Wrap up and next steps…

- … towards ISIMIP3b future projections accounting for socioeconomic changes and adaptation (Group III)
- … towards CMIP7-based ISIMIP simulations -> ISIMIP4 (FT)
- … towards ISIMIP-based contributions to AR7

Overall aims of the workshop

1 Future impact simulations accounting for socioeconomic changes

Issues

- Open issues with regard to the disaggregation of the fertilizer inputs could be clarified with agriculture sector
- Missing DHF for water quality, health and peat sector are a burning issue (synthetic P fertlilizer, manure, livestock, wastewater treatment, sanitation, peat type areas, peat drainage depth and density)
- Regional water sector needs more detailed information about water management

Current status

- High interest in doing ISIMIP3b (group III) simulations also for the AR7

2 Road towards CMIP7-based ISIMIP4 FT

Which ESM-simulations will be available first, what will be new?

- Identification of marker simulations for each of the ScenarioMIP scenarios within the IAM community bottleneck for generation of CMIP7-ESM simulations
- OptimESM will support the generation of ESM simulations by summer next year
- July 2027 seems a not too bad estimate of the IPCC-WGII submission deadline

Which scenarios should we consider in ISIMIP4 FT?

- Bart van den Hurk: Overshoot dynamics highly relevant for the IPCC AR7
- Helene Hewitt and Torben Koenigk: Improvements within CMIP7 compared to CMIP6

➢ new models potentially resolve high ECS issue

➢ emissions-driven

➢ explicit overshoot scenarios

➢ scenario extensions

➢ some high-resolution models

➢ more models will have the right output available

➢ generally improved model performance, more processes included

3 What do we want to contribute to the IPCC AR7

Critical topics to be addressed in IPCC Report (Bart):

- Overshoot
- Impacts on Global South
- Benefits of short-term actions
- Adaptation
- Distributional impacts/risks, risks for development ⇒what is potential of societies (and individual groups) to respond?
- comparisons of CMIP6 and CMIP7-driven impacts

From the discussions:

- How do extreme events affect water quality?
- How do vegetation dynamics affect recovery from overshoot in the global water models?
- How can we project changes in vulnerability and protection levels into the future? (Jeroen Aerts)
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Next steps

- We will make a suggestion of a selection of 2-3 ScenarioMIP scenarios for an ISIMIP4-FT and discuss it again with the sectoral coordinators
- As soon as we have an agreement, we will ask the IAM community whether they could focus on these scenarios when identifying the markers and submit them to CMIP first
- Share paper ideas to let people know where their impact simulations will be needed
- Extension of the ISIMIP3b DHF to fill the identified gaps starting from the water quality inputs

Wrap up and next steps

Wrap up gaps that could be filled for IPCC
Bart:
- overshoot
-- which scenarios are most relevant for Global South
-- inspire short-term actions
- adaptation
- distributional impacts/risks

wrap up posted ideas

improvements in CMIP7
- new models - potentially resolve high ECS issue
- emissions-driven
- overshoot scenarios
- scenario extensions
- some high-resolution models
- more models will have the right output available