



Agriculture's Adaptability to Climate Change
AFBF Policy Development
May 2014

Issue:

Farmers and ranchers have been responding to climate change since they first put seed in the ground and herded livestock. Whether or not one believes the climate is changing or whether humans are the cause of that change, from a food supply standpoint, agriculture needs to be as resilient as possible.

Questions:

What policies and approaches should the organization promote to help farmers and ranchers handle more extreme weather events?

What private-sector responses would best assist farmers and ranchers in managing their business through adverse weather?

What can the land grant universities do to provide unbiased information? How can Farm Bureau help the land grant universities with their core mission of supporting farm research?

Background:

With a potential increase in the frequency of adverse temperature and precipitation events, farmers need to understand how changing seed technology, tillage systems, and cultural practices like cover crops can be used to lower yield risk as well as potentially improve their environmental performance. Seed companies have been researching drought-tolerant seed hybrids that are better at managing water during drought conditions than non-drought tolerant plants. Similarly, improved seed coating technology is allowing producers to plant seeds in colder soils previously deemed too risky to plant. Producers may decide to change their tillage systems or adopt cover crops to increase the soil's organic matter level. Increasing the amount of organic matter in the soil will increase the soil's ability to hold water, and that will help mitigate heat and moisture stress. The land grant university research farms can provide an unbiased evaluation and resource to farmers to help them understand the profitability of the alternative agronomic practices and the ability of these cultural practices to reduce risk in response to changes in temperature or precipitation.

Farmers will need access to the best seed technology available to better mitigate temperature and precipitation extremes as well as the pests accompanying these extreme events. The ability of plant breeders to use biotechnology to improve a plant's ability to resist weed or insect pressure will be important in managing yield risk. Public policy problems of asynchronous approval and low-level presence of non-approved GMO varieties will continue to hamper the release of new varieties into the market due to concerns of being able to export these new grains to markets that have not approved of the varieties.

Livestock producers, particularly those dependent on pasture, range and other forage sources for grazing and access to adequate water also need the tools that research and innovation can provide. These tools may include improved weather forecasting, drought-tolerant grasses and forage crops, and regulatory flexibility and cooperation from federal agencies to access public lands and water during prolonged drought. Relative to public land grazing, this includes the federal government doing its part to control invasive species—whether plant or animal—and more aggressive action to control pest pressures on rangelands.

The precision farming data producers have been collecting may be used by agronomic experts to identify the areas on the farm or in the region that may be the most at risk from changes in temperature or precipitation. The ability of a farmer to compare the specific field-level data to similar farms in the area will improve the management of the soil resources and help farmers understand what practices their neighbors are using on similar soil types that are effective against adverse precipitation and temperature.

This “big data” technology may provide important information to plant breeders as they will have access to more-detailed information on a crop grown in a field environment instead of on a carefully controlled research test plot. Plant breeders and agronomic experts can work together to help farmers use a prescriptive fertilizer, seed and pest management production system to meet their soil resource capability and expected temperature and climate.

The collection of this field-level data may help the coordinators of the data systems develop more effective risk management insurance products that are more accurately rated to a particular field’s risk. This may cut both ways for farmers. A field with fewer soil types and less yield variability may have a lower cost insurance product than a field with more soil types with greater yield variability. Insurance premiums will increase with the amount of risk as the insuring company has access to more detailed yield information and can more accurately determine an actuarially fair premium rate. The use of “big data” will reduce the waste, fraud and abuse associated with crop insurance, which will improve the entire industry.

Farm Bureau Policy

503 – Climate Change

Line 1 – Market-based incentives, such as pollutant credit trading, are preferable to government mandates.

Line 2.1 – [We support:] A voluntary market-based carbon credit trading system;

Line 2.2 – Compensation to farmers for planting crops that keep carbon in the soil;

Line 2.3 – Alternative energy sources;

Line 2.4 – Incentive to industries to increase energy efficiencies;

Line 2.5 – Market-based solutions to reduced greenhouse gas emissions;

Line 2.6 – EPA re-evaluation of burdensome emission control rules for farming; and

Line 2.7 – Inclusion of agricultural community in development of any policy or legislation

461- Research

Line 2.1 – [We support] USDA research, extension and education programs that are initiated by partnerships between federal, state and local governments and are carried out through universities and USDA. These programs should reflect and be tailored to the unique soil, environmental and socioeconomic makeup of regions, states, and locales:

337 – Biotechnology

Line 7.8 – [We support] The maintenance of U.S. export markets by securing foreign regulatory acceptance of biotech products. Sellers of agricultural products enhanced through biotechnology should assume major responsibility for this acceptance. Extra efforts should be made to make farmers aware of markets where the products are not accepted by using such methods as color markings on bags, boxes, bulk delivery systems and/or seed tags.