



Designing Better Policies

Measuring Just Transition

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Outline

1. Why a Green Jobs Assessment Model to measure Just Transition ? (among other frameworks e.g World Benchmarking Alliance)
2. Properties, data, structure and how to build it?
3. Country examples

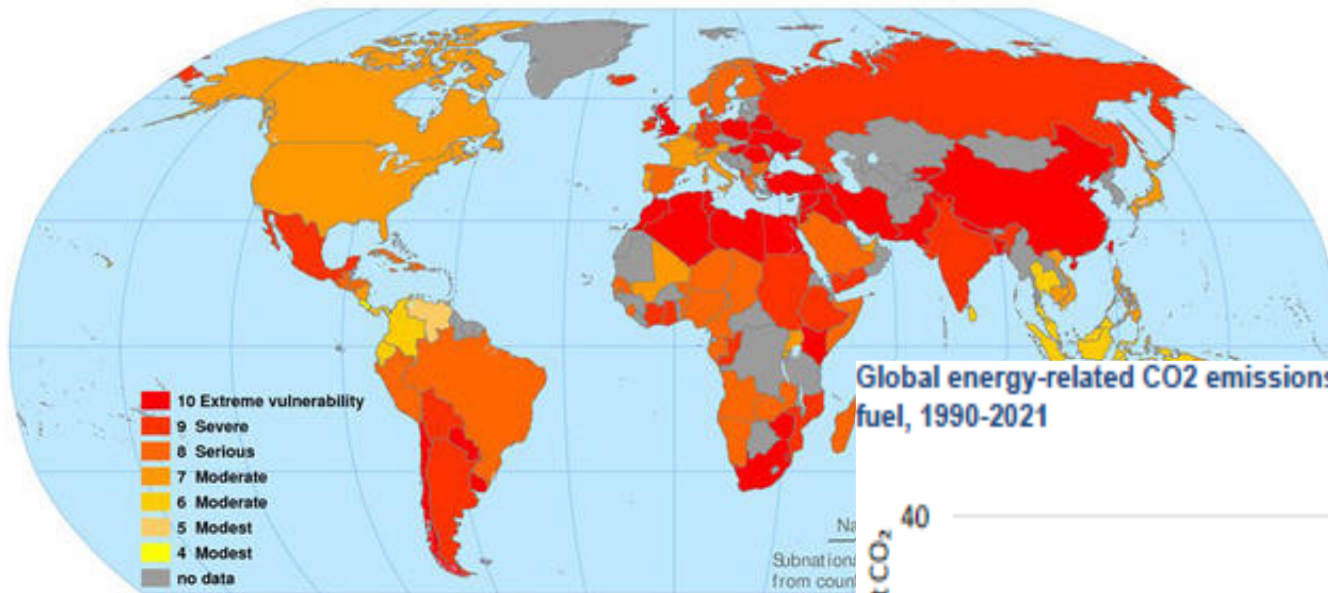


Why a Green Jobs Assessment Model to measure Just Transition?



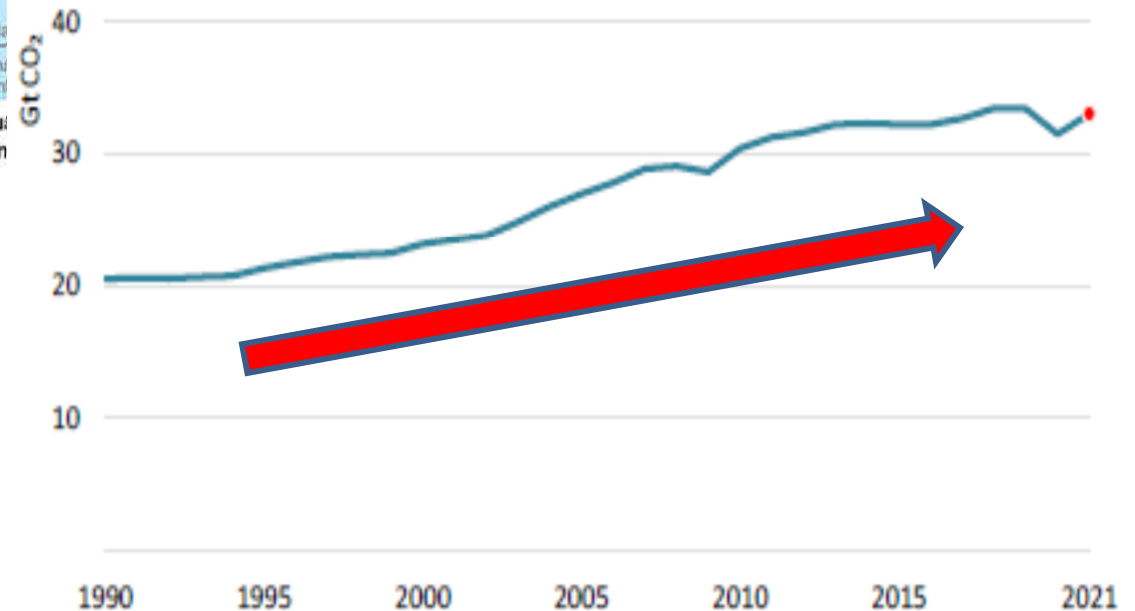
Reality: Growing Climate Change and Biodiversity crisis

Global Distribution of Vulnerability to Climate Change
Combined National Indices of Exposure and Sensitivity



Scenario A2 in Year 2100 with Climate Sensitivity Equi
Annual Mean Temperature with Aggregate Impacts Calibration an

Global energy-related CO₂ emissions, 1990-2021, and change in CO₂ emissions by fuel, 1990-2021

