

**Title :** Interlinkages C4&C5 (interlinkages WP14-WP16 and WP18-WP20)

**Time :** 14:30 – 16:00, Oct 25

**Chair :** Wim de Vries, Markus Amann

**Attendees :** Stefan Reis, Clare Howard, Max Posch,  
Almut Arneht, Rasmus Houburg, Gert Jan  
Reinds, Mike Holland, Till Spranger, Bruce  
Hungate

**Minutes by :** Wilfried Winiwarter/Wim de Vries

### **Aim**

Explore interactions between components (C4 and C5)

### **Presentations**

Max Posch – work planned in WP 19

### **Topics discussed with Issue, decisions/conclusions and actions**

- Issue:** Do we included critical thresholds or response functions in GAINS  
**Decision:** Focus is on response functions. This allows GAINS to quantitatively assess impacts and is the only basis for an economic valuation in WP18  
**Action:** C4 to provide response functions for individual drivers, focusing on (i) productivity/carbon sequestration and (ii) biodiversity.
- Issue:** Interactions between drivers; multi-parameter response functions (CO<sub>2</sub>, O<sub>3</sub>, N for a given climate)  
**Decision:** GAINS is able to parameterize complex functions  
**Action:** C4 to provide complex response functions including driver interactions (synergistic or antagonistic effects)
- Issue:** Spatial detail/species detail  
**Decision:** GAINS operates on country level and would not distinguish sub-units; valuation needs detailed information e.g. per tree species.  
**Action:** C4 to prepare input accordingly. Focusing on forests, it means that (i) mean different response curves per grid cell are given for the various drivers (averaged for the various tree species within a grid cell) for inclusion in GAINS) and outcomes of individual species for economic valuation.
- Issue:** What are the ecosystem services to be included in the valuation. luation  
**Decision:** do what can be made available – e.g. positive impact of N on forest growth; e.g. recent GCB paper “The GHG value of ecosystems”. It will include (i) food/wood production for all crops and trees (extent from specific crops and trees to all crops and trees) and (ii) Biodiversity in Natura 2000 sites:  
**Action:** Participants to provide relevant information to Mike
- Issue:** harmonize modelling activities  
**Decision:** focussed meeting of modelling & scenario groups  
**Action:** Almut to prepare a doodle (for ~March)
- Issue:** Policy relevance  
**Decision:** Current policy process of NEC revision (2030 data): window closes within next few months (max: one year)  
**Action:** Wim/Max to provide results on response functions for individual drivers plus interactions from current activity as it gets available. Use in GAINS requires inclusion of an S-R matrix for POD (Dave Simpson)

### Decisions

Action	Due	Who
Provide results on response functions for individual drivers plus interactions from current activity at Alterra/RIVM	February 2012	Wim/Max
"Explore availability of ozone fluxes and NH3 data in S-R matrix currently used by GAINS	November 2011	Wilfried together with Chris Heyes"