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Tax Initiative

ATI Workshop Series on Environmental Taxation

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Introduction

This is a summary document for the ATI Workshop Series on Environmental Taxation, a series of online workshops which took place between October 2024 and April 2025. The workshop series looked at all payments that can be regarded as an attempt on the part of government to manipulate prices with the intention of changing behaviour in favour of a positive environmental impact, i.e. environmental taxes, fees and charges (henceforth: ETs). [1]

ATI countries face many pressing environmental challenges aside from climate change, such as air, water and soil pollution, biodiversity loss, and waste management. However, knowledge resources on implementing ETs to tackle these challenges are comparatively scarce. Providing access to knowledge resources and facilitating a practical exchange between participants on these topics was, as far as possible, the focus of the series.

Key messages, good practices and lessons learned are summarised below. Links to further reading and resources are provided throughout. All workshop presentations can be found here.

Tax design

The primary aim of ETs is to deliver environmental objectives in an efficient and fair manner, and design of such instruments should reflect this goal. Designing ETs to include accompanying measures which mitigate negative and amplify positive impacts has the potential to deliver important secondary benefits, such as Domestic Revenue Mobilisation (DRM), access to substitutions, or enhanced social welfare.

The presentation on tax design from the workshop series can be found here.

Key discussion points are below:

- Design of ETs is often the art of the possible rather than the pursuit of the optimal, e.g. using the Standards and Prices approach to tax rate setting, which adjusts the tax rate (price) to achieve a specified environmental standard.

[1] The definition of environmental taxation used for the workshop was: “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.” Source: Cottrell J. and Falcão, T. (2018). A Climate of Fairness. VIDC, p.8.

- Upstream taxes – at the top of the value chain – have the broadest coverage, enable widest range of abatement options and have a lower administrative burden.

- Cooperation between policymakers, industry and civil society is crucial for the successful design and implementation of ETs, cf. Ghana's experience.

- Preparing the ground well can maximise the potential for ETs to be effective, e.g. development of recycling facilities alongside a plastics tax, provision of clean cooking stoves when taxing fuel wood, or raising awareness about ETs, such as the purpose of the instrument, planned tax rate trajectory, and revenue use.

- Consideration of the broader fiscal, budgetary and regulatory context is important for efficiency and policy coherence reasons: tax incentives and other direct or indirect subsidies may complement or contradict ETs.

Detailed guidance on the design of ETs is available in the ATAF (2024) Environmental Tax Handbook. Lessons learned on tax design in the context of low- and middle-income countries (LMICs) can be found in European Commission (2023) Green Taxation in non-OECD countries. Specific approaches to ETs and Green Fiscal Policy (GFP) in the forestry sector can be found in the World Bank publication (2021) Designing Fiscal Instruments for Sustainable Forests.

Other important resources on ETs in LMICs include World Bank Resources, the International Centre for Tax and Development (ICTD), the German Institute of Development and Sustainability (IDOS), and this report by Michael Keen (2023): Taxation and the Environment: An overview of key issues for developing countries.

Data considerations and needs

Implementing ETs is associated with high data requirements. To levy a tax, fee or charge on an environmentally relevant tax base, the amount of pollution emitted, or product consumed, must be reliably measurable or quantifiable. To set the tax rate, data on the price, elasticity of the good or service, and availability of alternatives, is needed. Data monitoring calls for consideration of multiple factors, including collection technologies, data quality and validation, integration and communication, etc.

However, in many ATI partner countries, the availability of – and access to – data is a significant problem. Data tends to be collected by several institutions, including line ministries and agencies, statistical agencies, subnational governments, and private

companies. Consolidation is costly and time-consuming, unless data-sharing structures are well-established. Where data is available, capacity to analyse cross-cutting data relevant for ETs and other GFPs is often limited, or capacities are distributed across agencies.

Possible strategies to meet these challenges are listed below:

- Improving coordination on data collection, management and data-sharing within and between institutions can help to consolidate data and facilitate access to it.

- Drawing up an inventory of data that is available and using it to identify possible fields of action and tax bases can create momentum behind ETs and demonstrate that such instruments are a useful and effective policy tool for environmental protection.

