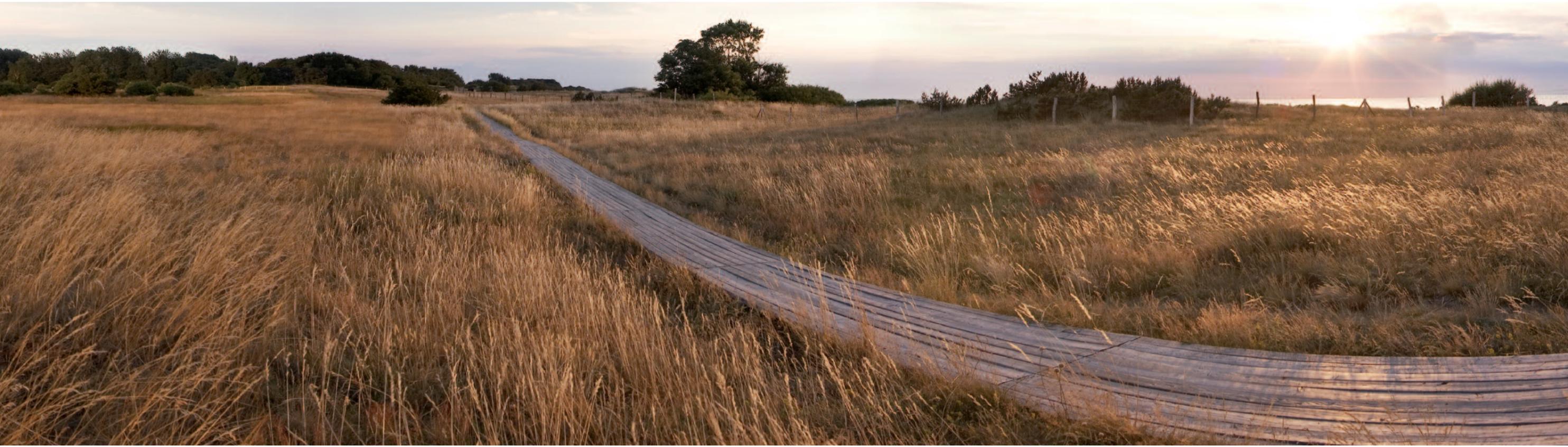


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Environmental Fiscal Reform in Developing, Emerging and Transition Economies: Progress & Prospects

Documentation of the 2007 Special Workshop hosted by the Federal
Ministry for Economic Cooperation and Development (BMZ) and the
Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH

Sector Project Rioplus - Environmental Policy and Promotion
of Strategies for Sustainable Development

Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH
DE 4703 - Environment, Resource Efficiency, Solid Waste
53113 Bonn
Germany



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Rioplus
Environmental Policy and Promotion of
Strategies for Sustainable Development

commissioned by



Federal Ministry
for Economic Cooperation
and Development

Published by:

Deutsche Gesellschaft für
Technische Zusammenarbeit (GTZ) GmbH
Postfach 5180
65726 Eschborn, Germany

Internet:

www.gtz.de

Sector project:

Rioplus - Environmental Policy and Promotion of Strategies
for Sustainable Development
Unit 47 Environment and Climate Change
Deutsche Gesellschaft für Technische Zusammenarbeit
(GTZ) GmbH

Dahlmannstr. 4
53113 Bonn, Germany
T +49 228 24 93 42 58
F +49 228 24 93 42 56
E rioplus@gtz.de
I www.gtz.de/rioplus

**Contact at the Federal Ministry for
Economic Cooperation and Development (BMZ):**

Dr. Kerstin Imbusch
Division 312
(Environment and Sustainable Use of Natural Resources)
T +49 228 535 3563
F +49 228 9910 535 3563
E Kerstin.Imbusch@bmz.bund.de
I www.bmz.de

Executive editor:

Axel Olearius

Authors:

Jacqueline Cottrell (Green Budget Germany / FÖS e.V.)
Stephanie Lorek, Marina Kosmus, Axel Olearius (GTZ GmbH)
Contributors: Sebastian Schmidt, Thomas Rösch, Steffen
Baumhauer (Green Budget Germany / FÖS e.V.)

Observer contributions by Dr. Alexander Ross Paterson
(University of Cape Town, South Africa) and Professor Margaret
Okorodudu-Fubara (Obafemi Awolowo University, Nigeria)

While there has been considerable consultation with participants
and supporters of the workshop, the judgements within this
publication do not necessarily reflect the views of their respective
institutions, or where applicable, the countries they represent.

