



New approaches towards assessing trade-offs and synergies between SDG 6 and other SDGs

Working Group within GRoW cross-cutting topic „UN-Sustainable Development Goals“

Dr. Frank-Andreas Weber, FiW e.V. Aachen, Germany, InoCottonGROW

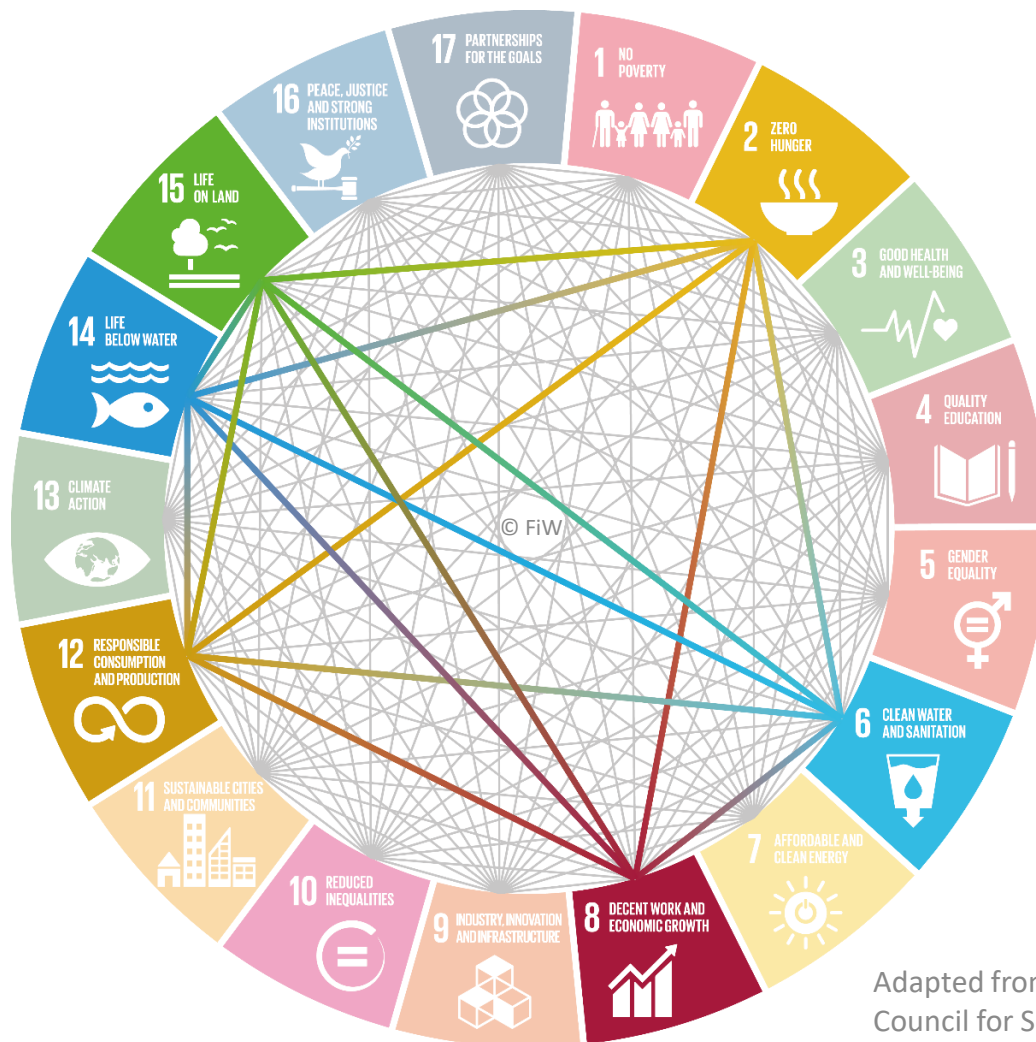
Manuel Krauß, University of Stuttgart, Germany, TRUST

with Input from WANDEL and STEER and further Working Group Members

Event on Stockholm World Water Week, 25 August 2019, 14:00-15:30h

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UN-SDG 6 interlinkages with other goals

