

August 30, 2022

IPBES-PROCLIAS/ISIMIP webinar

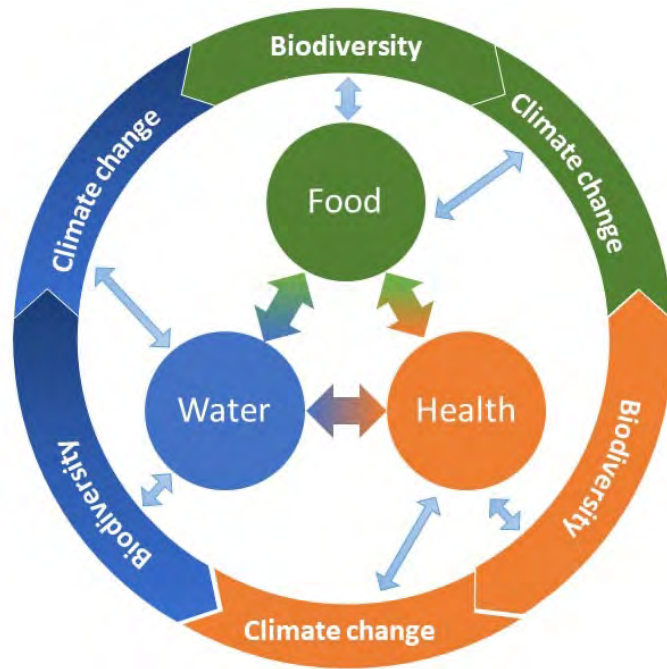
How ISIMIP can contribute to IPBES Nexus Assessment?

Akihiko Ito (National Institute for Environmental Studies)

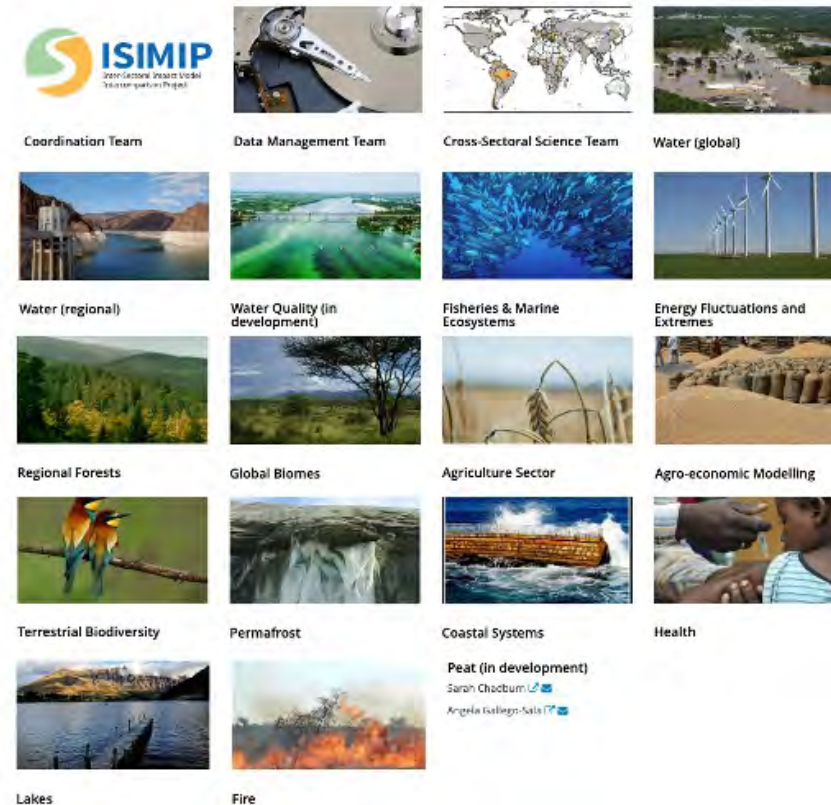
- Participant of ISIMIP biome sector since 2012
- Lead author of Ch. 5.5, IPBES Nexus report since 2022

Introduction

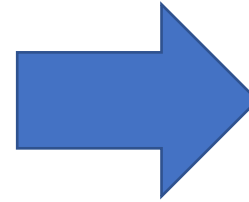
ISIMIP has achieved assessments on climatic impacts on multiple sectors, while IPBES Nexus started preparation of an assessment report. Based on my personal experience as a participant of ISIMIP and a lead author of IPBES, I would like to give some suggestions.



