

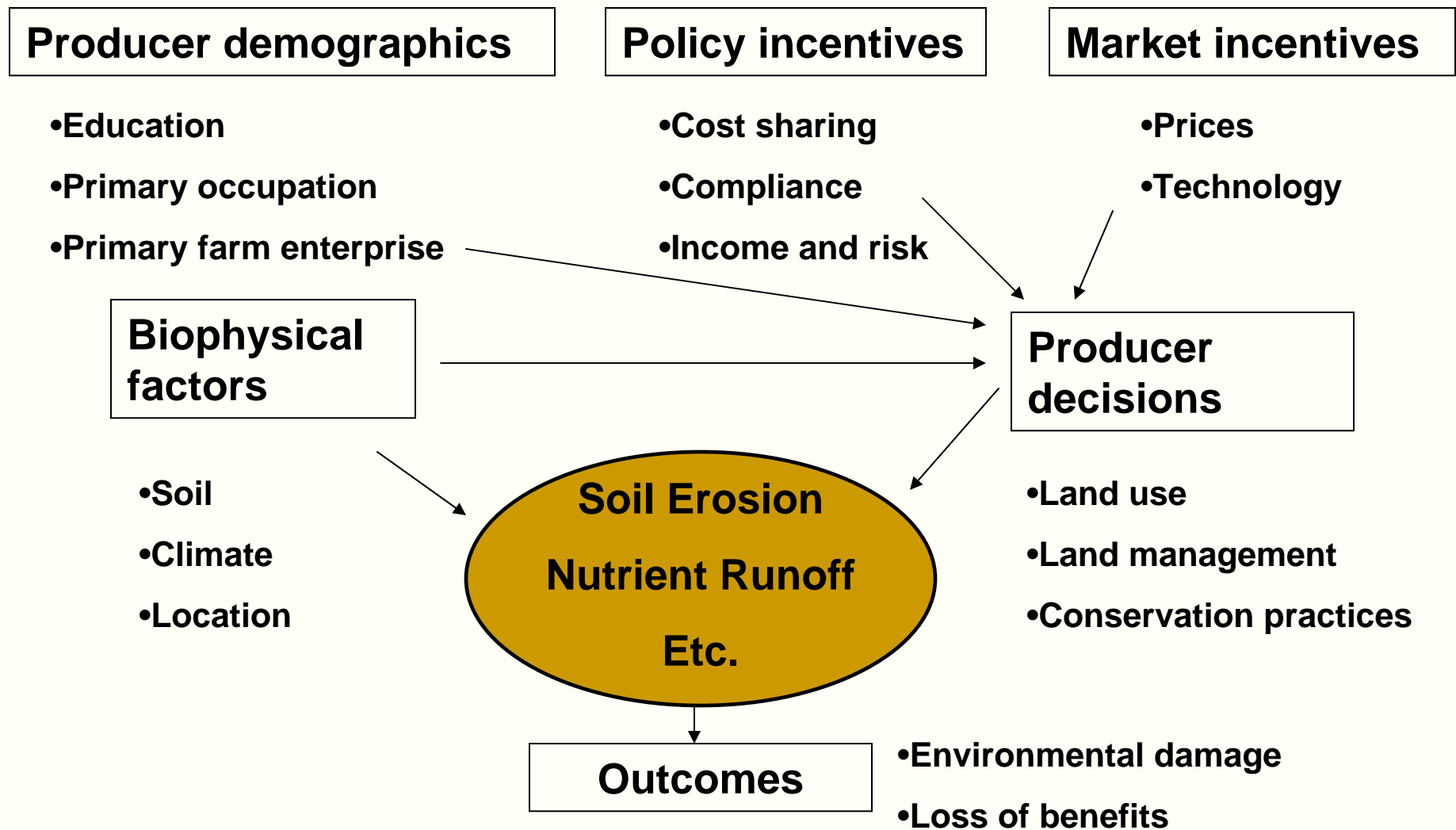
Modeling Conservation Behavior

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