Cooperation partners:

Green Budget Germany / FÖS e.V.
Landsbergerstr. 191, 80687 Munich, Germany,
T 49 89 520 113 13
E foes@foes.de
I www.foes.de / www.worldcotax.org

Organisation for Economic Co-operation and Development
(OECD)

United Nations Development Programme (UNDP)

Swedish Agency for International Development
Cooperation (SIDA)

UK Department for International Development (DFID)

Design:

Martin John, adspice

Printed by

oekom Verlag
Bonn, July 2008

Deutsche Gesellschaft für Technische Zusammenarbeit
(GTZ) GmbH

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Acknowledgements

This publication which goes beyond classical conference proceedings was possible thanks to the contributions from various people and institutions, among them the participants, session chairs and presenters of the Special Workshop “Environmental Fiscal Reform in Developing, Emerging and Transition Economies: Progress and Prospects”. The names of the session chairs and presenters including their contributions can be found in this publication. This workshop took place in the context of the 2007 Global Conference on Environmental Taxation (GCET) from 18-20 October in Munich, Germany.

Special thanks go to the non governmental organisation Green Budget Germany / FÖS e.V. which organised the 2007 Global Conference on Environmental Taxation.

Sincere thanks go also to the GCET Steering Committee, which entrusted the eighth GCET conference in this prestigious series to an NGO for the first time, while giving Green Budget Germany / FÖS e.V. sufficient freedom to invite new partners on board, such as the Federal Ministry for Economic Cooperation and Development (BMZ) and the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH – organisers of the Special Workshop documented herein.

June 2008

Preface

The Special Workshop on Environmental Fiscal Reform in Developing, Emerging and Transition Economies took place from 19 to 20 October 2007 in Munich. Part of the Global Conference on Environmental Taxation (GCET), it aimed to describe a framework for successful Environmental Fiscal Reform (EFR) in developing countries, bearing in mind the UN’s Millennium Development Goals and appropriate instruments and designs for EFR.

The involvement of the Federal Ministry for Economic Cooperation and Development (BMZ) and the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH in the GCET was prompted by Germany’s G8 Presidency in 2007. It was accompanied by a dialogue with developing countries and formed part of a long-term process within the Organisation for Economic Co-operation and Development (OECD) that focuses on EFR in developing, emerging and transition economies.

The underlying rationale of EFR is the correction of false price signals within the economy. Often, the costs and benefits of natural resources are not fully captured by pricing, which generates incentives for unsustainable resource use by making pollution or the degradation of natural resources a profitable exercise. EFR can help to internalise the costs incurred as a result of pollution or natural resource degradation within the price of a particular environmental good. However, many countries are unable to mobilise sufficient resources to fund such environmental policy measures or to absorb such distortions within their economies. To do so requires the development and implementation of EFR instruments

that can mobilise budgetary revenues to fund environmental protection and create incentives for sustainable resource use while remaining politically, economically and technically viable. However, this does not mean that EFR could or should replace other environmental policy instruments such as regulation and voluntary agreements. Often a single instrument does not operate in isolation and a well-balanced mix of instruments is crucial for the effective and efficient achievement of environmental goals.

The Special Workshop highlighted many examples of specific environmental-fiscal measures that are already in place in developing, emerging and transition economies and which have generated significant additional revenues while incentivising behavioural change.

Both the Special Workshop and the GCET have been an interdisciplinary forum for experts from all over the world to exchange lessons learnt about the use and benefits of EFR and other economic instruments across international boundaries. Such interdisciplinary approaches, with the participation of policy-makers from the environment, development and financial sectors, academics and representatives of civil society and the donor community, will be vital to the implementation of EFR in the future.

We hope this documentation of the Special Workshop and of parts of the GCET, will promote the conceptual debate and assist in putting EFR concepts in practice.



Frank Fass-Metz
Head of Division, Environment and Sustainable Use of Natural Resources, Federal Ministry for Economic Cooperation and Development (BMZ)



Dr. Christoph Beier
Director General, Mediterranean Region, Europe, Central Asian Countries, Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH

Executive Summary

Part I of the proceedings analyses the most important outcomes of the workshop. The 2005 Paris Declaration on Aid Effectiveness highlighted the need for capacity development and good governance, including good financial governance – elements that were also a central focus of the workshop and were identified as requirements for the successful implementation of Environmental Fiscal Reform (EFR).

