87, Sep. 2014 (in Korean).
 55. **Nam, W.H.**, Hong, E.M., Kim, T.G., Choi, J.Y., 2014. Projection of future water supply sustainability in agricultural reservoirs under RCP climate change scenarios. *Journal of the Korean Society of Agricultural Engineers* 56 (4): 59–68, July 2014 (in Korean).

56. Hong, E.M., **Nam, W.H.**, Choi, J.Y., Kim, J.T., 2014. Evaluation of water supply adequacy using real-time water level monitoring system in paddy irrigation canals. *Journal of the Korean Society of Agricultural Engineers* 56 (4): 1–8, July 2014 (in Korean).
57. Hong, E.M., Choi, J.Y., **Nam, W.H.**, Kang, M.S., Jang, J.R., 2014. Soil moisture extraction characteristics of cucumber crop in protected cultivation. *Journal of the Korean Society of Agricultural Engineers* 56 (2): 37–46, Mar. 2014 (in Korean).
58. **Nam, W.H.**, Hong, E.M., Choi, J.Y., 2014. Uncertainty of water supply in agricultural reservoirs considering the climate change. *Journal of the Korean Society of Agricultural Engineers* 56 (2): 11–23, Mar. 2014 (in Korean).
59. **Nam, W.H.**, Choi, J.Y., 2013. Development of operation rules in agricultural reservoirs using real-time water level and irrigation vulnerability index. *Journal of the Korean Society of Agricultural Engineers* 55 (6): 77–85, Nov. 2013 (in Korean).
60. **Nam, W.H.**, Choi, J.Y., Hong, E.M., Kim, J.T., 2013. Assessment of irrigation efficiencies using smarter water management. *Journal of the Korean Society of Agricultural Engineers* 55 (4): 45–53, July 2013 (in Korean).
61. **Nam, W.H.**, Choi, J.Y., Jang, M.W., Hong, E.M., 2013. Agricultural drought risk assessment using reservoir drought index. *Journal of the Korean Society of Agricultural Engineers* 55 (3): 41–49, May 2013 (in Korean).
62. **Nam, W.H.**, Kim, T.G., Choi, J.Y., Kim, H.J., 2012. Evaluation of irrigation vulnerability characteristic curves in agricultural reservoir. *Journal of the Korean Society of Agricultural Engineers* 54 (6): 39–44, Nov. 2012 (in Korean).
63. **Nam, W.H.**, Kim, T.G., Choi, J.Y., Lee, J.J., 2012. Estimating vulnerable duration for irrigation with agricultural water supply and demand during residual periods. *Journal of the Korean Society of Agricultural Engineers* 54 (5): 123–128, Sep. 2012 (in Korean).
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■ **KOREAN MAGAZINE PUBLICATIONS (NON PEER-REVIEWED)**

81. **Nam, W.H.**, Wardlow, B.D., 2020. Development of an agricultural drought disaster monitoring technology using satellite images. *Korea National Committee on Irrigation and Drainage* 65: 34–46, June 2020 (in Korean).
82. **Nam, W.H.**, 2020. Improvement methodology of agricultural water balance model. *Magazine of the Korea Water Resources Association* 53 (4): 33–42, Apr. 2020 (in Korean).
83. **Nam, W.H.**, 2020. Advanced management and methods for estimating irrigation water requirements. *Rural Community and Environment* 146: 70–81, Mar. 2020 (in Korean).
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PROCEEDING PUBLICATION AND CONFERENCE PRESENTATIONS

