

STIMUL

Task 6: Linking with and supporting similar initiatives at the international level

Presentation: Paul Leadley

This task supports ties to international programs that include development and use of similar types of integrated modelling. Activities include:

- initiatives to develop ties between the climate and biodiversity scenarios and modelling communities supported by IPBES and the Convention on Biological Diversity (CBD),
- interaction with initiatives within in Future Earth related to integrated modeling;
- activities to support IPCC and IPBES assessments including SSP (Shared Socioeconomic Pathway) development, use for impact studies, and collaboration with ISI-MIP (intersectorial model intercomparison projects) activities and EMF (Energy Modelling Forum - Stanford University).

STIMUL

Links with Shared Socio-economic Pathways (SSP) and ISI-MIP activities

Background: IPBES with the support of the CBD and Future Earth (bioDISCOVERY project) is mobilizing the scientific community to bring together Integrated Assessment Modeling (IAM) teams with researchers modeling the impacts of land use and climate change on biodiversity and ecosystem services at global scales. This work has two primary objectives:

- Carry out the first ever global scale model inter-comparison of biodiversity and ecosystem service models in order to better understand the impacts of land use and climate change in the SSP scenarios – with a focus on multiple indicators and quantification of uncertainty (**BES-SIM**).
- Create new multi-scale scenarios, including modifications of SSPs, that explicitly include consideration of biodiversity and ecosystems services as components of the socio-economic drivers (e.g., by including protected areas, payments for ecosystem services, etc.) = “**Nature Futures**”

PL is one of the three coordinators of this activity with R. Alkemade and H. Pereira

Rosa et al. (2017 Nature Ecol. & Evol.) provides an overview of this work (PL – co-author)

STIMUL

Links with Shared Socio-economic Pathways (SSP) and ISI-MIP activities

- A methods paper is under review in Geoscientific Model Development (Kim et al. - *PL co-author*)
- Several new global-scale biodiversity and ecosystem services models have been run with SS1-RCP2.6, SSP3-RCP6.0 and SSP5-RCP8.6 derived land use and climate using a common land use change inputs (LUH2) and climate (), providing close ties to ISI-MIP activities. A paper summarizing this work will be submitted to Science this summer (*PL co-author and BASC acknowledged*) and a special issue of Global Change Biology has been organized (*PL co-author and BASC acknowledged in overview paper*).
- Muriel Tichit (SADAPT) and PL will supervise multi-criteria analysis to better understand the synergies and tradeoffs across multiple indicators produced by the consortium (post-doc based at MT starting this fall, co-funded with IC CLAND).
- Follow-up activities – including analysis of multiple scenarios per SSP, analysis of new "1.5 C" scenarios, etc. – will be discussed an upcoming workshop co-funded by BASC, CLAND and IPBES. Probably in early 2019 and hopefully in Paris.

STIMUL

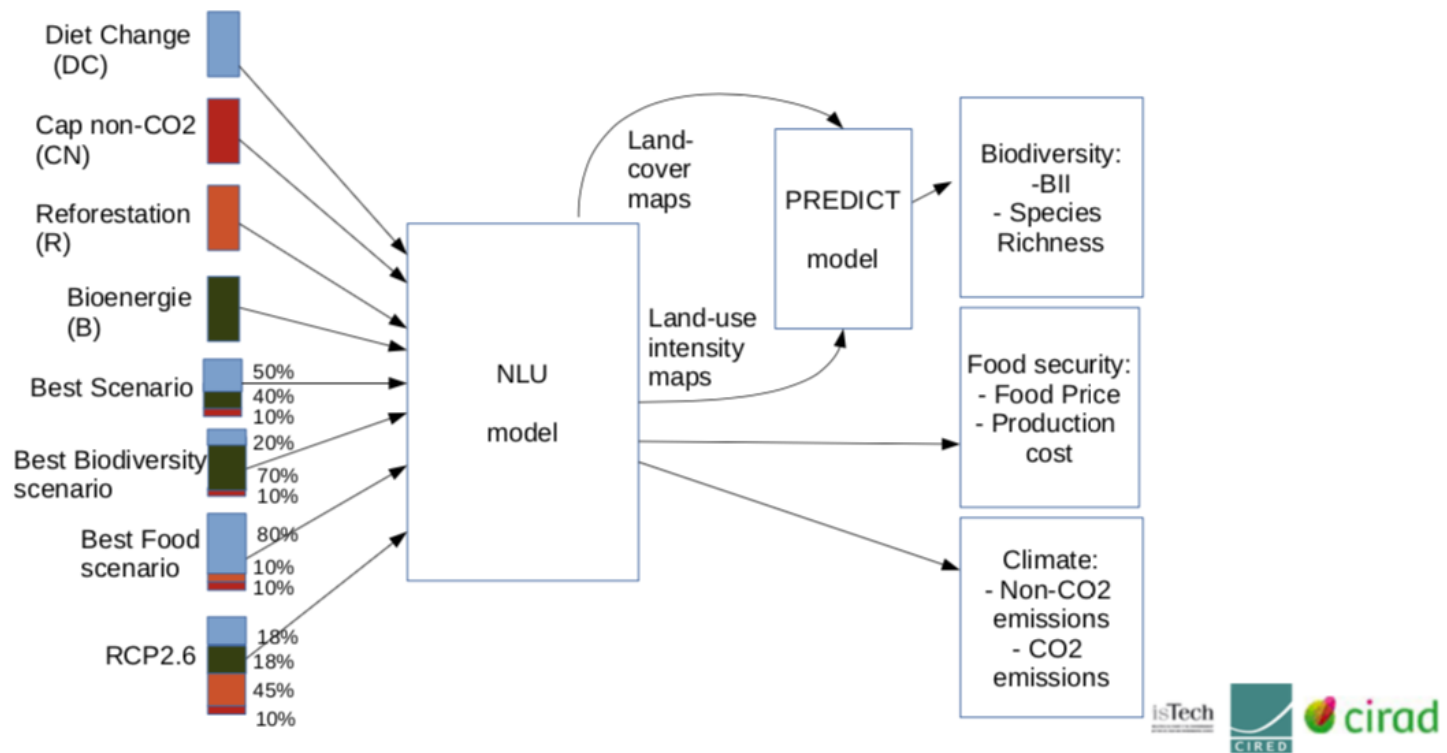
Links with Shared Socio-economic Pathways (SSP) and ISI-MIP activities