Other important aspects highlighted during the workshop included the importance of understanding the political economy of EFR in the country concerned – in other words, the country-specific context within which EFR is being implemented – and the significance of in-depth policy analyses that facilitate sound policy design and effective implementation. Political barriers to implementation, including opposition from powerful interest groups, lack of communication between finance and environment ministries, and tension between different levels of government, were also identified and ways of mitigating their impact discussed. It was suggested that one possible way of undermining opposition to EFR was to emphasise its revenue-raising potential, which could also prove a useful entry point to discussions of EFR as a serious policy option. The potential of EFR for both direct and indirect poverty alleviation by improving the environment and raising revenue for poverty reduction measures was also discussed.

In **Part II** of the proceedings, summaries of plenary addresses on EFR in developing, emerging and transition economies are followed by summaries of subsequent workshop sessions on country case studies. Workshops examined the status of EFR implementation in developing, emerging and transition economies – specifically,

China, Kenya, India, Morocco, Pakistan, South Africa, Sri Lanka, Tanzania, and Uganda – and the potential for further EFR measures as seen from the social, environmental and governance perspectives. The fishbowl discussion session drew together findings from previous workshops and gave participants the opportunity to compare and contrast EFR in these and other countries. Comments from expert observers on their impressions of the workshop complete this section.

Part III summarises the four plenary sessions of the eighth Global Conference on Environmental Taxation, entitled Innovation, Technology and Employment: Impacts of Environmental Fiscal Reforms and other Market-Based Instruments, of which the Special Workshop was a part.

Part IV outlines GTZ's approach to and pilot project on Environmental Finance, which aims to better identify financial opportunities for environmental protection and existing incentives for unsustainable resource use, and to develop solution-based approaches. The project centres on furthering the sustainable use of natural resources through a coherent combination of different, mutually supportive incentive-based instruments and mechanisms such as EFR, Payments for Environmental Services (PES) and the Clean Development Mechanism (CDM).

The accompanying CD-ROM contains PDF files of all presentations and their abstracts given at the Special Workshop, the GCET conference programme booklet and the conference abstracts booklet.

PART I

Lessons Learned from the Special Workshop on Environmental Fiscal Reform in Developing, Emerging and Transition Economies

Jacqueline Cottrell, *Green Budget Germany / FÖS e.V.*
Axel Olearius and Stephanie Lorek, *Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH*

Introduction

Governance, environment, taxation and the fiscal system are complex and cross-cutting issues in themselves, even more so when seen in the context of Environmental Fiscal Reform (EFR). The specific context within which EFR is implemented in developing, emerging and transition economies is unique in each case. EFR legislation is highly sensitive to country-specific circumstances. The lessons below can only provide a general guide to issues meriting consideration during the policy process.

Capacity Development and Good Governance

Capacity development and good governance, including good financial governance, are inextricably linked and mutually reinforcing, while fostering the conditions under which EFR can be effectively implemented. Capacity development can be defined as the process through which individuals, organisations and societies obtain, strengthen and maintain the capabilities to set and achieve their own development objectives over time.¹ It provides the means of achieving good governance, which involves sustaining favourable political framework conditions for social, ecological and market-oriented economic development as well as responsible use of political power and public resources by the state.² These two factors were consistently identified throughout the workshop as essential to the implementation of EFR.

EFR cannot be successfully implemented without a strong, stable governance framework, particularly in relation to financial governance. It requires an established tax system that is capable of levying, collecting and re-distributing revenues and of transparent, competent and accountable public financial management. Weaknesses in this field hamper investment, economic growth and sustainable development. The importance of good financial governance is reflected in the G8 Action Plan for Good Financial Governance in Africa.³ The Plan outlines ten areas for action that draw on the principles of the Paris Declaration on Aid Effectiveness and ongoing initiatives to support the reform of public financial systems in Africa. Within this process, priority is being given to strengthening current initiatives to promote more effective and transparent budget procedures, establish more equitable tax systems and enhance the transparency of public revenue

es. Without good governance and good financial governance, the more advanced stages of the policy process in particular, i.e. implementation and enforcement, tend to be pursued less rigorously.

