

Designing cost-effective voluntary programs that pay for agri-environmental performance

Leah H. Palm-Forster
Applied Economics & Statistics
University of Delaware

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Highlights

1

Payments for ecosystem services (PES) programs can compensate farmers for reducing nitrogen losses.

2

Directing funds to high - impact areas of the landscape can improve program outcomes.

3

Conservation auctions are a tool designed to cost-effectively allocate PES funds.

4

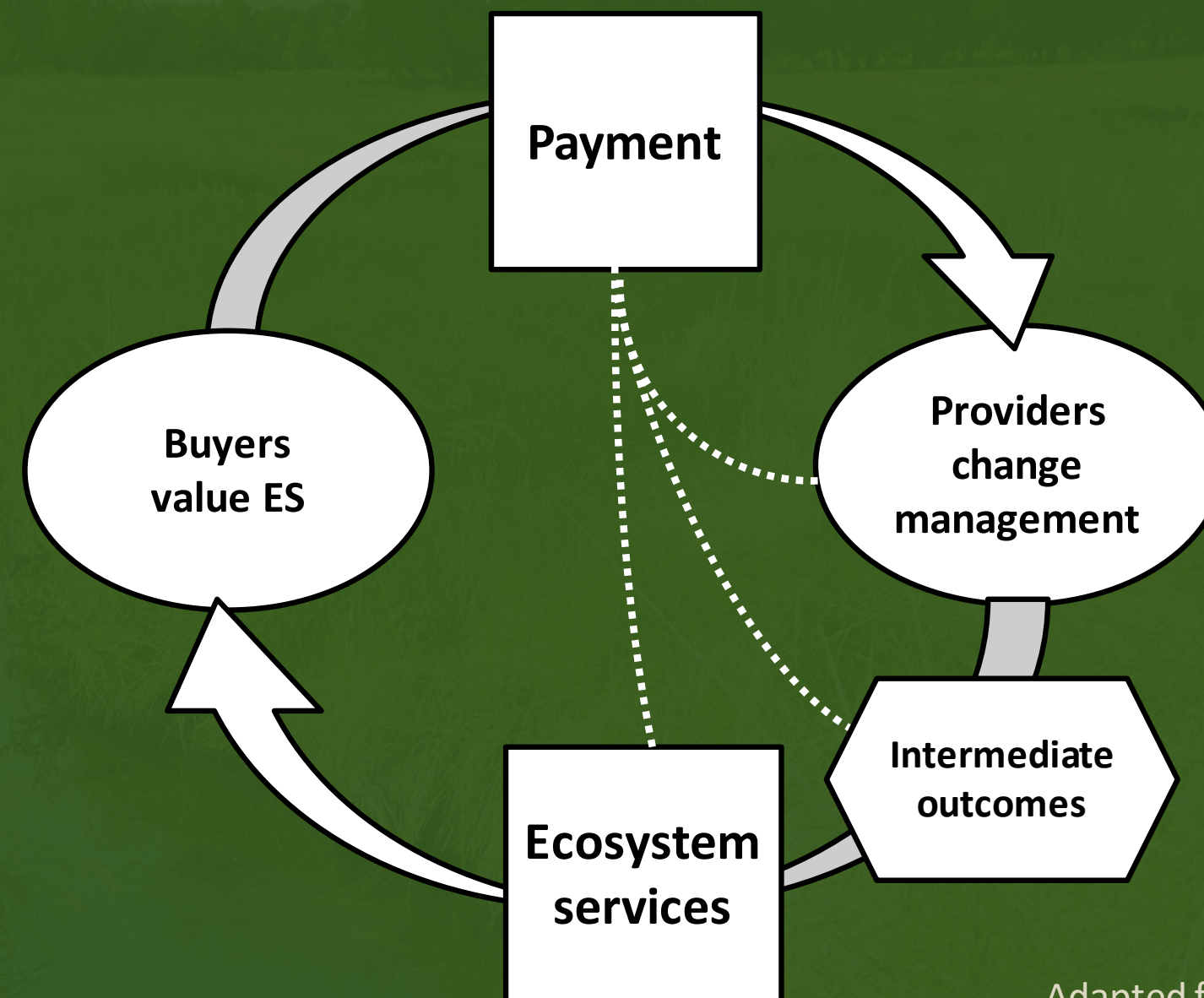
In practice, transaction costs (for farmers and administrators) can limit the cost - effectiveness of conservation auctions.

