The Organic Research Centre

An overview of the Organic Research Centre's work on sustainability assessment

Round Table on Organic Agriculture and Climate Change Meeting
IFOAM – Bonn, 11-12th July 2013

Laurence Smith
Senior Sustainability Researcher

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Introduction

- Progressive Farming Trust established as Charity in 1980 with endowment from David Astor
- Organic Research Centre is trading name
- Currently ca. 90% of funding from project contracts, 10% from donations
- Two main sites: Elm Farm and Wakelyns Agroforestry (Fressingfield, Suffolk)
- Most research carried out on commercial farms
- Lawrence Woodward OBE Director from 1980-2010
- Nic Lampkin joined ORC as Director in 2009

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ORC's goals

- **Development of genuinely sustainable food and farming systems**
- **Building on organic/agro-ecological principles**
- **Disseminating knowledge**
- **Compiling evidence on performance**
- **Informing public debate**

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Sustainability assessment

Staff

- Bruce Pearce, Team leader
- Susanne Padel
- Catherine Gerrard, data analysis
- Nic Lampkin
- Laurence Smith, Senior Sustainability Researcher

Projects (Defra funded)

- Public goods tool (+ Quality/Environmental benchmarking)
- FBS environmental benchmarking scoping study
- Farming Systems Assessment Methodology
- Greenhouse Gas Platform

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Public Goods Tool: basic principles

- Rapid assessment to determine Public Goods delivery
- Immediate results
- 11 Spurs with between 1 and 8 activities
- Indicators used
  - Quantitative and qualitative
  - Prescriptions and outputs
- Simple programming in Excel-spreadsheet

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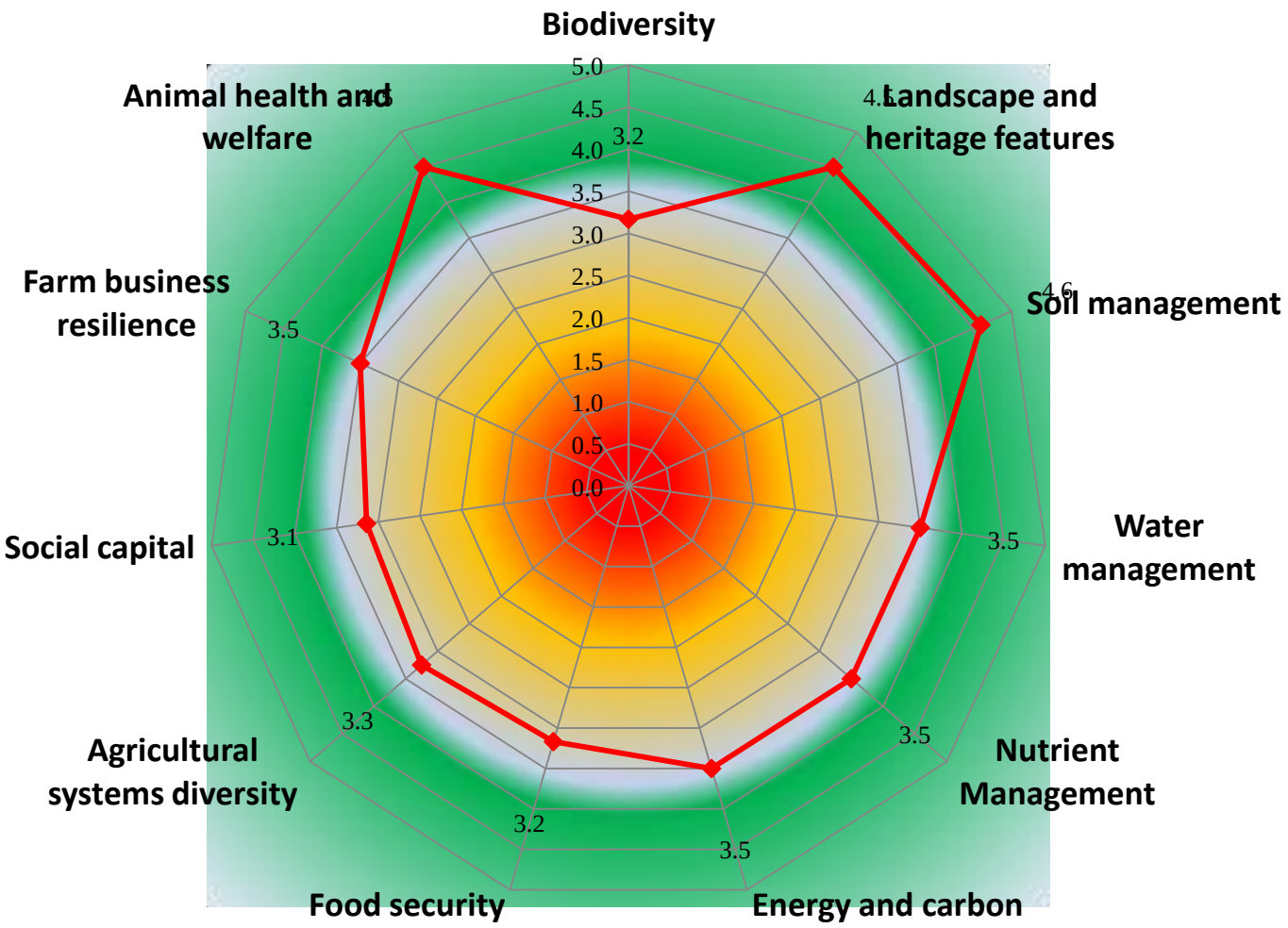
Results Presented in a Radar Diagram