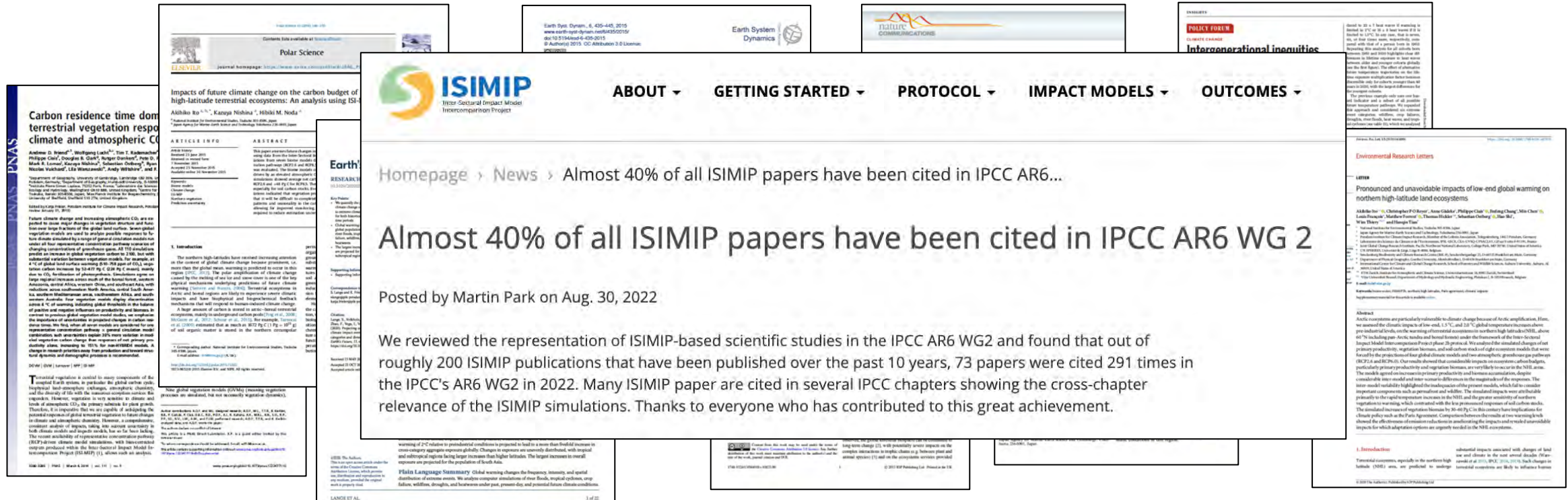
From Scoping Conference web



ISIMIP and IPCC

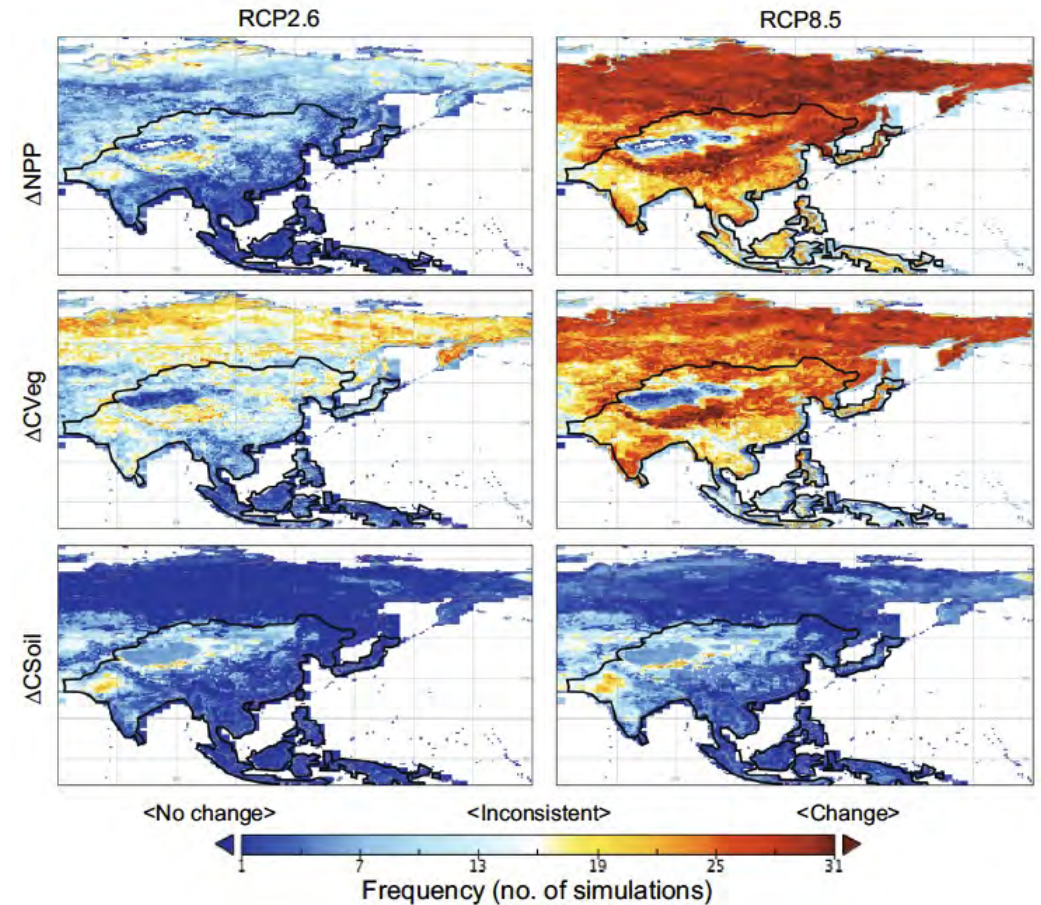
