

Application of Weather and Climate for Agriculture

The World Agricultural Outlook Board (WAOB), created by the Secretary of Agriculture in 1977, serves as the Departmental global economic intelligence focal point for gathering information and analyzing developments that affect agriculture. Under the Board's direction, interagency committees of experts develop official forecasts of supply, utilization, and prices for commodities. The Board is also responsible for coordination and clearance review of all commodity and agricultural outlook and situation analyses prepared within the Department of Agriculture. A major WAOB responsibility is to improve the consistency, objectivity, and reliability of outlook and situation material developed in the Department. Parallel to its role in Departmental forecasting work, the Board coordinates weather, climate, and remote sensing activities among USDA agencies. In addition, the Board has operational global responsibility for monitoring and analyzing the impact of weather on agriculture.

A primary focus of public interest is the monthly *World Agricultural Supply and Demand Estimates* report released by the Board. The forecasts in this monthly report, covering major commodities for the United States and the world, are considered authoritative as they are backed by USDA's unparalleled access to information and are based on a systematic and objective process. This report is considered as the benchmark for both government and industry. Information disseminated by the Board is used for essential production and trade decisions by farmers, ranchers, agribusiness, commodity traders, exporters, food processors, farm input suppliers, and other domestic and foreign agricultural sectors.

Weather plays a crucial role in agriculture. Daily farm management decisions are often dictated by weather events. Crop success or failure is determined by seasonal weather conditions. Extreme weather events and severe weather and climate anomalies can result in economic hardships at the regional and national levels.

How is weather information used by the Board? A staff of meteorologists from the National Weather Service work closely with agricultural meteorologists of the Board to gather and analyze global weather data. This activity, conducted jointly by NWS and WAOB since 1978, is referred to as the Joint Agricultural Weather Facility (JAWF). JAWF is located at USDA. Accurate assessments of weather's impact on crops, grown throughout the world, contribute significantly to improving short-term supply/demand forecasts. Great strides have been made by JAWF in obtaining near real-time weather monitoring tools, and in gathering more comprehensive crop and climate data for better analysis of weather's impact on crops during the growing season.

On a daily basis, meteorologists track global weather developments and keep analysts informed of forecasts and predictions in the major crop areas around the world. The agricultural meteorologists interpret the impact of seasonal weather to date on crops at their various growth stages. As part of a daily package of commodity and weather highlights, the Board sends a written summary of daily agricultural weather conditions, including NWS outlooks for the next 6-10 days, to the Secretary of Agriculture and top departmental staff.

The *Weekly Weather and Crop Bulletin*, published since 1872, has been a major responsibility of JAWF since 1978. Agricultural weather summaries of all major crop areas around the world are included in this report and are released to the public every Wednesday. The Board also formally briefs the Office of the Secretary each week on major commodity and weather developments.

The importance of weather information for commodity analysis can not be over emphasized. Weather data are closely scrutinized to analyze the impact on crop yield potential. The monthly crop forecasts, which are used to revise the global supply and demand estimates, reflect the impact of observed weather during the growing season. Errors in the crop forecasts associated with critical growth stages may be introduced by imprecise information with respect to timing of weather events or by weather forecasts which do not verify. To narrow the crop forecasting error in its monthly revised estimates, the Department employs a normal weather assumption with respect to the remainder of the crop season. Valuable information is, however, gleaned from weather and climate predictions as an early-alert to help narrow scenarios for the remainder of the growing season.

The advancement of the science of meteorology for agricultural applications is assigned a high priority by USDA. To this end, USDA's Chief Meteorologist is responsible for coordinating weather-related activities in the Department and represents USDA's weather information needs to other Federal agencies, international bodies, and scientific organizations. The productive relationship USDA has long enjoyed with DOC for the purpose of advancing agricultural meteorology exemplifies the benefits of interagency cooperation. USDA looks forward to continuing this relationship.