Rivers, energy and ecosystem intersection in South Asia

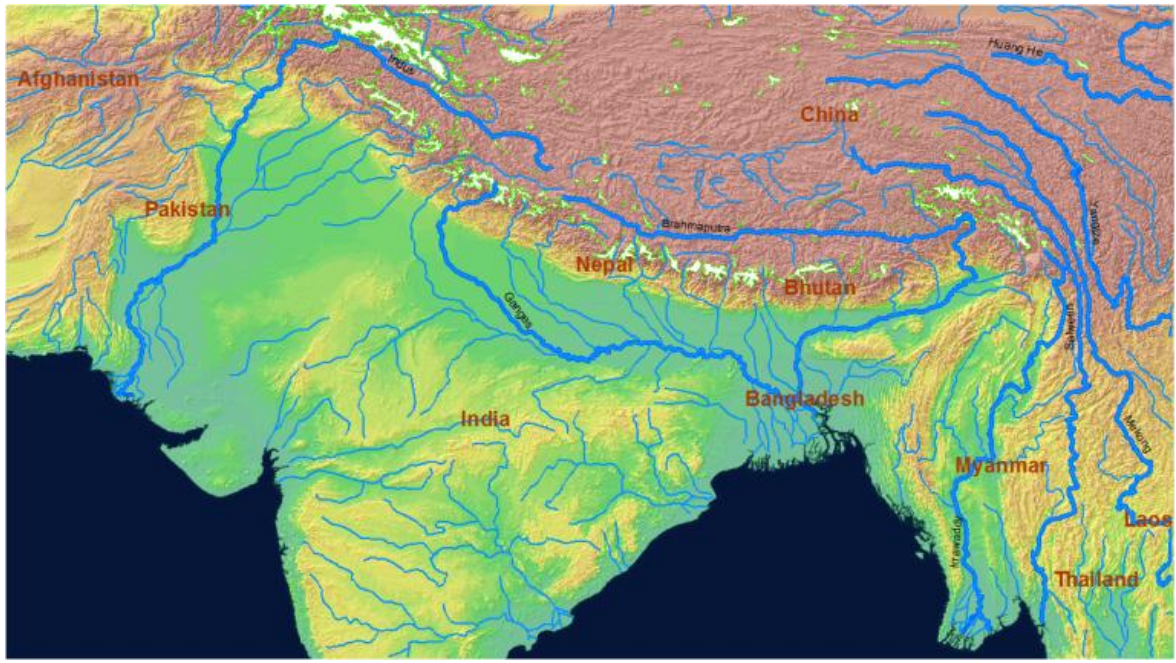
Media Workshop on

Rethinking Water and Energy Cooperation

Jointly organized by

South Asia Watch on Trade, Economics & Environment (SAWTEE) and

Institute for Social and Environmental Transition (ISET-N) Nepal



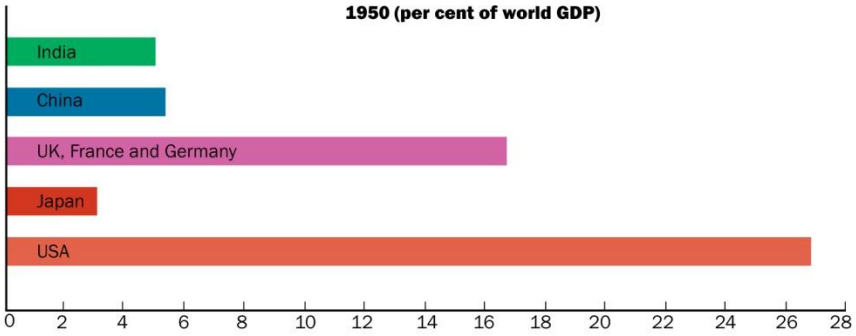
- Larger political and water context
- Knowledge initiative
- Example of ruptures
- Reflect on trans-boundary issue
- Energy issues in multiple water uses
- Global framework
- Towards stewardship
- Some concluding thoughts

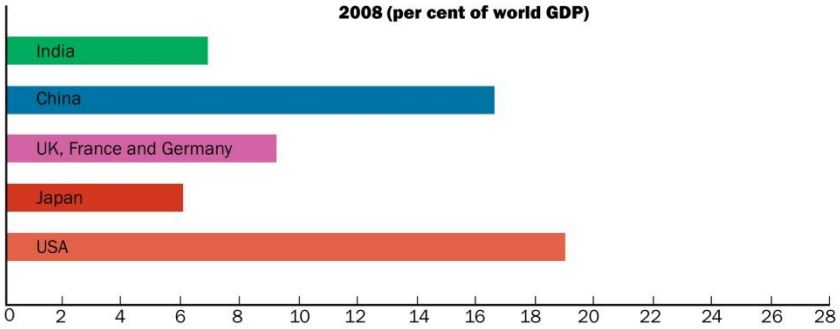
Starting Points (Larger) !!!

Global changes: Populism, isolationism and aid regime

Climate change: Impacts in hydrological cycle and water buffers

Economic context:



