



Environmental Fiscal Reform

Case Studies

Introduction

Alleviating poverty and achieving economic development whilst safeguarding our environment is a major challenge for governments aiming at sustainable development. In order to achieve success, the choice of policy instruments is crucial. Market-based instruments have been increasingly applied in the last two decades, as they have proven to lead to efficient environmental management, to trigger innovation, and possibly create revenues which could be – at least partially – used for poverty reduction.

Environmental Fiscal Reform” has emerged as a most promising set of policy tools in this context, as it corrects price signals within the formal economy to include environmental and other costs and reforms fiscal policy so that the tax system takes environmental criteria into account.

Environmental Fiscal Reform, referring to a set of instruments, here, to charges, fees, taxes, subsidies and emission trading, have the potential to make a significant contribution to the implementation of green economy strategies. Therefore it contributes to the agreement at the United Nations Conference on Sustainable Development in Rio de Janeiro 2012 (the so-called Rio+20 summit) acknowledging “green economy in the context of sustainable development and poverty eradication as one of the important tools available for achieving sustainable development”.

Frequently asked for country examples, GIZ Project “Rioplus- Environmental Policy and Sustainable Development” assembled cases of different approaches of Environmental Fiscal Reforms in several countries. They originate from different sources. GIZ edited summaries for easy and quick reading.

The following online publication clusters the approaches by country and by instrument applied and allows the reader to make a choice on country experience description and a brief definition and analysis of the instruments. It is meant to act as an initial point of reference for professionals at government level or development co-operation practitioners interested in applying Environmental fiscal reform instruments. It can be further used to support the elaboration of green Economy strategies or innovative finance mechanisms for environmental policies. Trainees of the GIZ seminar “Capacity Development for Environmental Fiscal Reform” will use the case studies as references.

The matrix is neither exhaustive nor comprehensive; it is a “living” document meant to be updated and complemented by new, additional case studies. Links for further reading are inserted below each summary.

Matrix

	Environmental Taxation				Environmental Subsidies		Markets for Environmental Goods
	<u>Taxes on Natural Resource Extraction</u>	<u>Taxes on Products</u>	<u>Taxes on Pollutants and Emissions</u>	<u>Charges & Fees</u>	<u>Green Subsidies/ Targeted Subsidies/ Cross-Subsidies</u>	<u>Reforming Environmentally Harmful Subsidies</u>	<u>Emission/ Certificate Trading</u>
AFRICA	<u>Burkina Faso</u>	x					
	<u>Ghana</u>					x	
	<u>Morocco</u>			x			
	<u>South Africa</u>			x			
	<u>Tanzania</u>			x			
	<u>Uganda</u>			x			
ASIA	<u>China</u>		x				
	<u>Indonesia</u>					x	
	<u>Iran</u>					x	
	<u>Thailand</u>					x	
	<u>Vietnam</u>		x				
	<u>Czech Republic</u>		x				
EUROPE	<u>Estonia</u>			x			
	<u>Hungary</u>		x				
	<u>Ireland</u>			x			
	<u>Latvia</u>	x					
	<u>Romania</u>		x				
	<u>Sweden</u>		x				
LATIN AMERICA	<u>Argentina</u>				x		
	<u>Bolivia</u>	x					
	<u>Brazil</u>		x				
	<u>Chile</u>						x
	<u>Colombia</u>			x			
	<u>Nicaragua</u>	x					



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CHARGES AND FEES

Definition: Fees/charges are payments for specific services given to whoever pays the fee/charge.

CHARACTERISTICS

User charges cover the cost of collective services associated with the treatment or the disposal of the pollution associated with the consumption or use of a product. Primarily a financing device for the service in question (in other words, the user/polluter pays the levy in return for a compulsory service). Base: quality and quantity of service provided.

Allocation of Proceeds: Various, but frequently to the establishment/ operation/management of the corresponding infrastructure/service. When relevant service was previously provided at no cost by a public entity, the charge/fee frees up budgetary resources.

Examples:

Charges for energy or water supply, charges for the collection and treatment of solid waste (including toxic and hazardous wastes), charges on sewage water.

The terms “user fee/charge” are frequently employed for the non-commercial use of natural resources. (e.g. access to national parks, natural hunting or fishing grounds).

Distinction between taxes and charges: Under German tax law, revenue from charges must be used for specific purposes, while taxes can be absorbed in the general budget.

STRENGTHS

- * Create a strong incentive for resource-efficiency and cleaner technologies by discouraging emissions, waste generation and use of environmental resources (GTZ 2006).
- * A marketable service is provided to identifiable beneficiaries – easy to communicate.
- * Direct and proportional benefits accrue to beneficiaries in exchange for payments.
- * Transactions take place in a willing buyer willing seller market.
- * Cover governmental expenses: Full cost recovery can make institutions financially self-sustaining, thus freeing money for other expenses.
- * Can generate financial resources to increase coverage of infrastructure (water supply, sanitation, energy).
- * Easy to monitor.
- * Individual fees and charges reward careful users.
- * Can make the polluter pay for the cost of cleaning up pollution e.g. in the case of levies for waste disposal and treatment.

Factors favouring the use of emission charges are:

- » clear differences in abatement costs for different sources of emissions;
- » easily identifiable emission sources;
- » low-cost methods of monitoring emissions;
- » technological potential for reducing emissions.

Product charges are preferable where

- » products are manufactured in large numbers and are easily identifiable;
- » existing administrative structures can be used (e.g. to collect VAT);
- » product manufacture, resource exploitation or waste disposal involve emissions whose sources are diffuse and difficult to document;
- » consumers can switch to other products; there is a high price elasticity of demand.

WEAKNESSES

Social considerations: Charging for services previously provided at no cost can lead to concerns about the accessibility of services to the poor, with water user-charges being among the most debated issues. Concerns exist that charges might be borne at disproportionate levels by the poor, depending on the concrete pricing mechanism. One solution is to apply fees only above a certain level of usage volume (“lifeline tariffs”), or to implement compensatory measures.

On the other hand, the poorest tend not to benefit from the free / low-cost provision of environmental services, as they tend not to be connected to the network

Trade-off between social issues and environmental effectiveness: Political considerations regarding social consequences of charges may lead to charge rates that do not cover the actual costs of the service provided and/or which are insufficient to have a significant impact on resource efficiency improvements.

Managerial interest and attitude: Fees and user-charges can conflict with the interest of public service providers, as they cause opposition among their clients, require organisational adaptations, and lead to accountability pressure. If charges reduce demand for services, public service providers will lose clients, budgets and influence.

Vulnerable to illicit behaviour and corruption.


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TAXES ON PRODUCTS, POLLUTANTS AND EMISSIONS

Definition:

Product tax: Payments are levied on the units of harmful substance contained in products, typically levied at the point of sale

Emission tax: Payments are directly related to the measurement (or estimation) of the pollution (i.e. air or water pollution, land contamination, noise) caused (EEA 2006).

CHARACTERISTICS

The product tax may also be levied per unit of the product, if the objective is to reduce usage of the product generally (e.g. a tax on pesticides) (EEA 2006).

A central goal and characteristic of CO₂ taxation is to create a price for fossil CO₂ emissions irrespective of what kind of fossil fuel is being used.

STRENGTHS

Environmental goals are achieved at lower costs: Environmental improvements happen in the best place and with the best technology that yields the environmental goal with the lowest costs.

Promote innovation to improve resource efficiency and cleaner technologies: environmental taxes can provide continuous and dynamic incentives for research in environmental technologies, especially if the businesses expect the tax to persist in the long term.

Reduce distortions: the revenues from eco-taxes can be used to reduce other more harmful taxes that cause more distortions within the economy. This is particularly true in relation to taxation of labour.

Mobilisation of revenue: Especially for developing countries that have a small tax base and face difficulties in raising government revenues, eco-taxes can be an attractive option to mobilise government revenues and align environmental and economic goals.

Economic efficiency: any move to internalise costs and thus “get prices right” should lead to greater economic efficiency and thus benefit the economy as a whole.

Reduced dependency on fossil fuel imports: less exposure to price fluctuations, greater macroeconomic stability, improved energy security

WEAKNESSES

Environmental taxes are cost-effective, but they cannot guarantee a defined quantifiable outcome (unlike emission trading). Flexibility in tax legislation can allow for later adjustment – enabling prices to be set at a level that effectively incentivise change. Care should be taken to adjust rates in a predictable way e.g. by means of an escalator.

Perceived risk of competitiveness impacts can provoke widespread resistance to a tax and calls for exemptions / compensatory measures – although there is very little evidence of taxes harming competitiveness in practice.

Exemptions create inefficiencies: if businesses anticipate long-term exemptions e.g. from energy taxes, then the economic incentive to undertake energy-saving measures at least cost is considerably reduced (Kohlhaas 2003).

Evasive actions (leakage): Re-locating activities to places outside of the regulated area remains probably the most frequent evasive action taken, leading to economic losses and undermining the environmental effect.

Illicit behaviour and corruption: Companies can try to avoid the eco-tax by illicit behaviour, e.g. the falsification of pollution records or engagement in corruption with government officials.

Information gaps and political influence: In order for the policy to achieve its objectives in an efficient way, polluters from a range as wide as possible need to be included. This can be hindered by data gaps on emission sources and resistance from influential lobbies, leading to potential exclusion of critical industry sectors or exclusion of a large informal economy from the tax.

