europass

Dimitrios Kremmydas

Nationality: Greek **Date of birth:** 06/12/1977 **Gender:** Male

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Home: Avenida Cristina Hoyos 6 casa 9, 41940 Seville (Spain)

WORK EXPERIENCE

Department of Agricultural Economics and Rural Development, Agriculutral University of Athens – Athens, Greece

City: Athens | **Country:** Greece

Assistant Professor of Farm Management with Emphasis on Decision Support Systems

[08/2025 – Current]

I was selected for a tenure-track position on 25/11/2024 and I assumed my duties on 24/8/2025.

European Commission, Joint Research Center, D4, Economics of the Food System – Seville, Spain

City: Seville | **Country:** Spain | **Name of unit or department:** D4, Economics of the food system

Economic Modeller and Deputy Team Leader

[15/04/2019 – 15/04/2025]

- Quantitative socio-economic analysis in fields related to the Green deal, the Farm to Fork strategy, CAP and the EU food system
    - Organic farming targets and the required incentives to reach the target
    - Sustainable agricultural practices and their integration to eco-schemes
    - The protein gap in EU
    - Potential effects of a nitrogen tax in EU agriculture
    - Effects of the increase of fertilizer prices in 2022
    - CAP simplification and the effects on farm income
    - The cost of adoption of GAECs for farmers
    - The conversion of GAECs to voluntary payments
- Application of quantitative and modelling methods, in the context of the agrifood system
    - Main developer of the IFM-CAP farm model (mathematical programming model of the EU agricultural sector)
    - Modeling of the CAP strategic plans
    - Development of Decision Support System (DSS) for the SCENAR2040 joint exercise with DG AGRI
    - Modeling the projection of the CAP 2023/27 payments for the 2020 FADN farms
- Experience with advanced statistical methods
    - Statistical analyses based on the FADN micro-economic data, like Linear and Nonlinear Regressions, Panel Data Analysis, Time Series Analysis, Propensity Score Matching (PSM).
    - Spatial statistical and econometric analysis using spatial databases (Corine Land Cover, Lucas, Copernicus)
    - Handling and processing micro-economic and macro-economic data for model integration, including addressing data quality issues.
    - Micro-data population synthesis based on machine learning methods
- Cooperation with policy services and external stakeholders
    - Joint exercise with DG AGRI of SCENAR2040
    - Support to DG AGRI for the conversion of FADN to FSDN
    - Participation to the MINDSTEP and TOOLS4CAP EU Horizon projects
- Deputy Team Leader form 2023 to 2025

Department of Agricultural Economics, Agricultural University of Athens (permanent position) – Athens, Greece

City: Athens | **Country:** Greece | **Website:** http://www.aoa.aua.gr/

Research and teaching assistant

[10/02/2010 – 14/04/2019]

- Data Collection and Analysis (gathering data through surveys and interviews; conducting statistical analyses; developing microeconomic models)
- Publication Support (preparation of research papers, journal articles or conference presentations)
- Project Management and coordination with collaborators
- Grant Writing
- Class Assistance (assisting in the preparation and delivery of lectures)
- Office Hours/Student Support (one-on-one or small group assistance to students who need help with course materials or assignments)
- Grading
- Curriculum Development (collaborating with faculty in developing course materials, syllabi, and assignments)
- Supervision of undergraduate theses

My research interests: agent based modeling, quantitative analysis of economic policies with microeconomic models, empirical econometric analysis; data analysis; parallel processing; mathematical programming; simulation; sustainable farming systems

Agricultural University of Athens (contract staff) – Athens, Greece

City: Athens | **Country:** Greece

Researcher and technical assistant

[01/11/2006 – 01/02/2010]

Various scientific and technical activities
- Data Collection (Surveys and interviews)
- Data Analysis (statistical/computational tools and coding to use statistical/econometric methods)
- Maintaining laboratory equipment.
- Technical Support (troubleshooting equipment and software)
- Documentation
- Report Writing (research reports, papers, presentations)
- Administrative Tasks related to the research project

"Olive and olive oil" monthly magazine – Athens, Greece

City: Athens | **Country:** Greece

Researcher

[31/05/2006 – 30/10/2006]

- Data collection and statistical analysis
- Drafting magazine articles

EDUCATION AND TRAINING

PhD, Integrated agent based model of Greek agriculture for policy analysis

Dep. of Agricultural Economics, Agricultural University of Athens [11/07/2013 – 15/05/2019]

City: Athens | **Country:** Greece | **Field(s) of study:** Economics

The main aim of the doctoral dissertation was to design and develop an integrated model of the Greek agriculture that can be used for the evaluation of agricultural policy, based on FADN data. An additional objective is to complement the conventional representative farm model with the Agent Based Modeling approach. Within this context the following components of a micro-economic farm model are discussed and implemented: Handling farm model input data; Building a FADN-based farm model that represents the majority of Greek Agriculture, named

GREFAM; Applying the GREFAM model to the regionalization policy question in Greece; Augmenting the farm model by means of Agent Based Modeling Approach; Encapsulating the model inside a Decision Support System. The value added of the dissertation is due to the new CAP design. Inside the new flexible CAP framework, the current agricultural policy evaluation models reach their limits. Econometric models cannot give guidance in such major policy shifts and general or partial equilibrium models cannot reach the necessary microeconomic detail. Since the impacts of policy measures depend on the specific farm characteristics, getting insights at disaggregated level and spatial scale becomes relevant for both policymakers and researchers. Consequently, farm scale policy analysis is becoming very relevant and is suitable for CAP policy analysis.

