Sustainability Information

~ A Life Cycle Assessment (LCA) Digital Commons

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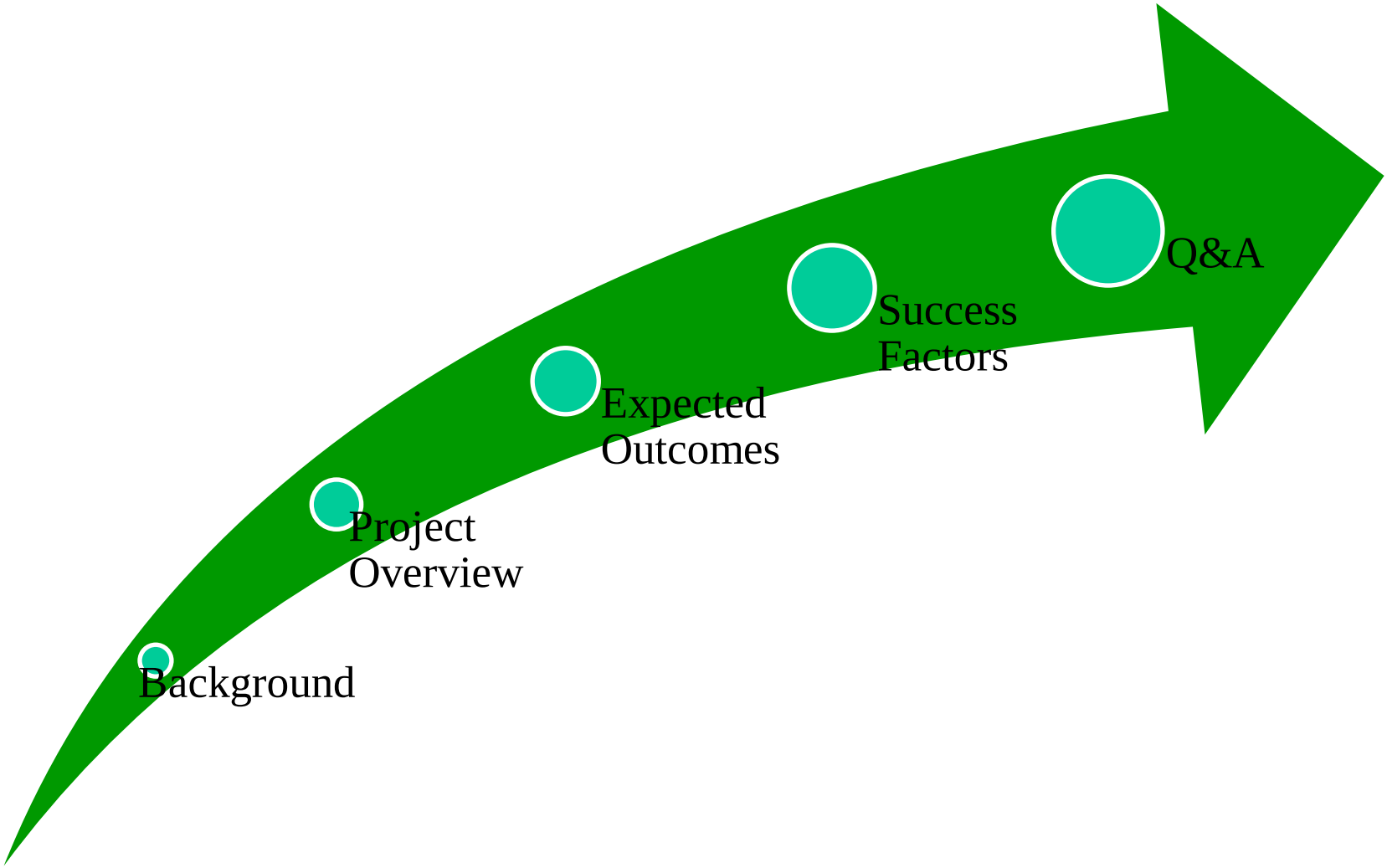
Simon Liu, Ph.D.
Director, National Agricultural Library

