



Spring School 2024

Simulation Modelling for Analyzing Agricultural Markets and Climate Change Impacts

18th-29th February, 2024
Amman, University of Jordan

Organized by

International Agricultural Trade and Development Group, Humboldt-Universität zu Berlin

In partnership with

Energy, Water and Food Security Research Center and Continues Education Center, An-Najah National University



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About the spring school

The spring school features a two-week program dedicated to delving into the theoretical foundations and applied methodologies for policy analysis in agricultural and food systems.

The in-person school aims to provide researchers and professionals from the Jordan River region working in agricultural economics and related fields an opportunity to develop their theoretical and practical skills in simulation modelling and economic policy analysis further.

The program focuses on analyzing the sectoral and economy-wide impacts of policies and external shocks related to the agricultural sector, which is an important sector for the Jordan River region in terms of production, trade, and livelihoods. During school, simulation models are developed and used to assess the economic impacts of policy changes and external shocks such as taxes, trade policies, and climate change. Furthermore, the participants will also analyze impacts on stakeholders including consumers, households, producers, and the government.

By the end of the course, participants will better understand the complex interactions in the economy and the outcomes of different scenarios. They will be able to apply the GAMS modelling software in a simulation modelling context and run basic economic simulation models. They will be able to implement and interpret the outcomes of climate and policy scenarios and also understand the shortcomings of different simulation model types.

The school will be held in person in Amman at the University of Jordan in English. Teaching will be done in lectures and practical sessions. The teaching will be complemented with public lectures on climate change impacts and mitigation.

Eligibility

This opportunity is open for application to master's and doctoral students, graduates, and early career researchers affiliated with Palestinian and Jordanian universities, as well as individuals from other research institutions and public or private entities engaged in agricultural economics or related fields. Participants are expected to have a basic knowledge in microeconomics and are required to use their own windows operated laptops during the school.

Content

The Spring school consists of a two-weeks workshop: the first week focuses on the foundations of simulation modelling and introducing GAMS; the second week covers the quantitative analysis of climate change and policies in general equilibrium models.

Application

The link for Palestinian students:

<https://forms.gle/6f4AyAerHLxu8ZMk8>

The link for Jordanian students:

<https://forms.gle/8ridLhnezynWnAeLA>

Please note that the deadline for registration will be by the end of 28th of January 2024

Teaching team

The spring school is carried out by a team from the International Agricultural Trade and Development Group at Humboldt-Universität Zu Berlin. The team has broad experience in conducting similar training projects in different countries.

Prof. Dr. Harald Grethe

Prof. Dr. Grethe is Professor for International Agricultural Trade and Development at Humboldt-Universität zu Berlin. Formerly, he was a Professor for Agricultural and Food Policy at the University of Hohenheim. His research interests include economic and agricultural development, economy-wide simulation modeling, and the role of the agricultural sector in society at large. From 2012 to 2020, he chaired the Scientific Advisory Board on Agricultural Policy and Food at the Federal Ministry of Food and Agriculture, Germany. Furthermore, he has worked as an expert for various institutions among which the European Commission, OECD, FAO and the World Bank.



Dr. Zuhail Elnour

Zuhail Elnour is a senior research fellow at the International Agricultural Trade and Development Group of Humboldt-Universität zu Berlin. She is also a senior researcher at the Agricultural Economics and Policy Research Center of the Agricultural Research Corporation in Sudan.

She has extensive expertise in developing and applying economy-wide modelling and associated databases. She taught in a summer school focused on simulation modelling in Sudan and provided professional training on economy-wide modelling in Kenya and Benin.

Her research interests include economic modelling, development economics and labour economics. Her current work focuses on using and developing economy-wide modelling to analyze climate change impacts on human health in Sub-Saharan Africa.



Dr. Jonas Luckmann

Dr. Luckmann is lecturer and researcher at the International Agricultural Trade and Development Group of the Humboldt University in Berlin since 2016. He is well experienced in lecturing Master and Bachelor students in both German and English. He has taught in a summer school on agricultural economics in Bhutan and on simulation modelling in Benin.

His research interests focus on economic modelling of the water sector. He developed a general equilibrium model centered on the water sector and published in several internationally peer-reviewed journals. He is associate editor of the journal Water Economics and Policy and is consultant for various international organizations.



Thierry Kinkpe

Thierry Kinkpe is a doctoral researcher at the International Agricultural Trade and Development Group at the Humboldt University of Berlin since 2019. His research focuses on the economy-wide implications of developing the processing of agricultural products. He has broad experience in using and developing general equilibrium models. Thierry has several years of experience in teaching economics and economic modelling in BSc, MSc, and PhD levels.