Supervising committee: Athanasios Kampas, Associate Professor, Department of Agricultural Economics & Rural Development, Agricultural University of Athens, Greece / Stelios Rozakis, Associate Professor, School of Environmental Engineering, Technical University of Crete, Greece / Ioannis Athanasiadis, Assistant Professor with the Information Technology group at Wageningen University, Netherlands

BSc, Computer Science

School of Science and Technology, Hellenic Open University [31/08/2004 – 13/07/2009]

City: Patras | **Country:** Greece | **Field(s) of study:** Information and Communication Technologies | **Final grade:** 7,79 | **Type of credits:** ECTS | **Number of credits:** 240 | **Thesis:** Design, Development, and Evaluation of Parallel Algorithms for Scientific Computing in High-Performance Cluster Environments.

Modules: Introduction to computer science; Programming techniques; Data structures; Programming Languages I+II;Software engineering I + II; Databases; Operating Systems I; Discrete Mathematics; Graph theory; Logic; Linear Algebra; Calculus; Compilers; Algorithms; Computational theory; Automata and standard languages; Artificial intelligence and expert systems; Neural networks; Genetic algorithms and applications; Signals and systems; Digital processing of images and signals; Image processing; Special issues in software engineering

MSc, Integrated Rural Development

Department of Agricultural Economics, Agricultural University of Athens [31/08/2004 – 16/05/2006]

City: Athens | **Country:** Greece | **Final grade:** 8,17 | **Type of credits:** ECTS | **Number of credits:** 90 | **Thesis:** Measuring Support and Protection in the Agricultural Sector: The Case of Greece

Modules:Sociology of Rural Development; Methods of Economic and Social Research in Agriculture; Macroeconomic theory and policy: selected topics; Rural development and the environment; Agro-tourism & integrated rural development; Rural development economics; Policies for the development of the rural space; Planning and evaluation of development programs; Local development; Entrepreneurship and small and medium enterprises in rural areas;

BSc in Agricultural Economics and Rural Development.

Department of Agricultural Economics, Agricultural University of Athens [20/09/1995 – 26/06/2002]

City: Athens | **Country:** Greece | **Final grade:** 7,10 | **Thesis:** The Consumption of Ready-Made Meals in Greece

Courses:
General&Inorganic Chemistry; Introduction to Agronomy; Plant Morphology; General Microbiology; Organic Chemistry; Botanical Taxonomy; Political Economy; Macroeconomic Theory; Plant Physiology; Statistics; Genetics; Agricultural Zoology; Ecology and Environment; Anatomy&Physiology of farm animals; General Soil science; Microeconomic analysis; Plant Pathology; rural sociology; animal husbandry; permanent crop science; general entomology; applied economic statistics; viticulture; introduction to agricultural production economics; agricultural industries; agricultural engineering; farming animals nutrition; agricultural production economics; farm accounting&farm appraisal; databases and expert systems in agriculture; rural environment protection policies; applied econometrics; computers in economics; financial mathematics; agricultural investment evaluation; agricultural policy; agricultural price analysis; management and organisation of agricultural enterprises I+II; agricultural enterprises funding; marketing of agricultural products&food I+II; agricultural extensions; rural development; cooperatives; research methods

PUBLICATIONS

[2025]
Do organic farming policies need to be more target-oriented to achieve sustainability?

Dolores Rey; Dimitrios Kremmydas; Edoardo Baldoni; Pavel Ciaian; Pascal Tillie (Under Review), Do organic farming policies need to be more target-oriented to achieve sustainability?, Journal of Environmental Management, Under Review

[2024]

Closing the EU protein gap – drivers, synergies and trade-offs

Hristov, J., Tassinari, G., Himics, M., Beber, C., Barbosa, A. L., Isbasoiu, A., Klinnert, A., Kremmydas, D., Tillie, P., & Fellmann, T. (2024). Closing the EU protein gap – drivers, synergies and trade-offs. Publications Office of the European Union

[2024]

The EU target for organic farming: Potential economic and environmental impacts of two alternative pathways

Kremmydas, D., Beber, C. L., et al. (2024). The EU target for organic farming: Potential economic and environmental impacts of two alternative pathways. Applied Economic Perspectives and Policy

[2023]

Agro-economic-environmental modelling in the context of the Green Deal and sustainable food systems – The iMAP view European Commission, Joint Research Centre, Fellmann, T., Genovese, G., Antonioli, F. et al., *Agro-economic-environmental modelling in the context of the Green Deal and sustainable food systems – The iMAP view,*, Fellmann, T.(editor), Genovese, G.(editor), Publications Office of the European Union, 2023. https://dx.doi.org/10.2760/123978

[2023]

Modeling conversion to organic agriculture with an EU-wide farm model Kremmydas, D., Ciaian, P., Baldoni, E., Kremmydas, D., Ciaian, P., & Baldoni, E. (2023). Modeling conversion to organic agriculture with an EU-wide farm model. *Bio-based and Applied Economics*, *10*. https://dx.doi.org/10.36253/bae-13925

[2023]

Farm-level impacts of the CAP post-2020 reform: A scenario-based analysis Petsakos, A., Ciaian, P., Espinosa, M., Perni, A., & Kremmydas, D. (2023). Farm-level impacts of the CAP post-2020 reform: A scenario-based analysis. *Applied Economic Perspectives and Policy*, *45*(2), 1168-1188. https://doi.org/10.1002/aepp.13257

[2022]

Redistribution and the abolishment of historical entitlements in the CAP Strategic plans: The case of Greece Kremmydas, D., & Tsiboukas, K. (2022). Redistribution and the abolishment of historical entitlements in the CAP Strategic plans: The case of Greece. *Sustainability*, *14*(2), 735. https://doi.org/10.3390/su14020735