Contradictions with subsidies provided for important but scarce environmental goods (like water) for social policy reasons. An eco-tax in this case could be perceived as reducing redistribution and might face political opposition.


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TAXES ON NATURAL RESOURCE EXTRACTION (E.G. TIMBER, OIL)

Definition:

Natural resource extraction tax: Collection of economic rents from the extraction of both renewable and non-renewable resources.

CHARACTERISTICS

Base: Volume or commercial value of resources extracted, or the profits of the company extracting the resource

Allocation: Various, but particularly the general budget.

Royalties are an important source of revenues for many governments.

Examples: Royalties for extraction of non-renewables (e.g. minerals, crude oil, natural gas). (OCED, 2003)

STRENGTHS

Provides regular and reliable source of income and has the potential to generate significant additional revenue.

As systems for tax collection usually exist, there is no need to set up a new collection system or bureaucracy.

Establishing fiscal instruments with a wide base means that protected area managers are less tied to individual donors.

Taxes that capture the economic benefits from resource uses guide the economy towards a more sustainable path.

Generate funds to cover cost of enforcement and monitoring of new taxes

Enhanced sustainability e.g. in forestry, benefits also for local, low-income communities

WEAKNESSES

Need for strong institutional and fiscal capacity. It may be difficult to introduce new taxes

Increasing the power of local authorities or protected area managers may call for a change in existing legislation.

Capturing full environmental costs and benefits is information intensive.

New instruments may create perverse incentives. The instruments should be sufficiently flexible so as to allow “trial and error” approaches.


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ENVIRONMENTAL SUBSIDIES

Definition:

Any measure that keeps prices for consumers below market levels, or for producers above market levels, or that reduces costs for consumers and producers” (OECD 1998).

CHARACTERISTICS

Governmental institutions provide explicit or implicit financial support to households or private enterprises to promote e.g. resource-efficient production and services. There are three main categories of financial aid:

- » Direct subsidies such as financial grants or credits. These facilitate investments in resource efficient technologies by partly covering the costs incurred by businesses or households.
- » Indirect subsidies in the form of (i) differentiated tax rates or tax exemptions and (ii) provision of goods like power or water and services below real, i.e. market, price.

Indirect subsidies are used to lower the price of resource efficient devices, items and services to improve their competitiveness and to enhance their commercialisation.

» Direct price support for producers or consumers.

Subsidies are used either to promote innovations, or to facilitate the adaptation to new legal frame conditions (norms and standards) or to preserve environmentally sound structures and production processes (GTZ, 2006).

STRENGTHS

Uses financial interest of target groups: Subsidies are a potent economic instrument to influence investment and purchasing decisions, as they directly reduce expenditures and increase income and profitability of the production of goods and services.

Immediate effectiveness: Subsidies act immediately as soon as they are provided. Loss of time to promote resource efficiency is comparatively low.

Competitiveness advantage for enterprises: When awarded on a national or regional level, subsidies offer enterprises advantages in international competition. They can contribute to creating on the medium term a powerful and internationally competitive industrial branch, and they can prevent companies from relocating their factories abroad.

Support innovation at an early stage: Subsidies facilitate the market launch of innovation at an early stage as they reduce the costs of pioneering products and increase knowledge among customers quickly

Green subsidies have proven invaluable for the diffusion of clean technologies and environmental infrastructure

Address financial needs of SMEs: Subsidies are especially advantageous for small- and medium-sized enterprises (SMEs) which have only limited financial capabilities to internally cross-subsidise new products with revenues from well-established products.

WEAKNESSES

Subsidies burden public budgets. Especially countries that have a small tax base and face difficulties in raising government revenues, subsidies reduce the availability of financial resources for core tasks of the state such as education, infrastructure, security etc.

Interfere with operation of market: Subsidies interfere with normal market development. They alter the price situation on the market by lowering the price for certain products or services. Thus, production and services that would otherwise be unprofitable can displace other, more economic products and services resulting in net welfare losses.

Unequal treatment of enterprises: Subsidies create a group of beneficiaries but also a group of disadvantaged. Among the latter are often profitable enterprises which may feel discouraged that their less successful competitors are being financed through (their) taxes.

Reduce innovation pressure: Subsidies weaken the motivation of beneficiaries to become more profitable, as long as the subsidies guarantee sufficient revenue (subsidy dependence). In this way, they can hamper the development and introduction of further innovations. Subsidies should always be structured to avoid dependency by being time-limited or related to e.g. technical maturity.

Vulnerability to illicit behaviour


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REFORMING ENVIRONMENTALLY HARMFUL SUBSIDIES

Definition:

An environmentally harmful subsidy (EHS) can be defined as: “a subsidy that encourages more environmental damage to take place than would occur without the subsidy” (OECD 1998).

CHARACTERISTICS

EHS are often difficult to reform because there are not readily identifiable, powerful stakeholders are dependent upon them, and politicians lack the will to push through reform.

EHS are sometimes understood to encompass implicit income transfers resulting from non-internalisation of externalities i.e. if an activity results in a burden (e.g. pollution) elsewhere, which is not internalised within the price of the activity, then the activity is implicitly subsidised (EEA 2005).

“Subsidy reform needs be based on a careful analytical exercise that takes into account the interrelations of instruments, subsidy leakage to other parts of the economy, the existence of policy filters that may reduce the harm of the subsidy, the potential negative effects (i.e. not just the benefits) of subsidy removal (including distributional effects), and the existence of viable alternative instruments if and where policy objectives still need to be supported” (EEA 2005).

STRENGTHS

Can reduce distortions in the economy that promote environmentally damaging behaviour, thus resulting in less pollution / consumption of scarce resources.

Beneficial to the economy as a whole: reducing distortions within the economy increases efficiency.

Subsidy reform creates a level-playing field between technologies. This means that clean energies and newer technologies are more able to compete with established industries.

Can free up large amounts of government revenue to consolidate the general budget or to invest elsewhere, e.g. in poverty reduction programmes.

Because typical subsidies are on imports (most notably fossil fuels), impact on employment tends to be quite low.

WEAKNESSES

Difficult to realise in practice: recipients of subsidies tend to strongly resist reform.

Risk of subsidy leakage to other parts of the economy.

Socially vulnerable groups e.g. poorer households, will be hit by reform: targeted subsidies to shield these groups from the worst impacts of reform (price increases) is often necessary.

Some businesses may not be competitive without subsidies.


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EMISSION/ CERTIFICATE TRADING

Definition:

In certificate trading systems governments establish a maximum quantity of emissions to the environment in a region and issue certificates or permits allowing certificate holders to emit pollutants or the use of environmental goods up to the defined maximum.

CHARACTERISTICS

A central authority (usually a [governmental](#) body) sets a limit or cap on the amount of a pollutant that may be emitted. The limit or cap is allocated or sold to firms in the form of emissions permits which represent the right to emit or discharge a specific volume of the specified pollutant.

Emission reduction schemes often take the form of a 'cap and trade' model (such as that implemented in Europe), whereby participants are allocated emission permits or allowances that represent allowable amounts of carbon emissions - the cap or target level of emissions. These permits can also be traded. To the extent that an entity emits more than the limits held (corresponding to the permits held), it must buy permits from the market or pay a penalty.

STRENGTHS

Environmental goals are achieved at lower costs: Environmental improvements happen in the best place and with the best technology that yields the environmental goal with the lowest costs (Tietenberg, 2003).

Flexibility and innovation: polluters can reduce emissions or purchase additional certificates, whichever costs least for them. The price signal from trading induces innovation, as those abating emissions more cheaply can generate allowances to sell and profit from the technologies associated with their abatement strategies. (EEA 2005)

Promote long-term resource efficiency: Trading systems promote continuous resource efficiency improvements and research in environmental technologies, especially if the number of certificates is reduced in a predictable manner over time.

Certainty of achieving environmental goals: The regulator can set the amount of certificates autonomously. The level of emissions cannot exceed the amount of certificates if actors are compliant, even with unexpected economic growth and new emission sources.

Certificate allocation: the effectiveness of the instrument does not depend on how certificates are initially allocated. Auctions can be used to raise government revenue; free allocation can secure support from businesses. Partial or full auctioning has a number of efficiency gains, as auctioning raises revenue to cover administrative costs, compensate losers and reduce pre-existing distortionary taxes.

WEAKNESSES

Reliance on other policy instruments: Certificate trading relies on government's capacity to sanction businesses in case of non-compliance. Consistent measurement and enforcement of compliance rules has proven necessary for programmes to yield the environmental and economic benefits envisioned.

Functioning market for certificate trading required: Markets for certificate trading work only if sufficient supply and demand of certificates exists and is expected to exist in the future.

Administratively cost-intensive: requires considerable investment in designating competent authorities, developing monitoring protocols and a verification system (EEA 2005).

Evasive actions (leakage): Re-locating activities to places outside of the regulated area remains probably the most frequent evasive action taken, leading to economic losses and undermining the environmental effect, especially as activities are likely to be shifted to a country with lower environmental standards.

Increasing concentration: Better-capitalised businesses can buy out smaller certificate holders and thereby gain undue market power (Tietenberg, 2003).

Surplus supply: if there is a surplus supply of certificates (if the cap has been set too high), there will be no trading and no prices, undermining the viability and rationale of the scheme.



