

Environmental taxation and social equity in low- and middle-income countries



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Presentation structure

1. Introducing the report: A Climate of Fairness
2. Literature review – equity impacts in LICs and MICs
3. Case studies – Vietnam, Morocco, China, Mexico, LICs
4. Conclusions: Dimensions of inequality in environmental / climate policy

“A Climate of Fairness”

By Jacqueline Cottrell and Tatiana Falcão

- Report on equity impacts of environmental taxes (ET) in middle and low-income countries
- Explores the potential for ET to safeguard environmental quality while reducing inequality
- Theoretical section: Legal and economic aspects
- Environmental taxes: Taxes with an environmental purpose
- Literature review: Generalized (tentative) conclusions, also on gender impacts
- Case studies: China, Vietnam, Morocco and Mexico

http://www.vidc.org/fileadmin/Bibliothek/DP/A_Climate_of_Fairness.pdf

Literature review: Equity impacts of environmental taxes in MICs and LICs

	Energy taxation	Natural resources and waste taxes	Taxes on transport and transport fuels	Water and wastewater taxes
Distributional impacts	Higher domestic spending on energy – address with cash transfers or lifeline tariffs	Less evidence available e.g. on taxes on agricultural inputs	Progressive impact: Most progressive in least equal societies	Higher domestic spending – address with cash transfers or lifeline tariffs
	May have a progressive impact if access to services is low	Progressive if resources are consumed more by wealthier income quintiles	Taxes on gasoline may act as luxury taxes in some MICs and LICs e.g. on aviation	Progressive impact if access to water supply or sanitation services is low
	Indirect price rises	Minimal impact if taxes levied on resources for export	Impact may be greater on men than women	
	Impact greater on women: household spending		Indirect price rises	

Equity impacts of environmental taxes: Additional considerations

- Static approaches to distributional impacts of environmental taxes
- Quantifiable welfare benefits resulting from environmental improvement rarely modelled or taken into account
- Synergies between environmental taxes and social equity:
 - environmental improvements and poverty reduction
 - mobilisation of domestic revenue to help achieve SDG targets
 - improved fiscal governance
 - reduced tax evasion

Objectives of the case studies

- Investigate effectiveness of environmental taxation in developing countries along 3 dimensions of sustainable development:
 1. Environmental effectiveness
 2. Economic prosperity
 3. Social inclusion
- Can environmental taxation be implemented in a way that is fair and fosters social equity?

Cases examined in detail in the report



Environmental protection tax
in Vietnam



Plastics tax in Morocco



Carbon tax in Mexico



Environmental taxes on
SO₂ in China

Environmental impacts of the case studies

Vietnam – Environmental Protection Tax	<ul style="list-style-type: none">▪ 1.7% reduction in CO₂ emissions in both 2012 and 2013▪ Modelling of a high tax scenario predicted annual 7.9% reduction▪ Tax rate reductions in parallel to EPT have undermined effect
Morocco – Plastics Tax	<ul style="list-style-type: none">▪ 32% of solid waste reached sanitary landfill in 2012, 53% in 2016▪ Municipal waste collection 80% by▪ All unsanitary waste dumps to be closed by 2020▪ Pilot biogas plant Oum Azza has abated 0.5 million tCO₂▪ Damage costs (health, pollution) due to waste halved 2000-2014 from 7 EUR / capita to 3.5 EUR / capita
Mexico – Carbon Tax	<ul style="list-style-type: none">▪ 0.38% reduction in CO₂ emissions – 1.8 million tCO₂ annually▪ Zero rating for gas = 45% of CO₂ emissions from energy use exempt▪ Decoupling of CO₂ emissions and electricity generation in 2018▪ Signalling effect – shift from subsidies to taxation of fossil fuels
China – Environmental taxes on SO ₂	<ul style="list-style-type: none">▪ 2010 – SO₂ emissions down 23% in power sector, 14.3% overall▪ SO₂ intensity of coal-fired power stations fell by 10%▪ By 2010 86% of coal power stations had installed FGD technology (2005 – 14%)▪ Savings due to reduced SO₂ emissions EUR 4.4 billion annually