[2021]

The EU-Wide Individual Farm Model for Common Agricultural Policy Analysis (IFM-CAP v. 2) Kremmydas, D., Petsakos, A., Ciaian, P., Baldoni, E., & Tillie, P. (2021). *The EU-Wide Individual Farm Model for Common Agricultural Policy Analysis (IFM-CAP v. 2)* (No. JRC127014). Joint Research Centre (Seville site). https://dx.doi.org/10.2760/248136

[2021]

The Evolution of Decision Support Systems for Agriculture: A Bibliometric Network Approach Kremmydas, D., Konstantinis, A., & Rozakis, S. (2021). The Evolution of Decision Support Systems for Agriculture: A Bibliometric Network Approach. In *EURO Working Group on DSS: A Tour of the DSS Developments Over the Last 30 Years* (pp. 97-113). Cham: Springer International Publishing. http://dx.doi.org/10.1007/978-3-030-70377-6_6

[2021]

A design for a generic and modular bio-economic farm model Britz, W., Ciaian, P., Gocht, A., Kanellopoulos, A., Kremmydas, D., Müller, M., ... & Reidsma, P. (2021). A design for a generic and modular bio-economic farm model. *Agricultural Systems*, *191*, 103133. https://doi.org/10.1016/j.agsy.2021.103133

[2020]
The Matthew effect of a journal's ranking Drivas, K., & Kremmydas, D. (2020). The Matthew effect of a journal's ranking. *Research Policy*, *49*(4), 103951. https://doi.org/10.1016/j.respol.2020.103951

[2018]
A review of agent based modeling for agricultural policy evaluation Kremmydas, D., Athanasiadis, I. N., & Rozakis, S. (2018). A review of agent based modeling for agricultural policy evaluation. *Agricultural systems*, *164*, 95-106. https://doi.org/10.1016/j.agsy.2018.03.010

[2018]
Allocating Shadow Prices in a Multi-objective Chance Constrained Problem of Biodiesel Blending Caldeira, C., Dias, L., Freire, F., Kremmydas, D., & Rozakis, S. (2018). Allocating Shadow Prices in a Multi-objective Chance Constrained Problem of Biodiesel Blending. *Multicriteria Analysis in Agriculture: Current Trends and Recent Applications*, 133-149. http://dx.doi.org/10.1007/978-3-319-76929-5_5

[2016]
The impact of different energy policy options on feedstock price and land demand for maize silage: The case of biogas in Lombardy Bartoli, A., Cavicchioli, D., Kremmydas, D., Rozakis, S., & Olper, A. (2016). The impact of different energy policy options on feedstock price and land demand for maize silage: The case of biogas in Lombardy. *Energy Policy*, *96*, 351-363. https://doi.org/10.1016/j.enpol.2016.06.018

[2016]
Data warehouse technology for agricultural policy data: a Greek case study Maliappis, M. T., & Kremmydas, D. (2016). Data warehouse technology for agricultural policy data: a Greek case study. *International Journal of Sustainable Agricultural Management and Informatics*, *2*(2-4), 243-262. https://doi.org/10.1504/IJSAMI.2016.082002

[2014]
Food Inflation in the European Union: Distribution Analysis and Spatial Effects Liontakis, A., & Kremmydas, D. (2014). Food Inflation in the European Union: Distribution Analysis and Spatial Effects. *Geographical analysis*, *46*(2), 148-164. http://dx.doi.org/10.1111/gean.12033

[2013]
Straw potential for energy purposes in Poland and optimal allocation to major co-firing power plants. Rozakis , S., Kremmydas, D., Pudełko, R., Borzęcka-Walker, M., & Faber, A. (2013). Straw potential for energy purposes in Poland and optimal allocation to major co-firing power plants. *biomass and bioenergy*, *58*, 275-285. https://doi.org/10.1016/j.biombioe.2013.06.011

[2013]
Highly scalable parallelization of standard simplex method on a myrinet-connected cluster platform Mamalis, B., Pantziou, G., Dimitropoulos, G., & Kremmydas, D. (2013). Highly scalable parallelization of standard simplex method on a myrinet-connected cluster platform. *International Journal of Computers and Applications*, *35*(4), 152-161. https://doi.org/10.2316/Journal.202.2013.4.202-3691

[2012]
Parametric Optimization of Linear and Non-Linear Models via Parallel Computing to Enhance Web-Spatial DSS Interactivity Kremmydas, D., Petsakos, A., & Rozakis, S. (2012). Parametric Optimization of Linear and Non-Linear Models via Parallel Computing to Enhance Web-Spatial DSS Interactivity. *International Journal of Decision Support System Technology (IJDSST)*, *4*(1), 14-29. https://doi.org/10.4018/jdsst.2012010102

[2008]

Support and protection of Greek agriculture: inter-temporal developments and sectoral diversification Karanikolas, P., Bourdaras, D., Kremmydas, D., & Martinos, N. (2008). Support and protection of Greek agriculture: inter-temporal developments and sectoral diversification. *South-Eastern Europe Journal of Economics*, *6*(2).

