

Preferences for Adoption of Integrated Pest Management in Nigeria: A Discrete Choice Experiment approach

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Background

- Pesticide use poses adverse effects on the environment and human health.
- Sustainable crop protection alternatives like Integrated Pest Management (IPM) are being promoted.
- IPM adoption remains limited despite its benefits, partly due to socio-technical challenges and entrenched pesticide reliance in food systems.
- Understanding farmer preferences is key to designing effective, farmer -friendly IPM strategies.

Objective, Methods and Data

- To elicit Nigerian cucumber farmers' preferences for adopting IPM and to assess their willingness to accept (WTA).
- A survey of 325 farmers in Rivers State, specifically in Etche and Ikwerre local government areas.
- Discrete Choice Experiment (DCE).

Experimental Design

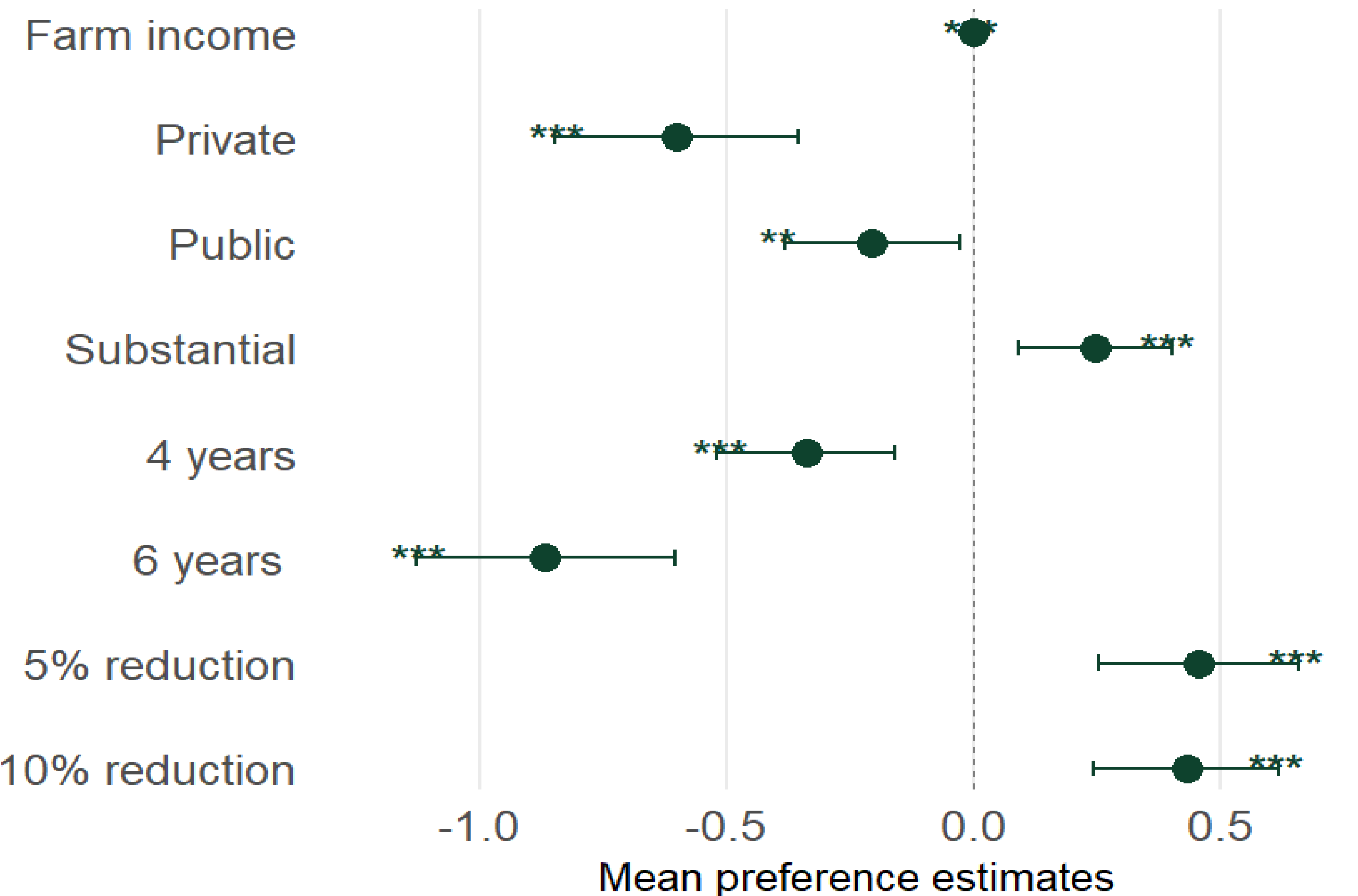
- A D-optimal fractional factorial design resulting in 24 choice sets based on five key attributes of IPM practices.
- 24 choice sets were split into 4 blocks of 6 choice tasks, with one block randomly assigned via LimeSurvey.

