A Climate of Fairness: Environmental Taxation and Tax Justice in Developing Countries

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International Environmental Agreements

- United Nations Framework Convention on Climate Change
- Kyoto Protocol
- Paris Agreement
Momentum for Change
Tax Fairness Agenda
2030 Agenda

Sustainable Development Goals

1. No Poverty
2. Zero Hunger
3. Good Health and Well-being
4. Quality Education
5. Gender Equality
6. Clean Water and Sanitation
7. Affordable and Clean Energy
8. Decent Work and Economic Growth
9. Industry, Innovation and Infrastructure
10. Reduced Inequalities
11. Sustainable Cities and Communities
12. Responsible Consumption and Production
13. Climate Action
14. Life Below Water
15. Life on Land
16. Peace, Justice and Strong Institutions
17. Partnerships for the Goals
Although there is a specific SDG for climate change, at least 9 others are related to the topic.

There is very little data concerning the effect of the application of environmental taxes in developing countries.
The term “environmental tax” is not defined in literature.

Only definition is for “environmentally related taxes”
Proposition for a definition of an environmental tax, bearing in mind the need for an environmental purpose and effect:

“Any compulsory, unrequited payment to general government imposed for an environmental reason and levied on a tax base that has a proven specific negative impact on the environment. An environmental tax, for the purposes of the report, is thus one that is regarded to have both an environmental purpose and effect.”
(i) principles of environmental law;

(ii) tax principles of general application;

(iii) policy-based principles; and

(iv) social justice principles.
Legal Design

- Excise tax
- Specific tax (price on a ton of carbon)
- Upstream/downstream
- On an item of pollution (carbon easiest proxy)
- Inflict change in consumer behaviour
- Earmarking (?) - Revenue destination (fund/public project)
Pricing Carbon

- Initial price should be commensurate with country’s level of economic development
- Increasing tax rate over time
- Predictability in price increases
- Publicity in policy-making – juridical certainty
- Successful tax = reduction in revenue collection ability
Source:
World Bank 2018
Policy design
Pragmatic approaches

Policymakers can exploit synergies between policy goals, but may have to accept trade-offs between environmental effectiveness and ...

- Fiscal goals
- Political feasibility
- Social protection
- International competitiveness
- Tax principles
Earmarking in low- and middle-income countries

Carbon tax rate in Sweden 1991-2018

NOTE: from 2008 industry outside EU Emissions Trading Scheme (EU ETS)
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?
Why are the poor hardest hit by environmental degradation?

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
Dimensions of inequality
Contributions to pollution

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
### Dimensions of inequality

**Outcomes resulting from environmental taxation**

<table>
<thead>
<tr>
<th>Taxes on energy, water supply, sanitation, waste</th>
<th>Taxes on transport, luxury taxes</th>
<th>Taxes on agricultural inputs</th>
<th>Taxes on resources, e.g. plastics taxes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generally regressive – compensation necessary to mitigate negative impacts</td>
<td>Most progressive in least equal societies</td>
<td>Regressive impact on households dependent upon agriculture</td>
<td>Less evidence available</td>
</tr>
<tr>
<td>May have progressive impact if access to services is low</td>
<td>Implementing luxury tax route for developing countries to implement progressive environmental taxation</td>
<td>Indirect effects not well documented</td>
<td>Progressive if resources are consumed more by high-income groups</td>
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<tr>
<td></td>
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<td>Minimal impact if taxes are levied on exported products</td>
</tr>
</tbody>
</table>
Dimensions of inequality
Further considerations on outcomes

- Static approaches to distributional impacts of environmental taxation

- Quantifiable welfare benefits resulting from environmental improvement rarely modelled or taken into account

- Synergies between environmental taxes and social equity:
  - environmental improvement and poverty reduction
  - mobilisation of domestic revenue to help achieve SDG targets
  - improved fiscal governance
  - reduced tax evasion
## Dimensions of inequality
Possible negative equity impacts on women

<table>
<thead>
<tr>
<th></th>
<th>Energy tax</th>
<th>Natural resources and waste taxes</th>
<th>Transport taxes</th>
<th>Water and wastewater taxes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Distributional impacts</strong></td>
<td>Higher domestic spending</td>
<td>Higher domestic spending</td>
<td>Women tend to spend less on private vehicles</td>
<td>Higher domestic spending vs. Reduced spending – bottled water</td>
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<tr>
<td></td>
<td>Indirect price rises</td>
<td>Resources for export</td>
<td>Higher spending on public transport</td>
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<tr>
<td><strong>Gender impacts attributable to socio-economic roles of men and women</strong></td>
<td>Shift to cleaner fuels</td>
<td>Reduced degradation</td>
<td>Improvement if revenue for public transport</td>
<td>Direct impact on domestic spending</td>
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<td></td>
<td>Substitutions – fuel shifting towards biomass</td>
<td></td>
<td>Impacts on commodity prices</td>
<td>Reduced time spend on water collection</td>
</tr>
<tr>
<td><strong>Environmental benefits?</strong></td>
<td>Improved health, cleaner local environment, reduced care burden</td>
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</tbody>
</table>
Cases examined in detail in the report

