



# A Drought Index Designed for Field-Scale Water Management

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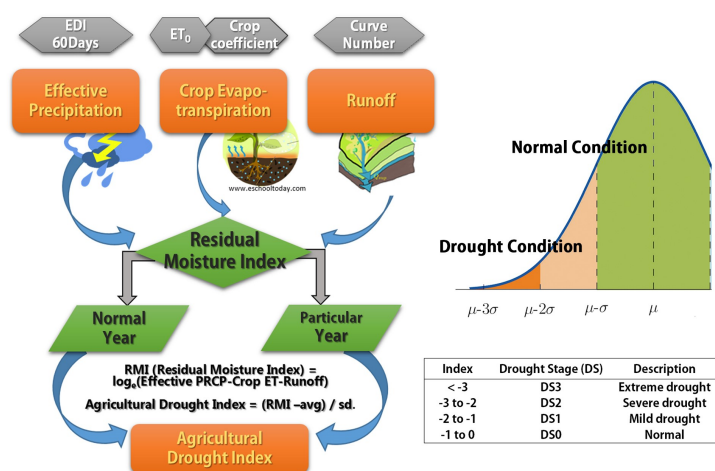
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## Study Purpose

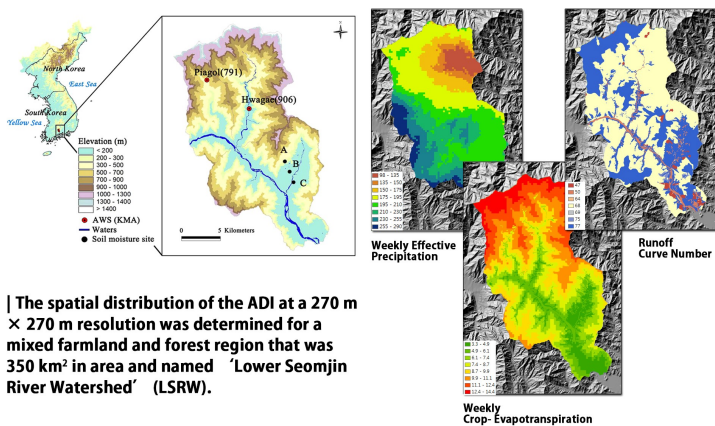
- (1) To propose a new drought index based on the soil moisture available to plants
- (2) To determine if the progress of an agricultural drought is detectable at a field level through the combination of this index with a high-resolution digital climate map

## Methods

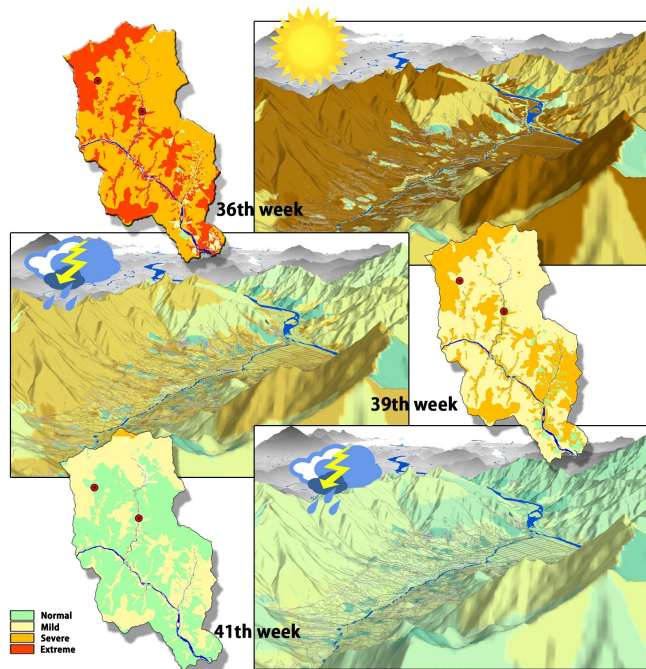
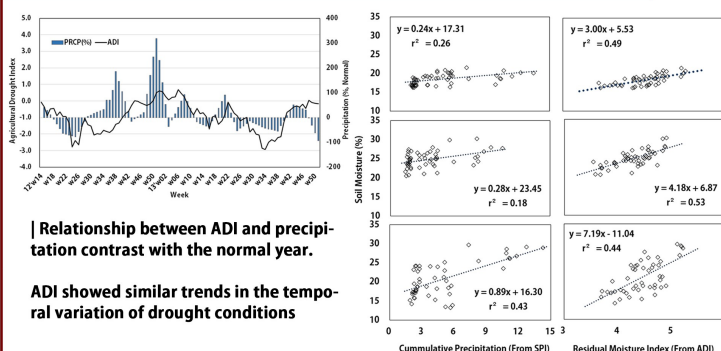


- (1) **Effective precipitation**: Effective precipitation is acquired by accumulating the daily precipitation weighted by the time to the current date. The accumulation continued for 60 days (2 months) up to the study endpoint.
- (2) **Evapotranspiration**: After calculating the reference evapotranspiration using the daily meteorological data, the crop coefficient was multiplied by the result in order to estimate the actual evapotranspiration rate.
- (3) **Runoff**: The unabsorbed excess moisture is discharged over the surface. The amount of runoff is estimated that used the runoff curved number (CN).

The soil residual moisture was theoretically obtained by subtracting the evapotranspiration rate and the runoff moisture from the effective precipitation. The presence of drought was determined based on the probability distribution in the given area.



## Results



Spatio-temporal variation in agricultural drought index (ADI) over the 'Lower Seomjin River Watershed' (LSRW) projected from the climatic and spatial data in 2013.

## Acknowledgments

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