

Towards a Sustainable Bioeconomy:

Insights from GBEP, IEA Bioenergy and how the SDGs can guide the development of bioeconomy

Presentation at the conference “Bioeconomy and its trade-offs towards meeting the Paris Agreement and the SDGs”

Nov 19, 2019 @ INSA, Toulouse



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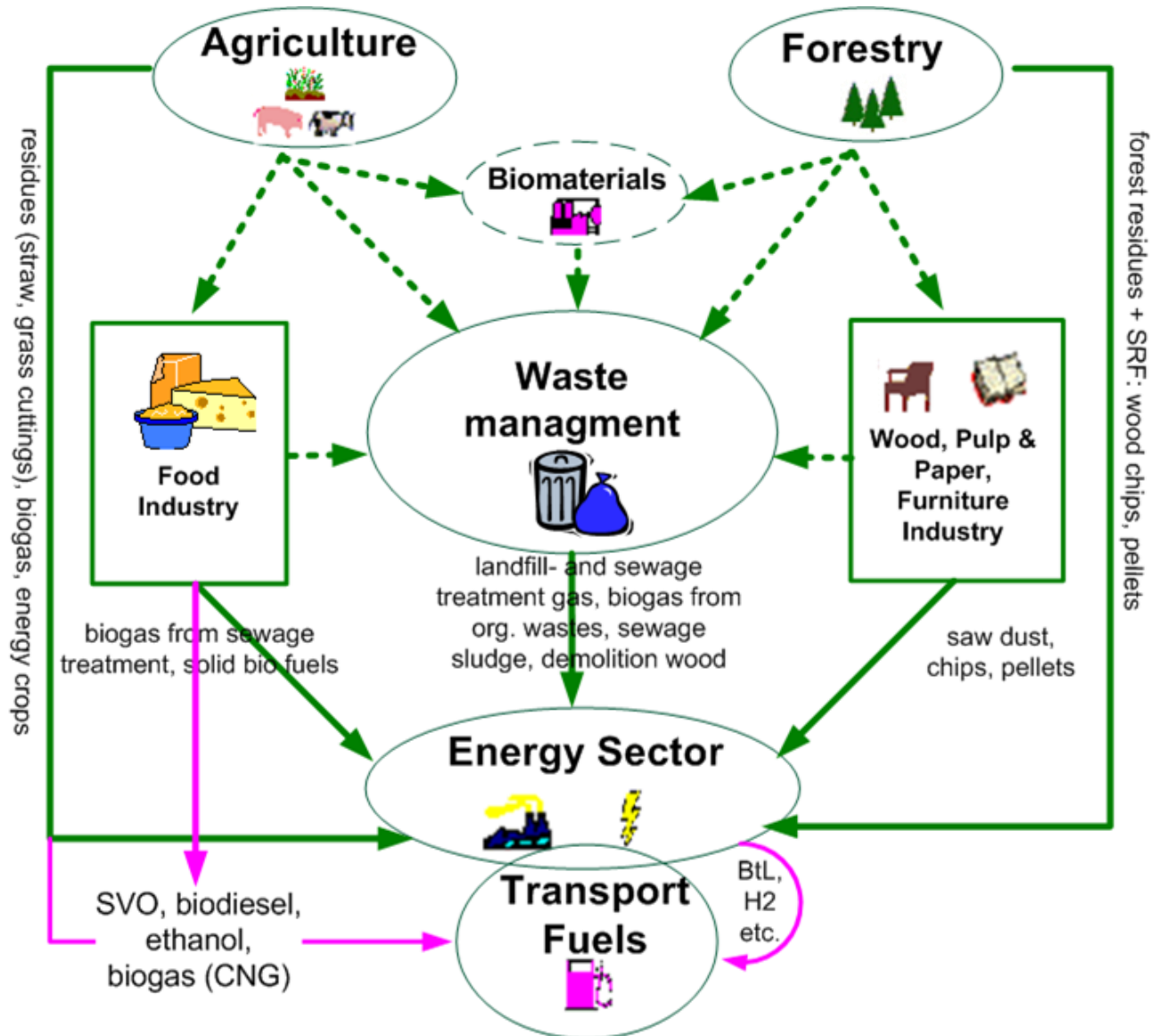
SDGs: all countries are “developing”



Source: <https://sustainabledevelopment.un.org/sdgs>

SDGs = normative **framework** to operationalize sustainability of land and biomass use

Biomass: the stuff of life



SDGs and Biomass

15 out of 17 SDGs are directly or indirectly **linked** to **biomass**, especially

