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## Private Sector Responses to Price Volatility

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International Centre for Advanced  
Mediterranean Agronomic Studies  
Mediterranean Agronomic Institute of Zaragoza



Food and Agriculture Organization  
of the United Nations  
Economic and Social Development Department



ULYSSES Project - European Union



## Advanced Course

# METHODOLOGICAL APPROACHES TO ASSESS AND MANAGE FOOD PRICE VOLATILITY

Zaragoza (Spain), 17-21 November 2014

### 1. Objective of the course

Since the food crisis of 2007-2008, governments, NGOs and international organizations have repetitively expressed serious concerns about food markets' increasing volatility. These price developments have been widely recognized as a global issue, and a major impediment to combat hunger and malnutrition, increase food production, stabilize consumer food prices and scale-up small farmers' production.

This debate has also triggered a strong response from the scientific community leading to a wealth of literature. Most of it has been devoted to the assessment and the analysis of the agricultural and food price behaviour using updated data and new methods. Special attention has been paid to primary drivers of markets' volatility, spillovers between different markets, and impacts along the food supply chain, both in developed and developing countries.

However, there is a lack of agreement in the literature about what have been the main causes of increased volatility. Current knowledge thus provides insufficient guidance for finding appropriate policy responses to increased price volatility in order to effectively avert, mitigate and combat future food crises. This uncertain situation also makes decision making difficult for private value chain agents.

The course has two main objectives. The first is to present the methodological foundations necessary to understand and critically evaluate the ongoing research debate on the causes and effects of food price volatility. Based on these findings, the second objective is to review public and private responses that address food price volatility.

At the end of the course participants will:

- Understand the concepts of volatility modelling and agricultural price analysis.
- Acquire skills for understanding current research on drivers, spillovers and transmission of agricultural and food price volatility.
- Be familiar with policy options to address price volatility.
- Be aware of possible tools in the private sector to cope with price volatility.

### 2. Organization

The course is jointly organized by the **International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM)**,

through the **Mediterranean Agronomic Institute of Zaragoza (IAMZ)**, the **Food and Agriculture Organization of the United Nations (FAO)**, through the **Economic and Social Development Department**, and the **ULYSSES Project (Understanding and coping with food markets volatility towards more Stable world and EU food SystEmS)** of the **European Commission Seventh Framework Programme**.

The course will be held at the **Mediterranean Agronomic Institute of Zaragoza** taught by well qualified lecturers from international institutions and from universities and private organizations in different countries.

The course will be held over a period of 1 week, from 17 to 21 November 2014, in morning and afternoon sessions.

### 3. Admission

The course is designed for 25 professionals with a university degree. It is intended for decision makers, public sector agents, stakeholders in agricultural trade and logistics, technical advisors, researchers and other professionals involved in agribusiness, food trade analysis and regulation or food security policy definition.

Given the diverse nationalities of the lecturers, knowledge of English and French will be valued in the selection of candidates, since together with Spanish, they will be the working languages of the course. However, if necessary, the Organization will provide simultaneous interpretation of the lectures.

### 4. Registration

Application forms may be obtained from:

**Instituto Agronómico Mediterráneo de Zaragoza**  
Avenida de Montañana 1005, 50059 Zaragoza (Spain)  
Tel.: +34 976 716000 - Fax: +34 976 716001  
e-mail: iamz@iamz.ciheam.org  
Web: www.iamz.ciheam.org

Candidates should send the completed application form to the above address, accompanied by a detailed *curriculum vitae*, stating degree, diplomas, experience, professional activities, language knowledge and reasons for applying to the course. Copies of certificates should be enclosed with the application.

The deadline for the submission of applications is **5 September 2014**.

Please display on a notice board if possible



CIHEAM

Instituto Agronómico Mediterráneo de Zaragoza  
Avenida de Montañana 1005, 50059 Zaragoza, Spain  
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E-mail: iamz@iamz.ciheam.org

See updated information at

[www.iamz.ciheam.org](http://www.iamz.ciheam.org)

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Applications from those candidates who cannot present their complete records when applying, or those requiring authorization to attend the course, may be accepted provisionally.

Registration fees for the course amount to 450 euro. This sum covers tuition fees only.

