

Water-energy-food nexus perspective: Path making for Sustainable Development Goals (SDGs) to country actions in Asia

Bijon Kumer Mitra

Senior Water Resource Specialist, Natural
Resources and Ecosystem Services

Driving Transformative Actions through Integrated and Innovative Approaches



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IGES
Institute for Global
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Facts about Asia

- ✓ Home of more than 50% of world's population
- ✓ Out of the three largest economies in the world, two are Asian countries China (2nd), and Japan (3rd).
- ✓ Of the ten largest cities in the world (by population), seven of them are located in Asia
- ✓ The ten largest shopping malls in the world are all located in Asia.
- ✓ Of the top ten tallest buildings in the world, nine are found in Asia

Shocking facts of Asia

Food



About 12% of people are chronically undernourished (FAO, IFAD, UNICEF 2017)

Water



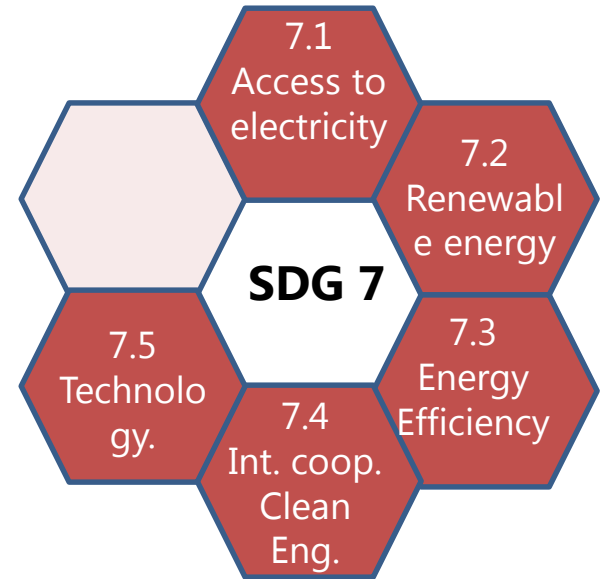
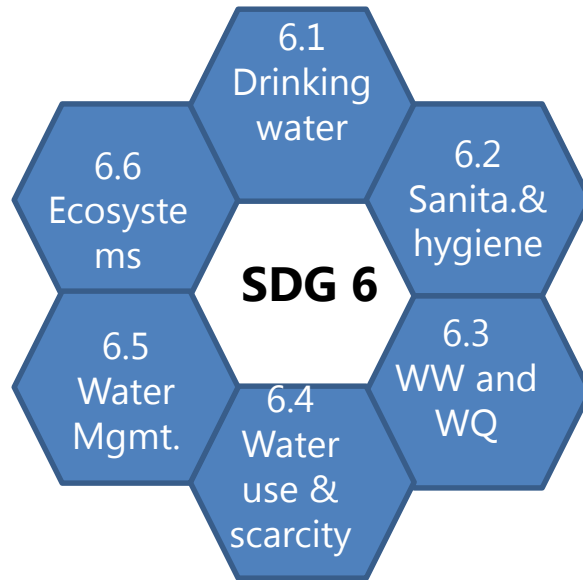
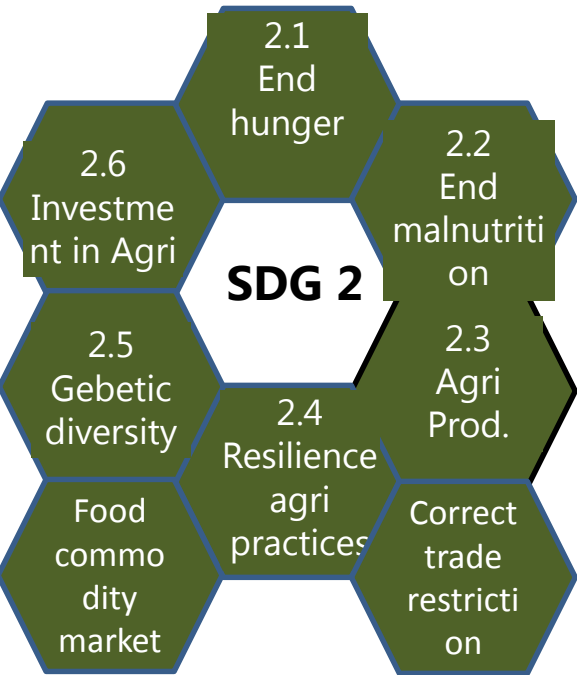
Nearly 280 million people lack adequate access to safe water (ADB 2017)

