

Exchange of views on lessons learned and best practices on analysis and assessment of positive and negative impacts of the implementation of response measures by Parties

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**A focus on the impacts on employment
of the implementation of response
measures**

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Outline

1. What is it we want to know?
2. What have we learned from global assessments?
3. What are policy implications?
4. Making assessments relevant in national contexts

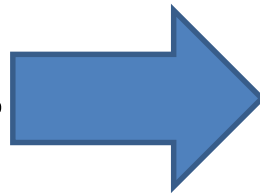


1. What is it we want to know?

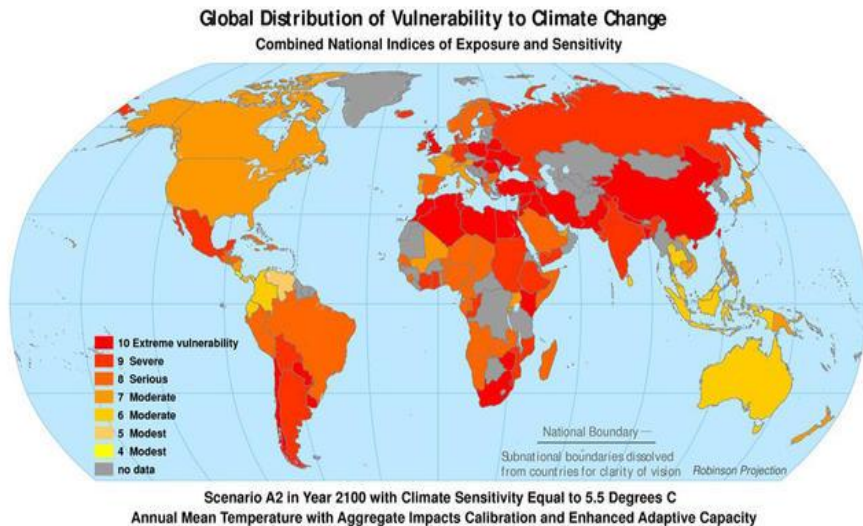


We want to know:

How mitigation in countries and cross-border impacts on...



...jobs, poverty, GDP, inequality... SDGs



Minimize social & job loss, max gains!

2. What have we learned from global assessments?



Response measures have transformative impacts

- Many mitigation measures involve changing methods of production across several sectors.
- In particular, changes are required in the energy, agriculture and waste management sectors to increase their resource efficiency and reduce the GHG emissions.
- These are the sectors that account for a high share of GHG emissions and use a high level of resources.
- The required measures will change these industries, as well as the industries that supply their inputs and depend on their outputs.
- The resulting changes will cross borders.



Insights from ILO WESO 2018 report

- Assessment of the impact of implementation the Paris Agreement (with a 2 degrees target), the number and types of jobs, taking into account the economic linkages across industries.
- Quantification of jobs created both directly and indirectly and at those destroyed by the transition.
- Focus on the energy sector as a key driver of transformation with domestic and cross-border impacts.

Link to WESO report:

<https://www.ilo.org/global/research/global-reports/weso/greening-with-jobs/lang--en/index.htm>



Methodology

- The scenarios explored in the study rely on Exiobase v3, a multiregional input-output table (MRIO) that maps the world economy and the linkages between industries across the world.
- Estimating scenarios using MRIOs allows the simulation of detailed specifications of technologies and processes, with full understanding of the mechanisms driving the results. T
- The scenarios estimate and localize at the regional and industry level the expected number of direct and indirect jobs created and destroyed under various scenarios by 2030.



Impacts in the energy sector

- Overall positive employment impact from the action taken in the energy, transport and construction sectors to limit global warming to 2°C over the course of the century.
- Employment creation driven by:
 - higher labour demand of renewable energy in comparison with electricity produced from fossil fuel sources, and
 - employment demand of the entire value chain associated with renewable energy and electric vehicles and construction.



Impacts in the energy sector (2)

- In total, job creation throughout the economy and in specific sectors more than offsets job destruction.
- The net job creation of 18 million projected to 2030 is the result of around 24 million jobs created and around 6 million jobs lost.
- Of the 163 economic sectors analysed, only 14 show employment losses of more than 10,000 jobs worldwide, and only two (petroleum refinery and extraction of crude petroleum) show losses of 1 million or more jobs.