Agenda


Background
Project Overview
Expected Outcomes
Success Factors
Q&A

Product Life Cycle – Soybean





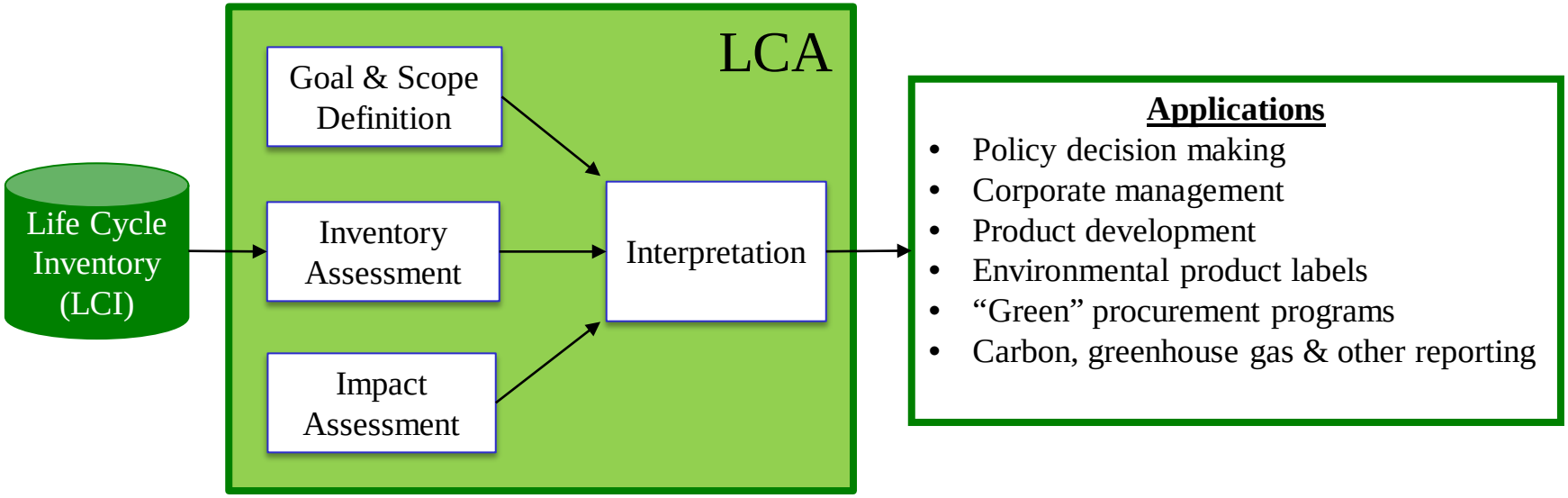




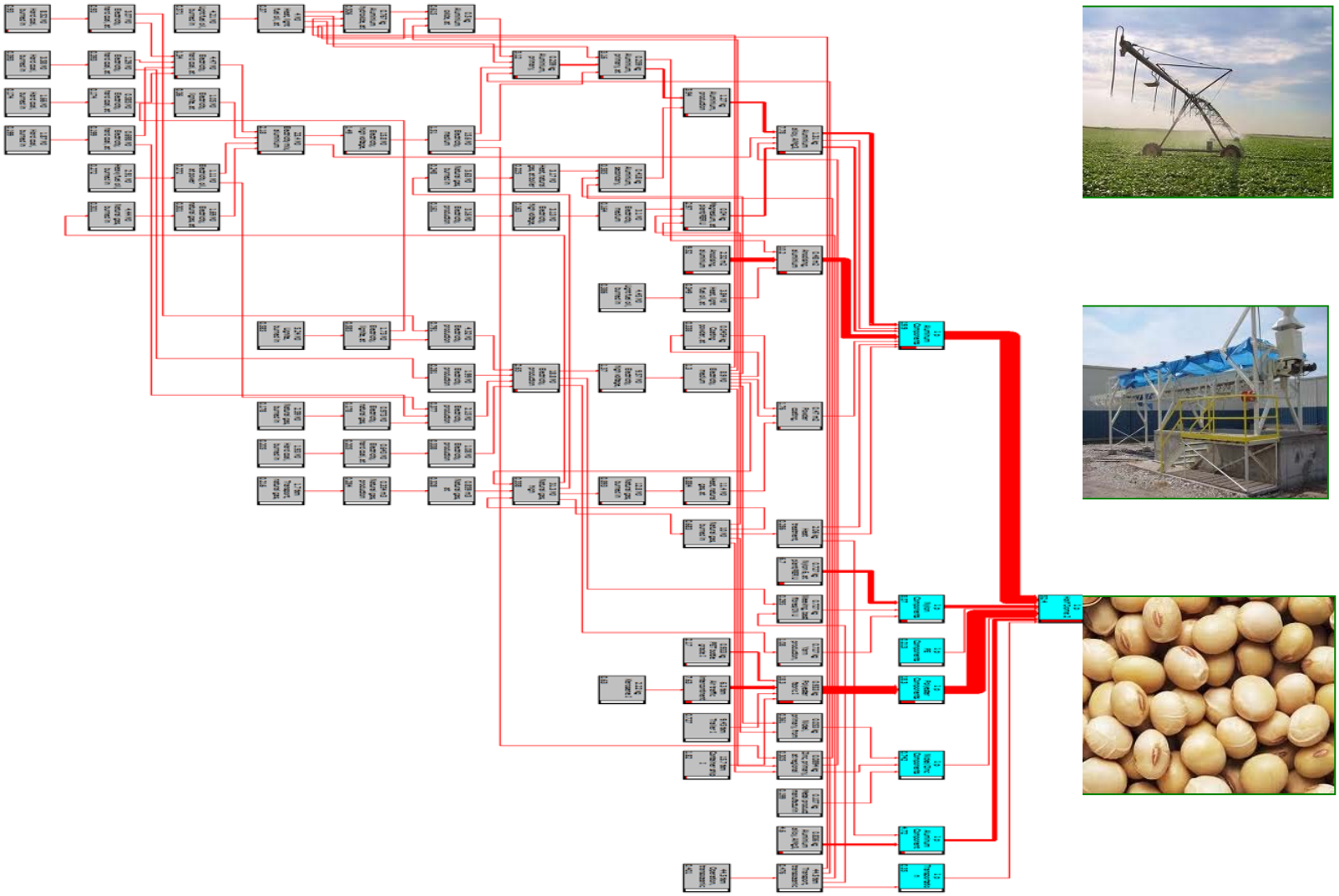


Life Cycle Assessment (LCA)