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Burkina Faso

Environmental taxation

Mainstreaming environmental issues in fiscal policy

Burkina Faso presents an interesting case for exploring possibilities for applying EFR and its instruments. Like many other African countries, it is heavily dependent on development cooperation for economic development and poverty alleviation. Its fiscal structure is characterized by low tax rates and a narrow tax base. Economic instruments for environmental management and conservation are poorly defined at best and in most cases largely inconsequential in meeting sustainable development, economic growth and poverty reduction objectives. Burkina Faso has significant natural resources, tremendously varied and rare fauna and flora as well as diverse ecosystems. However, environmental concerns receive only sporadic consideration and are often subordinated to growth efforts. Environmental regulation is weak and hardly enforced.

With the aim of strengthening the national capacities to analyse the links between poverty and environment, the Ministry of the Environment of Burkina Faso, with the support of the UNDP-UNEP, launched a joint programme: “Poverty and Environment Initiative (PEI) – Burkina Faso”. Efforts of the programme included supporting participative development of a PEI strategic environmental mainstreaming programme tailored to the context and needs of Burkina

Faso and awareness raising on the importance of poverty-environment mainstreaming amongst all key stakeholders (government, in-country donors, civil society and private sector). Additionally the programme carried out analyses of country specific poverty-environment linkages, institutional and political context, related capacity-building needs and economic valuation of use and management of key natural resources. In collaboration with German Technical Cooperation (GIZ) the programme supported capacity building on environmental fiscal reform to increase the country’s ability to integrate sustainability into development planning processes.

The Ministry of Economy and Finance of Burkina Faso has released a new directive in March 2011 that calls for the inclusion and set up of an environment unit as part of the organizational structure of the Ministry. The PEI country team had successfully lobbied for this institutional change to improve understanding and awareness of environment-poverty linkages among policy-maker in charge of economic development and planning. Poverty-environment issues are fully included in the new strategy for accelerated growth and sustainable development for the period 2011 – 2015 (SCADD) and the national planning and budgeting processes.

Further Reading:

- * [UNDP-UNEP](#)
- * [FOES](#)



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Ghana

Reforming environmentally harmful subsidy

Mobilising public support for removing fossil-fuel subsidies in Ghana

Addressing climate change requires that countries move away from fossil-fuel intensive development and onto a low carbon trajectory; fossil-fuel subsidies are a major impediment to this goal. In addition to this, low fossil-fuel prices, which do not accurately reflect the true economic and environmental costs associated with such energy sources, fail to incentivize households to use energy in an efficient manner. Moreover, in Ghana generous subsidies constitute a significant constraint upon government budgets and represent an inefficient means of addressing poverty.

The New Patriot Party government made several attempts to reform Ghana's fossil-fuel pricing structure and these took different approaches. The first of these occurred in early 2001, where an effort was made to liberalize fuel prices and an automatic price setting mechanism was established which linked domestic oil prices to international ones. However, rising global oil prices towards the end of 2002 put pressure on the government to discard the price setting mechanism. The government reintroduced the pricing mechanism again in early 2003; this resulted in a 90 per cent increase in fuel prices. The repeated rise of fuel prices was met with considerable opposition from the public, and pressure exerted upon the government resulted in a retraction of the fuel pricing mechanism. Fossil-fuel subsidies continued to be a significant drain upon Ghana's budget. To address this, a

new tack was taken. It was found that wealthier households were disproportionately benefiting from fuel subsidies and their removal would affect the lowest quintile most. These findings formed part of a communications campaign undertaken by the government to alter the public's perception of subsidies. This third attempt at fossil-fuel subsidy reform was centred upon the creation of a pricing mechanism that kept domestic prices in line with international prices; this was controlled by an independent governing body. To minimize the effects on the poor the reform included a Deregulation Mitigating Levy (DML) constituting 5 per cent of the total cost of fuel and designed to go towards efforts to decrease the impact of price rises on the poor. Additionally the government set about developing social policies aimed at compensating for price rises. The cross subsidization of LPG and kerosene was maintained.

Despite these reforms, escalating oil prices in 2007 and 2008 pressurised the Ghanaian government into abandoning the price tracking mechanism and the government froze its price ceilings between May and November 2008. The cost of energy became a hot issue in the run-up to the 2009 national election and after winning the election the National Democratic Congress (NDC) lowered fuel prices. Political popularity still remains a influential factor in removing subsidies in Ghana.

Further Reading:

* [UKAid](#)



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Morocco

Environmental taxation

Morocco's launches the most progressive environmental plan in the region

The environment in Morocco is subject to very strong pressures due particularly to demographic growth, urbanization and needs generated by the economic development. These pressures combined with climatic hazards and rareness and fragility of natural resources have resulted in the deterioration of natural environment and of the health and welfare of populations. According to data from the Ministry of Trade and Industry, the cost of environmental damage is calculated to be around 8% of Morocco's annual GDP.

So far, three laws have been passed to counter effects of environmental degradation: an environmental framework law and laws on air pollution control and environmental impact assessment. The waste law drafted with German support was passed in May 2006 following intensive advisory services to the parliament.

On April 22, 2010, during the celebration of Earth Day's 40th anniversary, the Kingdom of Morocco announced an unprecedented National Charter for Environment and Sustainable Development. This is the first environmental charter of its kind in Africa as well as in the Arab and Muslim world. The charter including a multi-billion dollar series of projects will form the framework for national environmental laws as well as for future environmental policy.

The aim of this environmental charter is to govern water and solid waste management in all public and private sectors, while preserving natural resources and spaces. Environmental groups have lauded the country its progressive move and

leading a new green revolution.

Additionally Morocco has recently set a royal goal to ensure that 40 percent of its electricity demand is met from renewable energy sources by 2020. With an eye toward protecting air and water quality and not just developing energy security, in 2010 Morocco introduced a "green tax" for polluters. As one specific proposal the taxation of raw materials and semi-finished products of plastic manufacturing has been prepared. It will enter into force in 2014. The future revenues generated by these environmental taxes are supposed to be used to finance innovative projects of the National Environmental Fund in the areas of recycling and treatment of waste.

Other possible areas of application for green taxes are examined in 2013 based on the upcoming environmental framework law. The National Charter has undergone a unique nationwide, public consultative process in order to make it reflect the interests of all Moroccans. The debate was conducted in the regional level through workshops which addressed all the environment related problems facing the different regions of Morocco.

The National Charter will be implemented by establishing 16 regional observatories that will provide the Moroccan government with yearly reports and recommendations on environment and developmental issues as well as on facing the potential threats endangering the Kingdom's nature reserve.

Further Reading:

- * [Eco Watch](#)
- * [Green Compass Research](#)
- * [GIZ](#)



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South Africa

Taxes on emissions

Realizing carbon tax in South Africa

In general, the condition of the South African environment is deteriorating. Increasing pollution and declining air quality are harming people's health. Natural resources are being exploited in an unsustainable way, threatening the functioning of ecosystems. Water quality and the health of aquatic ecosystems are declining. Land degradation remains a serious problem. Also, South African economy has one of the highest energy intensities in the world (i.e. energy consumption per unit of output); improvements in energy efficiency and the promotion of renewable energy sources have been highlighted as an important component of the Department of Minerals and Energy (DME) future energy policy.

The government already introduced a series of measures to address environmental issues starting with the plastic bag levy – introduced in June 2004 at three cents a bag and since July 2009 at four cents a bag – which brings in around R150 million in revenue. The electricity levy now stands at 3.5 c per kWh and will contribute some R8.6 billion to tax revenues by the end of the 2012/13 financial year. However, none of this money has been applied to environmental objectives. Filament lamp levies are currently at R3 a lamp and contribute R105 million, also with no environmental application. Finally, there is the environmental levy on carbon dioxide emissions of motor vehicles. Introduced in September 2010 to passenger vehicles and extended to double cab pick-ups in 2011, the tax is calculated on emissions

as per test report or proxy based on engine capacity. The revenue stands at R1.6 billion. In 2009, environmental taxes contributed R26.4 billion, around 4.2%, to total tax revenues and in 2013 it is expected to contribute R61.6 billion, some 7.4%. National Treasury has stated its intention to increase the contribution of environmental taxes and levies to total tax revenues. To also price in external costs associated with carbon- dioxide emissions, additional incentives will be created to change behavior and encourage energy-efficiency measures including the introduction of a carbon tax.

Announced in the 2012 budget by finance minister Pravin Gordhan, a phased approach has been suggested for the new tax. The first phase, from 2015 to 2019/20, suggests taxes to be levied on actual emissions. The design features of this phase include a percentage-based exemption threshold at 60%, set higher for certain process emissions and trade exposed sectors. The rate has been suggested at R120 per tonne of carbon dioxide emissions above the said thresholds. Offsets are allowed up to a maximum of 10% and there is also the possibility of additional relief for reduced carbon intensity. Revenues currently have not been earmarked, but there is the possibility of some of this being directed to environmental spending. Thresholds are to be reduced in Phase 2 (from 2020 to 2025) and following this, absolute emissions thresholds may be possible. South Africa is hoping to raise 8 billion to 30 billion rand a year from the proposed tax and to cut emissions 34 percent by 2020 and 42 percent by 2025.

