Assessing Frost Risk Perception and Adaptation in Moroccan Orchards: Insights from a Survey in the Fes Meknes Region

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Abstract

- **Mediterranean climate change** debates often focus on insufficient winter chill.
- In Morocco's Fes Meknes region, farmers see **spring frosts** as the main threat to orchards.
- Aim: assess frost risk **perception**, adaptation **measures**, and income **effects**.

Method

- Tested **impact pathway**:

  frost perception → adaptation → income effects

- **Climate** & **phenology** to assess frost events:

  historical temperature + phenology data

Statistics

- **73 farmers** in the Fes Meknes region.
- **Age**: mean of 51 years
- **Gender**: majority males (70 men, 3 women)
- **Education**: diverse educational backgrounds
- **Experience**: average of 28 years in farming
- Cultivated **species**: apple, sweet cherry, pear, olives, almonds, plums, peach, and figs.

Results

- **Adaptation** can benefit farmers, but further research with larger datasets is needed.
- **Recommendations**:
  - Couple farmer surveys with frost risk projections.
  - Strengthen participatory planning and extension services to support climate-resilient strategies.