

# Cost-Benefit Analysis & CC-TAME\*



Projects vs.  
Policy

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Circle Project Clustering  
Workshop  
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\* **Climate Change - Terrestrial  
Adaptation and Mitigation in Europe**

# Key Message

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## Utility of Cost-Benefit analysis:

1. Appropriate alternatives
2. Reliability of:
  - Monetary cost & benefit estimates
  - Other assumptions
3. Transparency of methodology

# A Traditional Cost-benefit: GOAL: get more water to/off land



## Alternatives:

1. Surface drains
2. Stream clearing & snagging<sup>1</sup>
3. Channelize stream  
or

  1. Irrigation system
  2. Holding ponds
  3. Dams

**C-B: Which provides the most income per \$ spent?**

<sup>1</sup> selective removal of trees brush & other obstructions to flow

# Cost-Benefit Analysis: Projects

## Project Characteristics

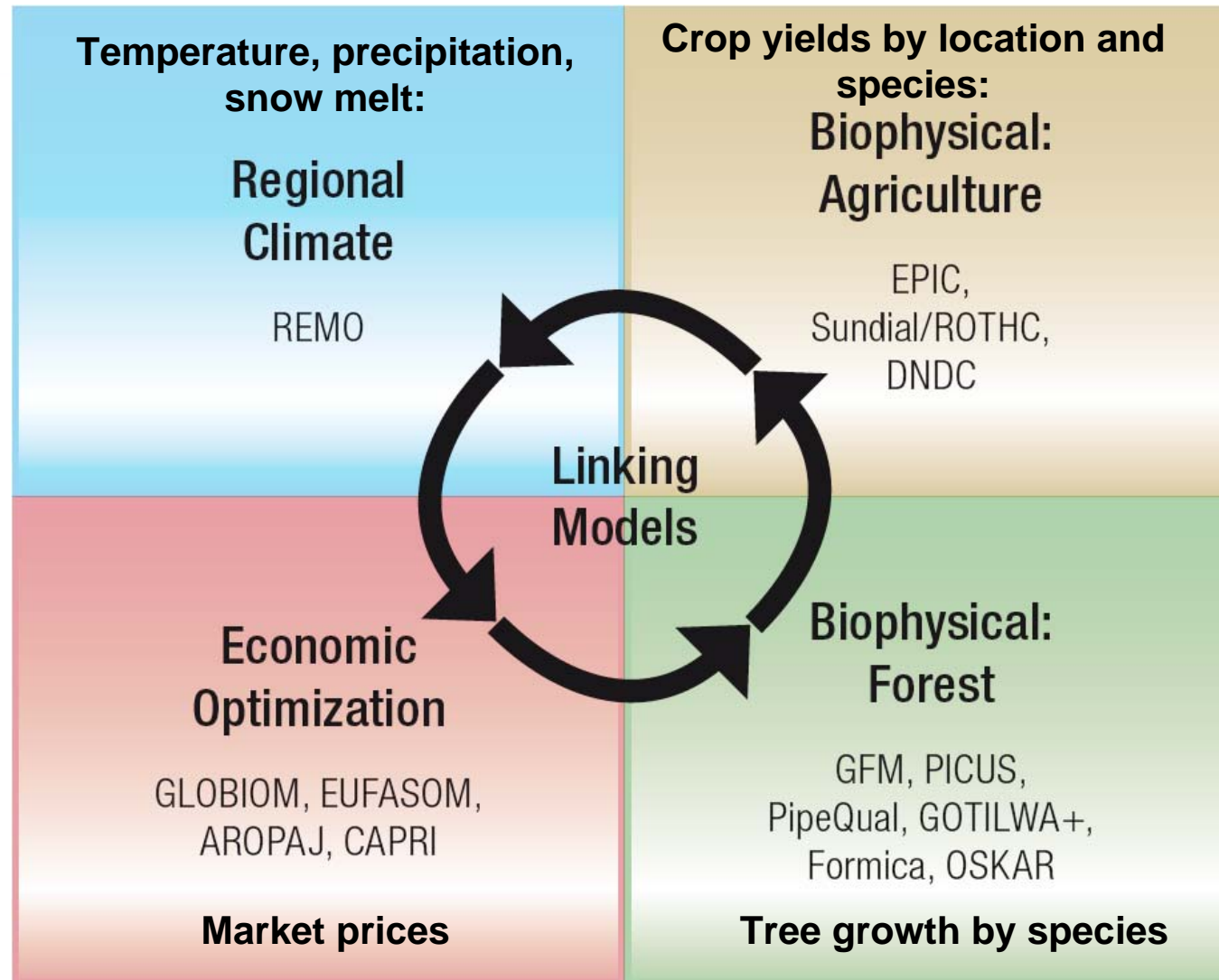
1. Goal: find best B/C ratio among options
2. Small region
3. Small set of options
4. Discrete costs
5. Comparable data

