

# **Agriculture, Food and Sustainable Development / A2D2**

Organized by

Mediterranean Agronomic Institute of Montpellier



# Agriculture, Food and Sustainable Development / A2D2

**MAI coordinator: Etienne MONTAIGNE**

## **Aims**

The aim of this Master is to train specialists in the field of “Policies and public choices in the agricultural and food sectors”.

In this field, economic globalisation and the changes having occurred during these last ten years in the role of the State, in its privileges, its modes of intervention and of functioning, have entailed the development of doctrines, researches and analyses dealing with public economy.

These evolutions have also made obvious the need for new skills likely to contribute to: the elaboration of agricultural and food policies; the evaluation of public choices in this field; refereeing between the actors of the national food systems; and the preparation of international or regional trade negotiations.

This training course leads to career opening in various administrations (ministries of Agriculture, of the Environment, of the Economy and Finance, of International Trade), R&D departments, farmers' and agri-food organizations and even in large firms.

Being a training programme through Research, the Master of Science in "Agriculture, Food and Sustainable Development" can be pursued by a doctorate, in collaboration with the *Ecole Doctorale* 'Economics and Management' of the *Montpellier University I*.

## **Objectives**

This course allows to acquire:

- **Thematic knowledge:** food policy, rural development policy, analysis of the agri-food system and its various chains, environmental economics
- **Theoretical knowledge** : New Institutional Economics, social choices, incentive and public Economics, Sociology, anthropological Economics, consumer theory and optional programs on (1) food chains and institutions for development; (2) Public policy, agriculture, environment et resources
- **Know-how:** applied econometrics, optimisation, public policy models, quantitative and qualitative surveys, experimental Economics, data analysis



# Part 1

## Postgraduate specialization programme

**The programme is organized in 14 units (60 ECTS)**

**Prerequisites** - Upgrade in economics and management (microeconomics, accounting, financial analysis and statistics)  
September '09 - Upgrade in computer use (Word, Excel, PowerPoint, Internet)  
- Introduction to documentary research

**THEMATIC COURSES (5 courses – The student has to choose 4 of them)**

**Unit I** **ECONOMICS AND AGRICULTURAL POLICIES (2 ECTS)**  
October '09

***Content :***

This course draws a synthesis of micro and macro approaches of one of the main issue of this Master: agriculture and its policies. It first presents the specificities of agricultural systems and their stakes at various historical stages. It then provides knowledge in public economics, political economics and agricultural policies. It ends with the presentation of the various agricultural policies instruments and the evolution of agricultural policies in an international context.

***Learning outcomes:***

- to be able to follow developed and specialized courses,
- to gain general knowledge about the main components of political economics applied to the fields of agriculture and agri-food,
- to be able to understand the reasons that led to very particular public interventions in agriculture and the determiners of their evolutions.

***Evaluation procedure:***  
Classroom examination

**Unit II**  
October '09

**RURAL AREAS ECONOMICS AND RURAL DEVELOPMENT POLICIES  
(2 ECTS)**

***Content :***

This course unit provides methodological basis about the notions of “rural area” and “rural development” in a view to present theoretical approaches for economical analysis of rural areas and to suggest a prospective view of the current mutations of rural areas.

***Learning outcomes:***

- to be able to follow developed and specialized courses,
- to master the basis of space economics applied to the rural sector and the main rural development logics.

***Evaluation procedure:***

Classroom examination

**Unit III**  
October '09

**FOOD SYSTEMS (2 ECTS)**

***Content :***

This course unit presents the necessary theoretical basis, concepts and methods to understand and analyse the food system and its dynamics. It aims at providing a global approach of the firms' environment.

***Learning outcomes:***

- to be able to follow developed and specialized courses,
- to be able to analyse a TEI (“Tableau d’Echanges Industriels” / “Industrial Exchanges Table”) following the Leontief matrix,
- to gain the knowledge of the main institutions and methods of sector-based regulations,
- to be able to identify the main actors within a market chain,
- to be able to draw up an operational synthesis of a firm.

***Evaluation procedure:***

Classroom examination

**Unit IV**  
October '09

**DEVELOPMENT ECONOMICS AND POLICIES (2 ECTS)**

***Content :***

This course provides the basis of economic analysis for environmental and natural resources management issues. It presents the main trends of development economics.

