A MARKET APPROACH TO CONTINUOUS LIVING CROPPING SYSTEMS

SYNTHESIS

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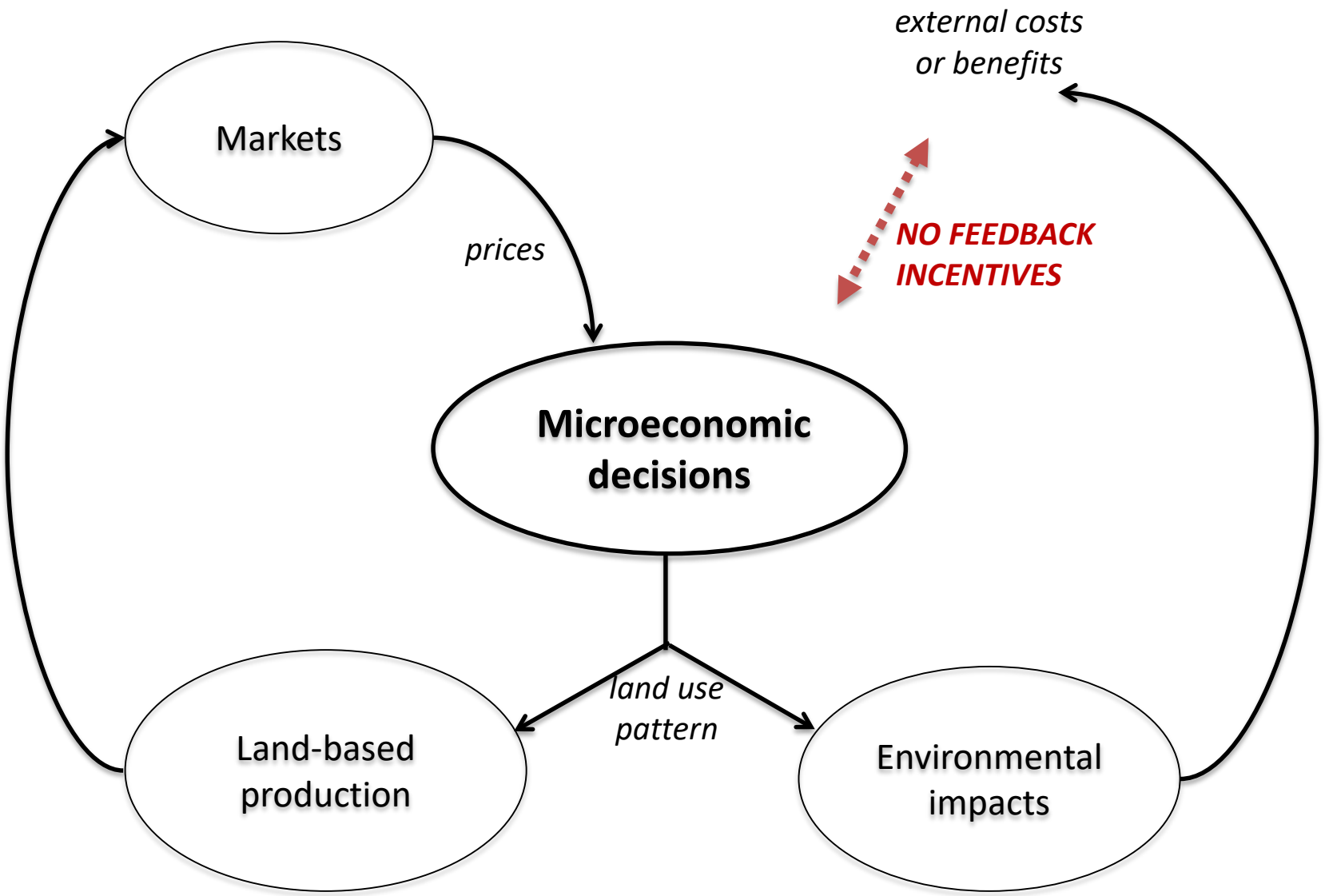
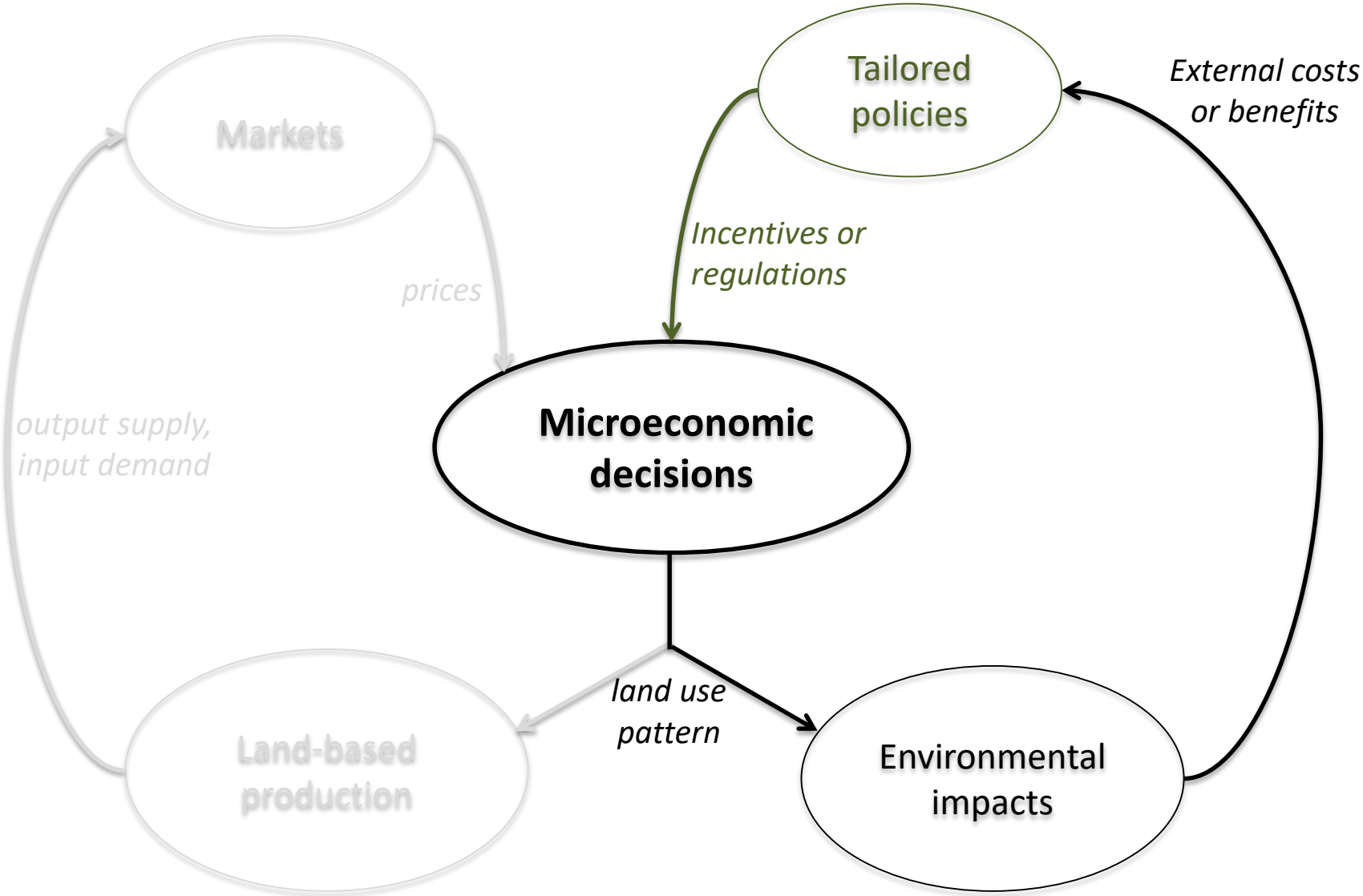
University of Minnesota
Driven to Discover℠