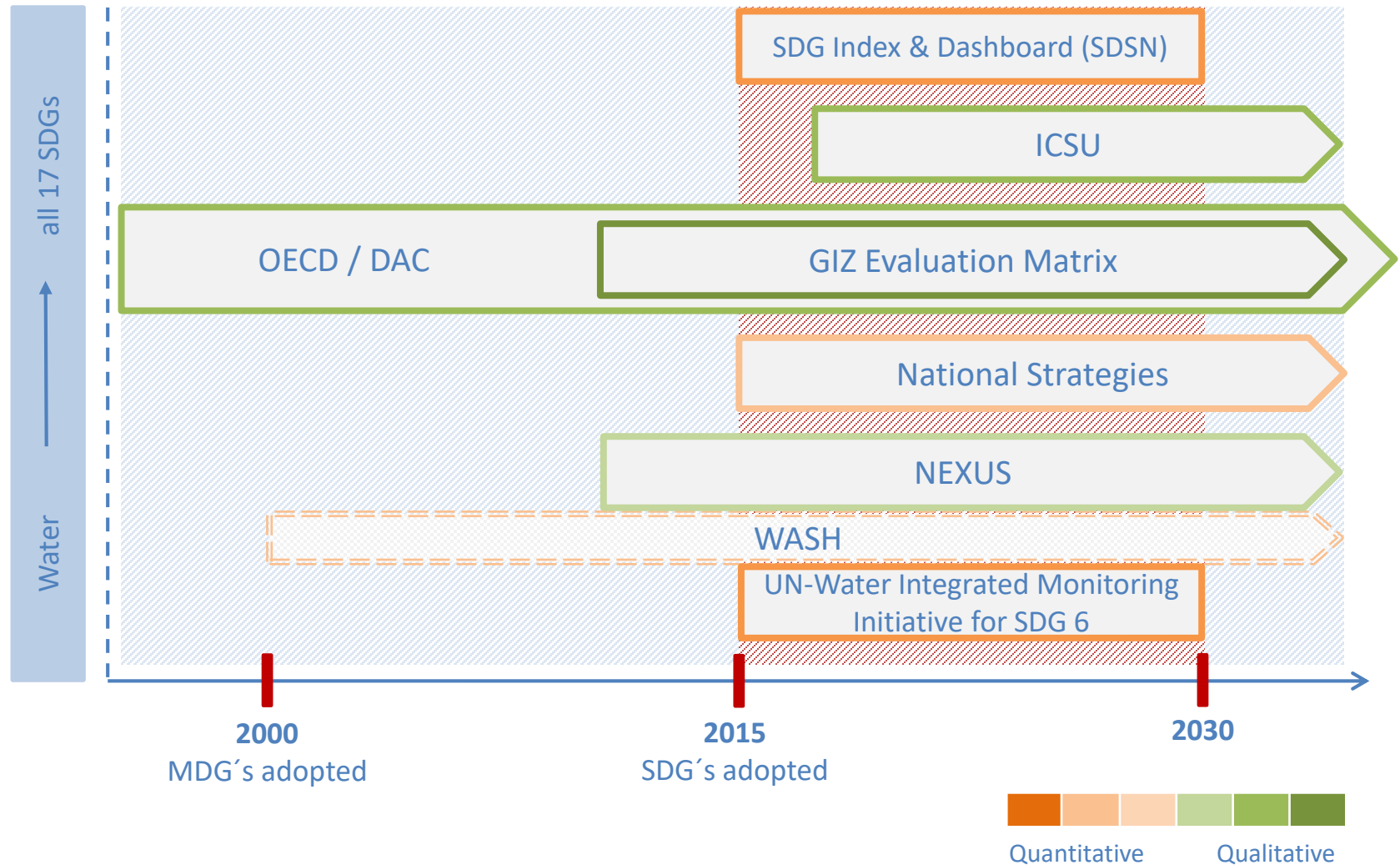


Adapted from International
Council for Science (ICSU 2017)

