

Logic Model for Agronomic Cropping Systems

North Central Agricultural and Natural Resources Program Leaders

Situation: The NC Region is the breadbasket of field crop production for the U.S. Our 12 states annually harvest about 68 million acres of corn for grain, 62 million acres of soybean, and 29 million acres of wheat, which account for 85, 81, and 57% of U.S. acreage, respectively. These crops returned approximately \$74 billion to growers in 2009 and contributed 15.6 billion bushels of product for the nation's food, feed and energy needs. Numerous other crops also contribute to the economic sustainability of NC growers and benefit of society. For example, NC growers produce over 70 percent of the nation's dry edible beans and sugar beets, about 90 percent of the sunflowers and nearly all flax and canola. These growers need education on the latest crop technology and decision-making tools to remain profitable in the face of high input and land costs and to continue to support global food security.

Assumptions: Demand for commodity grains will continue to support their production and marketing. Global competition and bio-energy policy provide risk to grain prices and input costs of fuel, seed, fertilizer, and land have been trending higher. Profit margins may erode and the safety net supplied by future farm bills is uncertain. New seed, chemical, fertilizer, and equipment technologies will enter the market and need local adaptation. Overall, increased volatility in input and output prices is making independent analysis of alternative production practices even more valuable, and the price volatility is not expected to change in the foreseeable future.

External Factors: Litigation, government regulations, and foreign approval will affect availability of transgenic technologies. Increased pressure from the public and environmental groups may play a key role in policies. Energy policies may affect the demand for current or new bio-fuel crops. Land ownership, age of farmers, and farm size may affect production decisions. Private entities will compete in delivering information and products in their self-interest. Finally, reduced extension budgets will limit the number and capacity of extension staff to provide the necessary educational programs.

Economic Sustainability – Agronomic Cropping Systems Logic Model