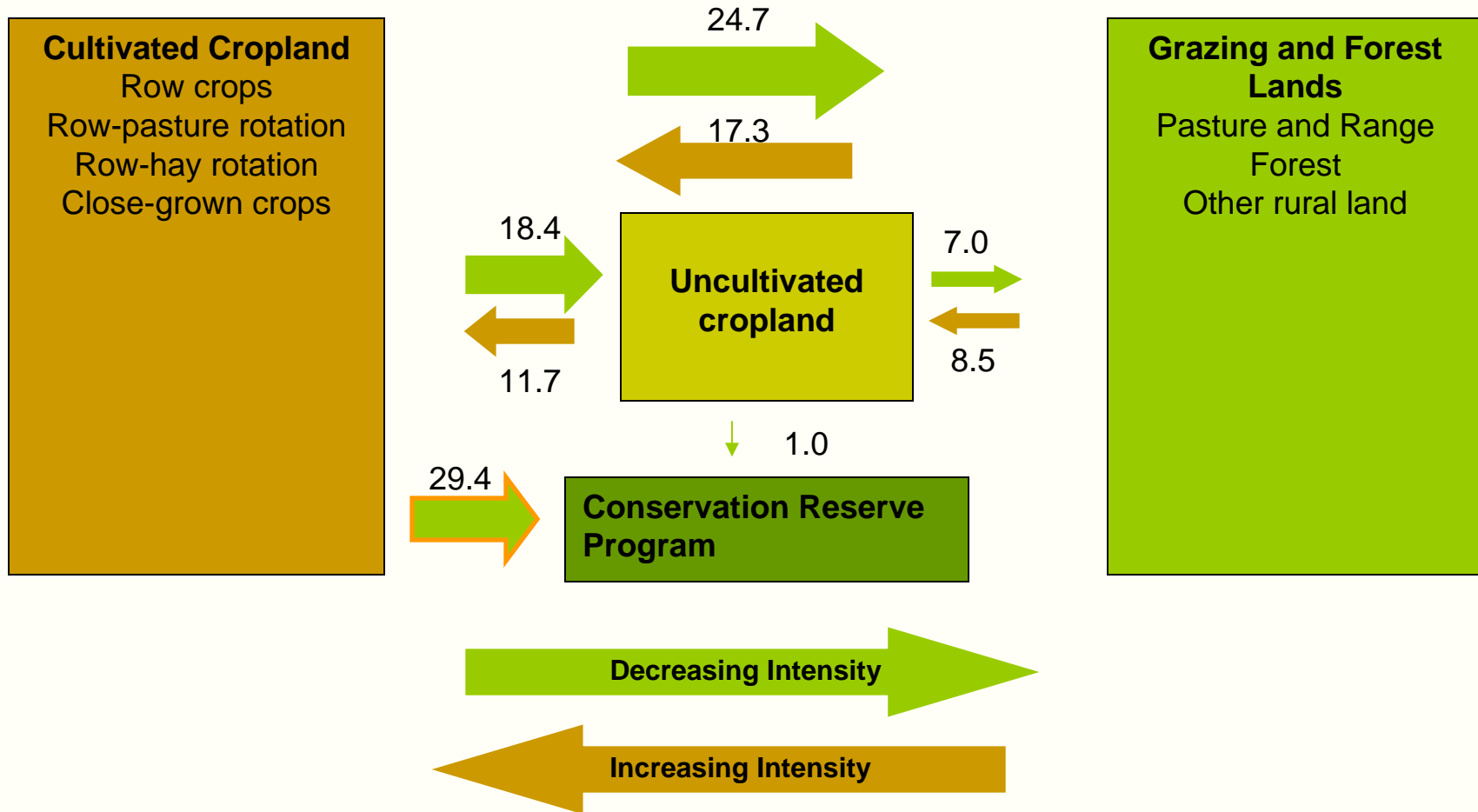
Modeling producer decisions: Producer, policy, market, and resource context



