

A dynamic water splash in shades of blue and white, with droplets and ripples, serves as the background for the slide.

Virtual Water Values (ViWA)

Linking Water Footprints with agro-hydrological model data for a sustainability assessment approach – implications for water related SDGs

Anna Schlattmann, Felix Neuendorf, Christina von Haaren, Kremena Burkhard

Water Footprints as basis to characterise agricultural water use

Conceptual development

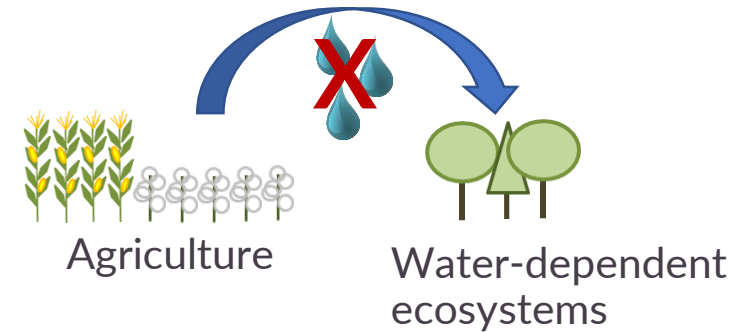
- Linking WF approaches with high resolution agro-hydrological model data
- Spatial relationships (geographical approach)
- Impacts on quantitative water supply

Features

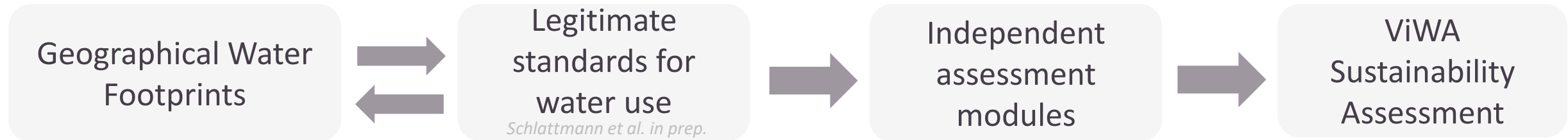
- Legitimate sustainability standards ensure a high level of transparency *Schlattmann et al. in prep.*
- Practical approach supports decision-making

Addressees

- Politics, food companies, NGOs



Conceptual development




Water Footprint
Sustainability assessment
<https://waterfootprint.org/en/>

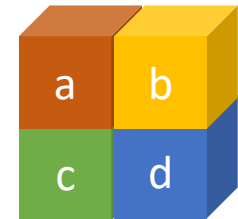
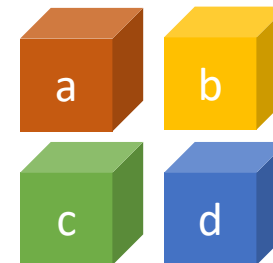
ISO14046:2014
'Water Scarcity Footprint'