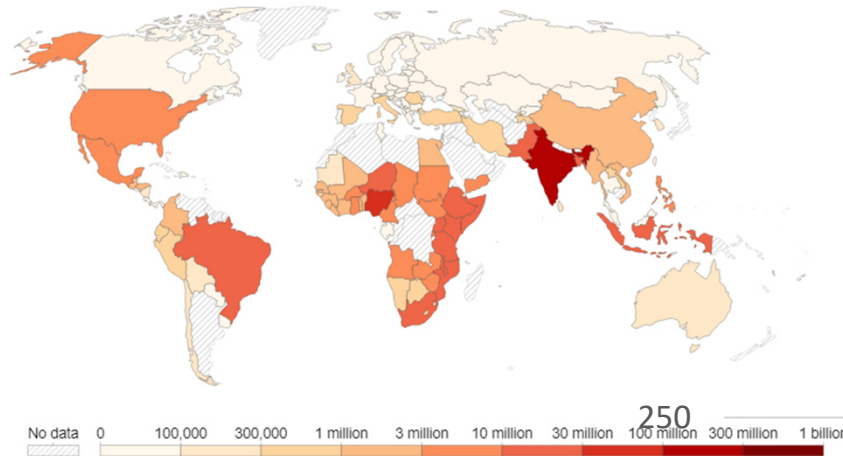


But, at the same time global poverty, unemployment and inequality crisis

Number of people living in extreme poverty, 2019

Extreme poverty is defined as living below the International Poverty Line of \$2.15 per day. This data is adjusted for inflation and for differences in the cost of living between countries.

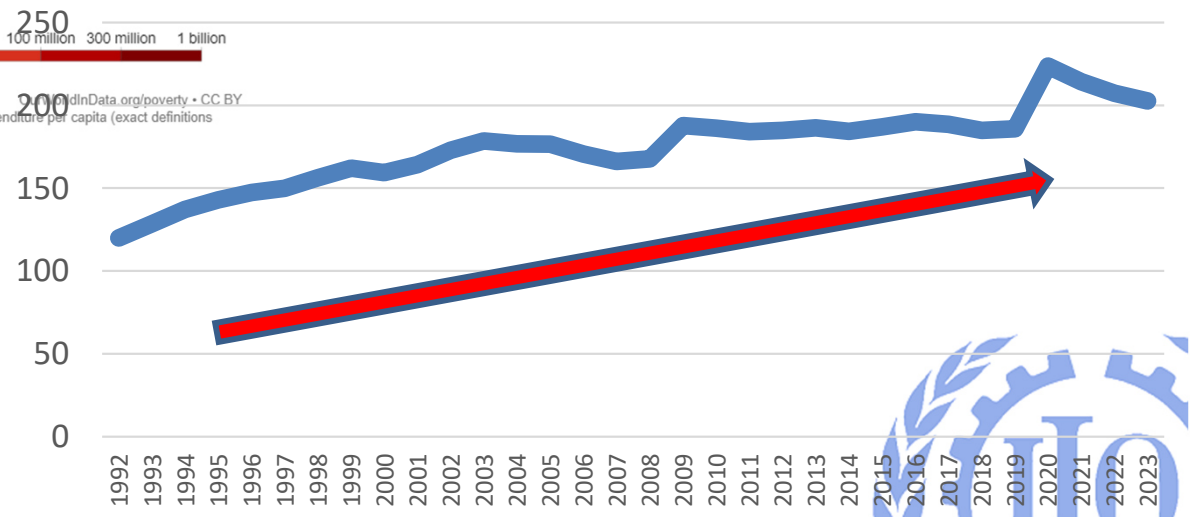
Our World
in Data



Source: World Bank Poverty and Inequality Platform

Note: This data is measured in international-\$ at 2017 prices. It relates to either disposable income or expenditure per capita (exact definitions vary).

Global Unemployment



Need to measure social AND environment indicators in an integrated way

**Need to
measure the
impact of
Climate and
Green
policies on...**

- Country and sector specific
- Based on data, statistics, Input Output
- Transparent



Social and Labour Market

- Direct, indirect and induced jobs
- Informal jobs
- Skills, Gender, Youth

Economy

- GDP by sector
- Poverty, inequality feedback on demand -> Reality
- Tax revenues, profits, wages