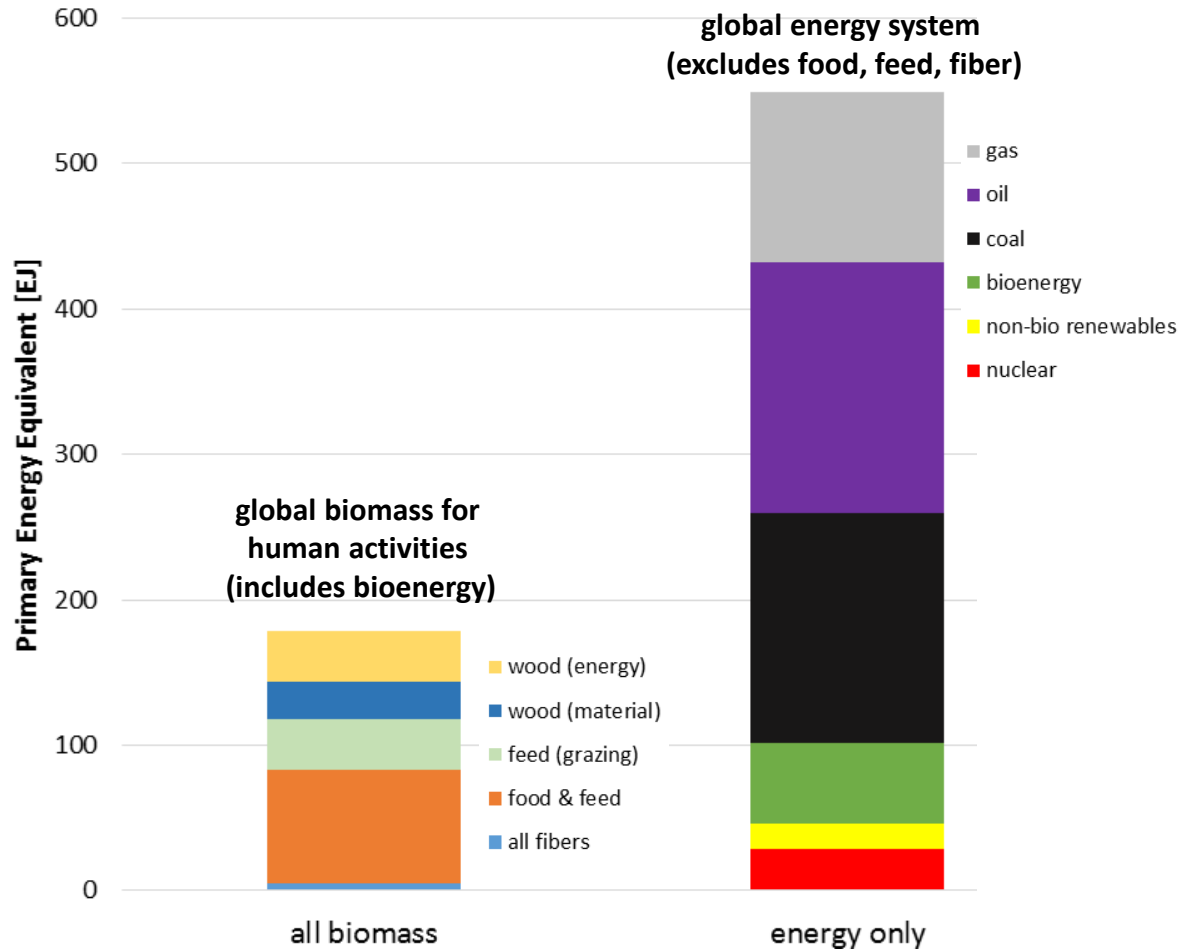
- 2 (food & agriculture)
- 3 (health) and 6 (water)
- 7 (energy)
- 8 (growth, employment)
- 11 (cities)
- 12 (consumption & prod.)
- 13 (climate change)
- 15 (forests, land)