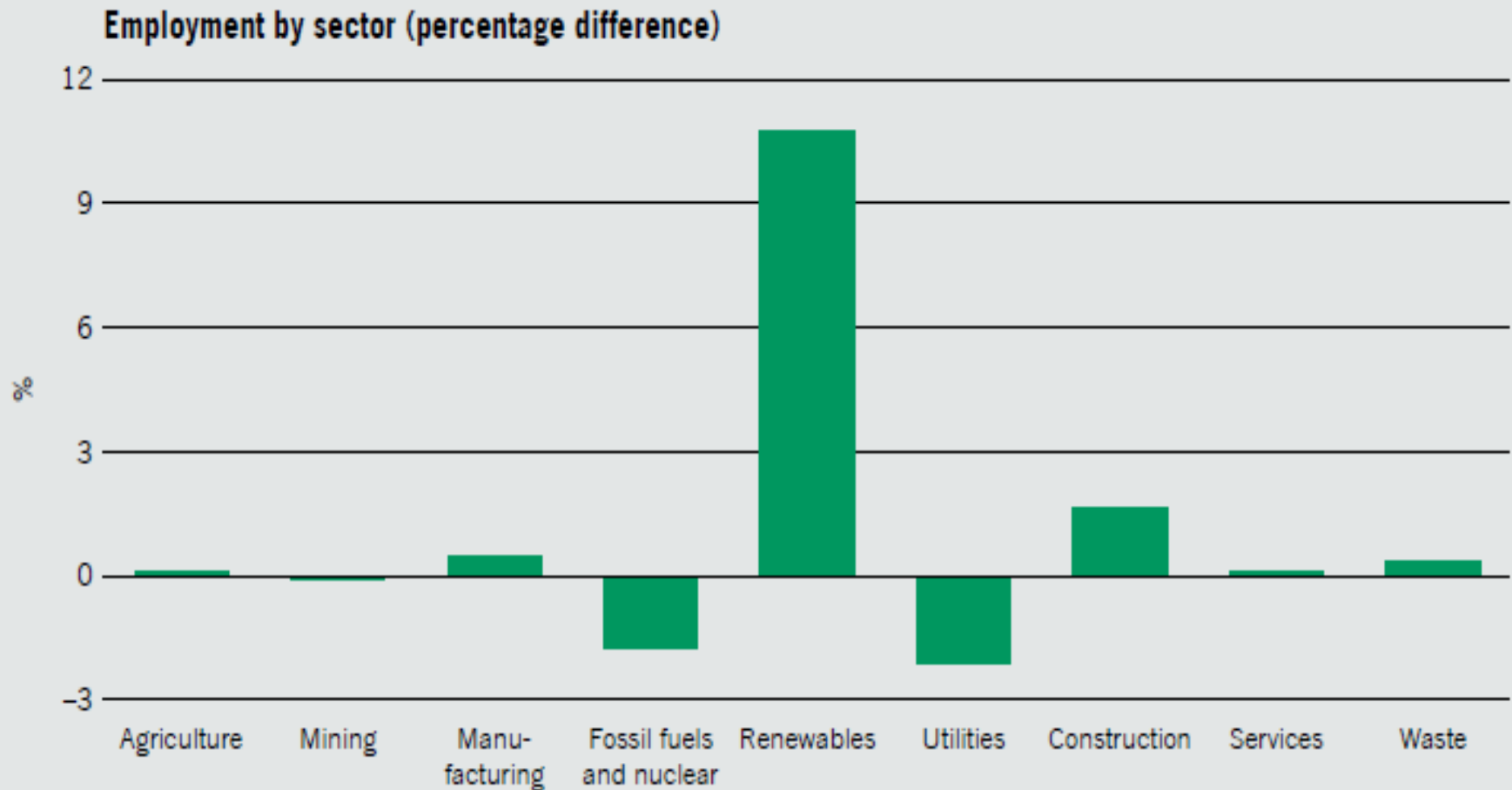
Significant regional differences

- At the regional level, there will be net job creation in the Americas, Asia and the Pacific and Europe.
 - (0.45, 0.32 and 0.27%, respectively, representing around 3, 14 and 2 million jobs).
- In contrast, there will be net job losses in the Middle East (–0.48%, or over 300,000 jobs) and Africa (–0.04%, or around 350,000 jobs) if the economic structure of these regions does not divert from the historical trend.



