

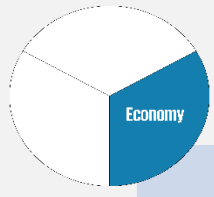
# ESCAP's Methodology for Integration of the SDGs and Application to SDG 6 (Water and Sanitation)

National SDG Workshop, Pakistan  
Integration Session, 7 November 2017

*Aneta Nikolova, Environment Affairs Officer, EDPS, EDD*

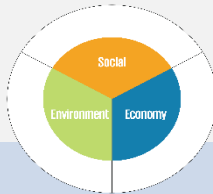


# The Evolution of the Integrated Approach



## 1970: The Limits to Growth (Club of Rome)

- The Limits to Growth spoke on whether high rates of economic growth were desirable or possible. "Earth had a limited supply of physical resources and that exceeding the limits of exploitation could end in catastrophe." (Meadows, 1972)



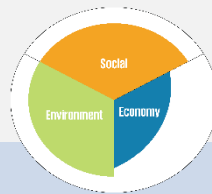
## 1972: UN Conference on Human Environment, Stockholm

- The Conference yielded the legitimization and definition of Sustainable Development as a concept. "To defend and improve the human environment for present and future generations." (Declaration of the United Nations Conference on the Human Environment, 1972)



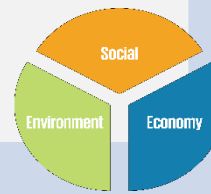
## 1987: Brundtland Report (World Commission on Environment and Development)

- The Report spoke about redistributing resources towards poorer nations to encourage their economic growth to enable all human beings to achieve their basic needs. It established three fundamental components: economic, environment, and social dimensions to yield the "Triple Bottom Line." It also recognized the inherent tension between economic growth and environmental protection.



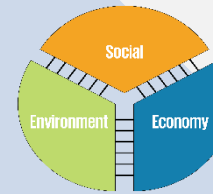
## 1992: Rio Earth Summit 1992

- The Rio Summit yielded two key outputs: the Rio Declaration and Agenda 21, both of which developed environmental themes to benefit social good, namely: quality of life, efficient use of natural resources, protection of global commons, management of human settlements, and lastly, sustainable economic growth.



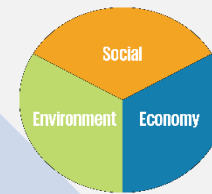
## 2000: Millennium Summit 2000

- The Summit produced the Millennium Development Goals (MDGs) which would serve as internationally-agreed targets using 1990 as a baseline, and progressing towards 2015. "The livelihoods and wellbeing of the world's poor are now conceptualized in terms of access to opportunity and absence of insecurity and vulnerability." (Adger et. al., 2007) The MDGs were a political expression of the principle of equilibrium between the three dimensions, but progress was pursued individually, in silo-like fashion.



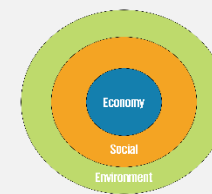
## 2002: Johannesburg Conference 2002

- The Conference was known as the Implementation Summit of the MDGs. "We are moving the concept of sustainable development towards a more productive exploration of the relationship between economic development and environment quality." (Asefa, 2005)



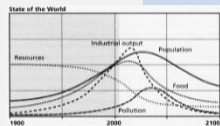
## 2012: Rio+20 (United Nations Conference on Sustainable Development 2012)

- The Conference produced the outcome document: "The Future We Want", which took stock of the progress towards MDGs and launched progress to develop a set of SDGs, which, built upon the MDGs, would converge with the post-2015 Development Agenda. It is an indication of further mainstreaming and recognition of the importance of all three dimensions of sustainable development.



## 2015: Sustainable Development Summit

- From the Summit, the 2030 Agenda for Sustainable Development was legitimized with the Sustainable Development Goals (SDGs), active between 2016 to 2030, representing "an indivisible tapestry of thinking and action that applies in every community everywhere in the world. They are universal...and also indivisible. Though they are presented as individual goals. They actually represent a total, completely intertwined latticework of action that is relevant for every human being everywhere." (Making the Goals Happen, 2016)



# A Focus on Water Resources

THE ASIA-PACIFIC REGION HOSTS

2/3

OF THE WORLD'S POPULATION



490 MILLION  
UNDERNOURISHED PEOPLE  
EQUIVALENT TO  
58 LONDONS



70% OF GLOBAL FRESHWATER WITHDRAWALS ARE USED FOR FOOD PRODUCTION IN ASIA-PACIFIC

ASIA-PACIFIC IS THE WORLD'S BIGGEST PRODUCER OF



ASIA-PACIFIC HAS THE LOWEST WATER ENDOWMENT PER CAPITA IN THE WORLD



ABOUT 40% OF THE LAND IN THE  
REGION IS USED FOR AGRICULTURE  
AND ANOTHER 30% IS FORESTED



# A Focus on Water Resources

NEXUS OF ENERGY  
FOOD & WATER



EXACERBATED OVER  
EXTRACTION OF WATER

NEXUS

70% to 90% OF WASTEWATER ARE DISCHARGED **UNTREATED** INTO FRESH WATER BODIES

## POSITIVE TRENDS IN THE REGION

ACCESS TO **SAFE DRINKING WATER** GREW

FROM **74%** IN 1990 TO **94%** IN 2015

&

ACCESS TO **BASIC SANITATION** GREW

FROM **44%** IN 1990 TO **65%** IN 2015

BUT

**277** MILLION PEOPLE

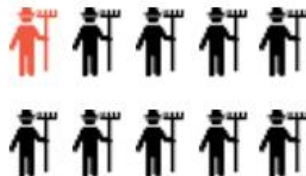
&

**1.7** BILLION PEOPLE

LACK ACCESS TO **SAFE DRINKING WATER**

LACK ACCESS TO **IMPROVED SANITATION**

LACKS ACCESS TO  
CLEAN DRINKING WATER



**SOUTH-WEST AND SOUTH  
ASIA** LAGGING BEHIND



# Interlinkages within SDG 6 (Water & Sanitation for All)

## Preliminary observations about the water system

1

Water sustains the natural environment and is [a] factor for systems to produce ecological services