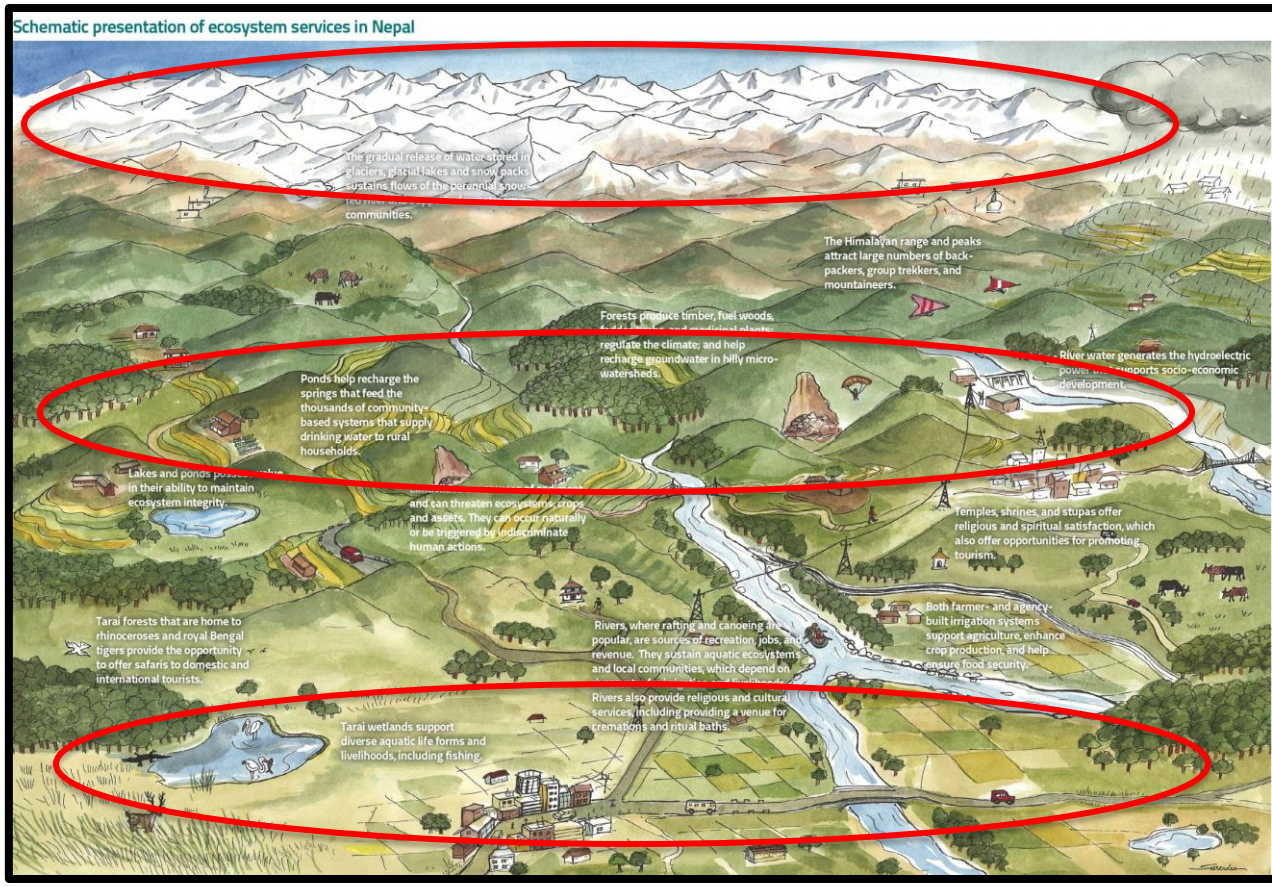


Water: Emerging three contexts

Between 1977 and 2010 [33 years], estimated ice reserves loss by 29% (129 km^3).

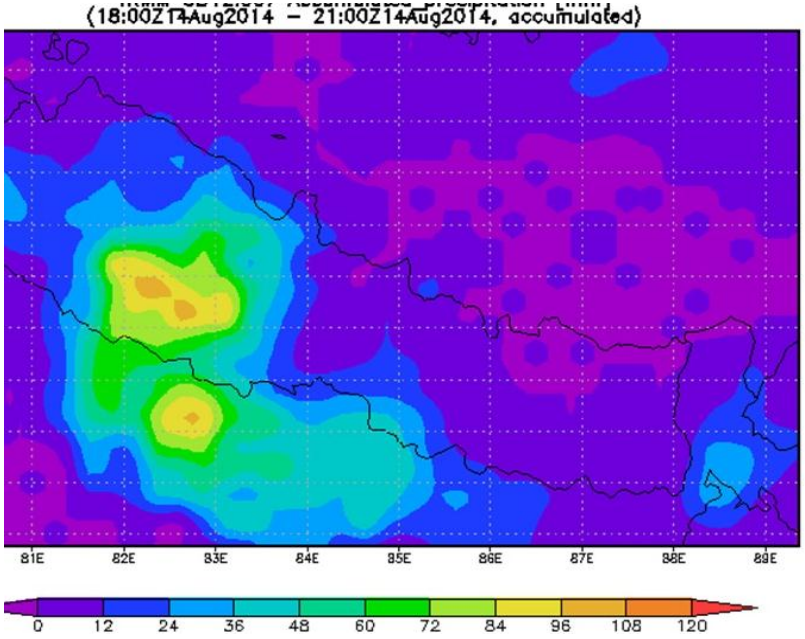
Depleting springs in the mid hills

Rivers deteriorated due to mismanagement and become sewerage channels. Overdraft and pollution of groundwater



CARIAA	In glacier- and snow-fed river basins in the Himalayas, **changes in water flow and in the Asian monsoon cycle** will affect **some 1.5 billio**n people. floodplains and **vulnerable**.
BRACED	helping people become more **resilient to climate extremes** to improve the integration of **disaster risk reduction** and **climate adaptation** methods into development approaches, at the local, national and international level.
Climate-Proofing Growth and Development Project	to improve **resilience** by directly incorporating climate **change considerations into policy, planning** and investment environments.
SAWI	promotion of an i**ntegrated water resources management** approach encompassing **adaptation to climate change**; a focus on enhancing **trans-boundary cooperation t**o deliver **mutual benefit**s; engagement of the broadest possible **range of perspectives across disciplines and across diverse stakeholder**s; emphasis on the importance of **focused debate to pose questions and guide analyses** and to ensure transparency, legitimacy and accountability.