Employment changes by sector

Energy sustainability and employment in 2030



Source: ILO calculations based on Exiobase v3.



Impacts by sector (2)

Sectors most affected by the transition to sustainability in the energy sector

Industries set to experience
the highest job demand growth (absolute)

Industries set to experience
the strongest job demand decline (absolute)

Sector	Jobs (millions)	Sector	Jobs (millions)
Construction	6.5	Petroleum refinery	-1.6
Manufacture of electrical machinery and apparatus	2.5	Extraction of crude petroleum and services related to crude oil extraction, excluding surveying	-1.4
Mining of copper ores and concentrates	1.2	Production of electricity by coal	-0.8
Production of electricity by hydropower	0.8	Mining of coal and lignite, peat extraction	-0.7
Cultivation of vegetables, fruit, nuts	0.8	Private households with employed persons	-0.5
Production of electricity by solar photovoltaics	0.8	Manufacture of gas, distribution of gaseous fuels through mains	-0.3
Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods	0.7	Extraction of natural gas and services related to natural gas extraction, excluding surveying	-0.2

Source: ILO calculations based on Exiobase v3.



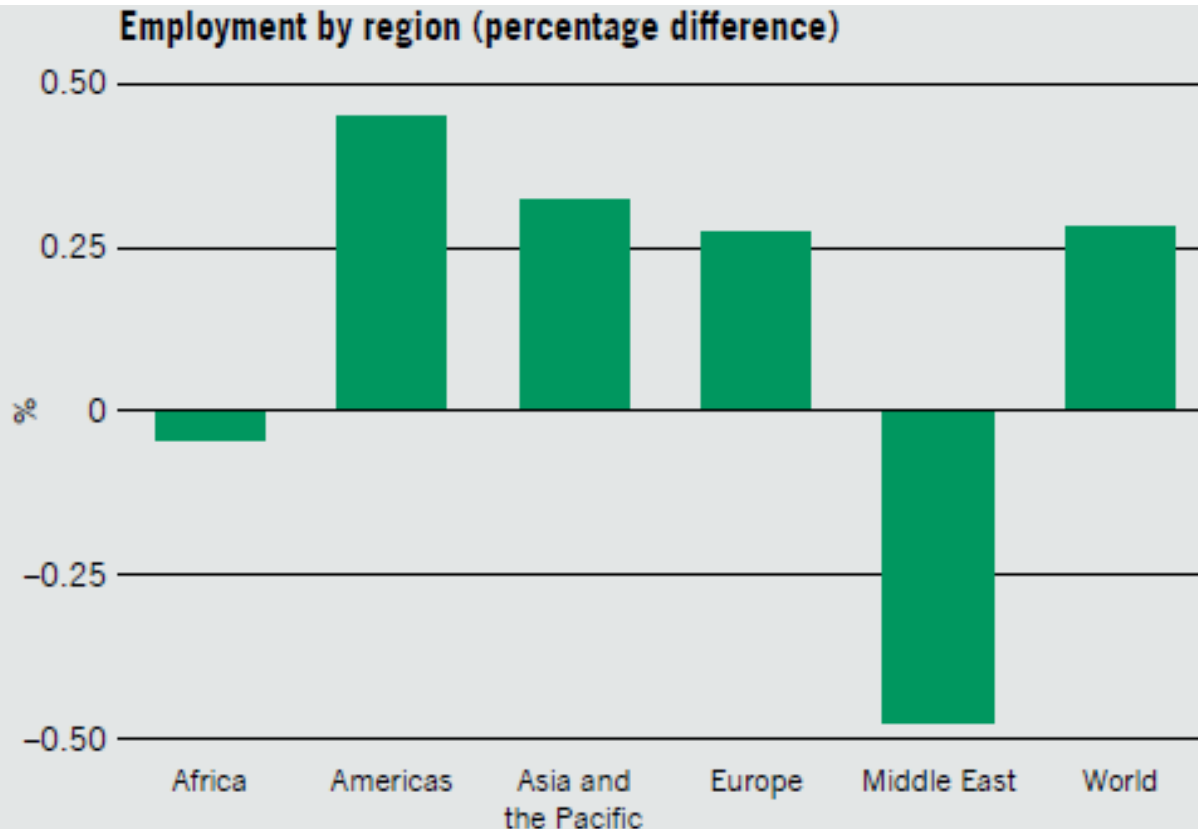
Impacts by sector (3)