SEEA-Water Asset
accounts
<https://seea.un.org/content/seea-water>

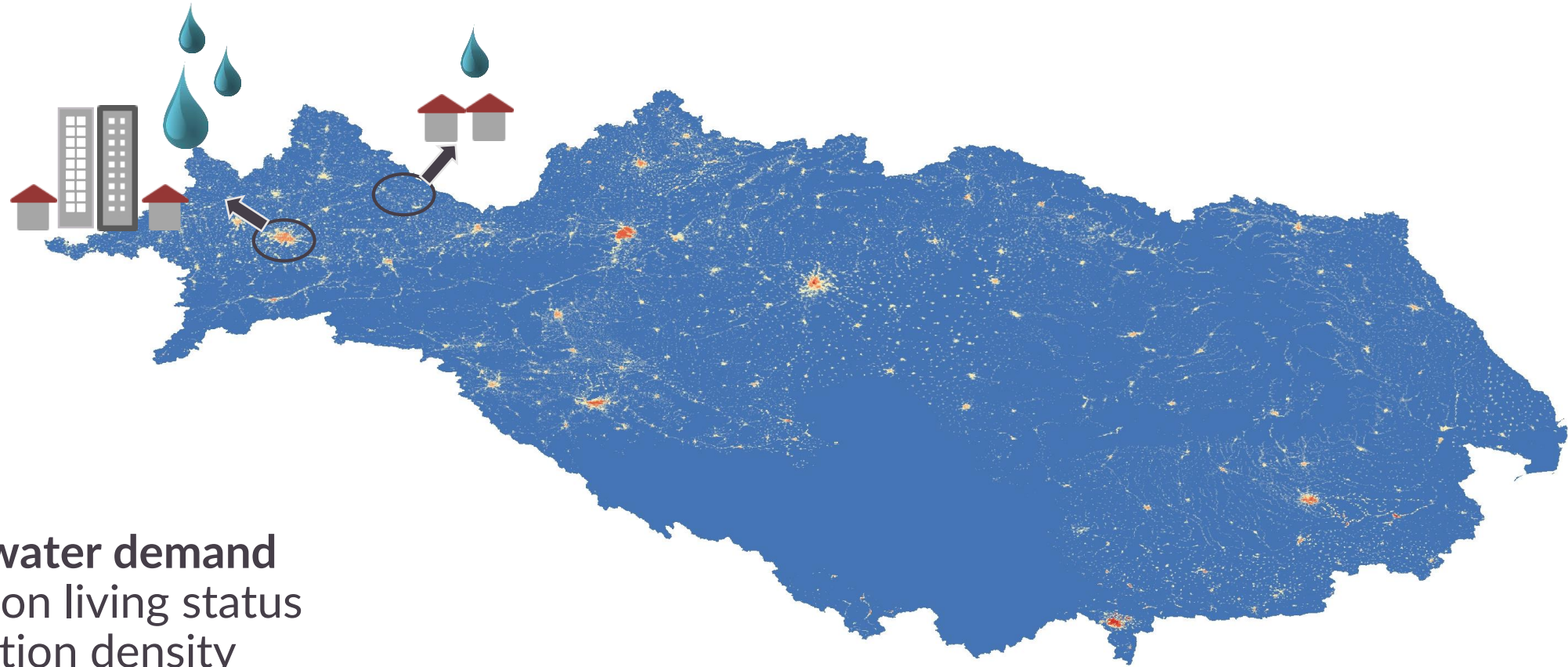


1. Domestic uses
2. Subsistence farming
3. Ecosystems and their functions
4. Equitable & reasonable transboundary water allocation




Assessment features for transparent sustainability assessment

Human Right to Water



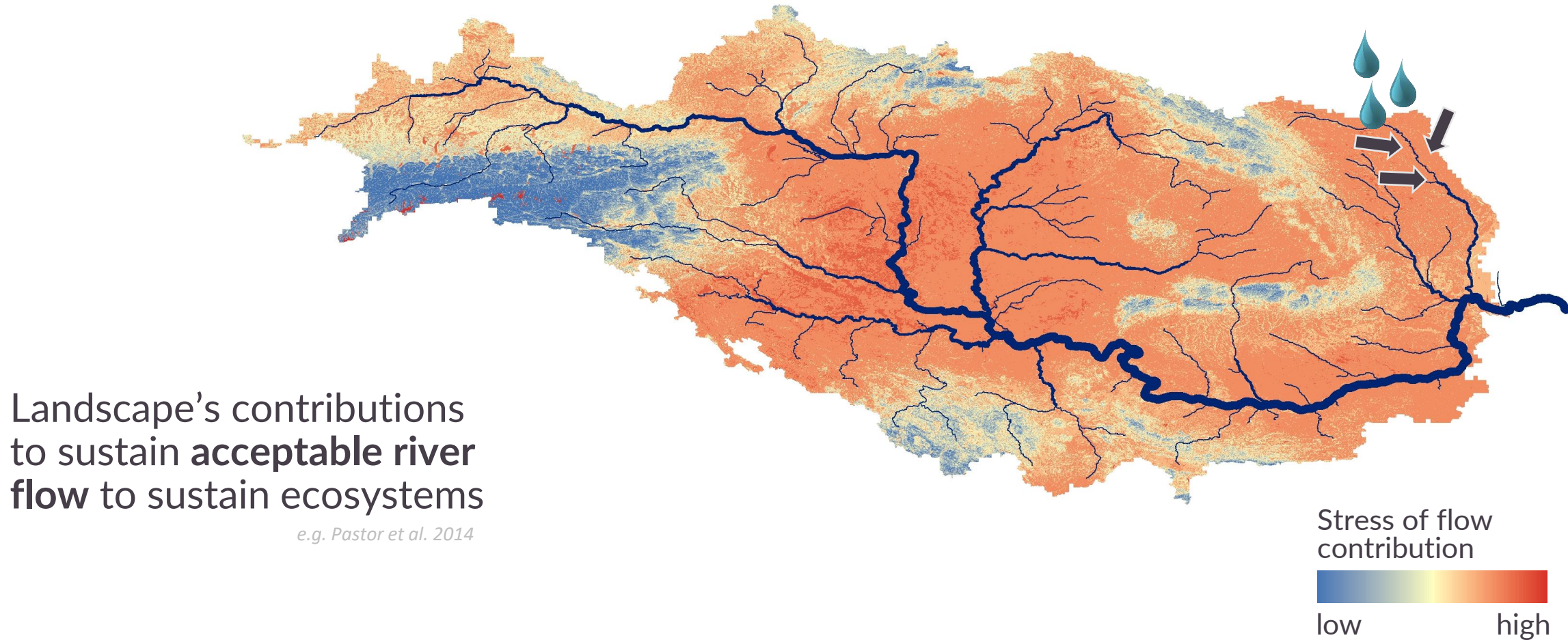
Domestic water demand
depending on living status
and population density