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Farm Systems Assessment Methodology

- Defra-funded, led by Warwick University
- Focus on sustainability assessment for farming systems, not individual commodities (building on earlier Cranfield studies)
- Contrasting 33 farm types of different intensities (including free range, organic)
- Environmental, economic and social indicators
- Includes total system output concept

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Defra Environmental Benchmarking Project

(Project No. DO0103)

- Scoping the potential for extending economic farm-level benchmarking to environmental and other aspects of farm performance, including energy use and greenhouse gas emissions
- Significant scope to develop the FBS and its associated benchmarking system to encompass environmental aspects
- Need to get the right balance between ease of use, low thresholds to entry and accuracy/comprehensiveness

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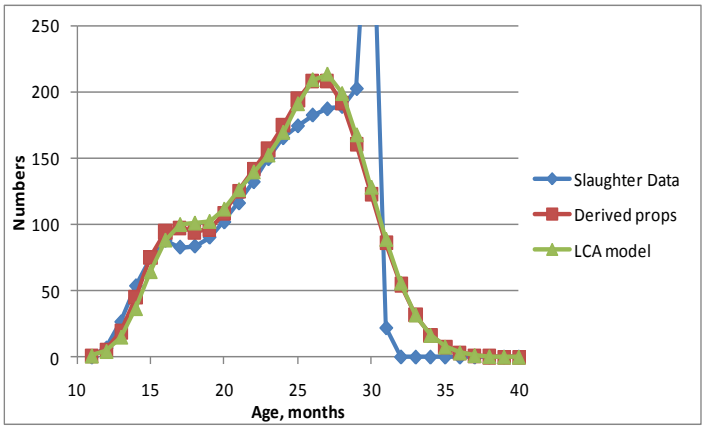
Greenhouse Gas Platform:

Developing a revised greenhouse gas inventory for UK agriculture

Producing a new inventory structure and calculation methodology based on IPCC 2006 guidelines

Assessing industry and Government level farm activity data to improve accuracy of reporting