CONFERENCES AND SEMINARS

[26/08/2025 – 29/08/2025] Bonn, Germany
XVIII EAAE Congress *Contributed Papers*Maximizing Policy Impact: The Value Of Information In Designing Agri-environmental PolicyKremmydas, Dimitrios; Baldoni, Edoardo; Rey Vicario, Dolores; Tillie, Pasca
Environmental And Economic Impacts of a Tax on Mineral N Fertilizers on the European Agricultural Sector: Results of Combined Model Use at Different Scales Helming, John; Krisztin, Tamas; Müller, Marc; Kremmydas, Dimitrios; Rey Vicario, Dolores; Scherer, Hugo; Sckokai, Paolo; Stepanyan, Davit; Varacca, Alessandro; Koutchadé, Obafèmi; Alain, Carpentier; Femenia, Fabienne
Farm-level effects of the Enhanced Conditionality in the EU Common Agricultural Policy Rey Vicario, Dolores; Kremmydas, Dimitrios; Baldoni, Edoardo; Tillie, Pascal***Presentations in Organised Sessions*****Enhancing IFM-CAP Calibration: Integrating Risk Preferences from Behavioral Experiments**Kremmydas, Dimitris; Rey, Dolores; Tillie, Pascalin Incorporating Results from Behavioural Experimental Methods in Agro-Economic Modelling
Exploring the Future of the CAP: Insights from the IFM-CAP Model Kremmydas, Dimitrios; Rey Vicario, Dolores; Tillie, PascalIn Advancing Farm Modeling for CAP Policy Analysis: Building a Collaborative Network
A Framework for Extending Farm Models with Sustainable Farming Practices and Adoption of Eco-schemes Kremmydas, Dimitrios; Rey Vicario, Dolores; Ciaian, Pavel; Tillie, PascalIn Advancing Farm Modeling for CAP Policy Analysis: Building a Collaborative Network
Challenges To Better Represent Water In Micro-Economic Models: The Case Of IFMCAP (Individual Farm Model for Common Agricultural Policy Analysis) Rey-Vicario, Dolores; Kremmydas, Dimitrios; Baldoni, Edoardo; Tillie, PascalIn Sustainable Water Use in Agriculture: from Economic Modelling to Policy Design

Link: https://www.ilr1.uni-bonn.de/eaaecongress2025/en

[26/08/2024 – 30/08/2024]
European Regional Science Association Congress (ERSA2024) Drought effects on agricultural productivity across EU regions

[02/08/2024 – 07/08/2024] New Delhi, India
32nd International Conference of Agricultural Economists (ICAE) Caetano, B., <MORE AUTHORS TO BE COMPLETED> Kremmydas D. How Improved Animal Welfare Standards in the EU Might Affect Farmers and Consumers in the Medium Term (August 2024), 32nd International Conference of Agricultural Economists (ICAE),

[03/07/2024 – 05/07/2024] Izmir, Turkey
EcoMod2024 - International Conference on Economic Modeling and Data Science Deep learning based emulation of complex economic models

[01/07/2024 – 04/07/2024] Leuven, Belgium
29th Annual Conference of the European Association of Environmental and Resource Economists Do organic farming policies need to be more target-oriented to achieve the desired environmental benefits?

[29/08/2023 – 01/09/2023] Rennes, France
XVII Congress of European Association of Agricultural Economists (EAAE) Kremmydas, D., Beber, C., Pignotti, D., Fellmann, T., Hristov, J., Stepanyan, D., Ciaian, P., Gocht, A., Baldoni, E., & Tillie, P. (2023). The EU Target For Organic Farming: Potential Budgetary, Farm and Market Impacts Of Two Alternative Pathways. Paper presented at the XVII EAAE Congress, Rennes, France. August 29 to September 1, 2023.

[27/03/2023 – 29/03/2023] Warwick University, Coventry, UK

97th Annual Conference of the Agricultural Economics Society Invited speaker on the plenary session "Opportunities and failures of policy on organic agriculture", chaired by Dr Alisa Spiegel (Thünen Institute, Germany): 'Opportunities and Failures of Policy on Organic Agriculture' – Other speakers are Dr Nicolas Lampkin (Thünen Institute, Germany), Prof. Simone Severini (UNITUS, Italy) and Dr Sharon Raszap Skorbiansky (US Department of Agriculture, Economic Research Service)

[05/10/2022 – 07/10/2022] Berlin, Germany

181th seminar of European Association of Agricultural Economists (EAAE) Kremmydas, D., Ciaian, P., Baldoni, E., & Tillie, P. (2022). Modeling organic conversion in an EU-wide farm model. Paper presented at the 181st Seminar of the European Association of Agricultural Economists, Berlin, Germany.

[07/10/2021 – 08/10/2021] Athens

16th conference of the Hellenic association of agricultural economists – ETAGRO international section in agricultural economics Petsakos, A., Espinosa, M., Perni, A., Kremmydas, D., & Ciaian, P. (2021). The impact of post-2020 cap reform proposal on farmers' income and the environment: the case of Greece. *7-8 October*, *91*, 569-580.

[01/09/2021 – 03/09/2021] Cartagena, Spain

XIII Congreso de Economía Agroalimentaria, Asociación Española de Economía Agroalimentaria Petsakos, A., Kremmydas, D., Espinosa Bayal, M. Á., Perni Llorente, Á., & Ciaian, P. (2021). Economic and environmental effects of the post-2020 cap reform proposal in spain: a farm level assessment. En N. Arcas Lario & M. D. d. Miguel Gómez (eds.), *XIII Congreso de Economía Agroalimentaria*. https://doi.org/10.31428/10317/10445

[28/05/2019 – 29/05/2019] Brussels, Belgium

172th seminar of European Association of Agricultural Economists (EAAE) Kremmydas, D., Kampas, A., Rozakis, S., & Vlachos, G. (2019). CAP regionalization trade-off analysis: environmental versus socioeconomic priorities. Paper presented at the 172nd Seminar of the European Association of Agricultural Economists, Brussels, Belgium.

[24/09/2018 – 26/09/2018] Pulawy, Poland

167th seminar of European Association of Agricultural Economists (EAAE) Mantziaris, Stamatis & Kremmydas, Dimitrios & Karanikolas, Pavlos. (2018). A sequential mathematical modeling approach for estimating supply curves for energy crops under different policy scenarios: A Greek case study.