SDG links indicate **tradeoffs**

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

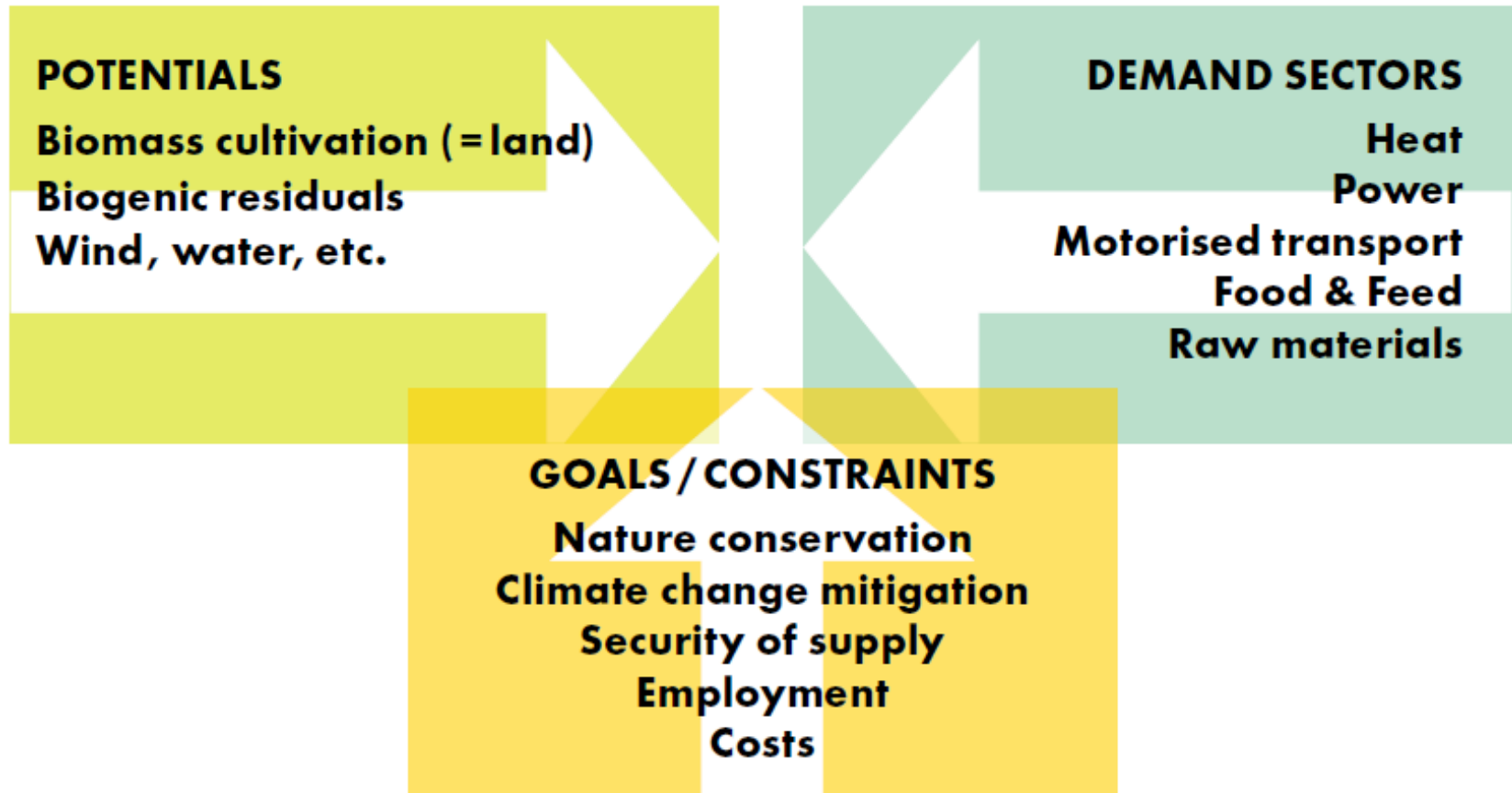
Source: own elaboration based on SDGP (2015). **Bold text:** SDG related to energy; (✓) = partially relevant

