



Agri-Environmental Policy- Payments vs Direct Control

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Introduction

Two broad ways to incentivize farmers to change their land use or management practices to benefit the environment.

1. Provide payments to farmers who adopt environmentally beneficial practices (BMPs)
2. Direct regulations that require farmers to undertake certain actions



Questions Addressed Here

1. Why is agri-environmental policy design so complicated?
2. Under what circumstances is it appropriate to implement the payment or the control policy option
3. What are the distributional implications of either type of incentive mechanism?
4. Under what conditions is each policy likely to be more effective and efficient?



Complications with Agri- Environmental Policy Design

1. Diffuse source pollution
2. Complex production and environmental fate process
3. Spatial, temporal and technological heterogeneity
4. Uncertainty
5. Abatement costs relative to damage costs
6. Political support for farmers



Types of Agri-Environmental Policies

1. Advisory Measures
2. Polluter Pays Mechanisms
3. Beneficiary Pays Mechanisms



1. Advisory Measures

1. Education programs
2. Research and Development
3. Labeling / Certification



2. Polluter Pay Mechanisms

1. Performance-Based Standards or Penalties
 - Emission standards on cars

2. Design-Based Standards or Penalties
 - Barn location
 - Fertilizer taxes

3. Liability Laws/Performance Bonds

4. Tradable Permits

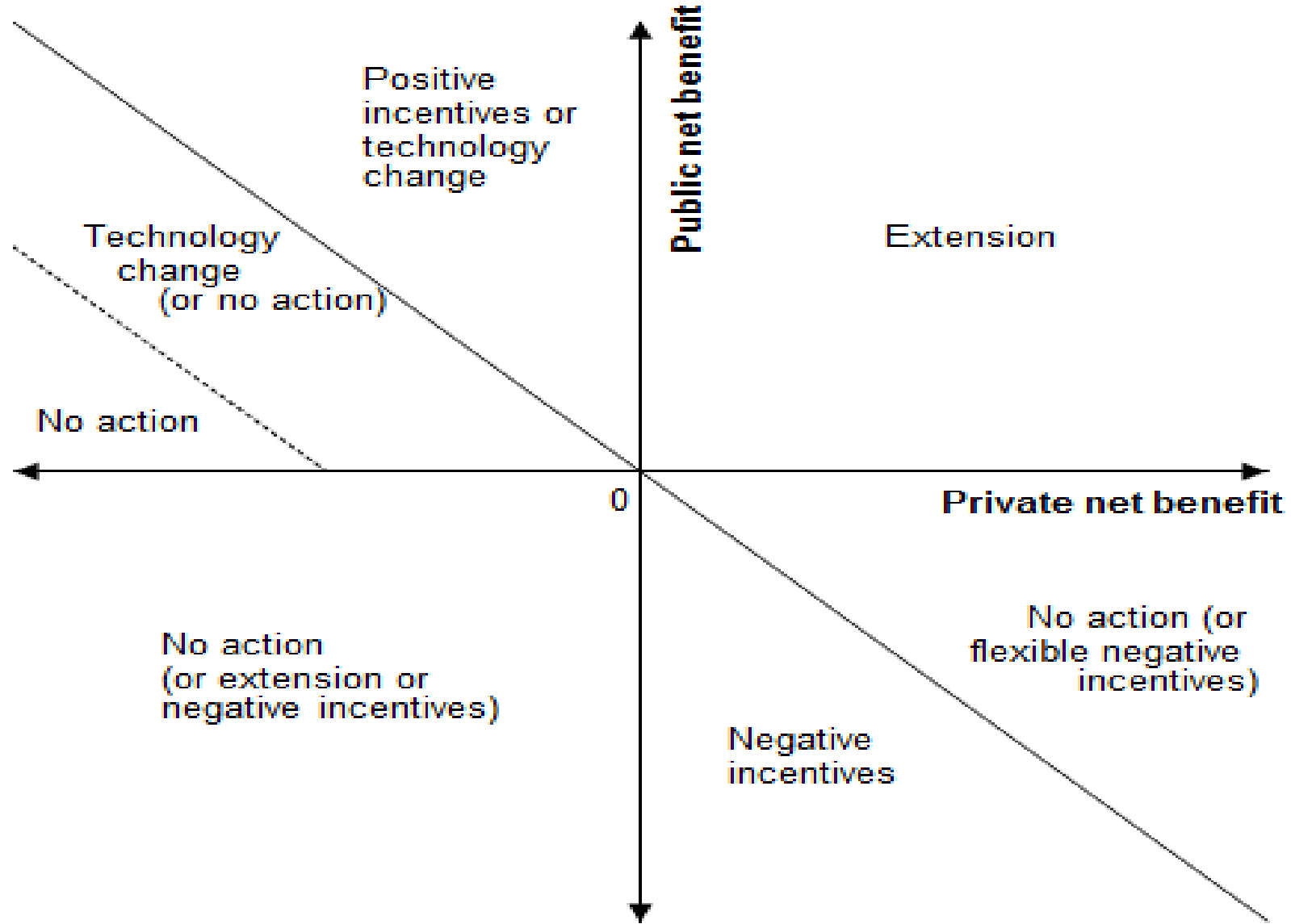


3. Beneficiary Pays Mechanisms

1. Performance-Based Payments
 - Green payments

2. Design-Based Payments
 - Cost share programs for BMP adoption
 - Reverse auctions

Efficient Policy Mechanisms



Source: Pannell 2008; Weersink and Pannell 2017



Additional Considerations

1. Who Pays?

- Beneficiary-pays (payments for BMPs)
 - Generally used when seeking to alter farmers existing practices
- User-pays (standards or penalties)
 - Tend to be used when seeking to prevent farmers from changing current practices or avoid something worse.



Additional Considerations

2. Budgetary Implications

- Payments require government funds
 - Political support will decline with fiscal pressures
 - Can result in reduced scale (and effectiveness) of programs

- Direct controls are less costly than payment schemes
 - Taxes (design or performance based) can even generate revenue



Additional Considerations

3. Transaction Costs (TC)

- Include design, implementation, administration, monitoring, and enforcement costs
- TC lower for design-based than performance-based
- TC increase with scale of problem (more people and jurisdictions)
- Relative TC for payments vs direct controls depends on current institutional arrangements



Additional Considerations

4. Distributional Implications

- Net benefits of each mechanism can differ across farm types, sectors, regions, members of society and generations
- Influenced by choice of mechanism in other jurisdictions
 - i.e. avoid direct control for export-oriented sectors



Additional Considerations

5. Multiple Policy Goals

- Improving farm income and environmental performance may not be consistent goals
- BMPs to reduce one externality may positively or negatively address another externality
 - Cover crop to improve soil health reduce soil erosion and nutrient runoff
 - N practices to reduce GHG emissions can increase nitrate leaching



Conclusions

- Incentives based mechanisms (payments and direct controls) recommended when private incentives are less than public benefits

- Both carrot and stick approaches will tend be design-based

- Rather than efficiency, biggest difference between them is distributional and political
 - Payments for BMPs to alter existing practices
 - Controls to prevent from changing current practices