UNIVERSITÀ DEGLI STUDI DELLA TUSCIA

Doctoral Course
Economics, Management and Quantitative Methods (EMMQ)

Course on
Risk analysis and management
in agriculture

-SUS Risk - Towards a holistic approach to sustainable risk management in agriculture

Università degli Studi della Tuscia (Viterbo)
Simone Severini (Principal Investigator)

Università degli Studi di Padova
Samuele Trestini

Università degli Studi di Trento
Roberta Raffaelli and Simone Cerroni

Università degli Studi di Foggia
Fabio Gaetano Santeramo

Università Cattolica del Sacro Cuore di Piacenza
Linda Arata and Paolo Sckokai

Course Outline

Date	Start Time	End Time	Topic	Teachers
February 25	4:00 PM	6:00 PM	Risk analysis and management in agriculture	Severini/Biagini
February 26	9:30 AM	11:30 AM	Risk analysis and management in agriculture	Severini/Biagini
February 26	3:30 PM	4:30 PM	Risk analysis and management in agriculture	Severini/Biagini
February 28	10:00 AM	12:00 PM	Risk analysis and management in agriculture	Severini/Biagini
March 4	9:00 AM	11:00 AM	• The moment-based approach to analyse risk in agriculture • An application of moment-based approach to yield and revenue variability in the Apple sector	Arata/Casati
March 13	10:00 AM	12:00 PM	Exploring the synergy of risk management tools: a DCE approach	Giampietri/Stiletto/Trestini
March 17	10:00 AM	12:00 PM	Economic experiments in risk management	Cerroni/Raffaelli

"Risk analysis and management in agriculture"

COURSE PROGRAM

PRIN SUS-RISK- D.6.3 - Course on Risk Management organised for young researchers

Lecture 1: Risk in Agriculture: Types of risks and its representation - UNITUS

- **Definitions and Types of Risk**
    - Introduction to the concept of risk and its importance in agriculture, including the uncertainty that characterises activities and results.
    - Discussion of the various types of risk: legal-institutional, financial, productive, and market risks, with a focus on production and market risks as the most characteristic in agriculture.
- **Sources of Risk**
    - Exploration of major sources of production risks such as weather, pests, diseases, and technology, and their impact on income.
- **Representing Risk**
    - Techniques for measuring and representing risk preferences, including the use of utility functions and the concepts of risk aversion, risk neutrality, and risk-seeking behaviours.

Lecture 2: Risk in Agriculture: Risk indicators and decision analysis - UNITUS

- **Risk indicators**
- **Decision analysis with unknown preferences:** Stochastic Efficiency Methods
- **Decision analysis with known preferences:** Subjective expected utility (SEU), Certainty Equivalent (CE) and risk premium.

Lecture 3: Risk in Agriculture: Farm Risk Management: strategies and tools/1 – UNITUS

- **Strategies and tools to cope with risk.**
- **CAP Risk Management Toolkit**

Lecture 4: Risk in Agriculture: Farm Risk Management: strategies and tools/2 - UNITUS

- **Insurance and subsidies insurance :** some definitions
- **Mutal Fund : some definitions**

Lecture 5: Attitudes to Risky Consequences and Decision Analysis – UNICATT + UNITN

- **Risk Attitudes**
    - Examination of risk attitudes, including aversion, neutrality, and seeking, and how these influence decision-making.
    - Quantitative methods to assess and quantify decision-makers degree of risk aversion, with numerical examples
- **Decision Analysis under Risk**
    - Applied decision analysis in agriculture and the role of probability in decision-making

- Case studies on decision-making under risk, including the concept of Expected Utility and risk premiums

Lecture 6: Farm Risk Management Strategies and Tools- UNIPD

- **Risk Management Framework**
  - Overview of risk management strategies and their application in agriculture, such as risk reduction, increasing the capacity to bear risk, and risk transfer.
  - Production diversification, crop insurance, and contract production as risk management strategies.
- **Analytical Tools**
  - Introduction to analytical tools for assessing the effectiveness of risk management strategies, including diversification examples

Lecture 7: Climate Risks and Econometrics - UNIFG

- **Understanding Climate Risks**
  - The impact of climate change on agricultural risks such as drought, hail, and flooding.
  - Econometric models for analysing climate risks and their implications for agriculture.
- **Econometric Tools**
  - Application of econometric tools in the study of climate risks and agricultural outcomes.

Lecture 8: Behavioral Economics, Risk Management Tools, and Insurance Preferences – UNITN + UNIPD

- **Behavioral Economics and Risk Management**
  - The influence of behavioural economics on risk management decisions, including cognitive biases and heuristics.
  - Exploration of how these factors affect risk perception and management.
- **Risk Management Tools**
  - Detailed review of various risk management tools available to farmers, including traditional and innovative financial instruments.
- **Insurance Preferences**
  - Discussion on farmers' preferences between traditional insurance and index insurance in relation to risk attitude and the factors affecting farmers' insurance choices and risk management behaviour