Domestic water
demand



low high

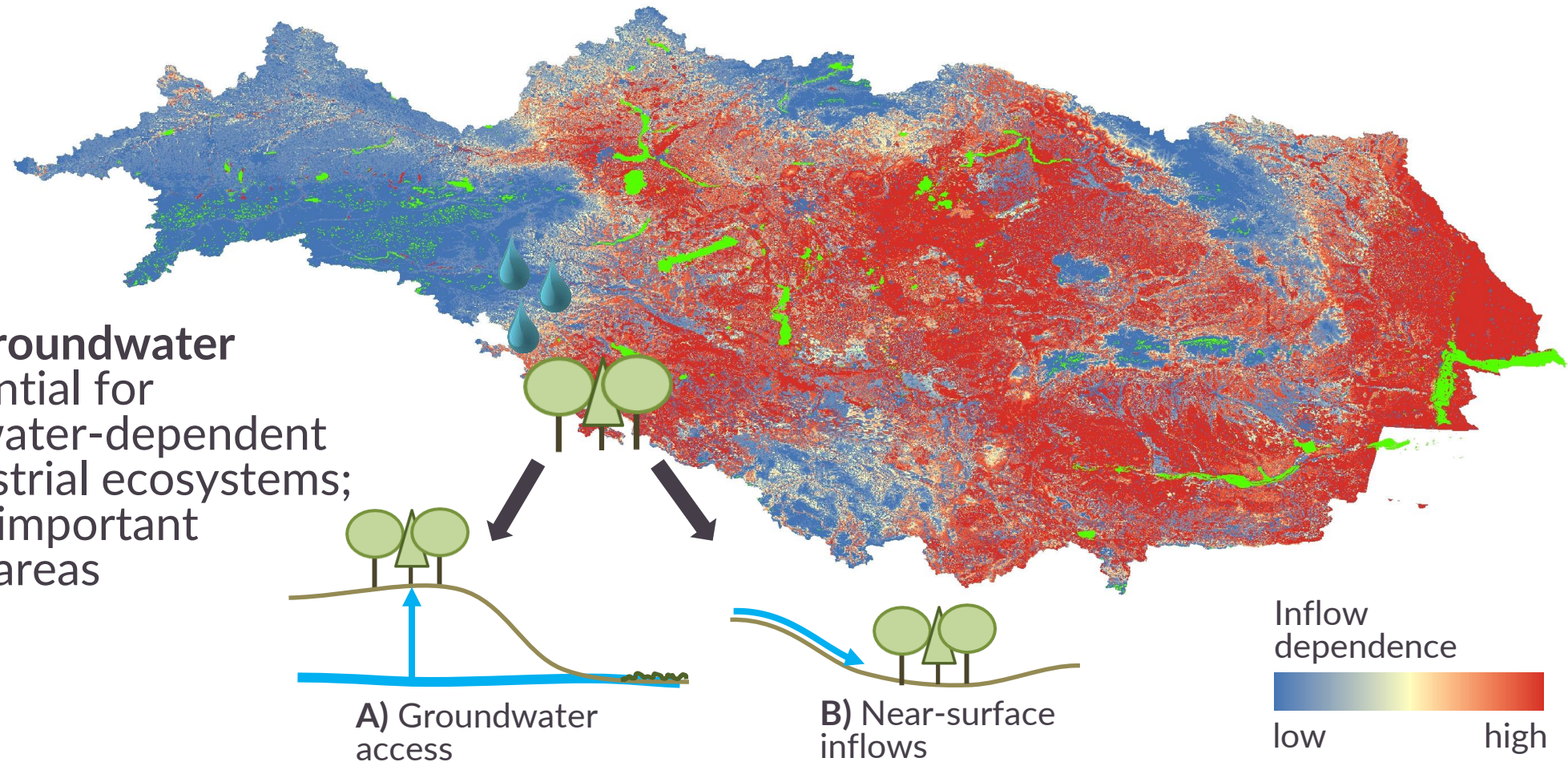
Ecosystems and their functions



Ecosystems and their functions

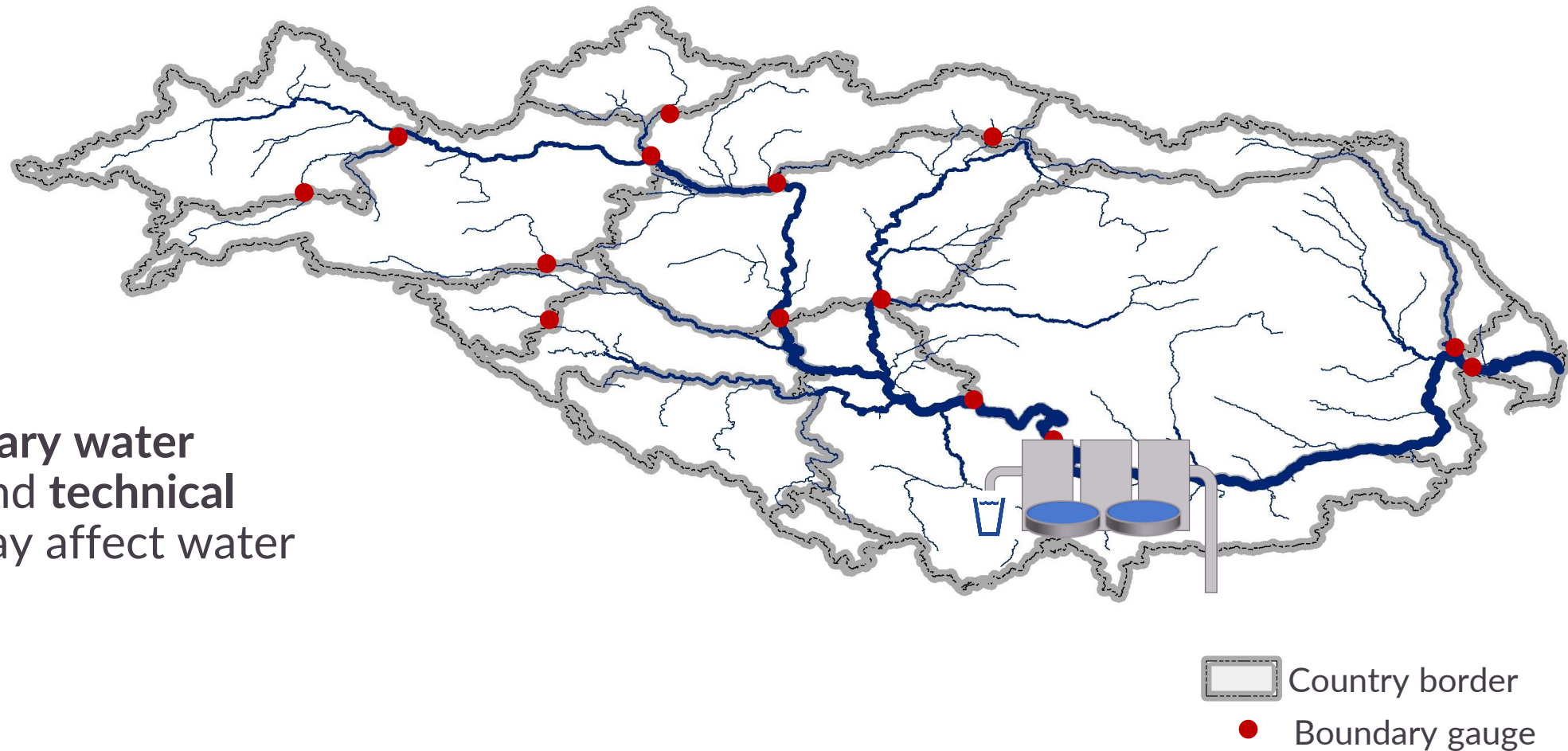
Surface or groundwater inflows essential for preserving water-dependent (semi-) terrestrial ecosystems; in particular important biodiversity areas