Further Reading:

- * [UNEP](#)
- * [UN-PEI](#)
- * [Bloomberg](#)


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Tanzania

Charges and fees

Second-guessing record revenue collection in Tanzania

Several environment related taxes are already in force in Tanzania, including an excise duty on plastic bags, VAT on petroleum, motor vehicle taxes, an excise duty on petroleum and a fuel levy. Looking at detailed data on revenues from environment related taxes in Tanzania, it is obvious that revenues from the plastic bag excise and VAT on petroleum are small. At the same time revenue from the petroleum excise and the fuel levy provide the government with a significant and stable income. Three out of the five above listed taxes provide significant revenues: motor vehicle taxes, excise on petroleum and fuel levy.

The revenue from these taxes accounted for 18.5% of total tax revenue in Tanzania in 2009. The share of environment related taxes in total tax revenue is extremely high in Tanzania compared to experience in OECD countries; in fact, no OECD member scored a higher percentage. However, on a per capita basis, the revenue from environment related taxes is low if compared to corresponding data from OECD countries. In 2009, revenue from environment related taxes per inhabitant in Tanzania was 14USD. This figure can be linked to the fact that although there is no generally accepted policy of what the optimal share of tax revenue-to-GDP should look like in developed or developing countries, this share is low in developing countries, and that these countries are facing huge challenges in mobilizing domestic funds for investments into infrastructure and other policy areas, such as health, education. None of the revenue from above mentioned environment related taxes in Tanzania

is earmarked for environment related expenditure. Out of the five environment-related taxes, the only instrument that includes earmarking is the fuel levy, where 100% of the revenue goes to the Road Fund and is used for maintenance and emergency repair of classified roads and related administrative costs in Mainland Tanzania. The government has allocated around 0.17 percent of the total budget in 2009/10 to environment sector, down from 0.27 percent of the total budget in 2008/09. The decline in allocation for environment sector is the result of decline in development budget, both local and foreign component in the 2009/10 budget. Currently the environment sector is massively under-funded.

Potential advancements to the existing system could include complementing excise taxes and fuel levy by a CO₂ tax, whereas revenues could be earmarked to an environmental fund. Additional challenges are presented by expanding taxation on resource extraction especially concerning the mining sector. The government included a super-profit tax on minerals in its five-year development plan but has yet to start charging it. To avoid the “resource curse” the government must find creative ways to manage the country’s abundant resources that include minerals, gas reserves, forestry, fisheries and arable land through proper taxation, value addition and transparency on natural resources management and maximize tax revenue to ensure the country’s prosperity.

Further Reading:

- * [UN-PEI](#)
- * [The Citizen](#)


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Uganda

Charges and fees

Furthering efforts to reverse environmental degradation in Uganda

Uganda has been using regulatory environmental policies for the last decade. Though quite successful, the costs of obtaining further or additional improvements in enforcement are high, law courts are slow in dealing with offenders, and fines are too low to prevent violations. Regulation has created little or no incentive for firms to improve their performance over and above the legal standard. As a result, environmental degradation has continued. For this reason, attention in Uganda has turned to economic approaches.

An enabling legal and policy framework for the implementation of environmental fiscal reform (EFR) is already in place in Uganda. The 1995 National Environment Act permits the National Environment Management Authority (NEMA), in consultation with the Ministry of Finance, Planning and Economic Development, to recommend EFR measures. Considerable progress has been made in terms of implementing EFR measures. For example, Uganda has introduced a Sustainable Fisheries User Levy. Revenues are used to initiate a long-term shift towards sustainable fishing by improving management practices and covering management costs, e.g. fisheries research and monitoring, control and surveillance. These costs are easily covered by the levy – in 2005, the equivalent of US\$ 2.46 million were collected. A ban on plastic bags of less than 30 microns and a 120% excise duty on all other plastic bags were implemented in September 2007. Uganda also has an environmental levy on imported vehicles which targets motor vehicles over eight years old.

The levy proved to be a substantial source of revenue for Uganda; in two years alone, equivalent of \$ 8.6 million has been earned through the environmental levy on old vehicles. Other financial instruments include green or eco-funds, e.g. the Bwindi Mgahinga trust fund for the conservation of the mountain gorilla, and the creation of a market for carbon offset credits; water charging is also in place (permit system).

One of the most fundamental problems facing the Ugandan government was the sound design of EFR policy packages that set tax rates and/or charges that change behaviour and generate revenues, without having any regressive effects and while taking competitiveness effects into account. Design of measures has to be based on the relevant country-specific conditions. For instance, Uganda has huge challenges to cope with the loss of biodiversity, land degradation and to construct additional electricity generation capacity as a source of power and thus reduce the pressure on the environment, in particular under the consideration that more than 90 percent of total energy consumption is fuel wood. Prospects for future EFR in Uganda include carbon storage, ecotourism, biodiversity option values, non-timber forest products, and water quality charges. There is a strong need for comprehensive research showing policy-makers the benefits of a properly designed EFR package and taking into account specific environmental problems and challenges as well as socio-economic considerations in Uganda.

Further Reading:

- * [UN-PEI](#)
- * [FOES](#)
- * [GIZ](#)


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China

Environmental taxation

Enhancing efforts toward environmental taxation systems in China

China faces a number of specific environmental challenges. It has a huge population, comprising 22% of the world population, and only limited per capita resources. The Chinese economy has experienced growth of 9.9% (worth US\$ 2.3 trillion) over the past 15 years, is resource intensive and depends on coal for two thirds of its energy generation. China is currently undergoing industrialization and urbanization and the economy is in transition to a market economy. The economic cost of environmental damage that goes together with economic growth is estimated at between 3.5% and 7.7% per year. There are huge discrepancies within China – between the developed eastern and undeveloped western areas, between urban and rural areas and between rich and poor – which pose a threat to environmental and developmental security. However, the trans-boundary effects and public goods characters of the environment require that central government coordinate environmental protection and economic development at the national level. In order to achieve this, incentives on a macro level are urgently required, and public finance reform should be utilized to create such incentives.

Environmental Fiscal Instruments applied in China include public expenditure, environmental taxation/levies and environmental pricing – three related mechanisms for forming or influencing the price of environmental goods and natural resources. Over the past few years, Environmental Fiscal Expenditure Reform has been implemented to create positive financial incentives for enterprises. The Forest Ecological Benefit Compensation Fund was set up in December 2004 to compensate for environmental damage. The most significant step in recent years has been the 2007 Environmental Fiscal Expenditure Account to budget for government funding for environmental protection – the first time ever that the Chinese central government has regularly budgeted for environmental protection. Electricity pricing measures have also been implemented. Since the end of 2004 the preferential grid price of desulphurized electricity has been RMB 0.015 per kwh higher than non-desulphurized electricity. In addition, in 2006 the end-user price of desulphurized power

was raised by an average of RMB 0.025 per kwh to spread the cost of desulphurization between plants, the grid and end-users. Importantly, monitoring systems are also in place to ensure that these increases are enforced. China's Pollution Levy System (PLS) is among the most extensive in the world. The PLS consists of fixed charges on 200 substances that are applied to air emissions, water discharges, noise, solid waste and radioactive waste. The revenues of the PLS for the Chinese government increased significantly from US\$ 151 million in 1986 and US\$ 341 million in 1993 to US\$ 1.2 billion in 2004. It is the main funding source for local environmental protection agencies for carrying out enforcement activities. Besides the fact that the PLS generates significant revenues for reducing pollution in China, the system has not succeeded in tackling the growth of air and water pollutants.

While acknowledging China's green progress including its increased investment in environmental infrastructure, greater focus on achievable targets, and strengthened accountability and enforcement, these achievements have been offset by the country's worsening threats of water pollution, water scarcity and rising output of solid waste. Additionally, China faces crises stemming from increasing output of urban and industrial wastewater and solid waste. To change this unsustainable growth pattern, China is considering reforming the pricing of resources and introducing a green taxation system. The new system would tax resource extraction, and pollutant and carbon dioxide emissions, and allow tax deductions to offset investments in pollution control equipment.

The implementation of further EFR measures in China requires a range of preliminary measures. The financial responsibility of different bodies for environmental impacts must be clearly defined and environmental inputs in the debate should be increased.

One step in China's plan towards a more comprehensive implementation of EFR is the announced introduction of a carbon tax in 2015. Coal, natural gas and oil companies would be required to pay the tax, while energy saving industries would be subsidised.

Further Reading:

- * [GTZ Workshop](#)
- * [UNEP](#)
- * [Energy Asia](#)
- * [OECD](#)


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Indonesia

Reforming environmentally harmful subsidies

Successful public awareness campaigns in Indonesia

Indonesia has a long history of directly subsidizing energy as a means of supporting the incomes of poor households. In 2008, 19% of government expenditure was devoted to energy-consumption subsidies. At the same time, a number of institutional reforms and policy changes are needed to meet Indonesia's targets for growth and poverty reduction and to move to an environmentally sustainable development path. Only a small amount of the subsidies to oil products reached the poor. In 1999, only roughly 15% of the total kerosene subsidy reached the poorest 30% of the population. Fuel subsidies are highly politicized in Indonesia. Indeed, in 1998, riots in protest at fuel price rises ended in the overthrow of President Suharto.