IMBALANCED INCENTIVES



Modified from Peterson et al (2014). Economic Linkages to Changing Landscapes. *Env. Mgt. 53(1): 55-66.*

REBALANCING INCENTIVES: THEORY



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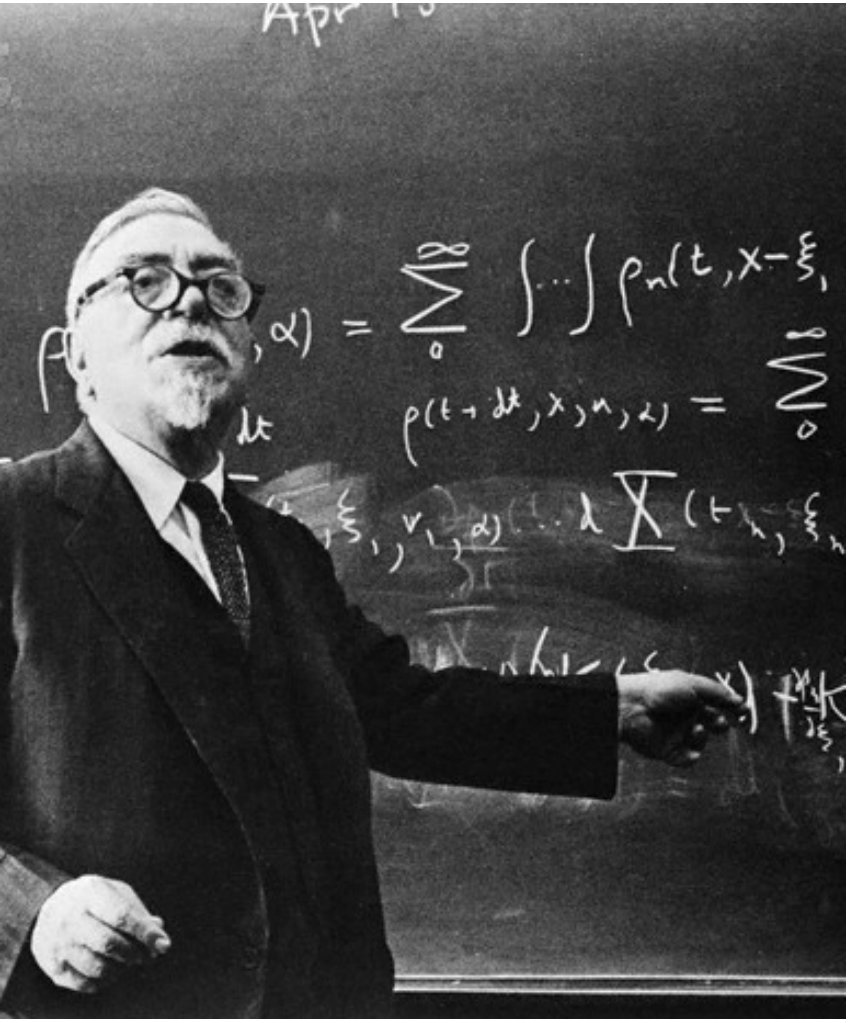
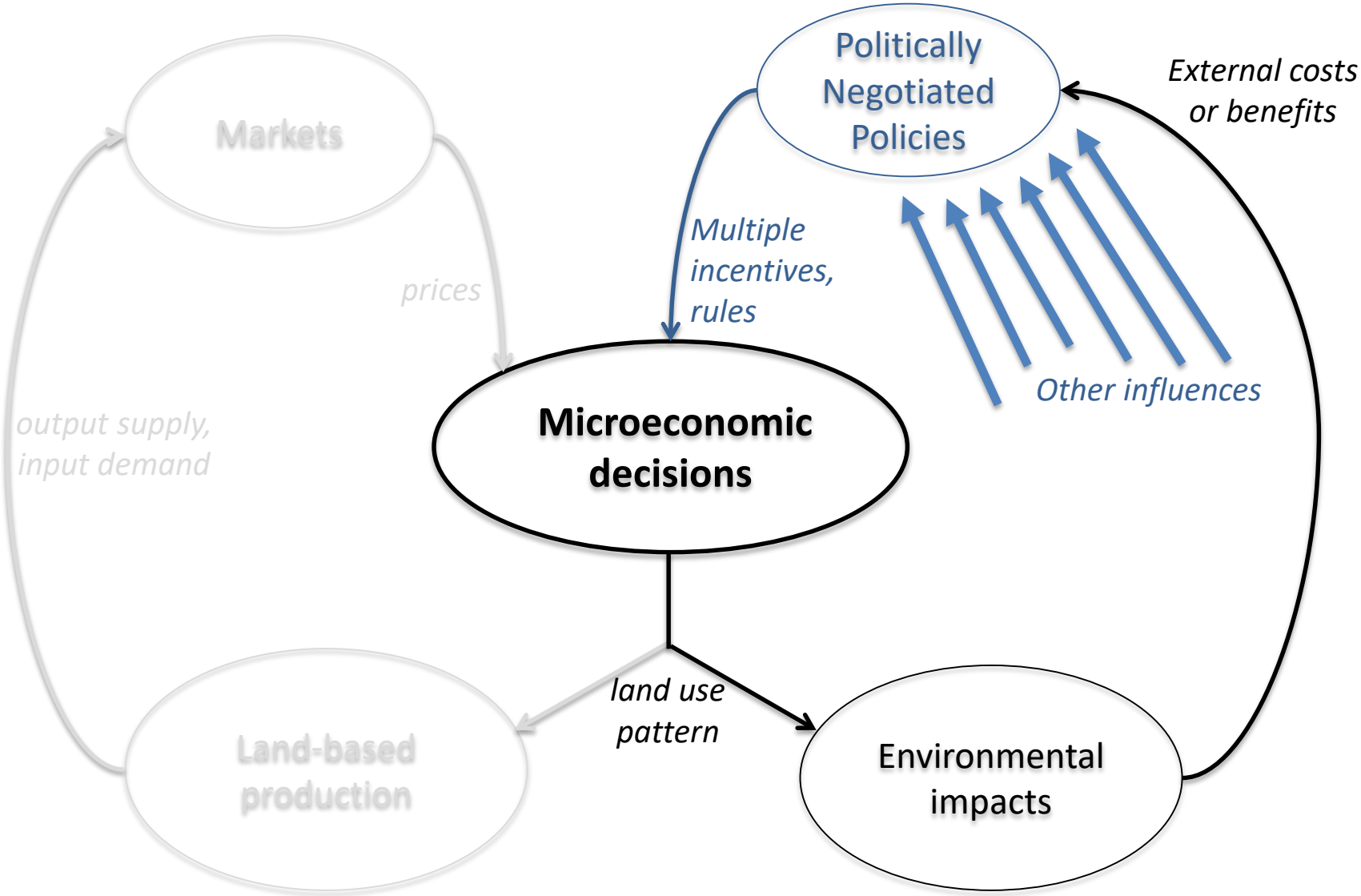
IN ECONOMIC THEORY, AN IDEAL POLICY:



- Focuses on a **single goal**
- Measures and enforces goal-based **performance**

POLICY IN PRACTICE



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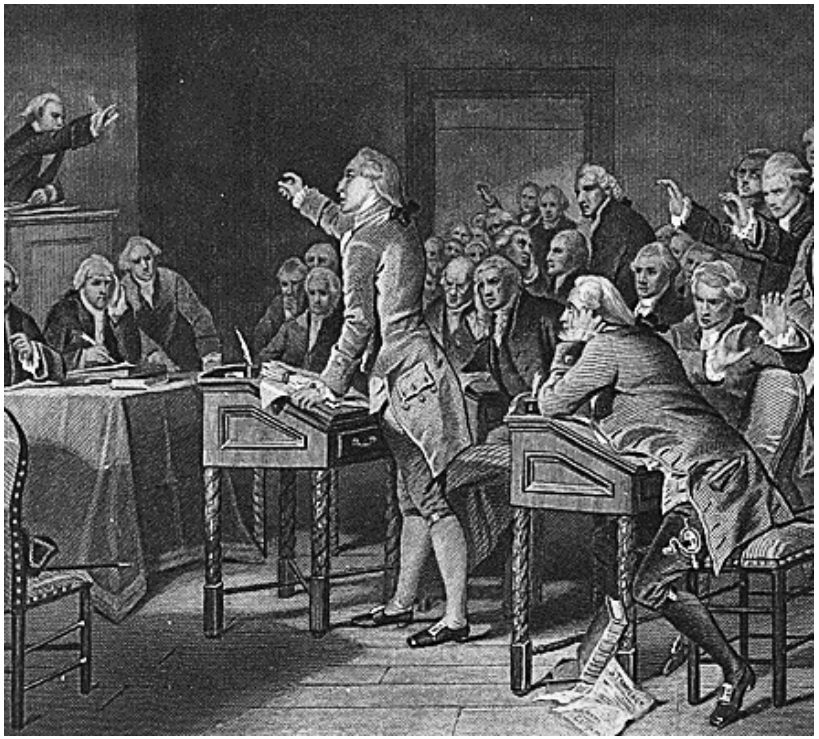
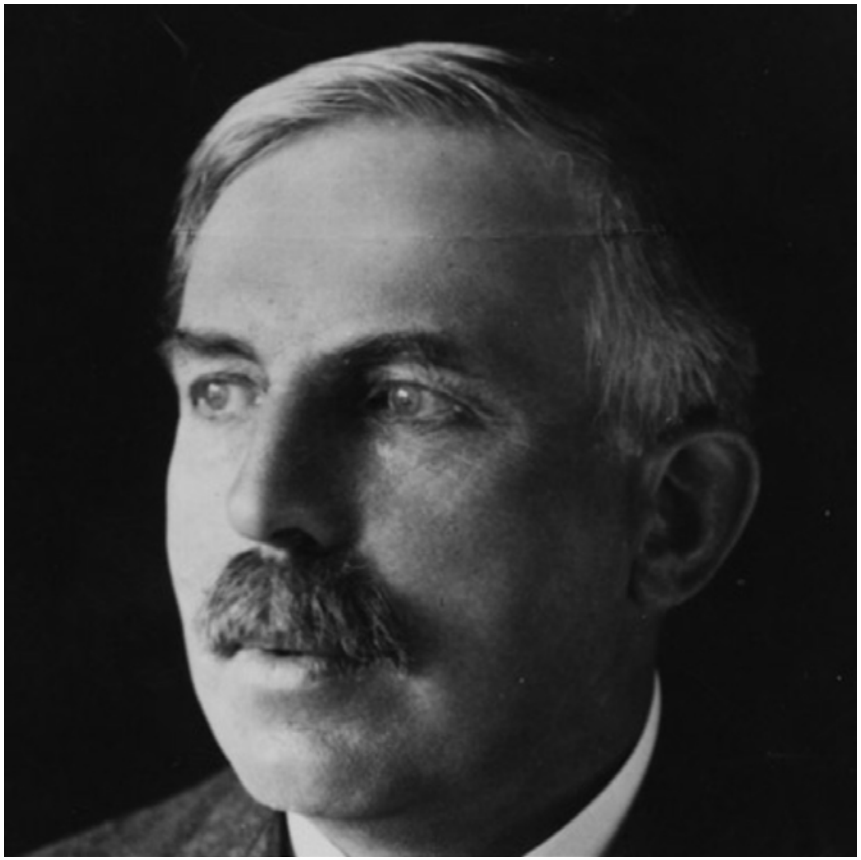
AGRICULTURAL CONSERVATION POLICIES