Bioeconomy and global energy



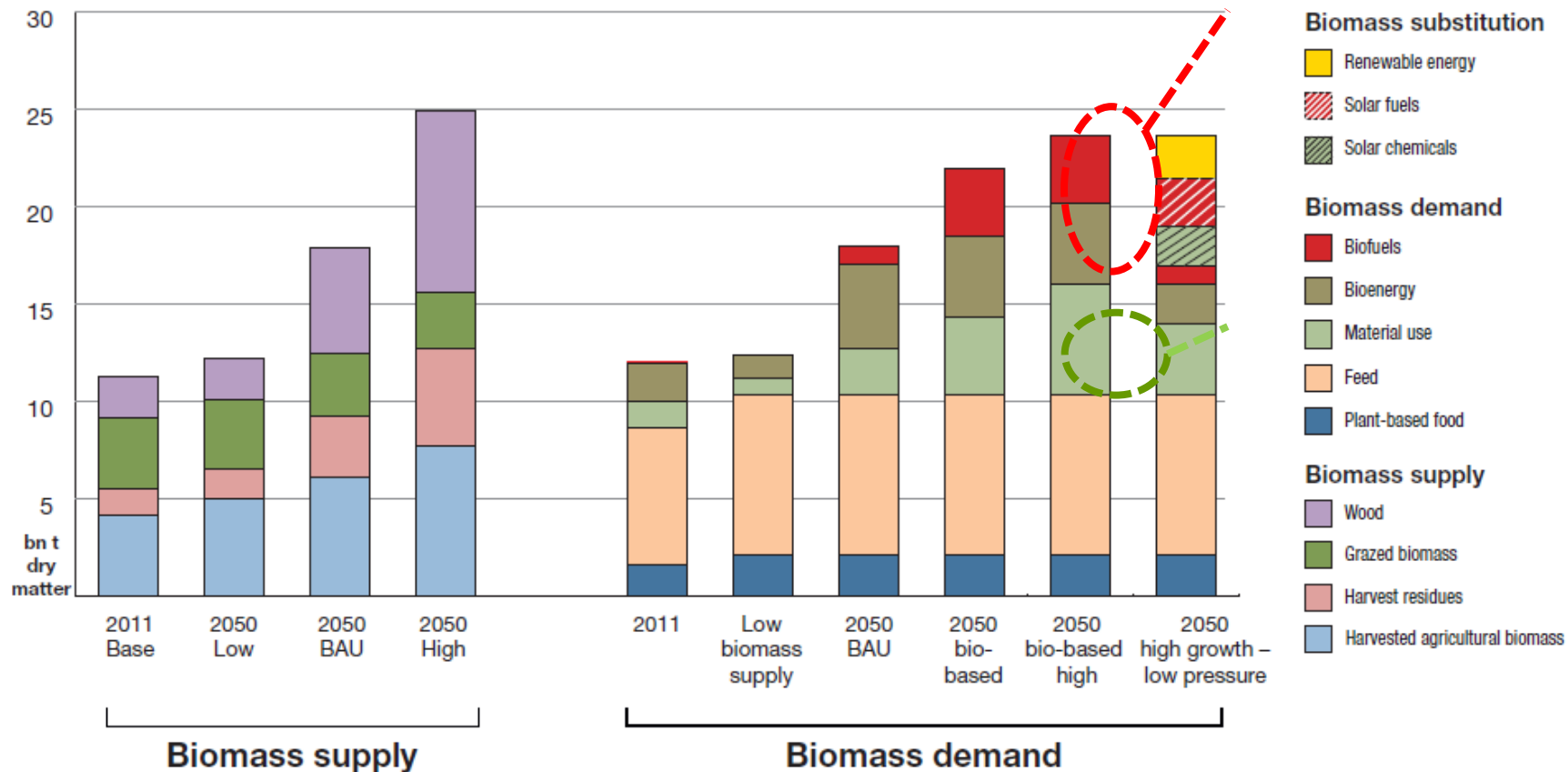
Source: IINAS calculation

Competing uses of biomass



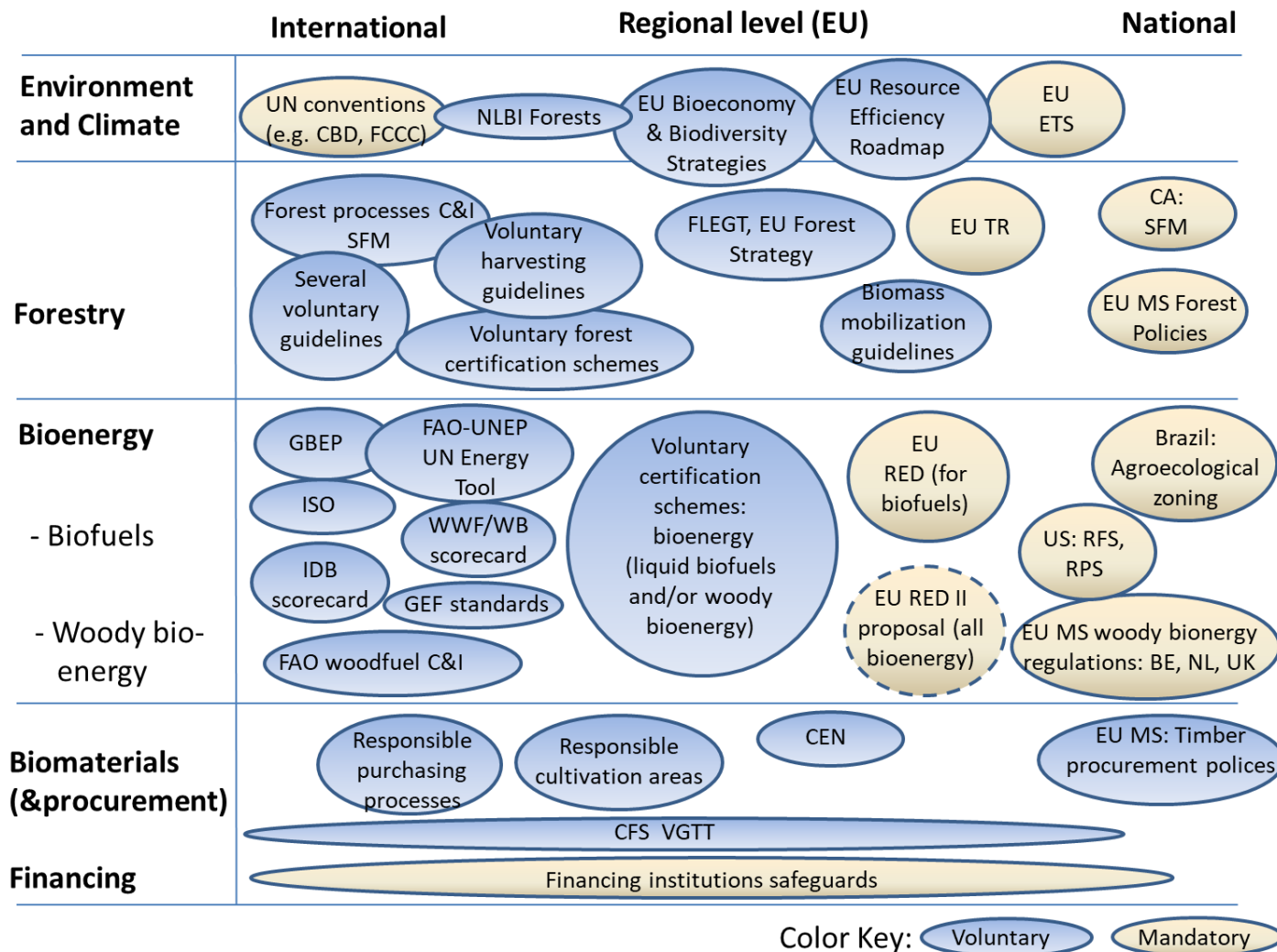
Be aware of trade-offs –most of all: go for positive ones
(AKA synergies)