Bearing this in mind, the Indonesian government went to considerable lengths to both publicise and implement a targeted cash transfer program to compensate the poor for fuel price increases. The cash transfer program proposed by the government was announced in newspapers, brochures, pamphlets and on TV. The efforts made by the Indonesian government probably led to the absence of major public protest against the increasing fuel prices at this time. In 2005, the government started to gradually liberalize the fuel market with the aim of completely eliminating fuel subsidies. In 2010, Indonesia also announced plans to eliminate energy subsidies by 2014. The government raised subsidized prices by an average of 125% in 2005 and 29% in 2009. From 2010 the aim is to phase out fossil fuel subsidies, and there is a program to transform kerosene to LPG.

The reform reduced the state budget deficit by US\$4.5 billion in 2005 and US\$10 billion in 2006. Government expenditure is almost halved from nearly 20% in 2008. 40 million households shifted their consumption from kerosene to LPG in the period through 2009. The potential negative impact of the reform on the poor was mitigated through a direct cash transfer program, which reached 19.2 million households or one third of the Indonesian population, and cost around US\$2.3 billion, less than a quarter of the savings in 2006 alone. The program delivered benefits covering more than the increase in energy costs. This served to increase the level of assistance for the poor and those on the verge from falling into poverty, and to make fuel price increases acceptable. The government also used the savings to finance programs in education, rural development, and health. The poorest deciles received 21% of the benefits, while deciles 2, 3 and 4 captured 40% and proved to be largely successful in reaching the poor. The path to zero subsidies has not been without its bumps. Even the restriction was considered ineffective to some because it was limited in scope; public transportation vehicles and motorcycles were to be exempt from the subsidy cut, even though there are approximately ten times as many motorcycles as there are cars in Indonesia. A recent trend of increasing oil price strengthens a perverse incentive to sell fuels subsidized by the Government to industries and other illegal channels: in 2011, this portion reportedly reached between 10 and 15 per cent.

Further Reading:

- * [Nordic Cooperation](#)
- * [United Nations Economic and Social Commission for Asia and the Pacific](#)



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Iran

Reforming environmentally harmful subsidies

The Targeted Subsidies Reform Act – Reforming Energy Subsidies in Iran

As in the majority of oil exporting countries, domestic energy prices have historically been regulated in Iran. However, when international prices began to rise after 2002, low domestic energy prices became increasingly out of line with the market value of oil and stimulated increasing demand, making Iran the country with the highest level of energy subsidies in the world. In addition to fiscal concerns, cheap domestic energy prices led to a rapid increase in domestic energy consumption, resulting in Iran also becoming one of the most energy-intensive economies in the world. Environmental pollution and its impact on human health provided additional urgency for the reform.

In March 2010, the Iranian parliament ratified the Targeted Subsidies Reform Act calling for a gradual increase of energy prices within a five-year period (2010–2015) to no less than 90 per cent of Persian Gulf free on board (FOB) prices. The first steps of the reform act were undertaken in December 2010, when the Government of Iran implemented bold economic reforms to phase out subsidies to energy products and replace them with nationwide cash transfers as compensation for rising energy prices. To compensate the nation for higher energy prices, the law has authorized payments increases to the population in the form of in-cash and in-kind payments bearing in mind each family's level of income and improvements to social security system (including introduction of national health insurance, job creation and house mortgage loans). Not until after the payments became effective, Iran increased domestic energy and agricultural prices by up to 20 times, making it the first major oil-exporting country to reduce implicit energy

subsidies substantially. Facing difficulties in identifying the target groups, the government announced that all Iranians living in the country were eligible to receive monthly cash payments of IRR455,000 (around US\$45). Another substantial percentage of the income from price increases was also designated to support industries and producers.

The sharp increase in energy prices appears to have a downward impact on consumption of most energy products. However one of the major challenges was managing its impact on inflation due to rising commodities' prices and increasing liquidity as a result of monthly cash payments – at the moment Iran is facing inflation rates considerably exceeding 20 percent. The situation escalated further as in January 2012, a new round of international sanctions targeted key sectors of the Iranian economy, i.e., Iran's oil sales and the Central Bank, causing dramatic impacts on the inflation rate and the foreign exchange market. Another fallback of the reform can be identified in the industrial sector of the country. Facing, on the one hand, rising production costs and, on the other hand, strict price controls from the government, the production sector has found it very difficult to remain profitable causing many small- and medium-size businesses to go bankrupt or downgrade their businesses.

In recent years, income inequality in Iran has declined by different measures, which may be an effect of the subsidy reforms. For example, the income Gini coefficient fell from 0.4023 in 2005 to 0.3813 in 2010. Also between February 2011 and February 2012, the government earned 510 trillion rials (some \$41.6 billion) by implementing the Subsidy Reform Plan.

Further Reading:

- * [IISD – GSI](#)
- * [IMF](#)


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Thailand

Reforming environmentally harmful subsidies

Coalition-building to phase out unleaded petrol

Environmental pollution in urban areas has been remarkably concerned as a major problem in Thailand. Most of the environmental problems especially air pollution in urban areas are totally arisen from transportation which are caused by congestion in road networks.

In 1991 the Government of Thailand – pressed by concerns about the seriously harmful effects of lead pollution on the population and the environment – embarked on an ambitious program to phase out the use of leaded gasoline. This was a complex task, impacting on many sectors. However, the Thai policymakers managed to surmount the obstacles encountered and successfully completed the process in four and a half years, one year ahead of schedule. A crucial success factor was reliance on fiscal incentives to favour unleaded gasoline. To encourage the switch to unleaded, the retail (pump) price was set at B 0.3 (USD 0.012) per litre less than that of leaded gasoline. This policy was introduced with a collaborative approach involving key stakeholders, namely, government agencies, automobile companies, oil companies

and the general public. From September 1993, the Thai Government furthermore introduced a regulation requiring that all cars sold in Thailand, from that date forward, be equipped with a catalytic converter. Additionally emission standards for new vehicles in Thailand had been established since 1995, mainly adopted from the European Union standard.

These measures resulted in the market share of unleaded petrol rising to almost 50% of the market for petrol in the following few years. Success was crucially dependent also on governmental institutions taking vigorous leadership and managing all steps of the process, including setting target dates for implementing key actions, and continual monitoring and follow-up evaluation. Leaded gasoline has been no longer available in Thailand since January 1st, 1996. The shift from leaded to unleaded gasoline in Thailand resulted in improvement in air quality and decline in blood lead levels among its population. It has proved that eliminating lead from gasoline is cost-effective, with the benefits far-outweighing the costs.

Further Reading:

* [Ministry of Natural Resources and Environment](#)



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Vietnam

Environmental taxation

Tackling environmental issues and state deficits – Environmental Taxation in Vietnam

Vietnam's rapid economic development comes with significant drawbacks, as it is currently coupled with a rise in environmental pollution and growing number of dead rivers and high levels of pollution negatively affecting the health and life of the Vietnamese citizens have increased to alarming levels. Over the past years, the environment was severely exploited and natural resources were rapidly exhausted.

Faced with worrisome environmental impacts, the Vietnamese Prime Minister Phan Van Khai asked for the introduction of an environmental tax law. Vietnamese parliament passed the bill in mid-November 2010 with the support of a large majority of the parliamentarians; the law came into force in 2012. The Vietnamese government levies taxes not only on energy in terms of refined fuels and coal, but also on environmentally harmful substances, such as hydrochloro-fluorocarbons (HCFCs), selected pesticides and soft plastic bags with taxes on coal and on refined fuels accounting for around 99.5% of the estimated tax revenue. Taxes are levied on the consumed physical units rather than on percentages of prices. This corresponds to international best practice as the actual amounts of used units harm the environment, independent of its price. Currently the new law suggests a relatively wide range of taxes (e.g. 1000-4000 VND/litre

gasoline), which will be determined by the central government for each tax period.

The environmental tax law has the potential to reduce Viet Nam's annual CO₂ emissions by up to 7.5 %. Additionally, according to the ex-ante impact assessment, the environmental taxes will contribute to the weak state budget, with up to 1.5 billion euros in additional tax revenues expected for 2012, depending on the tax rate applied. These additional tax revenues will be divided between the state budget and the provincial budgets, thereby strengthening fiscal decentralisation. Simulation results also show a significant shift in purchasing power from the household sector to the government sector. That means that households will bear the major burden of energy taxation. However, analysing the effects on different income groups reveals that the tax burden will be carried by enterprises and private households equally and that lower income households will not be adversely affected by environmental taxes. Another challenge is presented by the fact that in Vietnam, the price of coal only equals 75% of the world's price and the proposed tax rate on coal is significantly lower than the environmental tax rate on refined fuels. This may induce undesirable substitution effects from relatively "clean" refined fuels to relatively "dirty" coal.

Further Reading

- * [Institute of Development Studies](#)
- * [GIZ](#)



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Czech Republic

Environmental taxation

Comprehensive Environmental Tax Reform in Czech Republic

In 2000-2001 the first attempt to introduce Environmental Tax Reform into the Czech Republic by the Ministry of Finance and Ministry of Environment failed. Between 2002 and the end of 2004, a series of attempts to implement ETR were unsuccessful.