There is a strong link between water security, economic activity and human development

3

Scientific data, information and civil engagement are core drivers

2

Without proper water governance, increased competition for water is likely

4

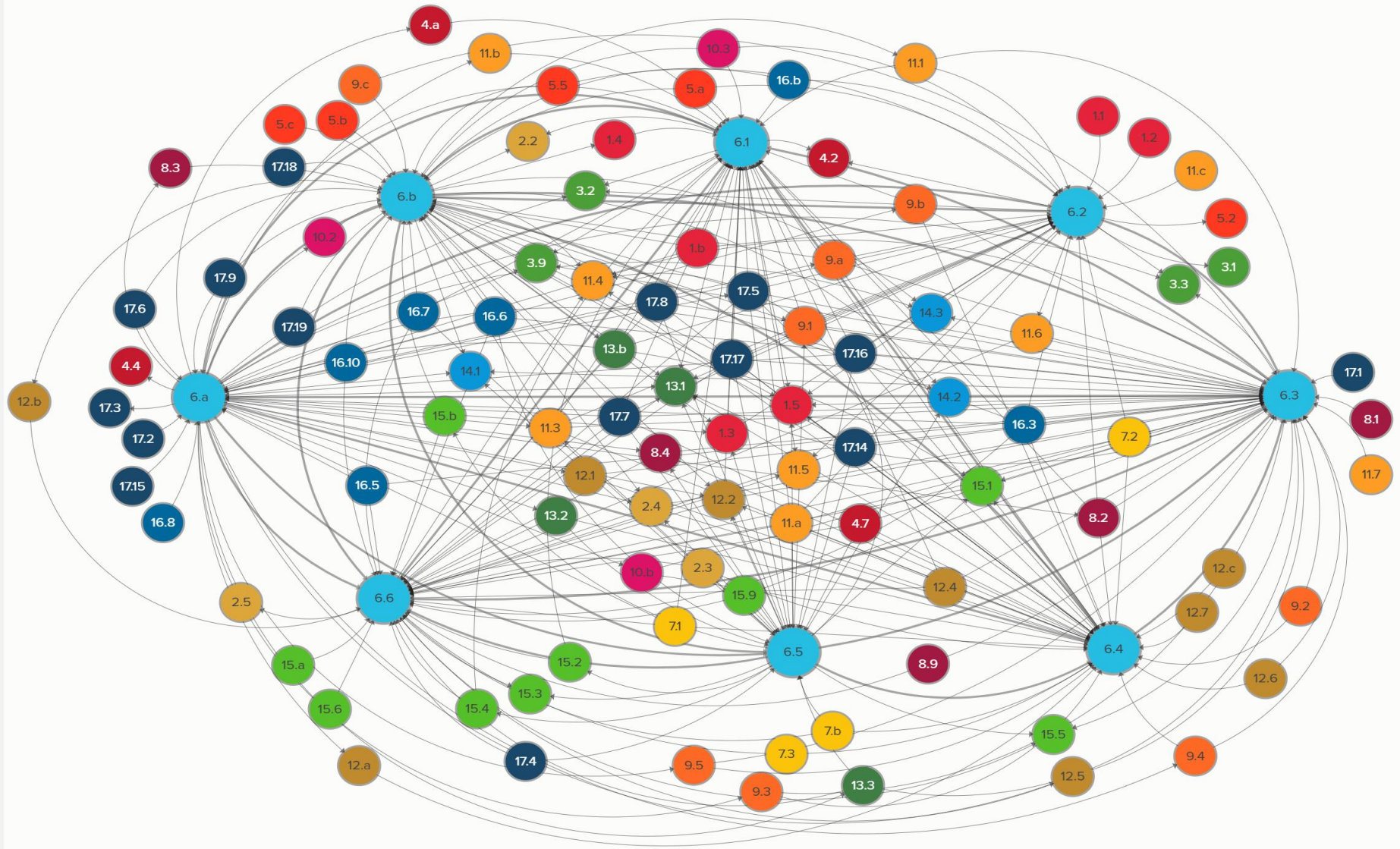






# ESCAP Methodology

# ESCAP Methodology supporting the Implementation of the 2030 Agenda



# SDG 6 Interlinkages with other SDGs



**Target 6.b – Support and strengthen the participation of local communities in improving water and sanitation management.**

**Fourth most inter-linked target;**

Direct causal inter-linkages with 48 other targets from 14 SDGs;

Indirectly linked with another 28 targets;

Directly driven/influenced by 27 other targets and is a key driver / influencer of 21 other targets;

Most strongly influenced by SDG 5, 16, and 17

Has the most direct influence on SDG 1, 6, 11, 12, 13, and 14.



