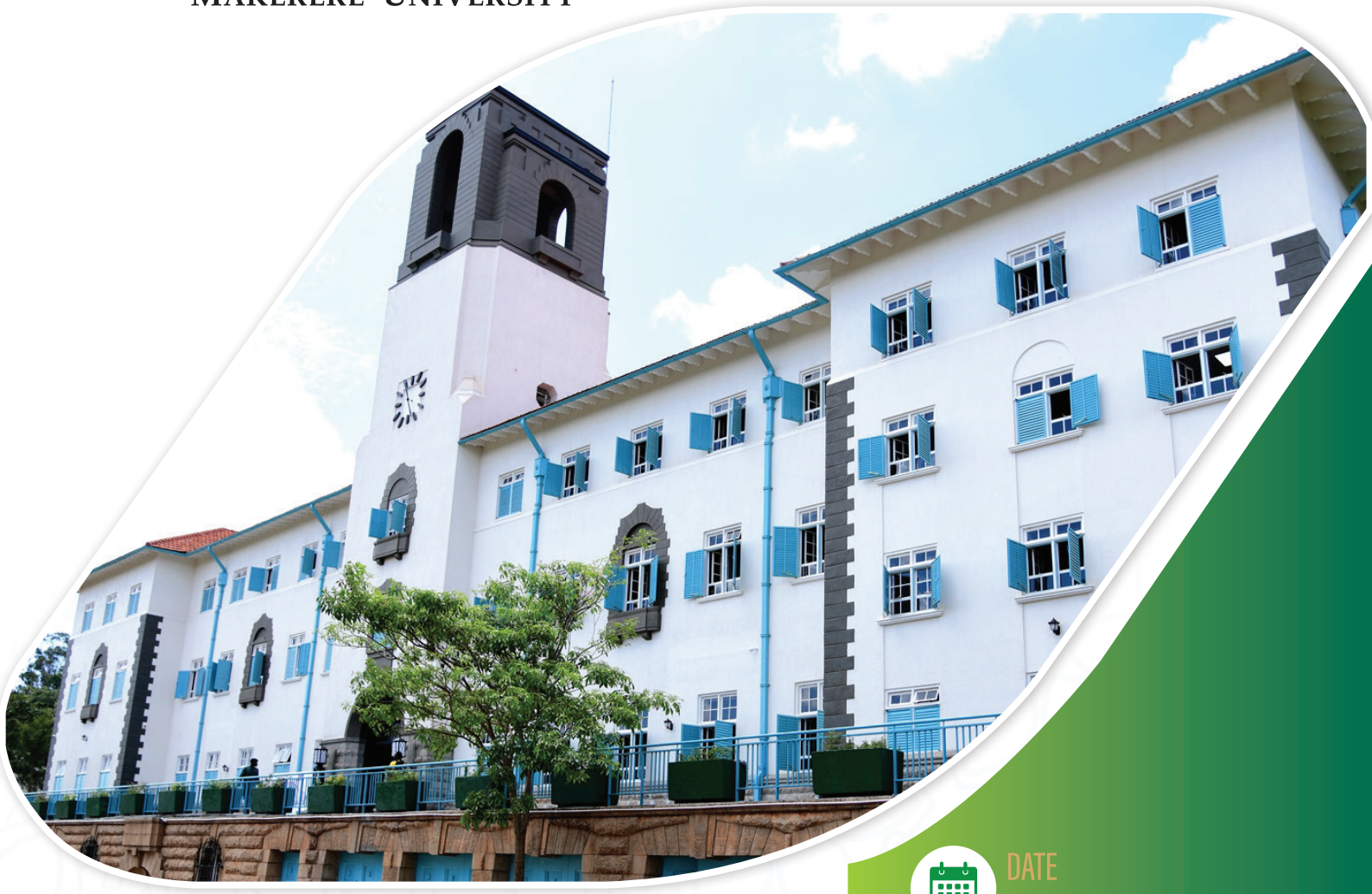
MAKERERE UNIVERSITY

CEACM
Centre of Excellence for Africa Climate-sensitive Macroeconomic Modelling



SPECIALIZED SHORT COURSE

MACROECONOMIC MODELLING OF NATURAL CAPITAL ASSETS

Using Social Accounting Matrix (SAM)-Based Multiplier Models

DATE
19th - 23rd, October 2026

VENUE:
Makerere University, Kampala, Uganda

Organized by
Centre of Excellence for Climate-Sensitive Macroeconomic Modelling (CEACM) College of Business and Management Sciences (CoBAMS) Makerere University