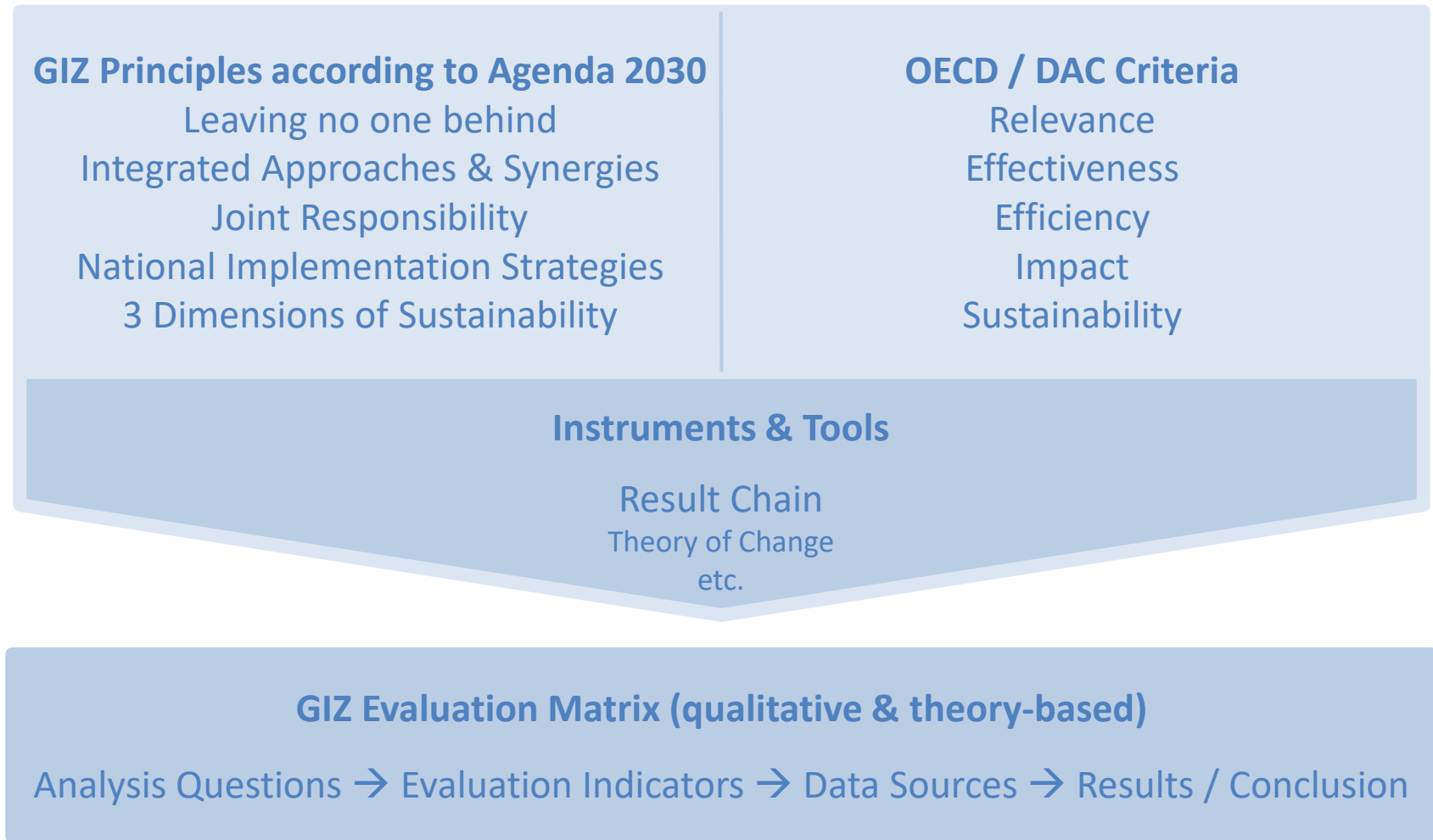
Objective

1. Discuss a **new assessment procedure** by which decision makers can evaluate the effects of key projects / policy strategies on achieving UN-SDG targets including **indirect trade-offs and synergies**.
 2. Demonstrate the **importance of SDG 6 in achieving other SDGs** using regional expertise and best practices from work generated within GRoW projects.
- **Support decisions-making** to harness synergies and avoid / mitigate potentially conflicting approaches.

