

# Linkages between the SDGs and the GBEP Sustainability Indicators for Bioenergy

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# GBEP and the SDGs



- **GBEP Task Force on Sustainability (TFS):** enhance practicality of GBEP Sustainability Indicators for Bioenergy (GSI) by producing a **complementary Implementation Guide** to the GSI report
- 13th TFS Meeting 2016: Understand GSIs in the context of **Sustainable Development Goals (SDGs)**
- As a contribution, **Technical Paper** by IINAS and IFEU highlights linkages between SDGs and GSIs, and determines how they may be mutually reinforcing

# The SDGs and bioenergy

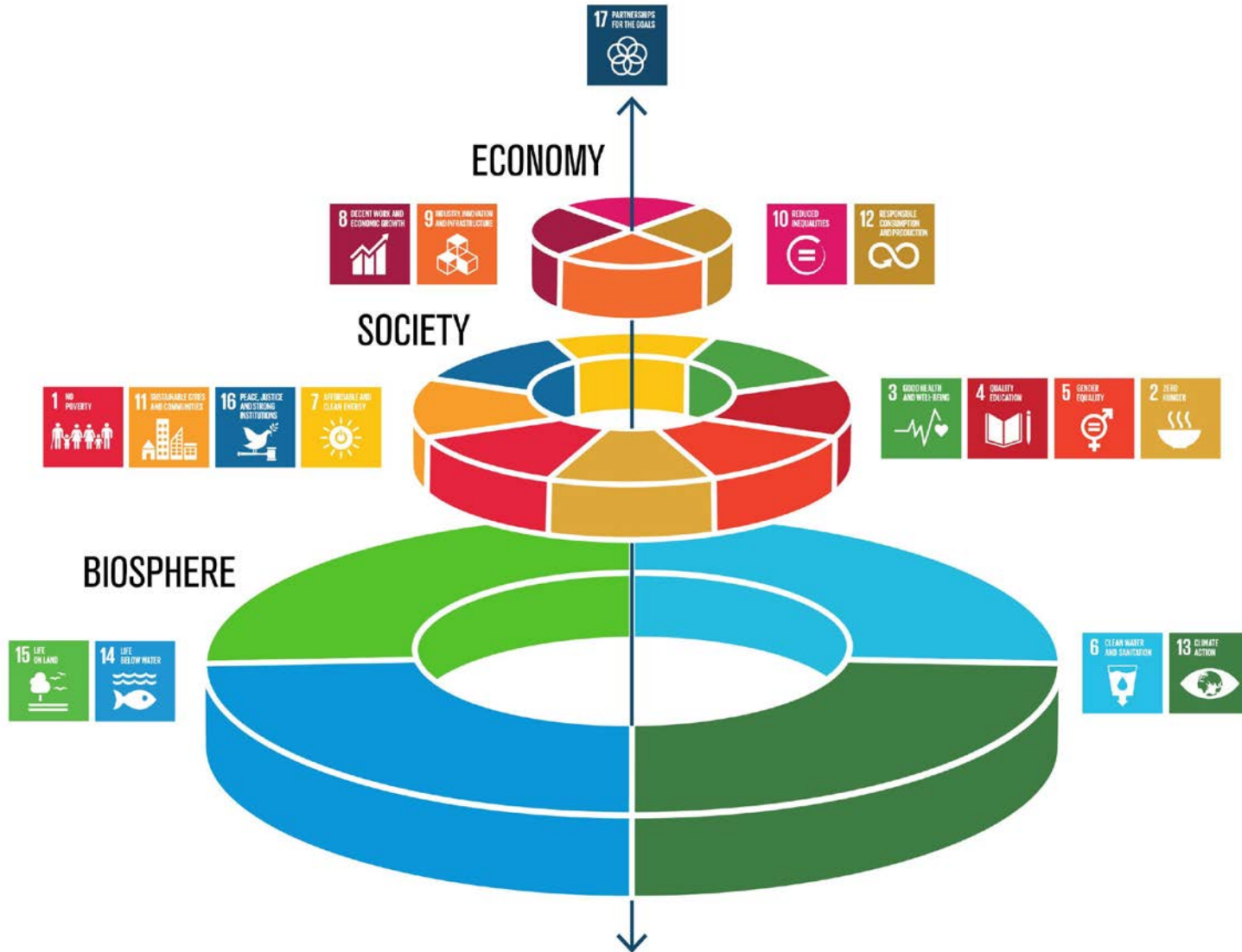
**15 out of 17** SDGs are directly or indirectly **linked** to **land** and **bioenergy**, especially