- 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

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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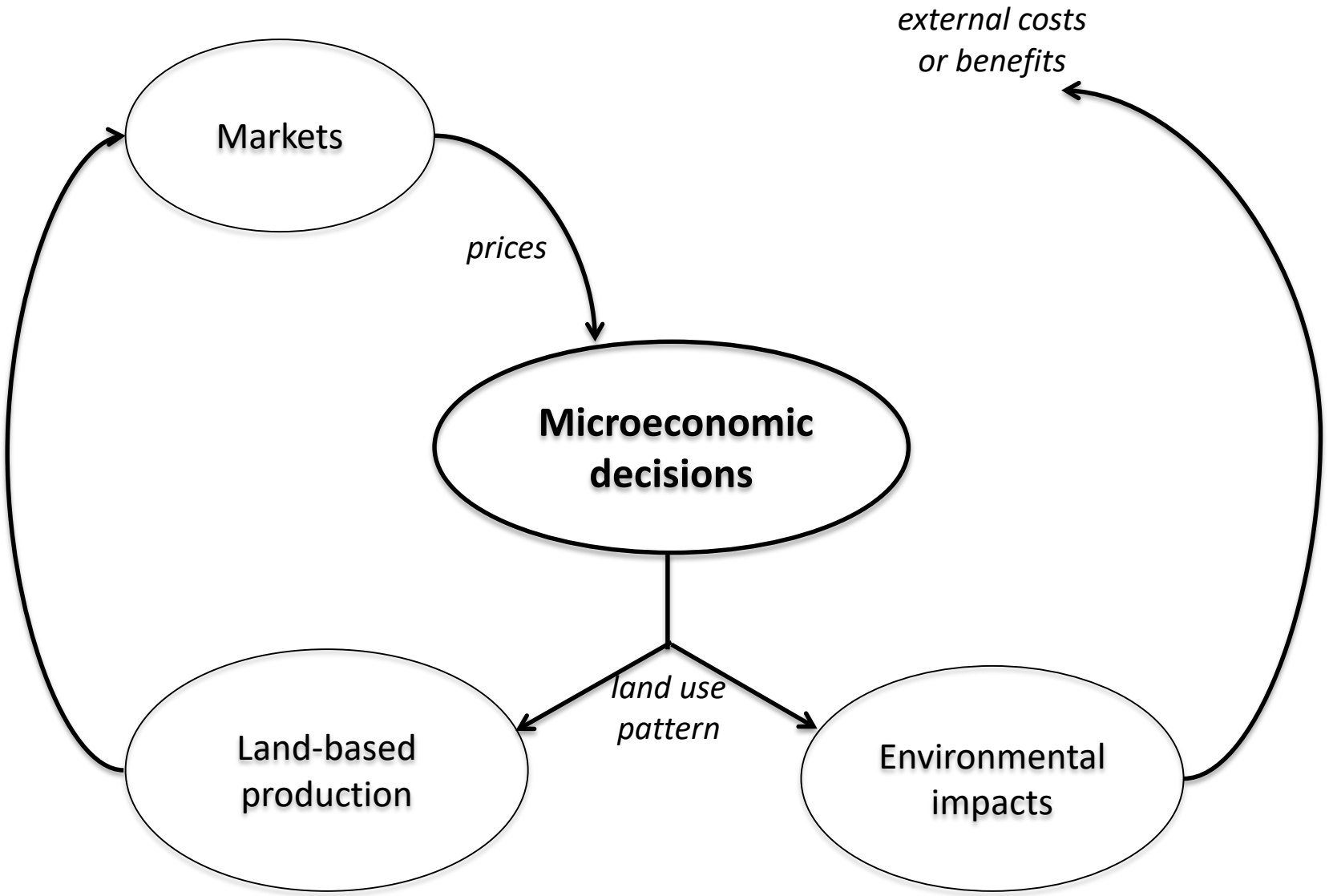
ECO-INNOVATION FOR LANDSCAPE CHANGE



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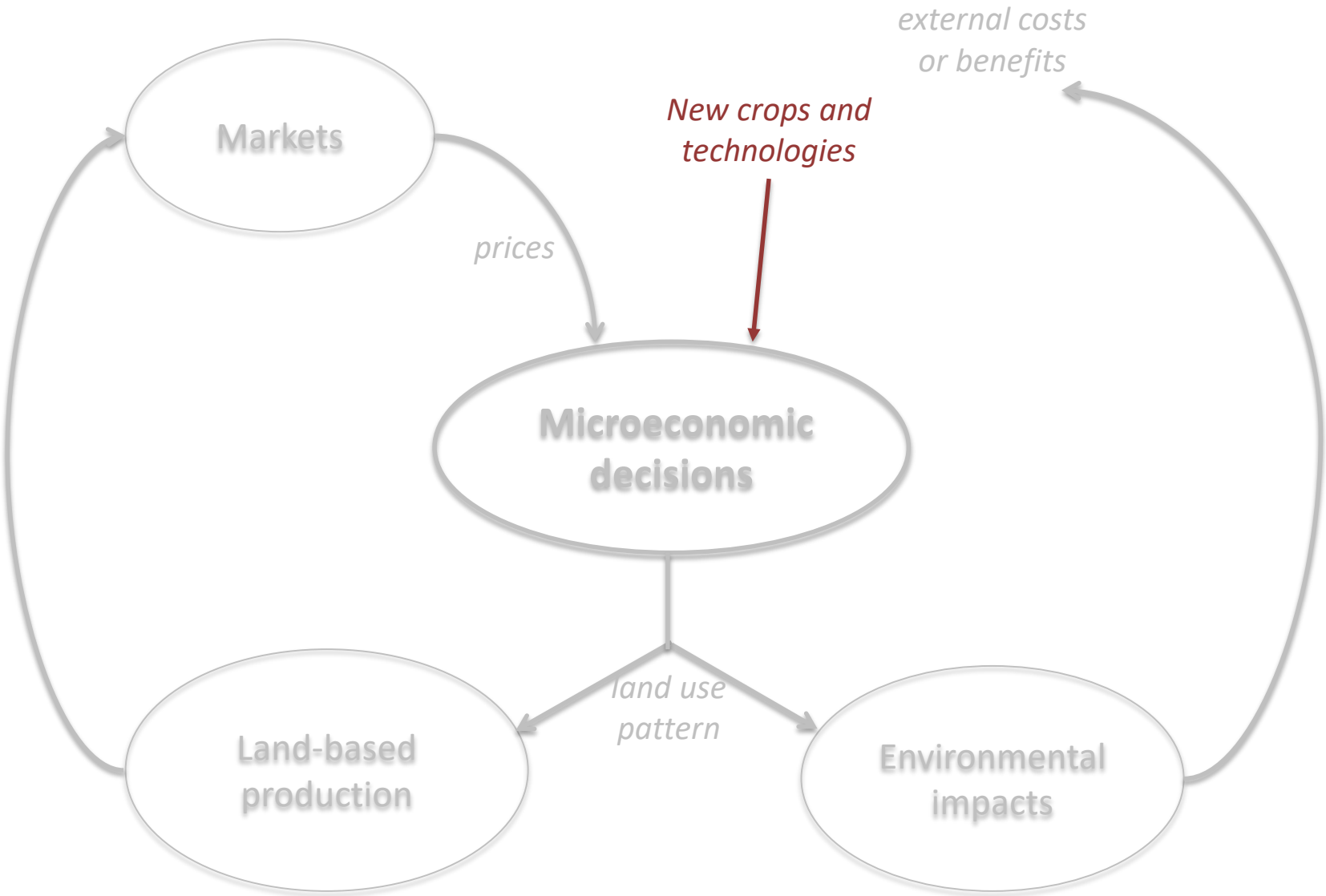