Current Approaches & Methods to Assess Progress towards SDG Achievement



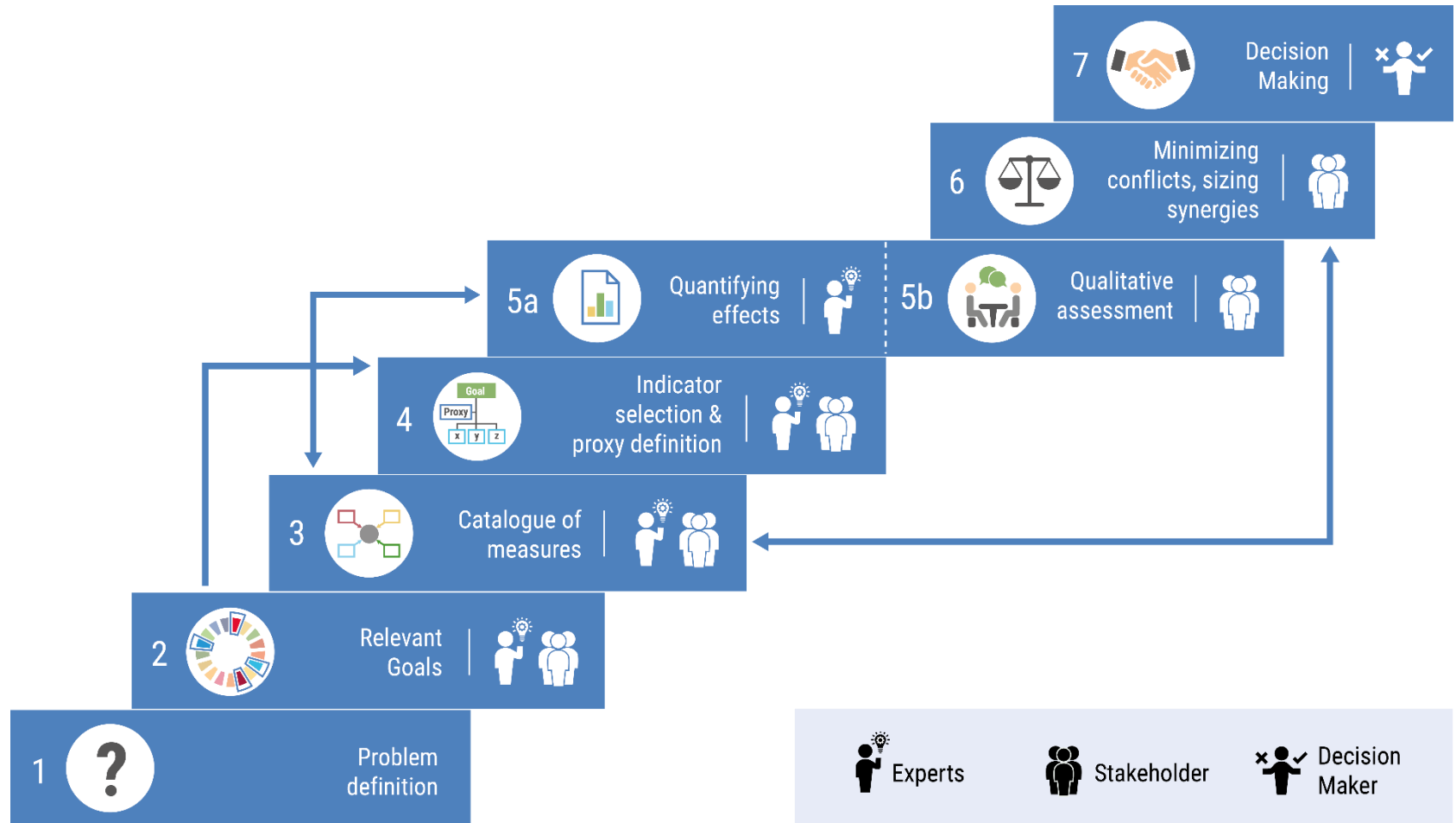
GIZ Project Monitoring & Evaluation



Aims for New Assessment Procedure for Project Planning & Implementation

- Holistic approach by looking on all 17 goals and 169 targets
- Allow context-specific assessment
- Working across different scales
- Participatory involvement of stakeholders to include local knowledge to minimize trade-offs and size synergies
- Be quantitatively as far as possible, but allow qualitative assessment if no projections / model / data are available. Handle data gaps.
- “Make it as simple as possible but not simpler”

Proposed Assessment Procedure



Case studies

Peru



Brazil, Marocco, Germany



Germany



Pakistan, Turkey, Germany



Case studies





Case studies

1. Problem definitions



Population and economic growth lead to increased pressure on water resources and overexploitation of groundwater resources; lack of access to **safe drinking water, sanitation and hygiene**; unsafe wastewater reuse.