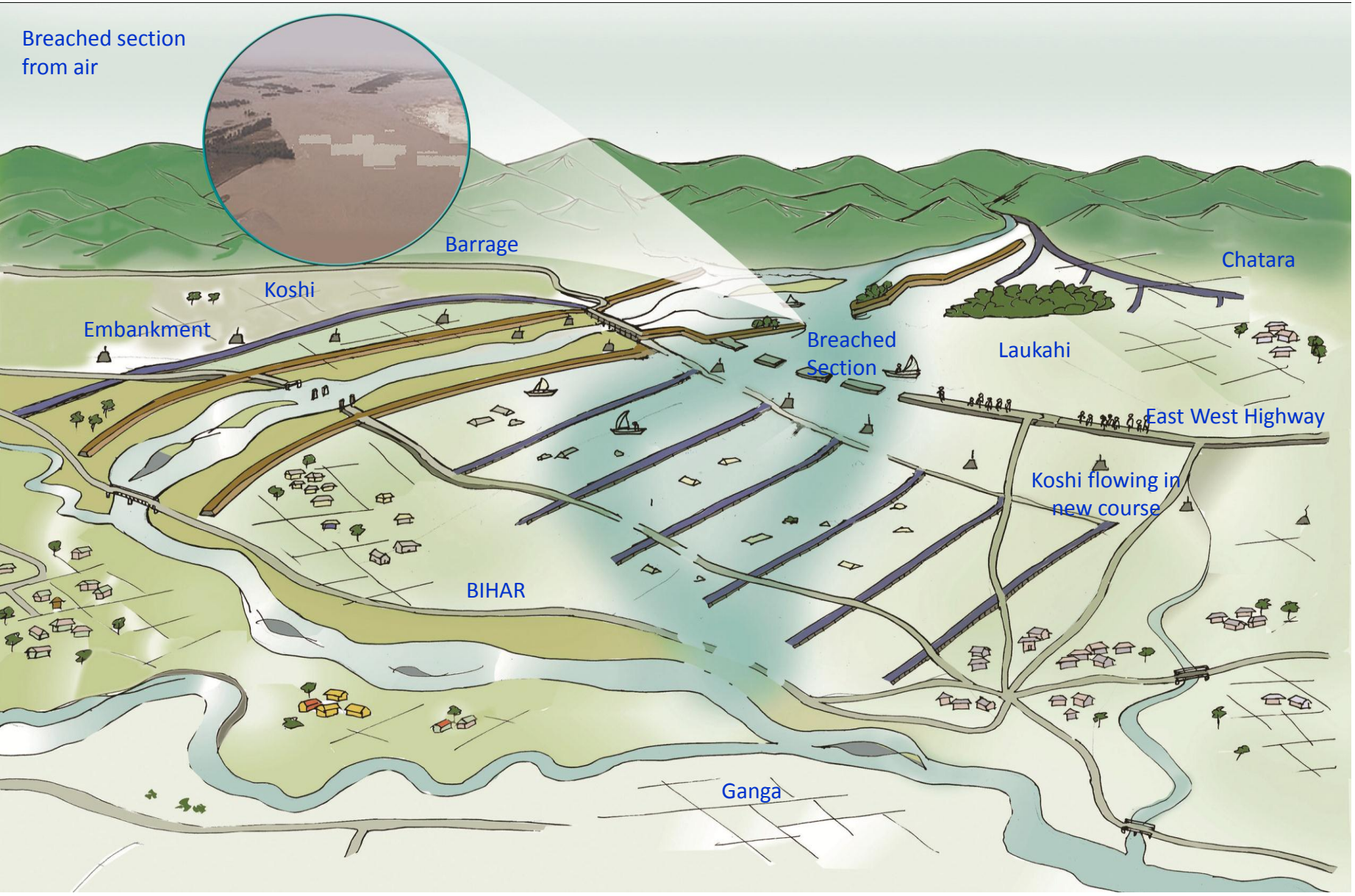
- In mid-August 2014, three days of torrential rainfall led to the widespread Karnali floods (493 mm in 9 hours)
- killed 222 people, impact on more 100,000.
- Damaged infrastructure and property and displacing households.



A mother remembers:

The river surrounded our village and our hut. I was scared and helpless. I carried my year old daughter and climbed to the roof. The hut kept violently shaking. I thought we would soon drown. I cried for help the whole night until the army helicopter rescued us. We were saved because the stilth of our house was strong that the flood did not wash.

