Chapter XX. Agriculture, Land Use, Food, and Sequestration.

Agriculture and Land Use Emission Goals

The University of Illinois possesses and manages extensive land holdings both on-campus and off-campus. The estimates for carbon emissions for the on-campus land holdings have not been well documented. Before strategies for carbon emissions can be put into place, we first must understand the sources of emission more thoroughly than we currently do. For example, it appears that ag emissions are solely based upon animal numbers on the south farms. There are at least 3000 acres of farmland most of which receives fertilizer, pesticide applications, tillage, etc. that may offset or cause net carbon emissions from these cropping practices. A more complete accounting of emissions from the agricultural lands on the south campus is needed.

Food System Emission Goals

Dining services has made excellent progress in terms of procuring foods locally and continuing to look for methods to reduce environmental impact. Examples include the purchase and installation of a number of aerobic digesters that help reduce the food waste coming from dining services. Dining services has partnered with the student sustainability committee to run a pilot project on the Student Farm to examine the feasibility of using vermicomposting to dispose of pre-consumer food waste.

The goals for the campus food system is to increase purchases of local foods to 40% by 2020. An additional goal is to get the non-U of I, on-campus dining systems (e.g. Illini Tower, Bromley Hall, Hendrick House, Espresso Royale, etc.) to participate in and work to meet these goals.

Sequestration Goals

Convert a minimum of 50 acres of U of I farmland to an agroforestry model to produce income from wood products while sequestering carbon and providing other ecocsystem services. This would require a financing model to replace the income that would be lost during the establishment phase of the conversion.

**Agriculture and Land Use Objectives**

1) Decrease emissions from direct farming activities by 20% by 2020.

2) Decrease emissions from the farm vehicle fleet by 20% by 2020.

**Food System emission Objectives**

1) Increase local food purchases to 40% by 2020.

2) Reach zero food waste into landfills by 2020.

3) Engage on-campus food providers to meet these same objectives.

**Sequestration Objectives**

1) Convert 50 acres of U of I farmland to agroforestry by 2020.

**Agriculture and Land Use Strategies**

1) Convert 50 acres of farmland to agroforestry/pasture production. Sell carbon credits to cover the conversion costs. Sell pasture production as hay crop and use the wood production to heat buildings on the south farms that are outside of the steam distribution system on campus.

2) Increase the use of cover crops and other strategies that reduce carbon emissions.

**Food System Strategies**

1) Continue to work with local farmers and food hubs to develop a market for local foods that can result in a greater use of local foods by dining services.

2) Use vermi-composting or anaerobic digesters to dispose of pre and post-consumer food waste

3) Gather data from campus restaurants and non-U of I food service providers on food waste and food purchasing.

4) Implement a project to examine Dining Services operations to determine what local food purchases should be targeted. Dining Services is commended for the strides they’ve made in purchasing food locally. Research should be undertaken to determine which local food purchases contribute the most to greenhouse gas reductions. Effort should then be placed in building up local availability of those items.

5) More information on the environmental footprint of the aerobic digesters used in dining services should by determined. Are they the best option for disposing of food waste?

**Sequestration Strategies**

1)Investigate the use of biochar as a soil amendment to increase agricultural production while sequestering carbon.

2) Encourage the adoption of composting as a waste disposal option for campus.

3) Develop agroforestry on U of I farmland as a means to store carbon, create ecosystem services, and produce income.