■ INTERNATIONAL SOCIETY MEETING

1. **Nam, W.H.**, Kim, T., Hayes, M.J., 2020. Examining the drought characteristics and awareness using evapotranspiration-based drought indices (EDDI, SEDI, SPEI). *American Geophysical Union Fall Meeting 2020*, San Francisco, California, USA.
2. **Nam, W.H.**, Hayes, M.J., Svoboda, M.D., Fuchs, B., 2020. Comparison of spatio-temporal trends on drought characteristics using meteorological drought indices (SPI and EDI) in the United States. *2020 ASABE Annual International Meeting, American Society of Agricultural and Biological Engineers*, Virtual and On Demand.
3. **Nam, W.H.**, Kim, T., 2020. Development of reservoir operation and water allocation model for optimal operating policy using machine learning techniques and climate phenomenon information. *2020 ASABE Annual International Meeting, American Society of Agricultural and Biological Engineers*, Virtual and On Demand.
4. **Nam, W.H.**, 2020. Application in agricultural drought management using remote sensing-based Evaporative Stress Index of crop yield. *2nd International Crop Modelling Symposium (ICROPM 2020)*, Montpellier, France.
5. **Nam, W.H.**, Kim, T., Hong, E.M., Feng, S., Hayes, M.J., 2019. Multi-model ensemble projections of the climate change effect on the mega-drought. *American Geophysical Union Fall Meeting 2019*, San Francisco, California, USA.

6. Safi, S., **Nam, W.H.**, Ghafoori, H., Malyar, I., 2019. Impact of climate change on flood frequency and proposed dams using SWAT model under CMIP5 RCP scenarios in the Kunar basin, Afghanistan. *23rd International Congress on Modelling and Simulation (MODSIM 2019)*, Canberra, Australia.
7. Bang, N.K., **Nam, W.H.**^{*}, Yoon, D.H., Park, M.J., Hayes, M.J., 2019. Assessment of future mega-drought based on CMIP5 GCMs using statistical frequency analysis in South Korea. *18th PAWEES Conference and INWEPF & PAWEES International Conference 2019*, Seoul, Republic of Korea.
8. Jeon, M.G., **Nam, W.H.**^{*}, Hong, E.M., Hwang, S., Ok, J., Cho, H., Han, K.H., Jung, K.H., Zhang, Y.S., Hong, S.Y., 2019. Extreme agricultural drought hotspot analysis for upland crops in adaptation to climate change. *18th PAWEES Conference and INWEPF & PAWEES International Conference 2019*, Seoul, Republic of Korea.
9. Yang, M.H., **Nam, W.H.**^{*}, Kim, T., Shin, J.H., Lee, J.E., 2019. Regional variations in the link between drought indices and agricultural crop production in South Korea. *18th PAWEES Conference and INWEPF & PAWEES International Conference 2019*, Seoul, Republic of Korea.
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11. Lee, H.J., **Nam, W.H.**^{*}, Bang, N.K., Kim, H.J., Kang, K., Ha, T.H., Lee, K.Y., 2019. Application of SWMM model to establish criteria for reservoir operation rules. *18th PAWEES Conference and INWEPF & PAWEES International Conference 2019*, Seoul, Republic of Korea.
12. Mun, Y.S., **Nam, W.H.**^{*}, Jeon, M.G., Kang, K., Kim, D.E., 2019. Development of climate and remote sensing-based agricultural drought risk vulnerability assessment. *18th PAWEES Conference and INWEPF & PAWEES International Conference 2019*, Seoul, Republic of Korea.
13. Melese, M., **Nam, W.H.**^{*}, 2019. Runoff-sediment management modelling responses to land use/land cover changes using SWAT model in west Ethiopia. *18th PAWEES Conference and INWEPF & PAWEES International Conference 2019*, Seoul, Republic of Korea.