Background: Several Integrated Assessment Modeling (IAM) teams have recently integrated or are integrating biodiversity models into their IAMs, driven by the recognition that the IAMs must begin to address a broader range of Sustainable Development Goals.

- The NEXUS Land-Use (NLU) modeling team (CIRED) is now coupled with a biodiversity model developed in the UK (PREDICTS) with NLU (Thesis of Remi Prudhomme – see next slide; *this work started roughly the same time as STIMUL*).
- The CIRED team has been involved in workshops of the BES-SIM activity, but the choice of only three IAMs for the first outputs and the very short deadlines meant that participation of the NEXUS team in this phase was not tenable.
- Follow-up work of the BES-SIM activity is intended to broaden the involvement of IAM teams and scenarios studied. For this reason and for the use of NLU to analyze the "STIMUL Scenarios" it is essential to continue the biodiversity modeling work for NLU. How exactly this will can be achieved will be the subject of discussions at the thesis committee meeting of Remi Prudhomme this afternoon (9 July 2018).

Thesis - Remi Prudhomme - CIRED

Méthodologie



STIMUL

Integration of work with IPBES and IPCC assessments

- The SSP-based biodiversity and ecosystem services model outcomes (BES-SIM) have been fully integrated into the Second Order Draft of the chapters of the IPBES Global Assessment, and are highlighted in the First Order Draft of the Summary for Policy Makers (SPM) currently under review (*PL is co-author of scenarios and modeling chapter and coordinated work between IPBES authors and the BES-SIM consortium*).
- It is hoped, that by working closely with the SSP community and following ISI-MIP guidelines, that this work will be integrated into the IPCC "Land" assessment (*need to liaise with N. de Noblet on this*) and the upcoming IPCC global assessment.
- This activity will be one of the key shared activities highlighted in an upcoming high level UNFCCC/CBD and IPCC/IPBES climate-biodiversity meeting to be held in Paris this fall.

STIMUL

Next steps

IAMs & biodiversity

i) IPBES, Future Earth, the CBD and the SSP consortium are all committed to long-term development of new scenarios and coupling of scenarios with biodiversity and ecosystem services models. BASC through STIMUL can continue to contribute to this through:

- Participation in the development and analysis of “Nature Futures” scenarios (see slide 2).
- Coordination of further BES-SIM analyses and their integration into IPBES and IPCC assessments
- Continued development of the biodiversity component of Nexus Land Use

ii) Analysis of the “STIMUL scenarios” with NLU including the newly coupled biodiversity model.

Other activities – my apologies, I’ve not discussed the connections with the EMF consortium with Jean-Christophe.

STIMUL

Travel budget

- Has funded participation of PL in IPBES-led work on SSP-based biodiversity and ecosystem services modeling.
- Will co-fund workshop with CLAND and IPBES on follow-up of BES-SIM early 2019 (see slide 3).
- Could co-fund additional workshops, but need ideas soon!

Personnel budget

- No funding used yet. Need to made decision very soon on priority.
- Potential funding of R. Pruhomme (or someone else) to follow-up on biodiversity modeling in NLU (*to be discussed with CIRED this afternoon – 9 July*)
- Potential co-funding of post-doc for multi-criteria analysis of BES-SIM (*to discuss with M. Tichit ASAP*).