5

More refined targeting may offer opportunities at larger scales.



In Payments for Ecosystem Services (PES) programs, ES buyers offer financial incentives to providers that take actions to generate ES beyond the status quo.



Adapted from
Bladon et al. (2016)

PES programs can be designed in many ways.

KEY QUESTIONS

- Who pays?
 - Public via federal and state programs
 - Regulated entities
 - Private individuals, groups (voluntary)

- What do they pay for?
 - Practices
 - Predicted outcomes (performance)
 - Measured outcomes (performance)

- Who receives payment?
 - First-come -first-serve
 - Lowest cost providers
 - Those with high -impact practices / vulnerable land
 - Most cost -effective providers

- Payment levels?
 - Uniform: fixed payment or cost-share
 - Discriminatory



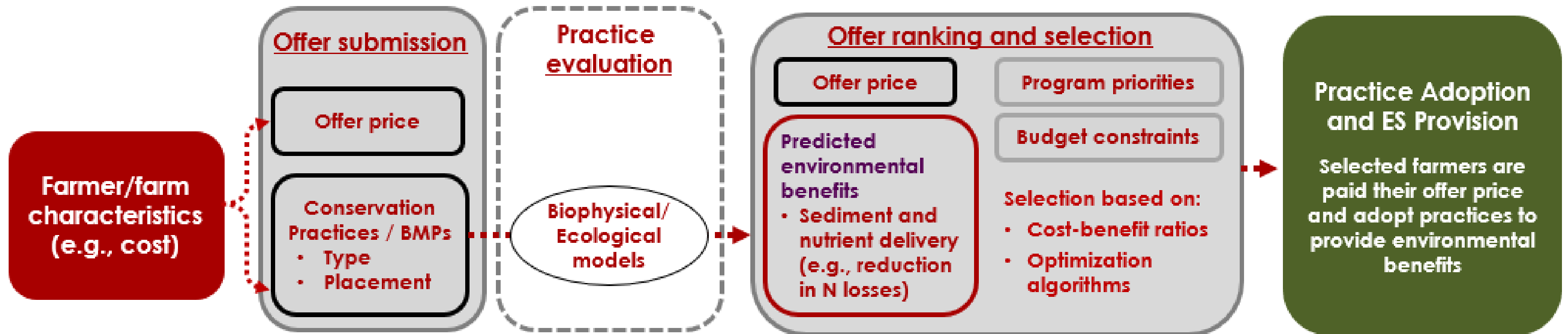
Adapted from
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Reverse auctions can be a valuable conservation tool

Conservation (reverse) auctions are a tool to allocate scarce program dollars to practices that will provide the most environmental benefit per dollar spent.

- Auctions are a mechanism to clear oversubscribed PES programs
- Creates competitive pressure to reduce costs and increase quality of offers.
- Pay-for-(predicted) performance

How do conservation auctions work?



Theoretical potential for auctions is limited by on-the-ground realities

Theoretical Benefits:

- Compete for scarce conservation funding
- Reveal private information about costs
- Target vulnerable lands by ranking projects