14. Sadiqi, S.S., **Nam, W.H.***, Hong, E.M., 2019. The vulnerability of the irrigation water sector to the impacts of climate change in Afghanistan. *18th PAWEES Conference and INWEPF & PAWEES International Conference 2019*, Seoul, Republic of Korea.
15. Khalaf, W.K., **Nam, W.H.**, Kim, Y.T., 2019. Greenhouse monitoring and control system based on humidity and temperature sensors. *18th PAWEES Conference and INWEPF & PAWEES International Conference 2019*, Seoul, Republic of Korea.
16. **Nam, W.H.**, 2019. Remote sensing-based drought monitoring to detect flash drought using the Evaporative Stress Index in East Asia. *2019 Asian Conference on Remote Sensing*, Daejeon, Republic of Korea.
17. Kim, H.J., **Nam, W.H.**, Kim, H.D., Lee, K.Y., Lee, J.J., Kim, Y.H., Yoo, S.H., Yoon, K.S., 2019. Modernization of irrigation system with ICT, big data, and machine learning technology in Korea. *International Workshop on Modernizing Irrigation Services for Water, Food, and Nutrition Security, 3rd World Irrigation Forum, International Commission on Irrigation and Drainage*, Bali, Indonesia.
18. Bang, N.K., **Nam, W.H.***, An, H.U., Ha, T.H., Lee, K.Y., 2019. Optimal operation of irrigation canal network system using SWMM. *3rd World Irrigation Forum and 70th International Executive Council Meetings, International Commission on Irrigation and Drainage*, Bali, Indonesia.
19. **Nam, W.H.**, Yoon, D.H., Lee, H.J., Hong, E.M., Shin, A.K., Kim, D.E., 2019. Assessment of agricultural drought monitoring and early warning using a suite of satellite-based drought indices in East Asia. *2019 ASABE Annual International Meeting, American Society of Agricultural and Biological Engineers*, Boston, Massachusetts, USA.
20. Ha, T.H., **Nam, W.H.**, Do, J., Lee, S.Y., Jung, E.Y., Lee, K.Y., 2019. Improving operational performance of irrigation canal network system for drought risk management using hydraulic model. *2019 ASABE Annual International Meeting, American Society of Agricultural and Biological Engineers*, Boston, Massachusetts, USA.
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22. Kim, D.E., Shin, A.K., Shin, H.J., Lee, J., **Nam, W.H.**, 2019. Development of satellite-based agricultural drought early warning system in South Korea. *2019 International Symposium on Remote Sensing*, Taipei, Taiwan.

23. Jeon, M.G., **Nam, W.H.***, Moon, Y.S., Hong, E.M., Kim, D.E., 2019. Evaluating a satellite-based reference evapotranspiration product in the USAID Famine Early Warning System Network for Korea. *2019 International Symposium on Remote Sensing*, Taipei, Taiwan.
24. Yoon, D.H., **Nam, W.H.***, Lee, H.J., Hong, E.M., Kim, D.E., Svoboda, M.D., 2019. Assessing the remotely sensed drought risk characteristics for agricultural drought monitoring using Evaporative Stress Index (ESI) in South Korea. *2019 International Symposium on Remote Sensing*, Taipei, Taiwan.
25. Lee, H.J., **Nam, W.H.***, Yoon, D.H., Kim, T., Hong, E.M., Kim, D.E., Tadesse, T., 2019. Building the vegetation drought response index for North Korea (VegDRI-NKorea) to monitor drought-related vegetation stress. *2019 International Symposium on Remote Sensing*, Taipei, Taiwan.
26. Moon, Y.S., **Nam, W.H.***, Jeon, M.G., Kim, T., Kim, D.E., Tadesse, T., 2019. Evaluation and comparison of satellite-derived rainfall products for hydroclimate extremes in East Asia. *2019 International Symposium on Remote Sensing*, Taipei, Taiwan.
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29. Kim, T., **Nam, W.H.**, Hong, E.M., Smith, T.M., Ha, T.H., Do, J.W., Lee, S.I., Lee, K.Y., 2018. How ICT can advance reservoir water level predictions using machine learning techniques. *American Geophysical Union Fall Meeting 2018*, Washington, D.C., USA.
30. **Nam, W.H.**, Feng, S., Ho, C.H., Hayes, M.J., Svoboda, M.D., Fuchs, B.A., Hong, E.M., Kim, T., 2018. Projected drought hazard assessment under future climate change in East Asia. *17th PAWEES Conference and INWEPF & PAWEES International Conference 2018*, Nara, Japan.
31. Bang, N.K., **Nam, W.H.***, Ha, T.H., Lee, S.I., Do, J.W., Lee, K.Y., 2018. Agricultural drought assessment of water supply reservoirs for extreme 2017 spring drought event in South Korea. *17th PAWEES Conference and INWEPF & PAWEES International Conference 2018*, Nara, Japan.