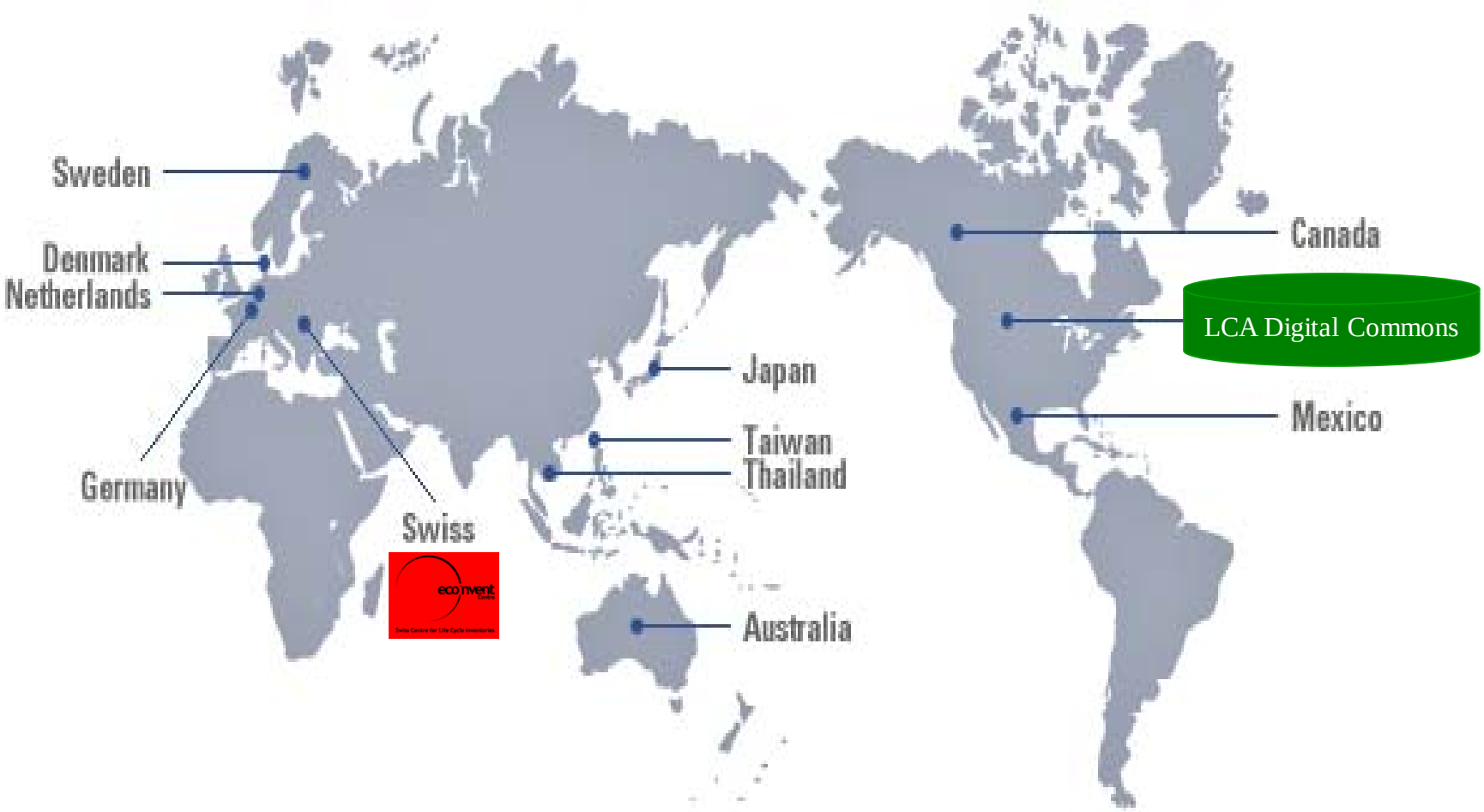
- **Life Cycle Assessment (LCA) –** The assessment of the environmental, economical, and social impact of a given product (e.g. Soybean) throughout its lifespan.