Bioeconomy: Global Scenario 2050



Nova (2015) Global bioeconomy in the conflict between biomass supply and demand. nova paper #7. Hürth
www.bio-based.eu/nova-papers

Sustainability approaches



Need to harmonize sustainability requirements across sectors

GBEP Sustainability Indicators



- * History
- * Purpose and Functions
- * Partners and Membership
- * Partners
- * GBEP structure

Partners and Membership

The Partnership brings together public decision-makers, representatives of the private sector and civil society as well as international agencies with expertise in bioenergy.



Environmental pillar	Social pillar	Economic pillar
1. Life-cycle GHG emissions	9. Allocation and tenure of land for new bioenergy production	17. Productivity
2. Soil quality	10. Price and supply of a national food basket	18. Net energy balance
3. Harvest levels of wood resources	11. Change in income	19. Gross value added
4. Emissions of non-GHG air pollutants, including air toxics	12. Jobs in the bioenergy sector	20. Change in consumption of fossil fuels and traditional use of biomass
5. Water use and efficiency	13. Change in unpaid time spent by women and children collecting biomass	21. Training and re-qualification of the workforce
6. Water quality	14. Bioenergy used to expand access to modern energy services	22. Energy diversity
7. Biological diversity in the landscape	15. Change in mortality and burden of disease attributable to indoor smoke	23. Infrastructure and logistics for distribution of bioenergy
8. Land use and land-use change related to bioenergy feedstock production	16. Incidence of occupational injury, illness and fatalities	24. Capacity and flexibility of use of bioenergy

GSI for Germany – 2nd reporting

Update of the Implementation report of the GBEP Indicators for Sustainable Bioenergy in Germany – 2nd Reporting

A German contribution accompanying the
Working Group on Capacity Building (WGCB) of the
Global Bioenergy Partnership (GBEP)

on behalf of the Federal Ministry for Economic Affairs and
Energy (BMWi) in cooperation with the
Federal Ministry of Food and Agriculture (BMEL)

Heidelberg, Darmstadt, Berlin
~~October~~ 2019

Table 1 Overall synopsis of the results of GBEP indicators applied in Germany – state and trend

	ENV		SOC		ECO
1	↘	9		17	
2	→	9.1	→	17.1	→
3		9.2	→	17.2	↗
3.1	→	10	→	17.3	↗
3.2	→	11	→	17.4	
3.3	→	11.1	→	18	
4		11.2	→	18.1	↗
4.1	→	12		18.2	↗
4.2	→	12.1	↘	18.3	↗
4.3	→	12.2	→	18.4	↗
4.4	↗	12.3	→	19	→
4.5	↘	12.4	→	20	
5		12.5	→	20.1a	↗
5.1a	→	16	↘	20.1b	
5.1b	→			20.2	
5.2	→			22	→
6				24	
6.1	→			24.1	↗
6.2	→			24.2	↗
7					
7.1	↘				
7.2					
7.3	↗				
8					
8.1	↘				
8.2	↘				
8.3a	→				
8.3b	↗				
8.3c	↗				
8.3d	↗				
8.4	↘				

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)