Multiple and cascading failure

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Karnali
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3 Narayani
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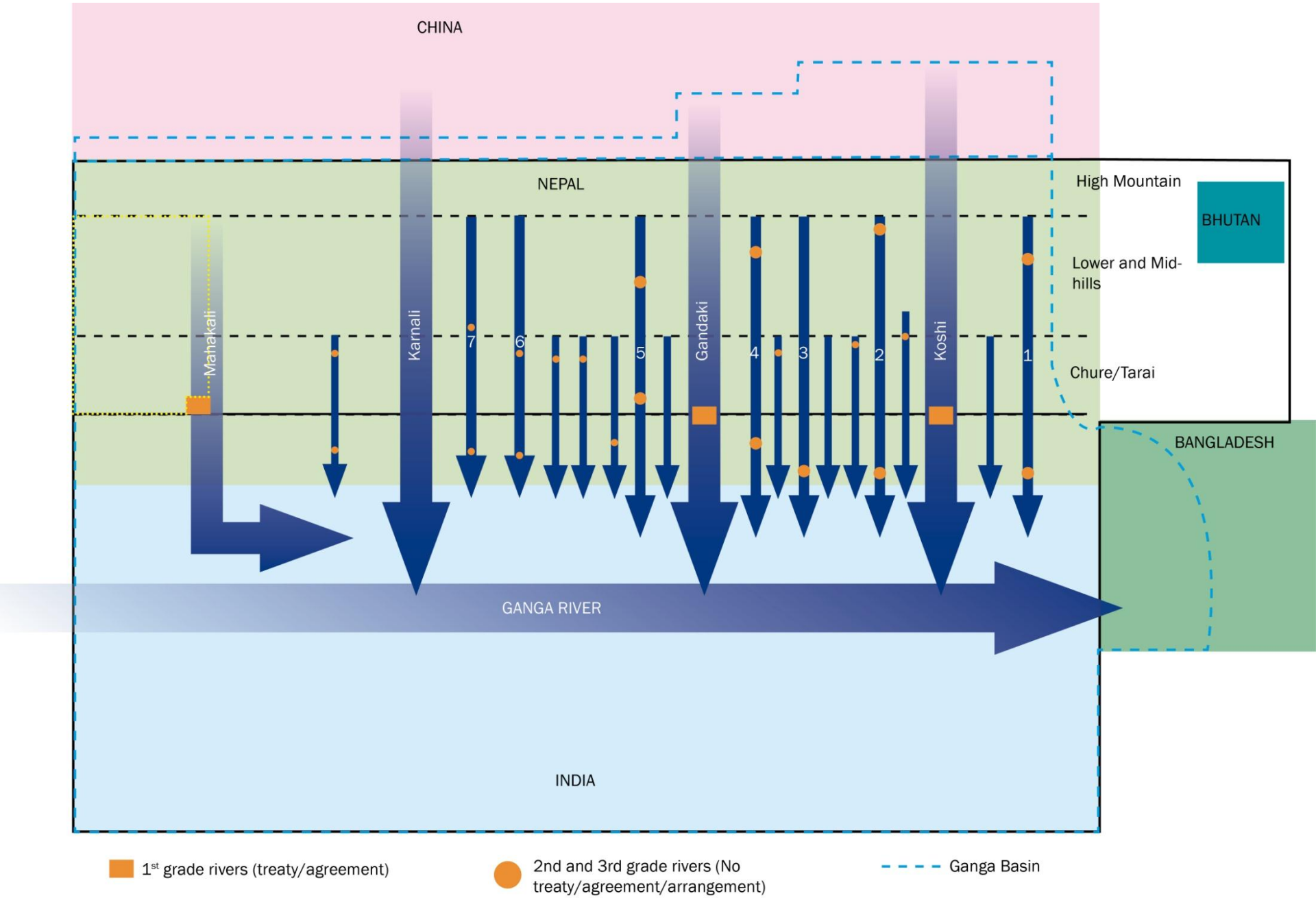
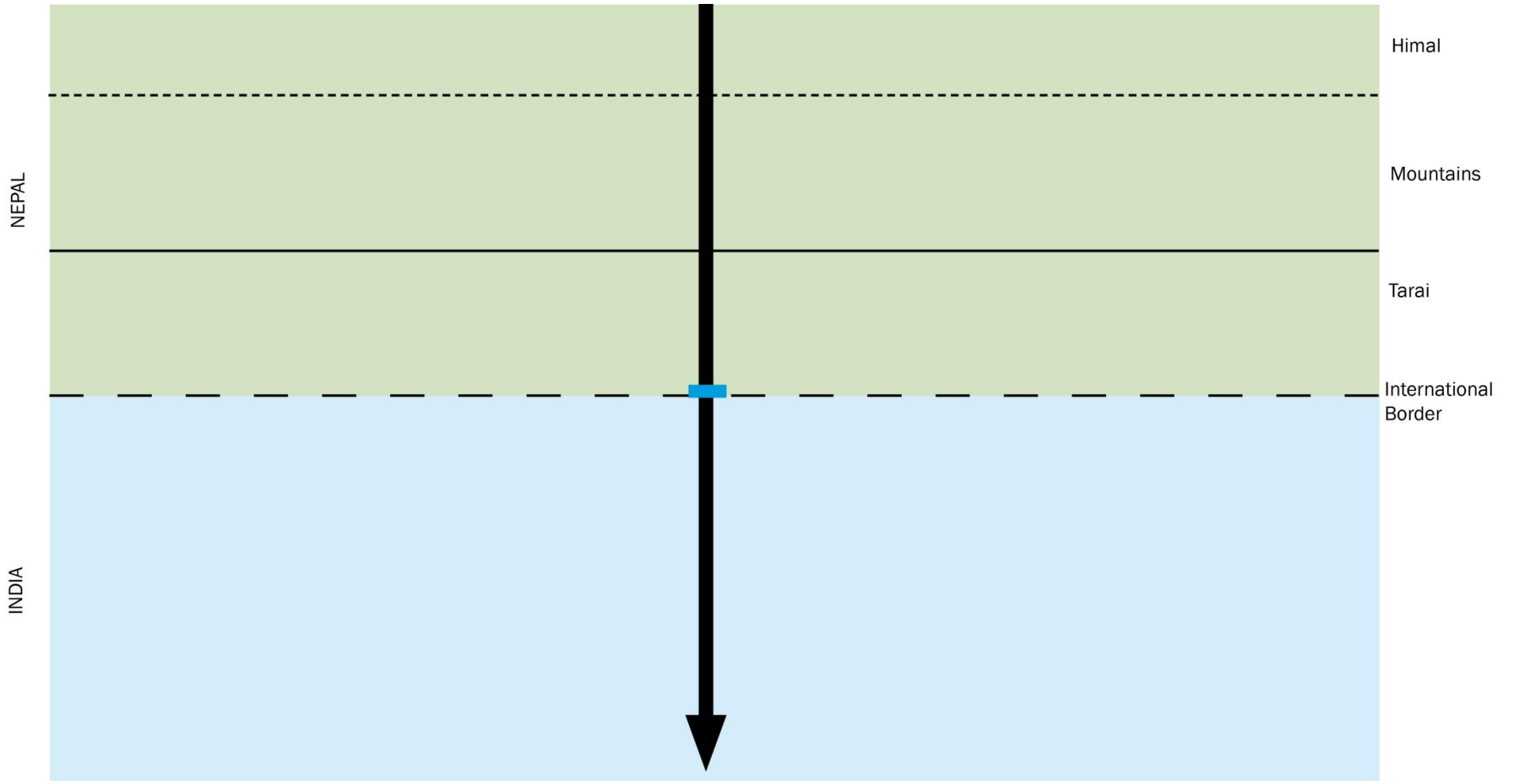


