



# Water Food Energy Ecosystem Nexus in HKH: Context, Significance and Opportunities

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11 August 2021

ICIMOD



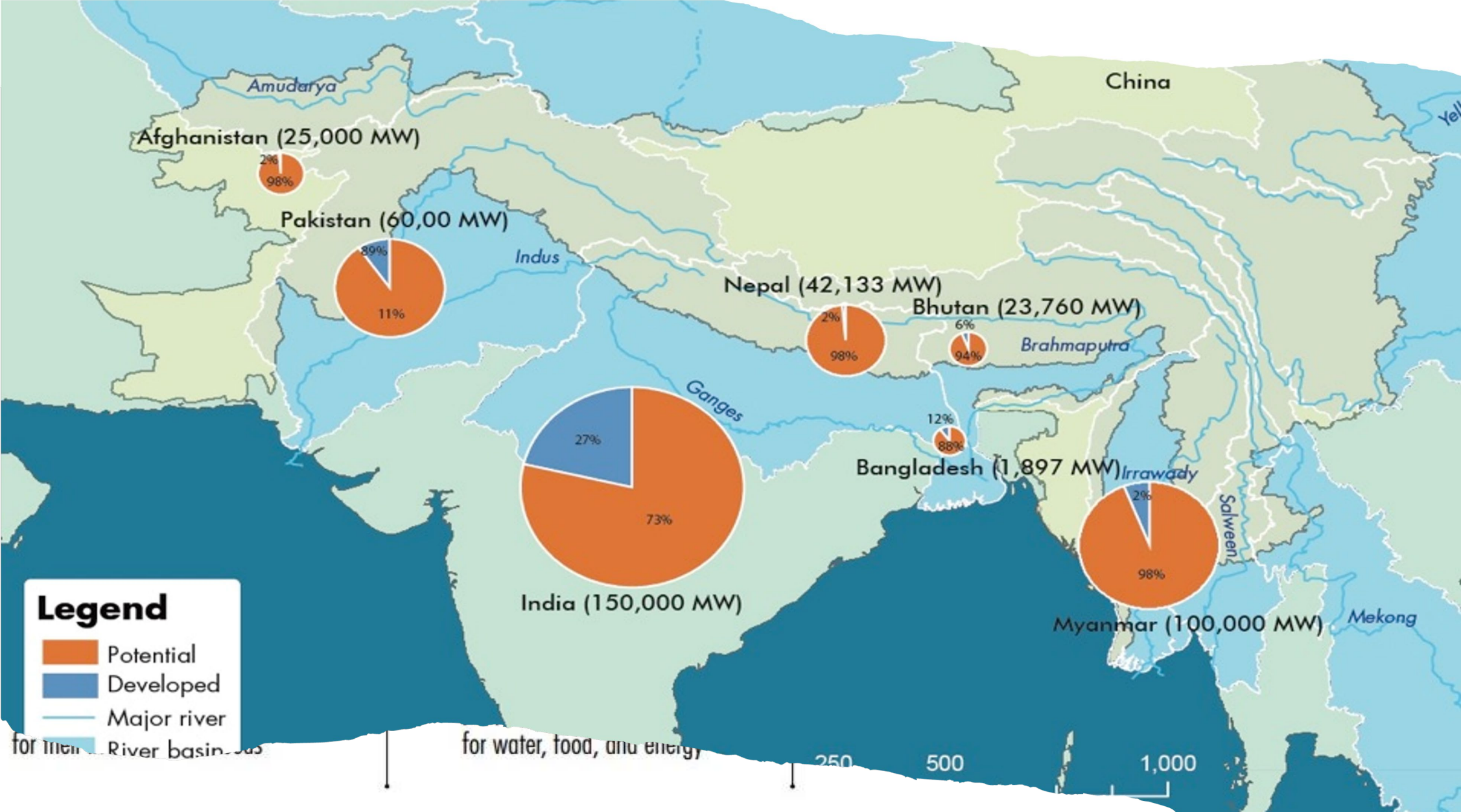