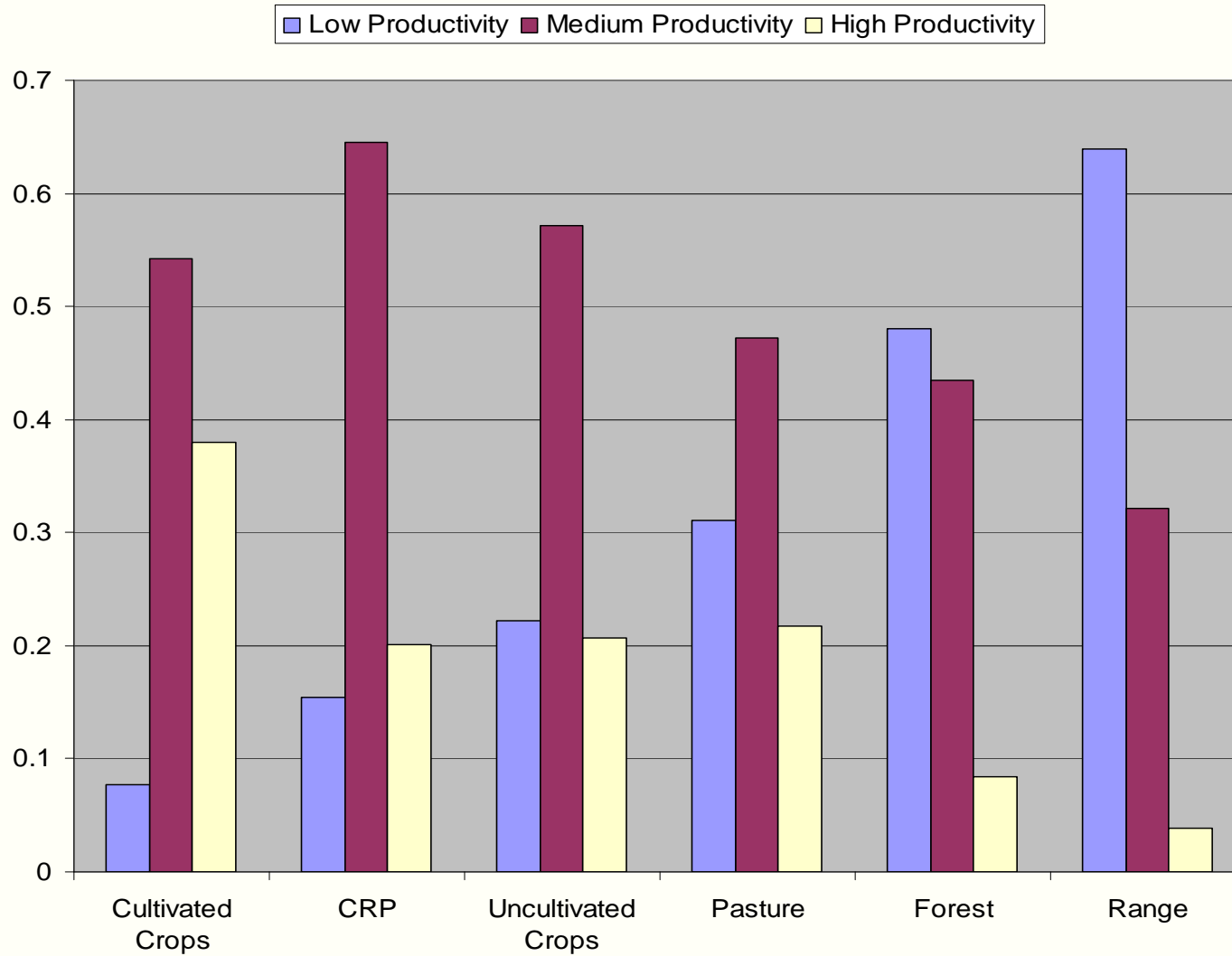
Environmental effects of land-use change: The role of economics and policy