Energy



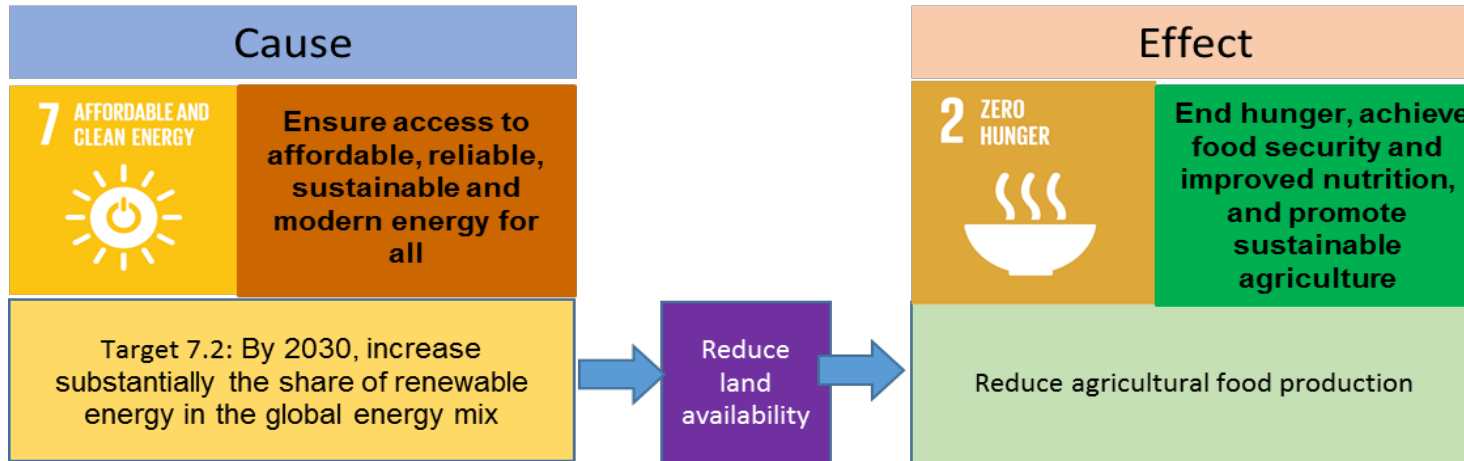
About 421 million people do not have access to electricity (The Asian and Pacific Energy Forum and UNESCAP 2017)

Water Energy and Food security in SDGs

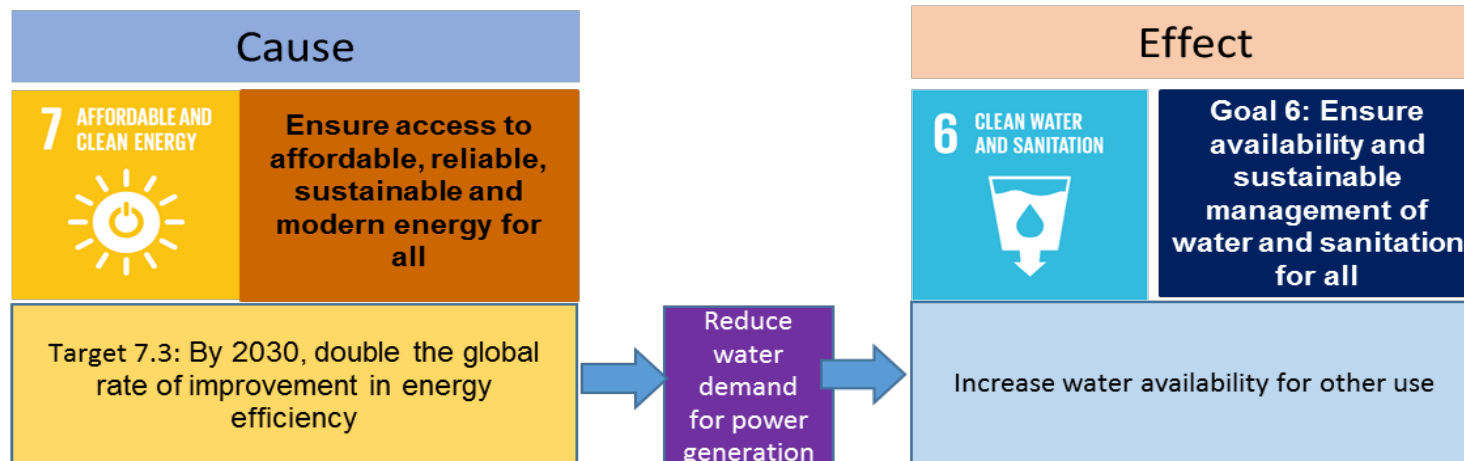


Trade-off and synergistic relationship of corresponding target of SDG-7 with SDG-2 and SDG-6.