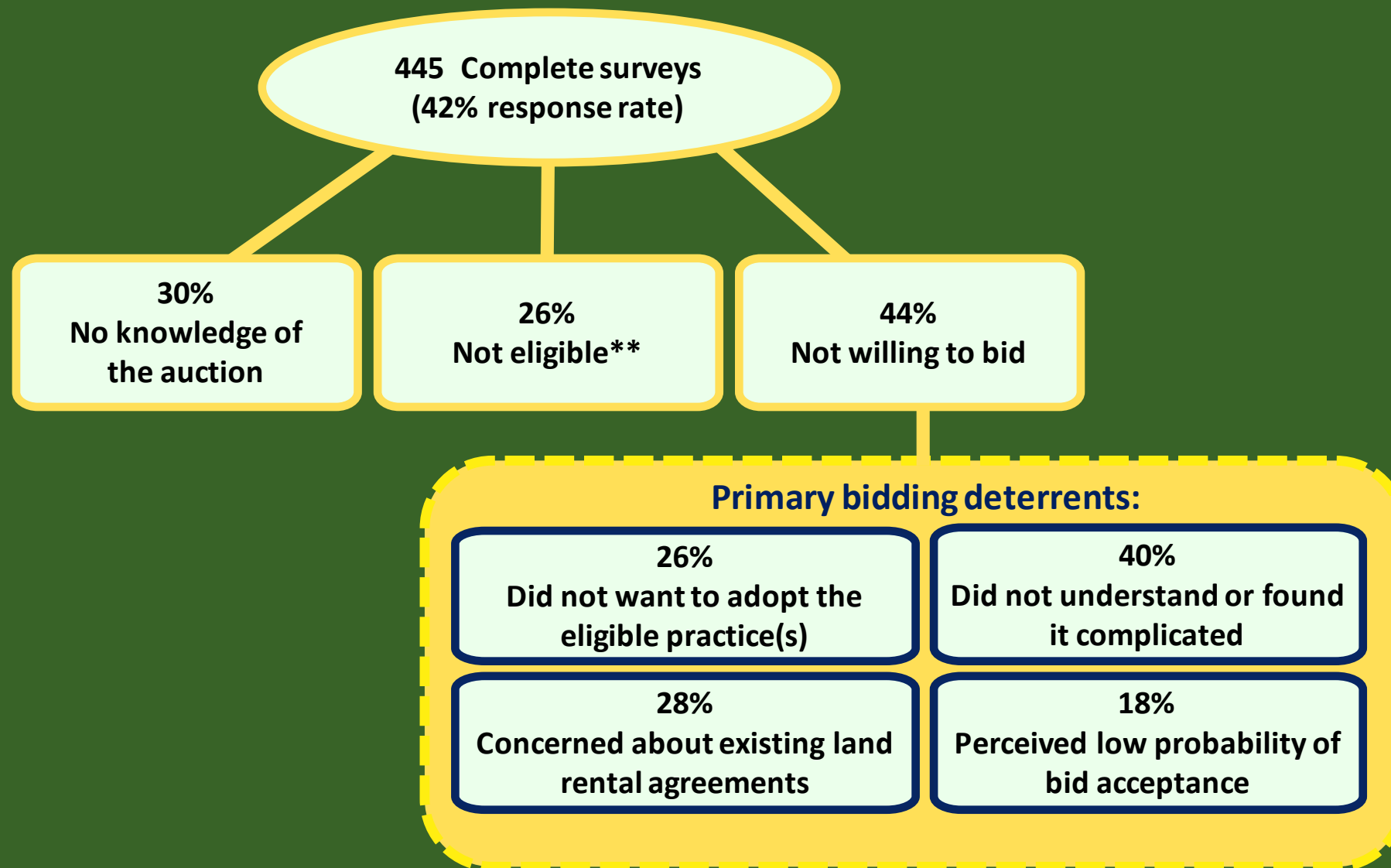
**Cost-effective
allocation of funds**

On-the-ground Realities:

- Need familiarity and ability to formulate a bid (farmer)
- Relies on timely participation (agency & farmer)
- Time and resources to evaluate benefits (agency)