- Producer decision: Land use for cultivated crops
- Policy context
 - Increase in Federal crop insurance premium subsidy (1995)
 - The Conservation Reserve Program (CRP) (ongoing)
 - Major change in Federal farm commodity payments (1996)
- Resource context
 - Land productivity
 - Potential for erosion, nutrient runoff, loss of habitat
- Market incentives (commodity prices)

Land use data: National Resources Inventory ag and forest uses 1982-1997 (million acres)

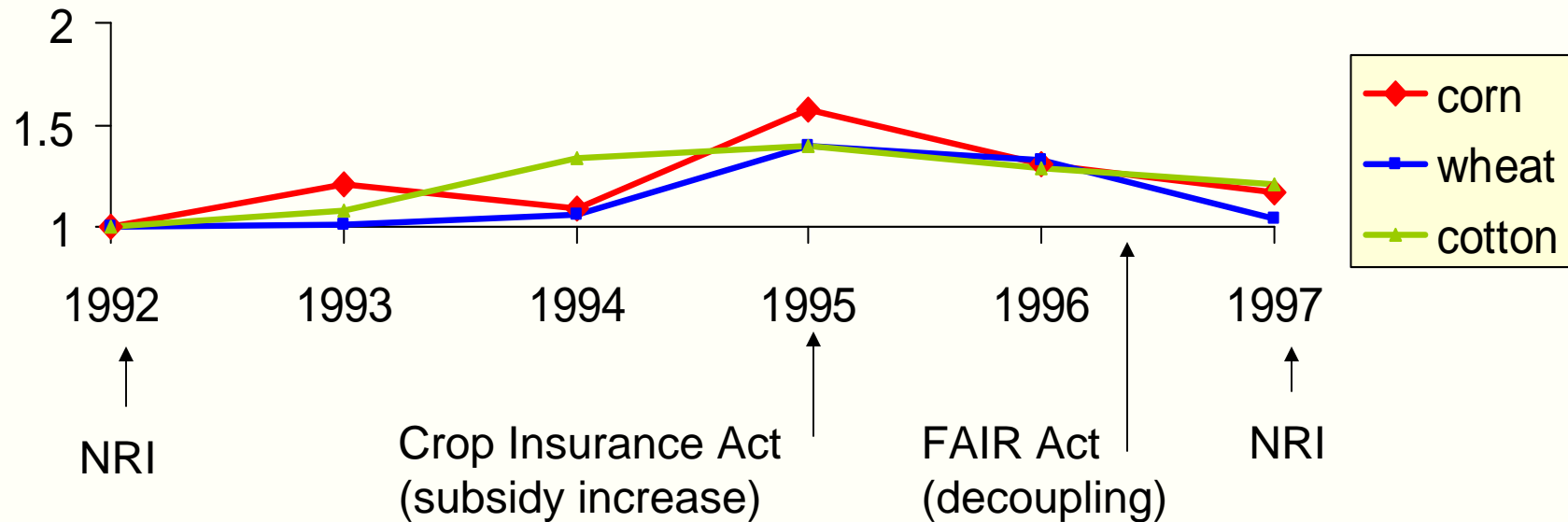


Productivity data (SRPG) links directly to NRI



Temporal aggregation can mask links to market and policy conditions

Relative year-to-year price change for corn, wheat, and cotton
1992-1997



Spatial links to crop insurance and demographic data could be improved

- Crop insurance incentives calculated as county averages
 - Estimated effect of crop insurance premium subsidy increase calculated at the county level
 - Estimates reflect county-to-county variation but not farm-to-farm variation

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- Crop insurance incentives calculated as county averages
 - Estimated effect of crop insurance premium subsidy increase calculated at the county level
 - Estimates reflect county-to-county variation but not farm-to-farm variation
- No demographic or farm-level economic data

Conclusions

- Researchers must often choose which parts of the overall decision-making context they will represent well
 - NRI was essential to describe land use change
 - But ARMS could have represented the policy and demographic contexts more accurately
- CEAP and CEAP-ARMS do bridge this divide to some extent
 - NRI and ARMS-type data available at the field level
 - CEAP-ARMS sample is small