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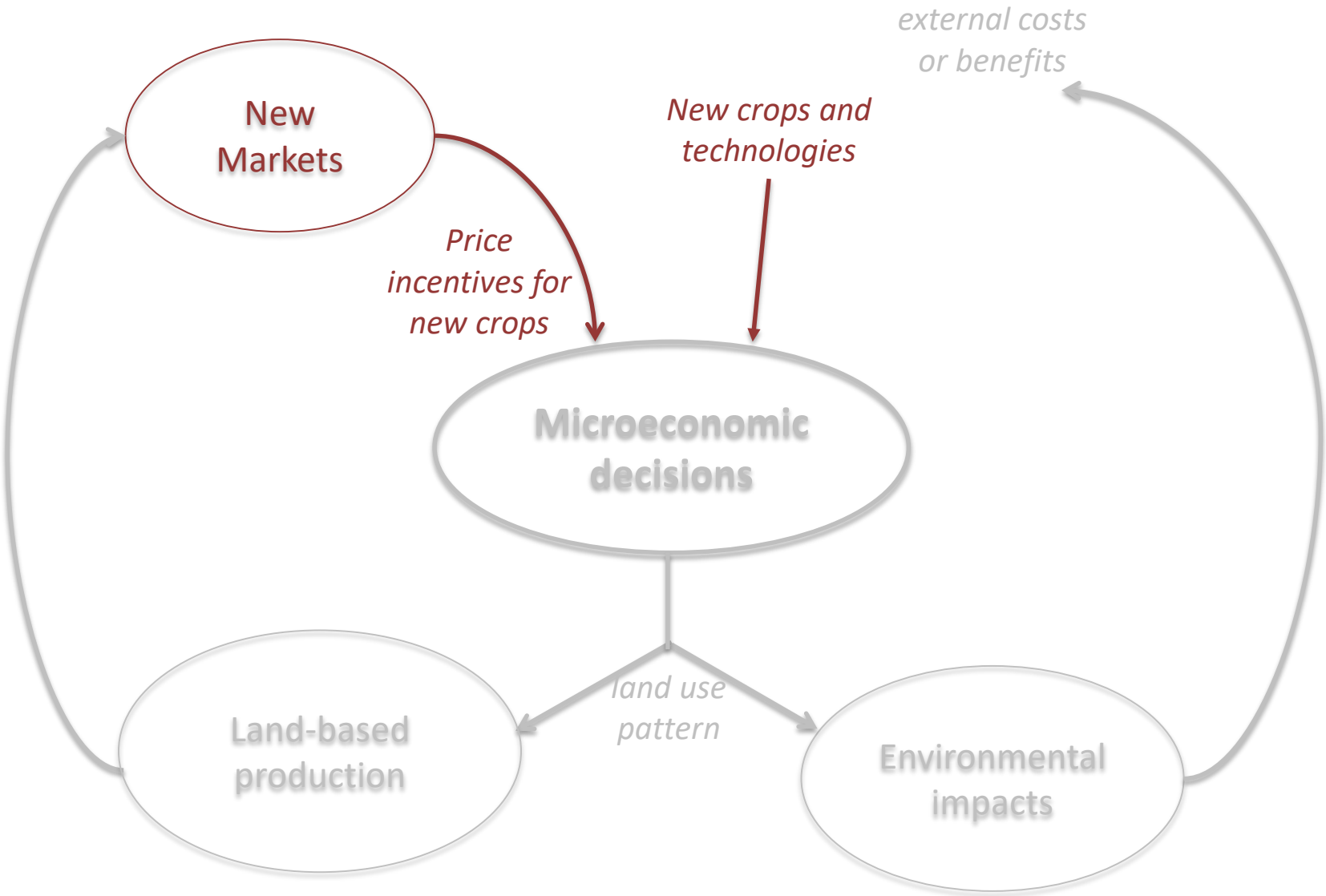

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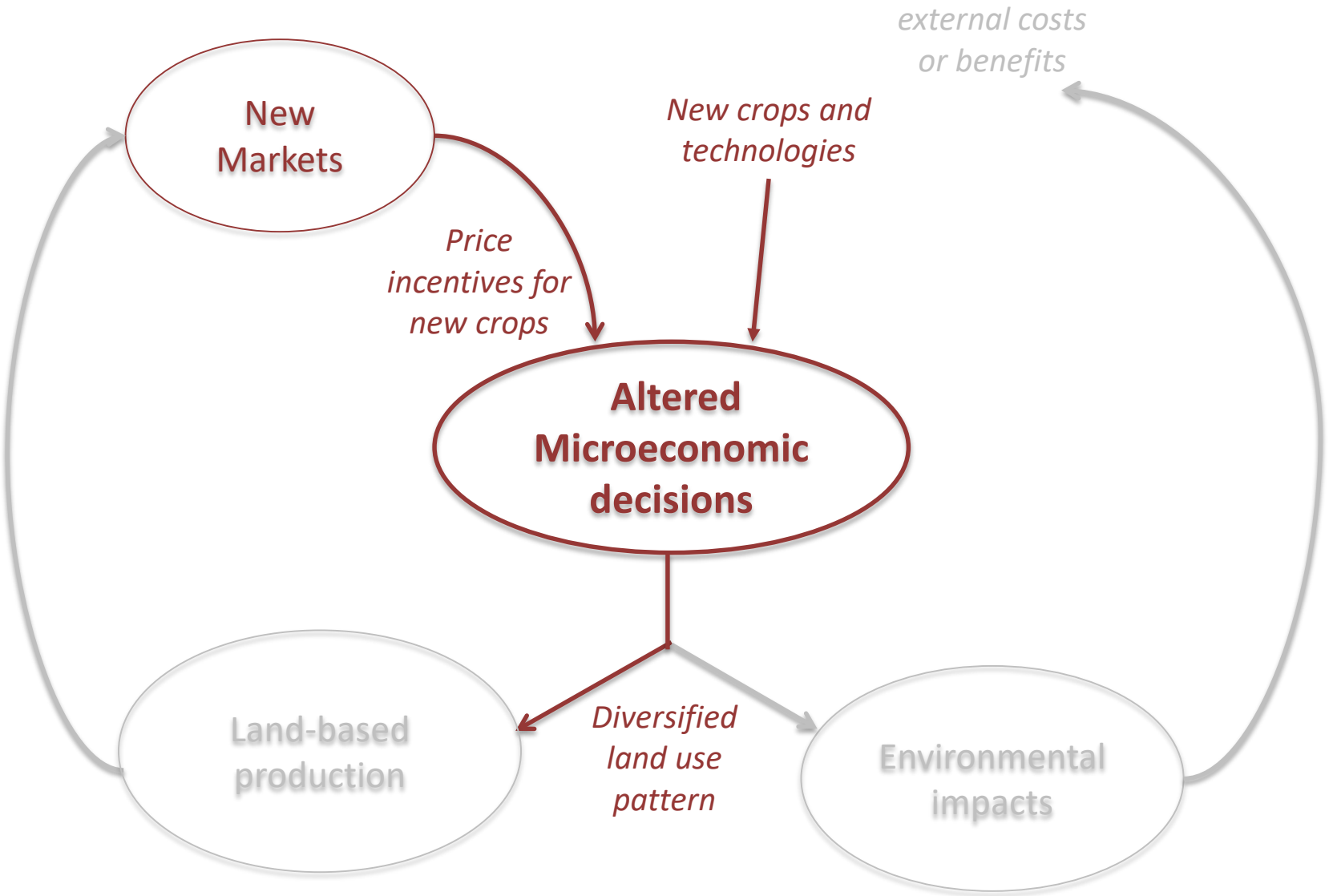