1-Kankai; 2- Kamala; 3-Bagmati; 4-East-Rapti; 5-Tinau; 6-West-Rapti; 7-Babai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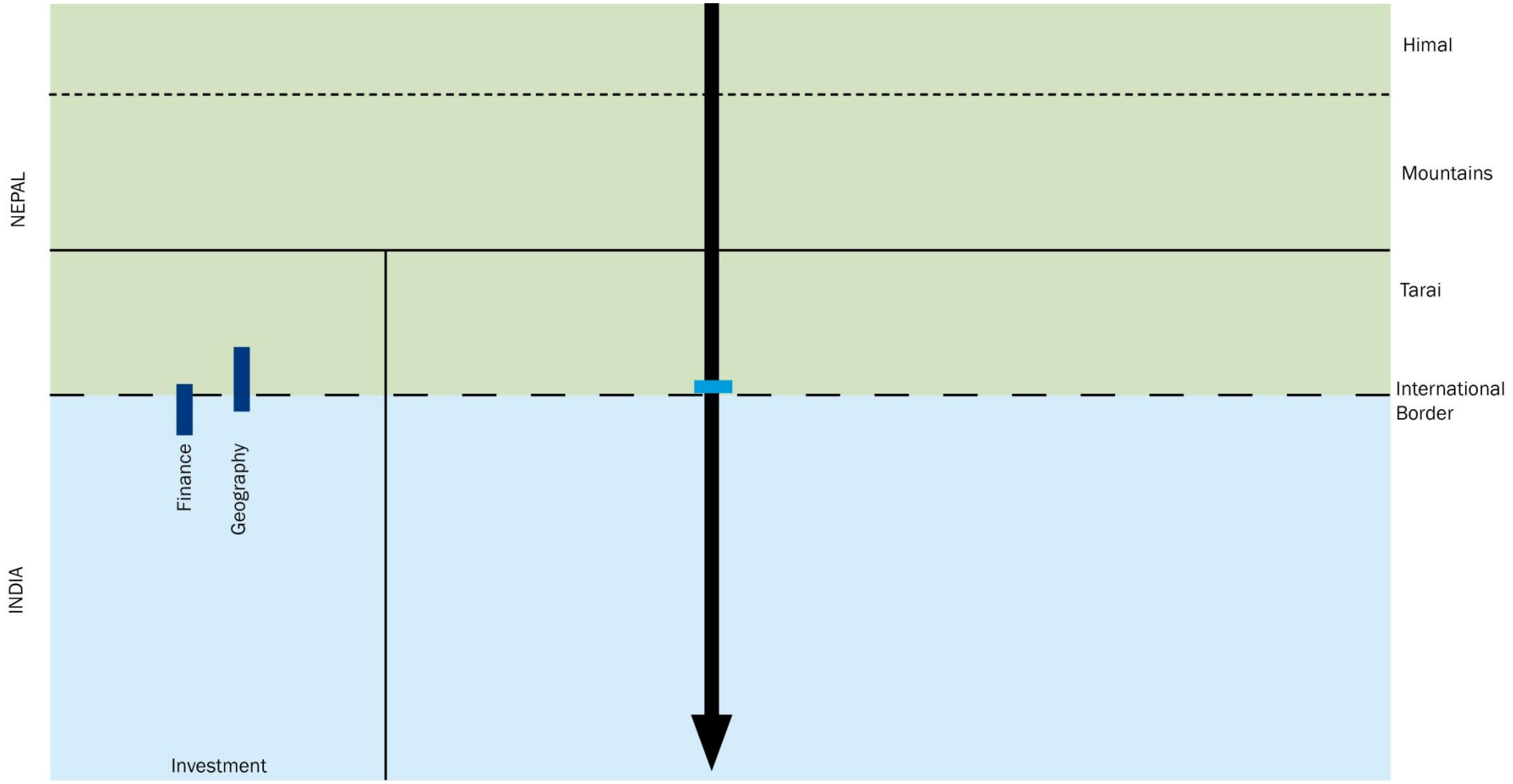
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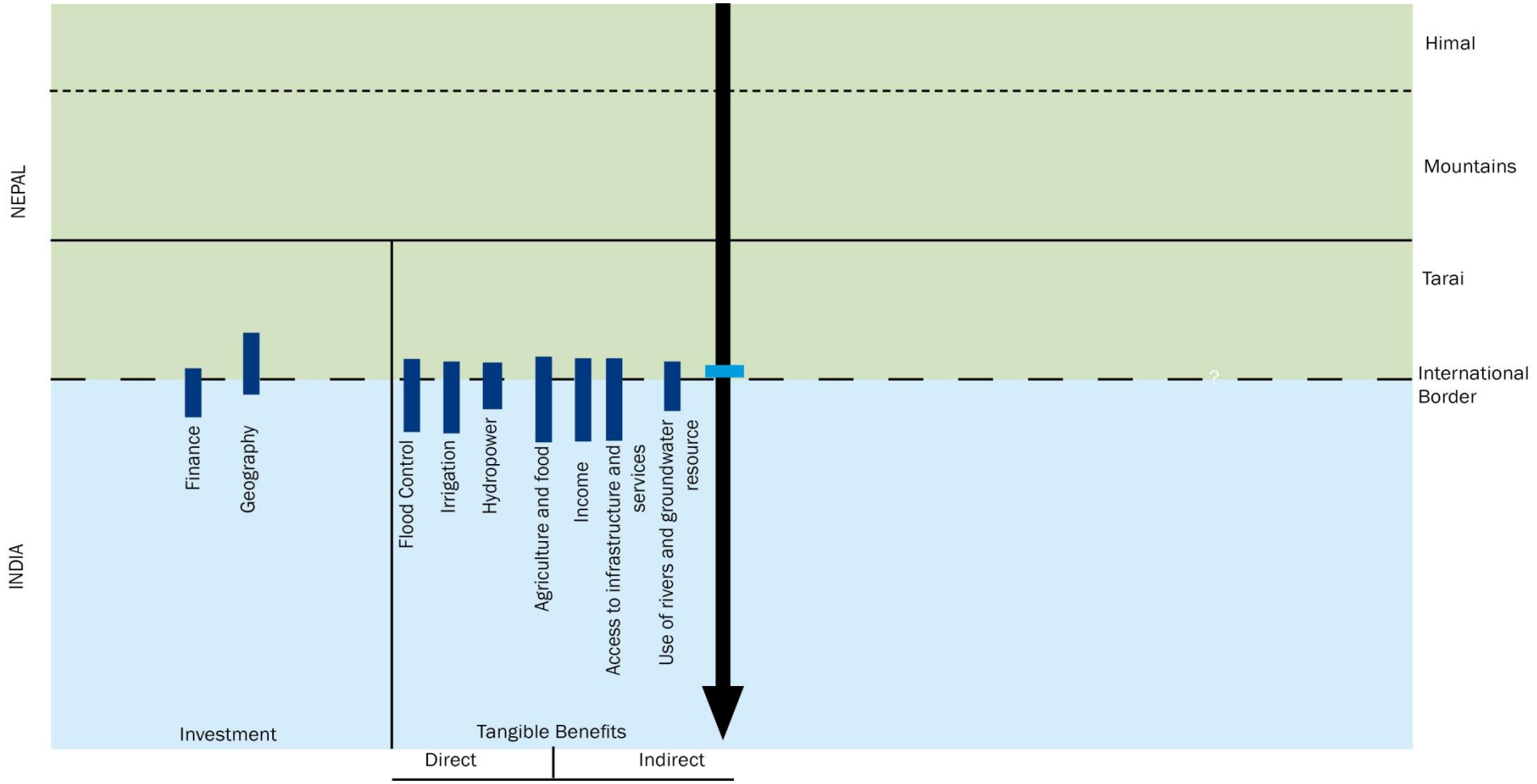
Investment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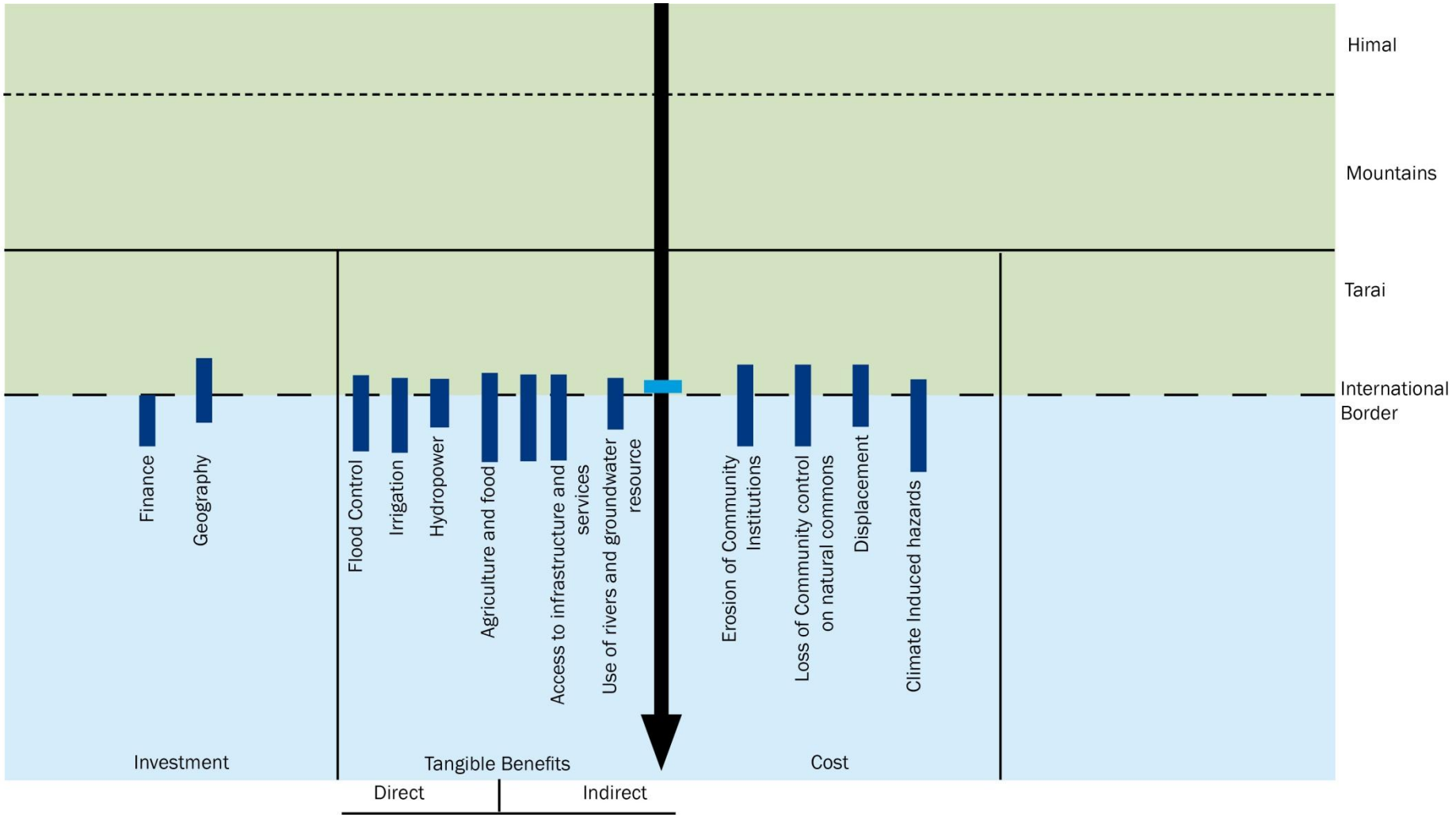
Finance
Geography
Flood Control
Irrigation
Hydropower
Agriculture and food
Income
Access to infrastructure and services
Use of rivers and groundwater resource
Investment
Tangible Benefits
Direct
