



# ISIMIP and OptimESM Workshop 2025

GLOBAL  
WATER  
SESSION



# AGENDA



Areas of focus



Paper ideas and  
workshop



Non-irrigation water  
use data is ready!



Challenges with  
ISIMIP3b Group III  
runs

The image shows the cover of the 'State of Global Water Resources 2023 Report'. The background is a photograph of a vast, arid, mountainous landscape with a body of water in the foreground. A person is standing on a small bridge or path in the water. The text 'State of Global Water Resources 2023 Report' is at the top. The WMO logo and 'WORLD METEOROLOGICAL ORGANIZATION' are at the bottom left. A vertical label on the left edge reads 'WEATHER CLIMATE WATER'.

# State of Global Water Resources 2023 Report

## AREA OF FOCUS

- ISIMIP3b and ISIMIP4?
- Do we do overshoot, med and high scenarios?
- WMO State of Global Water Resources Report:
  - Are we interested in setting-up a data supply chain and modelling protocol that links ISIMIP to the SGWR?
  - Is there interest in WMO and PIK setting up a near-real-time or even forecasting impact model chain in the future?

# PAPER IDEAS AND WORKSHOP

- Paper ideas using ISIMIP3 data (especially 3b Group III).
- Paper-writing workshop with Water Quality and Groundwater sectors.

ISIMIP3b Group III DHFs:

ISIMIP3B CHALLENGES

Direct human forcing (ssp126soc-noadapt, ssp126soc-adapt, ssp370soc-noadapt, ssp370soc-adapt, ssp585soc-noadapt, ssp585soc-adapt)		Hide group
Population data <div>mandatory</div>	<div>Group III all actions</div> <div>Paths: ISIMIP3b/InputData/socioeconomic/pop/ssp126soc-noadapt/ ISIMIP3b/InputData/socioeconomic/pop/ssp126soc-adapt/ ISIMIP3b/InputData/socioeconomic/pop/ssp370soc-noadapt/ ISIMIP3b/InputData/socioeconomic/pop/ssp370soc-adapt/ ISIMIP3b/InputData/socioeconomic/pop/ssp585soc-noadapt/ ISIMIP3b/InputData/socioeconomic/pop/ssp585soc-adapt/ noadapt forcing: <b>ssp1, ssp3, ssp5</b> adapt forcing: use <b>noadapt</b> data</div>	
GDP data <div>mandatory</div>	<div>Group III all actions</div> <div>Paths: ISIMIP3b/InputData/socioeconomic/gdp/ssp126soc-noadapt/ ISIMIP3b/InputData/socioeconomic/gdp/ssp126soc-adapt/ ISIMIP3b/InputData/socioeconomic/gdp/ssp370soc-noadapt/ ISIMIP3b/InputData/socioeconomic/gdp/ssp370soc-adapt/ ISIMIP3b/InputData/socioeconomic/gdp/ssp585soc-noadapt/ ISIMIP3b/InputData/socioeconomic/gdp/ssp585soc-adapt/ noadapt forcing: <b>ssp1, ssp3, ssp5</b> adapt forcing: use <b>noadapt</b> data Gridded GDP data are still under construction.</div>	
Land use and irrigation data <div>mandatory</div>	<div>Group III agriculture biodiversity biomes diarrhea energy_demand fire forestry groundwater health labour lakes_global lakes_local peat permafrost water_global water_regional water_quality</div> <div>MAgPIE IMAGE GLOBIOM</div> <div>Paths: ISIMIP3b/InputData/socioeconomic/landuse/ssp126soc-noadapt/ ISIMIP3b/InputData/socioeconomic/landuse/ssp126soc-adapt/ ISIMIP3b/InputData/socioeconomic/landuse/ssp370soc-noadapt/ ISIMIP3b/InputData/socioeconomic/landuse/ssp370soc-adapt/ ISIMIP3b/InputData/socioeconomic/landuse/ssp585soc-noadapt/ ISIMIP3b/InputData/socioeconomic/landuse/ssp585soc-adapt/ noadapt forcing: <b>ssp126, ssp370, ssp585</b> adapt forcing: <b>ssp126, ssp370, ssp585</b> GLOBIOM is not yet available.</div>	
Wood harvest <div>optional</div>	<div>Group III agriculture biomes fire groundwater peat permafrost water_global</div> <div>MAgPIE IMAGE GLOBIOM</div> <div>Paths: ISIMIP3b/InputData/socioeconomic/wood_harvesting/ssp126soc-noadapt/ ISIMIP3b/InputData/socioeconomic/wood_harvesting/ssp126soc-adapt/ ISIMIP3b/InputData/socioeconomic/wood_harvesting/ssp370soc-noadapt/ ISIMIP3b/InputData/socioeconomic/wood_harvesting/ssp370soc-adapt/ ISIMIP3b/InputData/socioeconomic/wood_harvesting/ssp585soc-noadapt/ ISIMIP3b/InputData/socioeconomic/wood_harvesting/ssp585soc-adapt/ noadapt forcing: <b>ssp126, ssp370, ssp585</b> adapt forcing: <b>ssp126, ssp370, ssp585</b> Input dataset documentation → <b>Future Wood Harvesting</b>. GLOBIOM is not yet available.</div>	
Total N deposition <div>optional</div>	<div>Group III agriculture biodiversity biomes diarrhea fire forestry groundwater health labour lakes_global lakes_local peat permafrost water_global water_regional water_quality</div> <div>Paths: ISIMIP3b/InputData/socioeconomic/n-deposition/ssp126soc-noadapt/ ISIMIP3b/InputData/socioeconomic/n-deposition/ssp126soc-adapt/ ISIMIP3b/InputData/socioeconomic/n-deposition/ssp370soc-noadapt/ ISIMIP3b/InputData/socioeconomic/n-deposition/ssp370soc-adapt/ ISIMIP3b/InputData/socioeconomic/n-deposition/ssp585soc-noadapt/ ISIMIP3b/InputData/socioeconomic/n-deposition/ssp585soc-adapt/ noadapt forcing: use <b>adapt</b> data adapt forcing: <b>ssp126, ssp370, ssp585</b> Input dataset documentation → <b>Nitrogen deposition</b>.</div>	
Crop calendar <div>mandatory</div>	<div>Group III agriculture biomes fire groundwater peat permafrost water_global</div> <div>Paths: ISIMIP3b/InputData/socioeconomic/crop_calendar/ssp126soc-adapt/ ISIMIP3b/InputData/socioeconomic/crop_calendar/ssp126soc-noadapt/ ISIMIP3b/InputData/socioeconomic/crop_calendar/ssp370soc-adapt/ ISIMIP3b/InputData/socioeconomic/crop_calendar/ssp370soc-noadapt/ ISIMIP3b/InputData/socioeconomic/crop_calendar/ssp585soc-adapt/ ISIMIP3b/InputData/socioeconomic/crop_calendar/ssp585soc-noadapt/ noadapt forcing: Fixed historical values for the year 2015 (identical to <b>hist1500</b>), no ssp dependence. adapt forcing: <b>ssp126, ssp370, ssp585</b> Input dataset documentation → <b>Crop calendar</b>.</div>	