**Transaction costs
exist for agency
and participant**

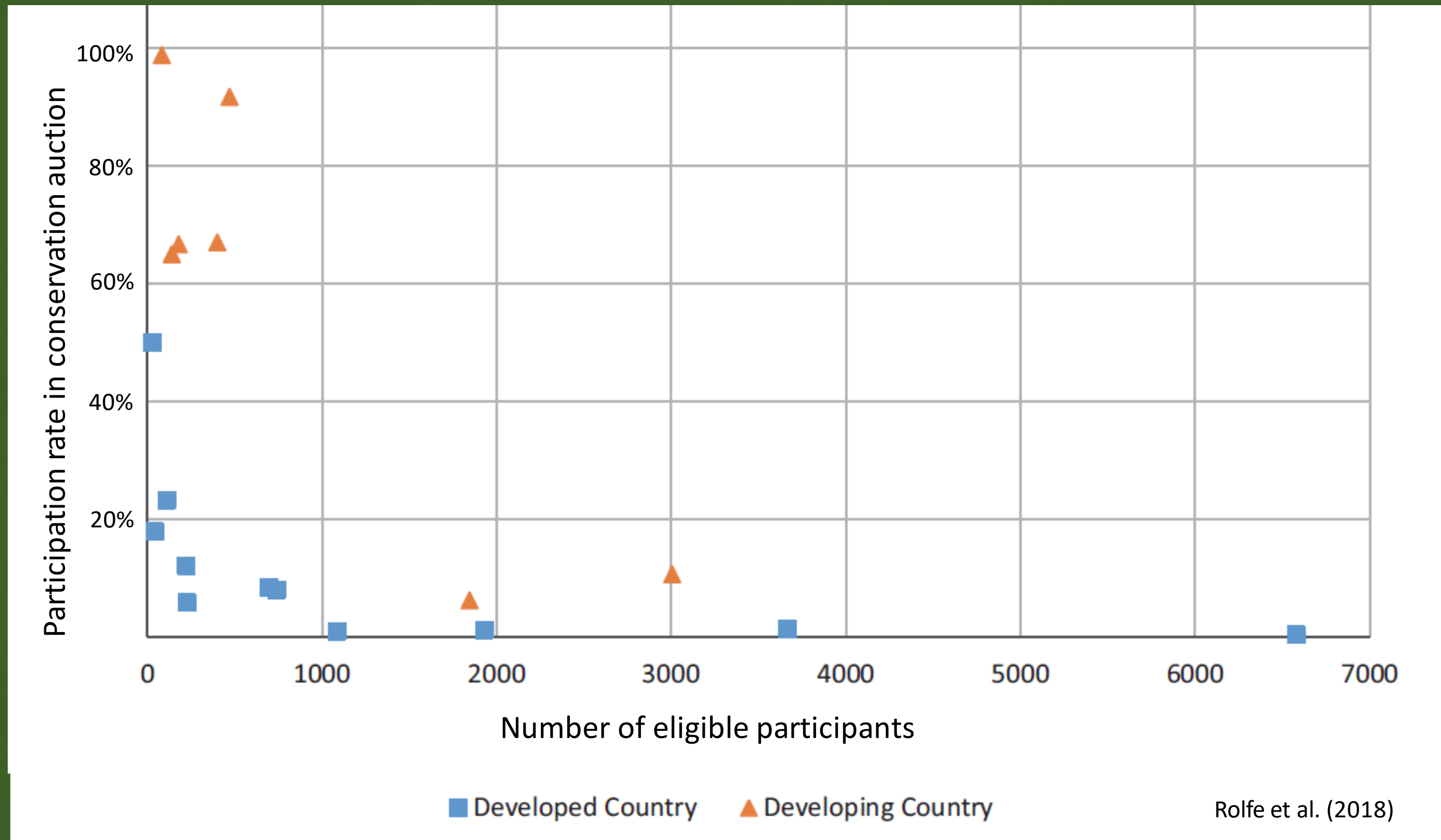


** Perceived ineligibility – some landowners and farmers reported ineligibility because of land rental agreements

Adapted from Palm-Forster et al. (2016)