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33. Yang, M.H., **Nam, W.H.***, Bang, N.K., Shin, J.H., 2018. Quantifying meteorological and agricultural drought impacts using various drought indices in South Korea. *17th PAWEES Conference and INWEPF & PAWEES International Conference 2018*, Nara, Japan.
34. Yoon, D.H., **Nam, W.H.***, Lee, H.J., Tadesse, T., Wardlow, B.D., Svoboda, M.D., 2018. Satellite-based drought assessment using the Evaporative Stress Index (ESI) as an indicator of agricultural drought in East Asia. *17th PAWEES Conference and INWEPF & PAWEES International Conference 2018*, Nara, Japan.
35. Cho, G.H., Ahmad, M.J., Choi, K.S., **Nam, W.H.**, Kwon, H.J., 2018. Evaluation of water conservation design standard of agricultural reservoirs under climate change. *17th PAWEES Conference and INWEPF & PAWEES International Conference 2018*, Nara, Japan.
36. Yassen, A.N., **Nam, W.H.***, 2018. Climate change impacts on drought risk management in Egypt using Standardized Precipitation Index (SPI) and Standardized Precipitation Evapotranspiration Index (SPEI). *International Conference on Energy and Sustainability 2018*, Seoul, Republic of Korea.
37. Do, J.W., Lee, K.Y., **Nam, W.H.**, 2018. A drought early warning system for agricultural reservoirs using real-time water level. *International Conference and 69th International Executive Council Meetings of the International Commission on Irrigation and Drainage*, Saskatoon, Saskatchewan, Canada.
38. **Nam, W.H.**, Hayes, M.J., Svoboda, M.D., Fuchs, B.A., Tadesse, T., Wilhite, D.A., Hong, E.M., Kim, T., 2017. Examining the extreme 2017 spring drought event in South Korea using a suite of drought indices (SPI, SC-PDSI, SPEI, EDI). *American Geophysical Union Fall Meeting 2017*, New Orleans, Louisiana, USA.
39. Bang, N.K., **Nam, W.H.***, Hong, E.M., Pachepsky, Y.A., Han, K.H., Cho, H., Ok, J., Hong, S.Y., 2017. Quantifying agricultural drought impacts using soil moisture model and drought indices in South Korea. *American Geophysical Union Fall Meeting 2017*, New Orleans, Louisiana, USA.
40. Tadesse, T., Demisse, G.B., Bayissa, Y.A., Wardlow, B.D., **Nam, W.H.**, 2016. Vegetation outlook for the Greater Horn of Africa (VegOut-GHA): An experimental model. *American Geophysical Union Fall Meeting 2016*, San Francisco, California, USA.