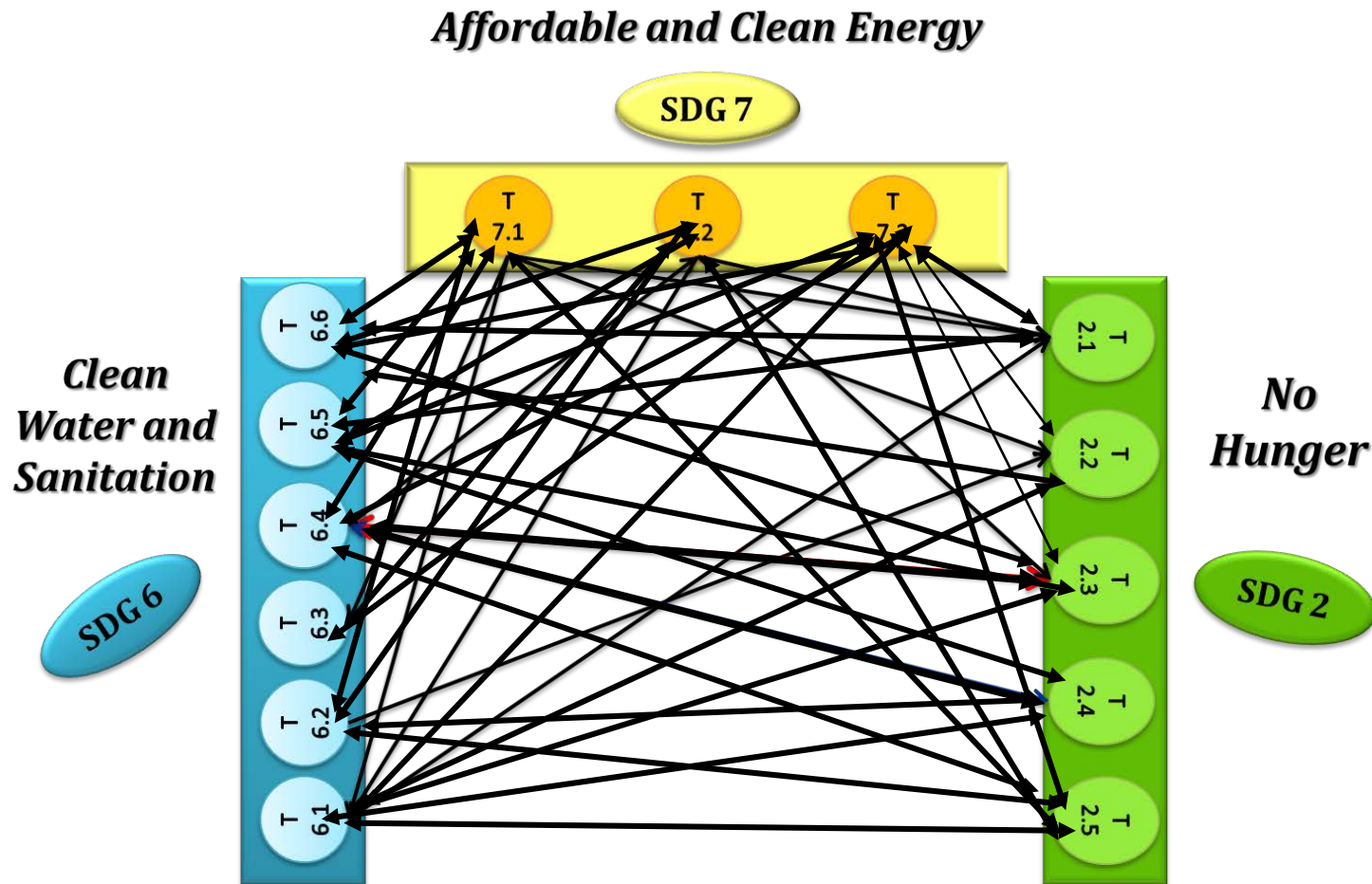
Trade-off relationship



Synergistic relationship



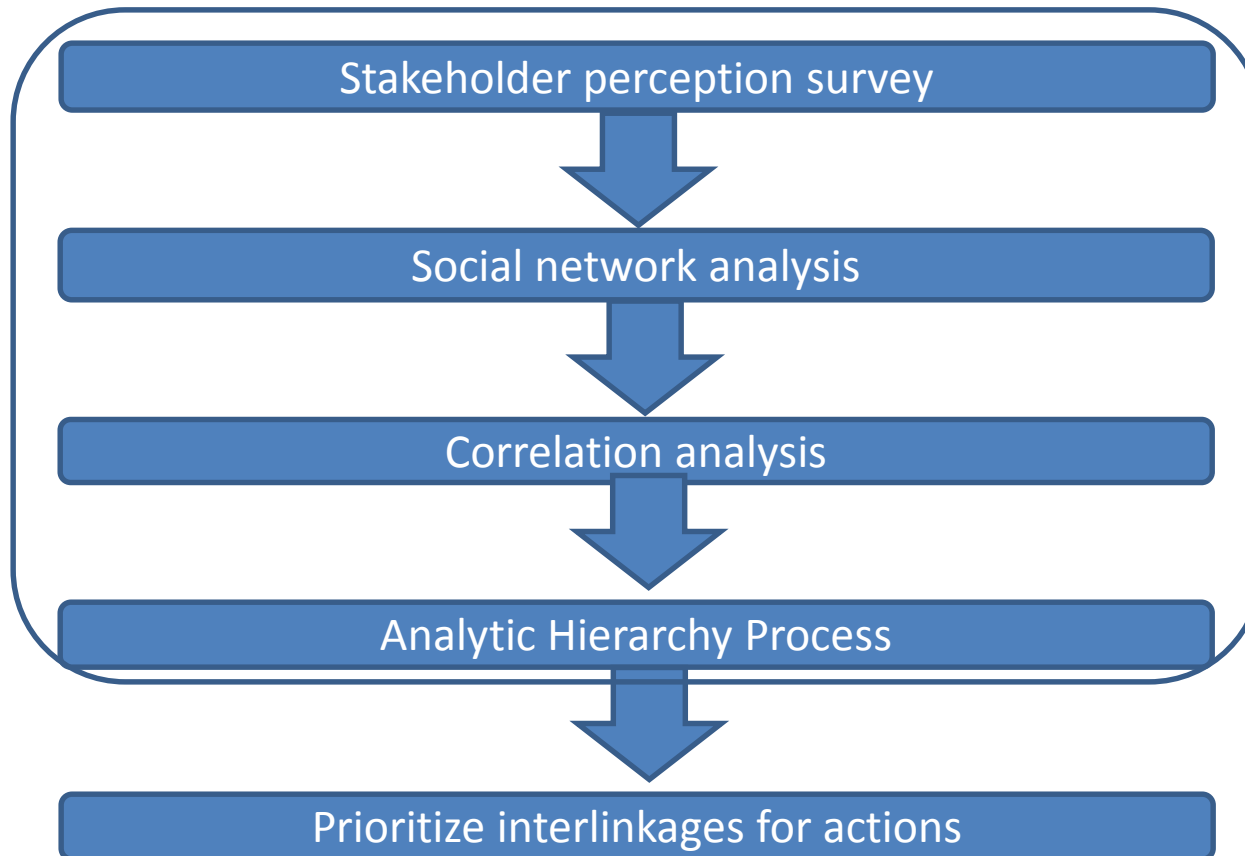
Inter-linkages of Food, Water and Energy targets



