



April 19th, 2022

10.00AM – 10.45AM CET

Minutes of the meeting on WP3 – modeling framework

Organized by C. Dionisio Pérez-Blanco and Francesco Sapino

Writing: Francesco Sapino

Participants:

Abdrabbo Shehata (GPAI), Arthur Hrast Essenfelder (CMCC), C. Dionisio Pérez Blanco (USAL), Francesco Sapino (USAL), Nina Graveline (INRAE), Ramiro Parrado (CMCC)

C. Dionisio Pérez Blanco (USAL)

Explains that the goal of the meeting is to setup the modeling framework in the French, Egyptian, and Tunisian labs, which will be presented and discussed with stakeholders during the first workshop. He says that every lab should implement modeling framework that were presented in the Modeling Work Package Meeting that consists of the aggregation of modules such as climatic, hydro(geo)logic, agronomic, micro-, and macro-economic by bidirectional soft links. C. Dionisio Pérez Blanco suggests starting with the French case study.

Nina Graveline (INRAE)

Explains that the French case study is an area with a predominance of vineyard that produces wine exported in large part, in addition she says that an expansion of the irrigated land for this crop is planned to address the increasing problem of scarcity driven by climate change. Nina Graveline asks what it could be the best strategy to integrate the microeconomics models, that the INRAE already uses, with the macroeconomic one.

C. Dionisio Pérez Blanco (USAL)

Suggests that the best option is to start the calibration of the microeconomic models in the case study and that pass the information to Ramiro Parrado (CMCC) who will integrate it with the macroeconomic model. The coupling is now ready to integrate the microeconomic models programmed with the software GAMS. The best outcome possible is deepen the integration of the two modules using ensemble of microeconomic models and different settings of the macroeconomic model. To this end more effort is still necessary to allow a dynamic integration of the two modules that will be investigated in a collaboration between the CMCC and the USAL planned for next September and October 2022.

Nina Graveline (INRAE)

Says that the INRAE wants to deepen the research of microeconomic models that use an explicit production function, both depending only on the water application or on the water + fertilizer application.

C. Dionisio Pérez Blanco (USAL)

Agrees with Nina Graveline and says that also in the USAL some researchers are working on the integration of production functions in the microeconomic module.

Nina Graveline (INRAE)

Asks if the macroeconomic module has the Vineyard category separated from the other permanent crops.

Ramiro Parrado (CMCC)

Answers that the macroeconomic module has now only an aggregate category of permanent crops, in which vineyard is included. He also clarifies that it is possible to disaggregate the Vineyard crop from the actual category, but the information required to do so is huge: all the data of the value chain of the wine. Ramiro Parrado suggests starting with a simplification, e.g., consider a percentage of the food and beverage sector.

Dionisio Pérez Blanco (USAL)

Stresses that the coupling between micro and macro modules is the same, so it is possible to start working with the actual model, while refine it later if all the necessary data is available.

Dionisio Pérez Blanco (USAL)

Asks Abdrabbo Shehata (GPAI) to explain which models the Egyptian lab is using and start data collecting for the micro model!

Abdrabbo Shehata (GPAI)

Says that the Egyptian lab uses 3 models to assess responses to different level of salinity, the major environmental problem of the Nile Delta. At GPAI the researcher uses 2 agronomic models, one of them calibrated at national level and connected to GIS (ALISARID), and SWAT can be used for the hydrologic assessment. He also informs the other assistants that GPAI has an economist that is currently abroad, but he can be contacted regarding the economic data needed for the microeconomic module.

Nina Graveline (INRAE)

Says that she has already worked on salinity issues related to agricultural productions and she is willing to collaborate with GPAI.

Abdrabbo Shehata (GPAI)

Explains that in many areas of the Nile delta there is a lot of unused water because it is saline, and some land also has the same problem. GPAI is currently working on some field experiments in 2 different areas: one near the Mediterranean Sea affected by saline water infiltration and the second one in a desertic area where the available water is saline. In the two experimental areas GPAI is testing new crops that have more tolerance to the salinity of the land and the water.

Dionisio Pérez Blanco (USAL)

Thanks everyone for the participation and tells that from now on bilateral meetings between USAL and the other labs will be planned to obtain the data and integrate the microeconomic module with the models that every lab is currently using, to implement the modeling framework presented in the Modeling Work Package Meeting.