41. Park, J.H., Do, J.W., Lee, K.Y., Koh, B.S., Lee, S.I., Ha, T.H., **Nam, W.H.**, 2016. Anticipatory defense for agricultural drought forecasting and warning system. *2nd World Irrigation Forum and 67th International Executive Council Meetings, International Commission on Irrigation and Drainage*, Chiang Mai, Thailand.
42. **Nam, W.H.**, Hong, E.M., Choi, J.Y., Hayes, M.J., Svoboda, M.D., Fuchs, B.A., Tadesse, T., 2016. The extreme 2015 drought event in North and South Korea and their impacts. *15th PAWEES Conference*, Daejeon, Republic of Korea.
43. Kim, Y.H., **Nam, W.H.**, 2016. ICT-based intelligent pipeline management system and their applications for efficient use of agricultural water in South Korea. *World Congress on Computers in Agriculture and Asia Federation for Information Technology in Agriculture*, Suncheon, Republic of Korea.
44. Štěpánek, P., Zahradníček, P., Hayes, M., Trnka, M., Fuchs, B., **Nam, W.H.**, 2016. Data quality control of various meteorological elements for Nebraska, USA. *The 13th International Meeting on Statistical Climatology*, Alberta, Canada.
45. **Nam, W.H.**, Wardlow, B.D., Hayes, M.J., Tadesse, T., Svoboda, M.D., Fuchs, B.A., Wilhite, D.A., 2015. Climate- and remote sensing-based tools for drought management application in North and South Korea. *American Geophysical Union Fall Meeting 2015*, San Francisco, California, USA.
46. Hayes, M.J., Svoboda, M.D., **Nam, W.H.**, 2015. Drought fusion: A union of past and present drought characteristics and their impacts. *Implications of a Changing Arctic on Water Resources and Agriculture in the Central United States*, University of Nebraska-Lincoln, Lincoln, Nebraska, USA.
47. Oh, C.J., Lee, J.H., Lee, K.H., **Nam, W.H.**, Hong, E.M., Choi, J.Y., Choi, G.H., 2015. Development of smart agricultural water management system using IoT technology. *26th Euro-Mediterranean Regional Conference and 66th International Executive Council Meetings, International Commission on Irrigation and Drainage*, Montpellier, France.
48. Hong, E.M., **Nam, W.H.**, Choi, J.Y., Kim, J.T., 2014. Decision support system for real-time operation and management of agricultural water supply. *22nd International Congress on Irrigation and Drainage and 65th International Executive Council Meetings, International Commission on Irrigation and Drainage*, Gwangju, Republic of Korea.
49. Hong, E.M., Choi, J.Y., **Nam, W.H.**, 2014. Analyzing of soil moisture characteristics by climate change in upland area of Korea. *2014 ASABE Annual International Meeting, American Society of Agricultural and Biological Engineers*, Montreal, Quebec Canada.

50. **Nam, W.H.**, Choi, J.Y., Hong, E.M., Kim, J.T., 2013. Assessment of water delivery efficiency at irrigation canals using performance indicators. *12th PAWEES Conference*, Cheongju, Republic of Korea.
51. Hong, E.M., Choi, J.Y., **Nam, W.H.**, Kang, M.S., Jang, J.R., 2013. The infiltrated nutrient loads assessment of shallow groundwater in protected cultivation and paddy field. *The 12th Conference of International Society of Paddy and Water Environment Engineering*, Cheongju, Republic of Korea.
52. **Nam, W.H.**, Choi, J.Y., Hong, E.M., 2013. Irrigation vulnerability assessment on agricultural water supply risk for adaptive management of climate change. *1st World Irrigation Forum and 64th International Executive Council Meetings, International Commission on Irrigation and Drainage*, Mardin, Turkey.
53. Hong, E.M., Choi, J.Y., **Nam, W.H.**, 2013. Modeling and analyzing of soil moisture characteristics by climate change in upland area of Korea. *1st World Irrigation Forum and 64th International Executive Council Meetings, International Commission on Irrigation and Drainage*, Mardin, Turkey.
54. Hong, E.M., Choi, J.Y., **Nam, W.H.**, Kang, M.S., Jang, J.R., 2013. Monitoring the infiltrated nutrient loads in shallow groundwater in greenhouse and conventional farming practices. *1st World Irrigation Forum and 64th International Executive Council Meetings, International Commission on Irrigation and Drainage*, Mardin, Turkey.
55. Hong, E.M., Choi, J.Y., **Nam, W.H.**, Kang, M.S., Jang, J.R., 2012. Monitoring the nutrient accumulation and leaching process in soil water in greenhouse. *11th PAWEES Conference*, Bangkok, Thailand.
56. **Nam, W.H.**, Kim, T.G., Choi, J.Y., Lee, J.J., 2012. Irrigation vulnerable duration assessment using distribution of agricultural water supply and demand. *11th PAWEES Conference*, Bangkok, Thailand.
57. **Nam, W.H.**, Choi, J.Y., Choi, S.G., Kim, H.J., Chung, S.O., Hur, S.O., 2012. Development of micro irrigation system control and operation program (MISCO) for irrigation water management. *7th Asian Regional Conference and 63rd International Executive Council Meetings, International Commission on Irrigation and Drainage*, Adelaide, Australia.
58. **Nam, W.H.**, Choi, J.Y., Yoo, S.H., Jang, M.W., 2011. DSS for agricultural drought management using risk assessment. *10th PAWEES Conference*, Taipei, Taiwan.
59. Hong, E.M., Choi, J.Y., Yoo, S.H., **Nam, W.H.**, Yeo, J.K., 2011. Monitoring of shallow groundwater salinity in livestock manure application to tidal reclaimed land. *21st*