Environment

- CO2 emission by sector
- Forest, waste, energy, water

**Guidelines for a just transition
towards environmentally sustainable economies and
societies for all**



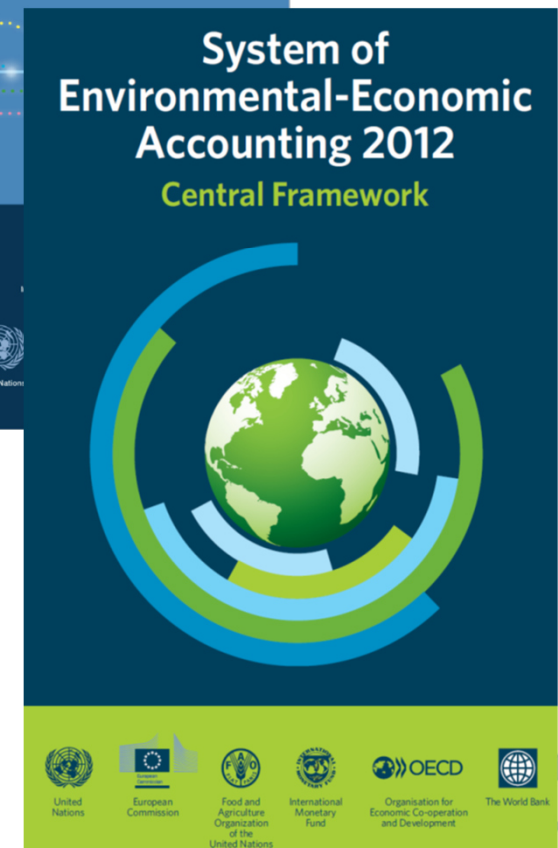
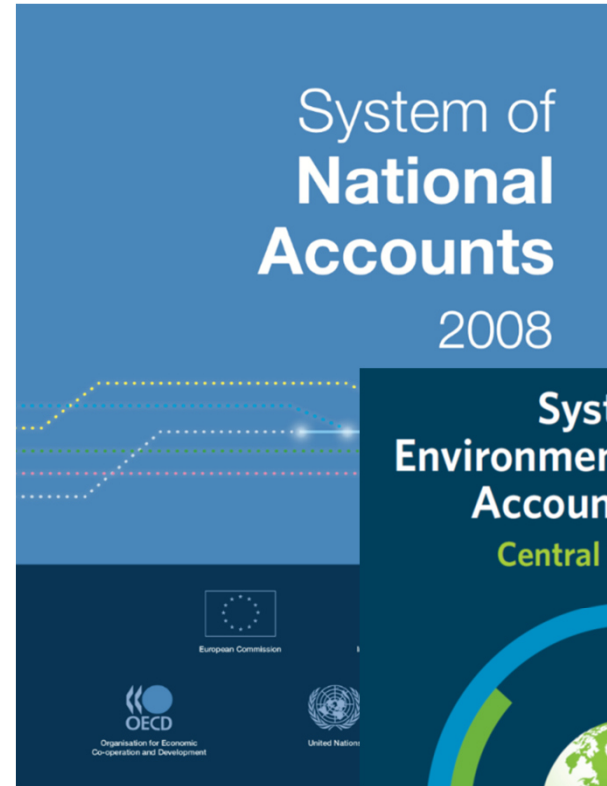
For Just Transition Policies to maximise job gains and protect losses!

Properties of Green Jobs Assessment Model



Economic data

- Economic growth
 - Consumer spending
 - Government debt
 - Investment
 - Prices
 - Taxes
 - Profits
-
- Drawing a picture of the economy
 - High sector disaggregation by ISIC
 - Actors: institutional sectors
 - Transactions
 - Money flows – direction of arrows
 - Exchanges
 - Transfers



Social & Decent Work data

- 1 – Employment-to-population ratio
- 2 – Unemployment rate
- 3 – Youth not in education or employment
- 4 – Informal employment
- 5 – Working poverty rate
- 6 – Low pay rate (below 2/3 of average hourly earnings)
- 7 – Excessive hours (more than 48 hours per week)
- 8 – Incidence of children in child labour
- 9 – Precarious employment rate
- 10 – Occupational segregation by sex
- 11 – Female share of employment in ISCO-08 sub-major groups 11,12 and 13
- 12 – Occupational injury rate, fatal
- 13 – Share of population above a specified age benefiting from a pension
- 14 – Public social security expenditure (% of GDP)
- 15 – Union density rate
- 16 – Enterprises belonging to employer organization [rate]
- 17 – Collective bargaining coverage rate
- 18 – Indicator for Fundamental Principles and Rights at Work (to be developed)

Based on international labour standards:

GUIDELINES FOR PRODUCERS AND USERS OF
STATISTICAL AND LEGAL FRAMEWORK
INDICATORS, ILO MANUAL, Sept.2013

available at

[http://www.ilo.org/wcmsp5/groups/public/---
dgreports/---
stat/documents/publication/wcms_223121.pdf](http://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/publication/wcms_223121.pdf)



Climate and Environment data

Table 1 - Green

Name	Symbol(s)
Carbon Dioxide	CO ₂
Methane	CH ₄
Nitrous Oxide	N ₂ O
Hydrofluorocarbons	HFCs (e.g., HFC-23 (CH ₃ CHF ₂))
Perfluorocarbons	PFCs (CF ₄ , C ₂ F ₆ , C ₃ F ₈)
Sulphur Hexafluoride	SF ₆
Nitrogen Trifluoride	NF ₃
Trifluoromethyl Sulphur Pentafluoride	SF ₅ CF ₃
Halogenated Ethers	e.g., C ₄ F ₉ OC ₂ H ₅ , CH ₃ OC ₂ F ₅
Other halocarbons	e.g., CF ₃ I, CH ₂ Br ₂ , CCl ₄
	C ₃ F ₇ C(O)C ₂ F ₅ , C ₇ F ₁₆ , C ₈ F ₁₈



INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE
NATIONAL GREENHOUSE GAS INVENTORIES PROGRAMME



2006 IPCC GUIDELINES FOR NATIONAL GREENHOUSE GAS INVENTORIES



The Green Jobs
Assessment model
integrates multiple data in
consistent framework

System of Environmental-Economic Accounting 2012

Central Fra

System of National Accounts



INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE
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2006 IPCC GUIDELINES FOR NATIONAL GREENHOUSE GAS INVENTORIES



Labour
Force
Surveys

Household
Budget
Surveys

Sector		Sector			Final demand (f)			Total output
		Agriculture	Industry	Services	Household consumption	Investment	Government consumption	
Sector	Agric.	z_{11}	z_{12}	z_{13}	C_1	I_1	G_1	x_1
	Industry	z_{21}	z_{22}	z_{23}	C_2	I_2	G_2	x_2
	Services	z_{31}	z_{32}	z_{33}	C_3	I_3	G_3	x_3
Value added	Wages	w_{L1}	w_{L2}	w_{L3}				
	Profits	w_{K1}	w_{K2}	w_{K3}				
	Net taxes on prod.	t_1	t_2	t_3				
	Total output	x_1	x_2	x_3				
	Employment	$emp\ 1$	$emp\ 2$	$emp\ 3$				
	CO2 Emissions	$e\ 1$	$e\ 2$	$e\ 3$				