[26/04/2018 – 27/04/2018] Budapest, Hungary

162th seminar of European Association of Agricultural Economists (EAAE) Kremmydas, Dimitris & Kampas, Athanasios & Rozakis, Stelios & Tsiboukas, Konstantinos & Vlahos, George, 2018. "CAP regionalization scheme in Greece: A rapid policy assessment method," 162nd Seminar, April 26-27, 2018, Budapest, Hungary 271970, European Association of Agricultural Economists.

[21/09/2017 – 24/09/2017] Chania, Greece

8th International Conference on Information and Communication Technologies in Agriculture, Food & Environment Kremmydas, D., Malliapis, M., Nellas, L., Polymeros, A., Rozakis, S., & Tsiboukas, K. (2019). CAP 2020 Regionalization Design: A Decision Support System. In *Information and Communication Technologies in Modern Agricultural Development: 8th International Conference, HAICTA 2017, Chania, Crete, Greece, September 21–24, 2017, Revised Selected Papers 8* (pp. 84-96). Springer International Publishing.

[17/09/2015 – 20/09/2015] Kavala, Greece

7th International Conference on Information and Communication Technologies in Agriculture, Food and Environment Maliappis, M. T., & Kremmydas, D. (2015, September). An Online Analytical Processing (OLAP) Database for Agricultural Policy Data: a Greek Case Study. In *HAICTA* (pp. 214-225).

[22/09/2011 – 24/09/2011] Thessaloniki, Greece

1st International Symposium on Operational Rsearch Kremmydas, D., Haque, M. I., & Rozakis, S. (2011). Enhancing Web-Spatial DSS interactivity with parallel computing: The case of bio-energy economic assessment in Greece. *BALCOR 2011*, 130.

[15/02/2011 – 17/02/2011] Innsbruck, Austria

10th IASTED International Congress on Parallel and Distributed Computing and Networks (PDCN 2011) Mamali s, B., Pantziou, G., Kremmydas, D., & Dimitropoulos, G. (2011). Reexamining the parallelization schemes for standard full tableau simplex method on distributed memory environments. In *Proceedings of the 10th IASTED PDCN Conference* (pp. 115-123).

TEACHING AND THESIS SUPERVISING

[01/01/2022 – Current]

Teaching in Msc Montpellier CIHEAM IAM, International center for Advanced Mediterranean Agronomic Studies

Teaching in the MIDA Master (Mediterranean farming system design for a sustainable food-system), in CIHEAM Montpellier, co-accredited with the University of Montpellier (UM) and L'Institut Agro Montpellier.

Module 6: Multi-agent analysis for designing resilient agricultural systems

Contents of the module:

- Regional modelling of agricultural systems - Practical exercise: Application of a regional agroeconomic model to assess changes in farming practices

- Regional agroeconomic modelling: mid-term analysis - Practical exercise: Impact assessment of changes in agricultural policy measures

- Regional agroeconomic modelling: long-term analysis - Practical exercise: Climate change and adaptation/mitigation scenarios

- Regional agroeconomic modelling: recent challenges. Practical exercise: Application to assess other sustainability issues related to the agricultural systems' transformation

Link: https://www.iamm.ciheam.org/wp-content/uploads/2023/11/FichePresentation_ENG_MIDAS_2024-2025.pdf

[30/11/2018 – 29/04/2019]

Teaching Project management (MSc Entrepreneurship and Consulting in Rural Development)

Objectives and constraints of Project Management - Project Life Cycle Analysis - Project Environment and Stakeholders - Project Organization and Analysis - Structural Project Analysis - Organizational Breakdown - Project Time Scheduling - Logical relationships and connections - Gantt Charts - Critical Path Method (CPM) - Program Evaluation and Review Technique (PERT) - Resource Planning - Resource Categories - Resource Matching - Loading and leveling of resources. Throughout this subunit, particular emphasis is placed on simultaneous learning of Microsoft Project software (or alternatively ProjectLibre) and the practical application of examples.

[01/01/2016 – 16/04/2019]

Evaluation of Investments in Agriculture

FINANCIAL MATHEMATICS: Simple and Complex Capitalization, Time series payments,•Amortization of Bond premia/ discounts.

INVESTMENT APPRAISAL: Traditional investment criteria, The concept of the Time Value of money, Discounted Cash Flows, Net Present Value, Internal Rate of Return, Investment Appraisal in conditions of uncertainty, Revisiting the Generally Accepted Accounting Principles, The Cash Flow Statement, Financial Evaluation using Ratio Analysis, Cost – Volume – Profit (Break Even) Analysis

[01/01/2016 – 16/04/2019]

Farm Management II

·Technical and economic analysis of farm function (group analysis) . Applications in farms .

·Separated analysis of production factors. Analysis of the use of agricultural equipment cost of use compared with the optimum threshold. Profitability analysis between two or more machinery items . Analysis of human labor (calculation of required and employed labor) . Applications to livestock farming

·Decision making using the Agricultural budget methods (partial budget , breakeven point budget , parametric budget , cash flow budget , total budget) . Applications in farms.

Decision making using linear programming (graphical method , algorithm Simplex, method of big M , the dual problem , sensitivity analysis . transportation problems, transshipment problem, assignment problem) . Applications in farms.

[01/01/2016 – 16/04/2019]

Farm Management I

· Asset appraisal of farms. Asset valuation methods. Estimation of soil value. Estimation of value of perennial plantations (semi-permanent and permanent plantations). Valuation of agricultural machinery. Estimation of value of agricultural constructions and land improvements. Estimation of value of productive animals. Estimation of value of annual crops in progress.