**Decision-maker friendly**

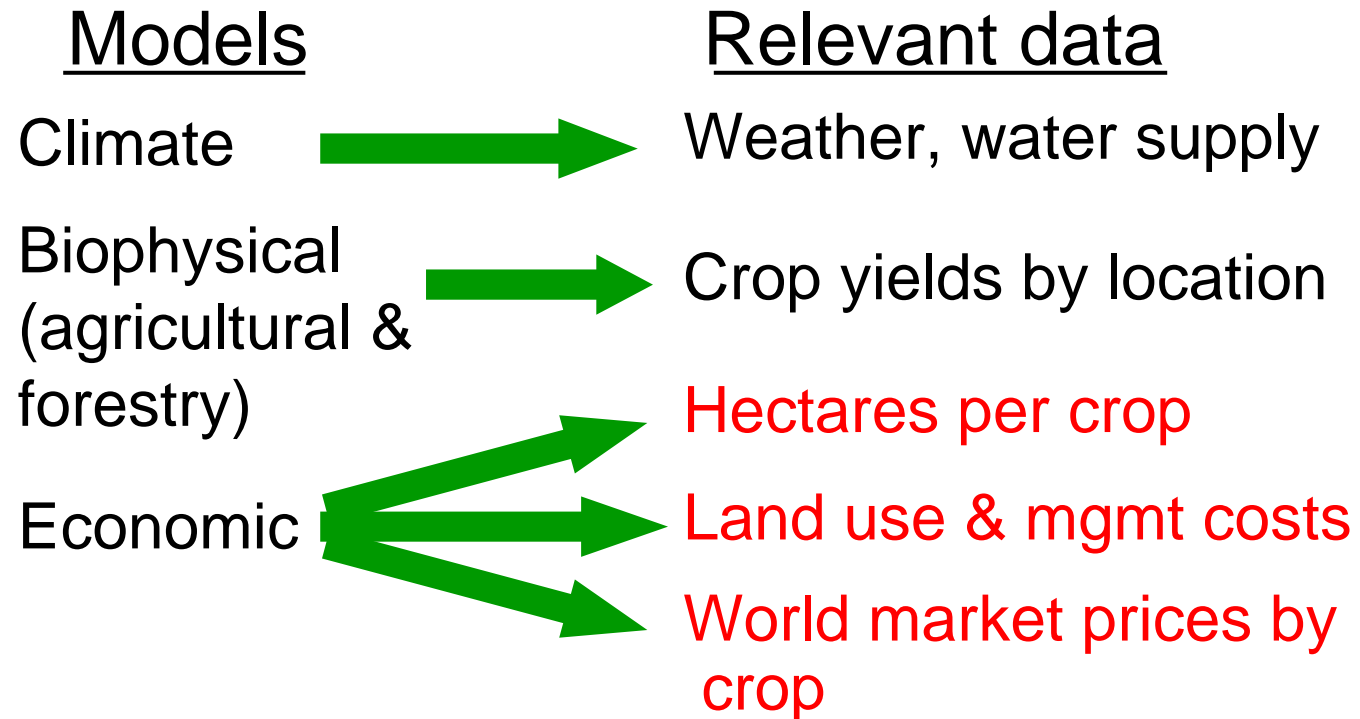
## Leads to

- 2: Well-known/easily confirmed data:
  - local crop prices & yields
  - interest rate
  - local labor costs
- 3&4: Investment amount options limited
- 3-5. Calculation straightforward:  $\text{benefits} \div \text{costs}$

# CC-TAME:



# CC-TAME & Project C/B analysis



- 1) Data is embedded in models; needs to be extracted
- 2) **Data interacts/feedbacks involved:** weather & market prices alter hectares & crops planted

# CC-TAME GOAL: Improve **policy** selection

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## CC-TAME will

### Evaluate:

- Land-sector mitigation & adaptation options
- Impacts of land-use policy options
- Feed-backs between land use and climate

### Provide:

- Maps, e.g., biomass & carbon stocks
- Trade-off analysis, e.g., bioenergy vs sequestration
- Negotiation support, e.g., implications of bioenergy targets
- **Cost curves: adaptation & mitigation options**

# What do policy-makers ask?

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1. What is the least-cost way to meet a GHG target\*?
2. What is a financially feasible target\*?
3. What is a fair way to distribute the burden?
4. Who or what gets hurt/helped?