Macro econometric structural simulation model (ex-ante measurement)

exogenous

endogenous

Global
economic
development

Population

GDP t-1 /
GDP t-2

Table 2.3: Supply and Use Tables framework

UN Handbook on Supply, Use and Input-Output Tables with Extensions and Applications (2018)

		Products				Industries				Final uses			
		Agriculture, forestry, etc.	Ores and minerals; etc.	...	Services	Agriculture, forestry, etc.	Mining and quarrying	...	Services	Final consumption	Gross capital formation	Exports	Total
Products	Agriculture, forestry, etc.					Intermediate consumption by product and by industry				Final uses by product and by category			Total use by product
	Ores and minerals; etc.												
	...												
	Services												
Industries	Agriculture, forestry, etc.	Output by product by industry											Total output by industry
	Mining and quarrying												
	...												
	Services												
Value added						Value added by component and by industry							Value added
Imports		Total imports by product											Total Imports
Total		Total supply by product				Total output by industry				Total final uses by category			

Empty cells by definition

GDP per
capita t-
1, t-2,

GDP per
capita &
inequality

Employment
by industry

Emissions by
industry

GJAM captures

- Direct effects
- Indirect effects
- Induced effects





Youth Report

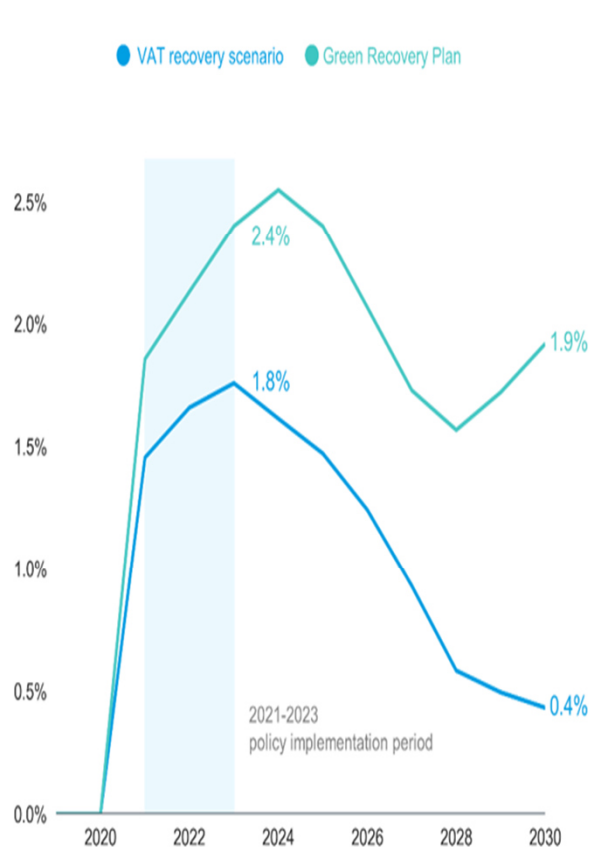


Global

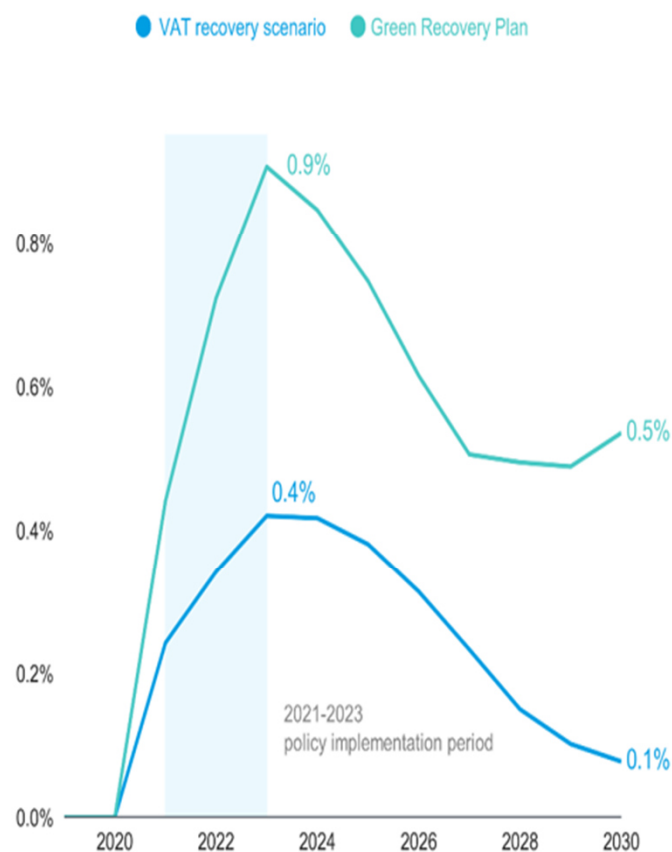
Impact of Green vs Conventional recovery & growth 2030

(per cent change from baseline)