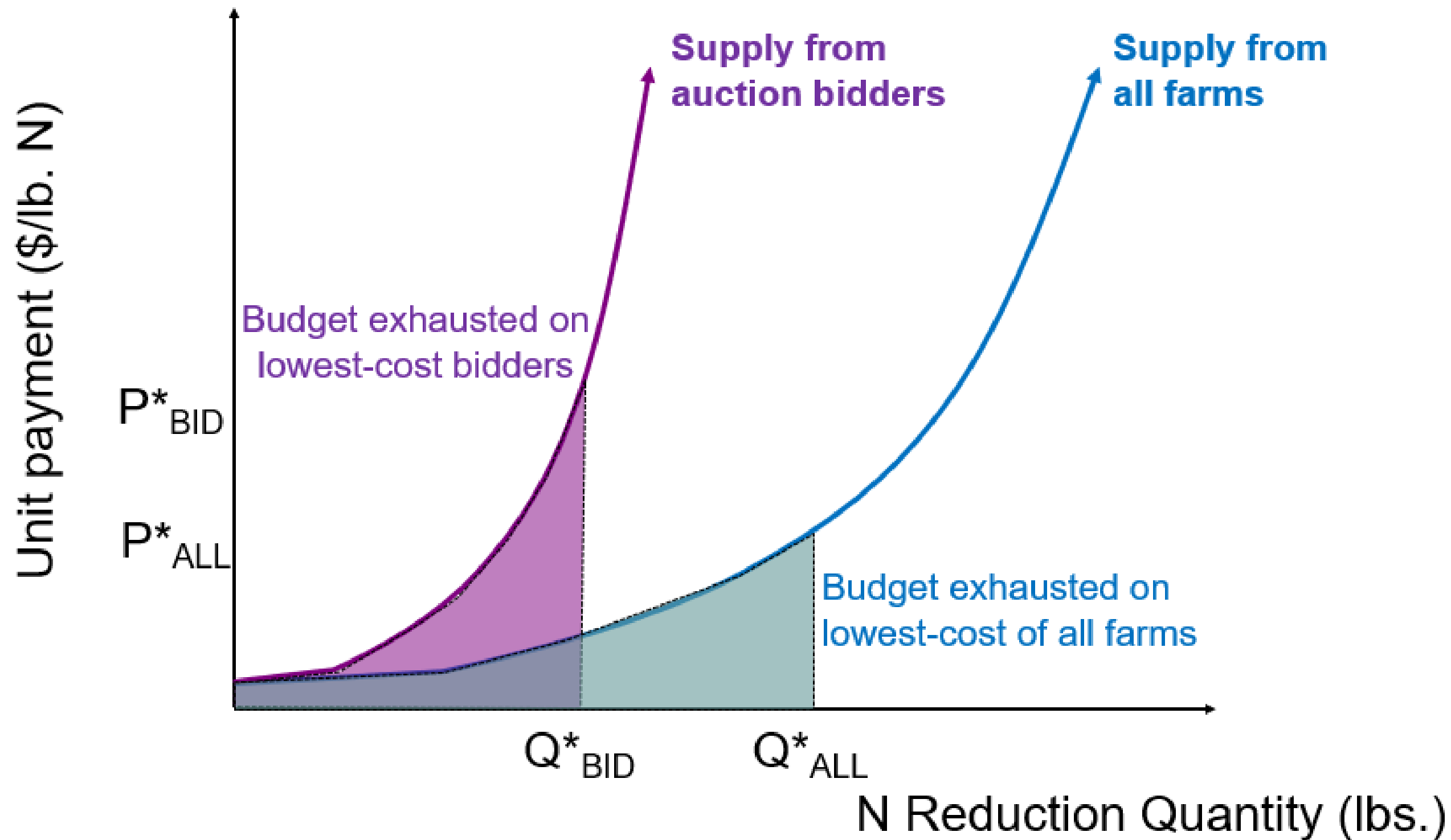
Transaction costs limit participation in conservation auctions, especially for working lands programs.

Low participation is common in conservation auctions in a variety of contexts.