# An important food bowl of Asia





# The HKH: Large unmet hydropower potential



# Ecosystems : key for SDGs

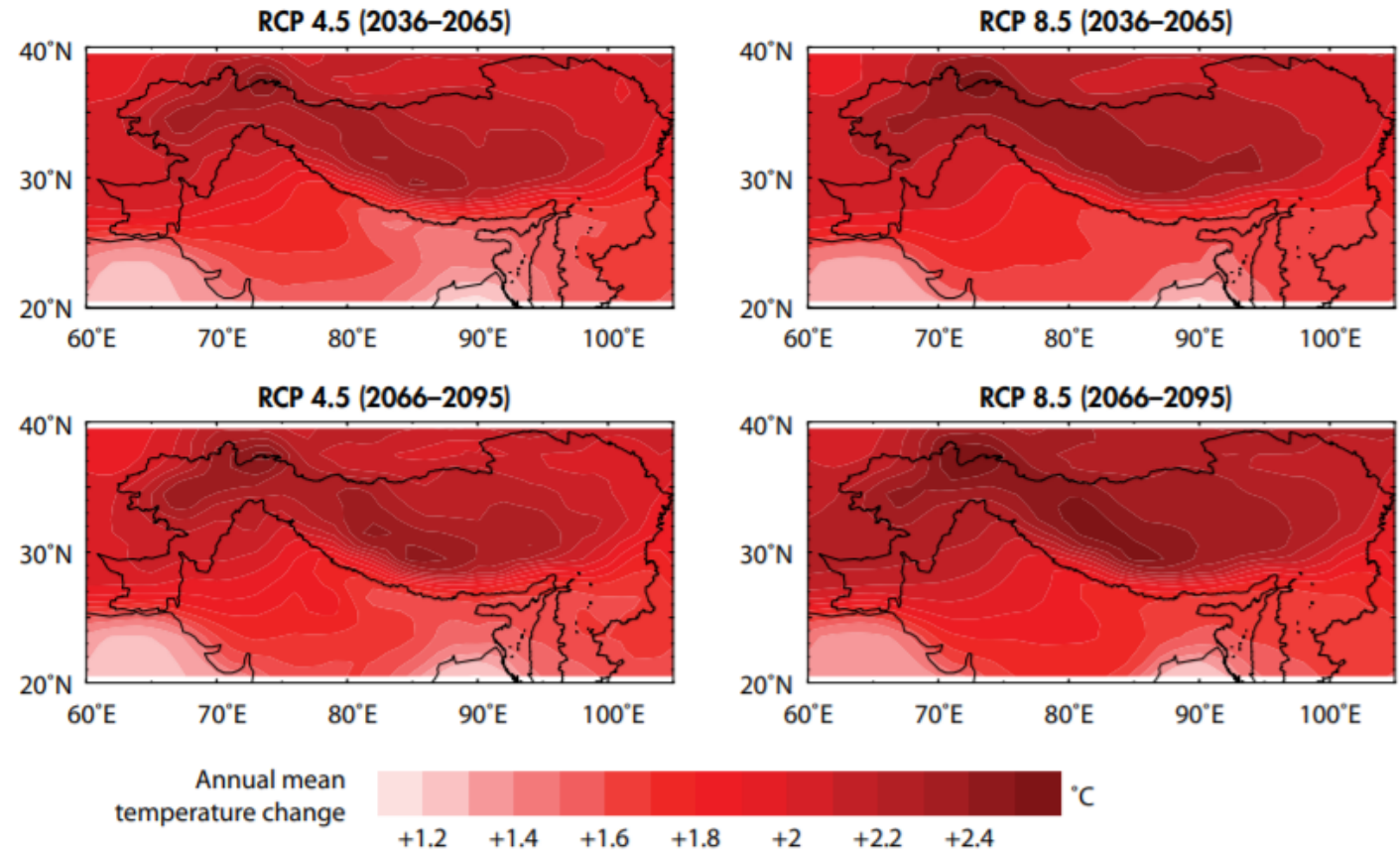




# Climate change: a major hotspot

**Even 1.5  
Degrees is  
Too Hot for  
the HKH**

and amplified  
by elevation  