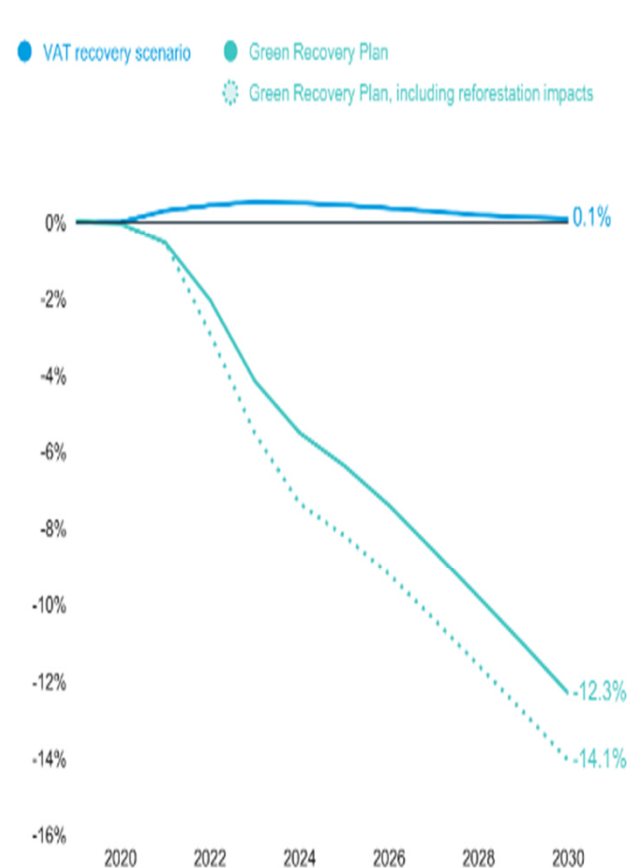
A. Impact on GDP



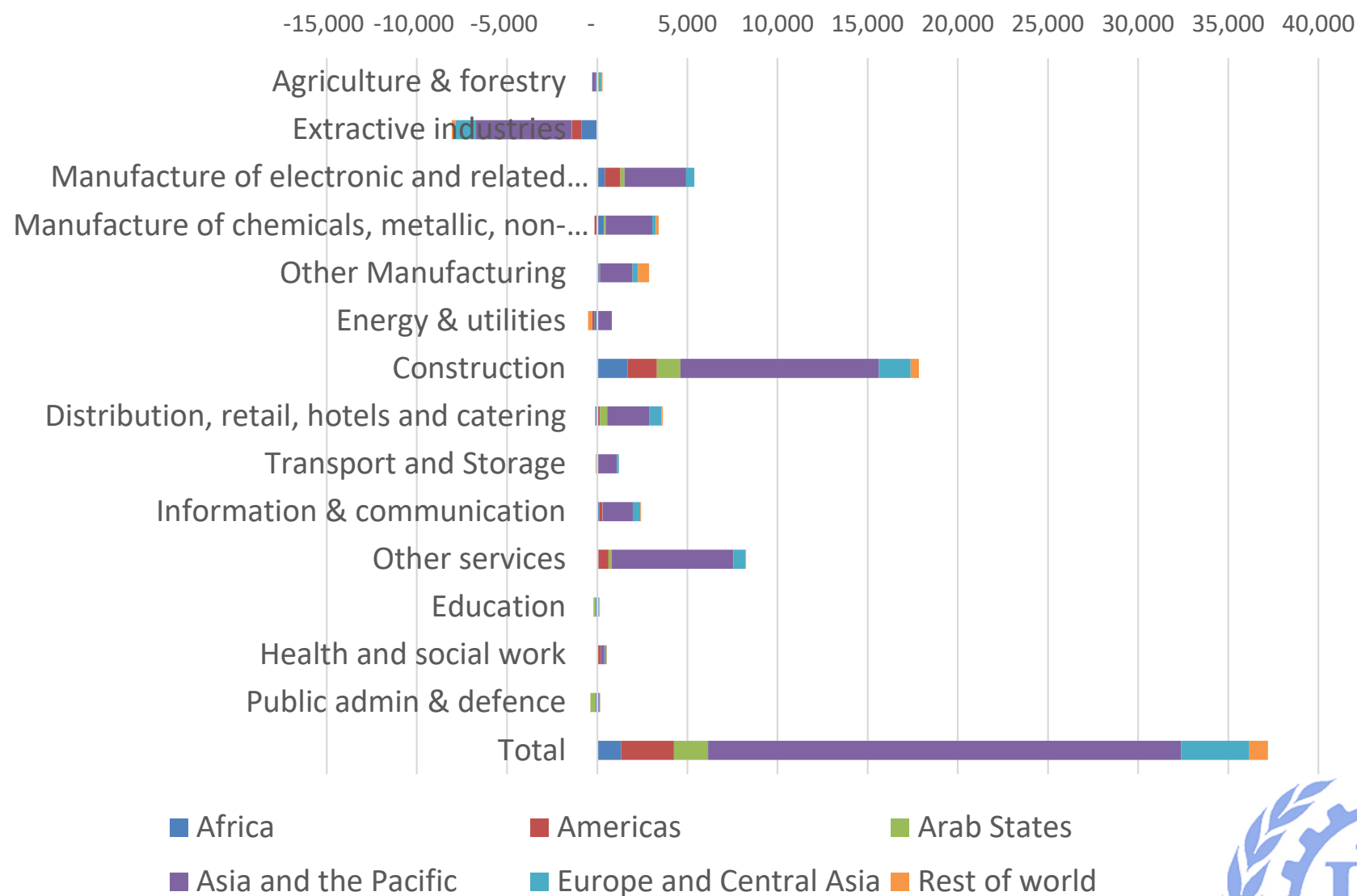
B. Impact on employment



C. Impact on CO₂emissions



Job losses & gains in Green vs Conventional growth scenario 2030 (thousands)