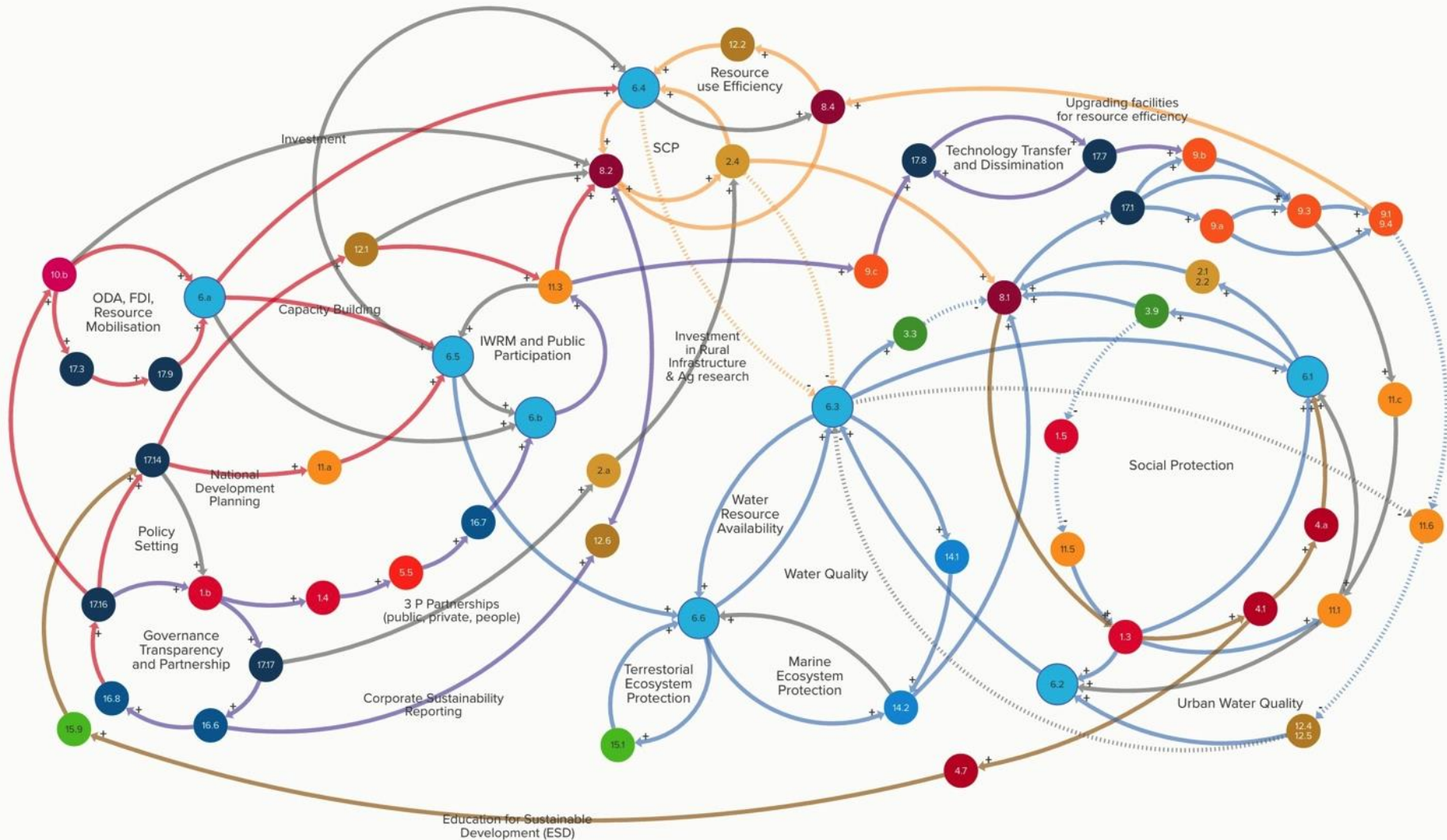


## Systems Thinking Approach for Integration

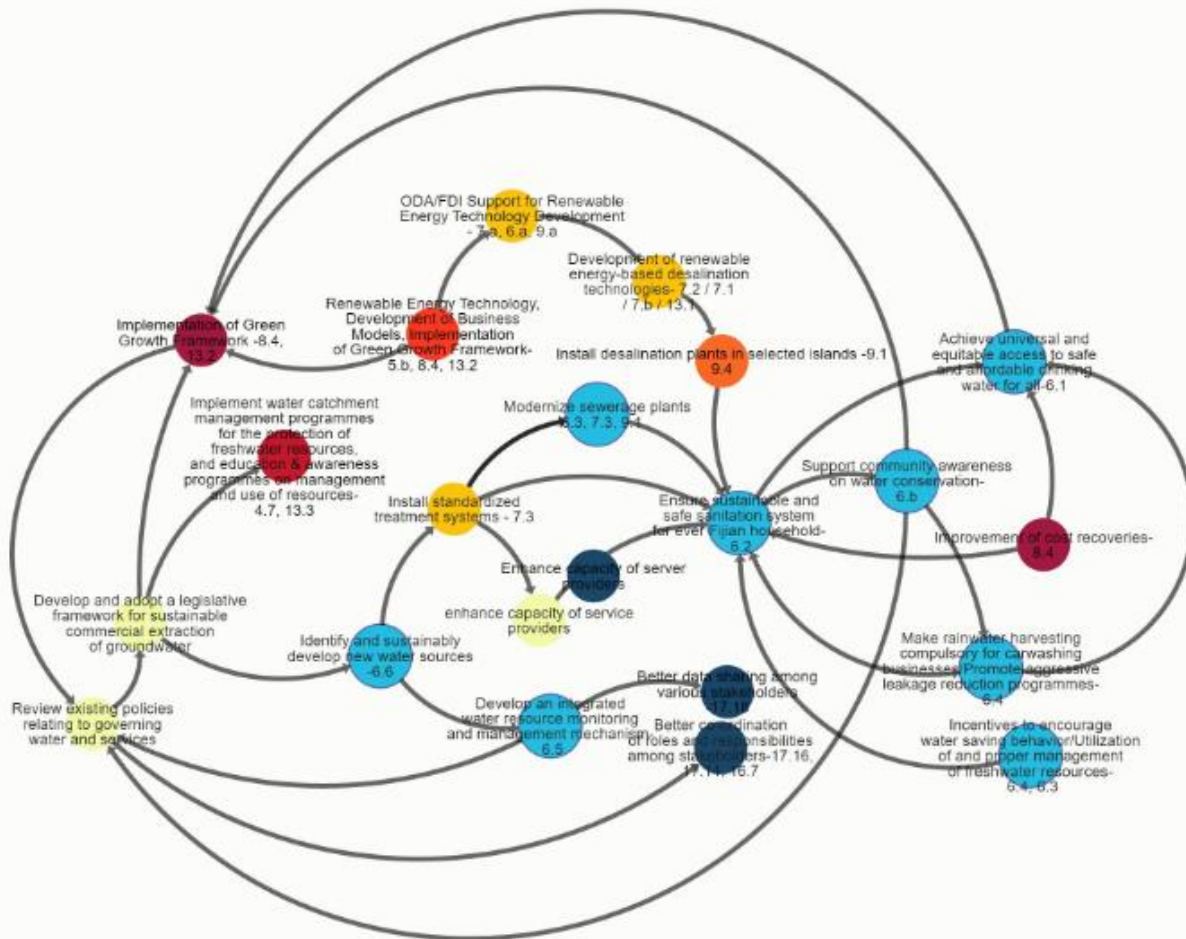
System Dynamics	Strategic Intervention
System is stagnant or stalled	<ul style="list-style-type: none"><li>• Look for constraints</li></ul>
Vicious cycles	<ul style="list-style-type: none"><li>• Identify “brakes”</li><li>• Examine intervention points to return process to virtuous cycle</li></ul>
Reinforce virtuous feedback cycles	
Find the strongest feedback structure operating then review the implications and generic leverage points.	
Examine each link and consider the consequences of strengthening it or weakening it	