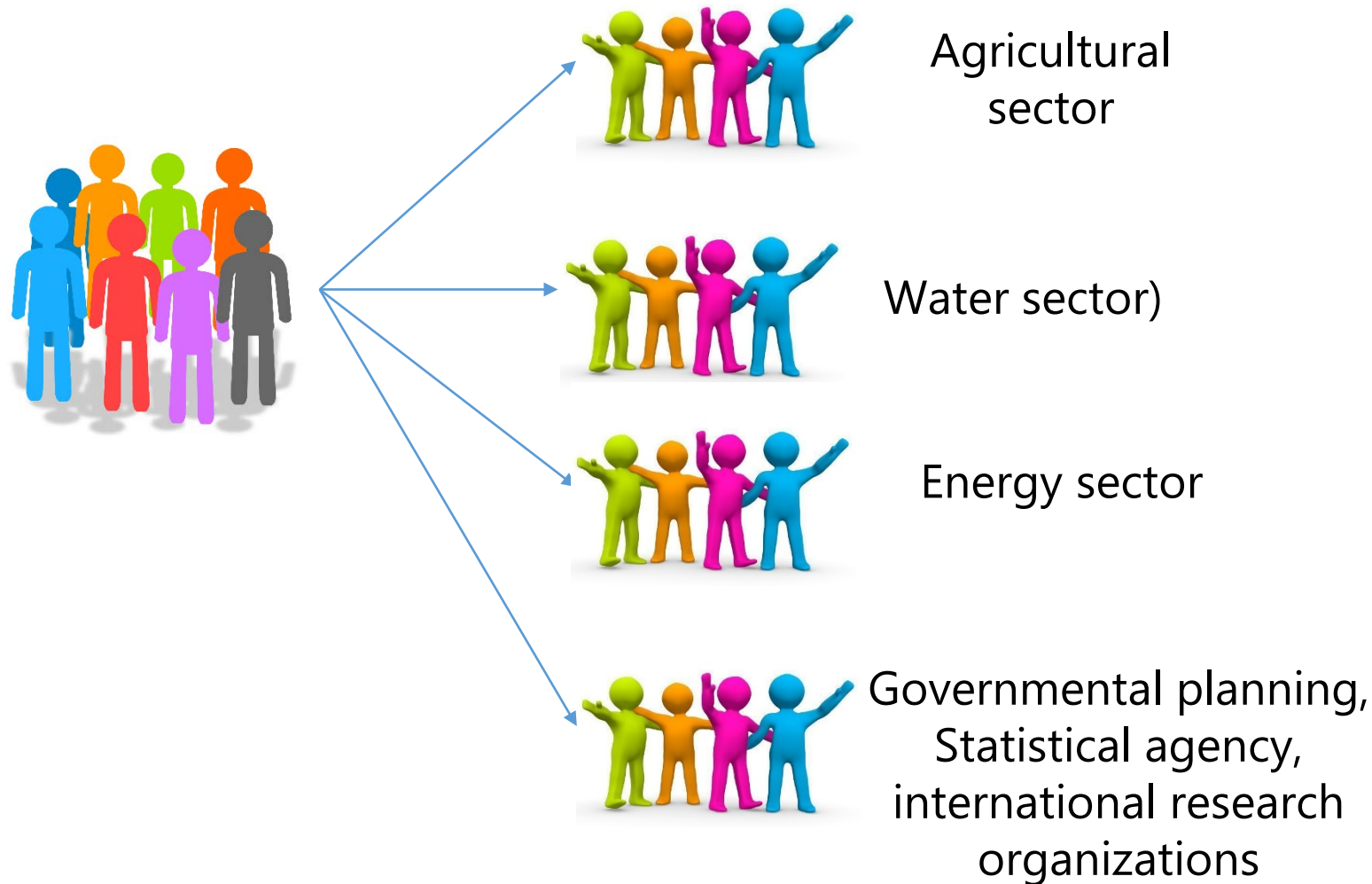
Total 118 interactions among targets of SDG 2, SDG 6 and SDG 7