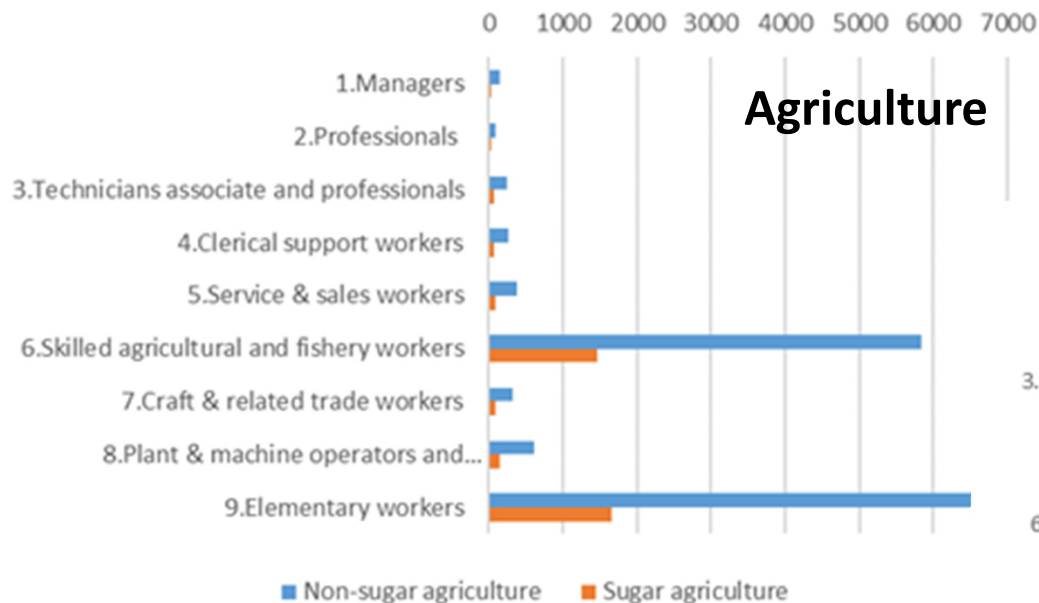
Mauritius NDC Job Assessment



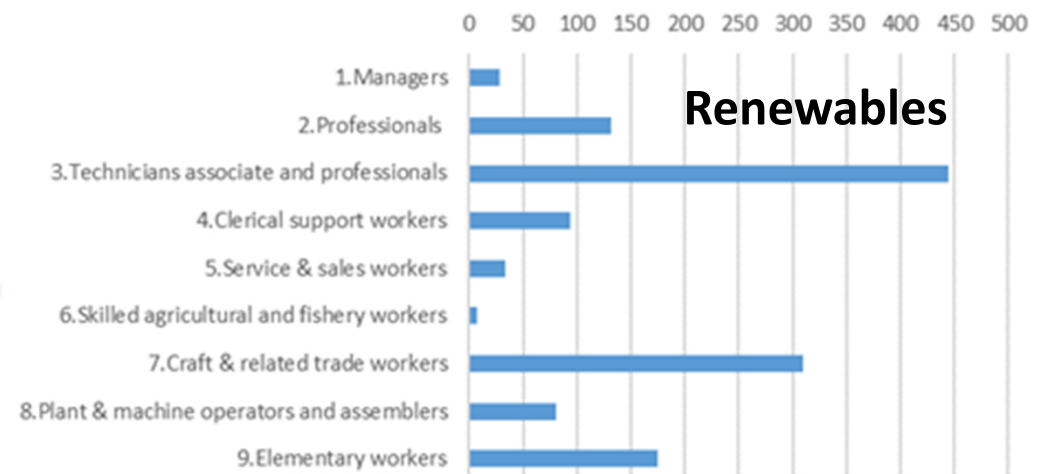
Mauritius

Skills requirements for NDC achievement

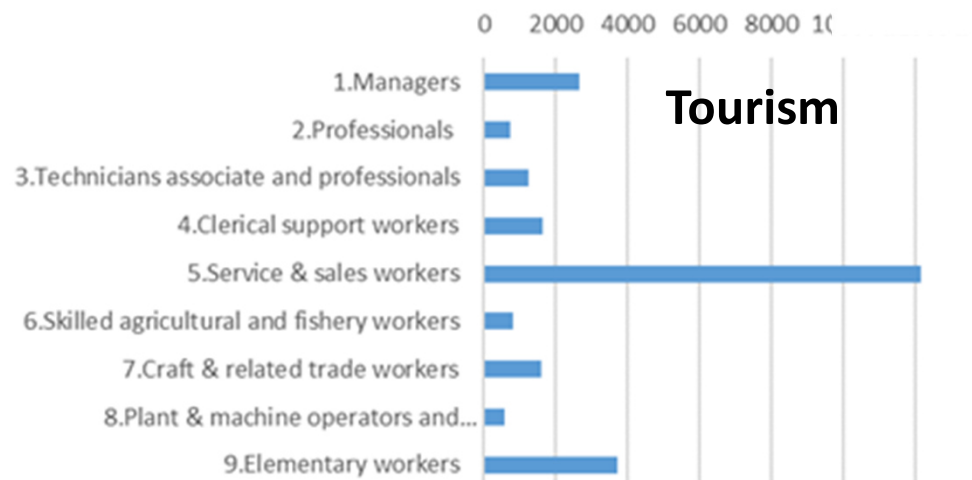
Agriculture



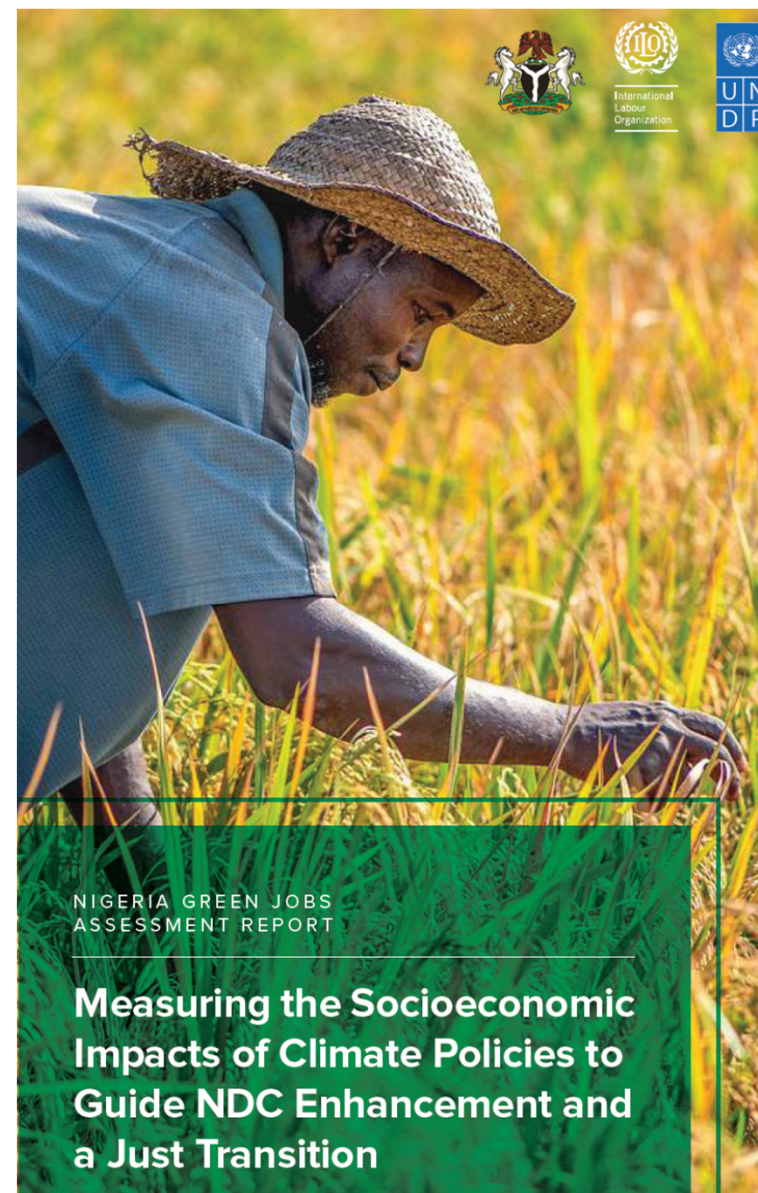
Renewables



Tourism



Assessment of Nigeria's Nationally Determined Contributions

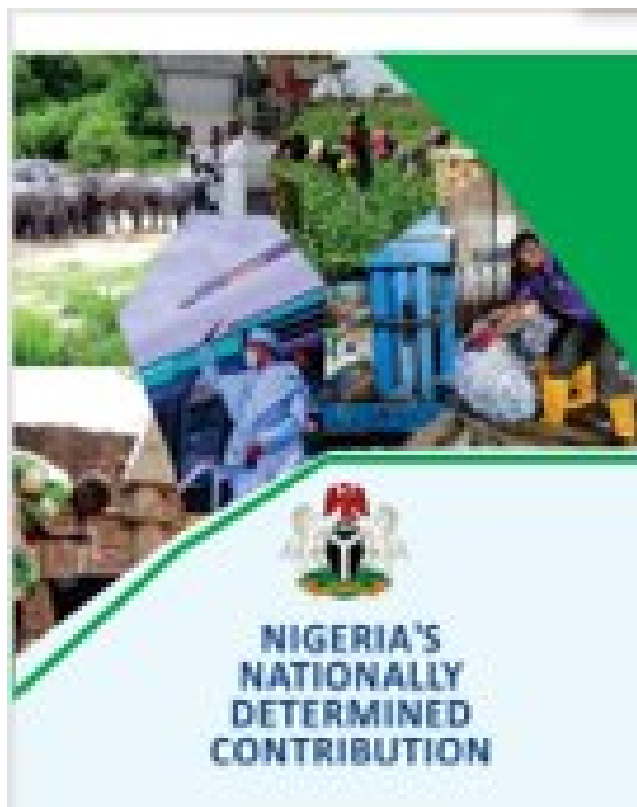


Measuring Just Transition for Better Policy Making

- ❑ Social and Employment gains are not automatic!

Climate policies have positive job outcomes if accompanied by Just Transition Policies

— Notably investment into Skills, Enterprise Development & Social Protection:



- Skills training for 12 million jobs in renewables and supply industries: **\$96 m/year**
 - (\$/year 96 million (\$26/pupil/secondary education; Underestimate as private and student finance)
- Conditional cash transfer to stop firewood & charcoal collection of 530,000 workers and alternative business: **\$900 m/y**
 - (\$/year 900 million (\$1.9/day/hh size 5, ½ income; Clean energy support to fire/charcoal cooking households (50 million hh)
- Financing by fiscal neutral progressive climate tax \$10 ton carbon for richest 10% : **\$1.06 bn/y**
 - (10.6 million adults (10%) earn 42% of national income and account for majority of Mt480 GHG)



