SDG Priority Setting and key Indicators based on Interlinkages Analysis

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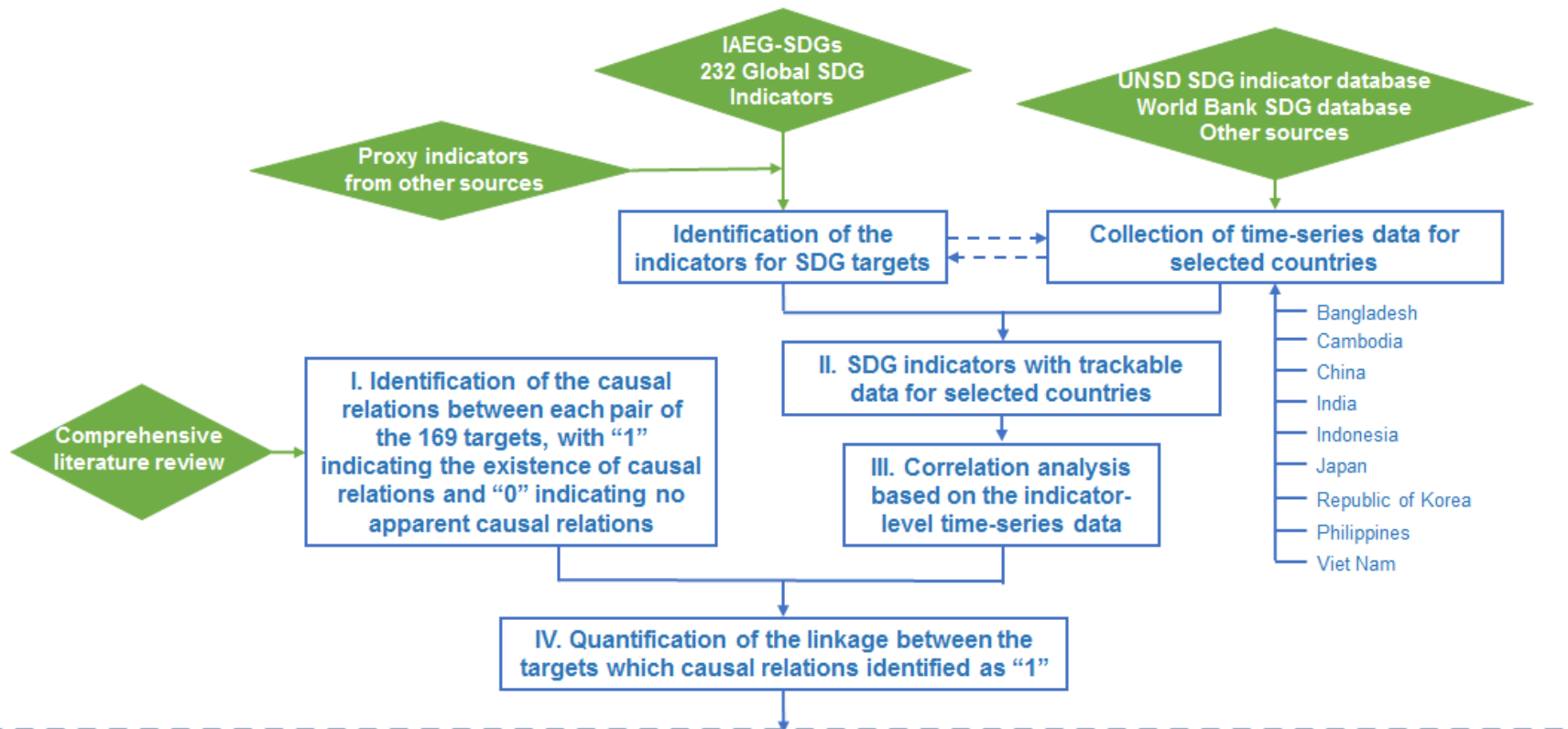
Parallel session on STI roadmaps for SDGs

The SDGs: 17 Goals, 169 Targets and 232 Indicators form an integrated and indivisible framework for delivering sustainability from a systemic perspective.
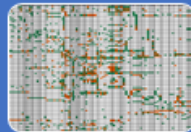
IGES initiated a pioneering project on SDG interlinkages and indicators (FY2015-2018)

IAEG-SDGs 232 Global SDG Indicators

UNSD SDG indicator database
World Bank SDG database
Other sources

Proxy indicators from other sources

Identification of the indicators for SDG targets

Collection of time-series data for selected countries

- Bangladesh
- Cambodia
- China
- India
- Indonesia
- Japan
- Republic of Korea
- Philippines
- Viet Nam

Comprehensive literature review

I. Identification of the causal relations between each pair of the 169 targets, with "1" indicating the existence of causal relations and "0" indicating no apparent causal relations