Need to prioritize interlinkages for Immediate actions

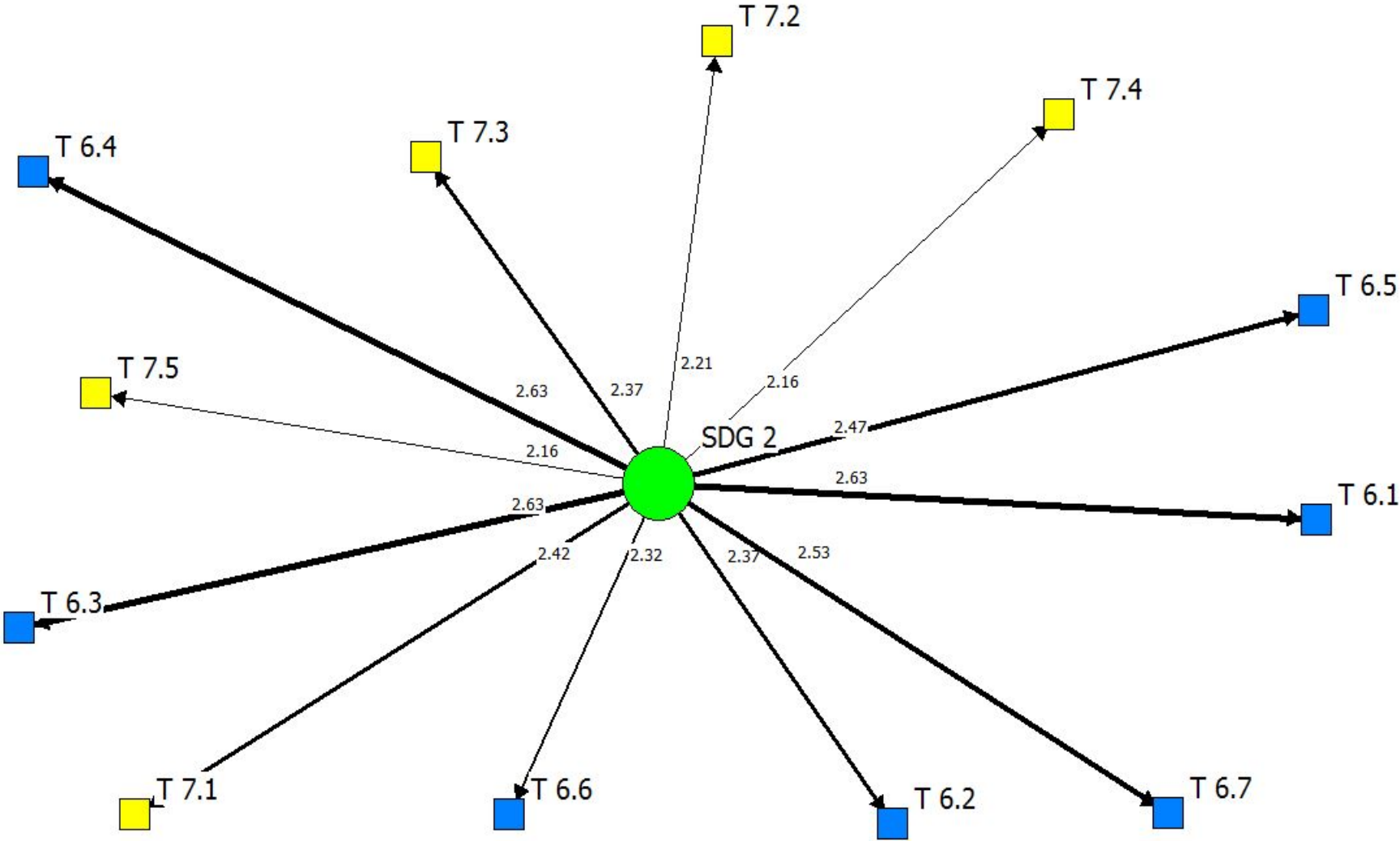
IGES is working to prioritize interlinkages in three Asian countries (Bangladesh, India and Viet Nam) in collaboration with BUET, CURAJ and HUNRE. The project is funded by APN.