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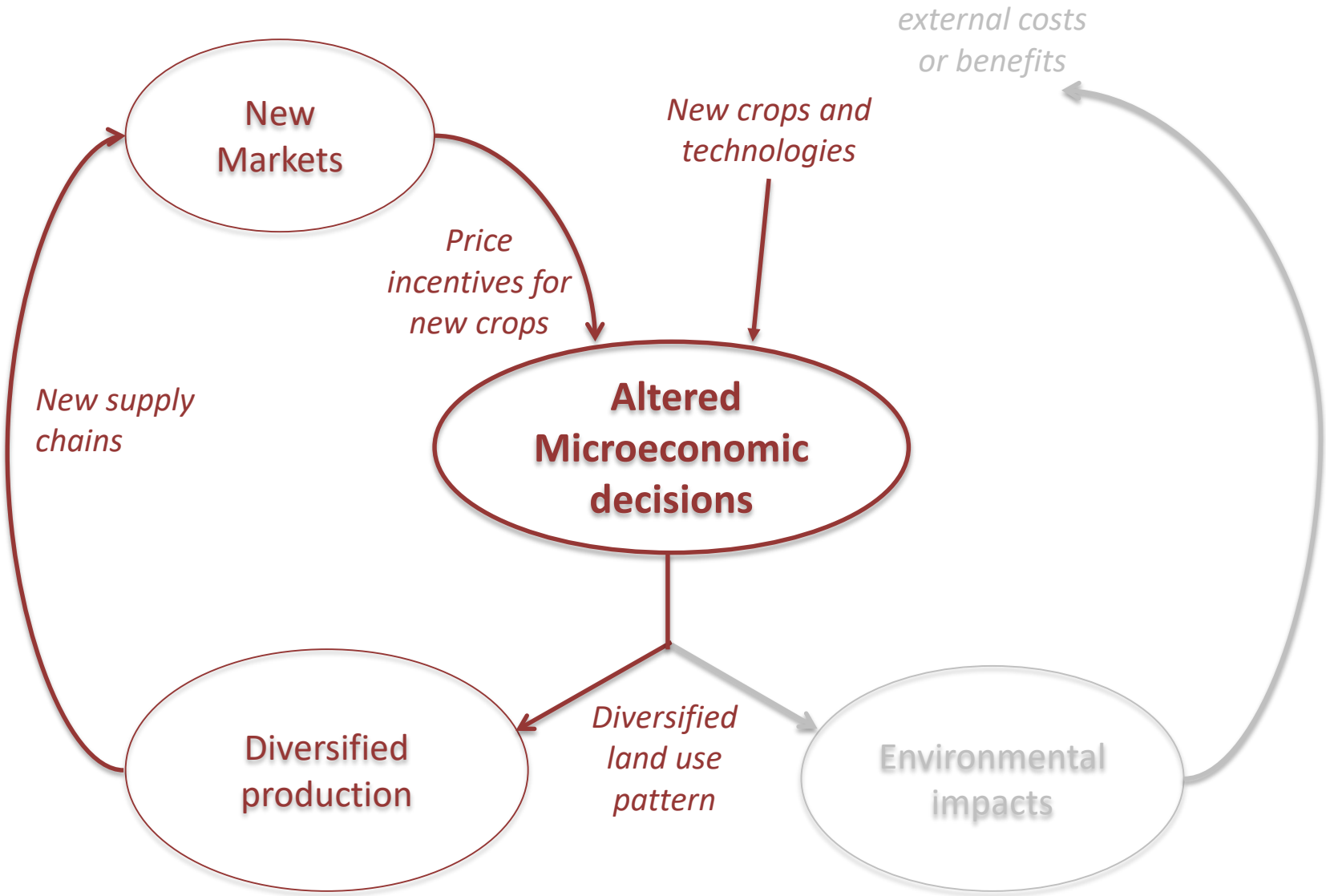

