**Data sources**

1. S. R. Potter et al., “Model Simulation of Soil Loss, Nutrient Loss, and Change in Soil Organic Carbon Associated with Crop Production.”
2. USDA/NASS QuickStats Ad-hoc Query Tool, <https://quickstats.nass.usda.gov/>

**LCI from data source [1]**

1. Soybean acres harvested:

Direct download.

1. Soybean acres fertilized:

Only county level total field crop area fertilized was available.

Formula used:

Fertilized soybean crop area in county = (soybean crop area in county/ all field area in county) \* total fertilized field crop area in county.

1. Fertilizer applied: Only state level totals available.

Formula used:

Fertilizer applied in county = (fertilized soybean crop area in county/ total fertilized crop area in the state) \* fertilizer applied for all counties.

1. Water applied: County wise soybean irrigated acres was available. It was multiplied by the all-county average water applied per acre which was available to get county wise water used.

**LCI from data source [2]**

1. Emissions were reported only per acre of soybean for upper Midwest region.

Formula used:

Emissions per acre in county = (emissions per acre in upper Midwest region \* total soybean crop area in Indiana) \* (fertilized soybean crop area in county / total soybean crop fertilized in Indiana)

1. N bio-fixation as farm input. Used the reported value in per acre units.