Ferike Thom

Ferike Thom has studied Economics and Agricultural Economics in Berlin, Germany and Madrid, Spain. She has been a doctoral candidate at the Chair of International Agricultural Trade and Development at the Humboldt University of Berlin since 2018. Her research focuses on trade policy in the agricultural sector, its impact on the development of sector competitiveness and on global greenhouse gas emissions. She has experience in using and developing static and dynamic general equilibrium models as well as in highly complex partial equilibrium models. She has several years of experience in teaching economics and economic modelling in German and English at BSc, MSc and PhD levels.



Sawsan Abdul-Jalil

Sawsan Abdul-Jalil is a lecturer at the University of Khartoum and doctoral researcher at the International Agricultural Trade and Development Group at Humboldt Universität zu Berlin. Her thesis focuses on the integration of ecosystem services in economy-wide simulation models. She has been working as a consultant for several governmental and international organizations such as the World Bank. She has experience in teaching economics and modelling at the MSc level.



Sara Ashour

Sara Ashour is a doctoral researcher at the International Agricultural Trade and Development Group at Humboldt-Universität zu Berlin. Her dissertation is entitled “Trade and Food Security Nexus: Can Trade Facilitation Mitigate Future Food Crises in Jordan?” She has successfully completed several courses on simulation modelling and a strong background on policy analysis having worked for 12 years as trade policy analyst for the Egyptian Ministry of Foreign Trade and Industry and other international institutions.



Program Overview

Week 1 Foundations and Theories of Simulation Modelling and Introduction to GAMS

Date 18/02/2024 – 22/02/2024

No	Date	Day	Time	Theme and teaching objective
1	18/02/2024	Sunday	08:30 – 10:00	Welcome and introduction: course structure and content
			10:30 – 12:00	Introduction to policy analysis
			13:00 – 14:30	Methods of policy analysis
			15:00 – 16:00	Microeconomic foundations of demand and supply systems
2	19/02/2024	Monday	08:30 – 10:00	Market equilibrium
			10:30 – 12:00	Elasticities of demand and supply
			13:00 – 14:30	Welfare economics and the efficiency of markets
			15:00 – 16:00	Policy instruments for adaptation to and mitigation of climate change
3	20/02/2024	Tuesday	08:30 – 10:00	Introduction to policy simulation modelling
			10:30 – 12:00	PC-LAB: A grain market model in Excel
			13:00 – 14:30	Introduction to GAMS
			15:00 – 16:30	Public lecture: Climate change mitigation in agricultural and food systems
4	21/02/2024	Wednesday	08:30 – 10:00	PC-LAB: A grain market model in GAMS
			10:30 – 12:00	PC-LAB: Improving the efficiency of the model
			13:00 – 14:30	PC-LAB: Simulating climate change impacts
			15:00 – 16:00	PC-LAB: Subsidies and welfare analysis
			18:00 – 19:30	Cultural evening: German culture, food and cuisine
5	22/02/2024	Thursday	08:30 – 10:00	PC-LAB: Multiregional model and data input/export from Excel
			10:30 – 12:00	Interpretation and discussion of the model results
			13:00 – 14:30	Limitations of PE models and overview of available PE models
			15:00 – 16:00	Evaluation of week 1

Workshop 2 Quantitative Analysis of Climate Change and Policies in General Equilibrium Models**Date 25/02/2024 – 29/02/2024**

No	Date	Day	Time	Theme and teaching objective
6	25/02/2024	Sunday	08:30 – 10:00	Introduction to social accounting matrices
			10:30 – 12:00	PC-LAB: social accounting matrix analysis
			13:00 – 14:30	Introduction to CGE modelling
			15:00 – 16:00	Prices and accounting identities in CGE modelling
7	26/02/2024	Monday	08:30 – 10:00	PC-LAB: A basic 2 sector CGE model
			10:30 – 12:00	- Model setup and calibration - Market clearing and macroeconomic closures in CGE
			13:00 – 14:30	PC-LAB: Policy experiments in a basic 2 sector CGE model
			15:00 – 16:00	Interpretation and discussion of the model results
8	27/02/2024	Tuesday	08:30 – 10:00	PC-LAB: Extension of the basic 2 sector CGE model
			10:30 – 12:00	An open economy CGE model
			13:00 – 14:30	PC-LAB: Policy experiments in an open economy CGE model
			15:00 – 16:00	Interpretation and discussion of model results
9	28/02/2024	Wednesday	18:00 – 19:30	Evening event – Agricultural research and study opportunities in Germany
			08:30 – 10:00	PC-LAB: An open economy CGE model with real-world data
			10:30 – 12:00	Climate change impacts and policies in an open economy CGE model with real-world data
			13:00 – 14:30	PC-LAB: Climate change impacts and policies in an open economy CGE model with real-world data
10	29/02/2024	Thursday	15:00 – 16:00	Interpretation and discussion of the model results
			08:30 – 10:00	Interpretation and discussion of the model results
			10:30 – 12:00	Limitations of CGE models and overview of available CGE models
			13:00 – 14:30	Evaluation of week 2
			15:00 – 16:30	Public lecture: Economy-wide impacts of climate change on economies of the Global South