Activity Report, 2011-2012

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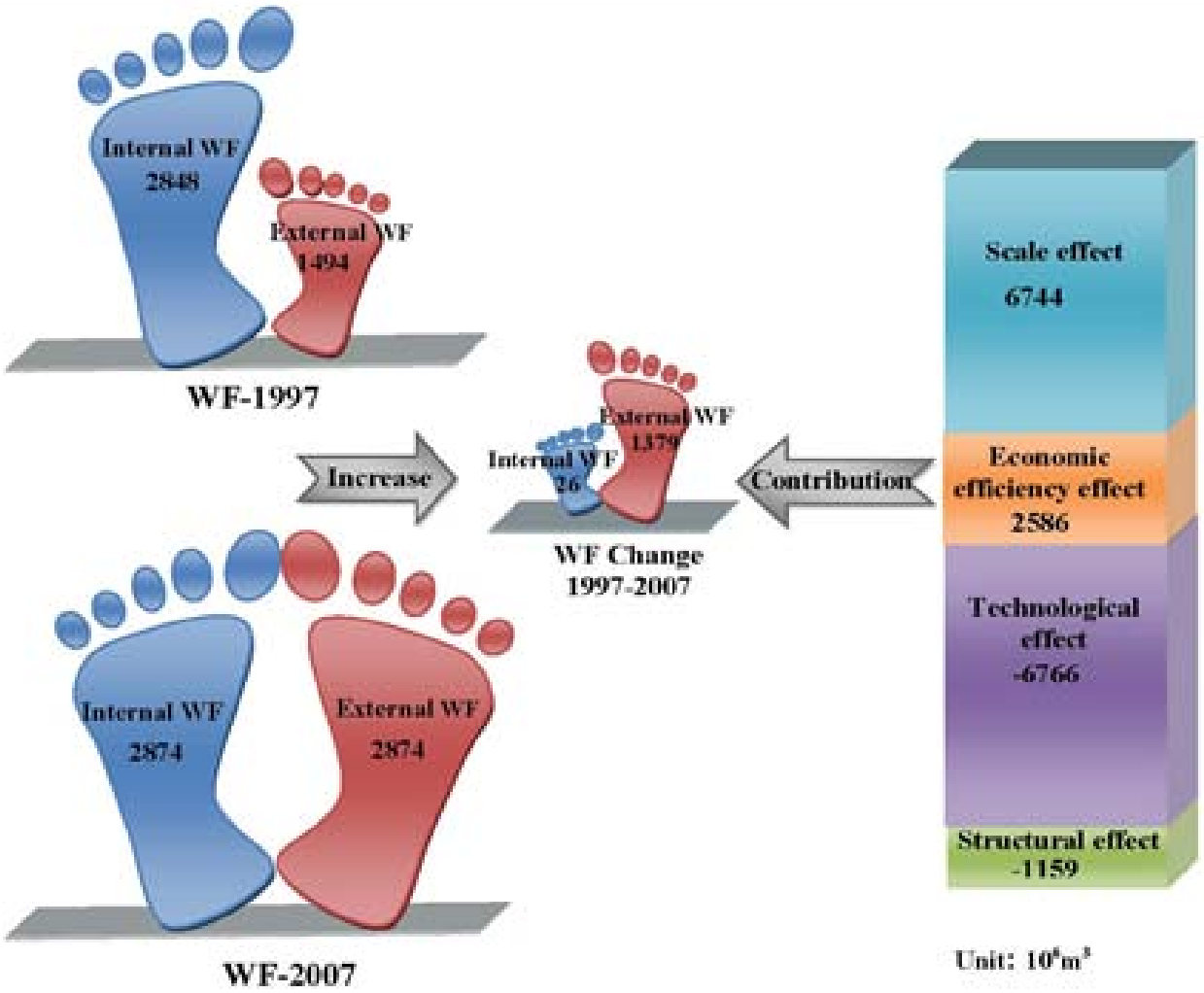
1. Advances in research

