A MARKET APPROACH TO CONTINUOUS LIVING CROPPING SYSTEMS
SYNTHESIS

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IMBALANCED INCENTIVES

Markets

Prices

Microeconomic decisions

Land-based production

Land use pattern

Environmental impacts

External costs or benefits

No feedback incentives

REBALANCING INCENTIVES: THEORY

IN ECONOMIC THEORY, AN IDEAL POLICY:

• Focuses on a **single goal**

• Measures and enforces **goal-based performance**
POLICY IN PRACTICE

Microeconomic decisions

Markets

Land-based production

Politically Negotiated Policies

Multiple incentives, rules

External costs or benefits

Other influences

Environment impacts

prices

output supply, input demand

land use pattern

AGRICULTURAL CONSERVATION POLICIES

- Have multiple goals
- Reward individual practices
Policy debates have focused on:

- **Gaps** between actual and ideal policies

- Cost burdens: **Who pays?**
Gentlemen, we have run out of money. It is time to start thinking.

-Ernest Rutherford
Eco-innovation is the production, application or exploitation of a good, service, production process, organizational structure, or management or business method that is novel to the firm or user and which results, throughout its life cycle, in a reduction of environmental risk, pollution and the negative impacts of resource use (including energy use) compared to relevant alternatives.

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ECO-INNOVATION FOR LANDSCAPE CHANGE

Markets

prices

Microeconomic decisions

Land-based production

land use pattern

Environmental impacts

external costs or benefits

ECO-INNOVATION FOR LANDSCAPE CHANGE

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ECO-INNOVATION FOR LANDSCAPE CHANGE

- Altered Microeconomic decisions
  - New crops and technologies
    - Price incentives for new crops
  - Diversified land use pattern
  - External costs or benefits

- New Markets
- Land-based production
- Environmental impacts

ECO-INNOVATION FOR LANDSCAPE CHANGE

New Markets

Price incentives for new crops

New supply chains

New crops and technologies

Altered Microeconomic decisions

Diversified production

Diversified land use pattern

Environmental impacts

ECO-INNOVATION FOR LANDSCAPE CHANGE

- New Markets
- New supply chains
- Price incentives for new crops
- Diversified production
- Diversified land use pattern
- Neutral or Positive Environmental impacts
- New crops and technologies
- External benefits

WHAT DRIVES INNOVATION?

Research → Innovation → New Products
WHAT DRIVES INNOVATION?

Research
- Upstream investment

Innovation
- Interface improvement

New Products
- Market creation
POTENTIAL ROLES FOR POLICY

Upstream Investment
- Foundational research
- Applied research

Interface Improvement
- Commercialization support
- Technology adoption incentives

Market Creation
- Subsidies
- Mandates
- Certification
LANDSCAPE CHANGE IN HISTORY

1879

Area in corn (thousand acres), by county

LANDSCAPE CHANGE IN HISTORY

Area in corn (thousand acres), by county

LANDSCAPE CHANGE IN HISTORY

Area in corn (thousand acres), by county

LANDSCAPE CHANGE IN HISTORY

Area in corn (thousand acres), by county

LANDSCAPE CHANGE IN HISTORY

FIGURE 6
CORN TECHNOLOGY ADOPTION

SYNTHESIS

• **Eco-innovation** is a unifying framework

• Innovation is influenced by **levers at all stages**

• Innovation-led landscape change has happened before, **will happen again**