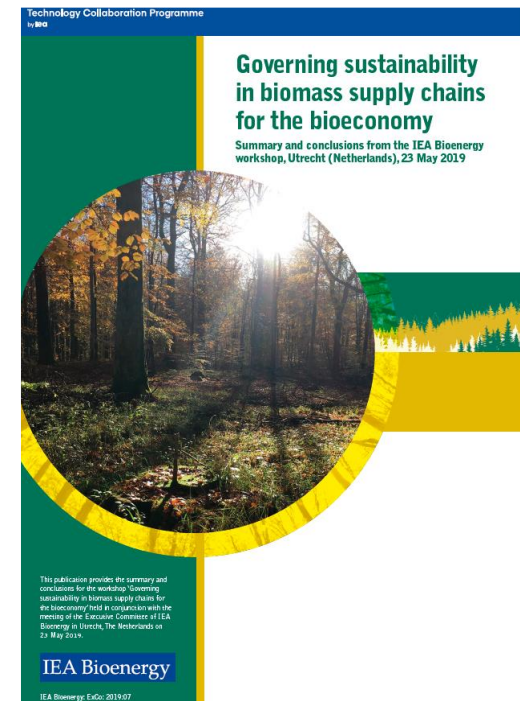
- Discuss **proxies for GSIs** that could support SDG **Tier III discussion**

- **Your comments and suggestions** are welcome!

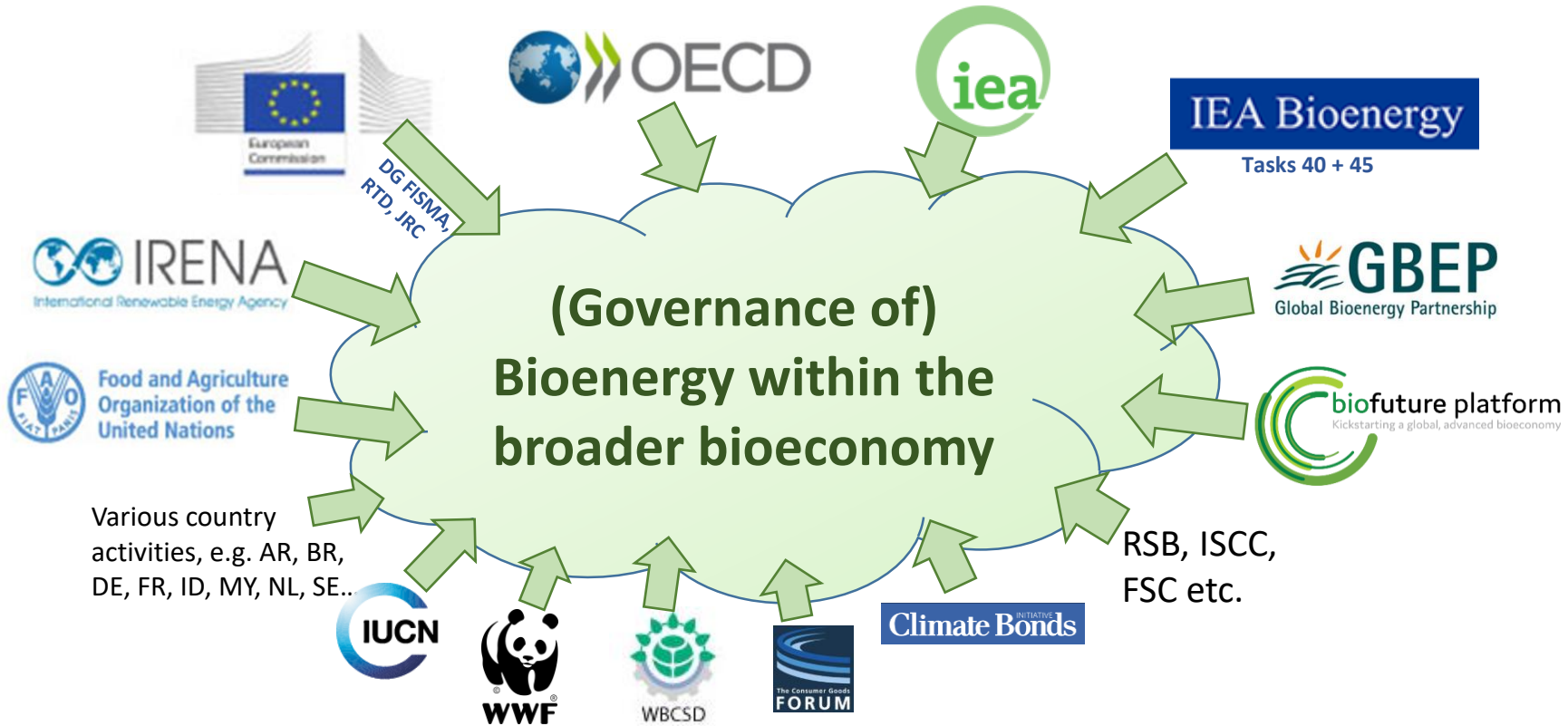


Governing sustainability in biomass supply: Utrecht workshop May 23

- **Improve Understanding** among bioeconomy & land use actors and across sectors by **mutual learning**
- Foster good practice examples and approaches providing positive SDG contributions as part of future deployment of bioenergy within a sustainable bioeconomy
- **Aligning** the variety of (international) approaches and initiatives, and **initiate joint** activities as follow-up



International contributors to sustainable bioeconomy governance



To be involved (among others):



Governing sustainability in land use and biomass supply: **Key issues**

- **Operationalize** governance of sustainable land & biomass use, incl. food/feed (“practical indicators & proxies” → Task 45 project)
- **Creating trust** through **good governance** for sustainable bioeconomy and land use, including **bioenergy**
- International collaboration, especially **financing institutions**

Who “governs”?