Indirect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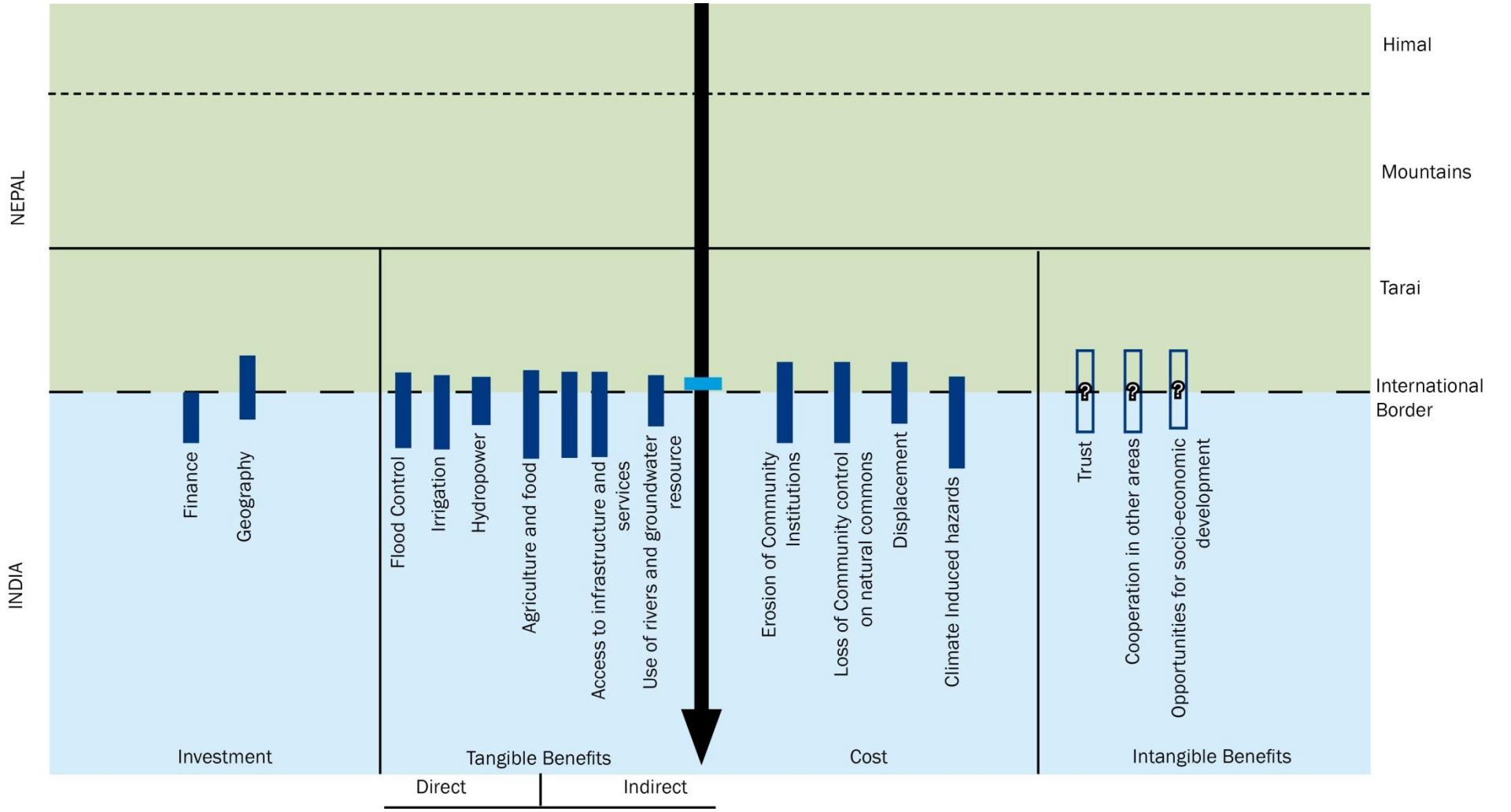
Use of rivers and groundwater resource
Erosion of Community Institutions
Loss of Community control on natural commons
Displacement
Climate Induced hazards
Investment
Tangible Benefits
Direct
Indirect
Cost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Displacement
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Trust
Cooperation in other areas
Opportunities for socio-economic development
Investment
Tangible Benefits
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Energy issues