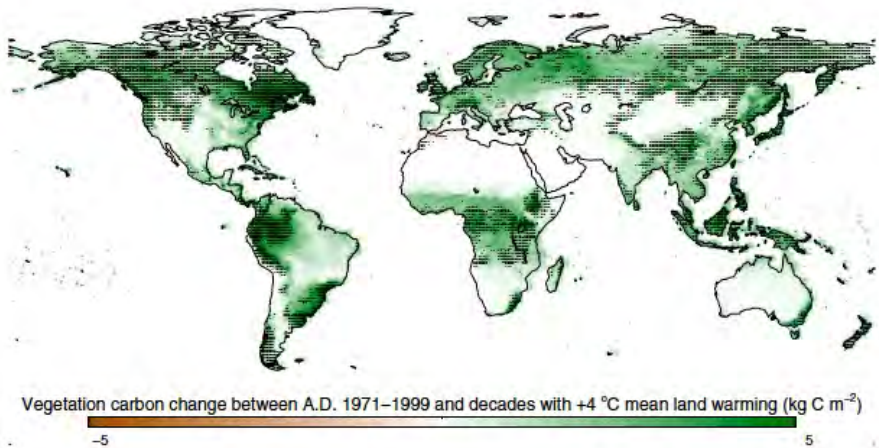
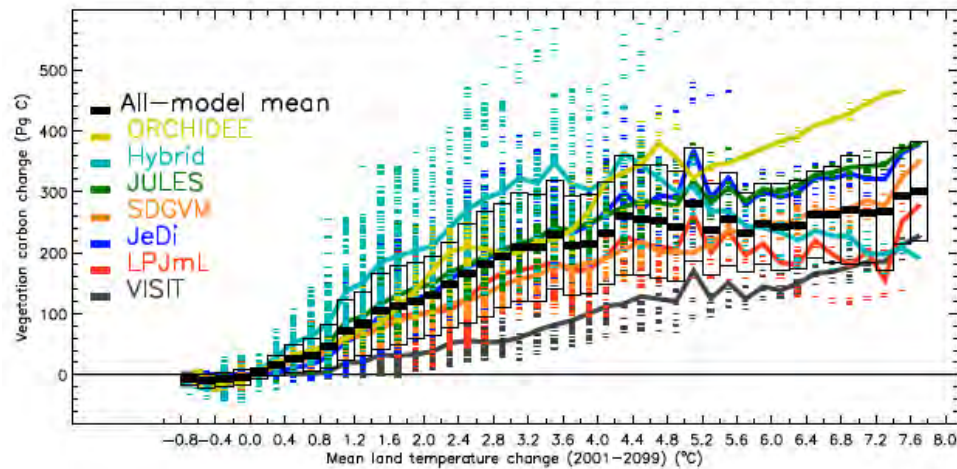


Assessment papers



ISIMIP Studies: fast track (2012-2013)