Landscape of relevant “hi-level” organizations



United Nations






G7 (G8 excl. RU)



(national) governments, but also:



Who “governs“?

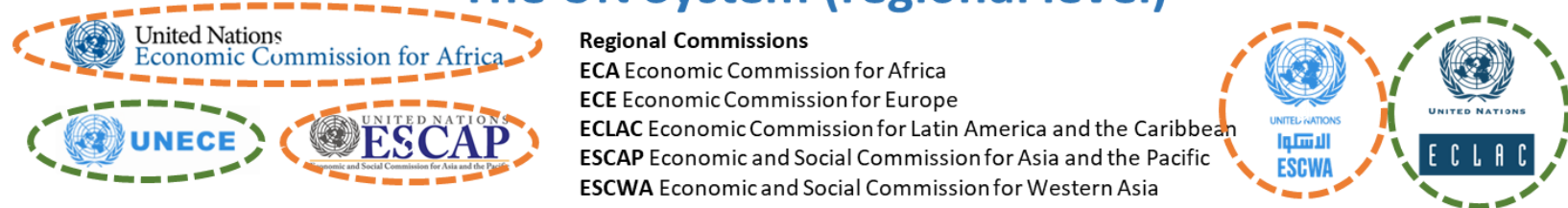
 = links established
 = links to be made
 = to be considered



The UN System (global level)

