

STIMUL / meeting for Dev to start - Thursday Nov. 29 / VISIO

Attendance:

Nathalie de Noblet, Devaraju Narayanappa, Raja Chakir, Anna Lungarska, Pierre Alain Jayet, Thierry Brunelle

Duration: ~1hour 30 minutes

On the Agenda:

1) Raja Chakir presented a brief overview of STIMUL project-- what will be done within the project?
2) Nathalie reminded the tasks what we're supposed to do at LSCE—Mostly related to Tasks 2 and 5 out of six tasks in STIMUL project.

3) Then we try to get answers to all the questions asked in an earlier email of Nathalie

* what are the geographical limits of Europe we're considering in the project?

* What are the years of the 'control' run, i.e. the years for present-day simulation?

What is the climate forcing used for those years?

* What is the climate change scenario we've agreed on?

* We need to start our simulations with a present-day distribution of crop areas, and crop types per grid-cell. We think we need to start with yours (Economic models). But this calls a first question: have you managed to converge in terms of land-use between your models? Or are you working independently? In the latter case does it mean we'll have to run twice the control run as well?

For each crop distribution we need a number of inputs for our ORCHIDEE simulation: planting dates, whether or not the crops are irrigated ... [we can come to details later on]

* Finally, on a more practical issue: who will be the contact point for Dev for questions regarding each model ...?

The following are the main OUTCOMES of the meeting:

1) Comparing the yields from different models (STICS, ORCHIDEE-CROP & LPJmL) between the years 2000 and 2012.

- First, we need to know CO2 levels and climate forcing used for all the models.
- For AROPAJ, CO2 levels and observed climate used for the period 2007-2012. Observed climate forcing dataset used is ERA-INTERIM.
(STICS simulations currently used: for EU15, year 2002. What's in progress: EU 15 / hopefully 27 for 2007-2012). Anna, provided to Dev already the CO2 levels used for STICS.)
- For NLU- Potential yield maps are used from LPJmL model for the period 2000-2006 and no information on what climate forcing used. Thierry Brunelle could get information from LPJmL model group who provided the potential yield maps.
- For ORCHIDEE, we could generate potential yields for the year 2000-2012, to be consistent with both AROPAJ and NLU models and using the same climate forcing data.

2) To have an idea of how different the various maps are from one another, whether we have about the same area of crop coverage, at the European level as well as the same area covered with different crops.

- Compile the Land Use information from NLU, AROPAJ, MIRAGE & ORCHIDEE, so that we will get a clear picture on the spatial resolution, crop types, forest distribution etc..
- It would also be useful to know what are the major crops we would like to be able to represent in Europe ... (in Orchidee-crops)??
- This Land use information will be used to force the ORCHIDEE model simulations. ORCHIDEE provides number of information likes productivity, biomass, soil carbon stock, CO2 fluxes, fluxes of hydrological cycle changes, fluxes of surface energy changes etc..

3) Discussion on the future scenarios-- The proposed future scenario for climate change is RCP4.5, For the comparison of potential yields we need to define what exactly is potential yield.

- Raja Chakir questioned on implementing the 50% reduction of N-fertilizer scenario in the models. Also, important to know how ORCHIDEE can handle fertilizer limitations.
- Anna highlighted on utilizing the AgMIP simulations performed for ORCHIDEE, and it would be good to use the results if already available in order to establish nitrogen-yield response functions for the economic models (MIRAGE and probably AROPAJ) used in STIMUL project. We will need to co-ordinate with Xuhui to get the information on those simulations.

(Note-- this as a parallel step and portfolio of all simulations available from ORCHIDEE and run through AgMIP ... But this is not to be done by Nathalie or Dev but to be asked to Philippe's team)

- Nathalie reminds us that

The definition of what is potential yield is needed in Step 1 ... otherwise we will not be sure that we're comparing the same yields!

Before Step 3 we're supposed to have solved our various questioning about what yields and project ourselves into future scenarios.

Scenario : RCP4.5 through CORDEX ... but need more infos on which Global model * regional climate model ... Why RCP4.5 and not 8.5? .. we probably need to discuss more some choices

NEXT ACTIONS

DEV:

- Define Potential Yields and make sure that this definition fits the outputs we will compare
- run ORCHIDEE-crop from 2000 to 2012 using the same European climate forcing as the one used for AROPAJ and NLU

THIERRY BRUNELLE:

- Get all infos regarding forcing data for LPJmL + Provide access to LPJmL outputs (yields but may be more variables as well) for Dev to be able to carry out the inter-comparison.

ANNA (?):

- Provide access to STICS outputs to DEV