- In this context, some sectors are particularly challenging, e.g. the forestry sector. Burkina Faso faces many challenges, including ineffective monitoring of forest resource use, lack of information on elasticities, and obsolete data. An improved Open Data platform, greater data transparency, and systemisation of data collection are all proposed solutions. [2]

- In some cases, the design of ETs can address data shortfalls, e.g. proxies can be used for air pollution from vehicles, such as engine size, fuel type, or age, as in Tanzania. Additional examples of proxies can be found in the workshop presentation.

- ETs can be introduced with a clear intention to adjust tax rates, particularly if data on elasticities – the expected demand response to a tax or fee – is not available.

- Companies can be required to report on their emissions, with data used to calculate the ET burden, e.g. environmental quality regulations introduced in Malaysia in 1977 required palm oil mills to report effluent discharge, composition and method of disposal quarterly.

- Not all pollution monitoring technologies are expensive, some are inexpensive and widely accessible.

- Using open-source data, e.g. IQ Air, integrating multiple data sources (high-precision and low-cost devices), using proxy and model-based data, historical and archived data, are all innovative strategies which can help close data gaps.

- Data is political; hence, political support for better data collection is required.

[2] This World Bank (n.d.) technical note identifies several approaches to ETs and deforestation.

Social impact assessment

Managing distributional outcomes is a key factor for the political acceptance of ETs. To inform the design of measures to mitigate negative outcomes, a Social Impact Assessment (SIA) should be carried out to:

1) Predict and analyse the intended and unintended social consequences, both positive and negative, of planned interventions (in this case, ET packages), and possible social change processes invoked by those interventions.

2) Monitor and manage these social consequences.

SIAs are a key element in the preparation and design of a strategic, integrated policy package of ETs, informing the design of ETs and complementary instruments (addressed in the following section) and contributing to political consensus building. The process of predicting social and distributional impacts can be realised in several ways, with very different human and technical capacity needs – from econometric modelling through to historical analysis, checklists of common impacts, and literature reviews.

With this in mind, the session looked at both theoretical and practical approaches to SIA. Key lessons are highlighted below:

- It is important to consider intersectionality when carrying out SIAs: individuals face multiple and overlapping dimensions of deprivation related to e.g. their age, ethnicity, gender, sexuality, religion. [3]

- Different models for SIA can be used to estimate short- and long-term effects of ETs – and both are essential, as responses to and the impacts of ETs are dynamic and change over time. [4]

- Direct and indirect impacts are important: in the case of carbon taxes, by far the most significant indirect impact is on food prices.[5] A general finding from modelling is that ETs tend to be neutral on relative terms when short-term effects are considered, but progressive in the longer term, due to unequal distribution of capital.

[3] Relatively little research has been done on ETs and gender: findings are summarised here and here.
[4] For example, the Carbon Pricing Incidence Calculator is a simple tool which can be used to predict the impact of carbon pricing on different income groups depending on the revenue-recycling model introduced.
[5] The World Bank Climate Policy Assessment Tool (CPAT) can be used to run a quick diagnostic of the potential benefits of a carbon pricing reform across key dimensions.

- Fairness has been shown to be an important consideration for taxpayers. Therefore, for political and public acceptance of ETs, it is important to demonstrate why a particular environmental tax, fee or charge is fair. This might consist in reference to the Polluter Pays Principle – "a key tool for the delivery of environmental objectives in an efficient and fair manner"[6] - or by designing luxury ETs that target e.g. aviation or private motor vehicles to effectively reduce the burden on the poor.

- In Morocco, ex ante modelling used to predict economic, fiscal, environmental and social impacts of ten possible GFPs was presented during the workshop: main lessons learned include early involvement of key institutional players, provision of clear explanation of the multiple benefits of measures for the environment, as well as fiscal and macroeconomic impacts.

- In Zambia, in common with many other LMICs, human and technical capacity and data constraints have prevented SIAs from being implemented: enhanced household data and improved data availability is necessary to support such analyses.

- A key source for SIA is the Handbook of Social Impact Assessment and Management.

Mitigating negative social impacts

Once an SIA has been conducted, the next key stage in the design of a policy package is to develop social mitigation measures. This should take the social mitigation hierarchy into account. Most preferable are measures which seek to be transformative and to magnify the impact of the GFP instrument, such as measures to address gender disparities. Win-win options and co-benefits policies that encourage green economy transition and provide substitutions for polluting technologies can be considered second-best choice. If such approaches are not feasible, safeguarding policies such as cash transfers can be implemented.