Assess direct (on-site) & indirect impacts of electricity production from sugarcane on water resources along the energy supply chain.



Re-conversion of the Emscher catchment from **heavily-polluted open wastewater channels** to an **ecologically improved watercourse** → focus on sustainable water resources management, participatory landscape planning & nature conservation between 1990 and 2020.



Water scarcity triggers **competition between cotton and food-crop farming** in one of world's largest irrigation systems, leaving farmers at the tail suffering from insufficient water allocation. Population growth, climate change, and pollution exacerbate water-related challenges.



Case studies

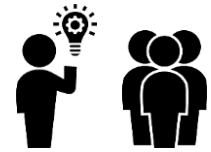
2. Relevant Goals

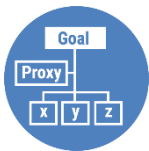




Case studies

3. Catalogue of Measures





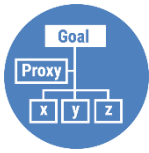
Case studies

4. Indicator Selection & Proxy Definition

5a. Quantitative Effects



2. Relevant Goals	Quantitative Assessment?	4. Indicator Selection & Proxy Definition	5a. Quantitative Effects		
			Today	Today – Baseline	Tomorrow – Measure implemented
2	X	2.2.2: Prevalence of malnutrition [%]	*	*	*
5	X	Proxy: Participation of women in water management decisions	*	*	*
6	✓	6.1.1: Drinking water: safely managed [%]	a	constant	~ 50
	✓	6.2.1: Sanitation services: safely managed [%]	b	constant	~ 50
	✓	6.3.1: Wastewater: safely managed [%]	0	0	~ 50



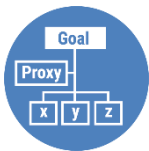
Case studies

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Case studies

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5a. Quantitative Effects



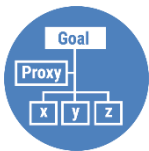
					
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	✓	6.3.1: Wastewater: safely managed [%]	0	0	~ 50

a)

2) JMP SERVICE LADDER	
Safely managed	0,5%
Basic	26,2%
Limited	37,4%
Unimproved	8,6%
Surface Water	27,4%

b)

2) JMP SERVICE LADDER	
Safely managed	0,0%
Basic	0,0%
Limited	28,2%
Unimproved	0,0%
Open Defecation	71,8%







Case studies

4. Indicator Selection & Proxy Definition

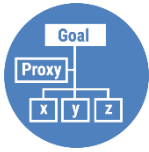
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a) and b) adapted indicator





ADVANCED SERVICE LADDER - PRIVAT HOMES		ADVANCED SERVICE LADDER - PUBLIC TOILETS		ADVANCED SERVICE LADDER - SCHOOL TOILETS	
Limited	100%				
Basic	90%	Basic	64%	Basic	83%
Safely managed	58%	Limited	100%	Limited	100%
Drinking Water		Sanitation		Hygiene	



Case studies

4. Indicator Selection & Proxy Definition

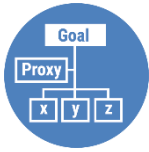
5a. Quantitative Effects

					
2. Relevant Goals	Quantitative Assessment?	4. Indicator Selection & Proxy Definition	5a. Quantitative Effects		
			Today	2030 – Baseline	2030 – Measure implemented
6	X	6.3.2: Water quality	**	*	*
	✓	6.4.1: Water use efficiency [%]	75	80	85
	X	Proxy 6: Water scarcity footprint [L/kWh]	0,63	*	*
7	✓	7.1.1: Access to electricity [%]	100	100	100
	✓	7.2.1: Renewable energy [%]	45,3	45,7	47