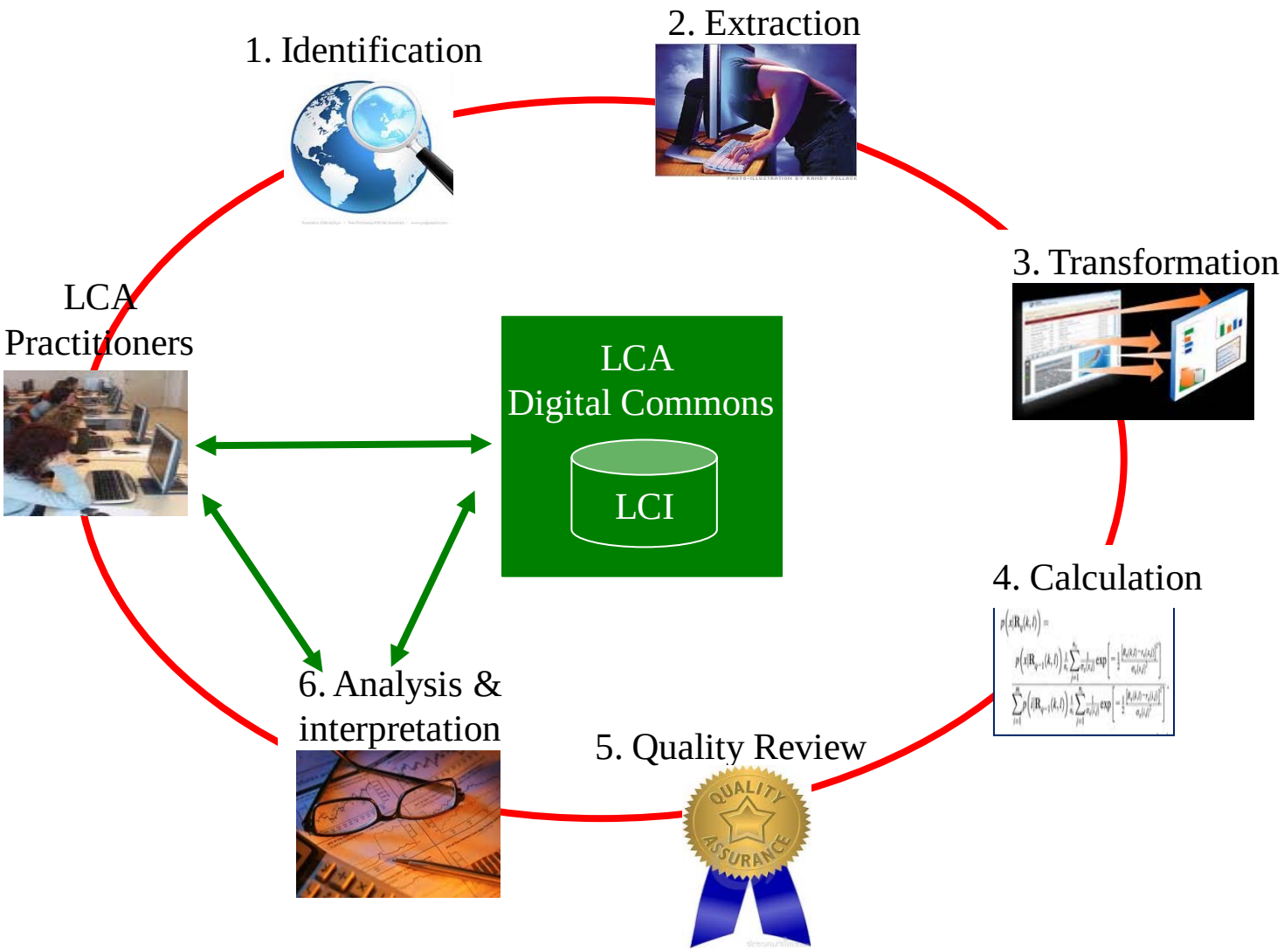
LCA Is Data Driven



Global LCA Information Landscape



Need A LCA Digital Commons



Project Approach

- Phase I
  - Organize project team & committees
  - Develop project plan
  - Collaborate with partners
  - Develop system architecture, standards, guidelines & procedures
- Phase II
  - Develop a prototype
  - Acquire, harvest & adapt existing LCI data
  - Collect, analyze, and review new LCI data
- Phase III
  - Disseminate data
  - Expand the database & network
  - Conduct research

Collaborators & Partners

Data Producer Community
- USDA (NIFA, ERS, NASS, FS, ...)
- EPA
- DOE
- Others

International Partners
- Ecoinvent (Switzerland)
- CIRAIG (Canada)
- European Life Cycle Database
- Others

LCA Practitioner Community
- Commodities: soybean, cotton, etc.
- American Center for Life Cycle Assessment
- Keystone Field to Market
- The Sustainability Consortium
- Specialty Crop Stewardship Index
- Others

Software & Tool Community
- OpenLCA Framework
- International Reference Life Cycle Data System
- Earthster
- Others