Thank you

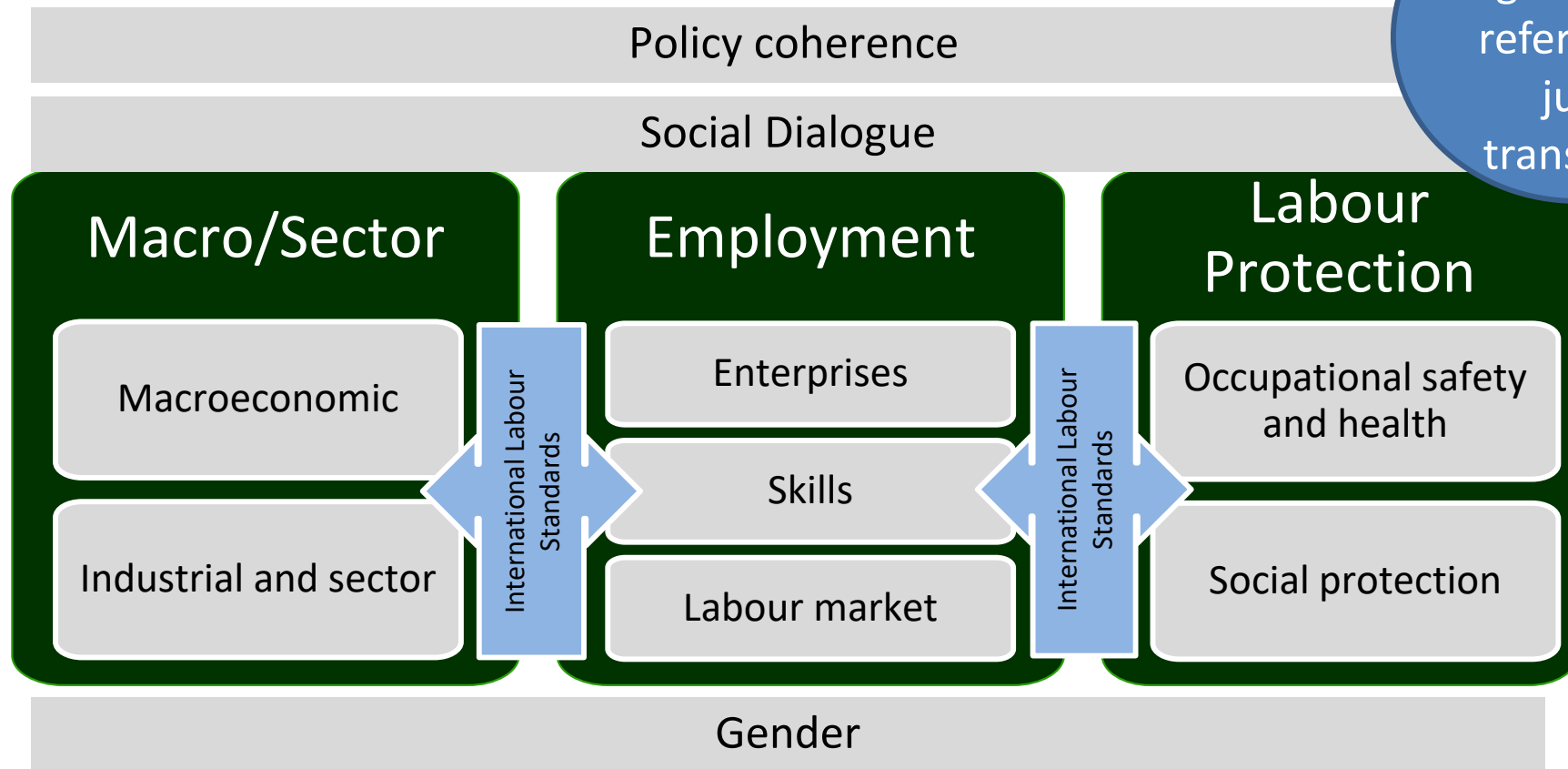


Just Transition Policies



ILO Guidelines for Just Transition

Paris Agreement refers to a just transition



Turn risks of transition into GDP growth, Job creation and reduced Inequality



Social dialogue

South Africa 8.5 bn \$ Just Transition Partnership

- Based on Government, business and labour engage in JT Council



Germany

- falsely called Coal Commission for phaseout!
- Commission on Growth, Structural Change and Employment creation

France (Grenelle), Spain (Kyoto), etc.



Social Protection



► Nature based solutions NREGA (India)

- US\$ 8 bill (only ~ 0.4% GDP)
- Benefit 59 million hh
- Adaptation, irrigation, reforestation



► Coal phaseout (Germany)

- Building on existing social protection mechanisms, providing predictability and regularity
- Combination of unemployment protection and support for labour market integration to provide reskilling



► Strategy to Combat Energy Poverty (Spain)

- Combining protection of vulnerable households and energy-efficient housing
- Reinforced by IMV/guaranteed minimum income scheme



Germany Electric Vehicles Apprenticeship Program 'Faculty 73'

- the car industry employs 830,000
- 1.3 million indirectly.
- Digital & electric switchover vary from 180,000 to 288,000

Bangladesh Gramen Shakti 'Solar System'

- 1.8 million systems installed
- 150,000 Jobs created

Skills training



Policy recommendations

1. Design Just Transition policies **ex-ante** to accompany climate policies
2. **Biggest bang for the buck**: E.g Africa focus on agriculture and forestry, biomass and renewable energy
3. Develop **skills training system**
4. Extend **social protection**
5. Fiscal neutral **progressive climate tax**



Research Network GAIN and ILO country support



National capacity building is key – ILO Assistance through the Green Jobs Assessment Institutions Network GAIN

- ✓ Open source methodology Training Guide published
- ✓ GAIN Network of 30+ Research Institutions
- ✓ Capacity building of Government & national institutions
- ✓ GAIN Training Hubs in Pretoria and Abidjan
- ✓ To build national models for better climate policy