# Developing Causal Loop Diagram



## SDG 6 Pilot Application : Fiji



## Sub-Region: The Pacific

**Development Level:** Developing, SIDS

2014 HDI: 0.727

Rank: 90

## 2016 WB Income: Upper-Middle

**Development Concerns:** Climate, Energy, Water resources, Sanitation, Economic Growth



# SDG 6 Pilot Application: Tajikistan

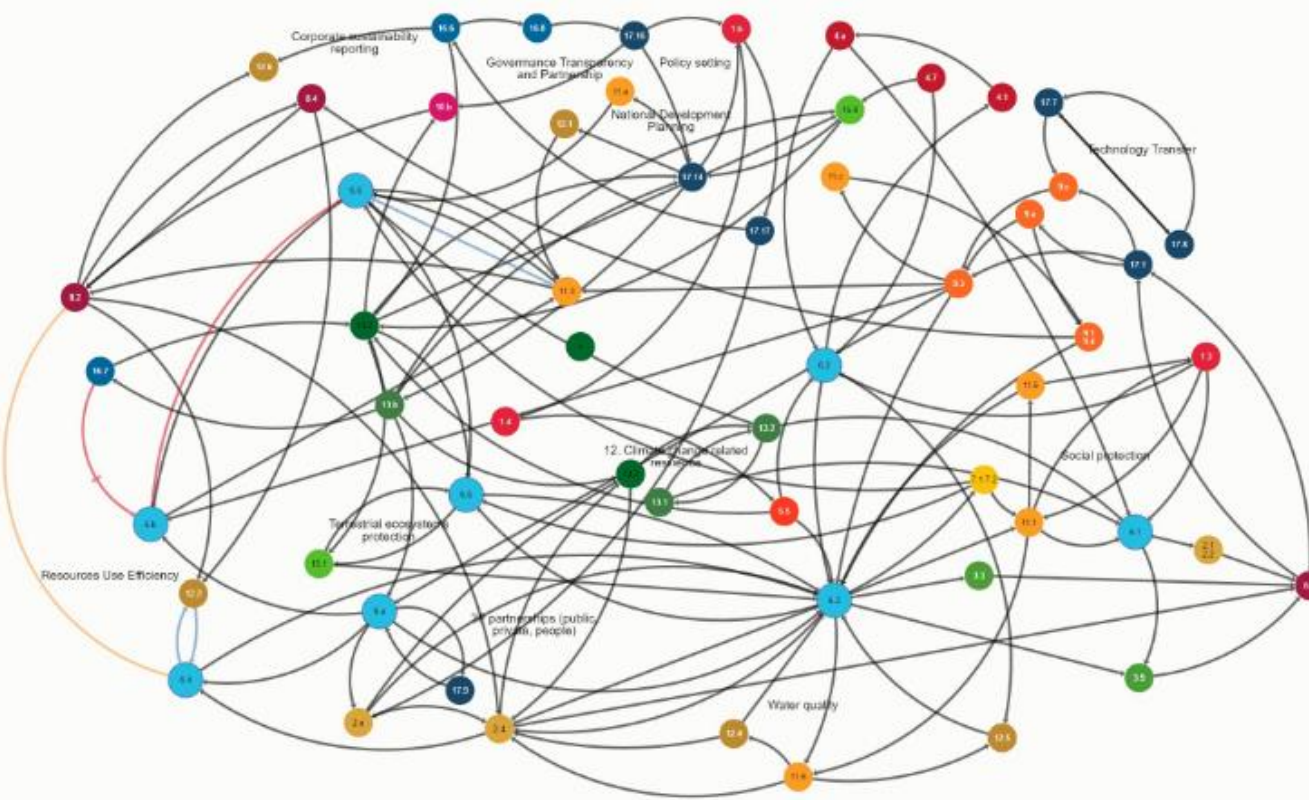
Sub-Region: Central Asia

Development Level: Developing, LLDC

2014 HDI: 0.624      Rank: 124