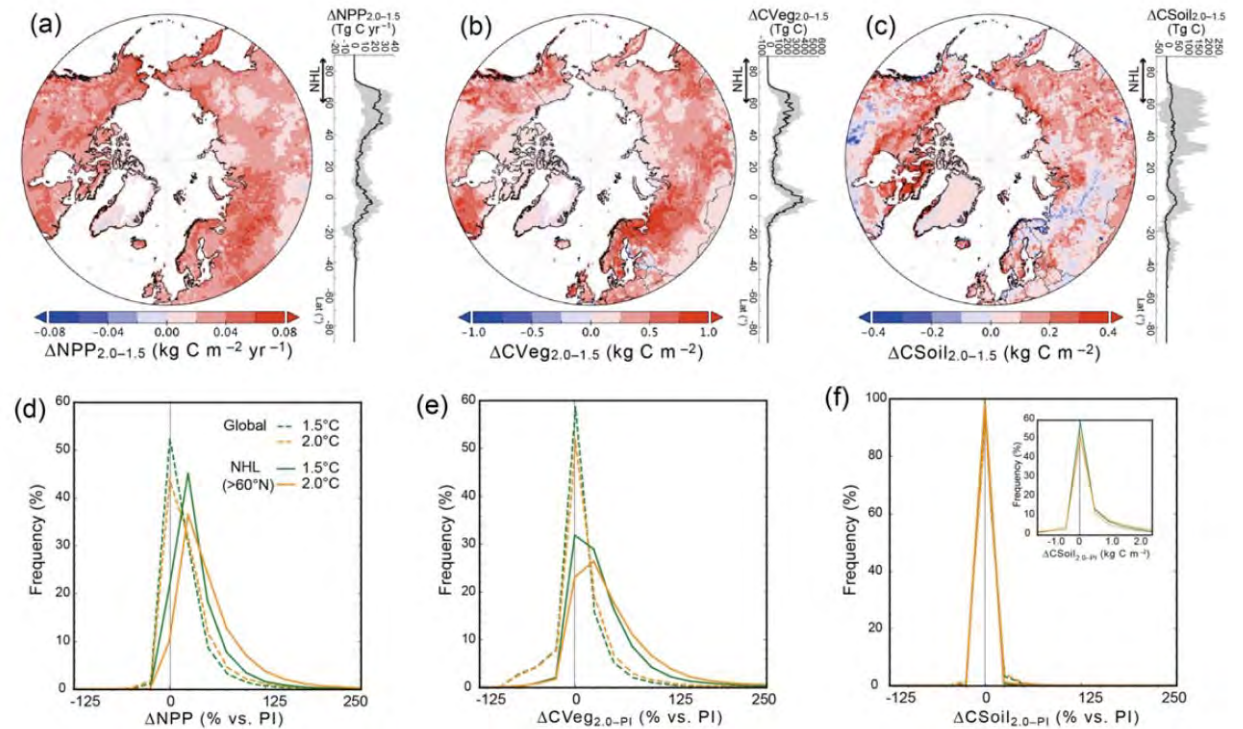
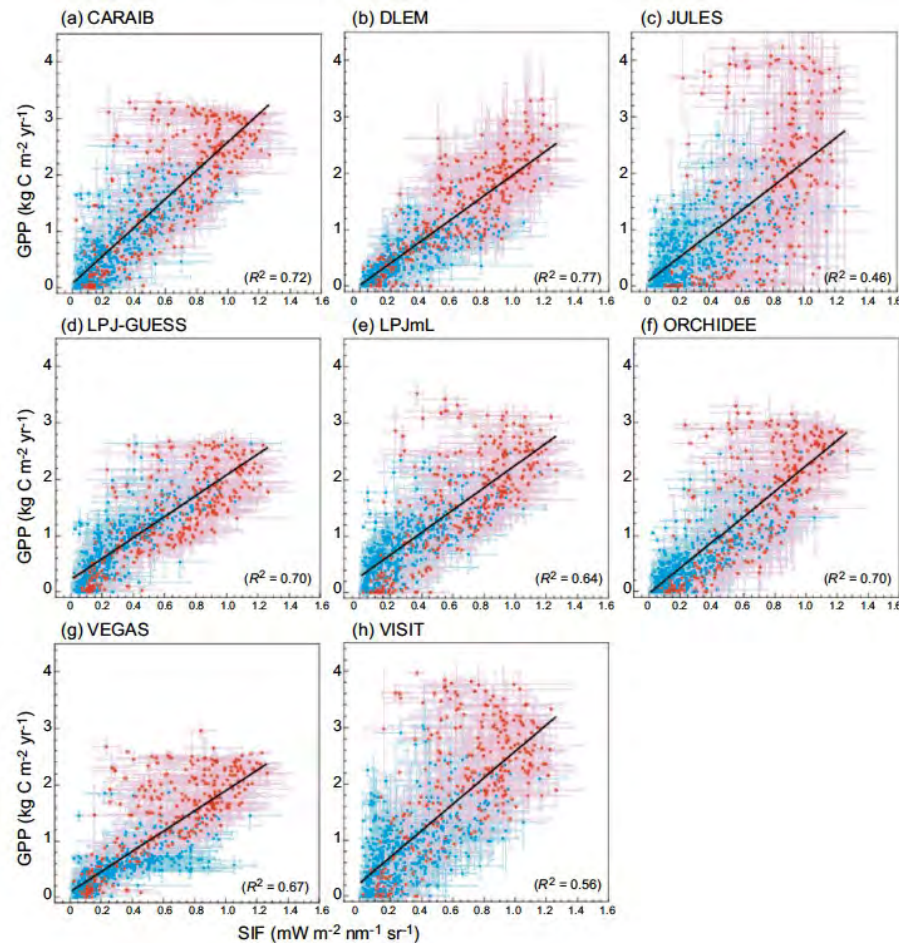
Climatic impacts on terrestrial ecosystems (CMIP5-based climate scenarios)
- Multiple scenarios and multiple models for uncertainty assessment



(Friend et al. 2014; Ito et al. 2016)

ISIMIP studies: phase 2a and 2b

Benchmarking for historical period to examine model reliability
Assessments of impacts of 1.5/2.0K warming (Paris Agreement's target)