In December 2004 an expert group was set up to inform the government of what needed to be achieved and successful implementation of ETR. It is now envisaged that the tax reform will gradually be implemented over 9 years between 2007 and 2017. The main areas that will face changes in the tax system include electricity energy and motor vehicle taxation, including a new tax on coal, hard coal, natural gas and electricity. The aim is to achieve fiscal neutrality such that the tax revenue is recycled and with an increase in environmental taxes there is a decrease in labour taxes. There will be reductions in taxation for renewable and alternative electricity, biogas and CHPs and specified environmentally sound vehicles. A tax refund will be available for public transportation using green electricity. The Government acknowledged the Environmental Tax Reform Principles and Schedule on 3 January 2007, which launched the implementation of the ETR in the Czech Republic. The ETR is scheduled to take place in three stages until 2017. The first stage of the ETR

consists in a transposition of Directive 2003/96/EC on the taxation of energy products and electricity. Three new taxes were thus introduced in 2007: the taxes on natural gas, solid fuels and electricity, supplementing the existing excise duty on mineral oils. The taxes became part of Act no. 261/2007 Coll., on stabilization of public budgets, and became effective on 1 January 2008. The second stage of the ETR is currently under preparation: its goal is to reduce emissions to air.

ETR revenues in 2008 amounted to around CZK 3 billion (0.12 billion euros). The taxation neutrality principle was achieved after the beginning of 2008 in the form of income taxation reductions for households and companies that were part of the government tax reform. However, the decrease in the social security contributions of 1.5% since 2009, with an anticipated reduction in governmental revenues paid by employers and employees for 2009 by CZK 11 billion (0.4 billion euros) was also declared by some government representatives to be a part of the ETR neutrality principle. Here, it is evident that revenue neutrality was neither properly deliberated nor unanimously announced by the public authorities. In fact, the real motivation for social-allowance lowering had nothing in common with the ETR. Its goal was mainly to help the economy to combat financial recession.

Further Reading:

- * [Czech Ministry of the Environment](#)
- * [Environmental Tax Reform \(ETR\): A Policy for Green Growth](#)



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Estonia

Charges and fees

Adjusting Environmental Fees to Inflation in Estonia

Environmental Fees were already introduced in Estonia in 1991 to ensure compliance and provide incentives for pollution reduction. The charges have been modified and charge rates gradually increased in order to improve their effect. The aim of applying environmental charges is to motivate companies to invest into production facilities with lower environmental impact and to use natural resources more efficiently and sustainably. Revenues from environmental charges are transferred back to environmental protection, helping to reduce and avoid pollution and impairment related to environmental resource management.

In 2005 the Estonian cabinet agreed a new environmental fees act, bringing together several regulations and establishing fees for the period 2006-2009. The Act provides for the complete regulation relating to both pollution charges (a charge to be paid for the issue of pollutants or waste into the environment) and environmental fees (a charge to be paid for the use of natural resources, e.g. use of water or mineral resources, fishing, hunting). Discharges of organic matter, phosphorous, nitrogen, suspended solids, sulphates and other pollutants along with wastewaters where pH value is greater than 9 or less than 6, are subject to the charge. Basic rates can be increased 1.2 to 2.5 times depending on the sensitivity of the recipient. Non-compliance fees, however, are 10 times the effluent charge for discharges above permitted levels and 15 times the basic charge without a permit.

In order to channel revenues from the exploitation of the environment into environmental projects the Ministry of

Finance founded the Environmental Investments Centre (EIC). The amounts distributed as grants through EIC bear the common title of the Environmental Programme, which consists of eight areas: fishery, water management, waste management, nature conservation, forestry, environmental management and regional programmes. A part of the environmental fees received by EIC are allocated for granting environmental loans (ad hoc loans for the implementation of environmental projects).

Over the last 10 years, EIC has financed 12,623 projects with more than 15.2 billion Estonian kroons from both the European Union funds and the amounts collected from the Estonian environmental charges. Although water management or the investments made to ensure clean drinking water is still the largest supported area in monetary terms, the largest number of projects is supported in the area of environmental awareness. In recent years the rate of inflation in recent years has weakened the effect of the fees, which no longer provide adequate motivation from the point of view of environmental protection. In June 2009 government and parliament decided that new environmental charge rates should be set and amendments were done in the Environmental Charges Act, increasing the charge rates from year 2010. At the moment the environmental charge rates are in place until 2015. The coming steps with respect to environmental charges include analysis of charges until 2020, taking into account the developments and policy recommendations from the EU and OECD, for example the results of the attempts to coordinate CO₂ taxation in EU.

Further Reading:

- * [Ministry of the Environment](#)
- * [Environmental Investment Centre](#)
- * [UCD Dublin](#)


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Hungary

Environmental taxation

Launching an environmental 'Robin Hood' tax in Hungary

There are different types of environmental related taxes in Hungary. Most of the taxes are product charges on certain environmentally harmful products such as refrigerating agents, petroleum products or packaging. There are certain types of taxes in relation with the ownership and use of vehicles (vehicle tax and excise duty on fuel). Besides, environmental pressure fees must also be paid for the pollution of the environment (air, water, soil).

Facing pressing fiscal constraints during the financial crisis Hungary introduced a package of "crisis taxes". Part of that development consisted of a 30 percent tax rate on energy and utility companies in 2009 including the normal 19 percent corporate tax and a 11 percent "Robin Hood" tax imposed on profits of energy trading and supply firms. An additional energy tax levied on oil, natural gas, power producers and traders was expected to raise \$125 million a year. In Hungary, energy taxes accounted for 85% of total environmental tax revenue in 2005, the same data was 81% in 2009. Compared to EU-27 data, the ratio of energy taxes is significantly higher in Hungary (in the EU-27, it was 72% in 2007). Energy taxes play a dominant role among envi-

ronmental related taxes in Hungary in the case of both the economic sectors and the households.

In 2012 Hungarian lawmakers decided to green-light a bill that keeps the so-called Robin Hood tax alive under different terms. The rate of the tax will go up to 11% from the current 8% from 2013 and the tax will be levied not only on energy firms (electricity and gas providers) but also on water and sewage companies, as well as on regional waste management companies. This measure is expected to bring HUF 55 billion to state coffers in 2013. The overall tax burden on the energy sector may decline though as another temporary crisis tax, a special levy on energy companies, would be phased out from next year. Total budget revenues from the Robin Hood tax are expected to rise to an estimated 38bn-40bn forints (\$160mn-168mn) in 2013 from 17bn forints in 2012, but proceeds from the crisis tax are scheduled to fall to zero next year, from Ft99bn in 2011. From now on revenues will go into the central budget, unlike under the previous practice when these were earmarked for special purposes (e.g. energy saving projects).

Further Reading:

- * [Green Budget Europe](#)
- * [Hungarian Statistical Office](#)
- * [Free Hungary](#)


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Ireland

Charges and Fees

Sound preparation for legislation: The plastic bag levy in Ireland

Preparations for the plastic bag levy in Ireland were very thorough. In 1996, framework legislation was enacted in which the government was empowered to impose environmental levies on retailers and others. A consultancy report in 1999 recommended that an upstream levy (on producers and importers) of approximately €0.035 per bag be imposed. But the Minister for the Environment, Heritage and Local Government wanted a strong signal to be given directly to consumers, including having the choice of paying the levy and getting a bag. He insisted on a downstream charge on consumers. In March 2000, the proposal was agreed by the Irish cabinet and the government introduced a levy of € 0.15 per plastic bag

provided to shoppers at point of sale in retail outlets.

The main concern of retailers was that they would be blamed for 'profiteering'. The solution was a strong publicity campaign by the Department, which succeeded in conveying the reasons why the levy was being introduced. Butchers were particularly opposed to a levy that would apply to all plastic bags, on the basis that various purchases would need to be wrapped separately for hygiene. This case was accepted,

and in effect exemption was given to plastic bags below a certain size when used for specific purposes.

There was extensive consultation with the main industry representative body, the Irish Business and Employers Confederation (IBEC), and the leading retailers, notably grocery stores, in the design and implementation of the scheme. Securing support from the Minister for Finance and the Revenue Commissioners was crucial to the successful implementation of the levy.

The effect of the tax on the use of plastic bags in retail outlets has been dramatic—a reduction in use in the order of 90%, and an associated gain in the form of reduced littering and negative landscape effects. Costs of administration have been very low, amounting to about 3% of revenues, because it was possible to integrate reporting and collection into existing Value Added Tax reporting systems. Response from the main stakeholders: the public and the retail industry, has been overwhelmingly positive. The Irish plastic bags levy has proved so popular with the Irish public that it would be politically damaging to remove it.

Further Reading:

* [Environmental and Resource Economics](#)



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Latvia

Taxes on natural resource extraction

Natural Resources Tax for environmental protection in Latvia

The use of economic instruments in Latvia is based on the Law of Natural Resource Tax (1995) that established a mixed policy approach with a concentration on instruments that achieve established goals and raise revenues for environmental spending. The system entails a permit/charge/non-compliance fee system in air, water, waste and natural resource extraction sectors.