Policy-makers almost never ask

**Which approach provides the most benefits per dollar invested?**

\* subject to many constraints

# Cost-benefit analysis: Climate Change Policy

## Policy Characteristics

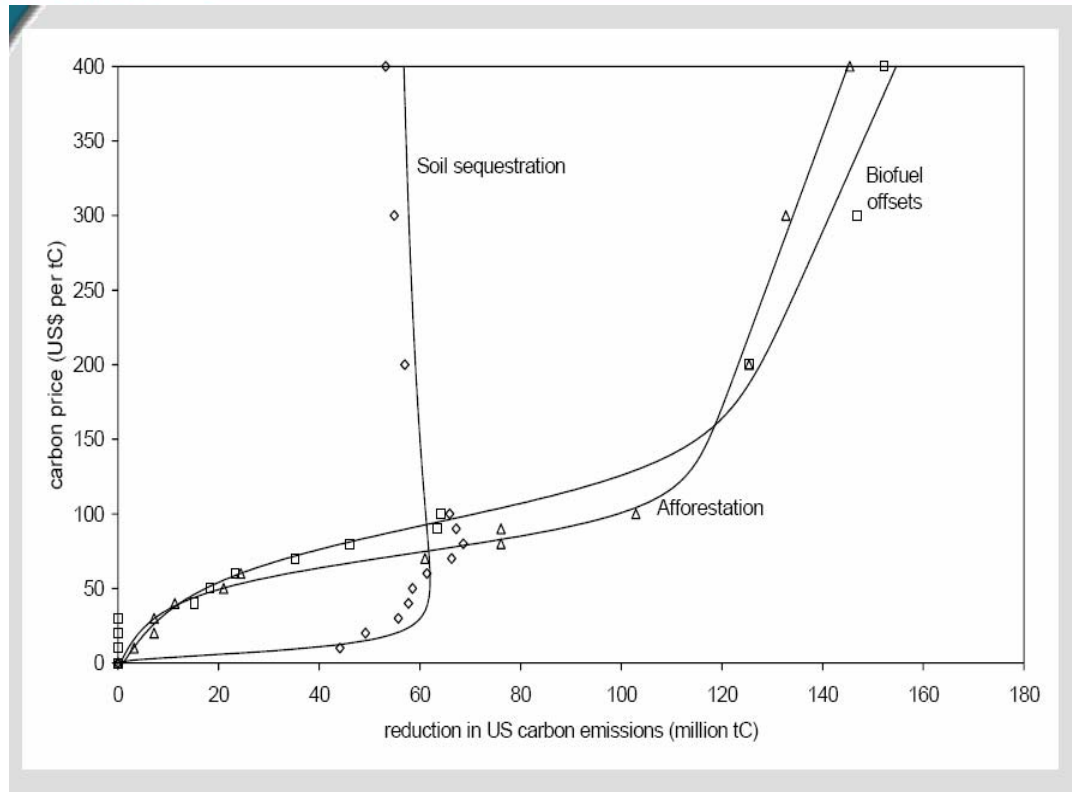
1. Goal: option mixes
2. Large areas
3. Key data unknown
4. Multiple options
  - Land use & management
  - Engineering solutions
  - Options in other sectors
  - Policy options
5. Continuum of investment levels

## Leads to

- 2: Data not well known
3. **Benefits per tonne GHG reduction;**  
**Carbon prices**
- 4: Data not comparable across options
5. Level of investment arbitrary

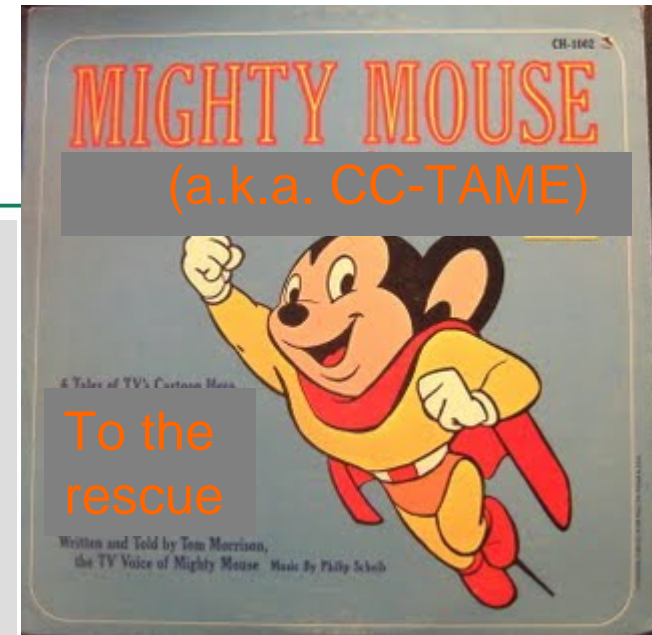
**Meeting utility criteria challenging**

# CC-TAME cost curves



Source: Bruce Mc Carl

\*Land use & management only



Least-cost  
options\* can  
seen at a glance  
for selected  
GHG goal.

# Tools versus Needs

	Project analysis	CC-TAME	Policy analysis
	B/\$ used	Info extractable / Cost curves	B/\$ rarely posed
Options clear	yes	TBD	?
Reliable data & transparent method	yes	NA only scenarios offered	?
Convincing to others	yes	TBD	?

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A Work in Progress

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