ARTICLE

<https://doi.org/10.1038/s41467-019-08745-6>

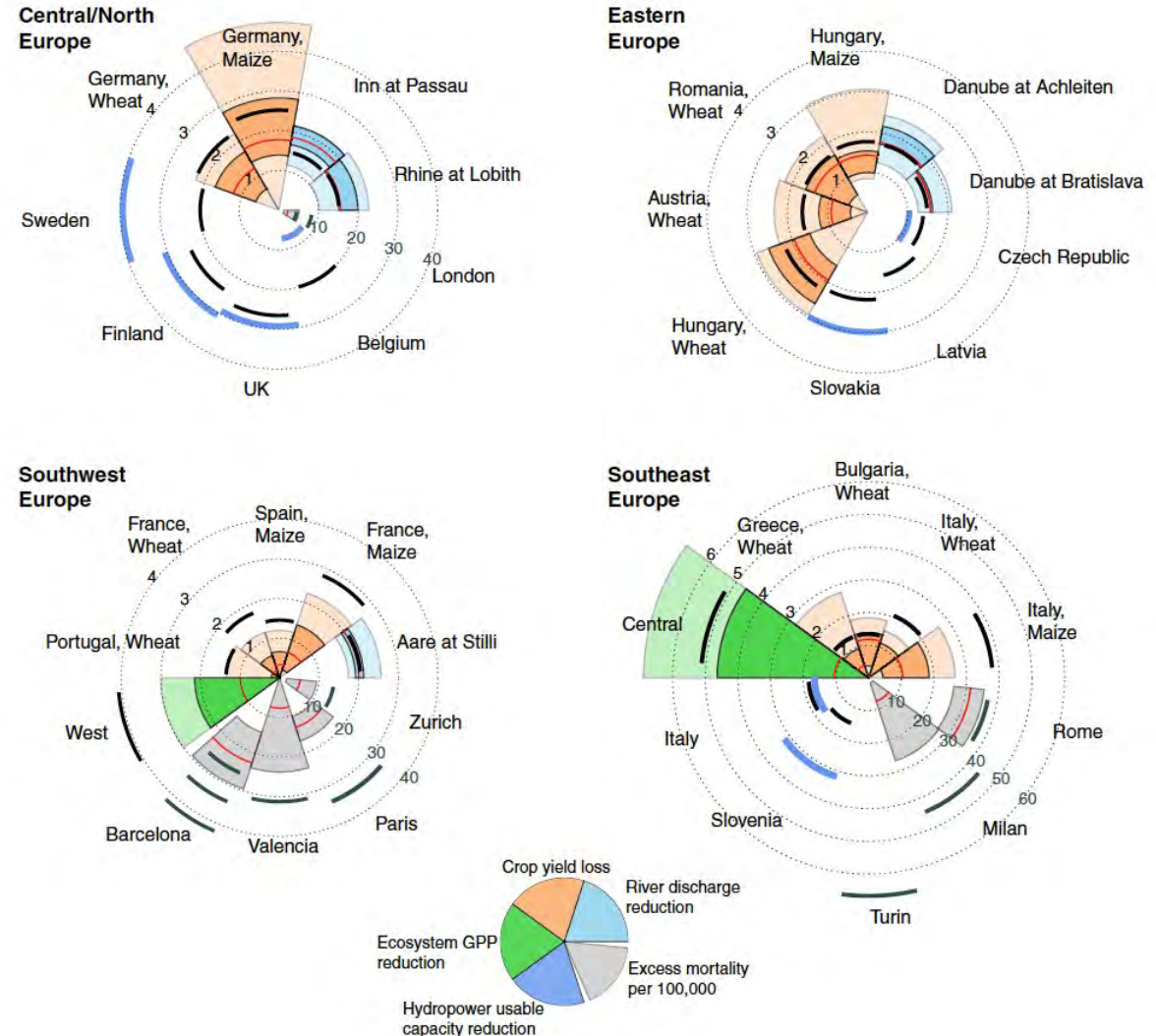
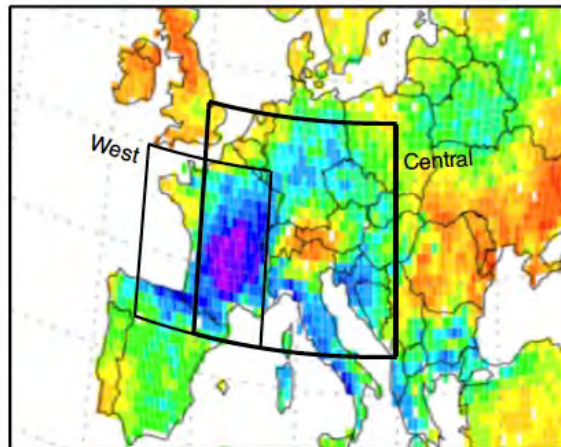
OPEN