Attributes	Levels
Source of IPM advisory support	No support, public, private bodies
Reduction of pesticide residues	Small, substantial
Transition time	In 2, 4, 6 years
Farm income	-5%, no change, +5%
Production losses in a cropping season	Production reduces by 5%, 10% , 15%

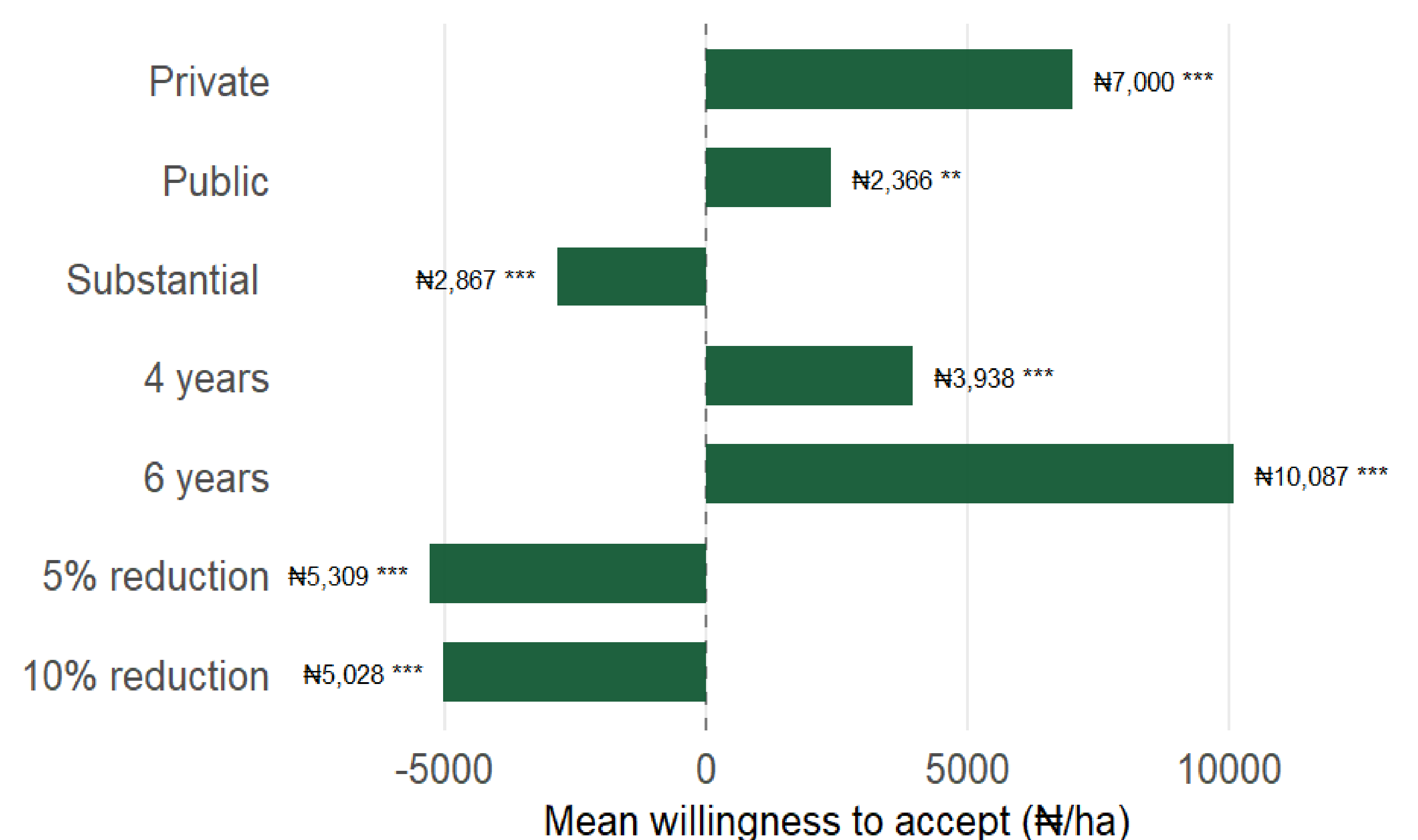
Note: Baseline levels are no support, small, 2 years, and 15% reduction.

Results

- Positive and significant preference for farm income and a higher preference for a 5% reduction in production.
- Preference for a substantial reduction in pesticide residues over a small reduction.
- Negative preferences for both private and public advisory support.
- A 4- and 6-year transition period is significantly negative.



- Positive and significant WTA estimates for private and public advisory support and 4- and 6-year transition periods.
- Positive and negative WTA estimates for substantial pesticide reduction and production reduction.



Conclusions

- Co-create advisory solutions with farmers instead of delivering top-down recommendations.
- Farmers value environmental benefits related to IPM, which substantially reduce pesticide residues.
- Promoting IPM practices likely to minimise production reductions can be a good entry point to scale the adoption of IPM.
- Design IPM strategies that require shorter transition times.