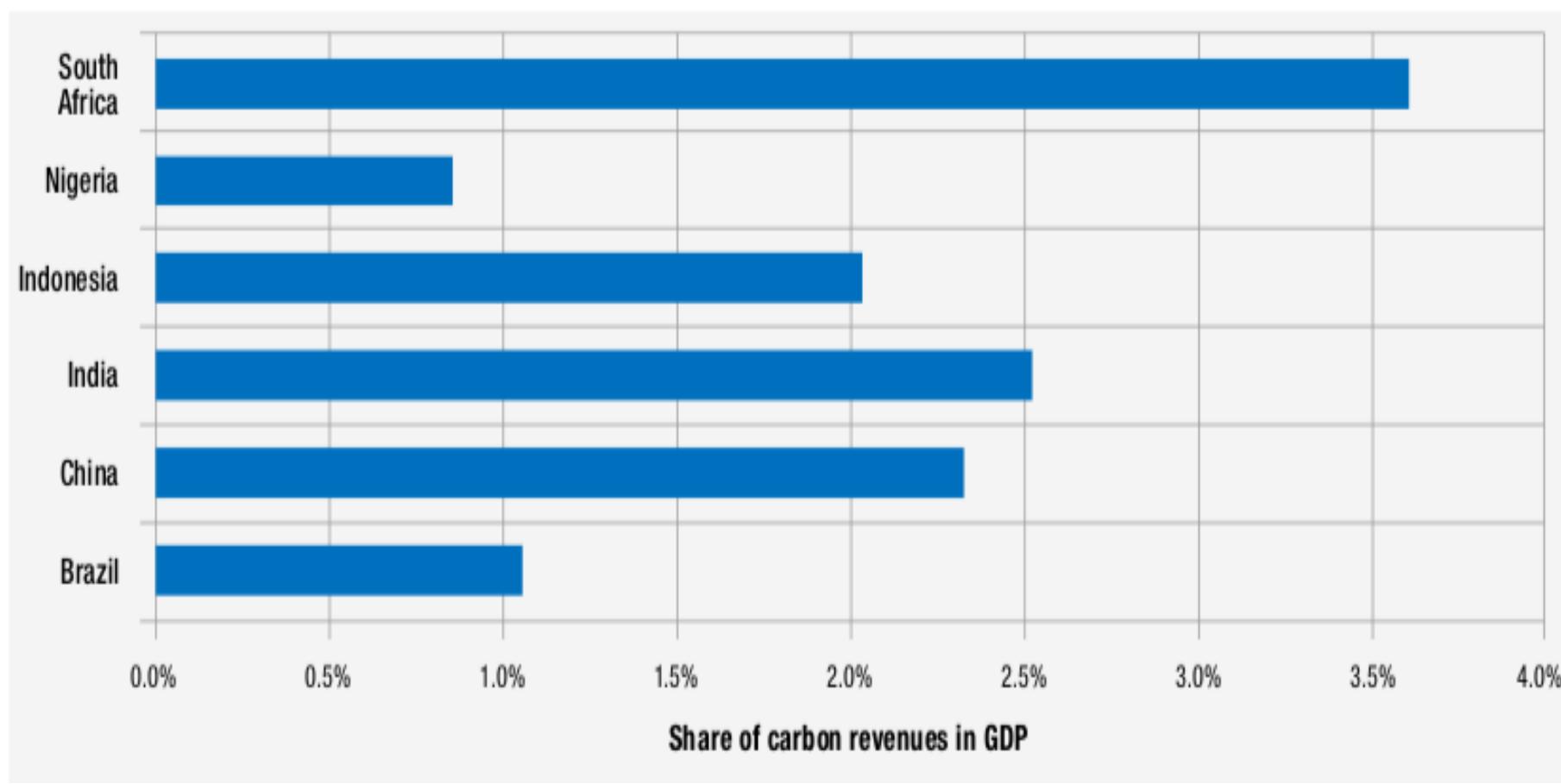
Social impacts of the case studies

Vietnam – Environmental Protection Tax	<ul style="list-style-type: none">Poverty rate declined 0.1-0.2% more slowly than BAU – but fell from 11.1% to 9.8% in two yearsDifferentiated geographical impact – greatest in poorest regionsTax was progressive – Gini coefficient slightly improved on BAU – transport tax
Morocco – Plastics Tax	<ul style="list-style-type: none">Tax on 1.5 litre PET bottle 0.08 Euro cents (imported) and 0.04 Euro cents (domestic production) – effect minimal20% of tax revenues supported waste pickers – generated more than 1,000 jobs – access to welfare / health