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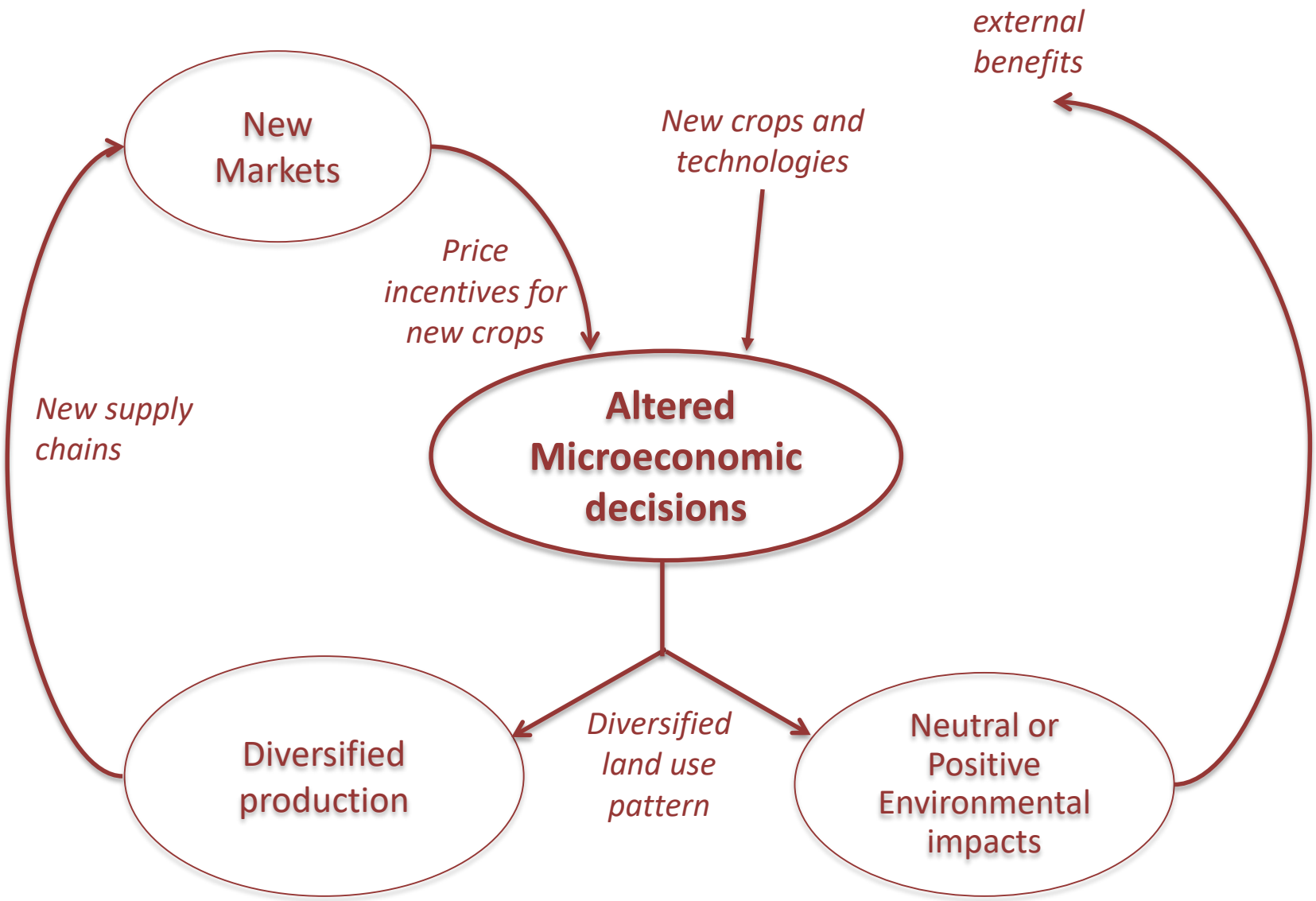

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WHAT DRIVES INNOVATION?

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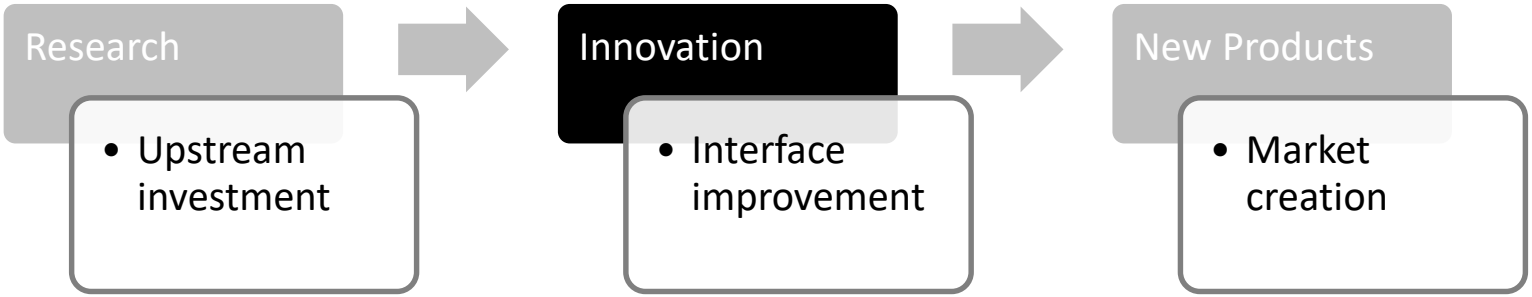


POTENTIAL ROLES FOR POLICY

Upstream Investment

- Foundational research
- Applied research

Interface Improvement

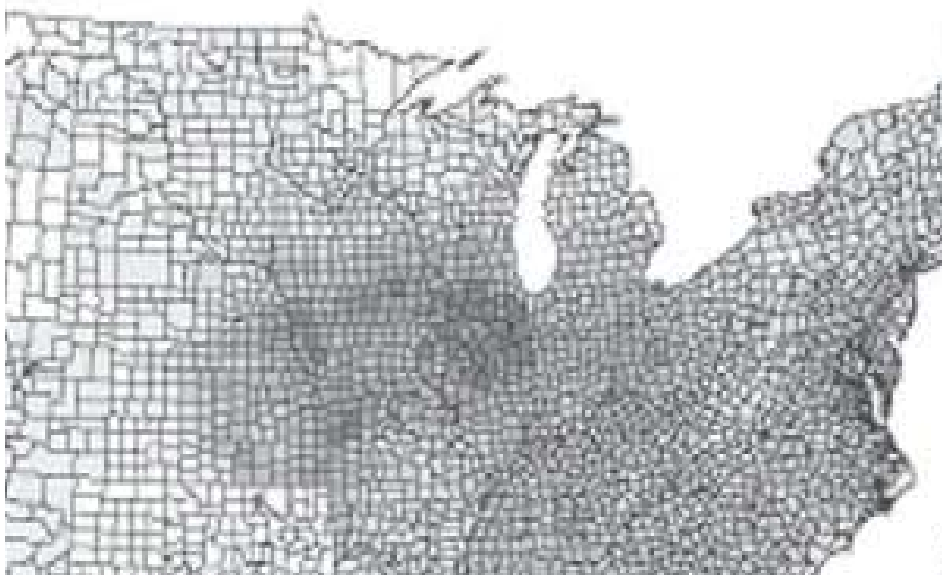
- Commercial-ization support
- Technology adoption incentives

Market Creation

- Subsidies
- Mandates
- Certification

LANDSCAPE CHANGE IN HISTORY

1879



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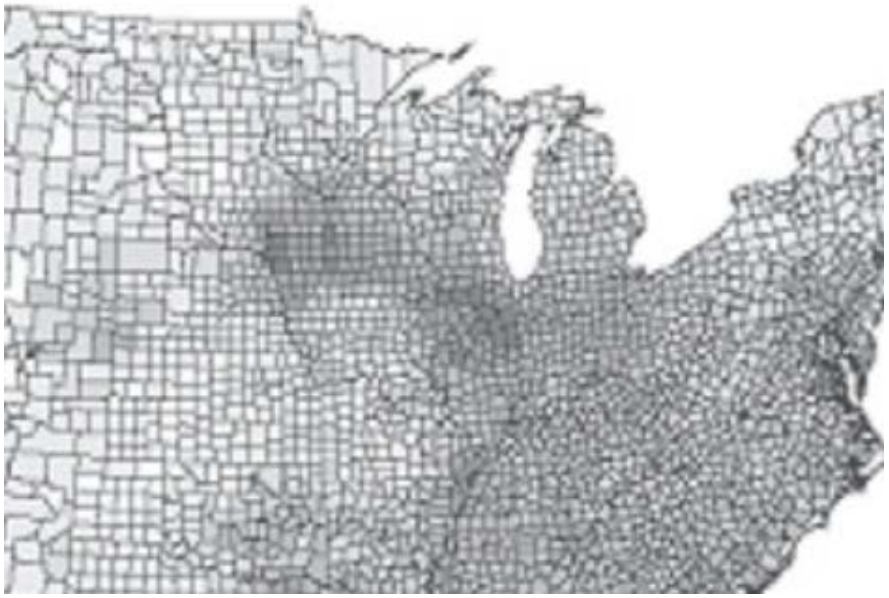
LANDSCAPE CHANGE IN HISTORY

