Reward management
Maximize sequestration
Document outcomes

Estimate mitigation potential
Measure and monitor carbon
Meet standards

Carbon dynamics
Feasible monitoring tools
National MRV systems

Alternative management
Systems for harmonizing data
Harmonizing guidance

Goals
Functions
Research
High-level conclusions

• Solid foundation of knowledge, experience, tools, data, and guidance

• Need cost-effective tools / methods and spatially-resolved data-gathering
  – for all land classes, regions, and carbon pools

• Diverse circumstances require regionally-relevant mix of
  – management practices
  – measurement approaches and models
## Priority research needs for agriculture

<table>
<thead>
<tr>
<th>Category</th>
<th>Needs</th>
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<tbody>
<tr>
<td>Carbon dynamics</td>
<td>• Soil C distribution – among pools, with depth, over time</td>
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<tr>
<td>Alternative management</td>
<td>• Soil C distribution &amp; residence times</td>
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<td>• Extent of desertification, degradation</td>
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<td>Accounting tools</td>
<td>• Regionally-relevant field data and models</td>
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<td>• Heterogeneous landscapes</td>
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<td>Global data system</td>
<td>• Integrated research and inventory data</td>
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<td>• Data sharing across scales and sectors</td>
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<td>National accounting</td>
<td>• Regional field data, conversion equations</td>
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<td>• Sampling designs</td>
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<td>Reporting guidance</td>
<td>• Methodology development / approval</td>
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<td>• Compatible terms, definitions, standards</td>
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Recommendations

• Greater convergence / consistency
  – research / synthesis
  – models
  – terminology, reporting guidelines

• Network platforms are key
  – facilitate research synthesis, tool development
  – access to tools, databases, technical support, extension
  – structured / convened <--> open source
  – requires motivated participants and continuity of resources
Initiatives underway – some examples

- **Climate Change, Agriculture and Food Security (CGIAR)** – global research program
- **GlobalSoilMap.net (consortium)** – digital soil data
- **GRACEnet (USDA-ARS)** – national database of agricultural practices and emissions
- **Technical Working Group on Agricultural Greenhouse Gases (T-AGG)** – methodologies for agricultural practices
- **Climate Assessment project (Sustainable Food Lab, Unilever, etc)** – common tool for supply chain mitigation
- **EX-ACT (FAO)** – project design tool
Robust, global, integrated scientific/technical infrastructure

• necessary for expanded agricultural mitigation
  – advancement also needed in policy, finance, governance
• most effective if information needs for full range of stakeholders are known and addressed
  – prioritize information delivery
• can be achieved through convergence among existing institutions and initiatives
  – emphasis on networks/platforms