II. SDG indicators with trackable data for selected countries

III. Correlation analysis based on the indicator-level time-series data

IV. Quantification of the linkage between the targets which causal relations identified as "1"

Major outputs

SDG Interlinkages Analysis & Visualisation Web Tool

Dashboards on Synergies and Trade-offs

Publications

Identification of SDG interlinkages based on literature review

Reference no.	Reference code	SDG coverage	Type of interlinkages/goal to goal (G-G), goal to target (G-T), target to goal (T-G) and target to target (T-T)	Source
1	IAEG-SDGs	All	T-T	IAEG-SDGs, 2015. List of Indicator Proposals (11 August 2015). Available at: https://unstats.un.org/sdgs/files/List%20of%20Indicator%20Proposals%201-8-2015.pdf
2	SDSN-1	All	T-T through shared indicators.	Leadership Council of the Sustainable Development Solutions Network (SDSN), 2015. Indicators and a Monitoring Framework for the Sustainable Development Goals: Launching a data revolution for the SDGs. A report to the Secretary-General of the United Nations. Available at: http://unsdsn.org/wp-content/uploads/2015/05/FINAL-SDSN-Indicator-Report-WEB.pdf
3	SDSN-Shared indicators	All	T-T through shared indicators.	2015. Indicators for the SDGs: Identifying inter-linkages. SDSN Issue Brief. Available at: http://unsdsn.org/wp-content/uploads/2015/09/150816-Identifying-inter-linkages-SDSN-Briefing-for-IAEG.pdf
4	ESCAP-SDG6	SDG6	T-T	United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), 2016. Analytical Framework for Integration of Water and Sanitation SDGs and Targets: Using Systems Thinking Approach, Annex I: Full Matrix of Analysis of Direct and Indirect Linkages Between the SDG 6 Targets and the Targets of the Other SDGs. UNESCAP Working Paper. Bangkok: UNESCAP. Available at: https://sustdev.unescap.org/Files/resource/300add205ca64d4ee4b1c4d1116855ce.pdf
5	WEF-Nexus	SDG2, SDG6 and SDG7.	T-T	Weitz, N., Nilsson, M., Davis, M., 2014. A Nexus Approach to the Post-2015 Agenda: Formulating Integrated Water, Energy and Food SDGs. Available at: https://www.oecd.org/pcd/Art%20Nexus%20SAIS%20weitz.pdf
6	UNECOSOC	All	G-T (for all SDGs except SDG17), G-G (SDG17)	Author(s) and publication date unknown. A Nexus Approach for the SDGs: Interlinkages between the goals and targets. Retrieved from the

Identification of SDG interlinkages based on literature review (2)

Reference no.	Reference code	SDG coverage	Type of interlinkages/goal to goal (G-G), goal to target (G-T), target to goal (T-G) and target to target (T-T)	Source
				website of the United Nations Economic and Social Council: https://www.un.org/ecosoc/sites/www.un.org.ecosoc/files/files/en/2016doc/interlinkages-sdgs.pdf
7	UNCTAD-Trade	Trade-related SDGs	T-T (trade-related targets link with each other)	United Nations Conference on Trade and Development (UNCTAD), 2016. Trading into Sustainable Development: Trade, Market Access, and the Sustainable Development Goals. Geneva: United Nations. Available at: http://unctad.org/en/PublicationsLibrary/ditctab2015d3_en.pdf
8	IOM-Migration	Migration-related SDGs	T-T (migration-related targets link with each other)	International Organization for Migration (IOM), publication date not known. 2030 Agenda for Sustainable Development. Available at: https://unofficeny.iom.int/2030-agenda-sustainable-development
9	Stakeholder Forum_1	All except for SDG17	G-G, T-G, T-T	Cutter, A., Osborn, D., Romano, J., Ullah, F., publication date unknown. Sustainable Development Goals and Integration: Achieving a better balance between the economic, social and environmental dimensions. Available at: http://www.stakeholderforum.org/fileadmin/files/Balancing%20the%20dimensions%20in%20the%20SDGs%20FINAL.pdf
10	Stakeholder Forum_SDG12	SDG12	T-T	Coopman, A., Osborn, D., Ullah, F., Auckland, E., Long, G., publication date unknown. See the Whole: Implementing the SDGs in an integrated and coherent way. A Research Pilot by Stakeholder Forum, Biregional and Newcastle University. Available at: http://www.stakeholderforum.org/fileadmin/files/SeeingTheWhole.ResearchPilotReportOnSDGsImplementation.pdf
11	ICSU-2017	SDGs 2, 3, 7, 14	G-G and T-T	ICSU, 2017. A guide to SDG interactions: From science To implementation. Available at: https://www.icsu.org/cms/2017/05/SDGs-Guide-to-Interactions.pdf.

Source: Zhou and Moinuddin, 2017. IGES Research Report.