Environmental protection tax in Vietnam

Plastics tax in Morocco

Environmental taxes on SO2 in China

Carbon tax in Mexico
## Environmental impacts of the case studies

<table>
<thead>
<tr>
<th>Country</th>
<th>Case Study</th>
<th>Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vietnam</td>
<td>Environmental Protection Tax</td>
<td>1.7% reduction in CO(_2) emissions in both 2012 and 2013</td>
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<tr>
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<td>Modelling of a high tax scenario predicted annual 7.9% reduction</td>
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<td>Tax rate reductions in parallel to EPT have undermined effect</td>
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<tr>
<td>Morocco</td>
<td>Plastics Tax</td>
<td>32% of solid waste reached sanitary landfill in 2012, 53% in 2016</td>
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<td>Municipal waste collection 80% by</td>
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<td>All unsanitary waste dumps to be closed by 2020</td>
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<td>Pilot biogas plant Oum Azza has abated 0.5 million tCO(_2)</td>
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<td>Damage costs (health, pollution) due to waste halved 2000-2014</td>
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<td>from 7 EUR / capita to 3.5 EUR / capita</td>
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<tr>
<td>Mexico</td>
<td>Carbon Tax</td>
<td>0.38% reduction in CO(_2) emissions – 1.8 million tCO(_2) annually</td>
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<td>Zero rating for gas = 45% of CO(_2) emissions from energy use exempt</td>
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<td>Decoupling of CO(_2) emissions and electricity generation in 2018</td>
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<td>Signalling effect – shift from subsidies to taxation of fossil fuels</td>
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<tr>
<td>China</td>
<td>Environmental taxes on SO(_2)</td>
<td>2010 – SO(_2) emissions down 23% in power sector, 14.3% overall</td>
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<td>SO(_2) intensity of coal-fired power stations fell by 10%</td>
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<td>By 2010 86% of coal power stations had installed FGD technology (2005 – 14%)</td>
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<td>Savings due to reduced SO(_2) emissions EUR 4.4 billion annually</td>
</tr>
</tbody>
</table>
## Social impacts of the case studies

<table>
<thead>
<tr>
<th>Country</th>
<th>Tax Type</th>
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</tr>
</thead>
</table>
| Vietnam      | Environmental Protection Tax            | **Poverty rate declined 0.1-0.2% more slowly than BAU – but fell from 11.1% to 9.8% in two years**  
**Differentiated geographical impact – greatest in poorest regions**  
**Tax was progressive – Gini coefficient slightly improved on BAU – transport tax**                                                        |
| Morocco      | Plastics Tax                            | **Tax on 1.5 litre PET bottle 0.08 Euro cents (imported) and 0.04 Euro cents (domestic production) – effect minimal**  
**20% of tax revenues supported waste pickers – generated more than 1,000 jobs – access to welfare / health**                                |
| Mexico       | Carbon Tax                              | **Carbon tax accounts for <1% of price of transport fuel**  
**Natural gas zero rating = limited impact on domestic energy price**  
**52% of the carbon tax and new fuel excise paid by the richest income quintile**  
**Revenues not used to compensate poorer households**                                                                                       |
| China        | Environmental taxes on SO₂              | **End user pricing regulations prevented pass through of higher costs to consumers – no negative social impact**  
**Subsidies for electricity regressive – wealthiest 10% received 25% total electricity subsidies in 2000s**                                    |
### Economic / fiscal impacts of the case studies

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<th>Case Study</th>
<th>Impact</th>
</tr>
</thead>
</table>
| Vietnam       | Environmental Protection Tax         | - 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                          | - 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                            | - 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 SO₂           | - 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 and prospects
Paying low and middle income countries to keep fossil fuels in the ground?

Can the UNFCCC framework be used as a means of paying low and middle income countries to keep fossil fuels in the ground?
Current status: Subsidization of the environmental cost of production and transport

WTO:
- Border Tax Adjustments – protect against loss in competitiveness
- Small groups of higher environmental standards

Harmonization: Multilateral approach (UN+WTO?)
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