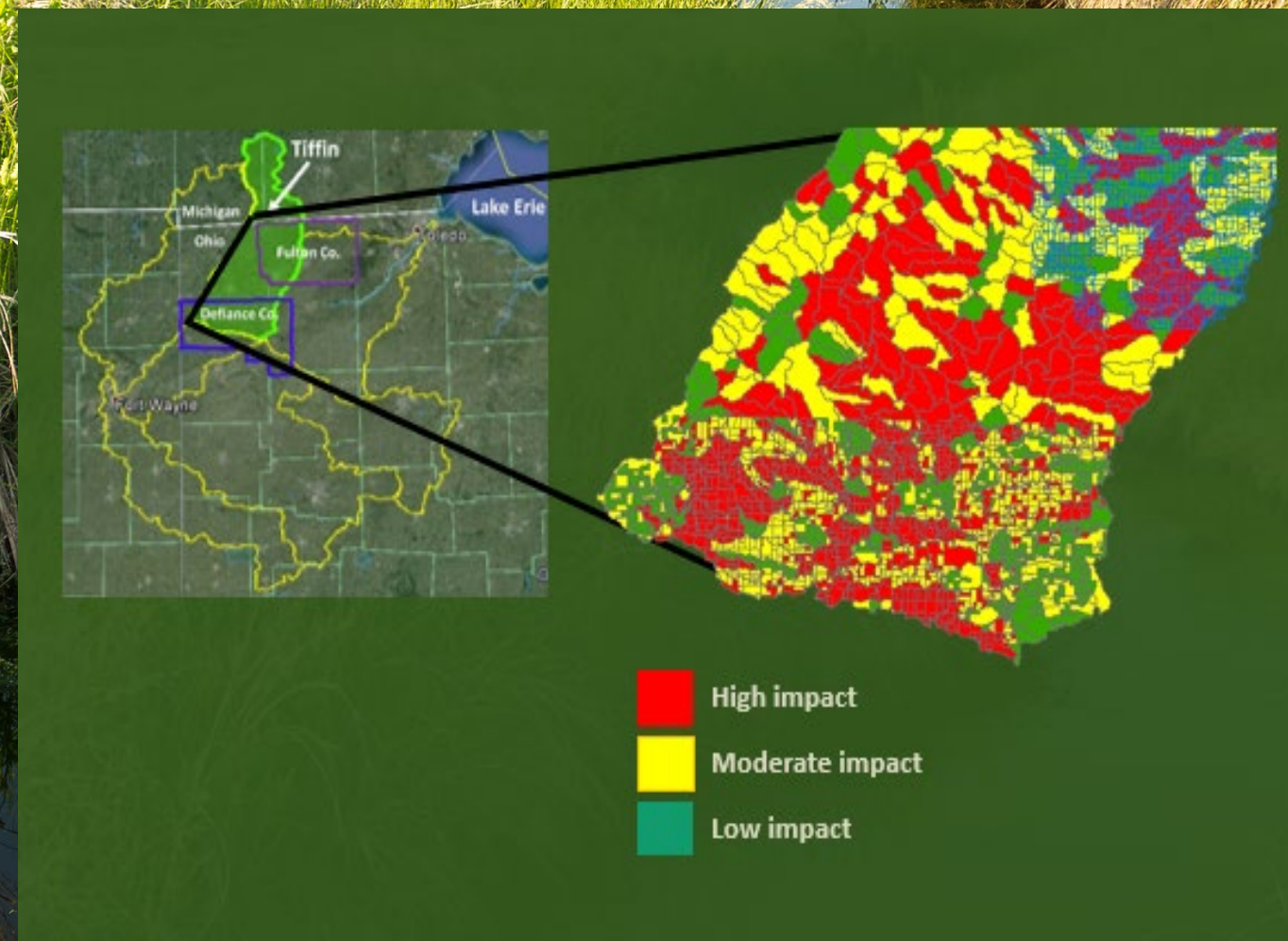
Rolfe et al. (2018)

Low participation limits the amount of nutrient loading reductions that can be achieved with a given budget.



Potential strategies to improve PES program design:

- Streamlining the design of auctions to reduce transaction costs.
- More refined targeting: offering payments for high-impact practices on vulnerable lands (limit PES eligibility, encourage competition on quality)



Questions?