International Congress on Irrigation and Drainage and 62nd International Executive Council Meetings, International Commission on Irrigation and Drainage, Tehran, Iran.

60. **Nam, W.H.**, Kim, T.G., Choi, J.Y., Kim, J.T., 2011. Wireless sensor network development using RFID for agricultural water management. *2011 ASABE Annual International Meeting, American Society of Agricultural and Biological Engineers, Louisville, USA.*
61. Kim, J.T., Kim, T.G., **Nam, W.H.**, Lee, T.S., Choi, J.Y., 2011. Mobile device development using RFID and QR code technology for real time information management of irrigation facilities. *2011 ASABE Annual International Meeting, American Society of Agricultural and Biological Engineers, Louisville, USA.*
62. Choi, S.G., Choi, J.Y., **Nam, W.H.**, Hong, E.M., Jeon, S.H., 2011. Analyzing soil moisture uniformity for surface drip irrigation system in multi-layered soil. *2011 ASABE Annual International Meeting, American Society of Agricultural and Biological Engineers, Louisville, USA.*
63. Hong, E.M., Choi, J.Y., Yoo, S.H., **Nam, W.H.**, Choi, I.G., 2011. Estimation of groundwater nitrate-N applying SCB liquid manure in bio-circulation experimental forest using GLEAMS model. *2011 ASABE Annual International Meeting, American Society of Agricultural and Biological Engineers, Louisville, USA.*
64. Yoo, S.H., Choi, J.Y., **Nam, W.H.**, Hong, E.M., 2011. Monitoring plan to measure the underground pollutant infiltration loads in greenhouse and conventional farming practices. *2011 ASABE Annual International Meeting, American Society of Agricultural and Biological Engineers, Louisville, USA.*
65. **Nam, W.H.**, Choi, J.Y., Yoo, S.H., Jang, M.W., 2010. Development of web-GIS based drought information system for agricultural drought management. *International Conference on Agricultural Engineering, AgEng 2010 Conference, Clermont-Ferrand, France.*
66. **Nam, W.H.**, Choi, J.Y., Hong, E.M., Kim, H.K., 2010. Development of web-GIS based SWAT data generation system. *2010 International SWAT Conference, Seoul, Republic of Korea.*
67. Choi, J.Y., Kang, M.S., **Nam, W.H.**, Yoo, S.H., 2008. Drought assessment and response using web-based GIS and soil moisture simulation. *7th PAWEES Conference, Taipei, Taiwan.*
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69. Kim, O.K., Choi, J.Y., **Nam, W.H.**, Yoo, S.H., Jang, M.W., 2006. Watershed scale drought assessment using soil moisture index. *2006 International Conference on Sustainable Water Environment*, Taipei, Taiwan.

■ **KOREAN SOCIETY MEETING**

Proceedings of the 2020 International Conference of the Korea Society of Climate Change Research

70. Kim, H.J., **Nam, W.H.**, Lee, N.H., Kang, K., 2020. Development of decision support system for recurrent irrigation water management and agricultural water supply in preparation for extreme drought.