1934



Area in corn (thousand acres), by county

NA	[50, 100)
(0, 10)	[100, 150)
[10, 25)	≥ 150
[25, 50)	

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LANDSCAPE CHANGE IN HISTORY

1974

Area in corn (thousand acres), by county

- NA
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- [10, 25)
- [25, 50)
- [50, 100)
- [100, 150)
- ≥ 150

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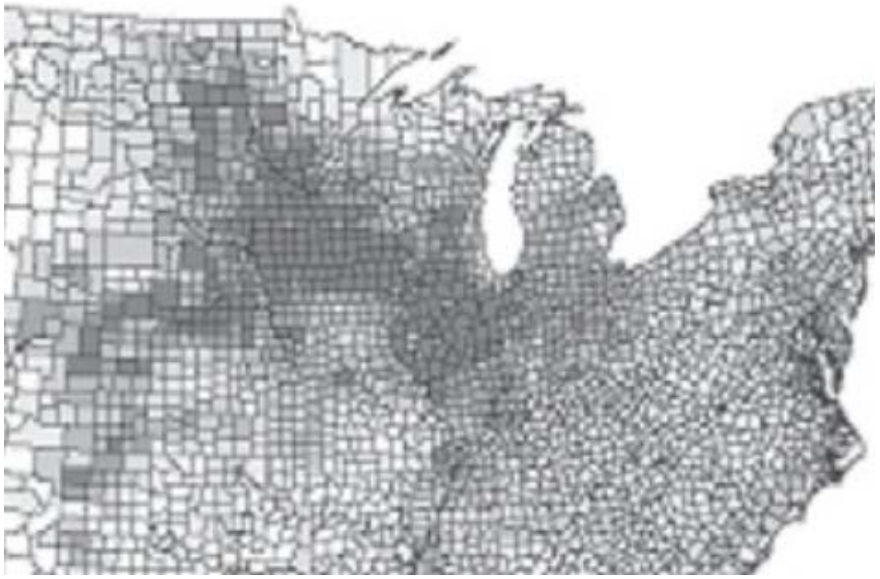
LANDSCAPE CHANGE IN HISTORY

2007



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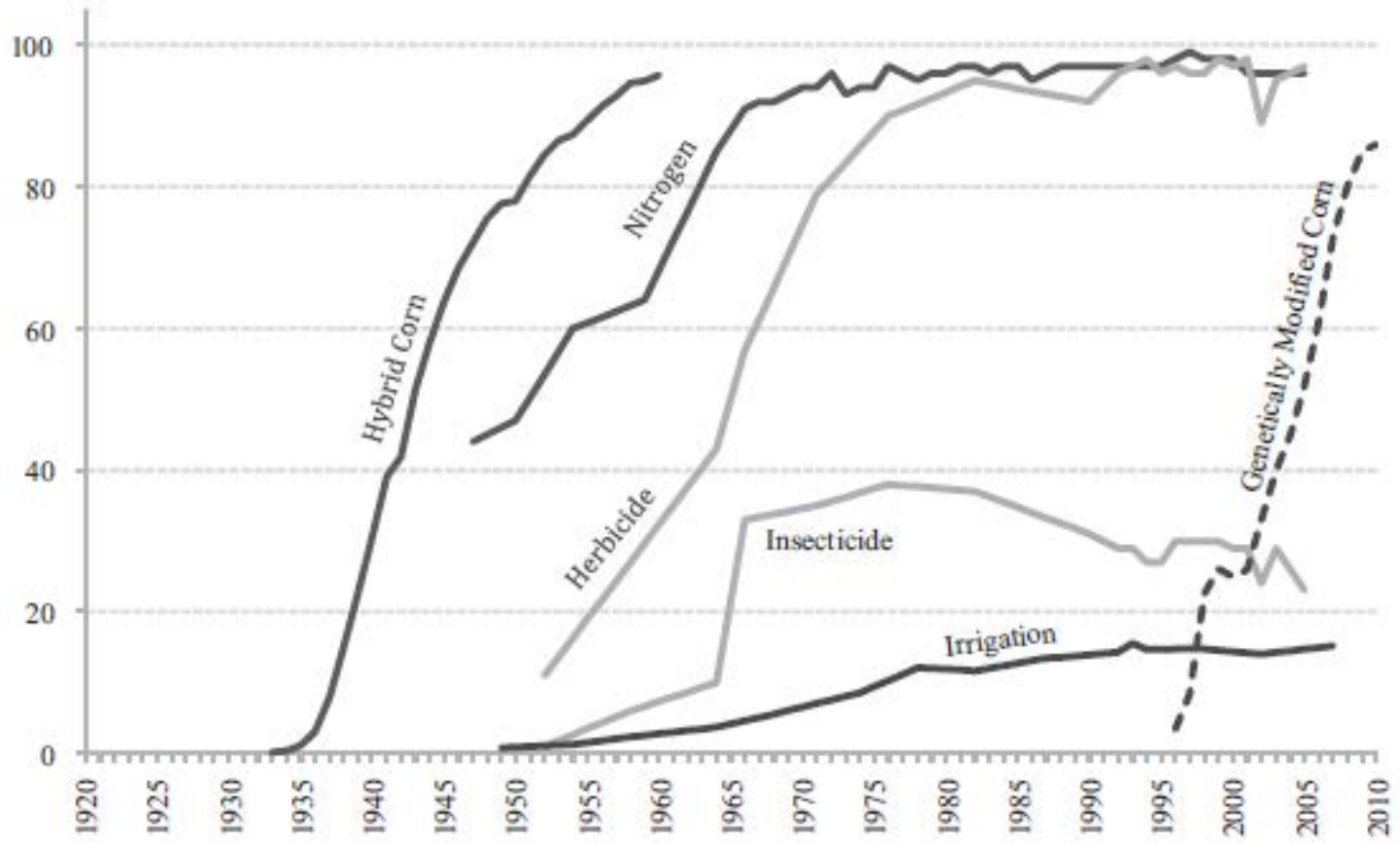

FIGURE 6
CORN TECHNOLOGY ADOPTION

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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**