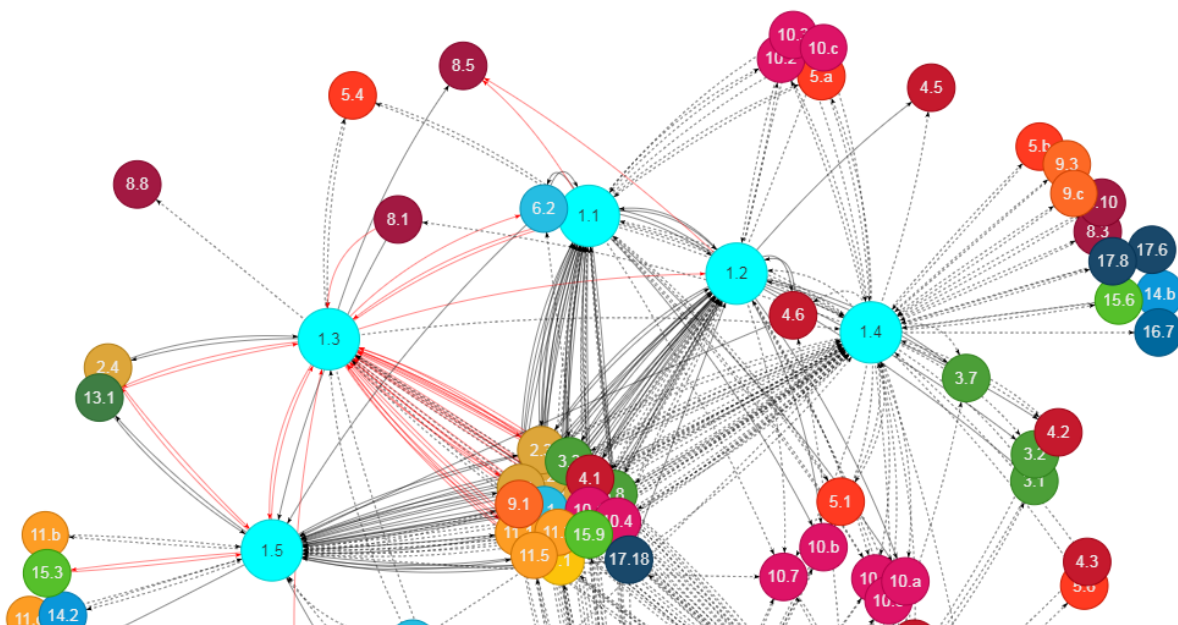# IGES SDG Interlinkages Analysis & Visualisation Tool (V2.0) (https://sdginterlinkages.iges.jp/visualisationtool.html)

Source: A snapshot taken from IGES SDG Interlinkages Analysis and Visualisation Web Tool.

The dashboard for Bangladesh indicating potential reinforcing (green) and conflicting (red) interlinkages

Source: Zhou & Moinuddion, 2017. IGES Research Report No. RR1602.
https://sdginterlinkages.iges.jp/files/IGES_Research%20Report_SDG%20Interlinkages_Publication.pdf

Priority setting based on key targets for Bangladesh

Targets that are identified by both GIU-PMO and IGES

1.1 End extreme poverty
1.2 Halve national poverty
2.2 End malnutrition
2.4 Build sustainable food production systems
6.1 Universal access to safe drinking water
6.2 Universal access to sanitation and hygiene

7.1 Universal access to energy
7.2 Increase renewable energy
8.1 Sustain inclusive economic growth
8.5 Decent work for all
13.1 Strengthen resilience to climate change

GIU-PMO only

3.2 End preventable young children deaths
3.6 Halve traffic deaths
4.4 Increase skilled workers for decent jobs
4.a Improve education facilities
5.3 Eliminate forced marriage
5.5 Enhance women's participation in decision-making
8.6 Improve youth employment
9.1 Develop resilient infrastructure
9.2 Promote inclusive and sustainable industrialization
9.c Universal and affordable access to ICT
10.1 Income growth of bottom 40% population

10.7 Improve equality of migrants
11.2 Universal access to sustainable transport system
12.5 Reduce waste generation
14.5 Conserve 10 per cent of coastal areas
15.1 Sustainable use of terrestrial and inland freshwater
15.3 Combat desertification and soil degradation
16.9 Provide legal identity to all
16.a Capacity building for preventing violence and terrorism
17.1 Capacity building for tax collection in developing countries
17.8 Enhance ICT in LDCs

IGES recommendations only

1.3 Implement social protection systems to the poor
1.5 Build resilience of the poor to climate and other disasters
2.1 End hunger
2.3 Double agriculture productivity
2.5 Maintain agricultural genetic diversity
3.3 End epidemics of diseases
3.8 Universal health coverage
3.b Access to essential medicines
5.1 End gender discrimination
9.a Enhance international aid to build resilient infrastructure
10.a Special trade treatment for LDCs

10.b Encourage ODA to LDCs
11.1 Universal access to urban housing and basic services
12.2 Sustainable resource use
17.9 International support for sustainable development
17.18 Capacity building for developing countries in

Recommendation for institutional arrangement for Bangladesh: A case for Target 6.2

⚙ Appropriate institutional arrangements is important to practise integrated policy-making which will help strengthen the synergies and address the trade-offs.