In Collaboration with
The University Network supporting the Pan-African Finance Ministers Forum for Climate Action (PAFCA)

COURSE OVERVIEW

African economies depend heavily on natural capital—including forests, land, water, biodiversity, minerals, fisheries, and ecosystem services. Yet the contribution of these assets to economic production, employment, household welfare, government revenue, and long-term economic resilience is often inadequatelyrepresentedinconventional macroeconomic policy analysis.The Short Course in Macroeconomic Modelling of Natural Capital Assets provides practical training in integrating Natural Capital Assets (NCA) into economy-wide macroeconomic analysis using Social Accounting Matrix (SAM)-based multiplier modelling approaches.

The course introduces participants to the application of the MONCAP modelling approach, a SAM-based multiplier framework designed to link changes and investments in natural capital to the wider economy. Participants will learn how to construct and apply multiplier models, integrate natural capital information into these frameworks, and assess the macroeconomic and distributional implications of investments in natural capital.The programme is highly practical and combines conceptual sessions with guided modelling exercises, data applications, model construction, scenario design, simulation, and interpretation of policy results.

COURSE OBJECTIVE

The overall objective of the course is to strengthen the capacity of African Ministries of Finance, universities, and other policy institutions to integrate Natural Capital Assets into macroeconomic modelling and policy analysis.

Specifically, the course will equip participants with practical skills to:

- Understand the role of Natural Capital Assets within an economy-wide macroeconomic framework.
- Understand the structure, construction, and economic interpretation of Social Accounting Matrices (SAMs).
- Apply matrix algebra and related techniques required for SAM-based multiplier modelling.
- Construct and interpret output, income, employment, and other economy-wide multipliers.
- Integrate natural capital accounts and indicators into SAM-based macroeconomic multiplier models.
- Establish linkages between changes in natural capital and economic activities, households, factors of production, and other economic agents.
- Design policy scenarios for investments in Natural Capital Assets.
- Estimate the economy-wide impacts of NCA investments on production, GDP, employment, household income, and other macroeconomic indicators.
- Interpret model results and translate quantitative evidence into practical policy recommendations for Ministries of Finance and other decision-making institutions.

WHO SHOULD ATTEND?

The course is primarily designed for professionals involved in macroeconomic modelling, fiscal policy, economic planning, natural capital accounting, climate policy, and applied economic research across Africa.

COURSE Content

Module 1: Matrix Applications for Economy-Wide Modelling.
Participants are introduced to the matrix concepts and applications required for SAM-based modelling, including matrix operations, coefficients, inverses, and their economic interpretation.

Module 2: Structure and Application of Social Accounting Matrices.
This module introduces the conceptual and accounting structure of a SAM, including production activities, commodities, factors of production, households, government, investment, and the rest of the world. Participants learn how transactions across these accounts represent the circular flow of income within an economy.

Module 3: Building SAM-Based Multiplier Models.
Participants progressively construct a multiplier model from a SAM. The module covers endogenous and exogenous accounts, average expenditure propensities, multiplier matrices, shock specification, model simulation, and interpretation of results.

Module 4: Integrating Natural Capital Assets into Multiplier Models.
This module demonstrates how natural capital accounts and indicators can be linked to the SAM and multiplier framework. Participants learn approaches for connecting economic sectors with natural capital assets and environmental indicators such as land, forests, water, energy, emissions, and other ecosystem-related variables.