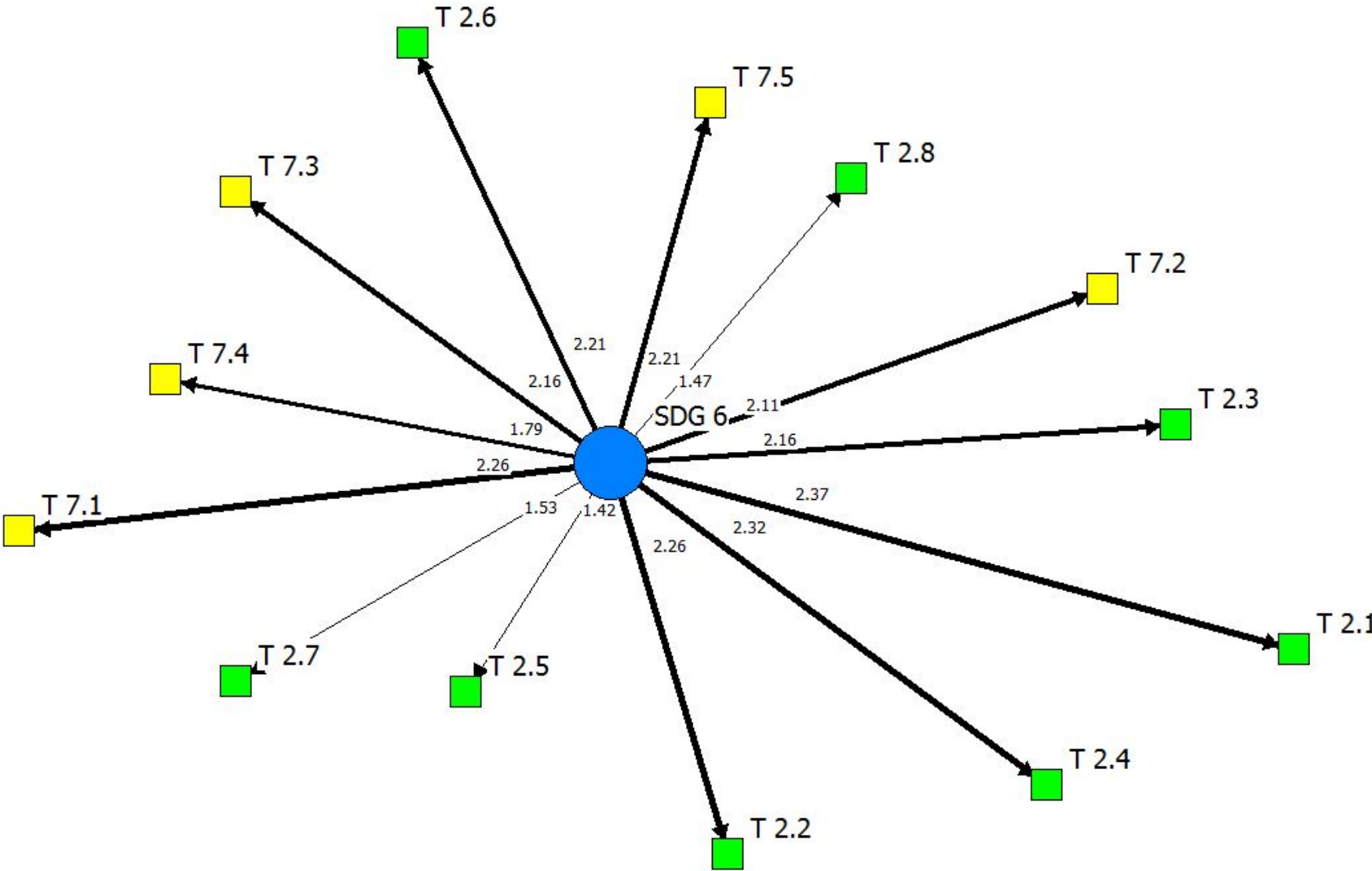
Stakeholder perception survey



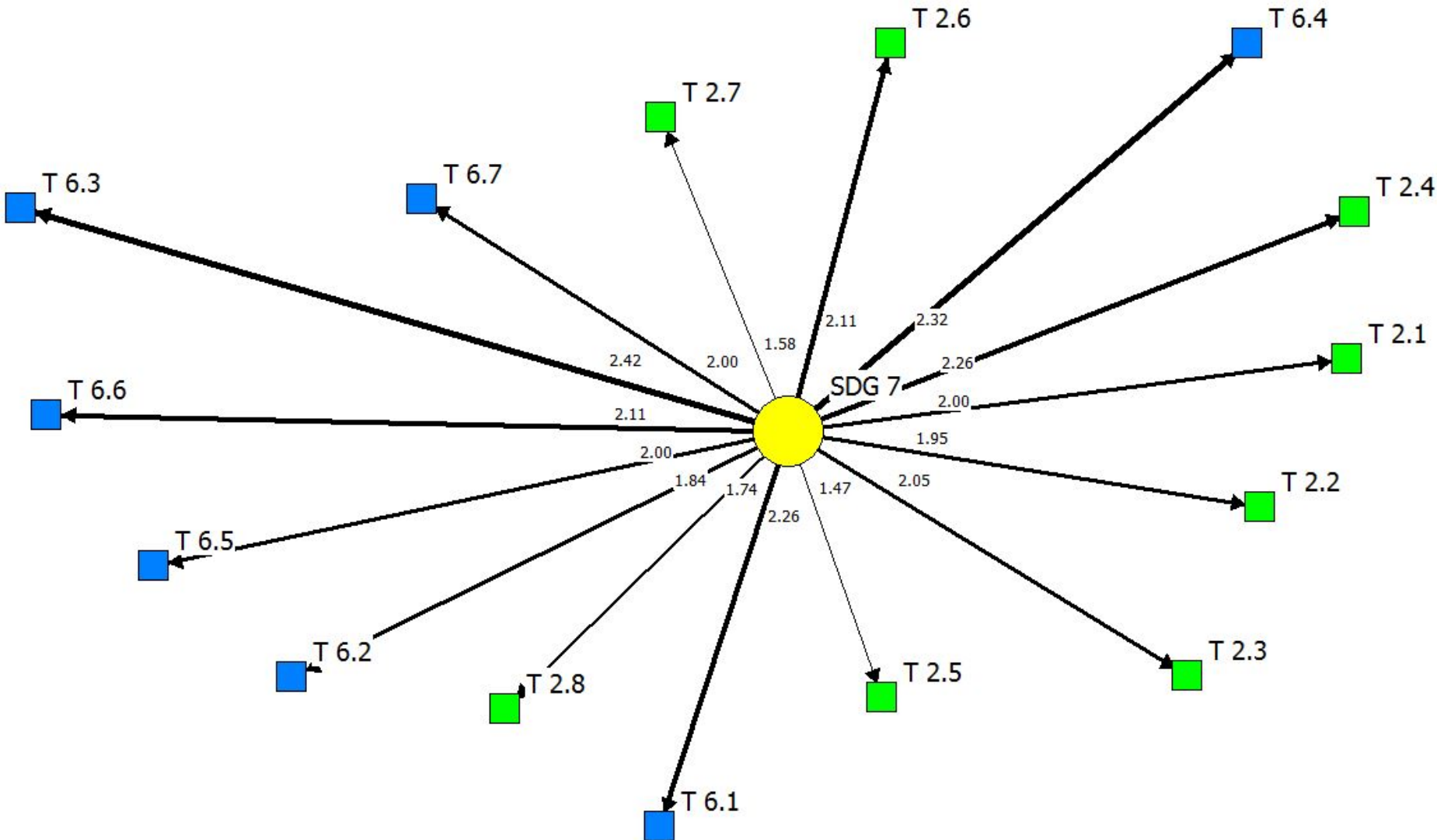
SDG 2 dependency on SDG 6 and SDG 7 targets (India)