State-of-the-art global models underestimate impacts from climate extremes

Jacob Schewe et al. #

Examination of impact models for the 2003 European heatwave and drought

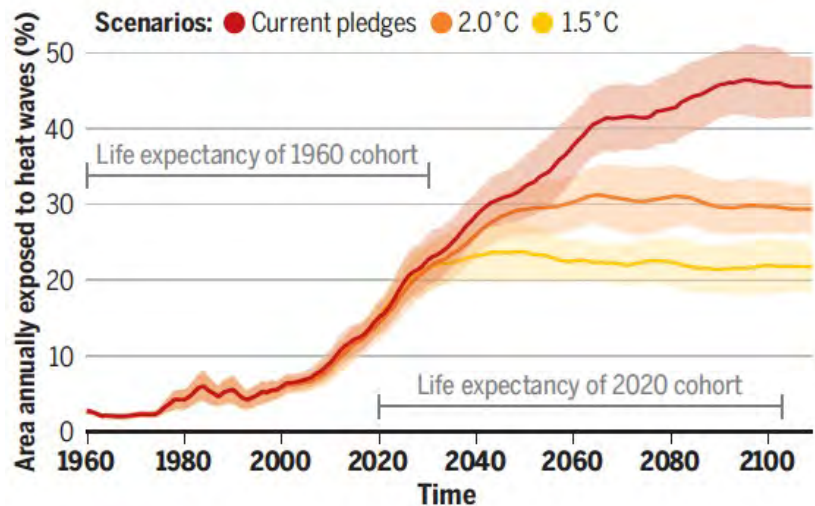
2003 GPP change (MODIS)



Intergenerational inequities in exposure to climate extremes

Young generations are severely threatened by climate change

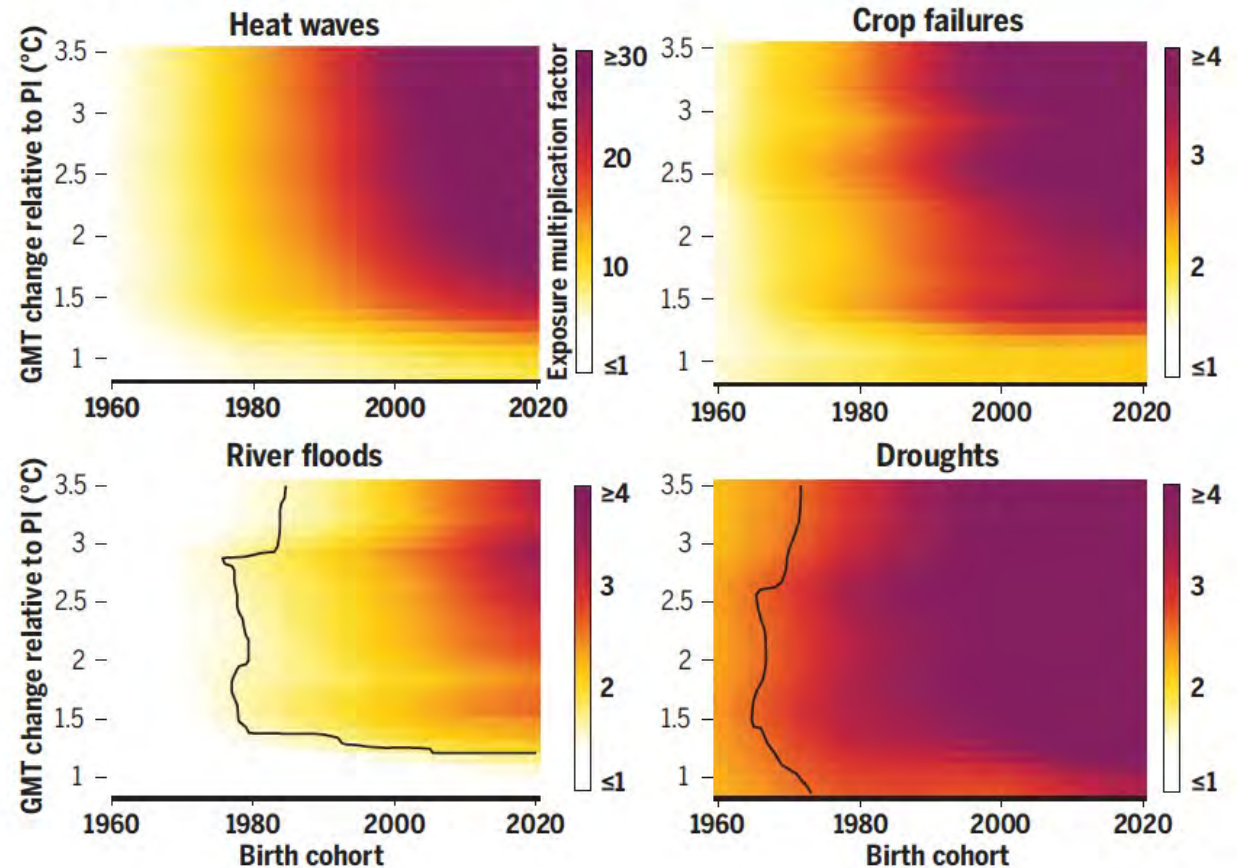
By Wim Thiery, Stefan Lange, Joeri Rogelj, Carl-Friedrich Schleussner, Lukas Gudmundsson, Sonia I. Seneviratne, Marina Andrijevic, Katja Frieler, Kerry Emanuel, Tobias Geiger, David N. Bresch, Fang Zhao, Sven N. Willner, Matthias Büchner, Jan Volkholz, Nico Bauer, Jinfeng Chang, Philippe Ciais, Marie Dury, Louis François, Manolis Grillakis, Simon N. Gosling, Naota Hanasaki, Thomas Hickler, Veronika Huber, Akihiko Ito, Jonas Jägermeyr, Nikolay Khabarov, Aristeidis Koutroulis, Wenfeng Liu, Wolfgang Lutz, Matthias Mengel, Christoph Müller, Sebastian Ostberg, Christopher P. O. Reyer, Tobias Stacke, Yoshihide Wada