2016 WB Income: Lower-Middle

**Development Concerns:** Water security, Sanitation, Climate, Energy, Peace, Economic Growth





# SDG 6 Pilot Application : Sri Lanka

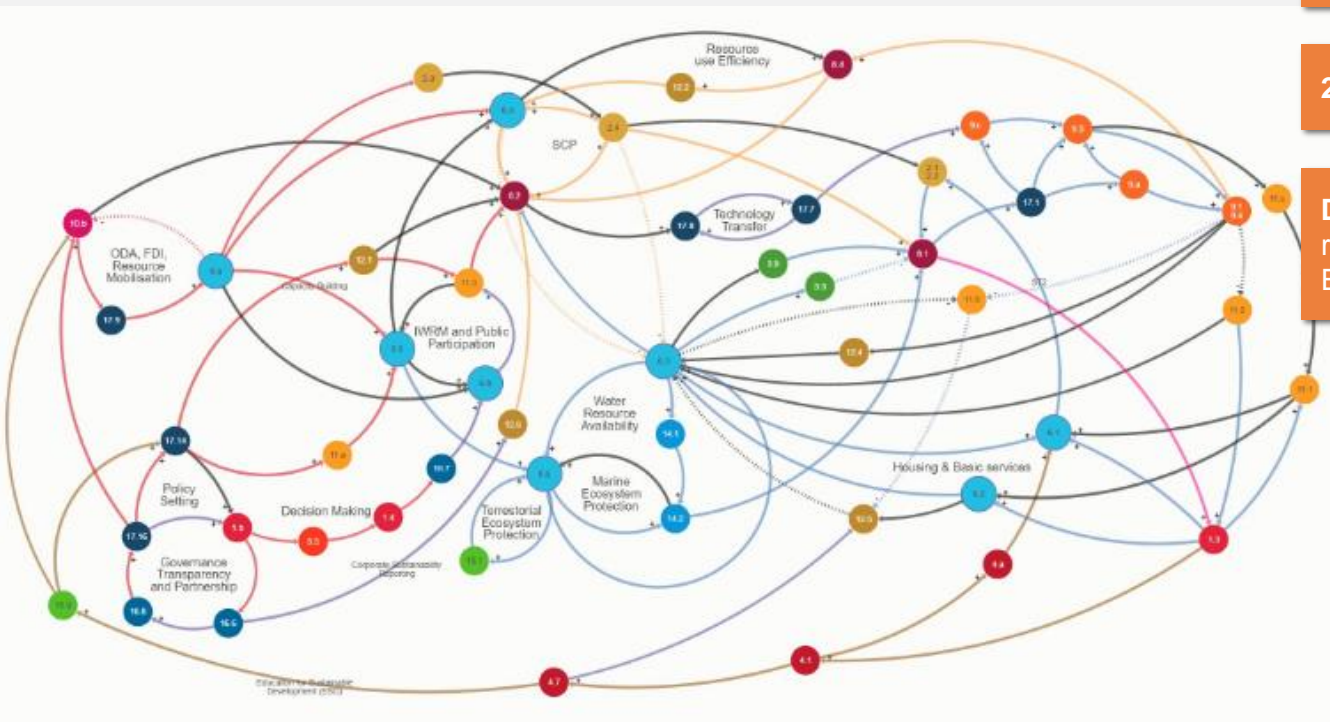
Sub-Region: South-West Asia

Development Level: Developing

2014 HDI: 0.757      Rank: 73

2016 WB Income: Lower-Middle

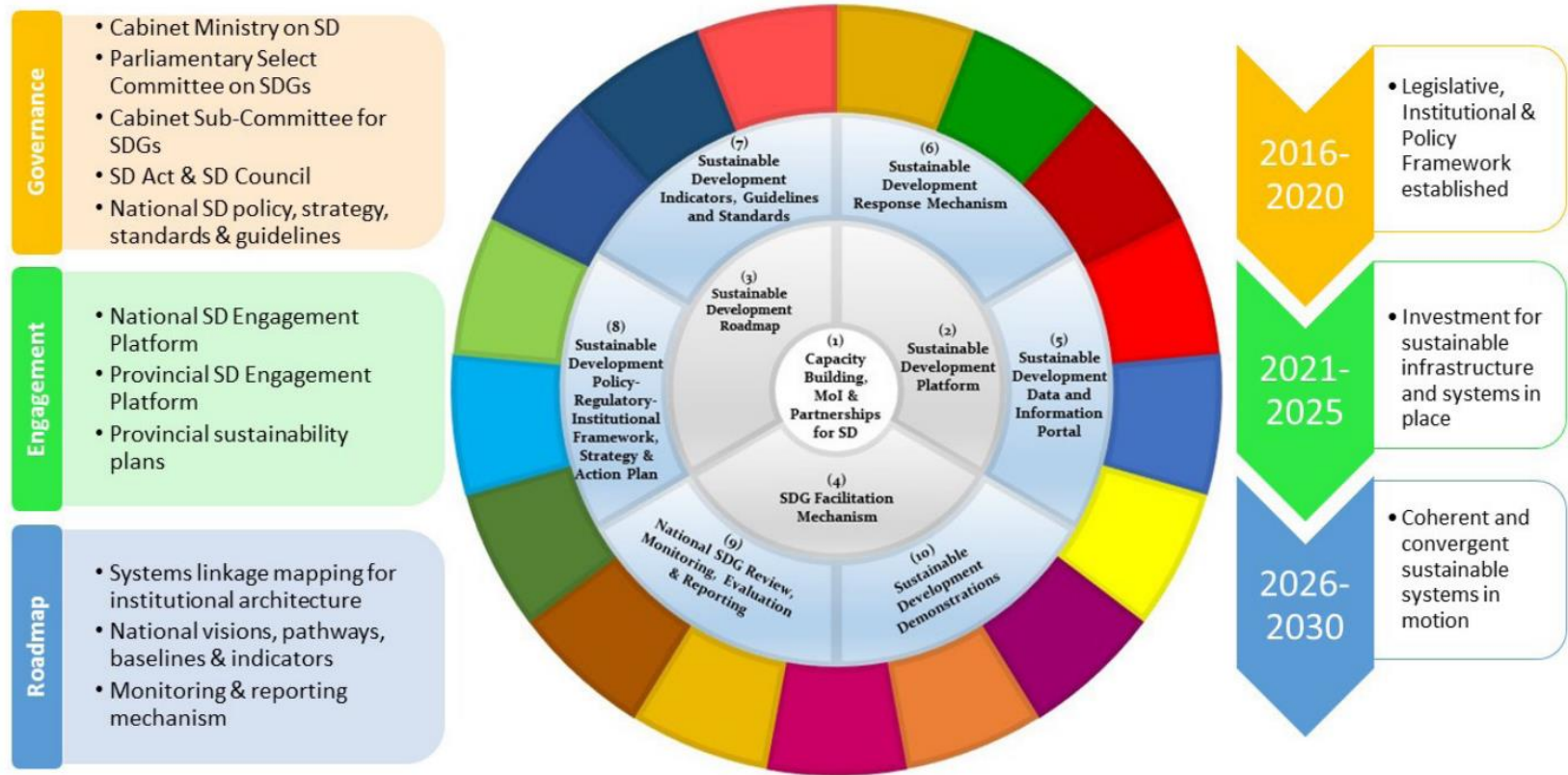
**Development Concerns:** Water resources, Sanitation, Gender, Education, Energy





