

# Project Proposal: Development of an Agricultural Sector Model for Croatia

Mac Callaway (DTU), Mario Njavro  
(University of Zagreb), Uwe  
Schneider (University of Hamburg)

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# Outline

- What is an agricultural sector model?
- How can it help Croatia?
- How can Croatians develop their “own” agricultural sector model

# What is an Agricultural Sector Model ?

- Economic (supply-demand) multi-market/product model of investment, production and consumption in the sector
- Characterizes many different:
  - Primary and processed commodities
  - Technologies/resources/mgt. regimes
  - Production and consumption regions
  - Domestic and export demand functions
  - Outputs: land use, production, resource use, land and commodity prices and welfare levels
- The model we are focusing on is the EU Forest and Agricultural Sector Model (FASOM)

# A Little Bit About EUFASOM

- Primary commodities –18 crops + 10 livestock
- Processed commodities – 12
- Regions- 25 “domestic” + 22 rest of world
- Croatia is currently in “Rest of Central Europe”
- Climate-relevant Input data:
  - crop yields
  - Animal productivity
  - water supply for irrigation
  - Irrigation water use by crop
- EU FASOM contains **both** an agricultural and forest sector competing for a common land base, but each sector can also be independent – food for thought

# How Can it Help Croatia?

- General applications – simulate physical and economic effects of:
  - Changes in prices of transport, exports, imports, inputs, etc
  - New crops, technology, mgmt and resources (for example, irrigation)
  - Plant pests and diseases, pollution, other shocks
  - A wide range of agricultural and non-ag. policies from within and without...like joining the EU (CAP)
  - Domestic production on Croatian environment

# How Can it Help Croatia?

- Climate applications – simulate physical and economic effects of existing climate variability, changes in climate (including climate variability):
  - Effects on crop mixes, production, prices, farm income, consumption and welfare of consumers
  - Value damages of extreme events and climate change
  - Estimate benefits and costs of measures and policies to avoid the damages of extreme events and climate change

# Elements of Proposal

- Objectives:
  - To develop a Croatian agricultural sector model that is compatible with (links to) the EUFASOM model and its data bases and
  - To expand the capacity to use and further develop this model to support public policy and private sector objectives
- Phase 1 Approach:
  - To fund a Croatian Ph.D. student at the University of Hamburg under the supervision of Prof. Uwe Schneider to develop a Croatian version of the model and implement the model in a climate change framework for Croatia in the Ph.D. dissertation
  - Transfer the model and capacity to use it to the U. Zagreb
  - We are also considering the possibility of a post-doc position

# Elements of Proposal

- Phase 2 Approach:
  - To continue to develop the model and its data bases through both external (EU) and Croatian funding
  - Awareness raising and capacity building workshops to promote the use of the model to develop and analyze public policies and support the private sector
  - Long-term commitment to further develop and use it !
- Phase 1 Cost:
  - Ph.D. Education – student living expenses are approximately €3.500/month for 3 years ~ €125.000
  - Model transfer (University of Zagreb) ~ €25.000
  - Total ~ €150.000