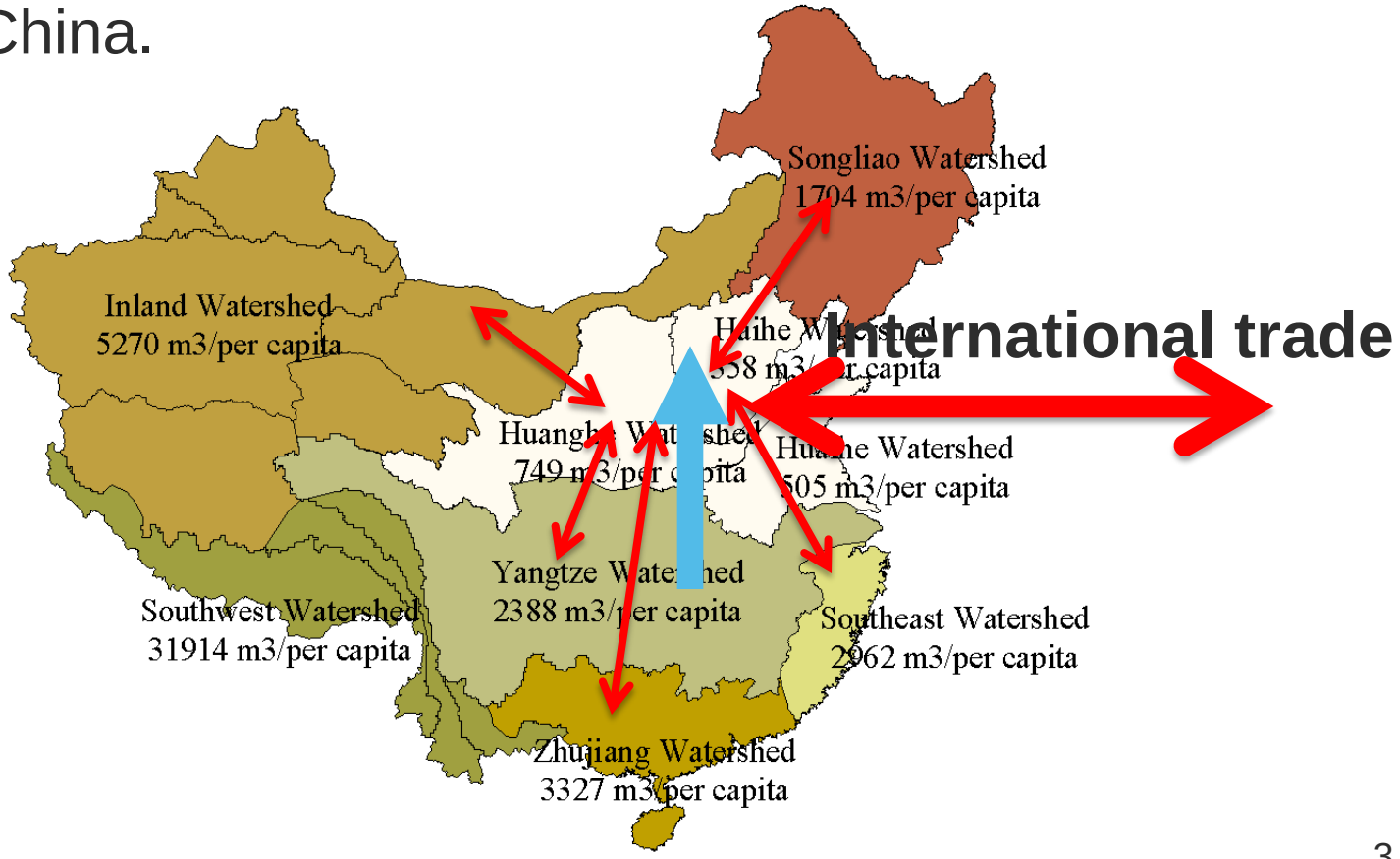
1.1 Accounting for virtual water flows across sectors and geographical regions

Understanding Beijing's water challenge: A decomposition analysis of changes in Beijing's water footprint between 1997 and 2007