# Sri Lanka's Next Steps: Integration of SDGs into National Planning

Figure 9. A model of the planning process for inclusive transformation in Sri Lanka

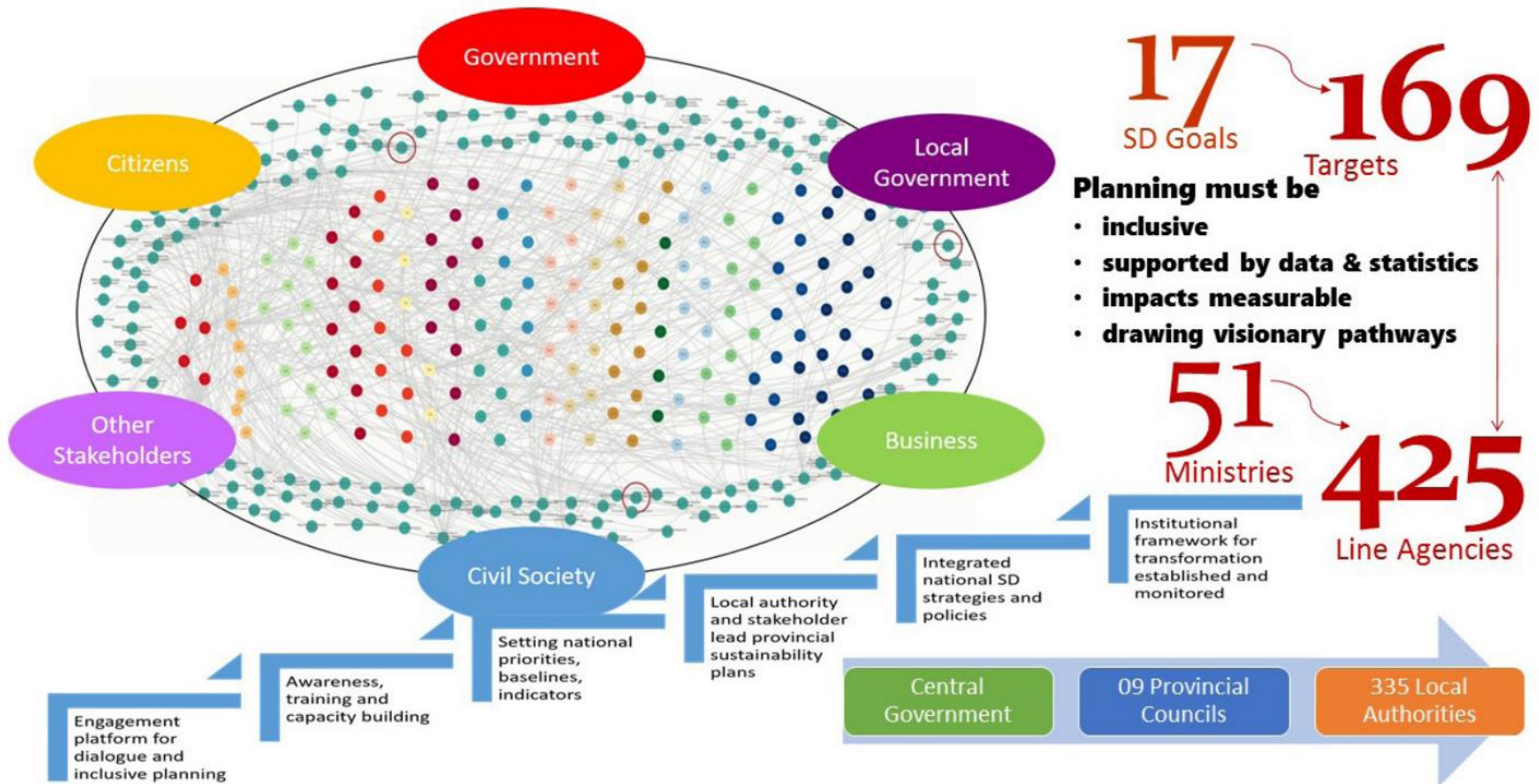


Source: Uchita de Zoysa, Sustainable Development Advisor, Ministry of Sustainable Development and Wildlife, 2016.



# Sri Lanka's Next Steps: Integration of SDGs into National Planning

Figure 10. Mapping of institutional convergences in Sri Lanka using the systems thinking approach