Defining how mitigation practices can be measured over time

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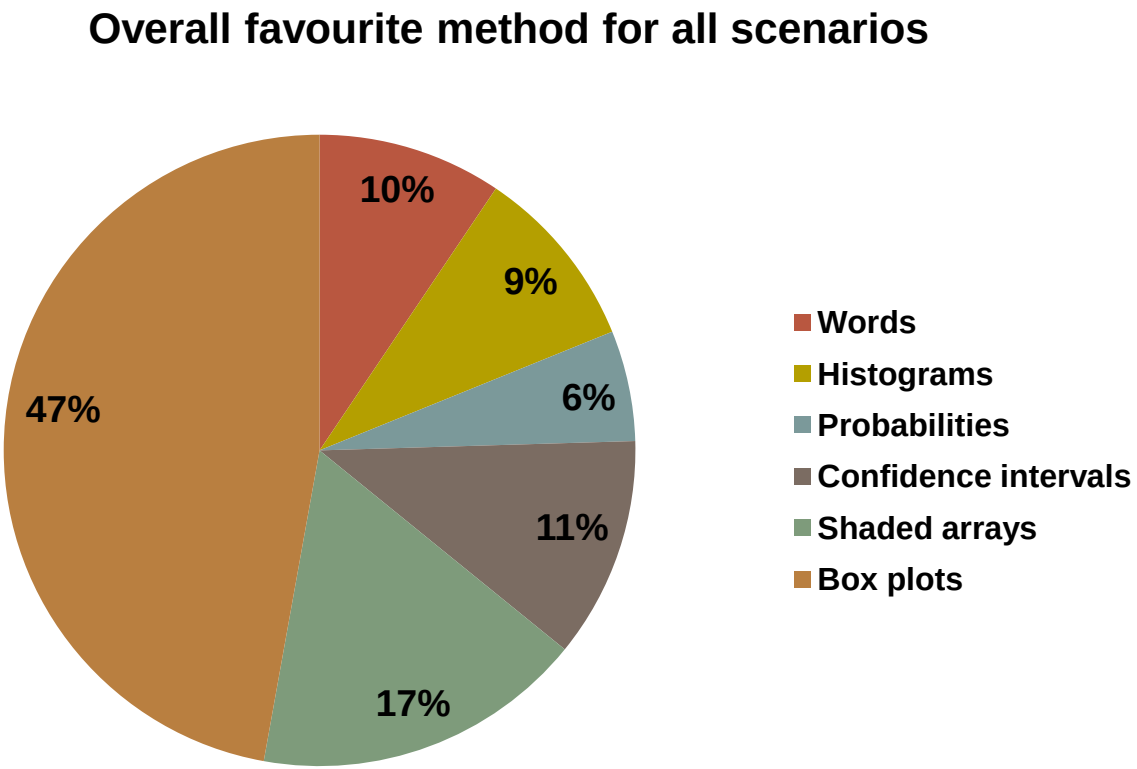
Reviewing Methods for Communicating Uncertainty associated with GHG estimates:



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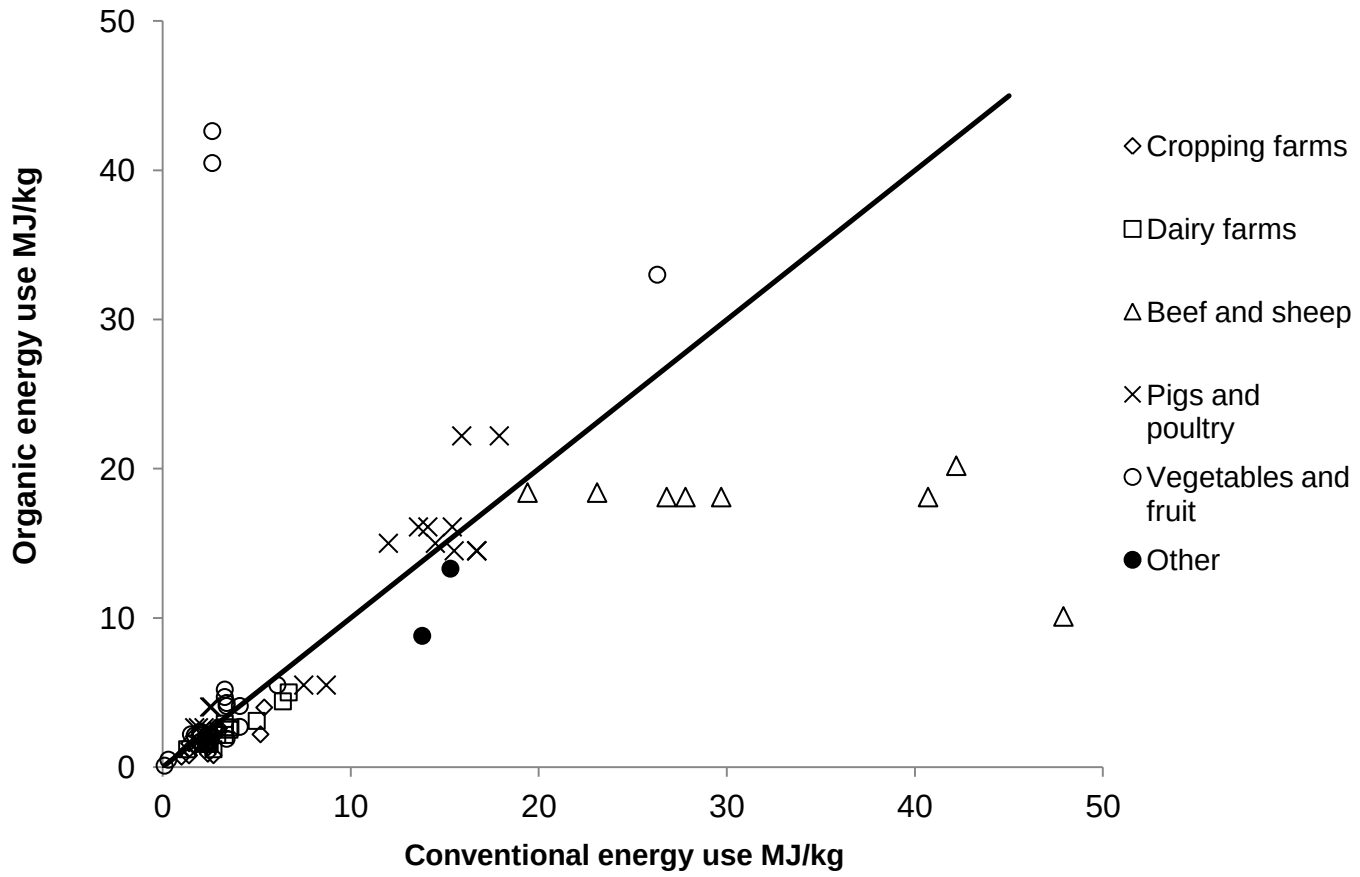
PhD: Exploring the environmental impacts of a 100% conversion to organic agriculture in England and Wales