Design of these measures should ensure that ETs do not reinforce structural inequalities relating to e.g. gender, ethnicity, age, or disability. To target measures effectively, governments can draw on e.g. digitised social safety nets and smart cards as in Indonesia, existing municipal data on low-income households like in Cape Town, or the knowledge of municipal or local governments and local community leaders.

Mitigation measures in Tunisia (the PROSOL programme) showed how mitigation can

[6] Citation from the European Court of Auditors (2021). The Polluter Pays Principle, p.4. https://www.eca.europa.eu/Lists/ECADocuments/SR21_12/SR_polluter_pays_principle_EN.pdf

make access renewable energy more affordable by reducing up-front investment requirements and providing concessional financing.

Key lessons from the session included:

- Preparing the ground well for ETs, GFPs and broader reforms is key, including policy impact analysis, i.e. predicting not only social impacts, but impacts on business, the economy, the fiscal system, and the environment. Such analyses can ensure that mitigation measures are well-designed and compensate those in need, whether vulnerable households or small and medium-sized enterprises.

- In Ecuador, the Human Development Bond in place since 2003 uses the social register to accurately target elements in the population living in poverty or extreme poverty to protect the vulnerable, such as children and the elderly.

- In the Philippines, a package of measures including targeted unconditional cash transfers, vouchers for public transport and food, and skills training compensated for the impacts of the 2018 Tax Reform for Acceleration and Inclusion (TRAIN).

- If digital systems are not in place, a proportion of revenue from ETs can be allocated to social welfare and poverty alleviation programmes, as in Namibia, where access to solar power is subsidised for rural areas with the aim of using electricity for clean cooking rather than fuel wood.

- It is important that policymakers understand the viability of the social protection schemes they put in place, or which are in place already, to recognise the extent to which they reach the most vulnerable – particularly in the context of informality, lack of social registries, etc.

- Targeted cash transfers are more efficient than untargeted subsidies. Conversely, if there are data gaps or a risk of missing out vulnerable groups, it may be preferable to implement broad-brush approaches to ensure sufficient coverage.

- The experience of fossil fuel subsidy reform in Ecuador highlighted the importance of sufficient coverage, effectiveness and accurate targeting of compensatory measures – as well as clear communication of the benefits of reforms.

Domestic Revenue Mobilisation (DRM)

In many LMICs, DRM is a key motivation for the introduction of environmental tax measures. However, it is important to strike a balance between fiscal and environmental

objectives of ETs. In this context, it is important to predict responses to ETs and estimate anticipated tax revenue prior to their implementation.

To achieve this, understanding the elasticity of demand of an environmentally harmful good or service is essential, as explained in the workshop presentation. If ETs are levied on a tax base with high elasticity of demand, a rapid response can be expected and revenue raised will be low. Taxes on plastic bags are a case in point. Conversely, if elasticity of demand is low, as in the case of fossil fuels, a slower response and therefore greater revenue volumes can be anticipated. Elasticities are dynamic i.e. they change over time – indeed, it has been estimated that long-term elasticities for transport fuels are around three times greater than short-term elasticities. Such considerations should feed into the design of ETs and shape policymaker's expectations of their contribution to DRM.

Key lessons from the session include:

- ATI countries should endeavour to strike a balance between DRM and environmental motivations. Reliance on ETs for DRM in the long-term is inadvisable, as revenues will diminish as ETs take effect and the environment improves.

- The issue of falling revenues can be addressed to some extent by means of a tax rate escalator, as is proposed for the carbon tax in South Africa.

- Given the relative inelasticity of fossil fuels in the energy and transport sectors, carbon tax revenues have considerable potential to contribute to climate financing, as well as other policy priorities.

- Examples in LMICs of ETs being used for DRM, e.g. the MID levy in Mauritius or ETs in the fisheries sector in Mauretania, highlight some of the challenges governments face when designing ETs to tackle environmental challenges while mobilising revenue.

- Revenues can be used for diverse purposes, to foster green transition, or for the general budget. Revenues can also be used to tackle key challenges associated with ETs, such as lack of data, poor monitoring, or targeting of social welfare.

- Transparency and communication are key for the political acceptance of ET instruments with a revenue-raising objective.

- Earmarking can help foster political acceptance, e.g. in South Korea, transport, energy and environmental taxes are earmarked for pre-designated government programmes, while in Colombia, the *Fondo para la Vida y al Biodiversidad* is 80% financed by the carbon tax.