Module 5: Policy Analysis of Investments in Natural Capital Assets.
Participants use the model to simulate investments in Natural Capital Assets and assess their economy-wide implications. Applications consider impacts on indicators such as:

Economic Output | GDP | Employment | Household Income | Government Revenue | Natural Capital | Environmental Indicators

The module demonstrates how modelling results can support the economic and fiscal case for investments in natural capital.

Module 6: Policy Simulation, Results Interpretation and Communication.
Participants undertake practical policy simulations and learn how to interpret and communicate modelling results to policymakers. Particular emphasis is placed on translating technical model outputs into evidence relevant to Ministries of Finance, national planning institutions, and climate and environmental policymakers.

PRACTICAL APPROACH

BUILD - INTEGRATE - SIMULATE - INTERPRET - INFORM POLICY

This is a hands-on modelling course rather than a purely theoretical programme.
Participants will work progressively from understanding the underlying SAM database to constructing a functioning multiplier model, integrating Natural Capital Assets, designing policy shocks, running simulations, and interpreting results.
By the end of the programme, participants will have practical experience in developing and applying a SAM-based Natural Capital macroeconomic multiplier model for policy analysis.

EXPECTED LEARNING OUTCOMES

Upon successful completion of the course, participants should be able to:

1. Understand and interpret the structure of a Social Accounting Matrix.
2. Apply matrix techniques required for SAM-based economic modelling.
3. Construct a SAM-based multiplier model.
4. Calculate and interpret different types of economy-wide multipliers.
5. Integrate Natural Capital Assets and environmental indicators into multiplier frameworks.
6. Design and simulate natural capital investment scenarios.
7. Estimate the macroeconomic, employment, income, fiscal, and environmental implications of NCA investments.
8. Interpret modelling results for policy purposes.
9. Communicate quantitative evidence on Natural Capital Assets to policymakers and decision-makers.

COURSE FORMAT

Duration: 5 Days
Dates: 12th–16th October 2026
Venue: Makerere University, Kampala, Uganda
Delivery: Face-to-Face
Tuition Fee: US$ 1200 per participant
Approach: Lectures, guided exercises, hands-on model construction, policy simulations, case studies, and group discussions.
Participants are expected to attend with a laptop computer to undertake the practical modelling exercises.

WHY THIS COURSE?

Making Natural Capital Visible in Macroeconomic Decision-Making

Decisions affecting forests, land, water, biodiversity and other natural assets are also macroeconomic decisions.
Investments in natural capital can affect economic production, jobs, household incomes, fiscal revenues, climate resilience, and long-term development. Integrating these relationships into macroeconomic modelling can provide Ministries of Finance and other policymakers with stronger quantitative evidence for evaluating natural capital investments.
This course bridges the gap between Natural Capital Accounting and macroeconomic policy analysis, helping participants move from natural capital data to practical economy-wide modelling and evidence-based policy advice.

INSTITUTIONAL COLLABORATION

The course is organised by the Centre of Excellence for Climate-Sensitive Macroeconomic Modelling (CEACM) under the College of Business and Management Sciences (CoBAMS), Makerere University.
It will be offered in collaboration with the University Network established to support the Pan-African Finance Ministers Forum for Climate Action (PAFCA).

Through this collaboration, the course contributes to strengthening African capacity to incorporate climate change and natural capital considerations into macroeconomic modelling, fiscal policy, economic planning, and investment decision-making.

COURSE AT A GLANCE

Course: Macroeconomic Modelling of Natural Capital Assets
Modelling Approach: SAM-Based Multiplier Modelling
Dates: 12th–16th October 2026
Duration: One Week
Venue: Makerere University, Kampala, Uganda
Host: CEACM, CoBAMS, Makerere University
Target: Ministries of Finance, universities, research institutions, national planning institutions, statistical agencies, and other relevant institutions across Africa
Format: Intensive Face-to-Face Practical Training

FROM NATURAL CAPITAL ACCOUNTS TO MACROECONOMIC POLICY EVIDENCE

Building Africa's capacity for climate-sensitive and nature-informed macroeconomic decision-making.

To book space, contact:

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