Cross-sectoral studies

Lifetime exposure to extreme events on the rise

Exposure multiplication factors across birth cohorts under a range of global warming trajectories (fig. S1) reaching 0.87°C to 3.5°C global mean temperature (GMT) anomalies in 2100 relative to the preindustrial (PI) reference period are shown. Factors are computed relative to the mean exposure of a hypothetical reference person living under PI climate conditions with 1960 cohort life expectancy. The black contours delineate lifetime exposure with 0.01% probability of occurrence under PI climate conditions; absence of the contour indicates that this probability is lower for all cases covered.



IPBES Nexus



IPBES First Author Meeting of the Nexus Assessment
Venue: Senckenberg Society for Nature Research
Dates: 16 – 20 May 2022

Food

Water

Health

Biodiversity

Climate [energy]

Liaison groups

From Scoping Report

<https://ipbes.net/sites/default/files/inline-files/Nexus%20scoping%20consolidated.pdf>

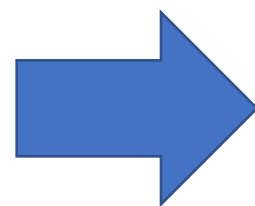
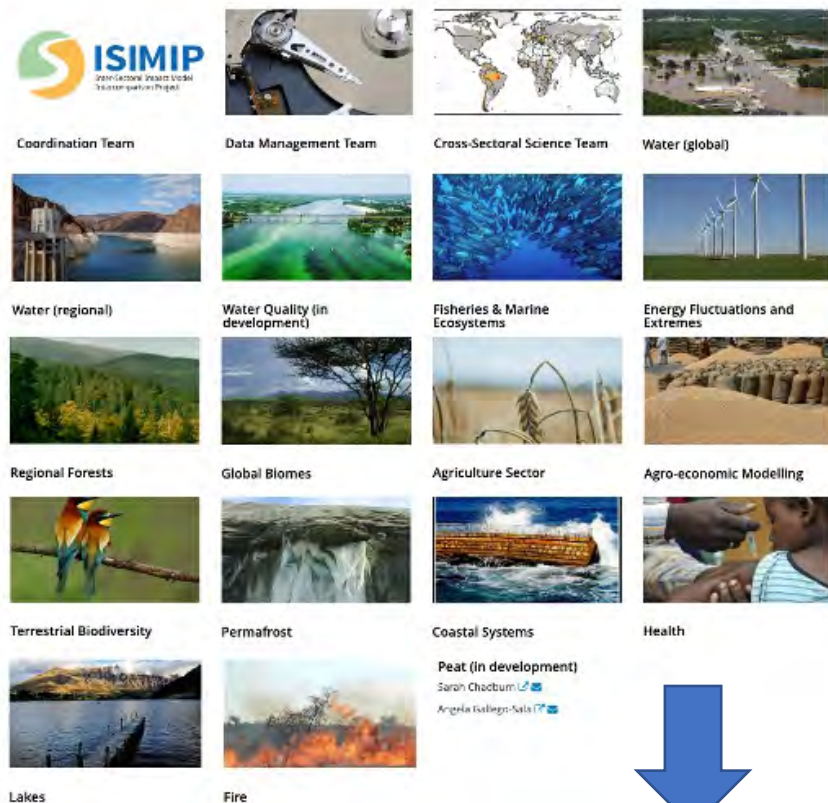
15. The assessment will be based on existing evidence: data (including, as appropriate, national data), scientific and grey literature and other forms of knowledge, in different languages (to the extent possible), including indigenous and local knowledge, in line with relevant procedures of the Platform.

So,

- Comprehensive and sometimes narrative
- Attention to actors and response options
- Caution concerning indigenous and local knowledge
- Liaison groups for cross-chapter topics

Zero- to first- order-draft and expert reviewing are ongoing.

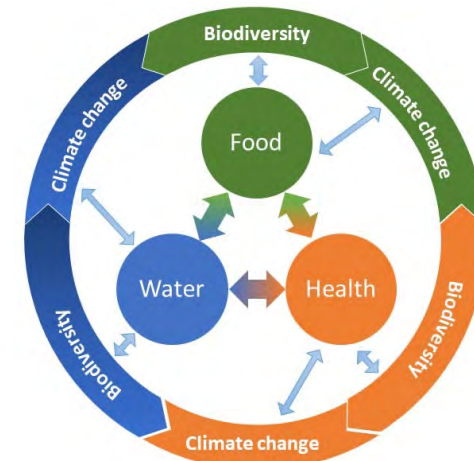
ISIMIP and IPBES



- Technical assessment
 - Knowledge generation
 - Capacity building
 - Policy support

Each sectoral analyses
Cross-sectoral analyses by ISIMIP

- Agriculture (food) – climate
- Water – climate
- Health – climate
- Biodiversity – climate
- Agriculture (food) – water
- Health / disease – biodiversity etc.