- 2 (food & agriculture)
- 4 (water)
- 7 (energy)
- 8 (growth, employment)
- 11 (cities)
- 12 (consumption & prod.)
- 13 (climate change)
- 15 (forests, land)

SDG **indicators** available

SDG	Key wording	Driver	Safe-guard
<b>1</b> End poverty in all its forms everywhere	End poverty in all its forms everywhere	(✓)	(✓)
<b>2</b> End hunger, achieve food security and improved nutrition and promote sustainable agriculture	End hunger, achieve food security and improved nutrition and promote sustainable agriculture	✓	✓
<b>3</b> Ensure healthy lives and promote well-being for all at all ages	Ensure healthy lives and promote well-being for all at all ages	(✓)	(✓)
<b>4</b> Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all		
<b>5</b> Achieve gender equality and empower all women and girls	Achieve gender equality and empower all women and girls	(✓)	(✓)
<b>6</b> Ensure availability and sustainable management of water and sanitation for all	Ensure availability and sustainable management of water and sanitation for all	(✓)	(✓)
<b>7</b> Ensure access to affordable, reliable, sustainable and modern energy for all	Ensure access to affordable, reliable, sustainable and modern energy for all	✓	(✓)
<b>8</b> Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	✓	(✓)
<b>9</b> Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	(✓)	
<b>10</b> Reduce inequality within and among countries	Reduce inequality within and among countries		
<b>11</b> Make cities and human settlements inclusive, safe, resilient and sustainable	Make cities and human settlements inclusive, safe, resilient and sustainable	✓	(✓)
<b>12</b> Ensure sustainable consumption and production patterns	Ensure sustainable consumption and production patterns	✓	(✓)
<b>13</b> Take urgent action to combat climate change and its impacts	Take urgent action to combat climate change and its impacts	✓	✓
<b>14</b> Conserve and sustainably use the oceans, seas and marine resources for sustainable development	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	(✓)	(✓)
<b>15</b> Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	✓	✓
<b>16</b> Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels		(✓)
<b>17</b> Strengthen the means of implementation and revitalise the global partnership for sustainable development	Strengthen the means of implementation and revitalise the global partnership for sustainable development	(✓)	(✓)

# Conceptual Structuring of the SDGs













# SDGs & GSIs: Mapping

Sustainable development goals, targets and indicators				GBEB Sustainability Indicators for Bioenergy (GSI)
SDG	Target	Indicator	Tier	GSI
	1.1	1.1.1	I	10. Price and supply of a national food basket
	1.2	1.2.1	I	11. Change in income
		1.2.2	II	
1.4	1.4.2	III	9. Allocation and tenure of land for new bioenergy production	
	2.1	2.1.1	I	10. Price and supply of a national food basket
		2.1.2		
	2.3	2.3.1	III	9. Allocation and tenure of land for new bioenergy production
		2.3.2		
2.4	2.4.1	III	7. Biological diversity in the landscape + 2. Soil quality	
2.c	2.c.1	II	10. Price and supply of a national food basket	
	3.9	3.9.1	I	15. Change in mortality and burden of disease attributable to indoor smoke
	5.4	5.4.1	II	13. Change in unpaid time spent by women and children collecting biomass
	6.3	6.3.1	II	6. Water quality
		6.3.2	III	
6.4	6.4.1	III	5. Water use and efficiency	
	6.4.2	II		
	7.1	7.1.1	I	14. Bioenergy used to expand access to modern energy services
		7.1.2		
	7.2	7.2.1	I	14 (see above) + 22. Energy diversity
	7.3	7.3.1	I	19. Gross value added + 22. Energy diversity
7.a	7.a.1	III	all GBEP work	