Land transformation <div>optional</div>	<div>Group III agriculture biodiversity biomes diarrhea fire forestry groundwater health labour lakes_global lakes_local peat permafrost water_global water_regional</div> <div>MAgPIE IMAGE GLOBIOM</div> <div>Paths: ISIMIP3b/InputData/socioeconomic/land-transformation/ssp126soc-noadapt/ ISIMIP3b/InputData/socioeconomic/land-transformation/ssp126soc-adapt/ ISIMIP3b/InputData/socioeconomic/land-transformation/ssp370soc-noadapt/ ISIMIP3b/InputData/socioeconomic/land-transformation/ssp370soc-adapt/ ISIMIP3b/InputData/socioeconomic/land-transformation/ssp585soc-noadapt/ ISIMIP3b/InputData/socioeconomic/land-transformation/ssp585soc-adapt/ noadapt forcing: <b>ssp126, ssp370, ssp585</b> adapt forcing: <b>ssp126, ssp370, ssp585</b> Input dataset documentation → <b>Future Land Transformation</b>. GLOBIOM is not yet available.</div>
Synthetic fertilizers N <div>mandatory</div>	<div>Group III agriculture biodiversity biomes diarrhea fire forestry groundwater health labour lakes_global lakes_local peat permafrost water_global water_regional water_quality</div> <div>MAgPIE IMAGE GLOBIOM</div> <div>Paths: ISIMIP3b/InputData/socioeconomic/n-fertilizer/ssp126soc-noadapt/ ISIMIP3b/InputData/socioeconomic/n-fertilizer/ssp126soc-adapt/ ISIMIP3b/InputData/socioeconomic/n-fertilizer/ssp370soc-noadapt/ ISIMIP3b/InputData/socioeconomic/n-fertilizer/ssp370soc-adapt/ ISIMIP3b/InputData/socioeconomic/n-fertilizer/ssp585soc-noadapt/ ISIMIP3b/InputData/socioeconomic/n-fertilizer/ssp585soc-adapt/ noadapt forcing: <b>ssp126, ssp370, ssp585</b> adapt forcing: <b>ssp126, ssp370, ssp585</b> GLOBIOM is not yet available.</div>
Dams and reservoirs <div>mandatory</div>	<div>Group III agriculture biodiversity biomes diarrhea groundwater health labour lakes_global lakes_local peat permafrost water_global water_regional water_quality</div> <div>noadapt forcing: <b>ssp126, ssp370, ssp585</b> adapt forcing: <b>ssp126, ssp370, ssp585</b></div>
Non-irrigation water use (withdrawal and consumption) <div>optional</div>	<div>Group III agriculture biodiversity biomes diarrhea groundwater health labour lakes_global lakes_local peat permafrost water_global water_regional water_quality</div> <div>noadapt forcing: <b>ssp126, ssp370, ssp585</b> adapt forcing: <b>ssp126, ssp370, ssp585</b></div>
Seawater desalination <div>optional</div>	<div>Group III agriculture biomes fire peat permafrost water_global</div> <div>noadapt forcing: <b>ssp126, ssp370, ssp585</b> adapt forcing: <b>ssp126, ssp370, ssp585</b></div>
Inter-basin water transfer <div>optional</div>	<div>Group III agriculture biomes fire peat permafrost water_global</div> <div>noadapt forcing: ?? adapt forcing: ??</div>
Irrigation techniques shares <div>optional</div>	<div>Group III agriculture biomes fire peat permafrost water_global</div> <div>Paths: ISIMIP3b/InputData/socioeconomic/crop_calendar/ssp126soc-noadapt/ ISIMIP3b/InputData/socioeconomic/crop_calendar/ssp370soc-noadapt/ ISIMIP3b/InputData/socioeconomic/crop_calendar/ssp585soc-noadapt/ noadapt forcing: <b>ssp126, ssp370, ssp585</b> adapt forcing: <b>ssp126, ssp370, ssp585</b> The data are only available for MAgPIE and the noadapt experiments at the moment.</div>
Lake and reservoir surface area <div>under construction</div>	<div>Group III agriculture biomes fire groundwater lakes_global lakes_local peat permafrost water_global water_quality</div> <div>noadapt forcing: <b>ssp126, ssp370, ssp585</b> adapt forcing: <b>ssp126, ssp370, ssp585</b></div>

# ISIMIP3B CHALLENGES

- Challenges with implementing ISIMIP3b Group III simulations
- e.g. irrigation techniques shares.