

Input-Output analysis and modelling with MARIO



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Summary of the Training Session:

This training session introduces MARIO, an open-source software requiring basic Python knowledge, which participants will acquire during the course. MARIO enables users to virtually read any input-output or supply and use database by simply inputting the file path. Additionally, it facilitates basic operations such as database aggregation, coefficient matrix calculation, and exporting tables, all via interaction with simple Excel sheets. MARIO can directly apply shocks to final demand, intermediate demand, or exogenous transaction matrices, managing multiple databases or adding new sectors. The course aims to equip participants with fundamental skills, allowing to efficiently analyze any database and lays the groundwork for utilizing MARIO in conjunction with more advanced models. In this session, the FIGARO database will be used to demonstrate MARIO's functionalities.

First Session – Input-output analysis, where Economics and Industrial Ecology meets: nomenclature and basic principle will be introduced starting from a simple spreadsheet.

Second Session – In-depth Exploration of MARIO: demonstrating the software package, parsing functions, and various functionalities. **Guided Examples:** step-by-step walkthroughs of practical applications, highlighting key features and capabilities.

Third Session – Handling the FIGARO Database: detailed instruction on navigating and utilizing the FIGARO database within the framework of MARIO. **Practical Exercises:** hands-on experience with FIGARO data, including data manipulation and analysis techniques.

Fourth Session – Application and Practice: engaging in exercises designed to reinforce learning and proficiency in using MARIO with FIGARO. **Q&A and Discussion:** Opportunity for participants to clarify doubts, exchange insights, and discuss real-world applications of the tools and techniques covered in the course.

Prerequisites:

A personal computer with access to internet and a basic knowledge of programming will be sufficient. Basic knowledge of Python is beneficial but not compulsory.

It could be necessary that participants have a basic level in ... Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.. Participants will bring with them their laptops....

Suggested References:

- Mohammad Amin Tahavori, Nicolò Golinucci, Lorenzo Rinaldi, Matteo Vincenzo Rocco and Emanuela Colombo; *MARIO: A Versatile and User-Friendly Software for Building Input-Output Models*, 2023 dx.doi.org/10.5334/JORS.473
- FIGARO - integrated global accounts for economic modelling - Products Eurostat News - Eurostat (europa.eu)