***Learning outcomes:***

- to be able to follow developed and specialized courses,
- to be able to identify and interconnect the various theories of development and their forerunners,
- to master the basis of the history of economical theories linked to development.

***Evaluation procedure:***

Classroom examination

**Unit V**  
October '09

### **ENVIRONMENT ECONOMICS AND POLICIES (2 ECTS)**

**Content :**

This course develops the theories of economic development in the framework of agri-food and rural development. It draws a parallel between contemporary problematics and theories.

**Learning outcomes:**

- to be able to follow developed and specialized courses,
- to master the basic notions of environment economics and policies,
- to be able to understand the necessity of public policies instruments and their diversity.

**Evaluation procedure:**

Classroom examination

### **METHODOLOGICAL COURSES (4 courses – The student has to choose 3 of them)**

**Unit I**  
Oct.–Nov. '09

### **APPLIED ECONOMETRICS (2 ECTS)**

**Content :**

This course unit introduces students to a stochastic approach of complex phenomenon and to the use and processing of real data. More particularly, this course aims at leading students to carry out an empirical economic work themselves through an individual project.

**Learning outcomes:**

- to be able to choose and to use econometric methods adapted to a particular research issue.

**Evaluation procedure:**

Classroom examination

**Unit II**  
Oct.–Nov. '09

### **OPTIMISATION OF MATHEMATIC PROGRAMMING TOOLS FOR PUBLIC POLICIES MODELLING (2 ECTS)**

**Content :**

This course presents the basis of classic methods for mathematic programming and the existing modelling tools for the analysis of the commercial and non commercial impact of public (agricultural and environmental) policies at a micro-economic and sectorial level. This course especially introduces students to the learning of the economic modelling language "GAMS" (General Algebraic Modelling System).

**Learning outcomes:**

- to be able to use the methods presented in the course unit with autonomy,
- to be able to choose the most adapted method dealing with a research issue,
- to be able to discuss the results of the main models used when evaluating public policies.

**Evaluation procedure:**

Classroom examination

**Unit III**  
Oct.–Nov. '09

**QUALITATIVE APPROACHES AND FIELD STUDY PROCESSES  
(2 ECTS)**

***Content :***

This course provides elements to economists who want to integrate a qualitative dimension in their future research work, through debates on field study matters. It first situates the field study approach within research and underlines the relation between a theoretical and empirical approach. It after provides the quantitative and qualitative methods for field studies.

***Learning outcomes:***

- to be able to use the methods presented in the course unit with autonomy,
- to be able to choose the most adapted method dealing with a research issue,
- to be able to provide a method of study for a particular research field,
- to be able to combine both quantitative and qualitative approaches.

***Evaluation procedure:***

Classroom examination

**Unit IV**  
Oct.–Nov. '09

**EXPERIMENTAL ECONOMICS AND THE “GAME PLAY THEORY“  
(2 ECTS)**

***Content :***

This course covers several important topics in experimental economics, with a special emphasis on social interactions. It analyses the behaviour of economic agents in reference to the conceptual framework of the “game play theory”. The course starts with a presentation of the main findings for experimental market interactions under various institutions: double auction, posted offers, auction markets and bargaining. It after discusses key experimental findings for non-market interactions linked to social dilemma games. It farther deals with experimental issues with respect to interactions under limited information and asymmetric information. Finally it presents anomalies observed in experiments on individual choice.

***Learning outcomes:***

- to be able to use the methods presented in the course unit with autonomy,
- to be able to choose the most adapted method dealing with a research issue,
- to be able to provide new explanations for atypical individual behaviours.

***Evaluation procedure:***

Classroom examination

## THEORETICAL COURSES (4 courses – The student has to choose 3 of them)

**Unit I**  
Oct.–Nov. '09

### **NEW INSTITUTIONAL ECONOMY (2 ECTS)**

**Content :**

This course studies the various trends of institutional economy (the “New institutional economy”, the “Property Rights Theories”, the “Evolutionary economy”, etc.) and links them to the various objectives, research positions, hypothesis and methods used in the analysis of institutions.

**Learning outcomes:**

- to be able to use the methods presented in the course unit with autonomy,
- to be able to choose the most adapted method dealing with a research issue,
- to be able to appeal to various concepts when studying contractual relations and organisation evolutions in institutions.