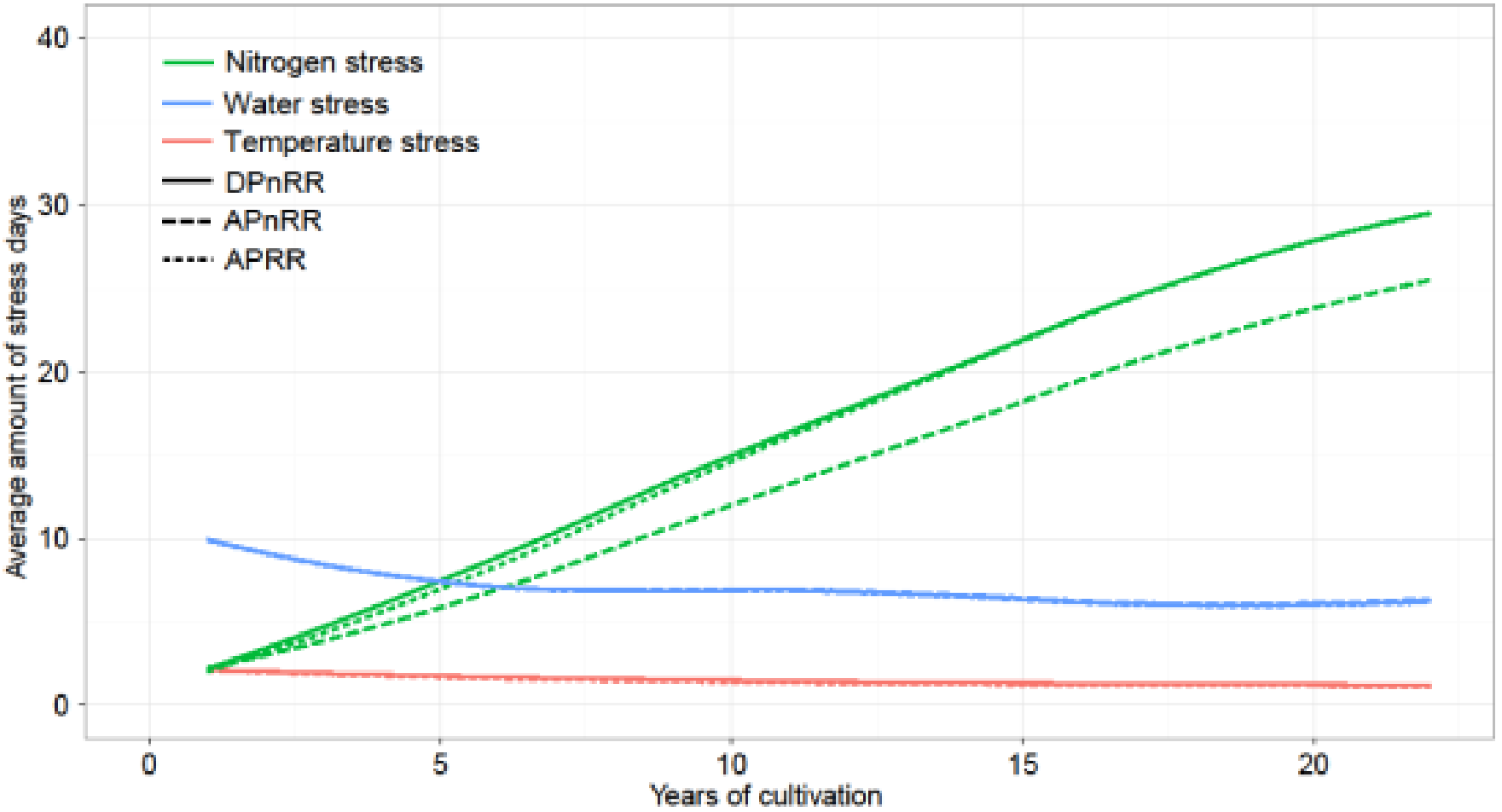


South-North Water Transfer and Impact on Virtual Water Trade

Development of the 3H regional water resource CGE model for the analysis of future water requirements and water resources constraints to the economic growth in the 3H region in China.