Expected Outcomes – LCI Datasets

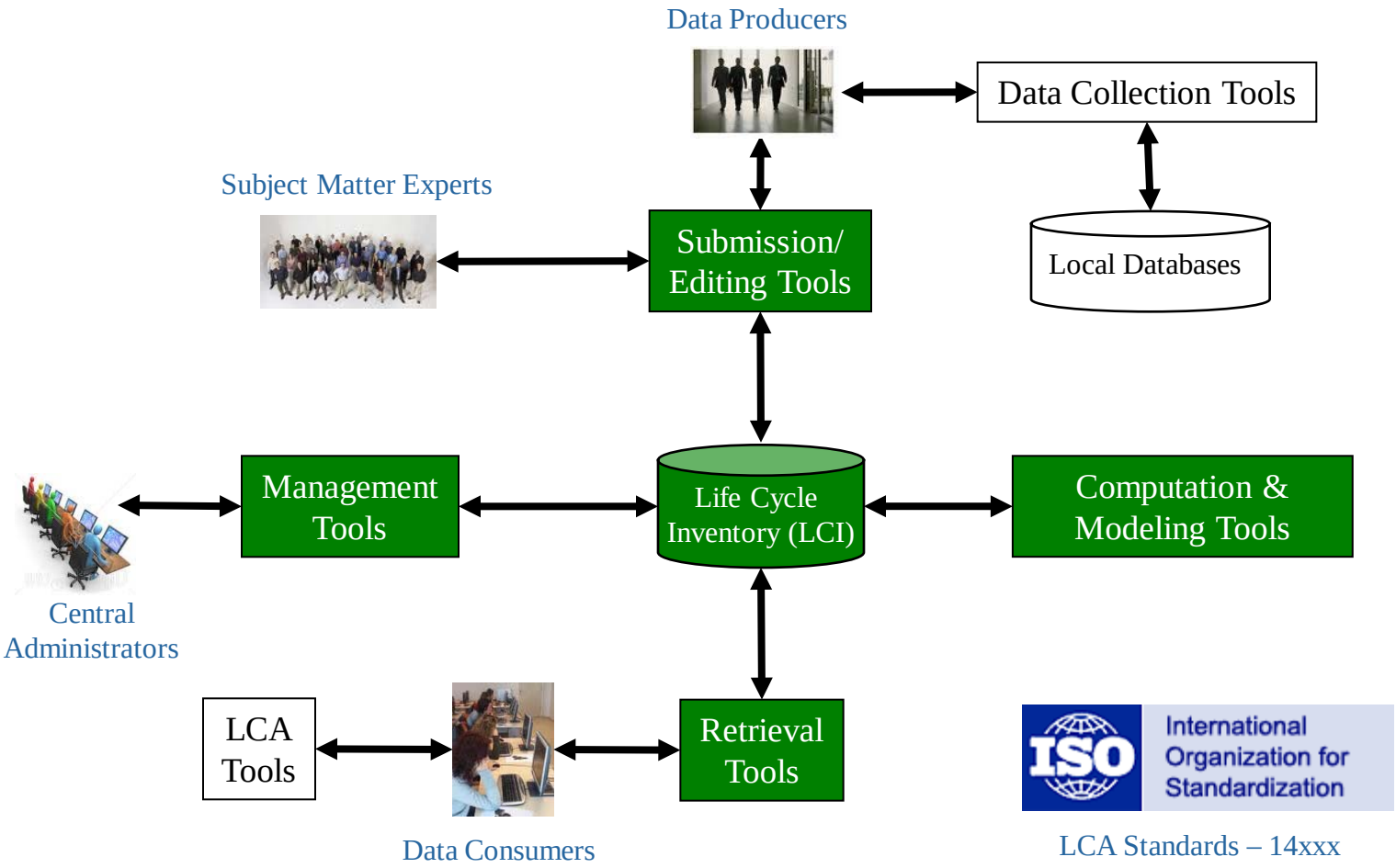
- Data collection in tiers
  - **Tier 1 data: crop production** with unit processes by *year-state-crop (2005-Nebraska-corn)*
  - **Tier 2 data: agricultural means of production/work processes** *(e.g., pressure irrigation, surface water, KY, 2003)*
  - **Tier 3 data: supporting processes**

    (e.g., *diesel production)*
- Tier 1 and 2 data derived from NASS (yield) and ARMS; Tier 3 data derived from a variety of sources including ARMS