**Evaluation procedure:**

Classroom examination

**Unit II**  
Oct.–Nov. '09

### **SOCIAL CHOICE, INCENTIVES AND PUBLIC ECONOMY (2 ECTS)**

**Content :**

This course provides to students the basis of public policies and notions on the “theory of incentives”. It first presents the foundations of public economics (listing situations in which the “invisible hand theory” of Adam Smith cannot be applied). It after focuses on the various types of public interventions according to different contexts.

**Learning outcomes:**

- to be able to use the methods presented in the course unit with autonomy,
- to be able to choose the most adapted method dealing with a research issue, guest
- to be able to analyse contractual relations in the framework of the standard neo-classical theory.

**Evaluation procedure:**

Classroom examination

**Unit III**  
Oct.–Nov. '09

### **ECONOMICAL SOCIOLOGY / ANTHROPOLOGY (2 ECTS)**

**Content :**

This course presents the origins and construction elements of the political economy of the 20<sup>th</sup> century, from both a scientific and a political point of view. This course unit also studies the main evolutions in the European and Anglo Saxon bodies, in the framework of the “great sharing” between economy and sociology, and provides some examples of debates, especially the one of the “New economic sociology”.

**Learning outcomes:**

- to be able to use the methods presented in the course unit with autonomy,
- to be able to choose the most adapted method dealing with a research issue,
- to be able to analyse coordination and quality problems in the sectors of agriculture and agri-food.

**Evaluation procedure:**

Classroom examination

**Unit IV**  
Oct.–Nov. '09

**THEORIES ON FIRMS AND CONSUMERS (2 ECTS)**

**Content :**

This course presents the main theoretical frameworks in the field of the consumer's behaviour.

**Learning outcomes:**

- to be able to use the methods presented in the course unit with autonomy,
- to be able to choose the most adapted method dealing with a research issue,
- to master the basis of the relation between a firm and consumers.

**Evaluation procedure:**

Classroom examination

**OPTIONS (2 options – The student has to choose 1 of them)**

**Option 1 “Agri-food chains, institutions and development“**

**Unit I**  
Nov. Dec. '09

**FOOD AND ETHIC (2,5 ECTS)**

**Content :**

This course presents the research concepts and methods in various fields applied to the food sector (especially marketing and sociology).

**Learning outcomes:**

- to be able to use the methods presented in the course unit with autonomy,
- to be able to choose the most adapted method dealing with a research issue,
- to be able to make a critical analysis of a scientific article dealing with the given issue.

**Evaluation procedure:**

Classroom examination

**Unit II**  
Nov. Dec. '09

**GOVERNANCE AND PERFORMANCE OF FIRMS AND AGRI-FOOD CHAINS (2,5 ECTS)**

***Content :***

This course provides to students the necessary theoretical basis, concepts and methods for prospective and strategic analysis considering various backgrounds: markets, food firms, public institutions, developing countries, etc.

***Learning outcomes:***

- to be able to use the methods presented in the course unit with autonomy,
- to be able to choose the most adapted method dealing with a research issue,
- to be able to make a critical analysis of a scientific article dealing with the given issue.

***Evaluation procedure:***

Classroom examination

**Unit III**  
Nov. Dec. '09

**INSTITUTIONAL ECONOMY APPLIED TO COORDINATION BETWEEN PRODUCT CHAINS (2,5 ECTS)**

***Content :***

This course aims at applying the knowledge gained in the common courses – in industrial economy (the “theory of incentives”), institutional economy and social economy – to the agricultural and agri-food field, especially to the chains of tropical or Mediterranean products.

***Learning outcomes:***

- to be able to use the methods presented in the course unit with autonomy,
- to be able to choose the most adapted method dealing with a research issue,
- to be able to make a critical analysis of a scientific article dealing with the given issue.

***Evaluation procedure:***

Classroom examination

**Unit IV**  
Nov. Dec. '09

**INSTITUTIONS AND DEVELOPMENT (2,5 ECTS)**

***Content :***

This course develops the previous course in institutional economy, especially the issues related to rural development and public policies.

***Learning outcomes:***

- to be able to use the methods presented in the course unit with autonomy,
- to be able to choose the most adapted method dealing with a research issue,
- to be able to make a critical analysis of a scientific article dealing with the given issue.