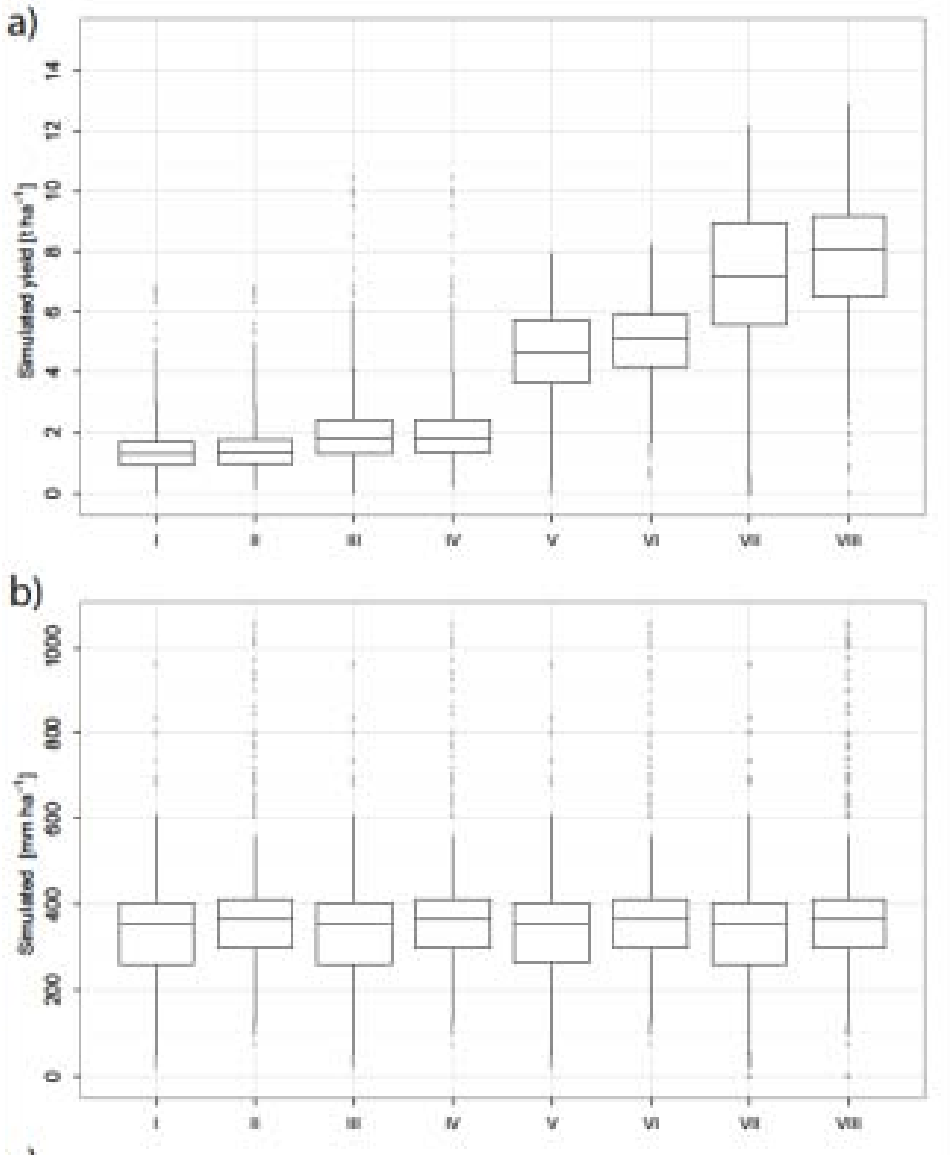


1.2 Modelling impacts of water and nutrient stresses on crop yields in Sub-Saharan Africa – crop model adaptation to local conditions



Changes in nitrogen, water, and temperature stress over time under continuous cultivation

Simulated (a) crop yield and (b) evapotranspiration under different management scenario



I	Fertilizer as „around 2000“ Current extent of irrigated areas Low-yielding cultivar (baseline)
II	Fertilizer as „around 2000“ With irrigation Low-yielding cultivar
III	Fertilizer as „around 2000“ Current extent of irrigated areas High-yielding cultivar
IV	Fertilizer as „around 2000“ With irrigation High-yielding cultivar
V	Sufficient fertilizer supply Current extent of irrigated areas Low-yielding cultivar
VI	Sufficient fertilizer supply With irrigation Low-yielding cultivar
VII	Sufficient fertilizer supply Current extent of irrigated areas High-yielding cultivar
VIII	Sufficient fertilizer supply With irrigation High-yielding cultivar

2. Other GWSP related activities

2.1. Contribution to COST ACTION ES1106

Assessment of EUROpean AGRIculture WATer use and trade under climate change (EURO-AGRIWAT)

Objective: Assessment of water footprint (WF) and virtual water trade (VWT) of key food and no-food agricultural products, including their uncertainties, as well as scenarios concerning WF and VWT under future climatic conditions.