dependent  
warming

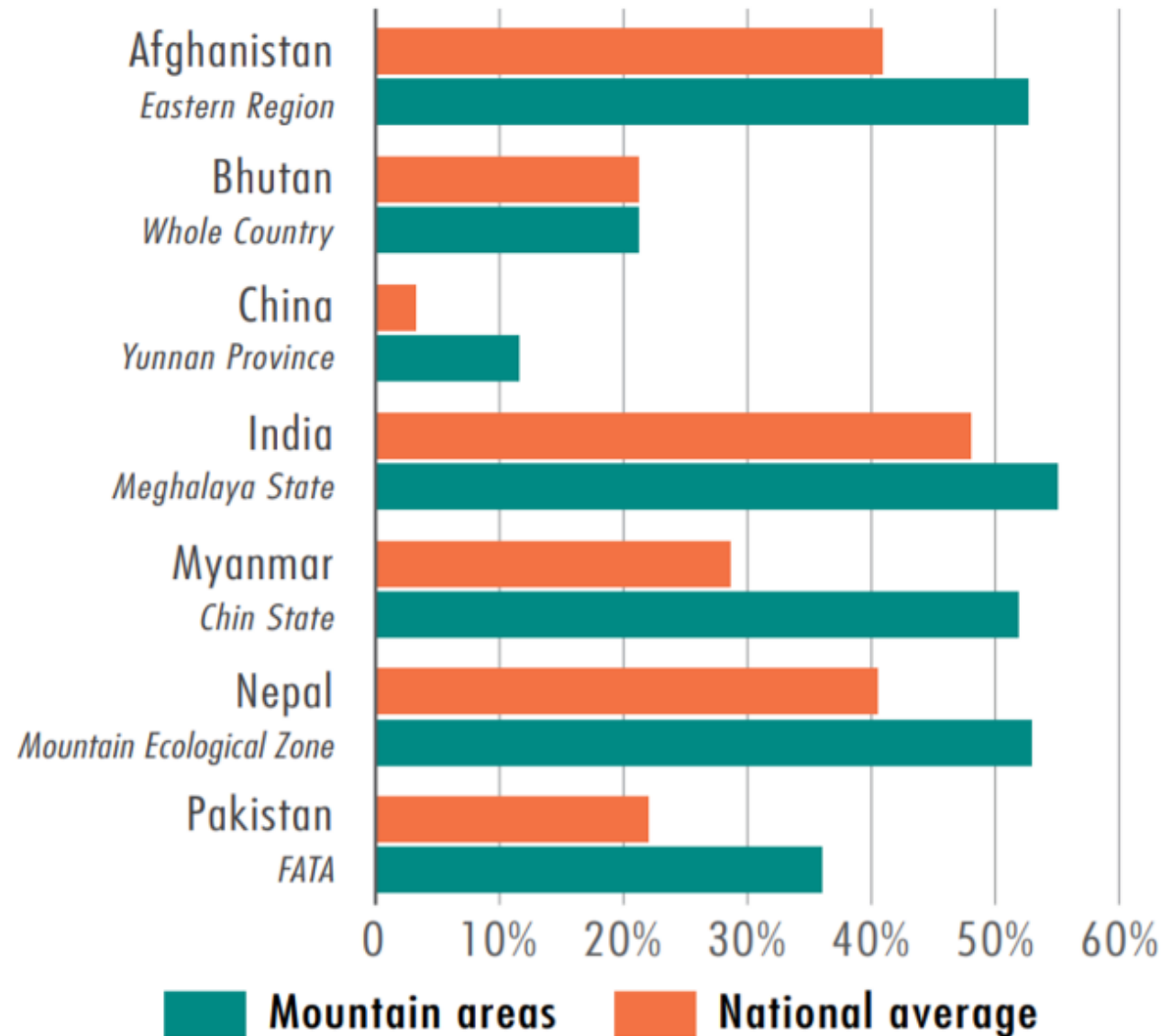


Source: HIMAP climate  
change chapter and  
Kraaijenbrink et al. 2017,  
Nature

**THE HKH WILL WARM MORE THAN THE GLOBAL MEAN AND  
MORE RAPIDLY AT HIGHER ELEVATIONS**