Lead/Co-Lead	Associates	
	Ministries and divisions that are identified by both GED and IGES	
	MoE; MoEF; MoF; MoHFW; MoPME; MoWCA; SID	
	Additional provided by GED	**Additional recommended by IGES**
Lead: LGD	MoInf; PMO	Strong links CD; ERD; GED; ICTD; MoA; MoC; MoFL; MoInd; MoLE; MoST; MoTJ; PTD; RTHD Weak links FD; LJD; MoCA; MoCAT; MoDMR; MoEWOE; MoFA; MoHA; MoHPW; MoSW; MoWR; RDCD

Strategic targets identified by ranking various centrality metrics using network analysis techniques

Bangladesh: 15 key targets and associated pre-set indicators

Target	weighted indegree	Target	weighted outdegree	Target	weighted degree	Target	closness centrality	Target	betweeness centrality	Target	eigen centrality
10. b	19. 59	17. 18	19. 04	6. 2	31. 60	17. 18	1	6. 2	623. 69001	2. 3	1
2. 2	17. 12	1. 2	17. 46	1. 2	30. 73	2. 3	0. 624113	17. 18	609. 246702	7. 1	0. 844553
2. 3	16. 57	6. 2	17. 26	10. b	30. 69	6. 2	0. 586667	2. 3	604. 024604	6. 1	0. 805111
10. a	16. 36	3. b	14. 93	2. 3	30. 45	2. 4	0. 586667	12. 2	428. 36176	6. 2	0. 762825
6. 2	14. 35	7. 1	14. 58	7. 1	27. 45	7. 1	0. 582781	17. 9	327. 649889	6. 4	0. 752795
1. 3	13. 58	4. 1	14. 24	2. 2	27. 21	12. 2	0. 575163	6. 1	298. 655872	2. 1	0. 750612
1. 2	13. 27	2. 3	13. 89	10. a	26. 86	7. 2	0. 567742	2. 4	295. 356565	10. b	0. 683297
7. 1	12. 88	1. 3	12. 46	3. b	26. 81	7. 3	0. 567742	10. b	264. 534633	1. 5	0. 673346
3. 2	12. 82	6. 1	11. 83	1. 3	26. 03	6. a	0. 567742	8. 1	257. 201103	2. 2	0. 650799
2. 1	12. 70	1. 1	11. 55	1. 1	22. 92	6. 1	0. 556962	8. 6	230. 643403	10. a	0. 650087
3. 1	12. 65	3. c	11. 33	2. 1	22. 16	17. 9	0. 556962	7. 1	221. 215251	3. 3	0. 647894
3. 3	12. 60	10. b	11. 10	6. 1	22. 07	9. 4	0. 55	2. a	217. 662124	2. 4	0. 637307
3. b	11. 89	7. 3	10. 98	4. 1	22. 00	8. 4	0. 533333	6. 4	204. 881425	8. 5	0. 60703
11. 1	11. 64	3. 8	10. 84	3. 3	21. 14	1. 2	0. 526946	10. a	201. 105326	13. 1	0. 571122
1. 1	11. 38	10. a	10. 50	3. 8	20. 82	4. 1	0. 526946	2. 2	189. 420702	1. 3	0. 558995
6. 1	10. 24	7. 2	10. 34	11. 1	20. 80	2. a	0. 526946	9. a	180. 65549	7. 2	0. 544314
8. 5	10. 16	2. 2	10. 09	3. 1	19. 92	8. 7	0. 526946	3. b	169. 765616	12. 2	0. 51755
3. 8	9. 98	17. 9	9. 58	3. c	19. 56	3. b	0. 52071	3. c	166. 967063	8. 6	0. 511381
3. 7	9. 59	2. 1	9. 46	17. 18	19. 16	9. a	0. 52071	2. 5	154. 111054	9. a	0. 509964
17. 9	9. 32	11. 1	9. 16	17. 9	18. 90	2. 5	0. 52071	2. 1	151. 926279	1. 2	0. 505594

Legend: 1. 2, 1. 3, 2. 1, 2. 2, 2. 3, 3. 3, 3. b, 6. 1, 6. 2, 7. 1, 7. 2, 10. a, 10. b, 17. 9, 17. 18

Strategic targets identified by ranking various centrality metrics using network analysis techniques