Proceedings of the 2020 Annual Conference of the Korean Society of Remote Sensing

71. Jeon, M.G., **Nam, W.H.***, Kim, H.Y., Woo, S.B., Jung, I., 2020. Drought monitoring based on satellite and UAV-based vegetation index.
72. Yoon, D.H., **Nam, W.H.***, Bang, N.K., Kim, D.E., 2020. Analysis on spatial-temporal distribution of drought for paddy rice and upland crop using satellite-based drought index.
73. Lee, H.J., **Nam, W.H.***, Yang, M.H., Park, J.H., 2020. Evaluation of vegetation indices for crop water stress estimation using SPOT-6 and 7 satellite imagery.
74. Mun, Y.S., **Nam, W.H.***, Shin, J.H., Kim, T., 2020. Evaluating the utility of satellite-based global precipitation estimation products in East Asia.

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PROFESSIONAL SOCIETY

- 2006 – present: Korean Society of Agricultural Engineers (KSAE)
- 2007 – present: Korean National Committee on Irrigation and Drainage (KCID)
- 2008 – present: Korea Water Resources Association (KWRA)
- 2016 – present: Korean Society of Rural Planning (KSRP)
- 2016 – present: Korean Society of Climate Change Research (KSCC)
- 2019 – present: Korean Society of Hazard Mitigation (KSHM)
- 2019 – present: Korean Society of Remote Sensing (KSRS)
- 2007 – present: American Society of Agricultural and Biological Engineers (ASABE)
- 2008 – present: International Society of Paddy and Water Environment Engineering (PAWEES)
- 2011 – present: International Commission on Irrigation and Drainage (ICID)
- 2015 – present: American Geophysical Union (AGU)
- 2019 – present: American Meteorological Society (AMS)

HONORS AND AWARDS

■ **KCID BEST PERFORMING COMMITTEE AWARD IN JUL 2020**

Korean National Committee on Irrigation and Drainage (KCID), Republic of Korea

■ **YOUNG SCIENTIST AWARD IN OCT 2019**

Korean Society of Agricultural Engineers (KSAE), Republic of Korea

■ **YOUNG RESEARCHERS AWARD IN OCT 2018**

International Conference on Energy and Sustainability 2018 (ICES 2018), Seoul, Republic of Korea

Title: *Climate change impacts on drought risk management in Egypt using Standardized Precipitation Index (SPI) and Standardized Precipitation Evapotranspiration Index (SPEI)*

■ **KSAE OUTSTANDING PAPER PRESENTATION AWARD IN OCT 2016**

2016 Annual Conference of the Korean Society of Agricultural Engineers (KSAE), Daejeon, Republic of Korea

Title: *Climate change impact assessment on agricultural water resources for upland crops*

■ **KSAE OUTSTANDING PAPER PRESENTATION AWARD IN SEP 2012**

2012 Annual Conference of the Korean Society of Agricultural Engineers (KSAE), Cheonan, Republic of Korea

Title: *Agricultural drought assessment using reservoir drought index*

■ **KWRA OUTSTANDING PAPER PRESENTATION AWARD IN MAY 2012**

2012 Annual Conference of the Korea Water Resources Association (KWRA), Gangwon, Republic of Korea

Title: *Reliability assessment of water supply system in agricultural reservoir using probability distribution of water demand and supply*

■ **OUTSTANDING PAPER PRESENTATION AWARD IN SEP 2009**

2009 Chuncheon Global Water Forum, Gangwon, Republic of Korea

Title: *Development of web-GIS based SWAT data generation system*

RESEARCH INTERESTS

- Irrigation and drainage engineering
- Agricultural drought and water resources management
- Drought monitoring, mitigation, planning and policy
- Risk and vulnerability management
- Remote sensing for drought monitoring and management
- Climate change impact and mitigation on agricultural water resources
- Web-GIS for watershed management decision support systems
- Information and communications technology applications for agricultural water management

- Soil moisture and hydrologic/watershed modeling
- Monitoring agro-environmental impacts for sustainable agricultural system
- Agrometeorology and climate teleconnection
- Crop simulation modelling and decision support tools to improve crop management