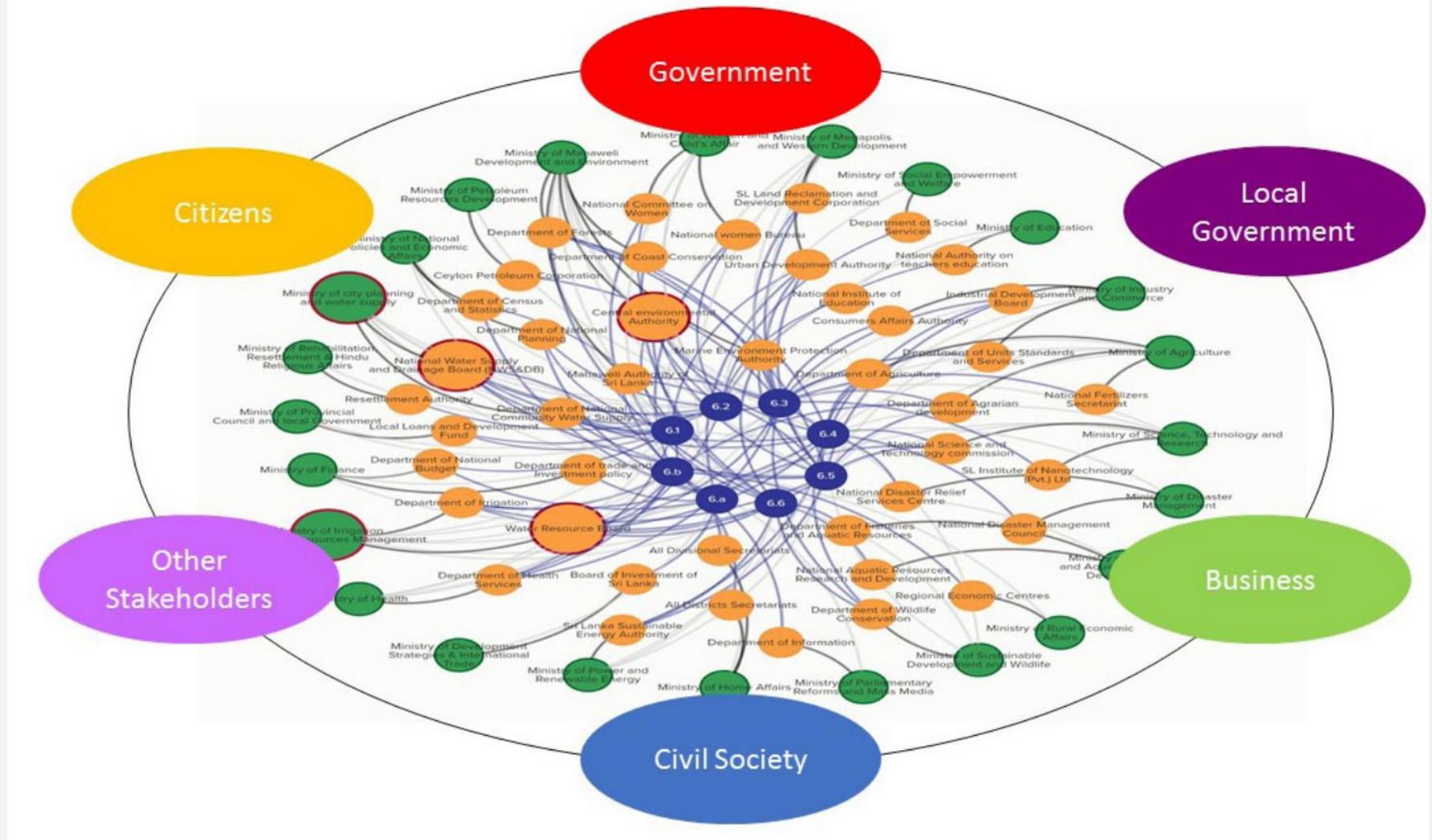
Source: Uchita de Zoysa, Sustainable Development Advisor, Ministry of Sustainable Development and Wildlife, 2016.





# Sri Lanka's Next Steps: Integration of SDGs into National Planning

Figure 11. Systems mapping of agencies and stakeholder engagement



# Anchored by the SDG Indicators



Goal 6. Ensure availability and sustainable management of water and sanitation for all	
6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all	6.1.1 Proportion of population using safely managed drinking water services
6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations	6.2.1 Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water
6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	6.3.1 Proportion of wastewater safely treated
	6.3.2 Proportion of bodies of water with good ambient water quality
6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	6.4.1 Change in water-use efficiency over time
	6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources
6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate	6.5.1 Degree of integrated water resources management implementation (0-100)
	6.5.2 Proportion of transboundary basin area with an operational arrangement for water cooperation
6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	6.6.1 Change in the extent of water-related ecosystems over time
6.a By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies	6.a.1 Amount of water- and sanitation-related official development assistance that is part of a government-coordinated spending plan
6.b Support and strengthen the participation of local communities in improving water and sanitation management	6.b.1 Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management



# The Next Step: Quantitative Modeling

## Structural Equation Modeling

Software: IBM AMOS

<10% Data Missingness

Output: Quantified indirect/direct effects

Overall: Concrete analysis of system dynamics

## Correlational Analyses

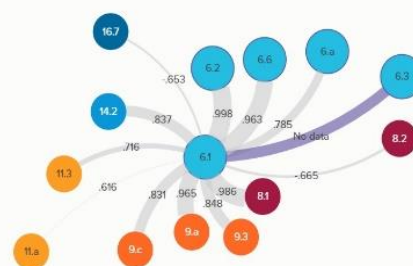
Software: IBM SPSS/ MS Excel

>10% Data Missingness

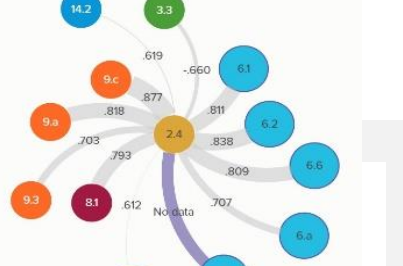
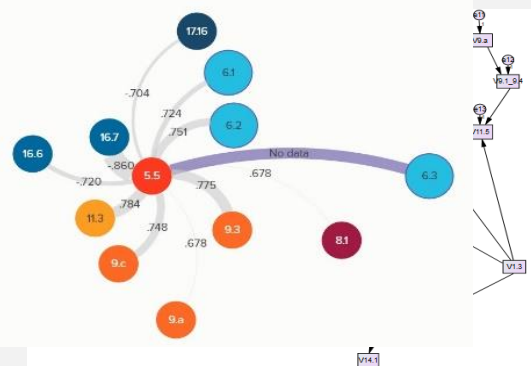
Output: Non-directional strength of relation