* not yet quantified

** below drinking water threshold

*** share of electricity production



Case studies

4. Indicator Selection & Proxy Definition

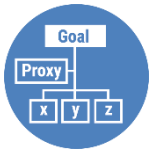
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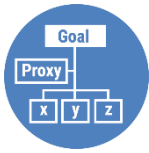
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5a. Quantitative Effects



2. Relevant Goals	Quantitative Assessment?	4. Indicator Selection & Proxy Definition	5a. Quantitative Effects		
			Before conversion	Today – Baseline	2030 – Conversion completed
4	✓	Proxy: Excursions participants – Emscher basin ¹	0	465 - 1.549	> 1.549 (aim)
6	✓	6.3.1: Wastewater [%]	100	100	100
	✓	6.3.2: Water quality [%]	0	38	32
	✓	6.5.1: Integrated water resources management [%]	20	75	95
	✓	Proxy: Total in stream wetted surface [ha] ¹	95	~ 130	168
15	✓	Proxy: Threatened species – IUCN Red list [per site]	0	4	6

¹ Indicator taken from DESSIN (2016): Quantified ESS for 3 mature sites including recommendations for application (D13.1).



Case studies

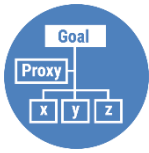
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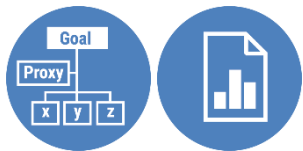
Case studies

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			Today	2030 – Baseline	2030 – Measure implemented
2	✓	Proxy: Yield Cotton [t raw cotton/ha]	2,95	2,95	3,25
	✗	2.1.1: Prevalence of undernourishment [%]	19,9	*	*
6	✓	Proxy: Water productivity [kg/m ³ gross irrigation]	0,48	0,48	0,68
	✗	6.4.2: Level of water stress [%]	102,5	*	*
8	✗	Proxy: Cotton farmer average income [€/a]	1.768	*	*

* not yet quantified



Case studies

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5a. Quantitative Effects

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* not yet quantified



Case studies

5b. Qualitative Assessment



Goals, Targets or Proxys	2030
2: Zero Hunger	Slightly supporting
3: Good Health & Well-Being	Supporting
5: Gender Equality	Slightly supporting
6.4: Water Scarcity	Supporting
8: Decent Work & Economic Growth	Slightly supporting



Goals, Targets or Proxys	2030
2: Zero Hunger	Likely conflicting
6.3, 6.4: Water quality & efficiency	Likely conflicting
13: Combat Climate Change	Very likely supporting

Goals, Targets or Proxys	2020
4: Quality Education	Slightly supporting
6.3, 6.6: Water quality & ecosystems	Supporting
8: Decent Work & Economic Growth	Slightly supporting
11: Sustainable Cities & Communities	Slightly supporting
15: Life on Land	Supporting

Goals, Targets or Proxys	2030
2: Zero Hunger	Likely conflicting
6.6: Restore water-related ecosystems	Likely supporting
8: Decent Work & Economic Growth	World cotton price
15: Life on Land	Likely supporting



Conclusions

- **This is work in progress:** Assessment procedure not yet carried out in a formal planning process
- Findings of all 12 BMBF-GRoW R&D projects in 23 countries underpins **SDG 6 Synthesis Report:**
 - Achieving SDG 6 is essential for progress on all other SDGs and vice versa
 - The time to act on SDG 6 is now
 - Global SDG 6 targets must be localized and adapted to country context
 - Effective water resources management needs more and better data
- **Strength** of assessment procedure suggested:
 - Visible integration of SDG 6 contribution to achievement of other goals
 - Cooperation of relevant stakeholders early on for minimizing trade-offs and sizing synergies



Thank you and enjoy the conference!

InoCotton
GRoW



MuDak-WRM

WANDEL 
Wasserressourcen als bedeutsame Faktoren der
Energiewende auf lokaler und globaler Ebene

STEER 

MedWater 

trust 



ViWA
Virtual Water Values

Globe
Drought 



iWa
GSS
INTEGRATED WATER
GOVERNANCE



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