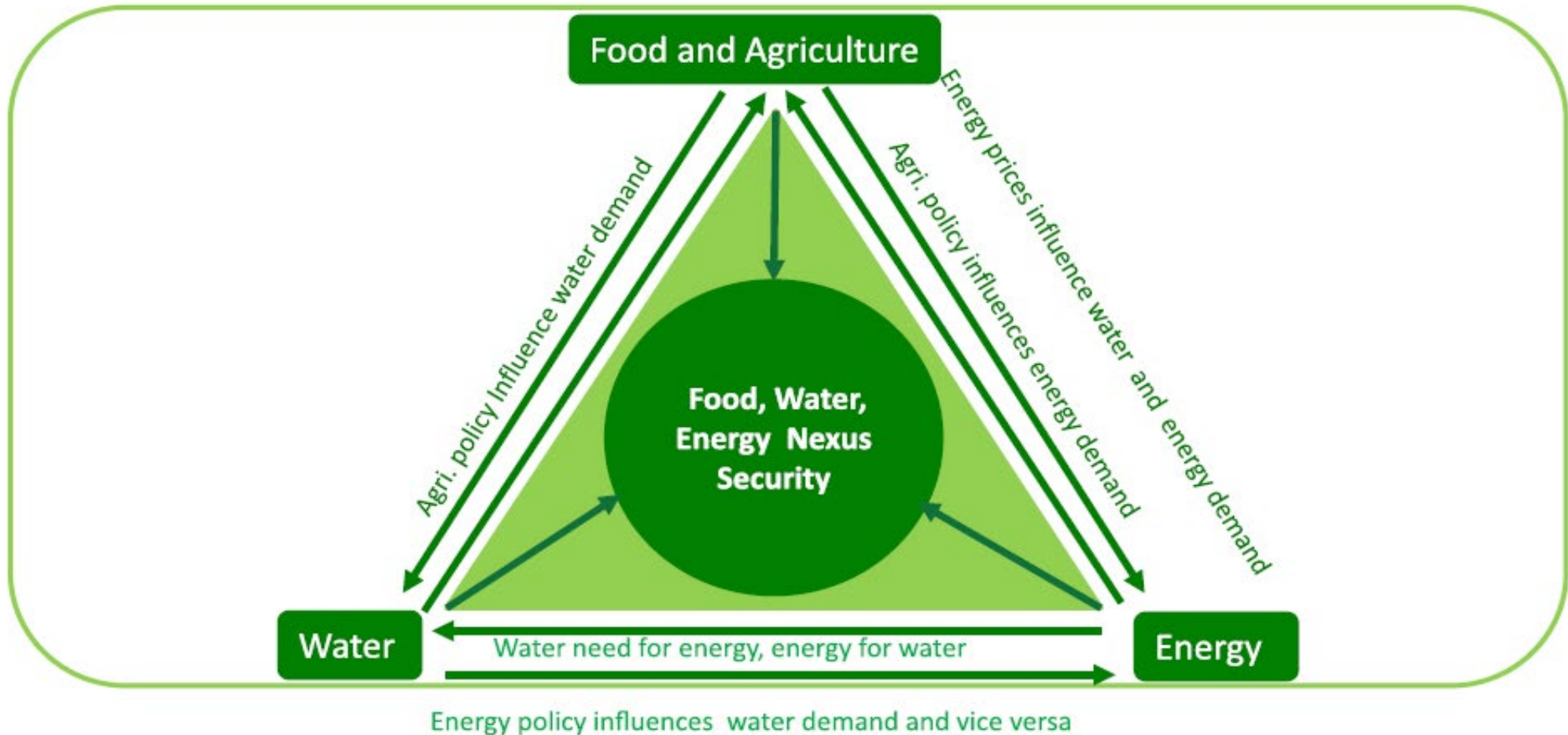
*This figure shows projected spatial distribution of annual mean temperature change (°C) over the HKH for two representative concentration pathways (RCP 4.5 and RCP 8.5) over two time periods (2036–2065 and 2066–2096)*