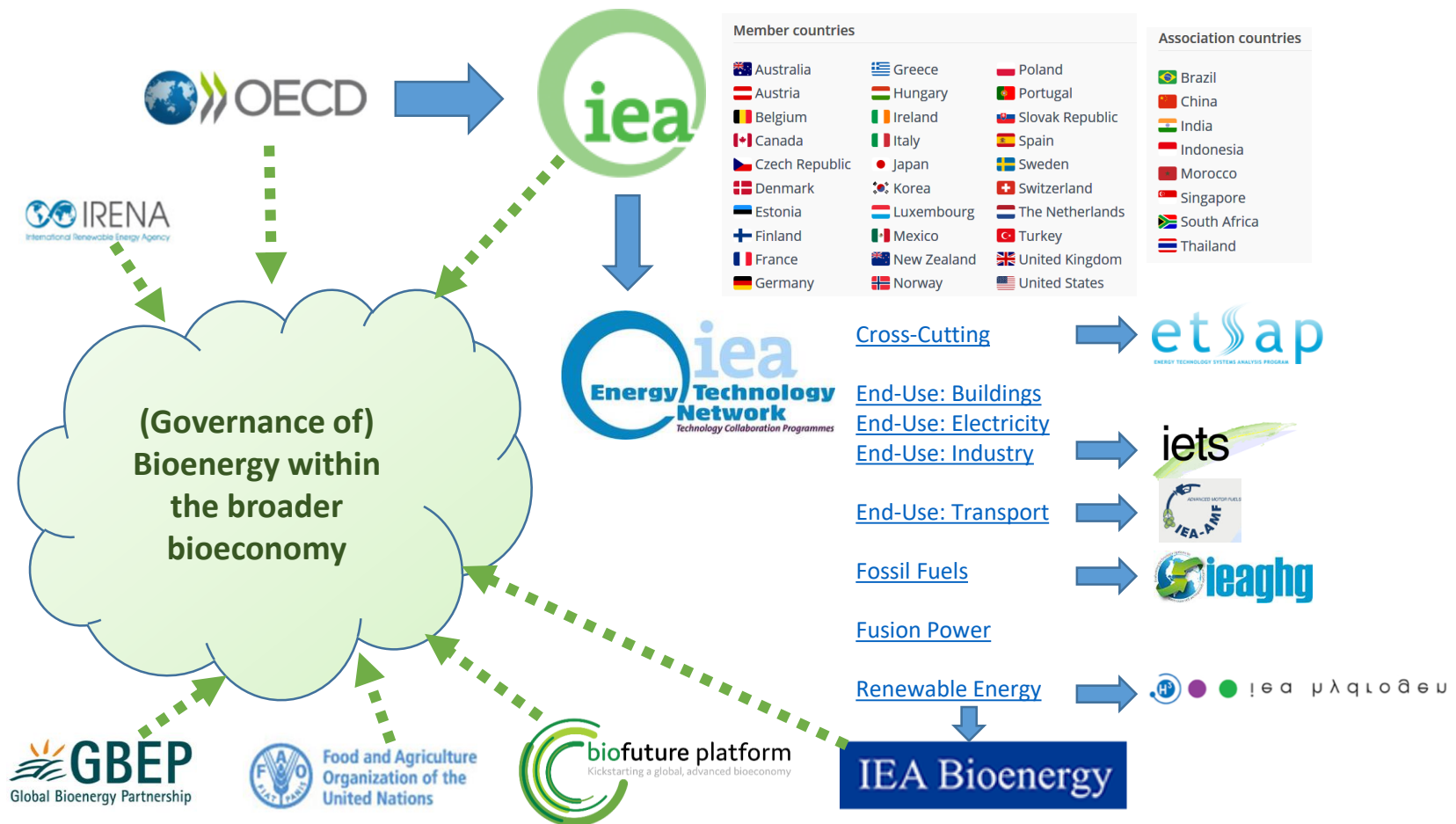


The UN System (regional level)

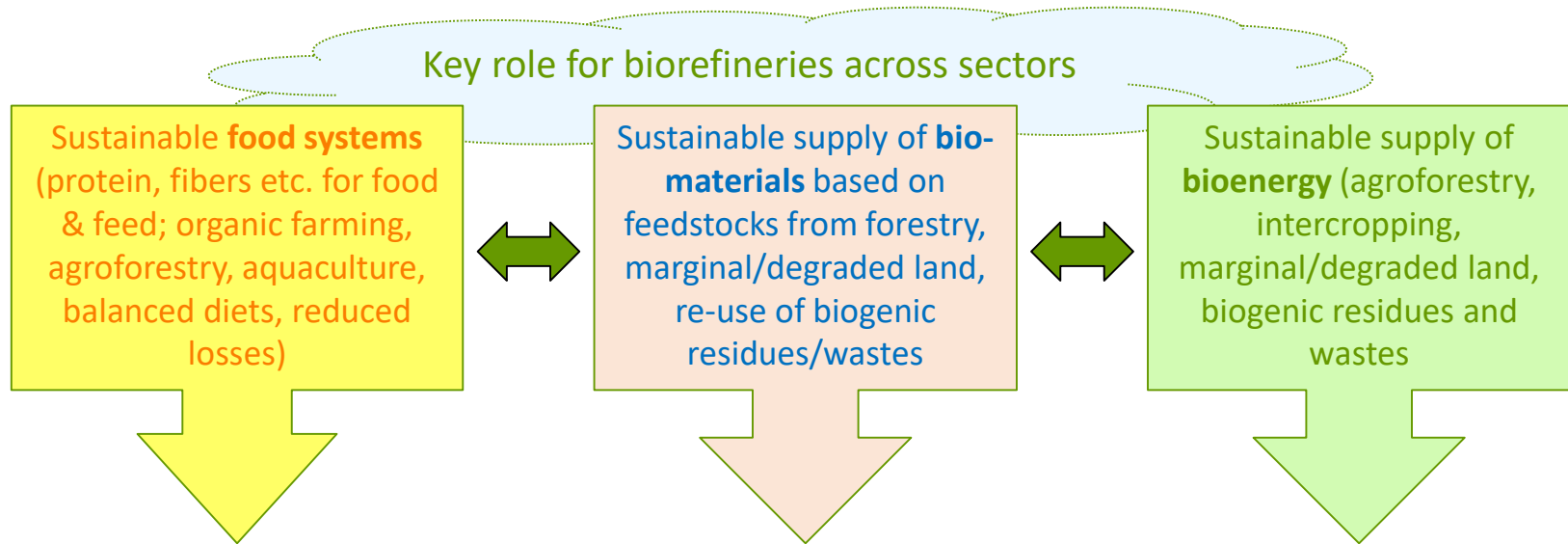


Who “governs”?

Organizations related to sustainable bioeconomy governance



Sustainable Bioeconomy: a vision



- Global food security, secure land tenure
- Regional/local employment and value added (rural development)
- Sustainable production in agriculture, fishery and forestry
- Reduction of food losses, recycling of wastes (circularity)
- Conservation of ecosystem services (biodiversity, C sequestration, recreation, soil fertility, water...)

Beyond UNECE: A sustainable African bioeconomy?

Image: Grand Muraille Verte



- New cultivation systems – e.g. agroforestry - **enrich biodiversity** (but no invasive species)
- Bioenergy in waste **water management**
- **Income** from landscape/habitat management **residues** for bioenergy
- Rural development + access to modern energy can reduce **deforestation** pressure
- **Reduce land** competition – restore land, inter-cropping. Example: green walls.

http://www.thegef.org/gef/video/great_green_wall

It always seems impossible until it's done



Nelson Mandela

...my motto:

**If you want to go fast,
go alone.**

**If you want to go far,
go together**

African Proverb

Thanks for your attention!

More information:

<http://task40.ieabioenergy.com>

<http://task45.ieabioenergy.com>

<http://itp-sustainable.ieabioenergy.com>



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