**Indonesia:** 15 key targets and associated pre-set indicators

Target	weighted indegree	Target	weighted outdegree	Target	weighted degree	Target	closness centrality	Target	betweeness centrality	Target	eigen centrality
10. b	12. 35	17. 18	16. 45	6. 2	24. 06	17. 18	1	17. 18	655. 827126	2. 3	1
10. a	10. 54	6. 2	13. 80	10. b	21. 75	2. 3	0. 598684	6. 2	648. 177219	7. 1	0. 916305
6. 2	10. 27	4. 1	12. 35	2. 1	19. 46	6. 2	0. 583333	2. 3	520. 936836	6. 4	0. 862064
2. 3	10. 03	1. 2	10. 95	2. 3	19. 38	7. 1	0. 579618	12. 2	493. 022725	6. 2	0. 771904
2. 1	9. 73	7. 1	10. 29	10. a	18. 73	2. 4	0. 579618	17. 9	341. 495037	2. 1	0. 745932
8. 6	8. 45	8. 6	9. 74	8. 6	18. 19	6. a	0. 575949	2. 4	310. 75672	10. b	0. 736154
5. b	8. 35	2. 1	9. 73	4. 1	17. 55	12. 2	0. 575949	2. a	266. 805088	2. 4	0. 726279
9. a	7. 66	10. b	9. 40	1. 2	16. 86	7. 2	0. 56875	7. 1	265. 510349	10. a	0. 7005
9. c	7. 26	2. 3	9. 36	17. 18	15. 82	7. 3	0. 56875	10. b	264. 989	8. 5	0. 646029
3. b	6. 40	4. 6	8. 92	7. 1	14. 94	17. 9	0. 558282	8. 1	255. 342683	1. 5	0. 643784
2. 2	6. 33	3. b	8. 45	9. a	14. 85	12. a	0. 554878	6. 4	239. 12632	9. a	0. 633946
17. 6	6. 02	10. a	8. 19	3. b	14. 84	9. 4	0. 54491	13. 3	236. 84248	2. 2	0. 633318
1. 2	5. 91	3. 1	7. 65	5. b	14. 40	2. a	0. 538462	8. 6	221. 621149	7. 2	0. 63233
2. a	5. 86	17. 8	7. 49	2. 2	13. 56	8. 4	0. 535294	10. a	202. 679501	3. 3	0. 612961
4. 5	5. 31	2. 2	7. 23	9. c	12. 34	11. 2	0. 52907	9. a	194. 181163	13. 1	0. 596446
4. 1	5. 20	9. a	7. 19	4. 6	12. 28	4. b	0. 526012	3. b	191. 296619	8. 6	0. 593323
5. 5	4. 97	11. 1	6. 91	3. 1	12. 05	3. b	0. 522989	12. a	188. 874216	8. 1	0. 581708
5. 3	4. 96	1. 1	6. 19	17. 8	11. 47	9. a	0. 514124	6. a	181. 694027	12. 2	0. 579544
9. 2	4. 79	7. 2	6. 13	11. 1	11. 33	13. 1	0. 514124	5. b	178. 257418	2. a	0. 549125
7. 1	4. 65	5. b	6. 05	17. 6	11. 31	8. 6	0. 511236	2. 2	170. 218764	8. 2	0. 527686

Legend: 2. 1, 2. 2, 2. 3, 2. 4, 2. a, 3. b, 5. b, 6. 2, 7. 1, 7. 2, 8. 6, 9. a, 10. a, 10. b, 17. 18