# Increasing food Insecurity in HKH region



ABOUT HALF THE  
POPULATION IN  
THE HKH IS  
SUFFERING FROM  
MALNUTRITION  
AND NEARLY ONE-  
THIRD FROM  
FOOD INSECURITY

# Water, Energy and Food (WEF) Nexus – where is ecosystem?



Rasul et al., 2016

Dynamic relationship among the food, water, and energy sectors.

# Ecosystems under threat & unrecognized



**1/4**  
of endemic species  
in the Indian  
Himalaya could be  
wiped out by 2100

**RICH BIODIVERSITY  
IN THE HINDU KUSH  
HIMALAYA IS  
UNDER THREAT**



**70–80%**  
of habitat lost  
in biodiversity  
hotspots in the HKH  
(relative to 1500 AD)

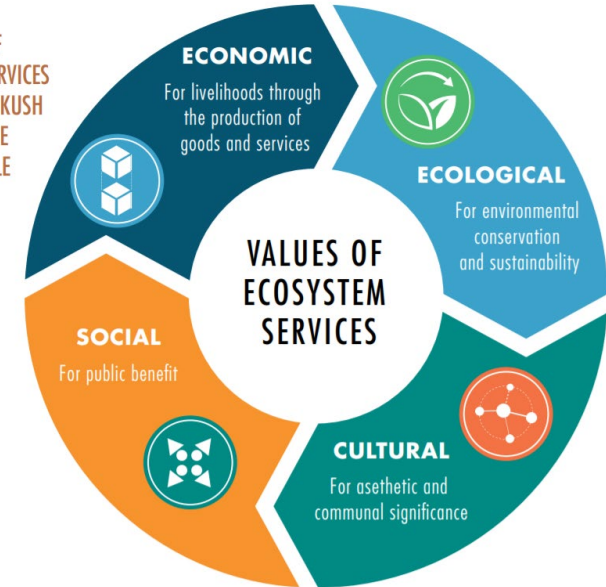
Summary of the HKH Assessment Report

Implications on:

- **Energy security**
- **Food security**
- **Water security**

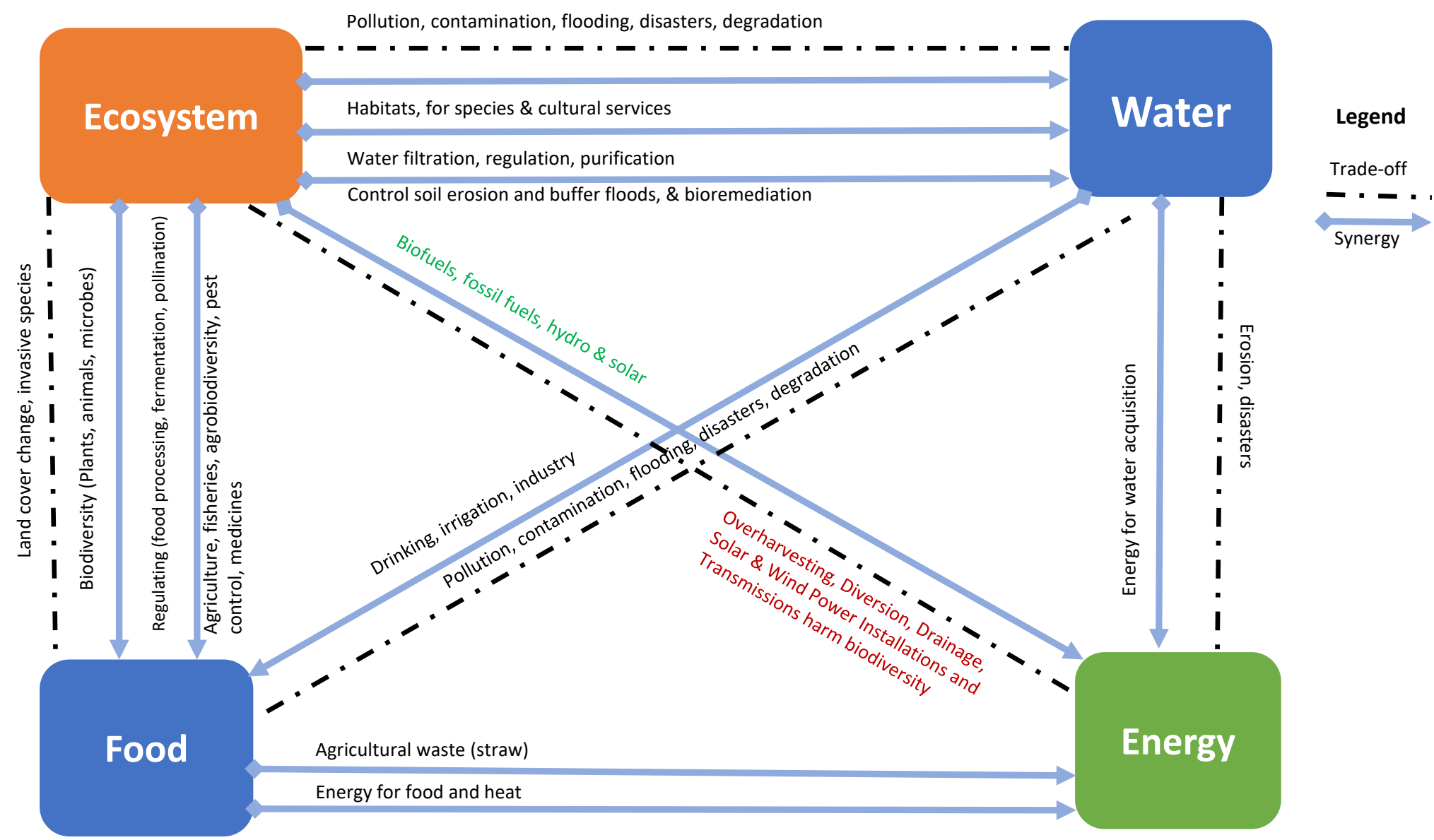


THE VALUES OF  
ECOSYSTEM SERVICES  
IN THE HINDU KUSH  
HIMALAYA HAVE  
RECEIVED LITTLE  
ATTENTION





# WEFE Nexus in HKH: Potential Synergies and trade-offs



Source: Scopus (2021)