Leah H. Palm-Forster
leahhp@udel.edu

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Key Takeaways

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Directing funds to high -impact areas of the landscape can improve program outcomes.

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Conservation auctions are a tool designed to cost-effectively allocate PES funds.

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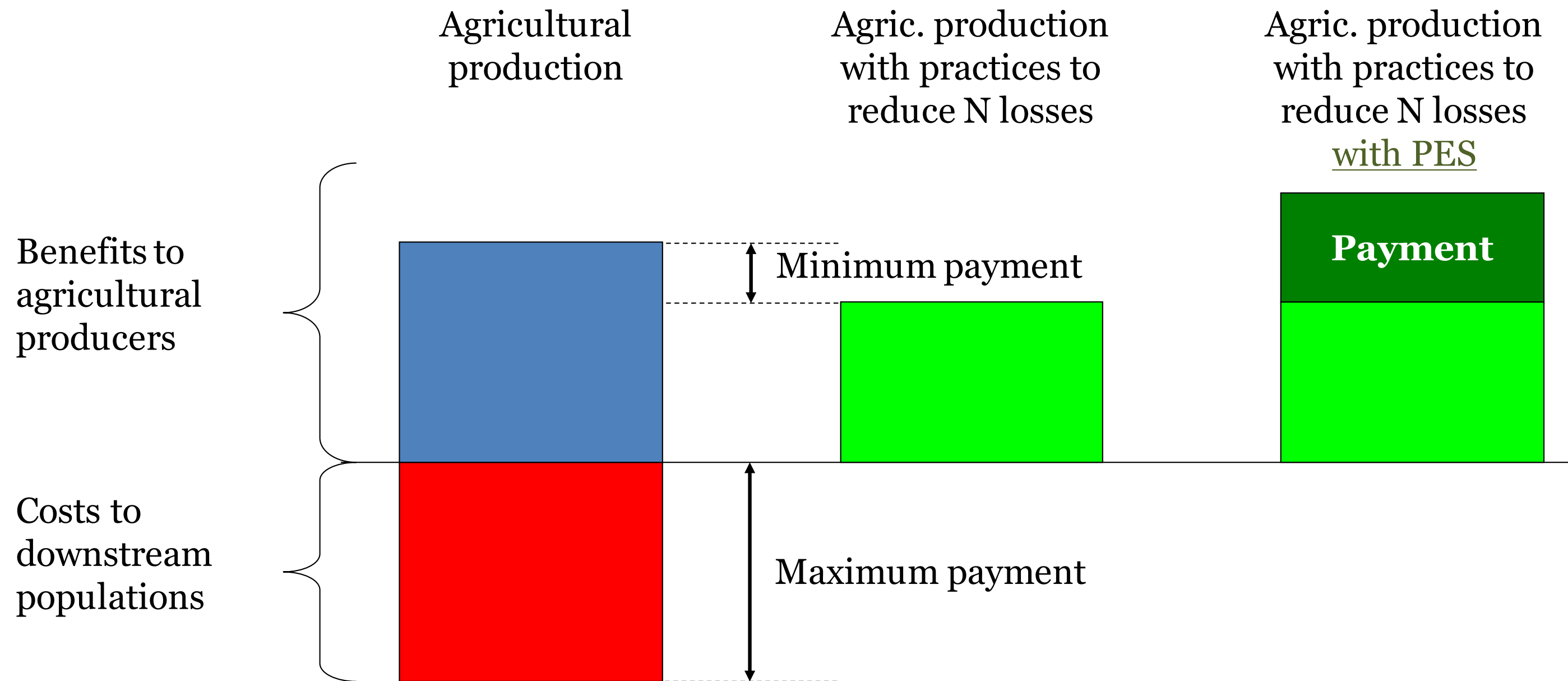
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Conceptually, there are a lot of different payment levels that ES buyers and sellers will both benefit from.



Adapted from Engel et al. (2008)