## 5. Scholarships

Candidates from CIHEAM member countries (Albania, Algeria, Egypt, France, Greece, Italy, Lebanon, Malta, Morocco, Portugal, Spain, Tunisia and Turkey) may apply for scholarships covering registration fees, and for scholarships covering the cost of travel and full board accommodation in the Hall of Residence on the Aula Dei Campus.

Candidates from other countries who require financial support should apply directly to other national or international institutions.

## 6. Insurance

It is compulsory for participants to have medical insurance valid for Spain. Proof of insurance cover must be given at the beginning of the course. Those who so wish may participate in a collective insurance policy taken out by the Organization, upon payment of the stipulated sum.

## 7. Teaching organization

The course requires personal work and interaction among participants and with lecturers. The international characteristics of the course favour the exchange of experiences and points of view.

The course will be delivered through a combination of lectures, examples and practical sessions that will provide the participants with hands-on experience in the analysis of the volatility in agricultural and food markets and the interpretation of results from empirical models.

## 8. Programme

### 1. Volatility and food markets (1 hour)

- 1.1. Conceptual framework
- 1.2. Impacts of volatility
- 1.3. Historical perspective and lessons learned
- 1.4. Challenges for global food systems

### 2. Economics of agricultural and food prices (4 hours)

- 2.1. Price formation in agricultural markets
- 2.2. Theory of storage
- 2.3. Futures and spot markets
- 2.4. Foundations of agricultural price policy analysis
- 2.5. Macroeconomic linkages

### 3. Measuring volatility (12 hours)

- 3.1. Sources and types of data
  - 3.1.1. Market definition and aggregation
  - 3.1.2. Data frequency and seasonality
  - 3.1.3. Nominal versus real prices

### 3.2. Measurement models

- 3.2.1. Basic indicators – coefficient of variation, standard deviation of changes in log prices, range-based volatility
- 3.2.2. Econometric models – ARCH, GARCH
- 3.2.3. Realized volatility
- 3.2.4. Implied volatility

### 3.3. Practical work on measuring volatility and interpreting results

## 4. Volatility drivers (4 hours)

### 4.1. Main drivers of agricultural and food price volatility

- 4.1.1. Supply factors
- 4.1.2. Demand factors
- 4.1.3. Other factors

### 4.2. Methodological approaches for identification and empirical assessment

### 4.3. Current findings and open questions

## 5. Price level and volatility transmission (6 hours)

### 5.1. Methodological approaches for empirical assessment

### 5.2. Spatial and vertical transmission

### 5.3. Spillovers between food and related non-food markets

### 5.4. Price linkages between futures and spot markets

### 5.5. Volatility and household welfare in net food importing countries

## 6. Policy options addressing volatility (4 hours)

### 6.1. Public interventions to prevent and manage volatility

- 6.1.1. Price policies
- 6.1.2. Storage related policies
- 6.1.3. Promoting supply response
- 6.1.4. Market infrastructure and logistics
- 6.1.5. Agricultural insurance and finance policies

### 6.2. Public interventions to protect the most vulnerable

- 6.2.1. Safety nets
- 6.2.2. Emergency reserves

### 6.3. Public interventions to improve information and transparency

- 6.3.1. Market information systems
- 6.3.2. Trade policy disclosure and monitoring
- 6.3.3. Financial market transparency

### 6.4. Supra national initiatives

- 6.4.1. WTO initiatives
- 6.4.2. Committee on World Food Security (CFS)
- 6.4.3. G20 framework

## 7. Private sector responses to price volatility (2 hours)

- 7.1. Risk management strategies in the agro-food sector
- 7.2. Futures and options contracts
- 7.3. Insurance schemes
- 7.4. Cash forward contracts
- 7.5. Private storage
- 7.6. Value chain risk management

## 8. Round table discussion – Public and private responses: synergies or trade-offs? (2 hours)

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## GUEST LECTURERS

M. BEN KAABIA, Univ. Zaragoza (Spain)

B. BRÜMMER, Georg August Univ. Goettingen (Germany)

M. DEMEKE, FAO, Roma (Italy)

N. FERENCZI, AGPB, Paris (France)

A. GARRIDO, Univ. Politécnica de Madrid (Spain)

J.M. GIL, CREDA-UPC-IRTA, Barcelona (Spain)

B.K. GOODWIN, North Carolina State Univ., Raleigh (USA)

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J.M. SUMPSI, Univ. Politécnica de Madrid (Spain)

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