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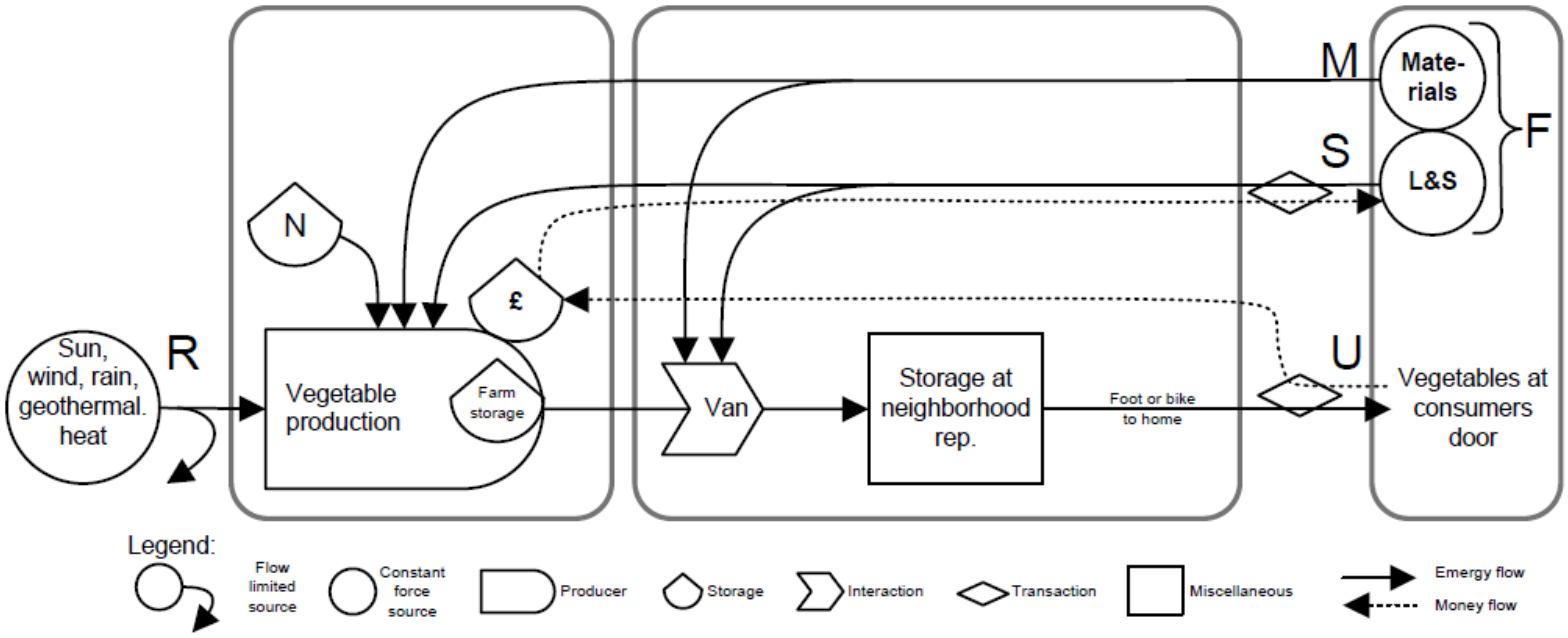
SOLIBAM: Work Package 8
Comparing systems using LCA and Emergy

