Choice of a farming system: a decision support tool confronted with farmers' behaviour

session 13.8

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Introduction

- Great diversity of existing suckler cattle production systems
- High dependence of this systems to EU subsidies
- Complexity of farms' socio-economic environment
- Difficulty to choose a production system
- Factors of choice interact

➔ A LP optimisation model (Opt'INRA) to help farmers with their decision-making

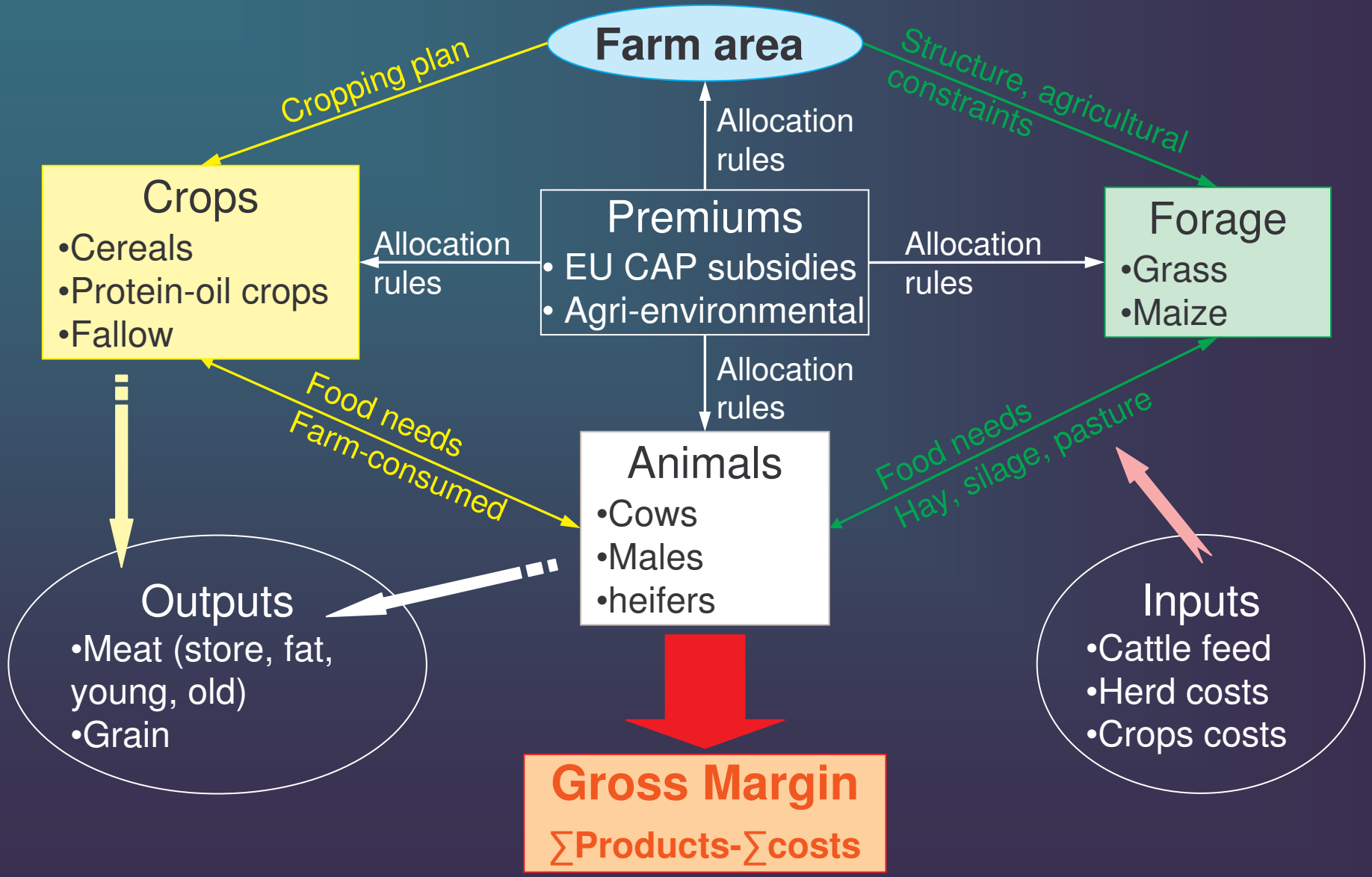
Aims of the study: Opt'INRA confronted with reality

- Do the farmers validate the logic and the outputs of the model?
- Can this model effectively help the farmers?
- How to improve the model?

Methodology

- Surveys: 22 mixed crop-livestock Charolais cattle farms
  - presentation of the model (inputs, possible activities, constraints, outputs)
  - parameters specifics to the farm: area, selling prices, crops yield, costs, …
  - optimisation
  - analysis of the results with the farmer confronted with his own actual and past results

The model: Opt'INRA



Results: cash crop and fodder area

- The model proposed significantly more cash crop (less fodder area) for 11 farms:
  - 1 farmer was agree with Opt'INRA and planed to increase his cash crop area
  - Others said that it's impossible:
    - Soil quality and low agronomic potential: the best field are still allocated to cash crop.
    - Low farm equipment and difficulty to find a agricultural contractor

Type of animals sold (1)

- From 1992 males are sold younger and the % of fattened animals decreases …
- … Otp'INRA chose to produce fattened animals
- Selling prices and feeding costs were approved by farmers. Why don't they fatten their males?

Type of animals sold (2)

- Young store animals: advantages
  - Short production cycle
    - Technical and healthy risks limited
  - Animals “easy” to produce and to manage
    - performances stable from birth to weaning
  - Stability of the market
    - export to Italy

- Fattened animals: disadvantages
  - Specific fattening building
  - Maize silage needs
  - Low rate of return of livestock capital
  - Unpredictable market
    - Needs of the production chain fluctuating
    - Marketing can be difficult

But: farmers who fatten their animals are all satisfied

History of the farm: factors of choice

- Farm structure: size (area, herd), labour
  - Farmer establishment, retirement, association
  - ➲Human factors

- Cropping plan
  - Land allocation stable
  - Changes: establishment and CAP premiums
  - Changes in grass harvesting technique: farm equipment constraints

History of the farm: factors of choice

- Animal production
  - The market: prices and stability
  - CAP premiums
  - Livestock buildings, stocking rate and forages supplies

➲Marketing chain

  - Producer groups, direct sales, …: economic environment and personality of the farmer

History of the farm: factors of choice

- Labour: constraint for changing the farming system?
  - Workforce availability / farm equipment investments
  - Know-how: fattening

➲labour constraint depends on:

  - Historical stage of the farm (farm establishment, cruising, end of career)
  - Financial status / debt

Discussion (1)

- Land allocation
  - Soil conditions and qualities
- Animal and grain production
  - Technical performances and new production system?

  ➲Linking biophysical and economic models
- Marketing
  - Production segmentation with differentiated prices

⇨ Increasing the possible activities?

Discussion (2)

- Labour
  - A personal perception!
  - A different constraint for each farmer
- Price and production risk
  - Price and weather variability?
  - Changes in the optimal production system with or without risk modelling?

⇨ Sensitivity analysis

Conclusions (1)

- Suckler cattle farmers need advices to adapt their production systems to the changes in their environment
- Farmers easily understand the logic of Opt'INRA
- The norm-creating character of the LP calls for some caution in interpreting the results

Conclusions (2)

- Opt'INRA must be consider as a dialogue tool between the adviser and the farmer
- Opt'INRA is a tool allowing the farmer to reveal his most sensitive activities
- Opt'INRA helps the farmer to build himself his own production system according to his own "feeling"