Do Social Factors Affect the Success of Water Quality Trading?

EPA/USDA National Conference on Water Quality Trading
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Partnership on Technology & the Environment

- – Formed in 2013 as a multi-stakeholder group
- – Participants have included:
  - EPA, WBCSD, DOE, EDF, AU, GWU, DOC
- – Focus is on promoting dialogue, analysis on how to accelerate pace of technology innovation
  - Grew out of 2012 Technology Market Summit
  - 2014 workshop on nutrient sensors & financing innovation on water utilities
  - 2015 workshop on nutrient sensing/monitoring to support water quality trading

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Workshop on Nutrient Monitoring to Support Water Quality Trading (June 2015)

– Seeking advice on a project to simulate trading on a sub-watershed of the Chesapeake Bay

– Linked with EPA's Nutrient Sensor Challenge and remote sensing work of Chesapeake Conservancy

– Considered use of real-time data from distributed sources and optimal placement of monitoring capabilities

– Participants included: EPA, USDA, MD DOE, AU, GWU, EDF, Chesapeake Conservancy, WRI, aggregators, business

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Workshop Findings & Recommendations

- Enhanced monitoring & better data could reduce uncertainty & increase credibility
- This could reduce uncertainty ratios and costs
- A simulation could inform such decisions
- On the issue of trust & credibility:
    - Better data could increase trust
    - More trust could reduce costs and uncertainty
    - Should know more about interactions among social and technical factors

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Features of Water Quality Trading
(compared to air cap & trade)

– Greater chance of local variations

– Sellers largely unregulated; fewer incentives

– Sellers have less experience with regulation

– Major challenges in monitoring, verification

– For sellers, essentially a voluntary program

Consequences of These Differences

– Rational actor model takes us only so far

– Economic incentives matter but insufficient

– Need to understand the social context in which opportunities are evaluated and decisions made

– Understanding of local contexts and relationships is critical to the success of trading programs

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Role of Trust in Market Exchanges

Humphrey & Smitz 1998)

– "the issue of trust arises because economic transactions involve risk." (33)

– Trust means that you are (1) accept risk and (2) believe that others will not take advantage

– Study of industrial districts in Italy:

  • "emphasizes the embeddedness of enterprises in communities and the socio-cultural ties which facilitate trust and sanctions." (51)

– "a 'broker' or 'facilitator' appears to be central to the process of kick-starting networks." (55)

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Motivations for Environmental Compliance
(from political scientist Peter May)

– "the interplay of a regulatory framework and the context within which it is embedded is important for explaining compliance motivations…" (May 2005, 340)

– Should view regulation as "fostering a societal or social contract rather than regulation as seeking compliance with enforcement directives." (May 2005, 340)

– Compliance a mix of affirmative and negative motivations:

  • Good intentions and sense of obligation to comply
  • Fears of consequences of being found in violation

– Argues: "regulation is better characterized as fulfillment of a social contract than solely as compliance with enforced directives." (May 2004, 41)

Social Embeddedness Theory
(Breetz, at al, 2005)

– "historical mistrust of regulators and other actors has hindered productive communication, contributing to farmer's initial unwillingness to participate in water quality trading." (172)

– Trust: "confidence that an exchange partner will not act in self-interest at another's expense." (174)

– Find it hard to trust government and others due to "trust and communication barriers." (173)

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Role of Trusted Relationships
(Breetz, at al, 2005)

– Lots of evidence on trust in market relationships

– Trusted relationships can:

  • "facilitate strong communications, promote access to greater trading opportunities, reduce transaction costs, and create a more efficient market." (175)

– Consider three mechanisms for reaching farmers:

  • Education (new mechanisms)

  • 3rd-party facilitator

  • Build on existing networks

– Best results when programs build on existing, established relationships

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Farmers, Trust, and Markets
(Mariola, 2012)

- – "the key to securing more farmer buy-in lies not with institutional design but in the largely overlooked realm of *social relations*." (578)
- – Trust facilitates market relationships by:
  - Enhancing credibility of information
  - Lowering transaction costs
  - Reducing risk and uncertainty
  - Building upon existing, 3rd-party networks
- – "Does a program use as its chief intermediary an entity directly involved in agricultural conservation that claims pre-existing ties to the local farming community?" (580)

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How to Frame the Opportunity
(Mariola, 2013)

- Don't say:
  - "How would you like to participate in a credit trading program with treatments plants and the government?"

- Do Say:
  - "Hey, we've got some money for manure storage, do you want it or not?"

- "From the farmers' point of view it is an act steeped in risk, uncertainty, and even skepticism." (579)

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Questions for Research

1. What can we learn from research on market and regulatory functioning and behavior?

2. Balance of affirmative & negative motivations:
    1. Sense of civic duty, reputation, shared problem-solving
    2. Fear of consequences of being caught

3. Is trading as much a social as an economic and regulatory process?

4. How do social factors (trust & credibility) affect feasibility of water quality trading in practice?

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Questions for Practice:

1. What is the local context?
2. Who are the trusted intermediaries?
3. To what extent can social factors help in reducing uncertainty?
4. How does social embeddedness interact with data needs and mechanisms like trading ratios?
5. How can government, NGOs participate in a trust-building process? (Should they?)
6. What actors are suited to role of trusted intermediaries?

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