Natural resource tax is imposed on natural resources extracted as a result of:

- » any commercial activity (gravel, peat, water etc.);
- » environment pollution - waste disposal, emissions into air and water;
- » goods and products that are harmful to the environment (oils, batteries, ozone depleting products, tires, IT and electronic products);
- » packaging of goods;
- » radioactive substances;
- » vehicles (since October 2004)

A basic tax rate is determined by the different usages of the natural resources. Natural resources tax is differentiated and depends on the type of natural resources and on the type of waste, as well as the threat to the environment. Rates fluctuate from a few santims up to hundred lats. Since its introduction the tax rate has been amended numerous times in line

with government regulation. The taxes are levied on the amount of the natural resource extracted rather than on the amount actually used, so that resource users are motivated to utilize each unit of extracted material economically during the entire production/utilization cycle and to minimize losses. Tax allowances, alleviation and refunds are given for projects involved in environmental protection and projects that aim to reduce environmental pollution with the aim of encouraging further investment.

Forty percent of tax payments received from NRT were transferred to the state budget for state environmental protection until 1 January 2004. After this date, the revenue was amalgamated into the general state budget and is administered by the Latvian Environment Protection Fund, a body under the direct control of the Environment Ministry. The remaining 60% is transferred to local government for environmental protection budgets.

Natural resource tax revenue equalled 0.11% of GDP in 2004. Tax on cars accounted for more than half of the natural resource tax revenues (0.06% of GDP). Limited analysis has been carried out on the effectiveness of natural resource taxes in Latvia. In comparison to other Western EU countries, it seems that the charge rates are well below levels that would reflect true environmental costs.

Further Reading:

- * [UCD Dublin](#)
- * [Law on Natural Resources Tax](#)



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Romania

Taxes on products, pollutants and emissions

Environmental Policy in conflict with European Legislation The Car Pollution Tax in Romania

Cars are the most important means of transport used by the European citizens but at the same time represent major sources of CO₂ emissions, and therefore, are one of the biggest polluters. Also, vehicle taxation is one of the most consistent sources of budget revenues in all member states, and also generates massive public expenditure for road infrastructure and environment protection. So, vehicle taxation is becoming one of the key factors of EU politics, because it deals with two major European issues.

The registration tax on passenger cars first appeared in Romania when the country adhered to the EU, on January the 1st, 2007, mainly to compensate the abolition of customs and excise duties due to the new status as a member of the EU. According to the arguments stated by the Ministry of Environment and by the Ministry of Public Finance, the introduction of the tax was dictated by the need to ensure environmental protection and to prevent pollution created by used cars imported from other EU Member States. The most serious problem generated by the special tax applied to vehicles on the occasion of the first registration in Romania was that it was contrary to EU law. Subsequently, negative criticism from mass media, court sentences unfavorable to the Government and also an infringement procedure opened against the Romanian state have determined the local authorities to replace this tax with the pollution tax that was put into practice on July, the 1st, 2008. The new framework took into considerations the European principles

by introducing the CO₂ based element in the assessment of tax and by implementing the refund system based on the residual value of the tax. Despite all this, the European Union's Court of Justice stated that the pollution tax, as well, was contrary to the EU law. Consequently, the full refund of the fees thus paid is required. Between 2011 and 2012 there have been about 80.600 cases registered in Romanian courts for repaying the pollution and vehicle tax. Nevertheless the pollution tax continues to exist up to present times.

Romania decided to apply a revised car pollution tax on all cars with maximum eight seats. The new tax will take into account the full carbon dioxide emissions, not just 30 percent as it is now, and for European emission standards non-euro (active from 1988-1992), Euro 1 (1992-1995) and Euro 2 (1995-1999), the tax will drop from the current levels. The tax will be paid only once in the car's life cycle, irrespective of how many times it changes owners. Also the government decided to apply the tax for cars registered before 2007. The tax, called Environment stamp, came as a proposal from the Environment Ministry to the Government. The intention is to apply the principle the polluter pays, but also to encourage the acquisition of less polluting cars. The car pollution tax that was supposed to be enforced in January 2012 in Romania will be further delayed until 2013. This is mainly due to the high number of people with cars older than five years who want to sell them, and the government decided to extend the window of opportunity.

Further Reading:

- * [European Union](#)
- * [Universität München](#)
- * [Romania-Insider](#)



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Sweden

Taxes on pollutants and emissions

Introducing Carbon Tax in Sweden

Sweden has signed the United Nations Framework Convention on Climate Change, which meant to stabilize CO₂ emissions at the 1990 level. Given that 1990 was a particularly “mild” year for Sweden in terms of economic activity and carbon emissions, this goal is likely to be relatively difficult for Sweden to attain. In the context of the overall environmental agenda the climate target has been considered to be the most difficult one to achieve since Carbon dioxide emission was responsible for approximately 80% of the Swedish anthropogenic contribution to the greenhouse effect and about 93% of the CO₂ emission was the result of fossil fuel combustion. The urgent climate challenge demanded well-functioning strategies to achieve reduced greenhouse gas emission targets and a tax on carbon dioxide (CO₂) promised to be a powerful and cost-effective measure

Together with other Nordic countries, Sweden took the lead in environmental tax reform during the early 1990s, followed by further reforms in the early 2000s to address the twin political objective of environmental improvement and employment support. The Swedish reform added several new taxes between 1991 and 1992. These included taxes on oil and natural gas to charge for CO₂ and (for oil) SO₂ and downstream taxes on coal-related SO₂ and industrial sources of NO_x. These increases were partly compensated by a reduction in ‘traditional’ energy excises—mainly on motor fuels and other oil products. Due to worries about reduced

competitiveness and addressing the risk of carbon leakage, a tax change in 1993 made certain sectors (e.g. industry, agriculture and heat production) completely exempt from traditional energy taxes and made it pay only 21 percent of CO₂ tax rates from 2004 onwards. Apart from raising revenues, the energy tax takes account of other external effects than CO₂ emissions (such as noise, congestion and road wear from traffic) and also acts as a way of generally stimulating energy efficiency.

Sweden is among the lowest CO₂ emitters (per capita) within the EU (2007). In Sweden, only 35 % of the gross inland consumption of energy in all sectors of the society consists of fossil fuels (the EU-27 average was 77 % in 2010). Over the last decades, there has been a major decrease of fossil fuels being used in Sweden and the changes in energy and CO₂ taxation lead to an increase in net tax revenues.

The most obvious effect of the carbon tax has been the development of the methods of biomass extraction and a biomass market resulting in an increased use of biomass in the Swedish district heating system. Biofuels currently contribute about 50% of the energy supply to the Swedish district heating systems.

Looking forward the Swedish Government proposed a number of tax changes in the climate and energy area mainly focused on taking steps towards a more uniform national price on fossil CO₂.

Further Reading:

- * [OECD](#)
- * [Ministry of Finance](#)
- * [University of South Carolina/Swedish University of Agricultural Sciences](#)


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Argentina

Environmental subsidies

Expanding energy provision in rural Argentina

Argentina has faced – and still faces – pressing energy needs among its low-income populations, both in urban and rural areas. These cover not just electricity, but energy for cooking, water heating and pumping, heating, refrigeration, motive power and other purposes, in homes, enterprises and in public services. While Argentina's abundant natural resources signal that it has strong potential for renewable energy, the share in electricity generation was less than 2 per cent.

In 2006, the Argentine government introduced a law which sets a target of 8 per cent of power generation from renewable energy sources by 2016, provides feed-in tariffs for renewable energy (excluding large hydro) and tax breaks to encourage domestic equipment supply. However, power sector reforms did little to extend access in rural areas. To address these challenges, the Argentine government in 1999, initiated the PERMER (Project for Renewable Energy in Rural Markets) programme, aimed to provide electricity for basic lighting and social communication (small TV and radio appliances) for uncovered households and public service institutions. The delivery model adopted by PERMER is a public-private partnership, which combines significant

government funding to install generating equipment and to subsidize user tariffs, with the award of exclusive contracts to concessionaires (private sector, public sector, co-operatives) who run and maintain the service. User tariffs are decided by provincial governments in negotiation with the concessionaires, with the tariff levels set varying according to local conditions, such as people's capacity or willingness to pay. While the majority of installations are solar photovoltaic (PV) panels, PERMER also involves renewable and hybrid mini-grids (wind, hydro, biomass, diesel), and solar systems for water heating, cooking, space heating and water pumping.

Following long delays, funding constraints and design changes during its early years, PERMER is now considered a broadly successful programme by the Argentine government and international funders. In ten years since its initiation, PERMER has provided basic electricity access to around 10,000 households and 1,800 schools and other public services buildings. In its current phase, the programme aims to reach another 18,000 households.

Further Reading:

* [IIED](#)



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Bolivia

Taxes on natural resource extraction

Managing forest products in Bolivia

Bolivia is the country with the largest overall area of certified natural tropical forests in the world (around 1 million ha in 2003). All Bolivian forests belong to the State.

The cornerstone of Bolivian forest policy is the Forest Law (Ley 1700) from 1996 as one of the results of the National Forestry Action Plan (PAFN), 1989–1996. The law introduced a new concession system that obliges concession holders to pay a fee (patentes forestales) per area under concessions, as opposed to a fee for the amount of timber harvested under the old system.

Concessions in Bolivia are granted for periods of 40 years, however, are subject to renewal every 5 years. The minimum charge (currently 1 US\$/ha) is set by law, adjusted every year to exchange rates and every 5 years to a change in market prices. Concessions are allocated per sealed tender to the highest offer. Private landowners have to pay the same fees as concessionaires. Whoever wants to extract non timber forest products (NTFP) for other than subsistence use is subject to the area-based NTFP fee. Its rate equals 30% of the minimum charge for the patente forestal. During the allocation process of harvesting concessions Asociaciones

Sociales del Lugar (ASLs – groups of traditional producers, local communities or forest dwellers) receive preferential treatment and only pay the minimum legal fee. Costs for private or collective afforestation efforts can reduce the payable amount of patentes to up to 100%. Subsistence needs are exempted from taxation.