A recurring problem in developing, emerging and transition economies has been a lack of capacity to support the more advanced stages of the policy process, and many cases were cited where a great deal of effort had gone into policy design while enforcement remained weak or non-existent. Good financial governance is essential to ensure that revenues are effectively collected and re-distributed. Aside from enforcement, governance issues are crucial at all stages of the policy process, for example to both facilitate and constrain the use of political power during the policy development phase.

Capacity development supports countries in improving their governance structures and thus facilitates the creation of a framework within which EFR can be developed and successfully implemented. Donors can contribute to this process in a number of ways.

- At all stages of the policy process, through the promotion of EFR as a policy tool by delivering evidence of its potential for poverty reduction; identification of potential policy areas and fields of action; support for negotiation between stakeholders and within government bodies; development of viable legislation; and support for capacity development outside the legislative process – at administrative level – to ensure smooth implementation and bolster revenue collection capacity.
- EFR requires coordination between different stakeholders with diverse needs and interests, and negotiation between government ministries. Donors can promote the capacity to negotiate successfully and overcome barriers between sectors and government ministries by helping to build ways of accessing and exchanging expertise, improving information flows, breaking down communication barriers between compartmentalised governmental structures, improving cross-sectoral coordination, and making negotiation processes more transparent.
- However, the negotiating ministries are often severely underfunded and do not have the capacity to develop complex EFR legislation. If both counterparts and donors can demonstrate

¹ UNDP definition, taken from the UNDP Capacity Development website at <http://www.capacity.undp.org/>.

² GTZ definition, taken from <http://www.gtz.de/de/dokumente/en-gtz2004-governance-5476.pdf>.

³ The Plan is available for download at: <http://www.g7.utoronto.ca/finance/g8finance-africa.pdf>.

that EFR is in the interest of governments and that it can achieve the joint aims of poverty reduction and environmental protection, this may serve to heighten the political will of decision-makers to develop and implement such legislation.

- One major advantage of capacity development is that it encourages a sense of 'ownership' of EFR policies and instruments – which is vital if they are to be pursued with sufficient political will to ensure their effective implementation.

Thus, successful capacity development and good governance are key to long-term sustainable development, as they entail greater accountability, improved participation and increased transparency, and reduce corruption. Because problems related to unsustainable resource use – pollution or degradation – are often caused by basic governance shortcomings, such as the lack of clearly defined property rights, open access to resources, or the insufficient enforcement of existing rules, improved governance in itself can facilitate improved environmental performance.

Policy Analysis for Improved Implementation

In-depth policy analysis and reliable data – for the tax system as a whole – are vital to the design and implementation of appropriate and effective EFR instruments. Examples cited during the workshop included the South African Treasury's draft policy paper on EFR – A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa,⁴ published in April 2006 – and the Tanzanian government's 2004 Public Environmental Expenditure Review. The latter proved to be a critical turning point in highlighting the considerable potential of environmental resources to contribute to revenue, the significant under-pricing of environmental services, and very low revenue collection in Tanzania in e.g. fisheries and wildlife, as well as relatively low investment and recurrent expenditure on environmental assets and improved revenue capture.⁵ In other words, analysing the fiscal system enables decision-makers to identify clear cases of policy failure, such as the subsidisation of unsustainable practices, particularly unsustainable resource use, a problem prevalent in e.g. forestry and fisheries.

In-depth policy analysis and a sound understanding of governance structures and the political economy of EFR can help to identify the areas that require legislation to prevent environmental degradation, introduce and maintain sustainable resource use,

improve the quality of life of the poor (both by improving living environments and by investing EFR revenues in poverty reduction measures), and ensure that this legislation can be implemented and enforced. In Morocco, for example, an analysis identified four areas relevant to EFR – water, air, solid waste, and littoral soils and landscape – and produced a number of recommendations for further policy measures. Similarly, an IUCN project in Pakistan identified areas of concern and outlined a number of possible policy measures, and is currently running pilot projects to investigate their effectiveness.

Clearly, environmental taxation in low-income, low-growth countries has only limited revenue-generating potential. Realistic sources of income need to be identified. These tend to include imports and business, although other areas are also possible,⁶ such as aid, the taxation of which would strengthen domestic revenue flows and tax administration rather than generate aid dependency.⁷ In resource-rich countries EFR measures should target sustainable resource use, while rapidly growing economies should focus on controlling industrial pollution. Introducing product taxation and removing environmentally harmful subsidies is most relevant in energy-producing economies where fuel subsidies are common. User charges for energy and water can and should be implemented in most countries, although it is important to take their potential regressive effects into account in compensatory legislation and/or revenue redistribution.