Costing as an element of efficiency of farms: concept, definition, quantification of production costs, economic results-income-income. Cost types, cost categories, cost positions, cost carriers. General principles of costing, costing methods, costing techniques. Applications at the level of farms

[01/11/2018 – 01/04/2019]

Supervision of the Bachelor Thesis: "Exploring the different priorities in relation to the goals of the Common Agricultural Policy through the Analytic Hierarchy Process"

The purpose of this work is to use the Analytic Hierarchy Process (AHP) to assess the importance that each objective of the Common Agricultural Policy (CAP) holds for different stakeholders associated with CAP. The thesis contains the following sections: (1) Overview of CAP from its inception to the present concerning policy objectives; (2) Examination of changes in the two most recent CAP revisions in detail (2010-14 and 2015-20) through regulations; (3) Identification of interest groups; (4) The AHP method. Theoretical background, description, example; (5) AHP study regarding the weights assigned by different stakeholder groups to CAP objectives.

[01/06/2018 – 01/04/2019]

Utilization of a Mathematical Programming Model for Extracting Supply Curves: The Case of Arable Crops

In this bachelor thesis, we calculate supply curves for three arable crops (barley, cotton, hard wheat) in the Thessaly region. This allows us to understand how the production volume of these crops would change in response to potential price fluctuations. The calculations are based on data from the Farm Accountancy Data Network (FADN), a European system that collects annual accounting information from agricultural and livestock enterprises oriented towards the market. By utilizing linear programming, we model the decisions of agricultural enterprises, assuming their goal is to maximize gross profit while considering constraints on production factors. This approach not only helps in deriving the supply curve but also provides a numerical estimate of supply elasticity. Understanding supply elasticity with respect to price is crucial for analyzing the effects of government measures (product taxes) or the impacts of market changes, such as how quickly enterprises can adapt to price fluctuations....

Student: Konstantina Papadogianni

[01/11/2018 – 01/03/2019]

Supervising of Bachelor Thesis: "Selection of agricultural machinery using the method of Integer Programming"

The problem addressed in this specific work is the selection of agricultural machinery with the aim of achieving the minimum possible cost for the farm operation. The cost of using machinery, which should include their ownership cost spread over time, is a particularly significant component of overall farm costs, especially for certain crops. Agricultural enterprises exhibit various specificities, being influenced by climatic and soil factors, the type and extent of crops, and the seasonality of agricultural activities. Therefore, the choice of tractor and its accessories, considering their type and size, requires the consideration of many factors. The approach begins with an analysis of the selection problem in its accounting dimension, including a discussion on calculating fixed and variable costs, along with a detailed example of calculating tractor usage costs. Additionally, the calculations are demonstrated in an Excel

spreadsheet. Subsequently, the problem is presented and solved using integer linear programming. Parameters and variables are defined, and the objective function and constraints are provided. The problem is solved using an Excel spreadsheet with the OpenSolver tool. The thesis concludes by presenting a realistic problem of selecting agricultural machinery for a single-crop wheat farm, providing all necessary elements and performing the required calculations to have relevant data. The specific problem is solved using the GAMS program, accompanied by a detailed presentation of the results and conclusions.

Student: Ioannis Andornikos

[01/11/2017 – 01/04/2018]

Supervising of Bachelor thesis, 'Construction of a linear programming model and estimation of economic results, regarding the operation of a cattle farming unit with 50 lactating cows and calf fattening in the Metsovo region'

This bachelor's thesis focuses on constructing a linear programming model for formulating cattle feeding and estimating the economic results of a dairy farm and developing-fattening calves in the Metsovo region. The farm maintains 50 lactating cows, five of which are withdrawn and sold as heifer-beef meat each year, while another five are newly introduced calves to the herd. The aim of this thesis is to analyze the biological activities of animals influencing their energy and protein needs, estimate these needs, and cover them at the lowest cost (using linear programming). The main productive expenses are also analyzed, along with an examination of the production process and economic results of the farm.

Student: Dimitrios Godevenos

[15/10/2018 – 10/03/2019]

Bachelor Thesis "A serious business game for the efficient irrigation of cotton crop"

Student: Trepekli Konstantina

NETWORKS AND MEMBERSHIPS

[01/01/2017 – Current]

European Association of Agricultural Economists

[01/01/2023 – Current]

Agricultural Economics Society

PROJECTS

[01/01/2023 – Current]

TOOLS4CAP: Innovative tools to support CAP Strategic Plans Description: The New Delivery Model established by Regulation EU 2115/2021 will bring significant changes to the EU's Common Agricultural Policy (CAP) governance. Specifically, it will introduce Strategic Plans and new monitoring, review and evaluation requirements. The EU-funded Tools4CAP project will support the implementation of National Strategic Plans 2023-2027 and lay the foundations for a sound preparation of Post-2027 Strategic Plans. Establishing a flexible and participatory Coordination and Support Action the project will promote learning, exchange processes and adoption of innovative solutions and good practices for the design, monitoring, and evaluation of CAP Strategic Plans. Tools4CAP will deliver a comprehensive inventory of tools, methodological guidelines on innovative solutions and a handbook of good practices.**Budget:** € 3,999,999 (4 million). Horizon Europe funded**My roles and responsibilities:** Model development; Scenario analysis; Policy insights; Research papers drafting**Workload:** 3 person-months (to be realized)

Link: https://cordis.europa.eu/project/id/101086311

[03/05/2019 – 31/12/2023]