e.g. Doody et al. 2017

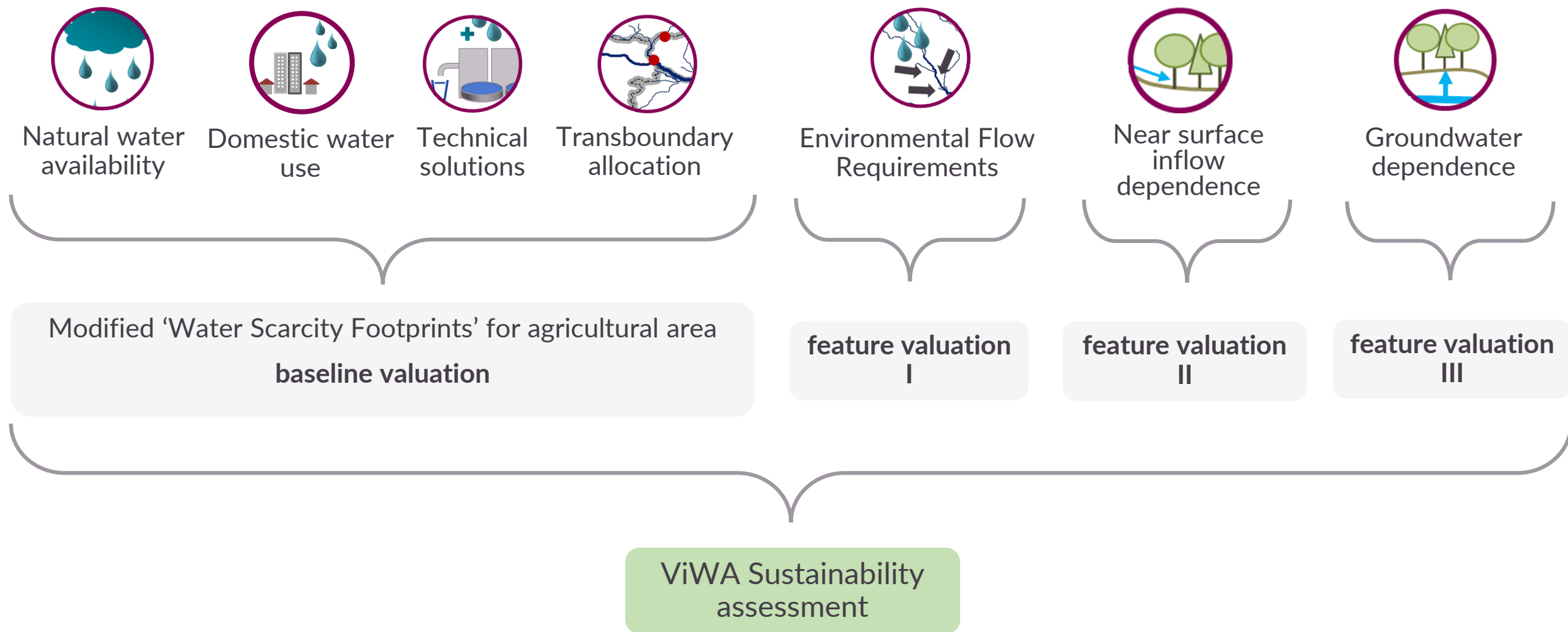


Equitable & reasonable water allocation and technical solutions

Transboundary water allocation and technical solutions may affect water availability



Compilation of a Multi-Criteria Sustainability Assessment



Addressing challenges

Application in scenarios

- Link with information on yield and water use efficiency to address trade-offs between food production and natural ecosystems

Added value for addressees

- Design of sustainable policies (agricultural aids; import-export policies, land-use planning)
- Safe investments for development banks
- Compliance with sustainability standards of food companies



Conclusions

What does the method provide?

- High resolution spatial link between agricultural water management and impacts on ecosystems
- Water volume related impacts
- Legitimate and transparent assessment standards

What would be beneficial for future WF developments?

- Spatially explicit information on absolute (industrial) water uses
- Uncover link to norms outside the WF concept (SDGs, Human Rights, Int. treaties)