The poor rates of implementation and lack of effectiveness found by Tanzania's Public Environmental Expenditure Review are problems common to many other developing, emerging and transition economies. In Sri Lanka, for example, research revealed that although legislation is in place for the imposition of charges on solid waste and waste water, fees are not collected and charges are not enforced. The effectiveness of EFR measures rests on more than the quality of legislation. It will depend on how well thought out a particular measure is, but also on the ability and political will to implement and enforce it once it is brought into law. Ministries need to work together to ensure revenues are collected, e.g. in Nicaragua, where tax and forestry administrations cooperate to implement taxation on deforestation. Donors and governments alike need to concentrate far more on the prosaic issue of how to enforce existing legislation, rather than focussing on the intellectually more challenging task of developing new EFR measures. A further advantage of sound policy analysis is that it helps policy

makers identify the potential winners and losers of a given piece of legislation, and can thus help governments to deal with any opposition – perhaps even before it is voiced – and overcome resistance to EFR. Understanding the characteristics of different stakeholder groups significantly enhances negotiation results and helps to produce solutions that are beneficial to all parties. Thus, the tangible benefits of EFR for the majority can be identified and information on these benefits disseminated, while the conflicting goals of government ministries and vested interests can be addressed. Within this process, the importance of support from key political actors and the judiciary should be emphasised – support that can be effectively garnered by the provision of sound information emphasising the benefits of EFR to environment, economy and society.

Political Barriers to Implementation⁸

Tensions between different ministries – particularly finance and environment – and a lack of interest in EFR legislation hampers the effective development and implementation of EFR. These problems are compounded by the fact that environment ministries generally have little political clout and a budget that is far less significant than that of the finance, mining, health or energy ministries. Donor support for capacity development can help to break down communication barriers, bring ministries together and facilitate fruitful discussions of EFR policy. Finance ministries can be motivated to deliver EFR measures in collaboration with the environment and other ministries by highlighting the revenue-generating potential of EFR, particularly if it can sustainably deliver a set percentage of the national budget (see below). At the same time, the potential for abusing EFR's revenue-raising potential has to be considered. Here, too, strong coordination between environment and financial ministries has been shown to be indispensable, not least to prevent finance ministries from promoting taxes with the greatest revenue-raising potential, rather than prioritising environmental effectiveness.

Pressure to implement EFR and other changes can be generated by international organisations, government ministries, the donor community, civil society and environment NGOs within the country. The influence of the latter two should not be underestimated, particularly in the context of less formal relations. In South Africa and elsewhere, they have demonstrated their capacity to influence policy and bring different stakeholders and authorities together. Alleviating tensions between different levels of government – local

or central – necessitates a delicate balancing of national and local interests. While it is often claimed that local taxes are more efficient and that fiscal decentralisation is an important means of ensuring effective legislation, the arguments are not always convincing. A detailed analysis of property rights, the local environment and local and national governance structures is required to identify the most reasonable solution in each case. Country- and sector-specific solutions to these problems need to be found. Evidence from the forestry sector, for example, shows that when the rights of indigenous and other local communities are respected and their enterprises allowed to compete, they can both reduce poverty and protect the forests the communities depend on for a living. Forest communities tend to take better care of forests than any other manager, public or private, and do so while boosting the income of local residents. This might prove very different in other sectors, and an in-depth analysis is required in each individual case.

Conflicts between interest groups within society can be a significant barrier to the implementation of EFR measures. For example, the most efficient tax – one that will presumably raise a considerable amount of revenue – may prove to be the least politically feasible. An efficient tax will almost inevitably affect the status quo while impacting on the wealthy and influential elements of society. A case in point is fuel taxation. In India the middle and upper classes are much opposed to the taxation of transport fuels, on the grounds that such a tax would be regressive and affect the poorer population the most. However, in actual fact the poorest elements of society would be less affected than the higher classes, as they have little or no direct access to transport fuels.

Revenue Raising

One of the main challenges for developing and transition economies is their ability to organise domestic resources. EFR can provide a relatively simple way of raising revenue while incurring low administrative costs. Furthermore, a proportion of revenues can be used to cover enforcement costs. With this in mind, it is desirable that revenues be used for concrete poverty reduction and sustainable development measures.