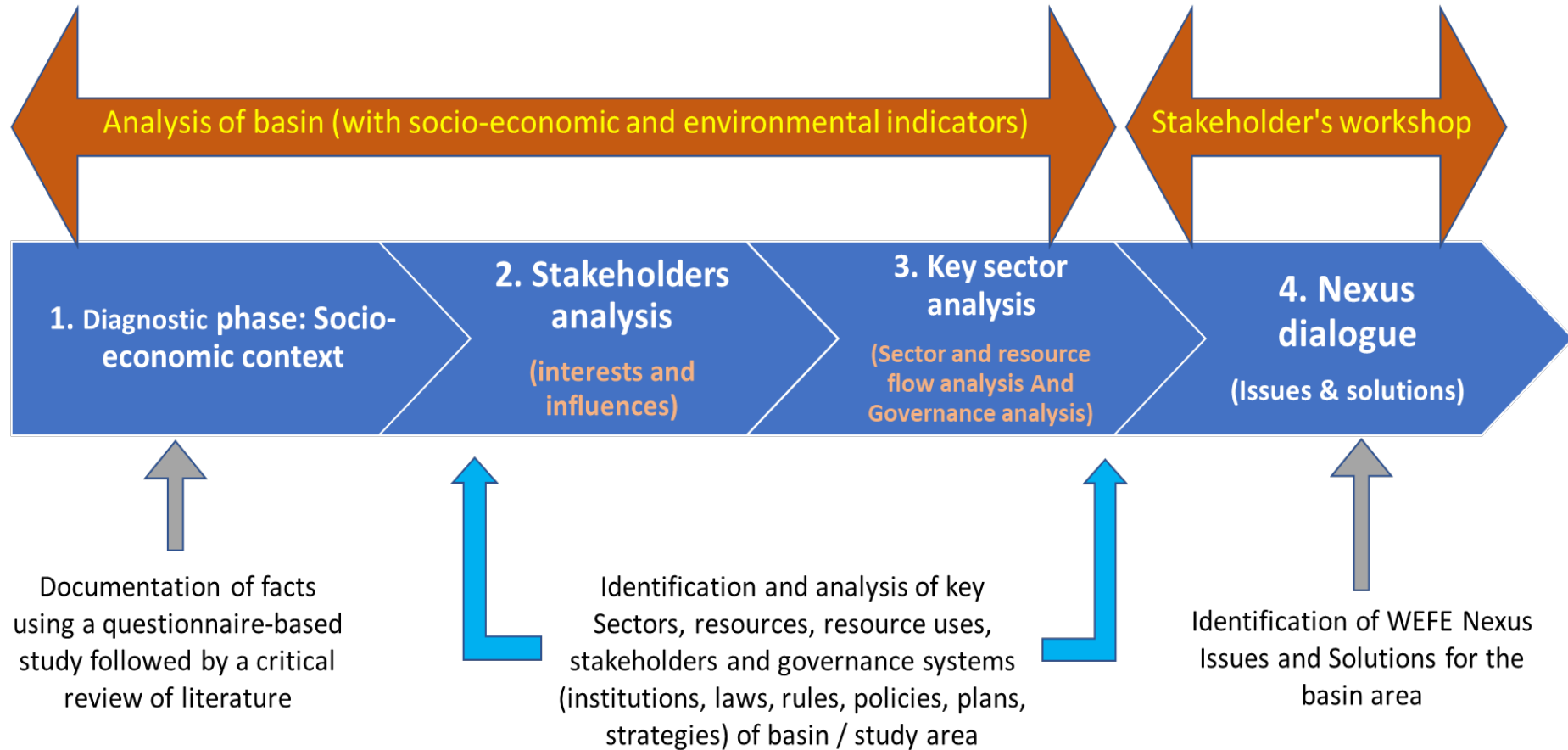
# Opportunities for WEFE Nexus in HKH region

ICIMOD being a regional inter-governmental knowledge centre:

- Established mechanisms and platforms for regional cooperation
- Bring voices from the HKH to the global stage
- Help HKH countries to work together on issues such as climate change adaptation & mitigation, ecosystem management, disaster risk reduction, livelihood development & diversification and water management.
- All 8 HKH countries are committed to global targets i.e., the SDGs, the Paris Agreement within the UNFCCC, the Sendai Framework for DRR, and Aichi Biodiversity Targets of the CBD.
- HKH Call to Action – Six targets – commitment to cooperate at all levels across HKH



# WEFE Assessment for the HKH



Thank you

Protect the  
pulse.





# Task: What are frameworks, assessment methods, and mode of practice(s) applicable for HKH?

## Key Questions:

**Time: 40 mins**

- 1. What type of assessment frameworks, approaches, methods, and practices, are used (by your organization) for WEFE nexus in your country / region?*
- 2. What type of Output/s have the assessments delivered? (e.g., resource assessment, evaluation of scenarios, response to specific policy questions...)*
- 3. Which framework/s, methods and practices would you recommend for WEFE Assessment in HKH region (transboundary landscapes and rivers)?*