Bolivia applies a Quota Revenue Distribution System. Revenue from the patente forestal and the NTFP fee is shared among prefecture (35%), municipality (25%), National Forest Development Fund (10%) and Forest Supervisory Authority (30%).

In 2001, 6.4 million ha of forests were in production, most of the area allocated to private logging companies through concessions (5 million ha in 76 concessions). As many other Latin American countries, Bolivia's log production is mainly consumed domestically.

Main constraint for enforcement of the new forest law was identified as “institutional weakness” (lack of professionalism, lack of funds and lack of capacity to successfully control road checkpoints and operations in the forests).

Further Reading:

- * [GIZ](#)
- * [Forest Policy and Economics](#)



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Brazil

Taxes on products

Introducing Ecological Value-Added Tax in Brazil

In Brazil, it is difficult for municipalities to generate income from conservation and related ecosystem services. Environmental protection is often established at higher levels of government and although protection is identified as beneficial to the well-being of people beyond municipal boundaries, the associated costs (in terms of land-use restrictions) are often borne by local actors. The designation of protected areas for biodiversity or water conservation, for example, often faces opposition at local levels due to land use restrictions for economic purposes.

With technical support from GIZ, Brazil pioneered the introduction of ecological fiscal transfers through the adoption of ecological value-added tax (in Portuguese: ICMS-E) in a number of states to compensate municipalities for land-use restrictions and opportunity costs imposed by protected areas. Although the ICMS-E was originally introduced to compensate for land-use restrictions, it soon developed into an incentive to create new protected areas. The ICMS-E arose from the constitutional prerogative that states may legislatively allocate up to 25% of the revenues they devolve to municipalities from value added taxation, according to their own criteria (rather than on the basis of revenues generated locally alone). It was through this opportunity, that states would establish revenue allocation to complement and reward municipalities' commitment to the environment and other basic life quality activities (e.g. size of protected areas on their territory or their compliance with environmental standards).

This green redistribution was first introduced in 1991 in the State of Paraná, and is today being applied in 14 of the 27 Brazilian States. The States of Amazonas and Acre, located in the heart of the Amazon basin have chosen an innovative path, combining the concepts of ICMS Ecológico with Reducing Emissions from Deforestation and Degradation (REDD) by linking the redistribution of ICMS funds to municipal deforestation rates. Thus, municipalities that effectively lower their deforestation rates are directly remunerated by the tax system.

It is estimated that in Paraná alone the instrument has generated about US\$170 million towards conservation in about 14 years and it has increased the number of protected areas in the state by 158%. The overall ICMS-E value accounted for over 200 billion US\$ in 2009.

Despite its success, ICMS-E still has not been adopted in several states that harbor some of Brazil's richest and most threatened biodiversity. Additionally, there are two important shortfalls impeding the effectiveness of transfers: 1) ICMS-E revenues are not earmarked to support local government environmental expenditures unless local governments pass complementary legislation, and 2) additional protected area creation reduces the proportionate amount of overall value added taxes devolved per unit area since amounts devolved represent a fixed proportion of overall value-added revenues.

Further Reading:

- * [Nature Conservancy](#)
- * [International Society for Ecological Economics](#)


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Chile

Markets for environmental goods

Tradable water rights in Chile

Chile is a water scarce country and water resources are becoming increasingly scarce in relation to growing demands including drinking and domestic needs, agricultural irrigation, mining and manufacturing and electricity generation.

In order to allocate water more effectively, in 1981, the government introduced a water rights trading scheme for both consumptive and non-consumptive water uses which are issued separately from land rights. The government maintains control over how water is initially allocated, which for permanent water rights was done according to historic use levels whilst temporary water rights are allocated based on user applications. Once water rights have been allocated, users are free to trade those rights as they see fit. Overall, the water law of 1981 privatized water rights, promoted free market forces and incentives in water use, and sharply reduced governmental regulatory powers in water management.

During the decades since then, the Chilean Water Code has been the world's leading example of a free-market approach

to water law and policy - a unique experiment in treating water rights not merely as private property but also as a fully marketable commodity. Although the system is widely regarded as being a success and has avoided political disputes over water allocation, relatively little trading has actually taken place (in Santiago approximately 3 per cent of total water consumption tends to be traded). The system has also been criticized on environmental grounds for failing to take proper account of the environmental implications of water trading. International experience with tradable permit systems and international offset systems (such as the clean development mechanism) still remains largely underdeveloped. These instruments are relatively sophisticated in comparison to other options and require extensive supporting regulatory infrastructure. Chile has a long tradition of clear and enforceable property rights over water use (often at an informal level), which is the backbone of their trading system. In seeking to replicate the system elsewhere, such factors need to be taken into consideration.

Further Reading:

- * [Resources of the Future \(RFF\)](#)
- * [National Treasury of South Africa](#)


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Colombia

Charges and fees

Environmental Charges in Colombia

Many of Colombia's most important rivers—including the Bogotá, Cali, Cauca, Medellín, de Oro, and Lebrija—are severely polluted. Among point sources, the domestic sector, not the industrial sector, is the leading contributor to water pollution. The domestic wastewater problem has several dimensions. First, a significant percentage of this wastewater is not collected into municipal sewer systems. Second, many municipalities lack any type of wastewater treatment. Third, many of Colombia's wastewater treatment plants operate poorly.

Law 99 of 1993, Colombia's second major comprehensive environmental law, established the legal foundation for a national discharge fee program.¹⁴ Article 42 mandates that the Regional Autonomous Corporations (CARs) and Urban Environmental Authorities (AAUs) charge retributive charges (tasas retributivas) for water effluents. The basic idea is to first set pollution-reduction goals in each watershed and then use trial and error to adjust fees until the goals are met. Political constraints dictate that regulators start with relatively low fees and ratchet them up over time. Although not welfare maximizing, such a strategy ensures that the pollution reduction goals are met at the least cost. It also

appears to ensure that regulatory authorities avoid one of the most common implementation problems in discharge fee programs in developing countries: setting fees too low to have an incentive effect.

Following the initiation of program in 1997 discharges dropped significantly. By enhancing transparency and accountability, and by introducing new financial incentives for enforcement (fee revenues), the discharge fee program spurred local regulators in some watersheds to remedy glaring deficiencies in permitting, monitoring, and enforcement of water pollution regulations. As for disadvantages, studies suggest that inadequate municipal wastewater treatment infrastructure—a pervasive problem in many developing countries—is likely to be a key barrier to more effective implementation of discharge fee programs.

Overall the charges from the program have provided funds for environmental investments in the industries and staff for the environmental agencies and helped to improve the effectiveness of existing emissions regulations. Ideas for expanding the system include introducing charges for air pollution, solid waste and polluting segments of the agricultural sector.

Further Reading:

* [Resources for the Future](#)


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Nicaragua

Taxes on resource extraction

Critical perspectives on fiscal policy in the forestry sector in Nicaragua

According to the Nicaraguan constitution, natural resources (such as forests) belong to the State. The legal framework of the forestry sector consists of several legal texts including the Law on Conservation, Promotion and Sustainable Development of the Forest Sector N° 462 (Ley de Conservación, Fomento y Desarrollo Sostenible del Sector Forestal) which was introduced in 2003.

Part of the new law is Nicaragua's core forest-related tax, the Tasa de aprovechamiento forestal, a de facto value-based tax. It is a fixed percentage (6%) linked to reference prices set by the government on the basis of market prices. Concessions are needed for logging on state owned land – an area-based royalty of 1 US\$/ha and year has to be paid by concessionaires. With Ley N° 462 from 2003, Nicaragua also introduced a series of incentives for investments in timber plantations. These subsidies are granted through tax exemptions and deductions on general taxes (like the income tax). Ley N° 462 has been seen critical for revoking in large parts Nicaragua's decentralization policy, particularly in rural areas. By introducing the 6% flat tax on timber extraction (and practically eliminating forest-related municipal taxes at the same time), the law deprived local communities

of their former right to set their own “prices” on natural resource extraction. In many cases, local communities are not involved in allocation of harvesting rights on their territories. Additionally the policy of forest fiscal incentives has further been criticized for putting the lion's share of the subsidy burden on municipalities.

The total fiscal revenues in the forestry sector in 2003 were US\$ 0.7 million; the contributions of the Tasa de aprovechamiento forestal were estimated at US\$ 500,000. In the Autonomous Regions the sum of the revenues is distributed among indigenous communities, municipalities, regional governments and councils, and National Treasury with an equal share of 25%. In the rest of Nicaragua 35% percent goes to municipalities, 15% to National Treasury and 50% to the National Forest Development Fund FONADEFO. Based on the contribution of the forest revenues to the total government revenues, the system does not generate sufficient revenues to ensure sustainable management of the country's forest resources. Municipalities also claim that the central government has failed to transfer their promised share of funds.

Further Reading:

- * [Wageningen University and Research Centre](#)
- * [GIZ – Environmental Fiscal Reform and National Forest Policies](#)

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