The amount of revenues raised, and the time this requires, should be calculated as accurately as possible to facilitate budgetary planning and maintain stability. Some taxes, for example, will erode their tax base relatively quickly, as has been the case with environ-

⁴ The report can be downloaded from the Treasury web site at: <http://www.treasury.gov.za>.

⁵ Details available at: <http://www.worldecotax.org/downloads/Presentations/SlungeMkendalkiaraKenyaTanzania.pdf>.

⁶ Taxing investment could also generate significant EFR revenues, but in all probability would have a negative impact on growth.

⁷ As aid taxation is not generally regarded as a form of environmental taxation, it is not discussed here in more depth. Suffice to say that aid taxation would not change the total amount of aid given, but simply divert resources to the national tax administration.

⁸ Barriers to implementation are discussed elsewhere in the Lessons Learnt section. Each stage of the policy process involves potential barriers to the implementation of EFR. This section provides a general summary of the most significant political barriers that may prevent the EFR policy process from being initiated.

mental taxation on sulphur or lead in transport fuels. Other taxes and EFR measures, such as those targeted at less easily avoidable pollutants, will be in place over a much longer timeframe. It seems inadvisable to forgo the revenue-raising potential of instruments such as certificate trading – although in most cases this is far more complicated to implement than taxation – as these can deliver long-term certainty in terms of budgetary inputs for sustainable development and poverty alleviation. On the other hand, other performance and monitoring indicators, such as environmental and social impacts, rate of behavioural change, enforcement levels, etc., are of equal if not greater importance in terms of evaluating the efficacy of EFR.

Additionally, revenues can also be used to secure the sustainability of various sectors of the economy, and any excess can be used for other purposes. For example, in Uganda, revenue raised by the Fisheries User Levy is primarily used to finance sustainable fishing practices, while excess revenues are used to boost the general budget. Likewise, in Colombia taxation and subsidies are combined to support sustainable forestry practices. Such measures can render EFR an appealing instrument for finance and environment ministries alike – and this appeal, as experience in the EU and elsewhere has shown, is vital to ensuring the implementation of EFR. Further advantages of the revenue-raising potential of EFR include bringing foreign exchange earnings into the country, e.g. by imposing an import duty on older vehicles, and reducing the dependency of local government on central government revenue in cases where revenues are raised and used locally.

EFR and Poverty Reduction

The double dividend of EFR in developing economies focuses on poverty reduction, rather than the benefits for the economy generally cited in OECD countries. On the one hand, EFR directly addresses environmental problems that affect the poor, while on the other, the revenues it raises can be used for poverty reduction and sustainable development. The use of EFR revenues to reduce distorting taxes, particularly taxes on labour, can help to alleviate poverty through potential trickle-down effects. The potential of EFR for raising revenue for poverty reduction measures is an important factor in heightening its appeal to governments in developing and transition economies, and can help to trigger a debate on the implementation of EFR.

This potential double dividend highlights another important finding of the Special Workshop. The OECD guidelines on EFR and Poverty Reduction⁹ fail to address the conflict between pro-poor and pro-environment lobbies – yet one of the most commonly voiced arguments against EFR in developing economies is that poverty reduction and development should be prioritised, while the environment should take a back seat.

In addition, while by no means a guarantee for political acceptance, the focus on poverty reduction may be used to overcome resistance to EFR legislation within many sectors of society, particularly those that use the supposed ‘regressivity’ of certain environmental taxes as an argument against their implementation (see box for more details). Whether or not legislation is ‘pro-poor’ or potentially regressive is a complex issue, and claims that a particular tax is regressive should be examined closely, as it is likely that the poverty reduction potential of EFR outweighs any potential regressive effects it may have.

Pro-poor legislation?