# SDGs & GSIs: Mapping

Sustainable development goals, targets and indicators				GBEB Sustainability Indicators for Bioenergy (GSI)
SDG	Target	Indicator	Tier	GSI
 <b>8</b> DECENT WORK AND ECONOMIC GROWTH	8.1	8.1.1	I	19. Gross value added
	8.2	8.2.1	I	12. Jobs in the bioenergy sector
	8.3	8.3.1	II	12. Jobs in the bioenergy sector
	8.5	8.5.1 8.5.2	II	11. Change in income
			I	
8.8	8.8.1 8.8.2	I III	16. Incidence of occupational injury, illness and fatalities	
 <b>9</b> INDUSTRY, INNOVATION AND INFRASTRUCTURE	9.4	9.4.1	I	1 + 19
 <b>10</b> REDUCED INEQUALITIES	10.1	10.1.1	I	11. Change in income
 <b>11</b> SUSTAINABLE CITIES AND COMMUNITIES	11.6	11.6.1	II	4. Emissions of non-GHG air pollutants, including air toxics
11.6.2		I		
 <b>12</b> RESPONSIBLE CONSUMPTION AND PRODUCTION	12.2	12.2.1 12.2.2	III II	20. Change in the consumption of fossil fuels and traditional use of biomass
 <b>13</b> CLIMATE ACTION	13.2	13.2.1	III	1. Lifecycle GHG emissions
 <b>15</b> LIFE ON LAND	15.1	15.1.1 15.1.2	I	8. Land use and land-use change related to bioenergy feedstock production
	15.2	15.2.1	II	3. Harvest levels of wood resources
	15.3	15.3.1	III	2. Soil quality
	15.8	15.8.1	III	7. Biological diversity in the landscape
 <b>17</b> PARTNERSHIPS FOR THE GOALS			I-III	GBEP work in general












# GSI for Bioenergy and the SDGs

The inverse mapping identified linkages between the GSIs and SDGs (on the level of their indicators) for each of the GSI pillars

The SDG tier classification is shown as well:













- **Tier I:** Indicator conceptually clear, established methodology and standards available and data regularly produced by countries
- **Tier II:** Indicator conceptually clear, established methodology and standards available **but** data are **not regularly** produced by countries
- **Tier III:** Indicator for which there are **no established methodology** and standards or methodology/standards are being developed/ tested

# GSI Environment Pillar and SDGs






GBEB Sustainability Indicators for Bioenergy (GSI)	Sustainable development goals, targets and indicators			
GSI	SDG	Target	Indicators	Tier
1. Lifecycle GHG emissions	 13 CLIMATE ACTION	13.2	13.2.1	III
	 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	9.4	9.4.1	I
2. Soil quality	 2 ZERO HUNGER	2.4	2.4.1	III
	 15 LIFE ON LAND	15.3	15.3.1	III
3. Harvest levels of wood resources	 15 LIFE ON LAND	15.2	15.2.1	II
4. Emissions of non-GHG air pollutants, including air toxics	 11 SUSTAINABLE CITIES AND COMMUNITIES	11.6	11.6.1 11.6.2	II I
5. Water use and efficiency	 6 CLEAN WATER AND SANITATION	6.4	6.4.1 6.4.2	III II
6. Water quality	 6 CLEAN WATER AND SANITATION	6.3	6.3.1 6.3.2	II III
7. Biological diversity in the landscape	 2 ZERO HUNGER	2.4	2.4.1	III
	 15 LIFE ON LAND	15.8	15.8.1	III
8. Land use and land-use change related to bioenergy feedstock production	 15 LIFE ON LAND	15.1	15.1.1 15.1.2	I