Mexico – Carbon Tax	<ul style="list-style-type: none">Carbon tax accounts for <1% of price of transport fuelNatural gas zero rating = limited impact on domestic energy price52% of the carbon tax and new fuel excise paid by the richest income quintileRevenues not used to compensate poorer households
China – Environmental taxes on SO ₂	<ul style="list-style-type: none">End user pricing regulations prevented pass through of higher costs to consumers – no negative social impactSubsidies for electricity regressive – wealthiest 10% received 25% total electricity subsidies in 2000s

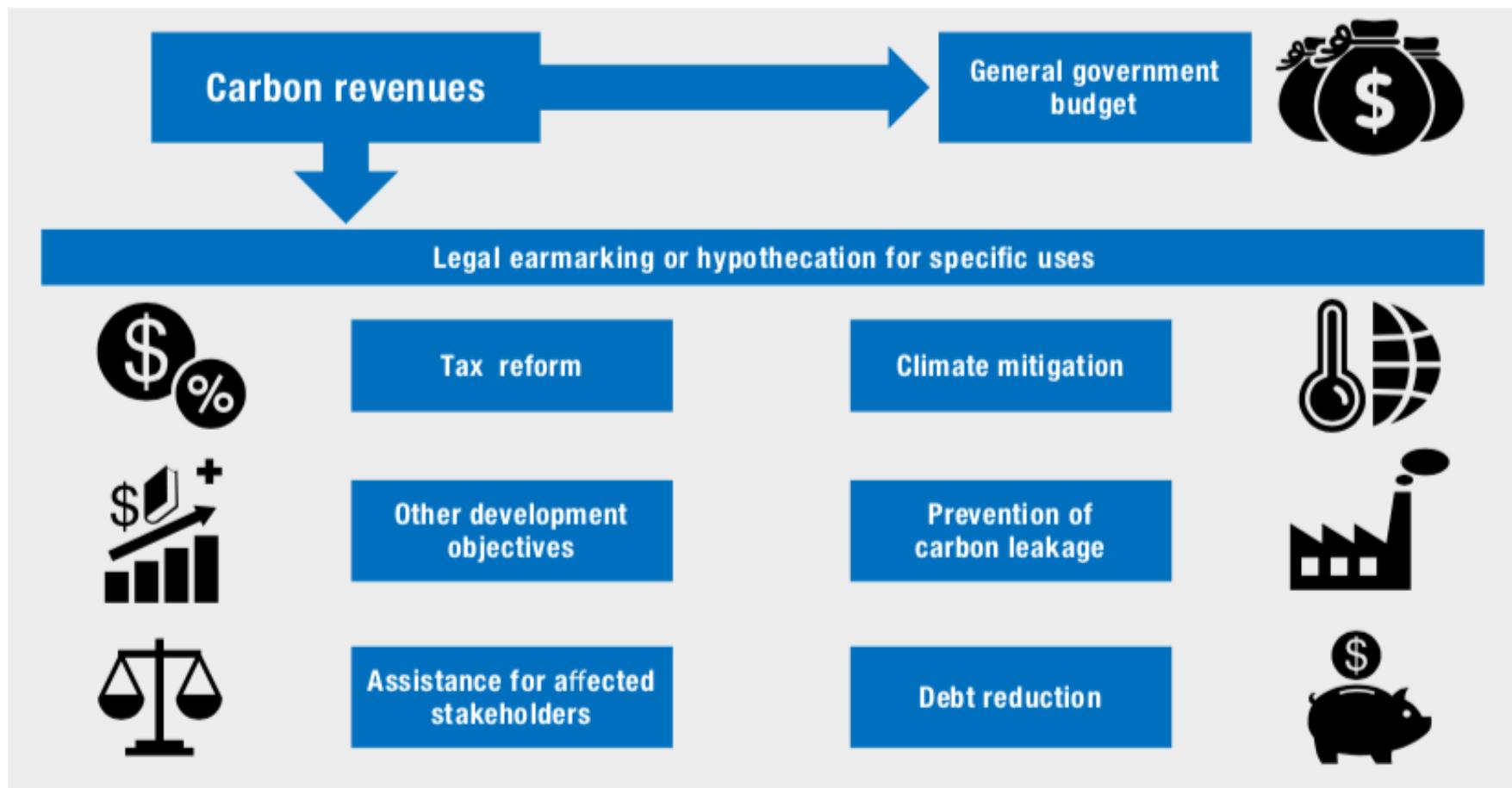
Economic / fiscal impacts of the case studies