Industries set to experience the highest job demand growth (percentage)		Industries set to experience the strongest job demand decline (percentage)	
Sector	Jobs (percentage)	Sector	Jobs (percentage)
Production of electricity by solar thermal energy	3.0	Production of electricity by coal	-0.19
Production of electricity by geothermal energy	0.4	Extraction of crude petroleum and services related to crude oil extraction, excluding surveying	-0.11
Production of electricity by wind	0.4	Extraction, liquefaction, and regasification of other petroleum and gaseous materials	-0.11
Production of electricity by nuclear energy	0.3	Petroleum refinery	-0.08
Production of electricity by biomass and waste	0.3	Manufacture of gas, distribution of gaseous fuels through mains	-0.05
Production of electricity by solar photovoltaics	0.3	Mining of coal and lignite, peat extraction	-0.03
Production of electricity by hydropower	0.2	Extraction of natural gas and services related to natural gas extraction, excluding surveying	-0.03

Notes: Percentage difference in employment between the sustainable energy and the IEA 6°C (business-as-usual) scenario by 2030. Appendix 2.1 provides further details on the data and methods used.

Source: ILO calculations based on Exiobase v3.

Employment changes by region



Notes: Percentage difference in employment between the sustainable energy scenario and the IEA 6°C (business-as-usual) scenario by 2030. Appendix 2.1 provides further methodological details on the data and methods used. Vertical scales differ by panel.

Source: ILO calculations based on Exiobase v3.

3. What are policy implications



Reallocation of jobs among sectors

- The scenario entails reallocation in certain sectors, and particularly mining.
- E.g. loss of employment in the sector due to a reduction in the mining and extraction of coal, petroleum and natural gas (around 2 million job losses) --
- BUT growing demand for inputs for electric vehicles and electrical machinery (some 2 million additional jobs in the mining of copper, nickel, iron and other non-ferrous and metal ores).



Gender dimensions

- As a result of the sectoral redistribution of employment, the transition will result in a slightly lower female labour share in employment, if current female labour shares by economic sub-sector remain constant.
- This is because the sectors currently associated with green technology (such as electrical machinery) employ a relatively lower share of women.



Low-skilled versus high-skills work

- Reallocation is also likely to benefit sectors that employ fewer highly skilled workers, which means that employment opportunities will favour low- and medium-skilled workers.
- The scenario will also probably result in a modest reduction in the numbers of own-account and contributing family workers.



4. Making assessments relevant in national contexts



Conducting national assessments

- ✓ Set-up of customized 2-3 year work programme
- ✓ Steering committee led by Government (statistic office, national economic research/university, social partners)
- ✓ Develop national capacity on statistics, economic model and policy making based on international guidelines
- ✓ Develop integrated data framework for public good and model for national development planning
- ✓ ILO experience in coordination with International Organizations (UN & Banks) and GAIN research partners
- ✓ Policy advice for better planning of social & job outcomes



Tools and methodologies are available

✓ Open source methodology
Training Guide published

✓ Based on national data
and needs



✓ Capacity building of
Government & national
institutions

✓ To build and run your own
national model



International
Labour
Office
Geneva

HOW TO MEASURE AND MODEL SOCIAL AND EMPLOYMENT OUTCOMES OF CLIMATE AND SUSTAINABLE DEVELOPMENT POLICIES

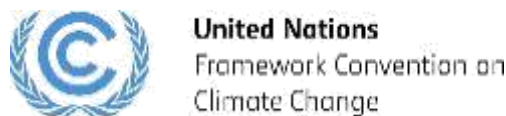
TRAINING GUIDEBOOK

Green Jobs Assessment Institutions Network (GAIN)



GAIN members to support countries

GAIN (Green Jobs Assessment Institutions Network) 33 Members, combining Research Institutes, Individual Researchers, and International Organisations





Thank you!

Please ask questions
www.ilo.org/greenjobs