MINDSTEP: Modelling INdividual Decisions to Support The European Policies related to agriculture Descriptio n: MIND STEP will improve exploitation of available agricultural and biophysical data and will include the individual decision making (IDM) unit in policy models. Based on a common data framework MIND STEP will develop IDM models, including agent-based models, focussing on different topics in an integrated manner in different regional case studies. The IDM models will be estimated and calibrated using agricultural statistics and big datasets, drawing on established econometric and evolving machine learning techniques and using both traditional models of optimising behaviour and theories from behavioural economics. MIND STEP will closely cooperate with a range of stakeholders to co-create and apply the MIND STEP model toolbox to selected regional, national and EU wide policy cases.**Budget:** € 4,000,000 (4 million). H2020 EU funded**Role and responsibilities:** Co-ordinator for the JRC actions in the consortium; Modeler for the IFM-CAP model; Drafting publications with policy scenarios; Presentations in stakeholder meetings**Workload:** 10 person-months

Link: https://cordis.europa.eu/project/id/817566

[01/01/2023 – 30/12/2023]

Economics of the adoption of agro-environmental practices in the EU Description: The general objective of this project is to build a database of agro-economic information regarding eco-scheme-related farming practices in the EU. This will enhance modeling tools used for the impact analysis of the Common Agricultural Policy (CAP) by integrating detailed information on farming practices. Against the backdrop of the EU's ambitious targets for 2030, emphasizing environmental sustainability, biodiversity, and reduced use of pesticides and fertilizers, the project seeks to understand how farmers' decisions on adopting new practices impact farm economics. The methodology involves tasks such as identifying farming practice experts, building a comprehensive database, defining methodologies for data collection, and simulating economic and environmental effects. The deliverables comprise an expert database, a report on the methodology, collected questionnaires, and a farming practices database with quantitative information.**Budget:** 113,000 (hundred thirteen thousand). Funded with institutional budget of the unit D4, Economics of the food system**My role and responsibilities:** Project manager**Workload:** 3 person-months

[01/01/2018 – 30/06/2020]

SUPREMA: SUpport for Policy REIevant Modelling of Agriculture Description: The SUPREMA project addresses the evolving challenges in agricultural impact assessments by proposing a meta-platform that supports modeling groups connected through existing platforms and networks. With a focus on aligning models with diverse policy objectives, SUPREMA aims to bridge the gap between policymakers' expectations and the actual capabilities of agricultural models. The objectives include developing a roadmap for future modeling directions, strengthening the SUPREMA model family, exploring and testing future modeling approaches in agriculture, and establishing a meta-platform for sharing findings with existing model platforms, research communities, and policymakers.**Budget:** € 999,823 (~1 million). H2020 EU funded**Role and responsibilities:** Modeler for the IFM-CAP model; Drafting publications with policy scenarios; Presentations in stakeholder meetings**Workload:** 3 person-months

Link: https://cordis.europa.eu/project/id/773499

[14/02/2018 – 30/12/2018]

MAGIC: MArginal lands for Growing Industrial Crops: Turning a burden into an opportunity Description: Indus trial crops hold immense potential as a source of valuable resources and bioenergy. But maximising their benefits while ensuring sustainability is challenging. The EU-funded MAGIC project aims to harness the power of resource-efficient and economically profitable industrial crops cultivated on marginal lands. Specifically, its multifaceted approach features the development of an extensive database, as well as the cataloguing of existing resource-efficient industrial crops and their agronomic characteristics. Moreover, marginal lands in Europe will be mapped to identify best practices. Overall, the project's success relies on collaboration with farmers and end users through the development of a decision support system. MAGIC will also explore new breeding tools and refine biomass supply-chain logistics to enhance crop varieties.**Budget:** € 5,999,987 (~5 million). H2020 EU funded**My role and responsibilities:** Policy recommendations and best-practice guidelines; Cost analysis of energy crops in marginal lands;**Workload:** 10 person-months

Link: https://cordis.europa.eu/project/id/727698

[31/08/2017 – 30/10/2018]

Consultant for the Preparation, Support, and Implementation of the New CAP in Greece Description: Consultancy for the Greek Ministry of Agriculture for preparing the strategic plan of the CAP 2020/25**My role and responsibilities:** Modeling of policy scenarios regarding different convergence and redistribution options.Budget: €150,000 (150 thousand). Funded by the Greek Ministry of Agriculture.**Workload:** 2 person-months

[31/10/2006 – 31/12/2008]

PILOTEC: Set up of innovative PILOT projects to assist ex' tobacco producers to sustainably cultivate Energy Crops Description: The project explores the shift of tobacco producers in Aetolia-Acarnania, Karditsa, and Kilkis to cultivating energy crops. Energy crops, essential for replacing tobacco, face competition from fodder crops in Aetolia-Acarnania and cotton, corn, and cereals in Karditsa and Kilkis. The study analyzes individual farms, providing insights into the complexity of production systems. Subsequent cost assessment of energy crops, in collaboration with the University of Thessaly, considers variables for existing crops and determines optimal production plans for different policy scenarios. The results suggest feasibility, with sunflower cultivation in Kilkis and Karditsa showing promise during low cereal and cotton prices. Exotic crops like fiber sorghum indicate significant contributions from Aetolia-Acarnania producers, particularly in low cereal price scenarios. Artichoke cultivation appears lucrative, with producers contributing substantially to the biomass supply, even under high cereal price scenarios. The project integrates data management, economic modeling, and geographical insights through a web-based decision support system.**Budget:** € 500,000. Financed by the Greek "Payment and Control Agency for Guidance and Guarantee Community Aids" in the context of the Tobacco Fund (Action 10, Com(EC)2182/02)**My role and responsibilities:** Project coordination; Data analysis; Model development; Statistical analysi**Workload:** 26 person-months

