



GRAHAM
SUSTAINABILITY INSTITUTE
UNIVERSITY OF MICHIGAN

Economic Impacts of Solar on Rural Communities

Sarah Mills, PhD

Solar: New Threat or Opportunity?

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The Washington Post
Democracy Dies in Darkness

Local

Proposed solar energy developments draw opposition over loss of farmland



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The Washington Post
Democracy Dies in Darkness

Business

The next money crop for farmers: Solar panels



What I'm not talking about (but Brady will)



<https://news.energysage.com/how-many-solar-panels-do-i-need/>

<https://www.lansingstatearray/76726074/>

What we are talking about



Two Creeks, WI, 800 acres

https://madison.com/wsj/business/construction-at-halfway-mark-for-wisconsins-first-large-scale-solar-farm/article_a3153d9a-e93e-5807-a975-036f241702ff.html

Lapeer, MI, 267 acres



Solar as Economic Development

Individual

- Landowner Lease Payments
- Payments to neighbors

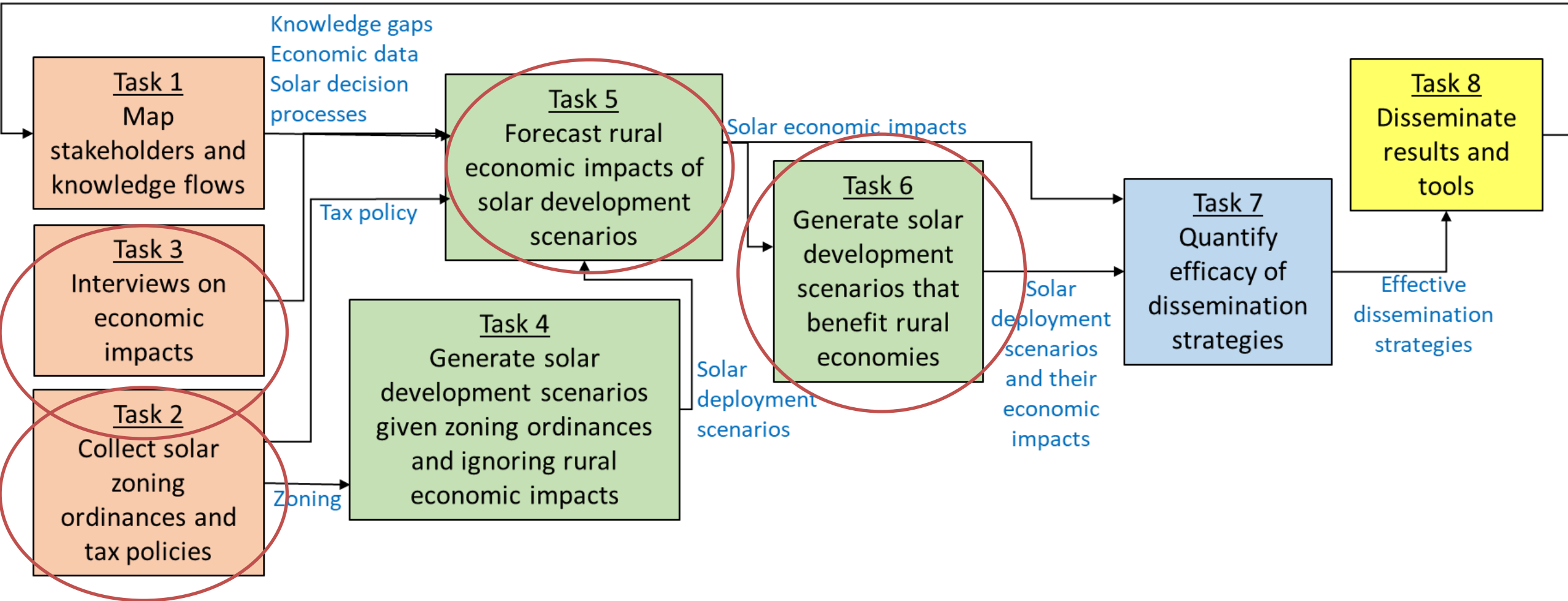
- Displacement of previous ag activity

Community-wide

- Property tax payments
- Donations
- Long-term jobs (operations)
- Short-term jobs (construction)

- Previous property tax payments
- Jobs in displaced sector

DOE – funded research



Interview Data

All projects ≥ 5 MW

Letter to all landowners (102)
with request to interview (12)

Emails to county / township
officials (93) with request to
interview (19)

- How much solar land is leased vs. purchased?
- What are leaseholders (counties) doing with revenue?
 - How does revenue recirculate in local economy?
- Comparison of solar to ag

Landowner Interviews

- Lease rates \$700-1250/acre/year with escalator
 - no pattern in project size or year
 - All doing better than previous cash rent⁺⁺ or crop yield
- Use of revenue
 - Active farmers (6/12)
 - Reinvest in farm or money in bank in preparation for retirement
 - Former farms (3/12) and heirs (3/12)
 - Money in bank
- Key impact = landowner local or not impacts recirc of \$\$

Landowner Interviews

- SURPRISE! Not all land is leased!
- 62% of land held by person/farm operation
 - 27% purchased by solar developer
 - 11% public land or non-energy private company
- Key impact = 1-time versus annual cash flow

Local government Interviews

- How noticeable tax revenues are depends on:
 - Project size
 - Tax structure (e.g. MN separate stream; IN pie doesn't grow...)
- “something” but not huge
- Few direct donations
- No notable negative impacts
- Key Impact: Need to know local tax structure

Calculator (led by Steven Miller, MSU)

- Excel-based
- Installation & Operations Phases
- County-level
- Indirect/induced impacts



Positives and Negatives



- Solar jobs
 - Installation
 - Operations
- Tax revenues
 - lower taxes to residents if no net increase
- Landowner payment(s)

- Displaced ag jobs
 - Considers typ. Yield

Preliminary observations

- Government & individual spending provides similar in-county multipliers
- Displaced ag has much higher in-county multipliers
- Where original landowners are in-county, leasing vs. purchasing makes a big difference; tips it from net positive to net negative
- **What is missing:** neighboring landowner payments; impacts on tenant farmers; impact on land market

Thank you

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