Farmers’ perceptions of climate change: a case study from the Portuguese Centro Region

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Context

• Agriculture and livestock production greatly depend on weather conditions

• Climate change (CC) projections
  • Increase of temperature
    • Droughts
  • Decrease of precipitation
    • Desertification
  • Increase of extreme phenomena occurrence
Objectives

• Assess the farmers’ perception of CC

• Assess the farmers’ knowledge and believes related to CC

• Assess if more sustainable practices are already being implemented
Methodology: study site

• The study site is **Baixo Mondego** located in the Centro region, one of the most fertile regions of Portugal

• Surveyed farmers by face-to-face interviews.
Methodology: Main crops and livestock

- Maize
- Rice
- Dairy farming
Methodology: Survey

• Socio-Economic data: gender, education level, off- or on-farm income, land tenure

• Agro-livestock data: crops, livestock, organic-waste management, fertilizers use

• Changing of agricultural practices data: changing crops, saving water, mulching, direct seeding, reduced tillage

• Animal well-being data: improved building structure, ventilation, changing feed
Results: Socio-economic

**Education level**
- Illiterate: 22.22%
- Basic: 22.22%
- High School: 11.11%
- University: 44.44%

**Income source**
- off-farm: 33.30%
- on-farm: 66.70%

**Land tenure**
- Own: 33.33%
- Own and rented: 11.11%
- Own and borrowed: 55.56%

**Consumption of farm products**
- No: 55.60%
- Yes: 44.40%

**Farming system**
- Agriculture: 44.44%
- Agro-dairy: 44.44%
- Dairy: 11.11%

**Source of information**
- Experience: 22.22%
- Experience and school: 33.33%
- Experience school and others: 22.22%
- Experience and others: 22.22%
Results: Agro-livestock

Cash crops
- No: 66.77%
- Rice: 11.11%
- Maize: 11.11%
- Maize and Rice: 11.01%

Livestock production
- Cattle: 44.44%
- Dairy: 22.22%
- Pig: 11.11%
- Sheep: 11.11%
- Hens: 11.11%

Organic-Waste Management
- Burning and Incorporation: 11.11%
- Incorporation: 11.11%
- Incorporation and Mulching: 22.22%
- Incorporation, Mulching and Burning: 55.56%
Results: CC adaptation practices

- Water saving
- Reduced tillage
- Mulching
- Changing the type of pesticides
- Direct seeding
- Decreasing flooding time (rice farmers only)
- Improved seeds
- Expanded the area/ improved the building
- Changed the feed

No interest
Thinking about doing it
Does
Results: CC causes at local level

Local industry

Deforestation

Rice farming

Maize farming

Vegetable farming

Extensive sheep farming

Intensive dairy farming

Urban development

Local transportation

Strongly agrees

Agrees

Not sure

Disagree
Conclusions

• All the farmers are aware of CC and its implications

• They all have already adopted adaptation practices
  • Reduced tillage
  • Incorporation of organic waste in the soil
  • Improved seeds
  • Drip irrigation
  • The reason is economical but the positive impacts on CC are undeniable

• They all watch TV and in the last couple of years the amount of programs related to CC has increased significantly
Thank you for your attention

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