Link: http://aoatools.aua.gr/pilotec/

[31/10/2006 – 30/11/2006]

HYDROSENSE: Innovative precision technologies for optimised irrigation and integrated crop management in a water-limited agrosystem Description: The HydroSense project (LIFE08 ENV/GR/000570) aimed to improve efficiency in the use of water, fertilisers and pesticides for the production of a major Mediterranean agricultural crop (cotton). It would achieve this aim by employing site-specific management and advanced technologies in proximal remote sensing, such as the employment of advanced canopy sensors. The project would also produce data and tools to evaluate the project's economic effectiveness and the potential to scale it up to the regional level, or transfer the methodology to other regions and other agricultural crops. Training and dissemination activities were also planned to reach these objectives.**Budget**: 1,693,575 (1.6 million). LIFE EU funded**My role and responsibilities:** Data analysis and model development**Workload:** 1 person-month

Link: https://webgate.ec.europa.eu/life/publicWebsite/project/LIFE08-ENV-GR-000570/innovative-precision-technologies-for-optimised-irrigation-and-integrated-crop-management-in-a-water-limited-agrosystem

REVIEWER

Ecological Modeling

Agricultural systems

PLOS ONE

Journal of Cleaner Production

Springer Nature

International Journal of Microsimulation

Science of the Total Environment

Journal of Agricultural Economics

HONOURS AND AWARDS

[24/09/2011] Hellenic Operational Research Society
Best Conference Paper, "Enhancing Web-Spatial DSS interactivity with parallel computing: The case of bio-energy economic assessment in Greece" In the constext of the 1st International Symposium and 10th Balkan Conference on Operational Research, Thessaloniki, Greece.

TRAINING / SEMINARS AS PARTICIPANT

[30/06/2016 – 08/07/2016]

10th Summer school, "Individual and Agent-Based Modeling: A course in analysis, application and publication of IBM (intermediate level)", Holzhau, Germany

Contents: The course provides an overview over the state-of-the-art in individual- and agent-based modeling, debugging, parameterization, sensitivity analysis, and robustness analysis. Further topics are the handling of uncertainties in data, the design of simulation experiments and the statistical analyses of their results. Although the course will also give a short intro into model development and implementation, the main focus is on the steps, which follow as soon as your first model version is running. This course is intended for grad students and researchers who are in the process of developing models by testing their first implementations and seek guidance on finishing, analyzing, and doing science with their models. Although participants might have developed their models ondifferent software platforms, the course will use NetLogo modeling software in combination with software for statistical analyses (e.g., R). Intermediate knowledge of Netlogo is

required. Material introducing NetLogo and R will be provided before the course. The lecturers are Uta Berger (TUD, Germany), Steve Railsback (USA), and Volker Grimm (UFZ, Germany). The course will consist of lectures, exercises, and extensive modeling projects to be presented in groups at the end of the course.

ECTS: 4

Link: https://tu-dresden.de/bu/ressourcen/dateien/internationales/sommerschulen/Flyer-IBM-Summerschool-2016.pdf?lang=en

[18/05/2015 – 20/05/2015]

PhD Summer School of the Annual Workshop on the Economic Science with Heterogeneous Interacting Agent, "Agent Based Modelling, Networks and Experimental Economics, Pole universitaire St Jean d' Angely, Nice, France

Contents: Doctoral summer school on agent-based modelling, the analysis of economic and social networks, and experimental economics.

Duration: Three days

Link: https://wehia2015.sciencesconf.org/

[07/04/2014 – 11/04/2014]

"Agent –based Modelling in Agricultural and Resource Economics" of the Doctoral Certificate Program in Agricultural Economics of German Agricultural Economics Department, Halle, Saale, Germany

Content: The objective of the course is to present the Agent-Based paradigm for modelling (Agent Based Modelling or ABM) and simulation of complex systems especially in the field of agricultural and resource economics. The course is a five-day learning module, divided into theory and practical sessions. On the theoretical sections, the course will enable participants to understand what ABMs are and when and why they are used; the main concepts of Agent-Based modeling and how it works will be explained; and the decisions required for the formulation of an ABM will be presented. On the practical sessions, participants will learn how to implement and analyze an ABM using the NetLogo framework by developing a simple model step by step. Participants shall subsequently extend the simple model to address a research question of their own. The course provides a foundation for the student additional self-instruction in Agent Based Modelling, using the references provided throughout the course.

ECTS: 3

Link: https://www.agraroekonomik.de/M1701-Balmann-Agent-based-modelling.html

[19/03/2012 – 23/03/2012]

Decision support systems for the development and environmental management of rural areas, International Center for Advanced Mediterranean Agronomic Studies, CIHEAM, Zaragoza, Spain

Duration: 33 hours

SKILLS

Office and document automatation

Microsoft Office / VBA per Offfice / LaTeX

Programming

Python / C/C++ / GIS Softwares such as ArcGIS, QGIS, Swat extension, ArcHydro.....others / Web Programming: Node.js, HTML, XML, PHP, JSP, Javascript / Java / Git / SQL

Statistics/Econometrics

R language and R studio / Stata / SPSS

Agent Based Modeling

Repast Symphony / Netlogo

Mathematical and optimization

Octave / Matlab / Maxima / GAMS

LANGUAGE SKILLS

Mother tongue(s): Greek

Other language(s):

English

LISTENING C2 **READING** C2 **WRITING** C2

SPOKEN PRODUCTION C2 **SPOKEN INTERACTION** C2

Ισπανικά

LISTENING C1 **READING** C1 **WRITING** B2

SPOKEN PRODUCTION B2 **SPOKEN INTERACTION** B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user