# GSI Social Pillar and SDGs

GBEB Sustainability Indicators for Bioenergy (GSI)	Sustainable development goals, targets and indicators			
GSI	SDG	Target	Indicators	Tier
9. Allocation and tenure of land for new bioenergy production	 1 NO POVERTY	1.4	1.4.2	III
	 2 ZERO HUNGER	2.3	2.3.1 2.3.2	III
10. Price and supply of a national food basket	 1 NO POVERTY	1.1	1.1.1	I
	 2 ZERO HUNGER	2.1	2.1.1 2.1.2	I
11. Change in income	 1 NO POVERTY	1.2	1.2.1 1.2.2	I II
	 8 DECENT WORK AND ECONOMIC GROWTH	8.5	8.5.1 8.5.2	II I
	 10 REDUCED INEQUALITIES	10.1	10.1.1	I
	 8 DECENT WORK AND ECONOMIC GROWTH	8.2 8.3	8.2.1 8.3.1	I II
13. Change in unpaid time spent by women and children collecting biomass	 5 GENDER EQUALITY	5.4	5.4.1	II
14. Bioenergy used to expand access to modern energy services	 7 AFFORDABLE AND CLEAN ENERGY	7.1	7.1.1 7.1.2	I
		7.2	7.2.1	I
15. Change in mortality and burden of disease attributable to indoor smoke	 3 GOOD HEALTH AND WELL-BEING	3.9	3.9.1	I
16. Incidence of occupational injury, illness and fatalities	 8 DECENT WORK AND ECONOMIC GROWTH	8.8	8.8.1 8.8.2	I III

# GSI Economic Pillar and SDGs

GBEB Sustainability Indicators for Bioenergy (GSI)	Sustainable development goals, targets and indicators			
	SDG	Target	Indicators	Tier
17. Productivity	no linkage			
18. Net energy balance	no linkage			
19. Gross value added	 7	7.3	7.3.1	I
	 8	8.1	8.1.1	I
	 9	9.4	9.4.1	I
20. Change in the consumption of fossil fuels and traditional use of biomass	 12	12.2	12.2.1	III
			12.2.2	II
21. Training and re-qualification of the workforce	no linkage			
22. Energy diversity	 7	7.2	7.2.1	I
		7.3	7.3.1	I
23. Infrastructure and logistics for distribution of bioenergy	no linkage			
24. Capacity and flexibility of use of bioenergy	no linkage			

# GSI and SDGs: Key findings

- **All GSIs** from ENV and SOC pillars and **majority** from ECO pillar are linked to SDGs and their targets and indicators
- In total, **23 of the 24 GSIs** are directly linked to SDGs/targets (only exception: GSI 24 on capacity and flexibility of use of bioenergy)
- **Many** GSI from **ENV** pillar linked to SDG indicators of **Tier III** (7 out of 14), implying that the SDG indicators will require more work
- **Few social** GSI linked to SDG indicators **Tier III** (3 out of 14), only 1 GSI from ECO pillar linked to SDG indicators **Tier III** (out of 4)

# GSI and SDGs: Conclusions

- **National SDG implementation** could be option to **initiate** GSI work and **GSI work** could provide (some) data for national SDG implementation
- **GSI Implementation Guide** should take up SDG interlinkages, based on Technical Paper
- Discussion on **proxies for GSIs** (best practices etc.) should be linked to **national SDG indicator** work

# SDGs and GSIs – next steps

- **Engaging** in national and international activities on **implementing the SDGs to inform** about opportunities of GSI work and data (issue for GBEP TFS and Secretariat)
- Discuss **proxies for GSIs** that could support SDG **Tier III discussion**
- **Your comments and suggestions** are welcome!



IINAS  
International Institute  
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in collaboration with



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Technical Paper for the GBEP Task Force on Sustainability

- Final Draft -

prepared for



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# More Information



[www.globalbioenergy.org](http://www.globalbioenergy.org)

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