

# Framing questions

Workshop on agent-based land market models

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# Questions

- How can we design land market interventions to manage provision of ecosystem services (either regulatory or market-based)?
  - Zoning, buffer zones, setbacks
  - Market for ecosystem services
- Application to urban and agricultural:
  - Urban
- Zoning and buffer are regulation that modify your use rights; these modifications would be capitalized into sales prices

# What do we mean by a land market based regulation?

- Modification of use rights, capitalized into sales prices (through zoning or spatial regulations)
  - Certification
  - Subsidies (condition on land use or management)
  - Regulation
- Preferential taxation/transfer taxes
- Land banking (need to regulate)
- Land retirement/easement
- Participation in tradable permit programs
- Limited subsidies/individual tradable quotas/TDRs
- Infrastructure policies (transport, water, sewer, irrigation)

# What programs appropriate for what ecosystem services? (did not address)

- TDRs/open space preservation
  - Preserve in one area in return for the right to build at a higher density in another area.
  - ABM can model interactions between zoning and developer choices, especially developer pressure
  - Lets you model hotspot issues and tradeoffs
  - How have these been modeled in general?

# Modeling challenges for TDRs:

- Expectations:
  - Will regulation stay in place? (Could I build at a higher density at a later point?) (Can model it as probabilistic)
  - What will be other patterns of future development? (densification, transportation networks, proportion of open space)
  - Expectation are more important when there are fixed costs of conversion/irreversibilities
  - What will be future infrastructure provision? (scenarios)
- How do you deal with time: simultaneous decisions (how to model synchronous decisions) Can predict the future sequence of growth but not timing. How do you incorporate the development of policy, esp. zoning? (What are the threshold that trigger changes in zoning and how?)

# Issues in agricultural settings?

- Farmland/agribusiness, water and irrigation rights
- Collective sales of water rights