Vietnam – Environmental Protection Tax	<ul style="list-style-type: none">▪ 0.2% decline in GDP on BAU 2012-14 – but average growth 5.5%▪ 0.7% drop in investment in comparison to BAU▪ EPT revenue raised >5% of total tax revenue by 2016
Morocco – Plastics Tax	<ul style="list-style-type: none">▪ EUR 14 million revenue / year (0.08% of total tax revenue)▪ Greater competitiveness of domestic products made from recycled plastic▪ Incorporation of workers
Mexico – Carbon Tax	<ul style="list-style-type: none">▪ EUR 0.9 billion predicted revenue 2017 (0.3% total tax revenue)▪ Tax rate has increased 10% 2014-2017▪ Carbon tax too low to drive low-carbon investment in isolation – additional measures implemented
China – Environmental taxes on SO ₂	<ul style="list-style-type: none">▪ Measures failed to take advantage of differentiations in abatement costs▪ Revenues recycled to industry or spent on environmental projects as recommended by Ministry of Finance▪ 2005-10: GDP growth increased 115%, electricity generation 80%

Potential revenues raised by a USD 70 carbon price in 2030



Revenue use: Huge potential to mitigate negative equity impacts



Source:

<https://openknowledge.worldbank.org/bitstream/handle/10986/32247/UsingCarbonRevenues.pdf?sequence=7&isAllowed=y>

Prospects for the future



Environment and climate policy are equity issues

The poor and vulnerable are most affected by climate change and environmental degradation because:

1. More exposed
2. Less able to respond
3. Higher dependency on natural resources

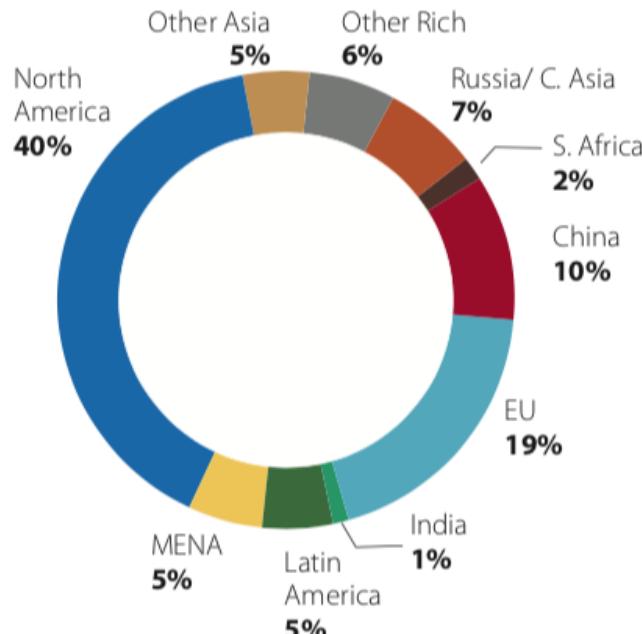
“...limiting global warming to 1.5°C, compared with 2°C, could reduce the number of people both exposed to climate-related risks and susceptible to poverty by ***up to several hundred million by 2050...***”