Alignment of NDC-related climate actions and SDGs
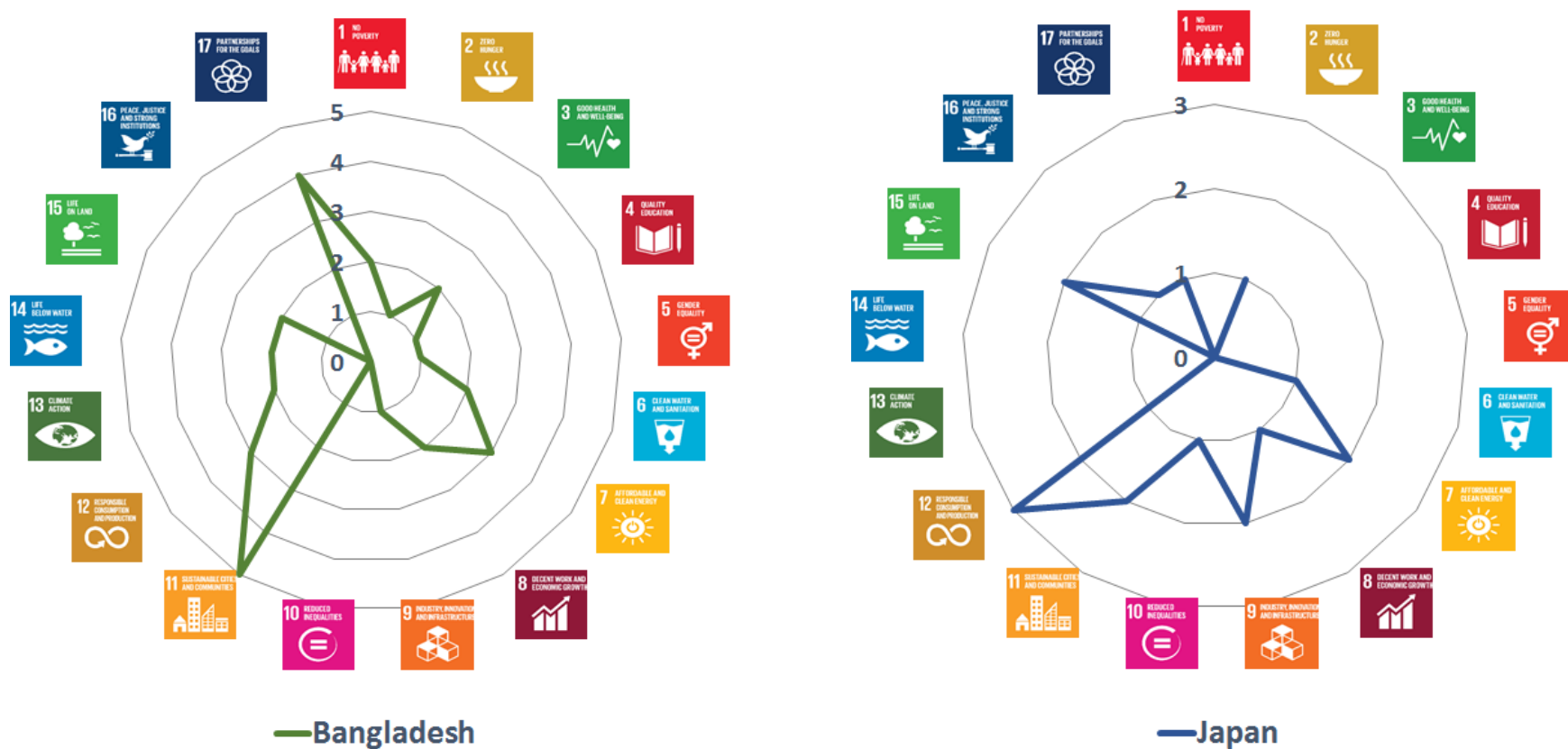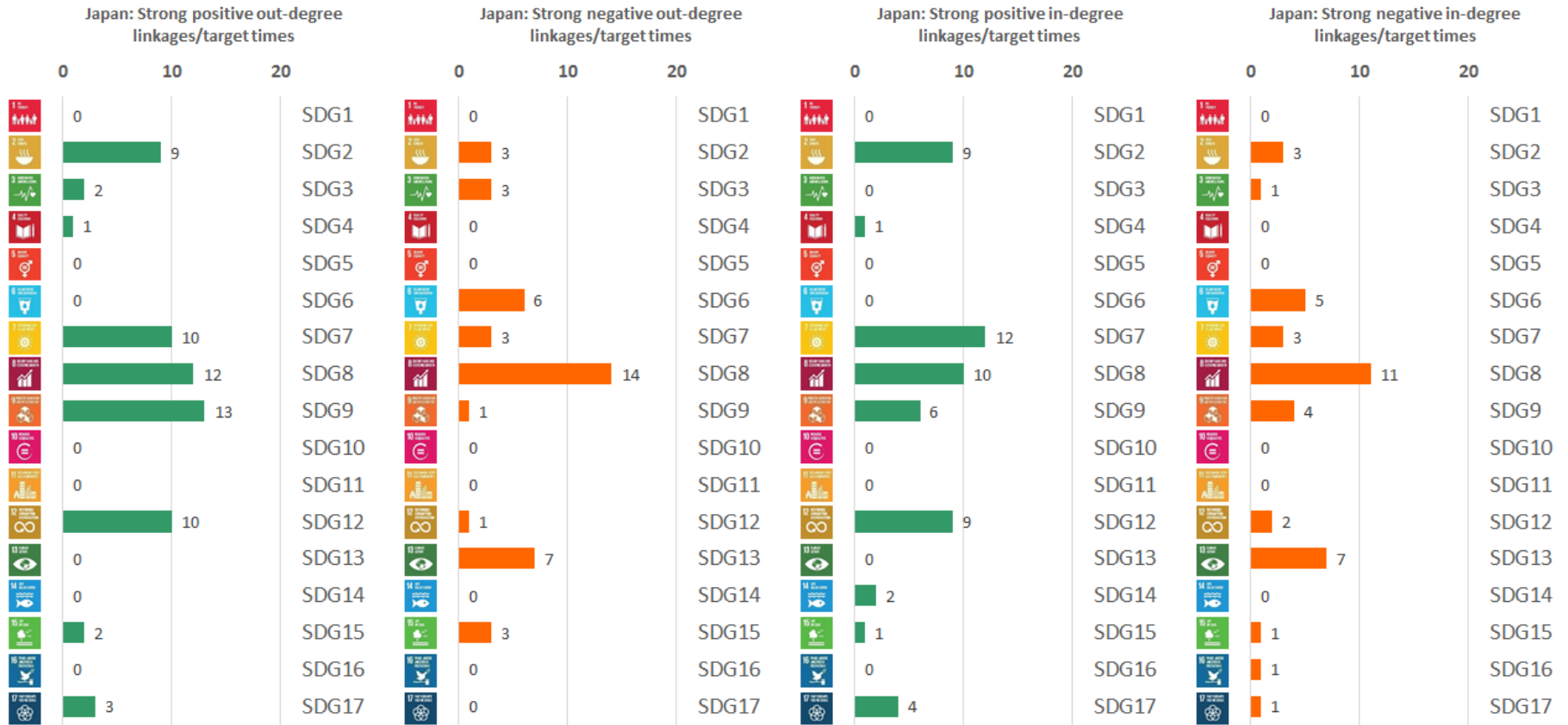

