**Organic Footprint Project** (OFoot) 2010-13, supported by a USDA grant and involving collaboration of Washington State University's Center for Sustaining Agriculture and Natural Resources (CSANR) with six selected focus farms in Washington State. Project leader: Dr. Lynne Carpenter-Boggs.

## OFoot Project Summary

This project addresses needs of 3 stakeholder groups: organic producers, organic certifying agents and agencies, and purchasers/traders of carbon credits. These groups need a scientifically sound yet simple estimation of the carbon and nitrogen sequestration and net greenhouse gas (GHG) balance likely in a given organic cropping system scenario.

Both a research model and a Life Cycle Analysis (LCA) tool will be developed through this project. The LCA tool will evaluate the impacts (contribution or mitigation) of organic farming methods on climate change. Currently, LCA is the purview of academics and consultants. Working with organic producers to develop a generally useful LCA tool could lead to organic farming methods and systems that maximize soil carbon storage, minimize greenhouse gas production, minimize total carbon footprint, and thereby contribute further to critical ecosystem services including global temperature moderation. A small set of "Focus Farms" will be involved in shaping the contents and format of the LCA tool, serving as validation sites for the model outputs, and as assessment sites for system-level LCA analysis.

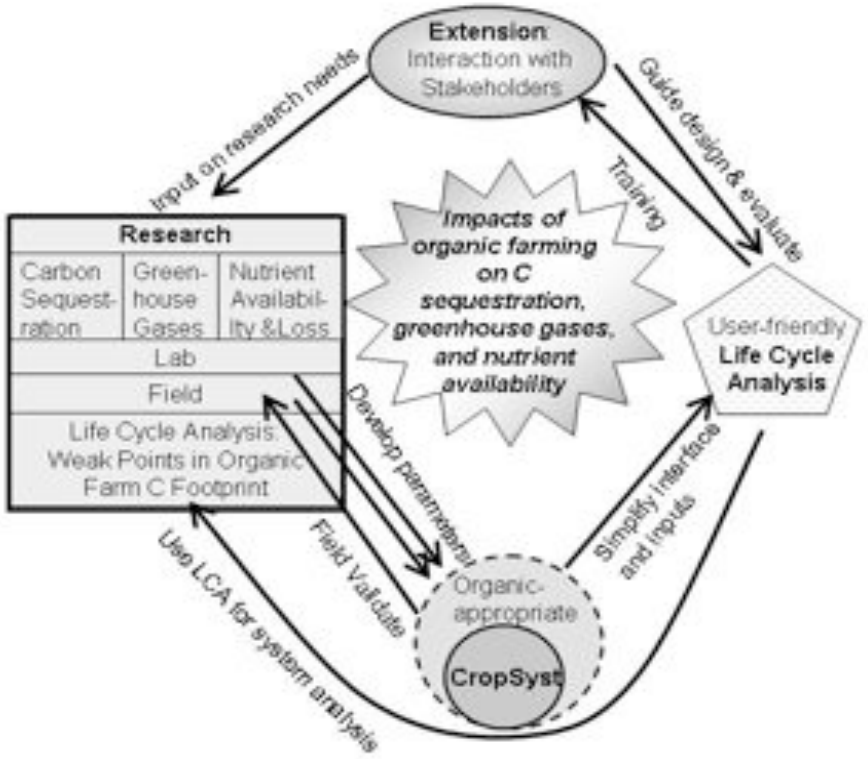
**Goals:**

**Goal 1.** Determine the carbon sequestration, greenhouse gas balance, and nutrient availability effects of common inputs, crops, and practices used in organic farming. Conduct laboratory and field experiments to parameterize and evaluate predictive models.

**Goal 2.** Elaborate on the current CropSyst® model to enable quantitative prediction of the carbon-, nutrient-, and greenhouse gas-related ecosystem services of operations common to organic farming.

**Goal 3.** Develop a simplified model with LCA capabilities (OFoot 1.0) to allow the evaluation by farmers, agencies, extension personnel, and organic certifiers of greenhouse gas (GHG) emissions, carbon sequestration, and nutrient balance under user-specified organic farms conditions.

**Goal 4.** Conduct educational outreach and trials. Train organic producers and organic certifiers to use the LCA tool for soil C management.




**Goal 5.** Utilize the LCA tool for a minimum of 5 commercial certified organic farms and 2 certified organic research fields. Assess the relative importance of C sequestration, $N_2O$ efflux, transportation, and input choices on a total farm carbon footprint.