UK 1: Small Scale Market Garden / box scheme



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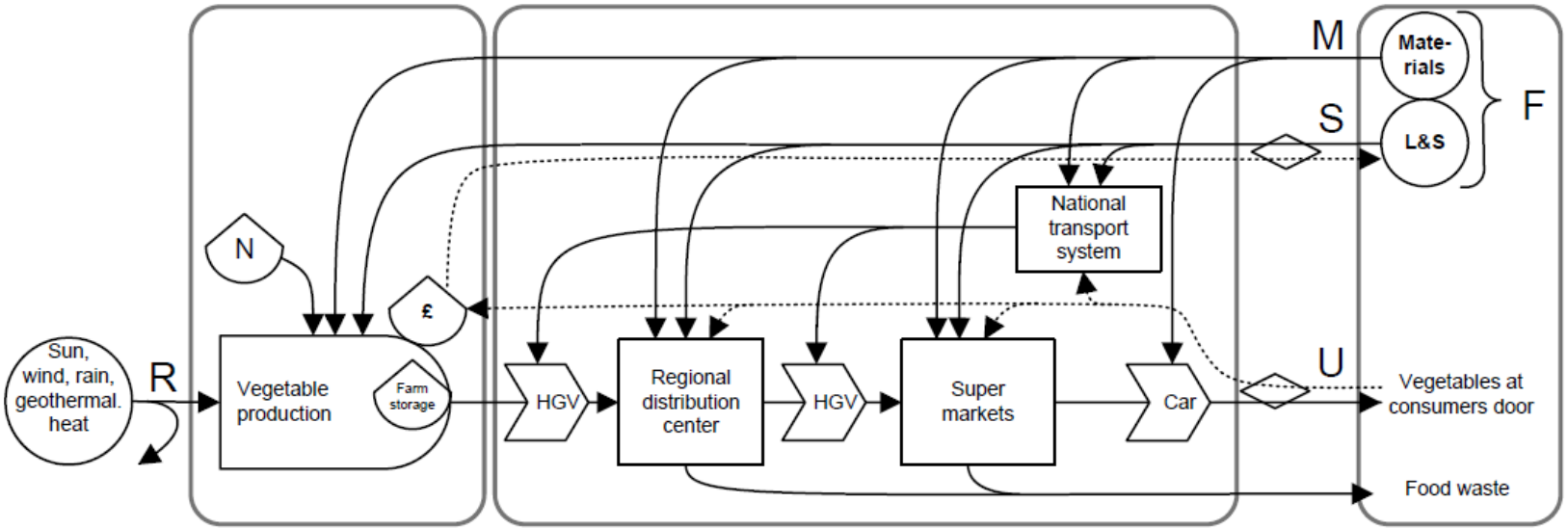
SOLIBAM: Work Package 8
Comparing systems using LCA and Emergy

UK 2: Large Scale Field vegetable production



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The Greenhouse Gas Action Plan

Developing and implementing mitigation strategies

Workshops with representatives from industry to identify data sources for monitoring uptake of mitigation measures