A tax is defined as regressive when the effective tax rate decreases while the amount to which the rate is applied increases. In other words, a regressive tax is one that impacts more upon poorer sectors of society and thus those who are less able to pay it. For example, introducing a tax on kerosene in South Africa or Kenya or indeed many other developing economies is a potentially regressive measure, as kerosene is used by many poor households as a cheap source of fuel for lighting and cooking. On the other hand, kerosene is a dangerous substance that causes many deaths each year, as a result of fires, the inhalation of toxic fumes, and poisoning incidents. Alternative fuels are eminently preferable. A tax on kerosene may initiate a shift in fuel use by creating an incentive to use alternative fuels. If accompanied by the provision of alternative fuel sources and targeted assistance, a kerosene tax could be regarded as a pro-poor piece of legislation. On similar grounds, electricity and water supplies are generally taxed at very low rates or not at all, and are delivered at an extremely low cost. While at first glance this may appear advantageous for the poor, such low prices may render the cost of supplying a poor residential area with water or electricity greater than the revenues generated as a result. For this reason, many poor areas are not supplied. Thus, while putting a price on water and electricity may appear regressive at first glance, keeping water and electricity supply cheap does not necessarily ensure that they will be delivered to the poor.

To conclude, it seems that the discussion of whether and to what extent a particular piece of tax legislation is regressive is often over-emphasised in the EFR debate. Priority should be given to an analysis of the use of revenues for poverty reduction and the protection of vulnerable groups from the more pernicious impacts of fiscal legislation.

⁹ Available online at: <http://www.oecd.org/dataoecd/14/25/34996292.pdf>.

Plenary Session: Innovation, Technology, Employment and Poverty Reduction:
Policy Design, Public Choice and Governance

Chair: **Harald Lossack**, *Project Coordinator, Rioplus: Environmental Policy and Promotion of Strategies for Sustainable Development, GTZ GmbH*

Good Financial Governance: Key to Poverty Reduction, Environment and Development

Marita Steinke, *Head of Division, Environment and Sustainable Use of Natural Resources, Ministry for Economic Cooperation and Development (BMZ)*

Economic growth and development are closely linked to the sound management of environmental resources. It is the poorest countries and the poorest people who rely most heavily on environmental resources, and are therefore most affected by their degradation. For example, it is estimated that 15 out of 24 essential services provided by ecosystems – such as food production, water quality and availability, disease management, and climate regulation – are being eroded. Unsafe water is responsible for 3.1% of all deaths worldwide, 99% of which occur in developing countries. Also in developing countries, 20% of the total loss of life expectancy is attributable to environmental causes.

Global environmental challenges such as climate change, biodiversity loss and desertification have important implications for the achievement of the Millennium Development Goals of September 2000. Many synergies exist between promoting development and sustaining the environment, but while some integrative policy options are already being implemented on a limited basis, they need to be scaled up and expanded if the MDGs are to be attained by 2015.

At the 2005 G8 summit in Gleneagles, the G8 pledged to increase official development assistance (ODA) by US\$ 50 billion by 2010, with half the amount earmarked for Africa. But far more important than merely raising the level of funding is for developing and emerging economies to increase their own revenues while taking into account poverty-environment linkages. In spite of this, EFR is not being implemented in the developing world because doing so is a complex process that requires a sound understanding of fiscal and environmental policy, as well as negotiation between numerous stakeholders working across political, social and institutional barriers. Thus it is absolutely crucial to establish the necessary institutional framework in partner countries to enable funds – ODA or national revenues – to be used effectively to raise citizens' living standards.

Good financial governance – the application of good governance principles to public finance – is vital to any attempt to foster EFR measures. Transparent, competent and accountable public financial management is a key element of a functioning democracy. Weaknesses in this field hamper investment, economic growth and sustainable development. Accountability, participation and transparency are the strongest antidotes to corruption.

As the African Union has stressed in its New Partnership for Africa's Development (NEPAD) programme, African countries accept that responsibility for peace, development, good governance and transparent, sustainable financing of the public sector lies with them. In order to be able to assume this responsibility at both national and regional level, the capacities of individuals, institutions and societies need to be developed and strengthened.



Marita Steinke, *Head of Division, Environment and Sustainable Use of Natural Resources, Ministry for Economic Cooperation and Development (BMZ)*

In January 2007, Germany took over the G8 Presidency for the fifth time. The guiding theme of the Presidency was growth and responsibility. Attention focused in particular on the question of how African countries could be supported in their endeavours to establish the institutional capacities required to ensure competence, transparency and responsibility in handling their public finances.