Field Crops

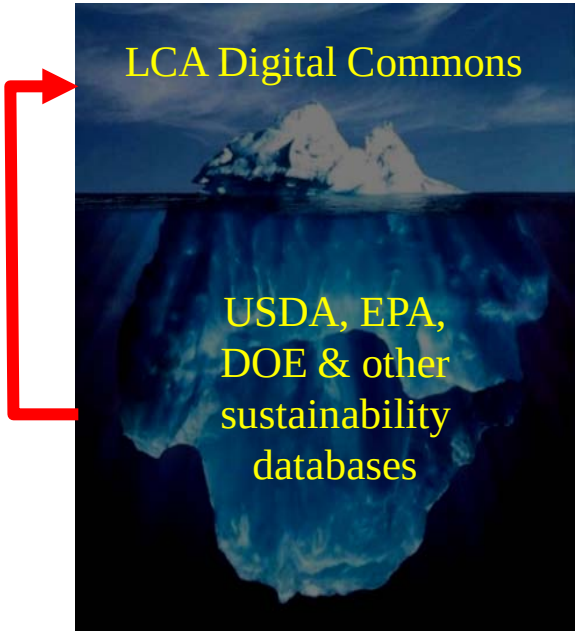
- Corn (1996, 1997, 1998, 1999, 2000, 2001, 2005)
- Soybeans (1996, 1997, 1998, 1999, 2000, 2002, 2006)
- Oats (2005)
- Spring, durum, and winter wheat (1996, 1997, 1998, 2000, 2004)
- Cotton (1996, 1997, 1998, 1999, 2000, 2003, 2007)
- Sorghum (2003)
- Barley for malt, barley for feed (2003)
- Peanuts (1999, 2004)
- Rice (2006)

Expected Outcomes – A Digital Commons



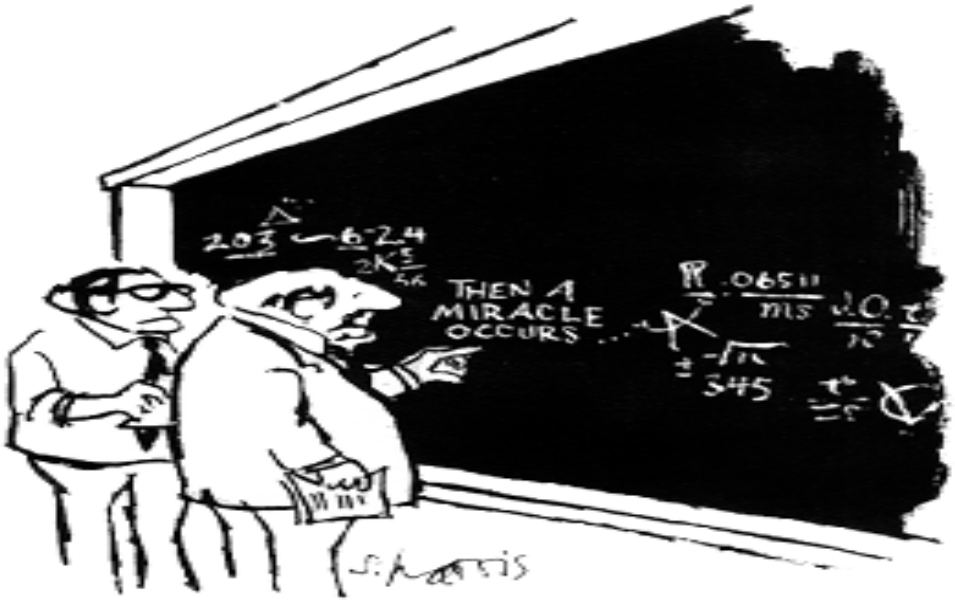
Expected Outcomes – Advance Sustainability

- Provide open access
  - Move sustainability datasets from deep to surface web
- Maximize return on sustainability research investments
  - Reuse sustainability datasets
  - Preserve sustainability datasets
  - Avoid duplication efforts
- Mature sustainability practices
- Speed up sustainability research
  - One-stop resource
  - Integrated view
  - Intelligent tools



Success Factors

- Data Transparency
- Data Quality
- Comprehensiveness
- Reliability
- Interoperability with partners & tools



"I think you should be more explicit here in step two."

Q&A

Simon Liu
simon.liu@ars.usda.gov
301-504-5248