—Bangladesh

—Japan

Source: Compiled based on the ClimateWatch (WRI)

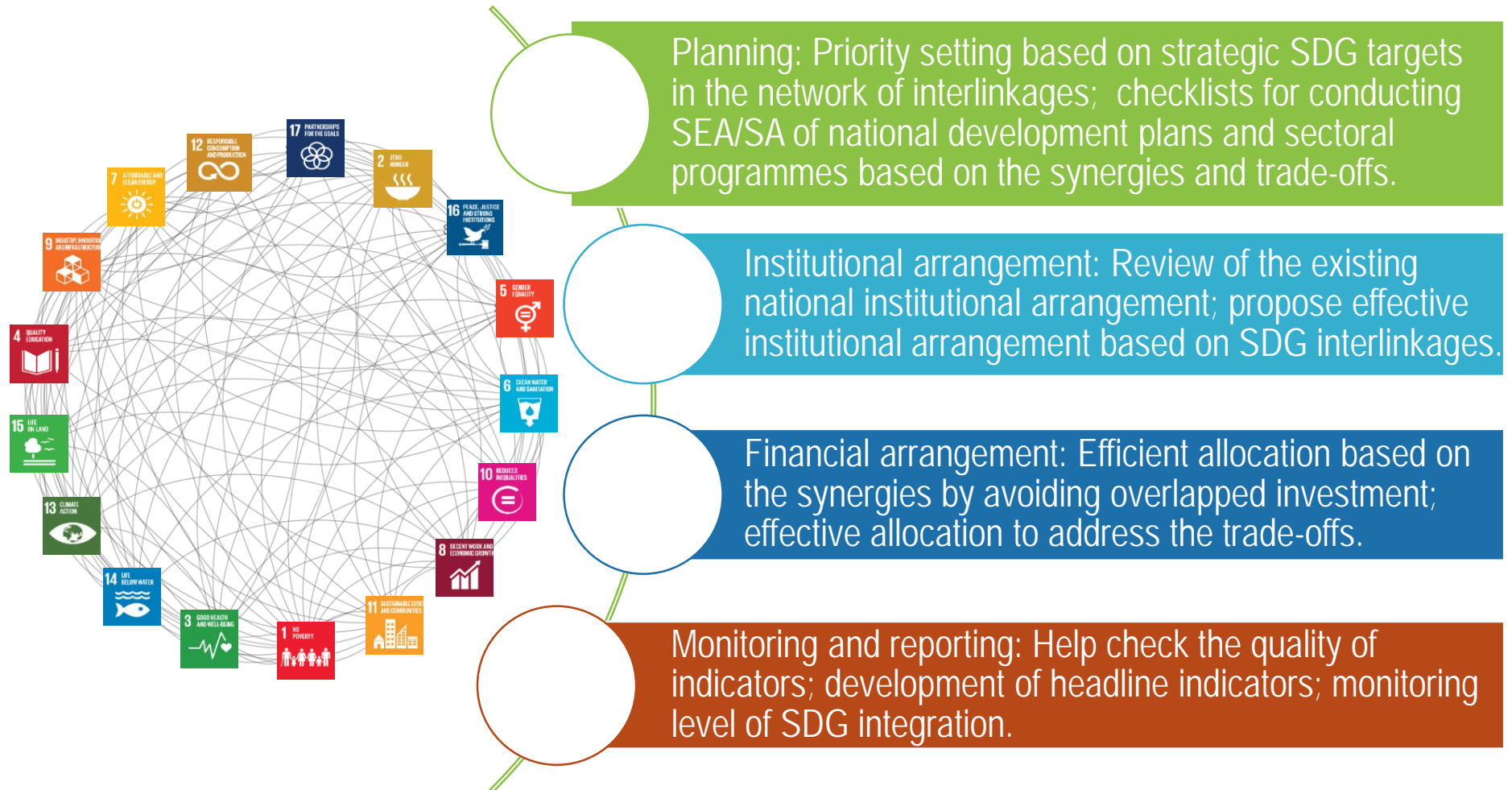# Bangladesh: Major NDC-SDG synergies and trade-offs
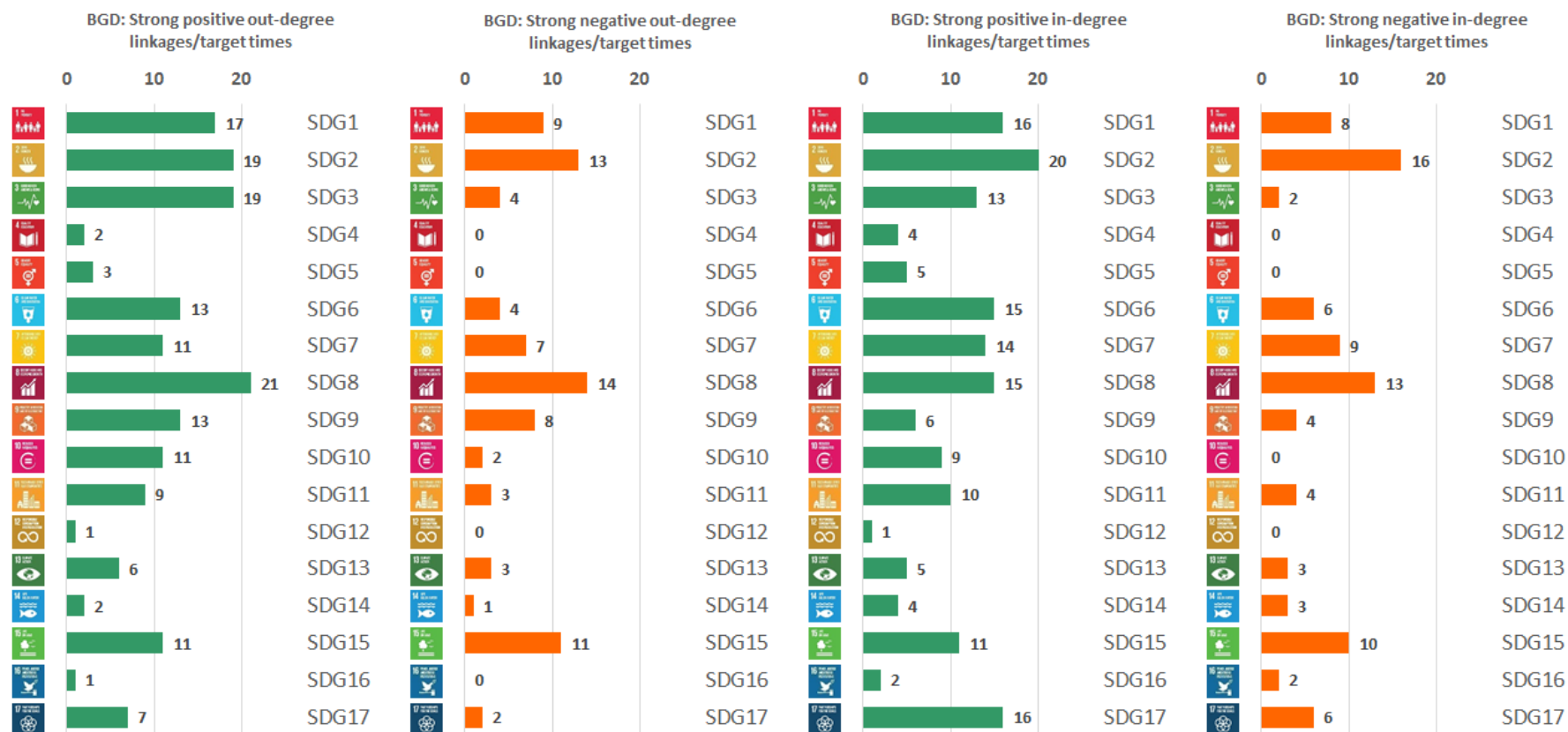
Source: Zhou & Moinuddin, 2018.

Japan: Major NDC-SDG synergies and trade-offs

Source: Zhou & Moinuddin, 2018.

Applications of the SDG interlinkages tool for SDG integration at different stages of the policy cycle

Planning: Priority setting based on strategic SDG targets in the network of interlinkages; checklists for conducting SEA/SA of national development plans and sectoral programmes based on the synergies and trade-offs.

Institutional arrangement: Review of the existing national institutional arrangement; propose effective institutional arrangement based on SDG interlinkages.

Financial arrangement: Efficient allocation based on the synergies by avoiding overlapped investment; effective allocation to address the trade-offs.

Monitoring and reporting: Help check the quality of indicators; development of headline indicators; monitoring level of SDG integration.

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Zhou, X., Moinuddin, M., 2017. Sustainable Development Goals Interlinkages and Network Analysis: A practical tool for SDG integration and policy coherence. IGES Research Report. Hayama: IGES. Available at: https://sdginterlinkages.iges.jp/files/IGES_Research%20Report_SDG%20Interlinkages_Publication.pdf.

Zhou, X., Moinuddin, M., Li, Y., 2017. SDG Interlinkages and Data Visualisation Web Tool. Hayama: IGES. Available at: https://sdginterlinkages.iges.jp/visualisationtool.html.

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