Source: IPCC 2018, Global Warming of 1.5°C: Summary for Policymakers, paragraph B.5.1

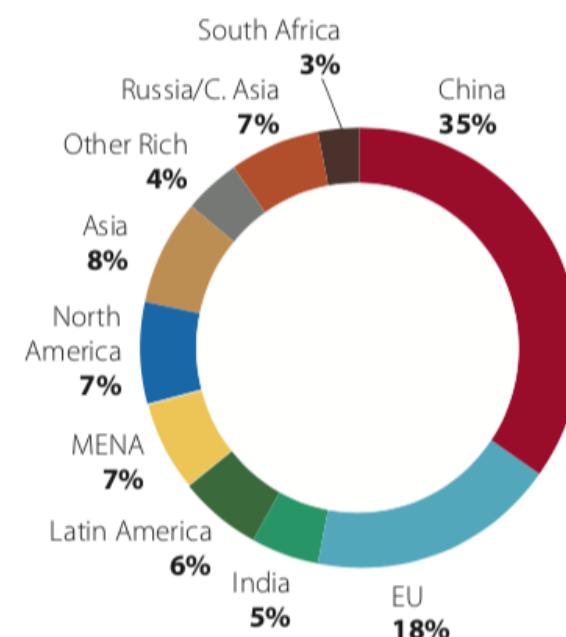
Polluter Pays and User Pays Principles: Wealthiest tend to pollute and use most

Geographical distribution of global emitters of CO₂

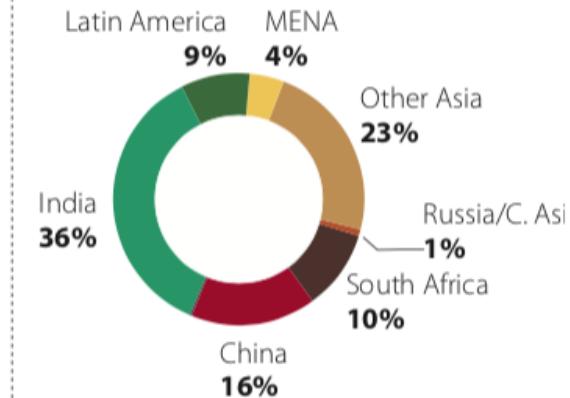
Top 10% of emitters worldwide emit 45% of total global CO₂ emissions



Middle 40% of emitters worldwide emit 42% of total global CO₂ emissions



Bottom 50% of emitters worldwide emit just 13% of total global CO₂ emissions



Source: Chancel and Piketty, 2015

Ways forward: Unilateral approaches

- ET can mobilize substantial domestic revenues: how these revenues are used is an important determinant of the social equity impacts of ET – “ET do not need to be regressive”
- At first, MICs and LICs can consider focusing on elements of ET levied on luxury goods to maximise progressive impacts e.g. Frequent flyer levy on aviation
- ETs levied on immobile tax bases, e.g. energy / carbon, are typically difficult to evade
- Implementing ET can help improve domestic fiscal governance in MICs and LICs
- ET can have social, environmental, fiscal and economic co-benefits which can support the implementation of the SDGs

Possible ways forward: Multilateral approaches

- Harmonization of carbon pricing between groups of countries with higher environmental standards in combination with Border Tax Adjustments
- Intergovernmental tax body under auspices of the UN
- UNFCCC process: Extraction of fossil fuels in MICs and LICs could be compensated in a similar way to REDD+

Thank you for your attention!



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