Putting emphasis on

- Actors
- Response options
- ILK ?

IPCC



SDGs



(submitted by Nov. 2023?)



Bonn2011 Conference
The Water, Energy and
Food Security Nexus
Solutions for the Green Economy
16 – 18 November 2011

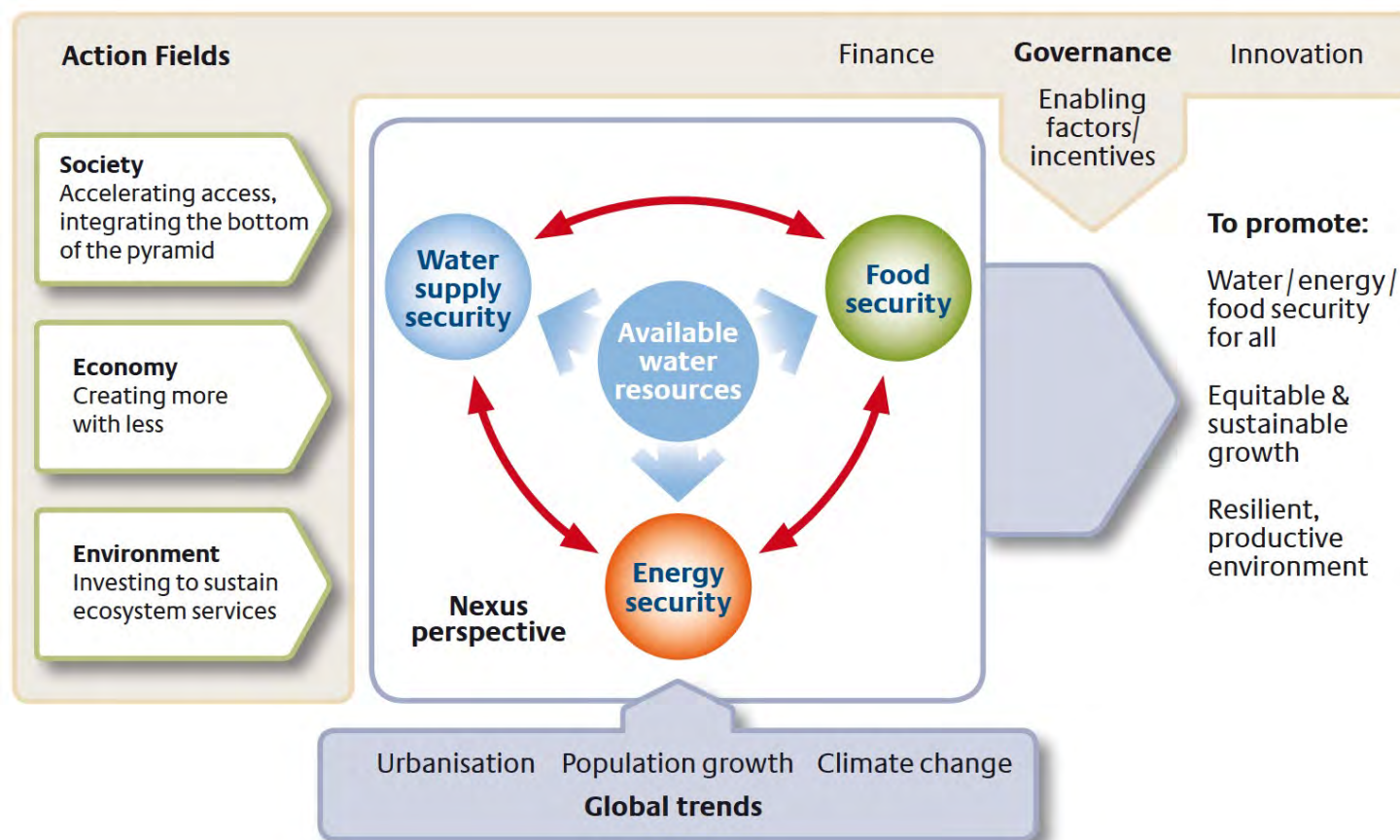
Understanding the Nexus

Background paper for the Bonn2011 Nexus Conference



Nexus

A nexus approach – an approach that integrates management and governance across sectors and scales.



Nexus—SDGs

Nexus approaches to global sustainable development

Jianguo Liu^{1*}, Vanessa Hull², H. Charles J. Godfray^{2,4}, David Tilman⁵, Peter Gleick⁶, Holger Hoff^{7,8}, Claudia Pahl-Wostl⁹, Zhenci Xu¹, Min Gon Chung¹, Jing Sun^{1,10} and Shuxin Li¹