Farmer guides summarising GHG tools available

THE COOL FARM TOOL:	
Developed by:	Unilever and researchers at the University of Aberdeen
Format	Downloadable software. The farmer enters details about crop area, yield, soil type, fertilizer and inputs, as well as some detailed information on electricity and fuel use (for field operations and primary processing). The results page provides a summary of greenhouse gas emissions as well as a detailed breakdown, so they can see what contributes the most and target reduction activities accordingly.
Availability	Available as a free excel file download from the webpage: http://www.coolfarmtool.org/CoolFarmTool The release of a web-based version is imminent.
What's it for?	The Cool Farm Tool is a greenhouse gas calculator that is free for growers to help them measure the carbon footprint of crop and livestock products. The CFT has been tested and adopted by a range of multinational companies who are using it to work with their suppliers to measure, manage, and reduce greenhouse gas emissions in the effort to mitigate global climate change.
Ease of use	The tool is designed to be simple to use, but scientifically robust in the complex arena of carbon accounting.
Methodology	The tool takes an LCA approach but was not aimed to be PAS2050 compliant and does contain some features which are not in PAS2050 - for example soil carbon accumulation/loss under constant land use as a function of e.g. tillage practice. Feedback to the project team apparently suggests that the tool can be used in a way which is broadly compliant. However they have not verified this.
What does it cover?	The CFT is a farm-level greenhouse gas emissions calculator based on empirical research from a broad range of published data sets. It is designed to be approachable and easy to complete based on information that a farmer will have readily available. The tool identifies hotspots and makes it easy for farmers to test alternative management scenarios and identifies those that will have a positive impact on the total net greenhouse gas emissions. Unlike many other agricultural greenhouse gas calculators, the CFT includes calculations of soil carbon sequestration, which is a key feature of agriculture that has both mitigation and adaptation benefits.

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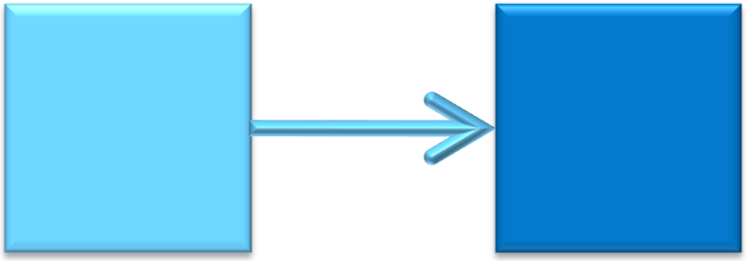
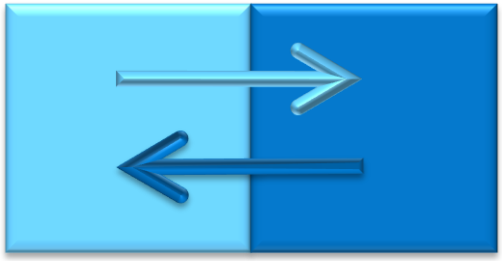
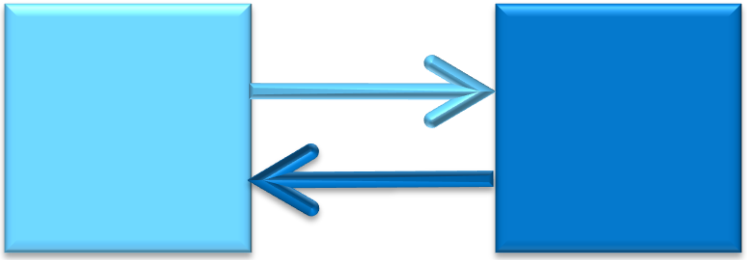
Research Models



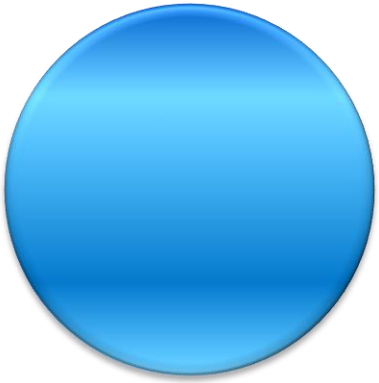
Linear



Collaborative



Feedback



Joint Production

Knowledge Producer

Knowledge User

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After RELU (2007)