Overall: Good indicator of system-fit

Standard Error			Adequacy of racial protection and labor program (% of total welfare of beneficiary households)	Borrowed from a financial institution (% of total welfare of beneficiary households)	Depth of Food Deficit (kilocalories per person per day)	Agriculture production index (2004-100)	Total official development assistance plus other official flows to the agriculture sector (USD Million)	Incidence of vector-borne diseases (incl. malaria and dengue) (incidence)	International Health Regulations (IHR) capacity and health emergency preparedness	Grazing enrollment ratio, emergency, both sexes (%)	Proportion of seats held by women in national parliament (%)
NResidual	poverty app at national poverty line (%)	Pearson Correlation	1	-.024	-.084	-.242	-.340	-.078	-.297	-.420	-.424
NResidual		Sig. (2-tailed)		.926	.791	.277	.247	.811	.348	.165	.154
NResidual		N	12	12	12	12	12	12	12	12	12
Direct Effect											
	adequacy of racial protection and labor program (% of total welfare of beneficiary households)	Pearson Correlation	-.024	1	-.549	-.146	-.019	-.064	-.464	-.068	.086
		Sig. (2-tailed)	.926		.003	.347	.954	.844	.129	.833	.790
		N	12	12	12	12	12	12	12	12	12
NResidual	adequacy of racial protection and labor program (% of total welfare of beneficiary households)	Pearson Correlation	-.024	1	-.549	-.146	-.019	-.064	-.464	-.068	.086
NResidual		Sig. (2-tailed)	.926		.003	.347	.954	.844	.129	.833	.790
NResidual		N	12	12	12	12	12	12	12	12	12
NResidual	depth of food deficit (kilocalories per person per day)	Pearson Correlation	-.084	-.549	1	-.179	.129	-.479	-.274	.316	-.310
NResidual		Sig. (2-tailed)	.791	.003		.507	.180	.319	.316	.321	.059
NResidual		N	12	12	12	12	12	12	12	12	12
NResidual	agriculture production index (2004-100)	Pearson Correlation	-.242	-.146	-.179	1	-.825	.000	.503	-.324	-.100
NResidual		Sig. (2-tailed)	.277	.347	.507		.001	.979	.095	.301	.575
NResidual		N	12	12	12	12	12	12	12	12	12
NResidual	total official development assistance plus other official flows to the agriculture sector (USD Million)	Pearson Correlation	-.340	-.019	-.179	-.825	1	-.014	-.551	.083	.054
NResidual		Sig. (2-tailed)	.247	.954	.507	.001		.796	.063	.797	.867
NResidual		N	12	12	12	12	12	12	12	12	12
NResidual	incidence of vector-borne diseases (incl. malaria and dengue) (incidence)	Pearson Correlation	-.078	-.464	-.479	-.014	-.551	1	.521	-.094	.359
NResidual		Sig. (2-tailed)	.811	.129	.319	.979	.095		.301	.575	.012
NResidual		N	12	12	12	12	12	12	12	12	12
NResidual	international health regulations (IHR) capacity and health emergency preparedness	Pearson Correlation	-.297	-.464	-.274	.316	-.324	.503	1	.083	.054
NResidual		Sig. (2-tailed)	.348	.129	.316	.321	.301	.095		.797	.867
NResidual		N	12	12	12	12	12	12	12	12	12
NResidual	grazing enrollment ratio, emergency, both sexes (%)	Pearson Correlation	-.068	-.068	.316	-.324	.503	.083	.054	1	.020
NResidual		Sig. (2-tailed)	.833	.833	.316	.301	.095	.797	.867		.020
NResidual		N	12	12	12	12	12	12	12	12	12
NResidual	proportion of seats held by women in national parliament (%)	Pearson Correlation	.086	.086	-.310	-.100	.054	.054	.020	.020	1
NResidual		Sig. (2-tailed)	.790	.790	.575	.643	.657	.657	.657	.657	.657
NResidual		N	12	12	12	12	12	12	12	12	12



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# Results from ESCAP Methodology & Conclusion

- Law and Governance
- Data Gathering and Sharing
- Strong Links to the Environment and Pollution
- Human and Institutional Capacity Building
- Mobilisation of Financial Resource
- Transboundary cooperation will be essential in delivering on water mandates

**Understanding interdependence key to implementing the SDGs**

**Integrated management and system thinking can**

- **Prioritise sustainable development goal implementation**
- **Attract investments**
- **Identify “high-impact” leverage points**
- **Ensure cohesive monitoring and review mechanisms**

**All water-related sectors must harmonise**



# ESCAP Methodology supporting the Implementation of the 2030 Agenda

The ESCAP-developed comprehensive methodology developed assists policymakers with integration of the SDGs into national planning:

- Reviewing existing institutional architecture and mandates to determine their relationship with the 17 SDGs;
- Assessing the impacts of policies and identifying effective policy interventions (leverage points) for impactful investment and use of scarce resources; and
- Stakeholder mapping and engagement in collectively developing the aspirational qualitative vision for societal change.



# ESCAP Knowledge Products

## **Integrating the Three Dimensions of Sustainable Development: A Framework and Tools**

<https://sustdev.unescap.org/Files/Integrating%20the%20three%20dimensions%20of%20sustainable%20development%20A%20framework.pdf>

## **Analytical Framework for Integration of Water and Sanitation SDGs and Targets Using Systems Thinking Approach**

<https://sustdev.unescap.org/Files/resource/be091e7a9604024298e074d880312c16.pdf>

## **Integrated Approaches for Sustainable Development Goals Planning: The Case of Goal 6 on Water and Sanitation**

<http://www.unescap.org/publications/integrated-approaches-sustainable-development-goals-planning-case-goal-6-water-and>

## **Low Carbon Green Growth Roadmap for Asia and the Pacific**

<http://www.unescap.org/sites/default/files/Full-report.pdf>

## **E-Learning Course: Low Carbon Green Growth Roadmap**

<https://sustdev.unescap.org/thematicarea/detail?id=5>

[E-Learning Course: Integration of SDG Into National Planning](#)

**NEW!**