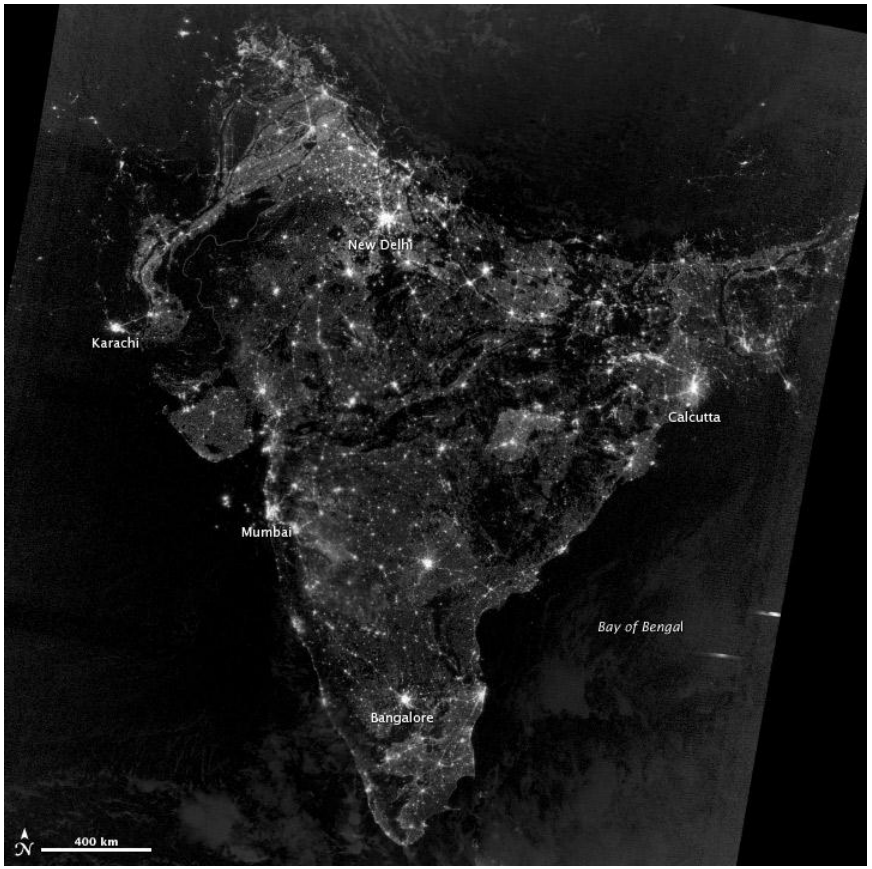
24/7 coverage using different platforms

Expand and diversify use from current 105 kWh to higher level

Technological transition to low carbon transit systems

Reduction of dependence of fossil-fuel

Promotion of entrepreneurship and alternative livelihoods



Nepal's Intended Nationally Decided Contribution

4,000 MW of Hydro by 2020

12,000 MW by 2030

2,100 MW Solar energy by 2030

220 MW bio energy 2030

dominated by hydro energy

- Other uses receive less priority
- Interventions have been at the cost of environmental integrity
- One point interventions promoting hydrological divisibility
- Low service level
- Community have taken civic actions for benefits

Pollution of water bodies with untreated wastewater and competition with other uses, such as irrigation and ecosystem

Urban areas becoming more dependent on services produced by distant than local ecosystems.

Eastern part of the GRB a food-deficit area has sign of growing dependency, import food from other regions.

Low landholdings, food insecurity, poverty, unreliable energy supply, a lack of non-agricultural livelihoods, frequent floods, weak markets and weak local institutions.

Integrated Water Resource Management

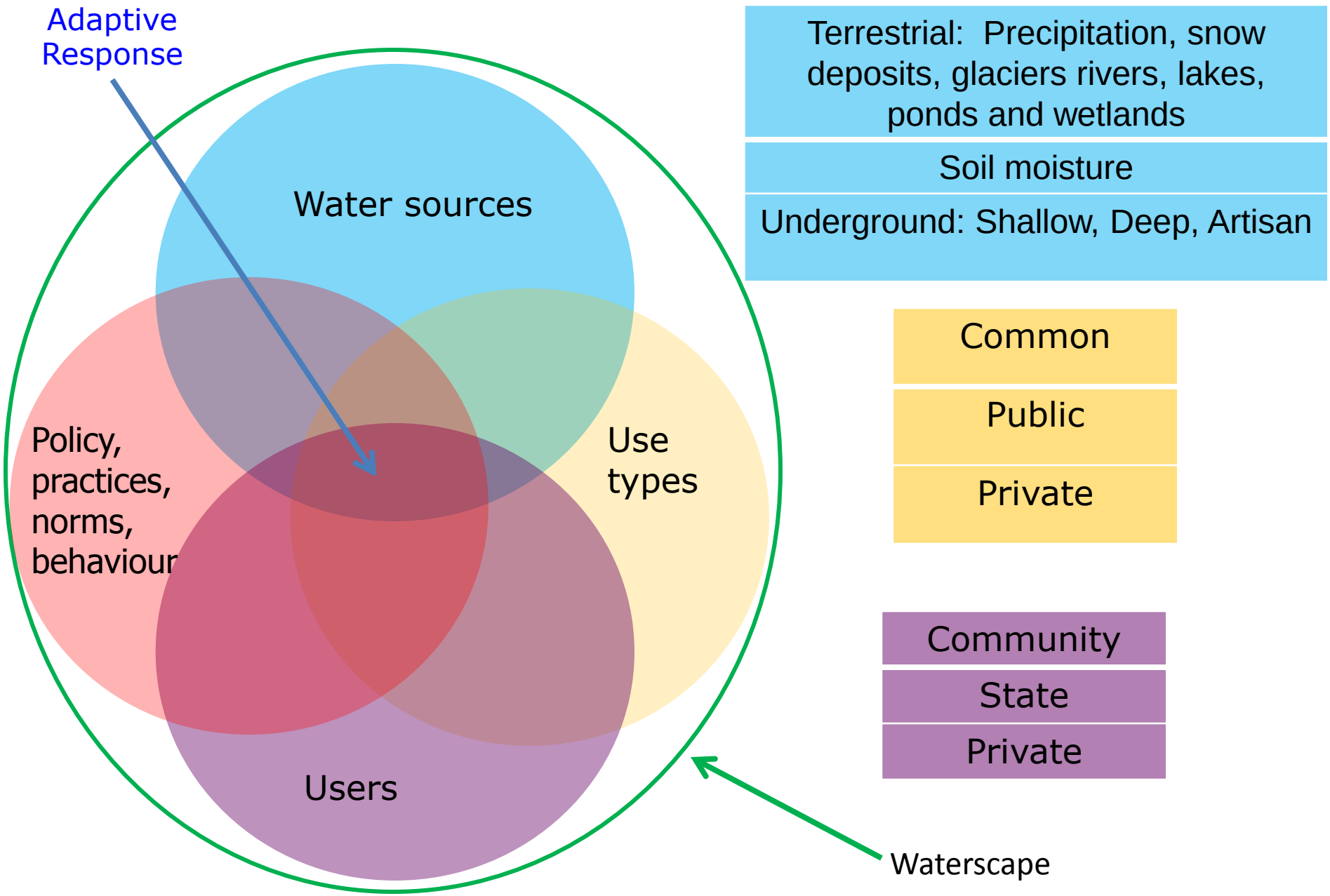
process which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems

Three strands

Strands	Values	Instruments
Coordination and management	Governance and accountability, a level playing field and regulation	Taxation, subsidy, legislation; fiscal incentives
Economic development	Profit and networking	Service delivery for profit via market and contractual arrangements and fair business
Social welfare, equity ecosystem sustainability	Social inclusion, representation, human rights and participation	Affirmative actions, social audit, quality and ecosystem flow

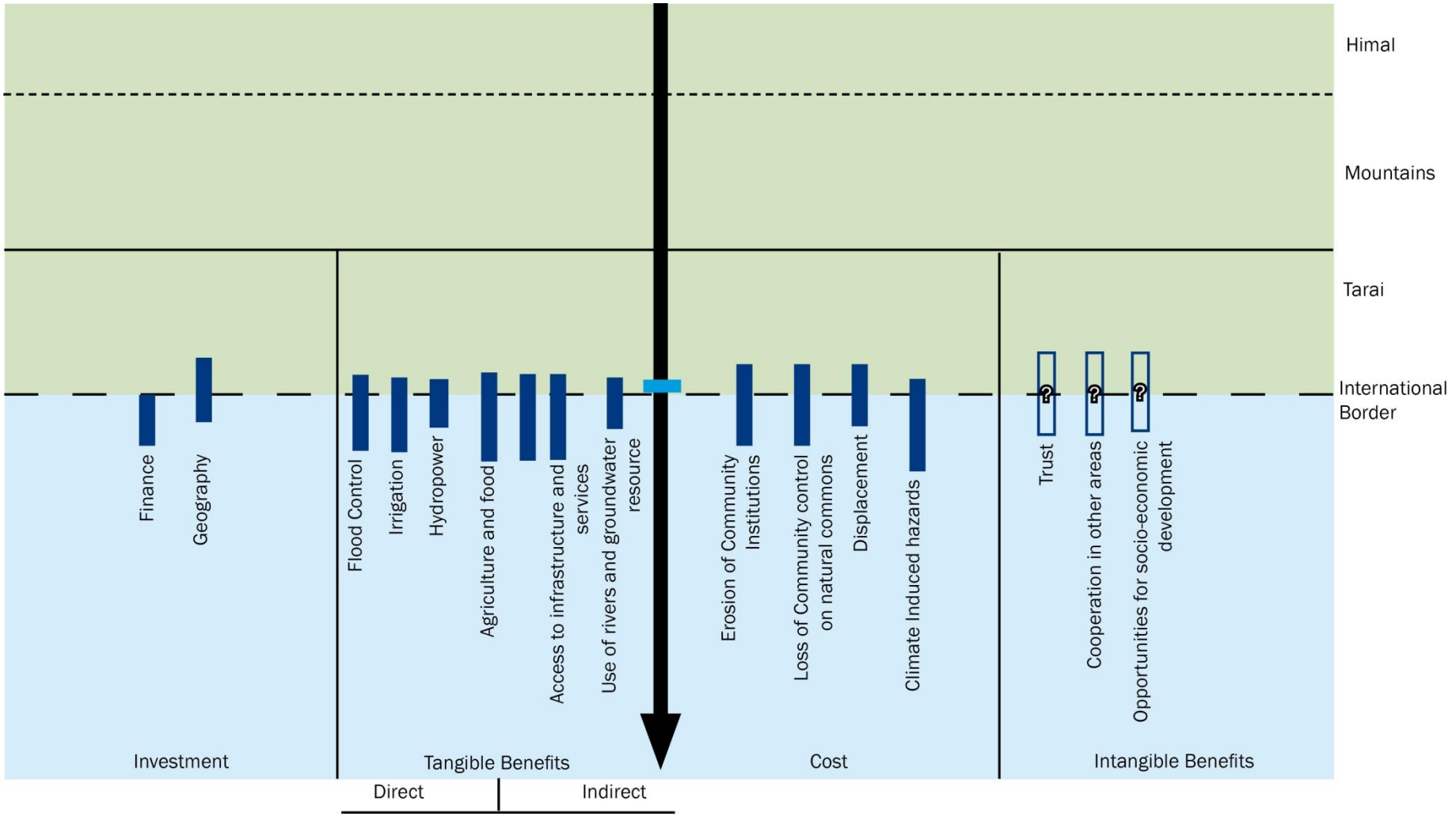
Towards water stewardship

- Will not pollute
- Will allow minimum ecosystem flow and keep river free flowing in stretches
- Provide unhindered flow to flood waters
- Consider climate change risks


Adaptive Response
Water sources
Policy, practices, norms, behaviour
Use types
Users
Waterscape
Terrestrial: Precipitation, snow deposits, glaciers rivers, lakes, ponds and wetlands
Soil moisture
Underground: Shallow, Deep, Artisan
Common
Public
Private
Community
State
Private

concluding thoughts

- Waterscape stewardship precondition for wellbeing journey.
- If adaptation is planned responses to specific impacts, then specific targeted responses required.
- If adaptation an ongoing process within complex evolving systems, then approaches that address points of vulnerability within the changing *Mosaic* needed.
- pluralistic and reflective approach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- Nepal and India are hydrologically connected
- water relation has been stressed and contested.
- in this conundrum how do we embed the notion of stewardship

Thank you !

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