농장맞춤형 기상재해 조기경보서비스 시연

심교문*, 김용석, 최인태, 정명표, 김호정

국립농업과학원

Demonstration of the Operational Service on a Farmstead-Specific Early Warning System for Weather Risk Management in Agriculture

Kyo-Moon Shim*, Youngseok Kim, In Tae Choi, Myung Pyo Jeong and Hojung Kim

National Institute of Agricultural Sciences, RDA, Wanju 53365, Korea

The purpose of the farmstead-specific early warning service system for weather risk management is to develop custom-made risk management recommendations for individual farms threatened by climate change and its variability. This system quantifies weather conditions into a "weather risk index" that is customized to crop and its growth stage. When the risk reaches the stage where it can cause any damage to the crops, the system is activated and the corresponding warning messages are delivered to the farmer's mobile phone. The messages are sent with proper recommendations that farmers can utilize to protect their crops against potential damage. This system is connected to various system components, which consists of estimation of farm-level weather data with 30~270 m grid, calculation of crop specific risk index and delivery of risk warnings to farmers with relevant recommendations to avoid or reduce damage. It also includes distributed web GIS service with visual grasp (http://new.agmet.kr) and mobile text service that notify individual farmers in the service area. In 2017, It was employed and implemented in a rural catchment (6,195.9 km^2) in the Seomjin river basin with diverse agricultural activities. There were 600 volunteer farmers participating in this project in order to get the user-specific weather risk information. The empirical studies have been conducted since 2014 under a 4-year (2014-2017) plan to make the system fully operational by a NAS cooperative research program (Project No. PJ010007). The diverse experience obtained through this study will be highly useful in planning and implementing a nation wide disaster early warning system for the agricultural sector. The system is a great leap forward in protecting agriculture exposed to weather extremes under climate change and its variability. This service system will be promoted nation wide starting 2018.

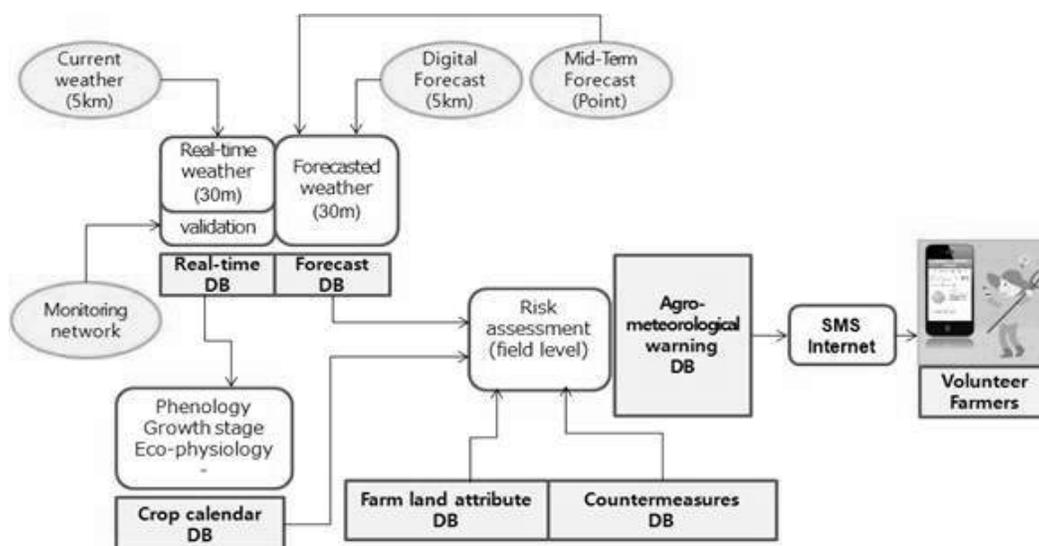* Correspondence to : kmshim@korea.kr

Fig. 1. Information flow of the farmstead-specific agro-meteorological Early Warning System for weather risk management.