***Evaluation procedure:***

Classroom examination

**Option 2 “Public policies, agriculture, environment and resources“**

**Unit I**  
Nov. Dec. '09

**AGRICULTURAL POLICIES AND RURAL DEVELOPMENT(2,5 ECTS)**

**Content :**

This course develops the knowledge gained in the common courses in agricultural economics and politics and in rural areas economics (especially the concepts of “multifunctionality of agriculture”, “localisation” and “regional development”).

**Learning outcomes:**

- to be able to use the methods presented in the course unit with autonomy,
- to be able to choose the most adapted method dealing with a research issue,
- to be able to make a critical analysis of a scientific article dealing with the given issue.

**Evaluation procedure:**

Classroom examination

**Unit II**  
Nov. Dec. '09

**INTERNATIONAL NEGOTIATIONS (2,5 ECTS)**

**Content :**

This course presents the empirical basis of negotiations, especially the exchanges liberalization theories, in order to understand the current stakes in international negotiations on trade and environment issues and their consequences on agricultural policies. It puts into practice theories through simulation games on international negotiations.

**Learning outcomes:**

- to be able to use the methods presented in the course unit with autonomy,
- to be able to choose the most adapted method dealing with a research issue,
- to be able to make a critical analysis of scientific article dealing with the given issue.

**Evaluation procedure:**

Classroom examination

**Unit III**  
Nov. Dec. '09

**TOOLS OF PUBLIC AND ENVIRONMENTAL POLICIES (2,5 ECTS)**

**Content :**

This course looks over the main categories of tools used in environmental policies focusing on their justifications, implementation conditions and limits, in a comparative view.

***Learning outcomes:***

- to be able to use the methods presented in the course unit with autonomy,
- to be able to choose the most adapted method dealing with a research issue,
- to be able to make a critical analysis of scientific article dealing with the given issue.

***Evaluation procedure:***

Classroom examination

**Unit IV**  
**Nov. Dec. '09**

**NATURAL RESOURCES MANAGEMENT (2,5 ECTS)**

***Content :***

This course develops the concepts and methods for economic analysis of natural resources management, especially of sustainable resources.

***Learning outcomes:***

- to be able to use the methods presented in the course unit with autonomy,
- to be able to choose the most adapted method dealing with a research issue,
- to be able to make a critical analysis of scientific article dealing with the given issue.

***Evaluation procedure:***

Classroom examination

**ACADEMIC STAFF**

During the first part of the programme, instruction is given by prestigious visiting lecturers from different countries, coming from higher education institutions, private companies, research centres, international organizations and administration bodies.

The international character of the program is also strengthened by the origin of attendants who come mostly from CIHEAM Mediterranean member countries but also from other parts of the world.



## **Part 2**

### **Master of Science thesis**

#### **Research thesis and defence (60 ECTS)**

Achievement of a research work within a research team of the IAMM or an associated laboratory including:

- Field work
- Achievement of a research thesis
- Defence of the thesis before a jury composed of teachers/researchers

#### **INDICATIVE MASTER THESES ACHIEVED IN “AGRICULTURE, FOOD AND SUSTAINABLE DEVELOPMENT – A2D2”**

1. **Title:** Land property enforcement in Madagascar land reform (2008)

**Author:** BOUÉ Céline (France)

**Thesis director:** Eric LÉONARD (IDR/ UMR MOISA)

2. **Title:** Endogenous growth and sustainable development (2008)

**Author:** KODJO-KOMNA Kodjo (Ivorian)

**Thesis director:** Charles FIGUIERES and Mabel TIDBALL (INRA / UMR LAMETA)

3. **Title:** International agreements on biodiversity (2008)

**Author:** MIDLER Estelle (France)

**Thesis director:** Charles FIGUIERES (INRA / UMR LAMETA)

4. **Title:** Consumers facing a new trend: sustainable food. (2008)

**Author:** MIGLIORE Agnese (Italia)

**Thesis director:** Martine PADILLA (IAMM)

5. **Title:** Experimental study of free riding in club goods (2008)

**Author:** ROUAIX Agathe (France)

**Thesis director:** Marc WILLINGER (Université Montpellier I / UMR LAMETA)

**Detailed additional information is available at**  
[http://www.iamm.fr/enseignement/master\\_of\\_science](http://www.iamm.fr/enseignement/master_of_science)

