Agriculture in the USA and other industrialized countries has become increasingly specialized in response to political, regulatory, and economic pressures to meet market demands of an ever-larger food and fiber-processing sector. However, there is a growing concern with specialized agricultural systems, because of increasingly negative responses from the environment that are manifested in (i) water contamination with excessive nutrients, pesticides, and pathogens; (ii) decreasing groundwater levels due to high demand and competition from a variety of stakeholders, including specialized crop production; (iii) rising greenhouse gas concentrations from soils depleted in organic matter; and (iv) dysfunctional soils that have become degraded from excessive tillage, salt accumulation, and pesticide inputs. Alternative agricultural systems that integrate crops and livestock could provide opportunities to capture ecological interactions to make agricultural ecosystems more efficient at cycling nutrients, relying more on renewable natural resources, and improving the comprehensive functioning of soils while achieving acceptable or improved economic returns for the farmer.

A symposium was convened at the 2005 ASA-CSSA-SSSA Annual Meeting in Salt Lake City, UT, to address the theme “Integrated Crop–Livestock Systems for Profit and Sustainability.” The goals of the symposium were to (i) highlight the benefits and costs of integrated agricultural systems in comparison with specialized systems, (ii) describe some climate- and scale-specific opportunities for successful integration of crop and livestock operations, and (iii) attract a diversity of agricultural scientists and other agricultural professionals who together could creatively and successfully bridge the gap between current and future agricultural systems. The design of future agricultural systems should rely on a healthy balance of historical, current, and idealistic perspectives.

The five papers published in this issue of Agronomy Journal as a result of the symposium held in Salt Lake City in 2005 describe potential opportunities and challenges to make agricultural systems more economically and environmentally sustainable. The focus of several of the papers has been intentionally specific to a particular climatic region, because of the unique ecological conditions that dictate by weather conditions and economic dynamics. Examples from other climatic regions are included to highlight particular opportunities for successful integration of crop–livestock systems, that is, whether integration is within- or among-farms. They also present the difficult steps necessary to advance the successful development of modern integrated crop–livestock systems will require a bold, multi-stakeholder, the size of which demands broad participation by biophysical and socioeconomic scientists, land practitioners, and other concerned stakeholders.

Russelle et al. (2007) take a broad view on the cold and subhumid climatic regions of the central USA and western Canada by describing agronomic and environmental advantages of cropping systems that include perennial forages in livestock with cropping; (iii) concerns with integrated crop–livestock systems, that is, whether integration is within- or among-farms. They also present the difficult steps necessary to advance the successful development of modern integrated crop–livestock systems will require a bold, multi-stakeholder endeavor, the size of which demands broad participation by biophysical and socioeconomic scientists, land practitioners, and other concerned stakeholders.

Allen et al. (2007) focus on the hot and dry climatic region of the southwestern USA by describing the opportunities for and benefits of integrating grazing strategies with traditional grain cropping systems. The early stages of a long-term, integrated grazing experiment being conducted in Illinois are described. The objective is to improve the nature and scale of integrated crop–livestock systems through the integration of nutrient use and possibilities for improved animal management; and (iv) the nature and scale of integrated crop–livestock systems, that is, whether integration is within- or among-farms. They also present the difficult steps necessary to advance the successful development of modern integrated crop–livestock systems will require a bold, multi-stakeholder endeavor, the size of which demands broad participation by biophysical and socioeconomic scientists, land practitioners, and other concerned stakeholders.

Sulc and Tracy (2007) focus on the cool and humid climatic region of the northern USA by describing the potential opportunities and challenges faced by stakeholders in integrated crop–livestock systems. They outline the short- and long-term challenges to make agricultural systems more economically and environmentally sustainable. The focus of several of the papers has been intentionally specific to a particular climatic region, because of the unique ecological conditions that dictate by weather conditions and economic dynamics. Examples from other climatic regions are included to highlight particular opportunities for successful integration of crop–livestock systems, that is, whether integration is within- or among-farms. They also present the difficult steps necessary to advance the successful development of modern integrated crop–livestock systems will require a bold, multi-stakeholder endeavor, the size of which demands broad participation by biophysical and socioeconomic scientists, land practitioners, and other concerned stakeholders.

Franzluebbers (2007) focuses on the tropical region of the southeast USA by describing the potential opportunities and challenges faced by stakeholders in integrated crop–livestock systems. They outline the short- and long-term challenges to make agricultural systems more economically and environmentally sustainable. The focus of several of the papers has been intentionally specific to a particular climatic region, because of the unique ecological conditions that dictate by weather conditions and economic dynamics. Examples from other climatic regions are included to highlight particular opportunities for successful integration of crop–livestock systems, that is, whether integration is within- or among-farms. They also present the difficult steps necessary to advance the successful development of modern integrated crop–livestock systems will require a bold, multi-stakeholder endeavor, the size of which demands broad participation by biophysical and socioeconomic scientists, land practitioners, and other concerned stakeholders.