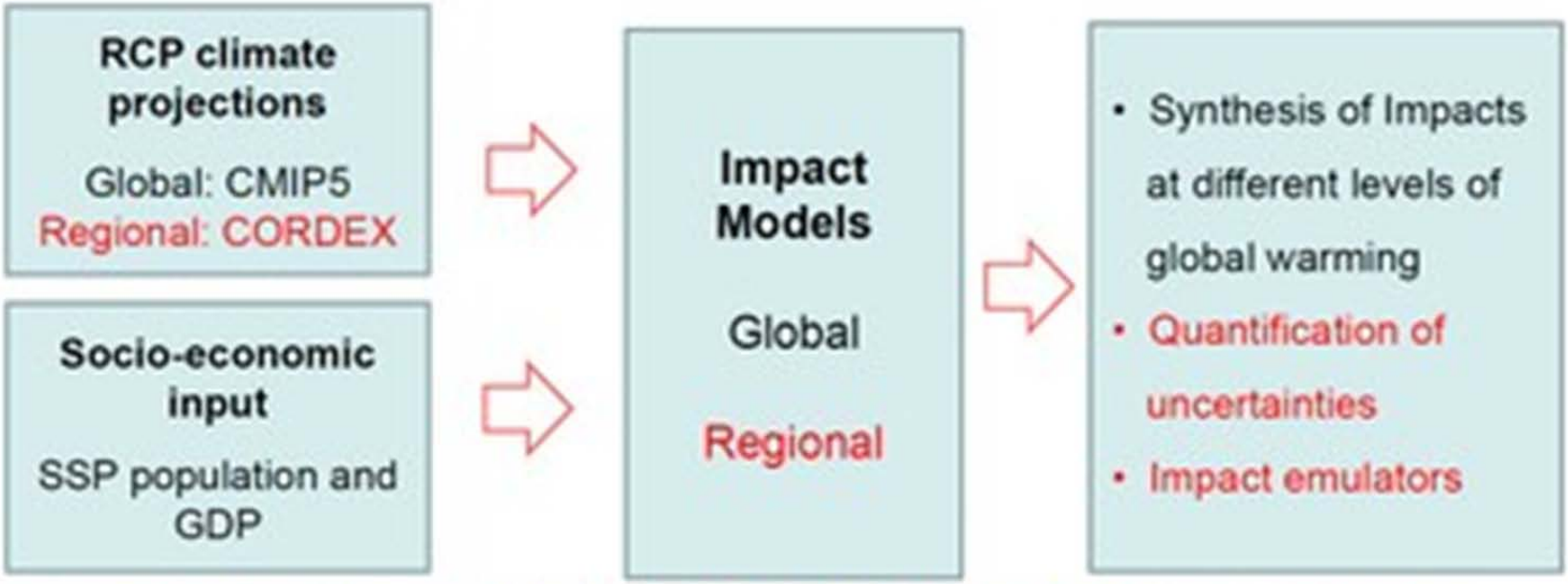
Activities:

1) Set-up of an inventory of data and tools in the relevant fields,
2) Development and test of methodologies
3) Assessment of climate change impact on WF and VWT
4) Analysis of sustainable water management
5) Integrations and interactions with other research programs

2.2 ISI-MIP: The Inter-Sectoral Impact Model Intercomparison Project

ISI-MIP is a community-driven modelling effort with the goal of providing cross-sectoral global impact assessments, based on the newly developed climate [Representative Concentration Pathways (RCPs)] and socio-economic [Shared Socio-Economic Pathways (SSPs)] scenarios.

The initiative is coordinated by a team at PIK with support from IIASA and backing from the IPCC Working Groups II and III. The first stage provides fast-track outcomes for the IPCC's Fifth Assessment Report (AR5). Further it hopes to initiate a longer-term coordinated impact assessment effort driven by the entire impact community.



Coming-up activities

- Communication with public on virtual water and water footprint issues, guiding water conscious consumer actions/behaviour, clarifying confusions and misunderstanding.

- Drought impact on crop yield and production in the historical context and in the future climate change (adaptation vs. no-adaptation)

- Water: a special social and economic resource/good - challenge to management and governance.