

## Integrating Crops and Livestock



## Cost Reduction

- Manure = fertilizer
- Stretch feed supply
- Break pest and weed cycles

## Income Benefits

- Marketable cover crop
- Diversify income streams
- Eco credits



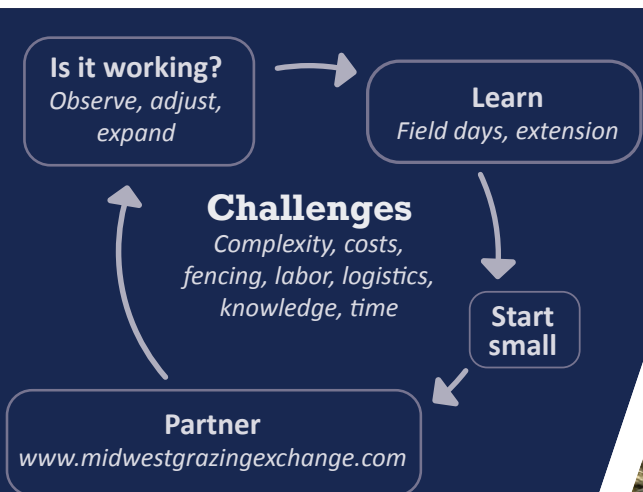
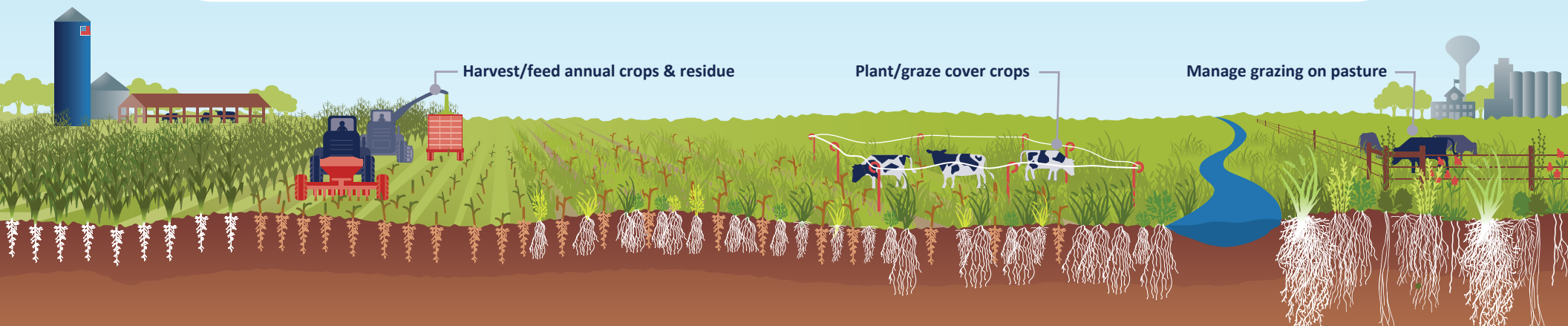
## Soil Benefits

- Improve fertility
- Enhance water infiltration
- Increase organic matter



## Community Benefits

- Support local farms and businesses
- Safeguard local water
- Build relationships
- Opportunities for new farmers



## Let's Talk!

## What's in this picture?

This infographic is intended to illustrate a spectrum of options for farmers wishing to capture the benefits of integrating livestock. Benefits include availability of a low-cost carbon-dense nutrient source from livestock waste, the potential to stack multiple enterprises, sharing equipment and partnering with neighbors, and reducing soil and nutrient loss from runoff.

- Starting at the left-hand side of the infographic: Crop farms can add value by feeding crops and crop residues to livestock. Many farms use a system in which livestock are confined and harvested crops are brought to them. Manure is hauled out to the fields and used as fertilizer.
  - This system has the benefit of generating manure, a resource to return nutrients and organic matter to the soil.
  - Harvesting and transporting crops and manure has drawbacks, though. Even if the farmers are only hauling a short distance there is fuel use, wear and tear on equipment, and a worker's time to do the hauling.
- Moving from left to right, planting cover crops into residue from a harvested crop can reduce soil erosion and generate feed for livestock. The roots of the harvested corn crop are brown, indicating dying and decaying. The newly planted cover crop, though, starts growing and putting down roots even late into the fall. Living roots of the cover crop are white.
  - This practice of cover crops planted into crop residue extends the feed supply for livestock, generates a manure resource, and keeps soil covered with living roots in the ground through the fall and winter.
  - If the cover crop is harvested and transported to animals, this system still includes fuel use, equipment wear and tear, and worker time for hauling.
- Further to the right, temporary electrified fencing allows livestock out to graze the cover crops, harvesting their own feed and depositing their own manure on the field.
  - This practice of grazing cover crops extends the feed supply for livestock and generates a manure resource; while also reducing fuel and equipment use and keeps soil covered with living roots in the ground through the fall and winter.
  - Labor and infrastructure costs associated with grazing cover crops are not as significant as many crop farmers may think and there may be cost sharing available to help with fencing expenses.
- Next there's a stream running through the fields. Cover crops and temporary grazing keep living roots in the soil, where they hold soil in place and collect and hold nutrients. Holding nutrients in a cover crop keeps them from being lost to surface or groundwater, thus reducing fertilizer costs.
- All the way to the right-hand side, there is an area of permanent pasture with diverse perennial forages. Crop and livestock systems benefit from including some perennial pasture. It's a place where livestock can graze during seasons when crop residue and cover crops are not available. The highly developed root systems of perennial plants are superstars at holding on to soil, too!

In all of these aspects of a crop and livestock system, there is potential for crop farmers and livestock farmers to work together and add value to other businesses in their community. There's no requirement that the same farmer must run all the enterprises needed for a crop and livestock system!

- Cover cropping could be an opportunity to hire custom operators to plant the cover crops - with equipment on the ground or in the air.
- Bringing livestock onto a crop farm for temporary grazing could create an opportunity for a beginning farmer to manage the grazing system.
- Managed grazing of cover crops on a crop farm could provide a welcome extension of the grazing season for a neighboring livestock farmer. Many livestock farmers are willing to truck livestock in order to keep them grazing and reduce feeding of stored feed.

Visit the Midwest Grazing Exchange to find opportunities to connect crops and livestock! [www.midwestgrazingexchange.com](http://www.midwestgrazingexchange.com)

Literature review for crop+livestock integration infographic