SDG 6 dependency on SDG 2 and SDG 7 targets



SDG 7 dependency on SDG 2 and SDG 6 targets



Correlation among relevant targets (India)

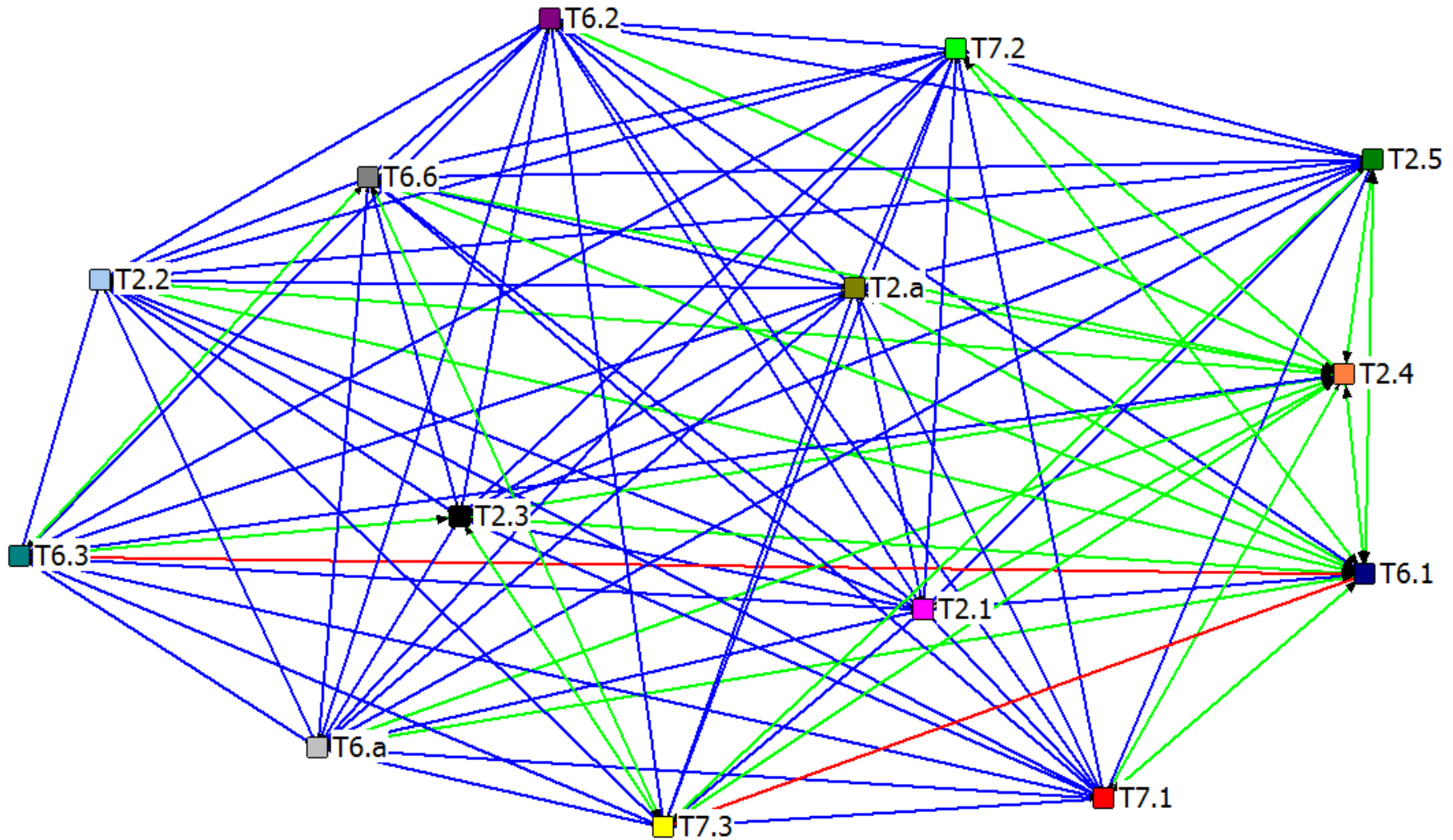
	T2.1	T2.2	T2.3	T2.4	T2.5	T2.a	T6.1	T6.2	T6.3	T6.6	T6.a	T7.1	T7.2	T7.3
T2.1	1.000													
T2.2	.785**	1.000												
T2.3	.740**	.720**	1.000											
T2.4	-0.137	0.094	-0.250	1.000										
T2.5	.879**	.899**	.799**	0.125	1.000									
T2.a	.698**	.863**	.606**	0.223	.850**	1.000								
T6.1	.787**	-0.239	-0.342	-0.018	-0.158	-0.268	1.000							
T6.2	.790**	.996**	.679**	0.062	.889**	.864**	1.000**	1.000						
T6.3	.974**	.958**	-0.184	0.777	0.000	0.767	-0.697	.969**	1.000					
T6.6	.944**	.936**	.736**	-0.149	.922**	.830**	-0.313	.896**	0.583	1.000				
T6.a	.713**	.856**	.662**	-0.092	.783**	.740**	-0.339	.842**	0.708	.688*	1.000			
T7.1	.730**	.940**	.636**	0.152	.826**	.869**	-0.272	.943**	0.807	.776**	.750**	1.000		
T7.2	.730**	.940**	.636**	0.152	.826**	.869**	-0.272	.943**	0.807	.776**	.750**	1.000**	1.000	
T7.3	.719**	.713**	.594*	0.067	.569*	.642**	-.847**	.977**	0.769	0.524	.710**	.704**	.704**	1.000

