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Policy Brief

The impact of crop insurance uptake on pesticide use in Italian apple production

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1. Background

The European Common Agricultural Policy (CAP) promotes two key actions for sustainable farming: reducing pesticide use and increasing crop insurance uptake. The European Commission aims to cut pesticide use by 50% by 2030 while subsidising crop insurance to stabilise farmers' incomes amid extreme weather events. However, this dual strategy raises concerns about potential conflicts, as crop insurance may incentivise moral hazard, where insured farmers adjust pesticide use to maximise insurance benefits.

2. Topic

This study explores the relationship between crop insurance adoption and pesticide use in apple production in Northern Italy, focusing on whether crop insurance subsidies increase pesticide intensity.

3. Objective(s)

- Study the existing literature on the link between crop insurance and pesticide use.
- Assess the correlation between crop insurance adoption and pesticide use in apple production in Northern Italy.

4. Main Findings

The literature is inconclusive regarding the impact of insurance on pesticide use. Some studies revealed that yield-based crop insurance, at the intensive margin, increases pesticide use (Enjolras & Aubert, 2020; He et al., 2020; Horowitz & Lichtenberg, 1993; Möhring et al., 2020; Regmi et al., 2022; Wu, 1999), while others concluded the opposite (Smith & Goodwin, 1996). Similarly, studies focusing on revenue-based insurance revealed that insurance adoption may increase or decrease chemical input use depending on crop types (Goodwin et al., 2004; Shi et al., 2020). Finally, some studies found no effect of crop insurance on pesticide use (Mishra et al., 2004; Weber et al., 2016).

The use of crop insurance is positively associated with an increase in pesticide use, corresponding to an increase of 3.79 euro in pesticides applied per hectare of apples. Geographical Indications (PDO and PGI) and CAP-Pillar II subsidies, including insurance-premium support, positively influence crop insurance uptake. These factors are associated with high-value, specialised agricultural regions, where the adoption of insurance may unintentionally correlate with increased pesticide use.

5. Policy Implications

To align crop insurance subsidies with sustainability goals, policymakers should consider

linking insurance premium subsidies to pesticide reduction strategies. This approach can help mitigate potential conflicts between income stabilisation and environmental goals. In addition, policies should take into account farmers' risk preferences to balance the uptake of insurance with reduced pesticide intensity. Re-evaluating the allocation of subsidies to risk management tools will ensure that they support both farm resilience and the EU's sustainability objectives.

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