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Greater than 0.6	Synergy
Between 0.6 to -0.6	Not defined
Less than -0.6	Trade-off

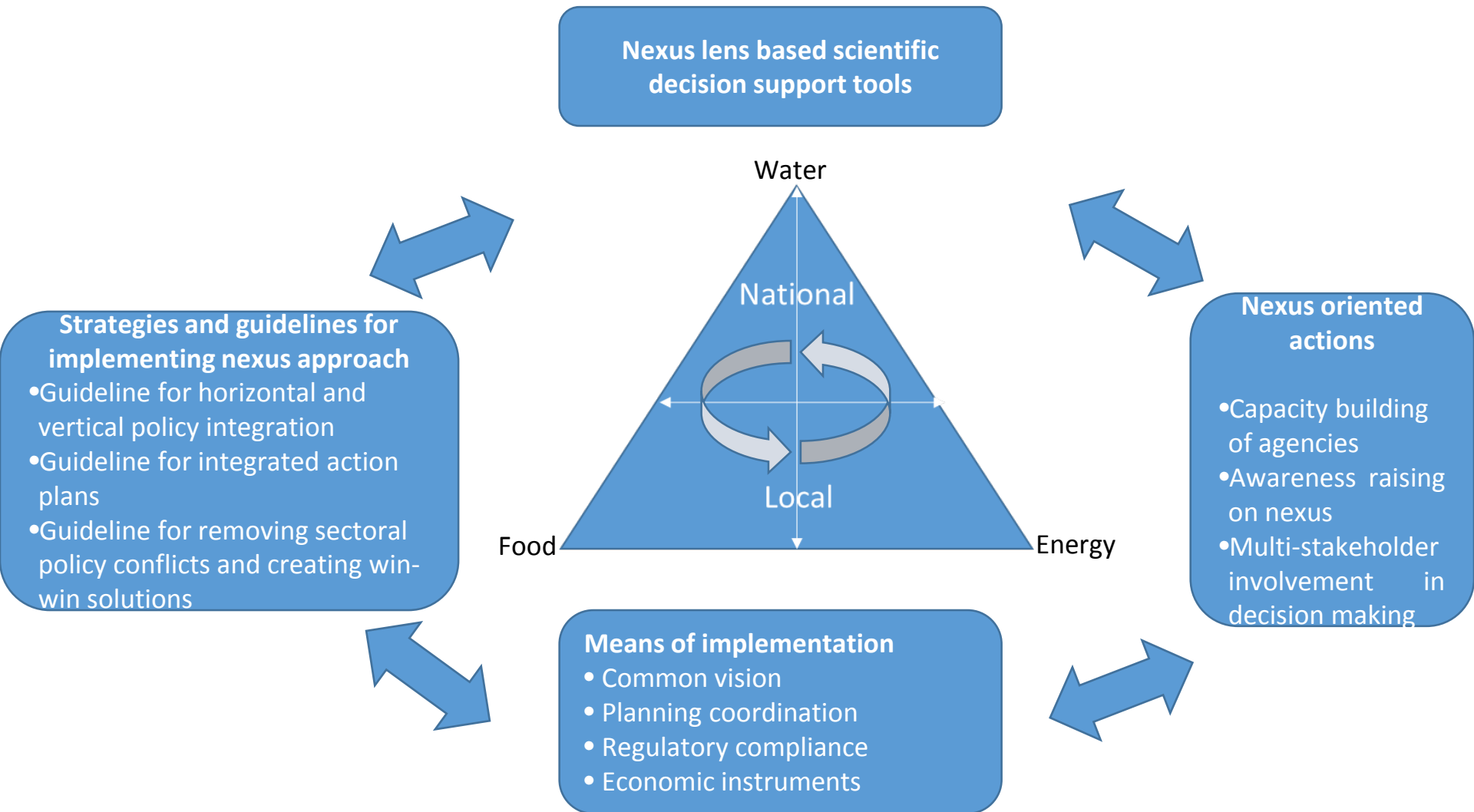
Interlinkage among relevant targets (India)



Common Challenges to operationalising the WEFN approach

Challenges	Bangladesh	India	Vietnam
Absence of policy coherence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Few entry points for scientific knowledge in decision making processes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of capacity to interpret interlinkages	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of multi-stakeholder engagement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of incentives for adopting efficient technologies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of adequate finance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Enabling framework for WEFN governance



Partners



Bangladesh University of Engineering and Technology



Central University of Rajasthan



Hanoi University of Natural Resource and Environment

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