Against this background, the G8 Action Plan for Good Financial Governance in Africa was developed together with African partners from Cameroon, Ghana, Nigeria, Mozambique, South Africa and the African Development Bank. It outlines ten areas for action that draw on the principles of the Paris Declaration on Aid Effectiveness and on ongoing initiatives to support the reform of public financial systems in Africa. Rather than promoting the creation of new initiatives, priority was given to strengthening current initiatives to promote more effective and transparent budget procedures, establish more equitable tax systems and enhance the transparency of public revenues – all of which are required for the implementation of EFR and market-based instruments (MBIs) for environmental policy and poverty alleviation. Good financial governance in Africa was also included in the G8 summit document of Heiligendamm.

Donor countries can make a valuable contribution towards establishing good financial governance through their own financial management. The manner in which we and our fellow donors regard and structure our cooperation has a substantial impact on governance and institutional development in partner countries. However, donor countries can only play a supporting role. Ultimately, the responsibility for improving governance in the public finance sector is clearly in the hands of national governments.

Plenary Session: Innovation, Technology, Employment and Poverty Reduction:
Policy Design, Public Choice and Governance

Environmental Fiscal Reform and the Importance of Capacity Development

Dr. Christoph Beier, *Director General, Mediterranean Region, Europe, Central Asian Countries, Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH*

The value of EFR lies in its potential to generate revenues and improve the environment – yet despite this, EFR is frequently delayed and constrained by political, social and institutional factors. Implementing EFR requires a firm understanding of these factors and the relevant stakeholders. In addition, a sense of ownership of the policy process is fundamental to the success of such reforms.¹⁰

In order to meet these requirements GTZ, on behalf of BMZ, is increasingly focussing its efforts on capacity development, an essentially endogenous process that strengthens the performance capability of legal and institutional systems. This gives countries the tools they need to implement measures effectively themselves.

In many cases, capacity development is needed to design and implement appropriate economic instruments to solve environmental problems in line with local conditions. Problems of unsustainable resource use are often caused by basic governance shortcomings. The costs and benefits of natural resources are not fully balanced, rendering pollution or the degradation of natural resources a far more profitable option than environmental protection, which effectively incentivises unsustainable resource use. EFR can address this market failure by providing economic incentives to correct the market's shortcomings as regards natural resource management and pollution control. However, certain measures may not be efficient enough or can even fail if there are policy or institutional failures. It is hence crucial to understand the underlying governance structure – the body of rules, enforcement mechanisms and decision-making processes – that guides people's behaviour.¹¹

As the introduction of EFR measures often requires complex legal, policy and institutional changes, support must be given to establishing suitable framework conditions. These structural changes require a complex, overarching political process. In this context the following issues have proven particularly important:

- The benefits of EFR have to be tangible for the majority of the stakeholders.
- Measures should be designed as simply as possible, particularly in the early phases of the policy cycle in a reform process.
- Policy changes necessitate ownership on the financial side. Although environmental authorities can launch the policy process, financial authorities must be convinced as soon as possible.

In Nicaragua, on behalf of BMZ, GTZ has supported a participatory study on the framework conditions of EFR in the forestry sector, the current state of play in relation to EFR legislation, and perspectives for pursuing new EFR measures in the sector in the future. A participatory, multi-stakeholder process on good forest governance in which the different sectors of society are well represented has been fostered and a new forest policy – including financing mechanisms – developed. Based on that study and on the process of good forest governance, we aim to work together with the partner country to support the reform of environmental fiscal policy ecological fiscalism in the Nicaraguan forestry sector to generate positive environmental effects – e.g. sustainable forest management or a reduction in illegal logging – while gaining positive fiscal benefits through an increase in the public revenue base. Initial modifications of the public tax system have already been implemented. One of the outcomes has been a tax exemption system for investments in forest plantations.¹²



Dr. Christoph Beier, *Director General, Mediterranean Region, Europe, Central Asian Countries, Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH*

In Paraguay, GTZ, on behalf of BMZ and in close cooperation with the relevant authorities, has helped to design an economic instrument that offers gradual tax reductions for those industries that implement cleaner production programmes and can actually demonstrate measurable and independently verifiable results, such as emission and pollution reduction or more efficient natural resource use. The launch of this tax reduction has been accompanied by awareness-raising, information and training measures for public authorities, industries and independent consultants.

GTZ also works to bring together environmental finance actors to foster a dialogue and identify potential amongst the donor community. GTZ actively promotes the exchange of information by organising conferences and workshops on EFR and other financial instruments, as well as working on studies related to specific issues, e.g. forestry policy. It has also launched a pilot project on Environmental Finance.

Capacity development, with its structural, political and institutional dimensions, has the potential to foster EFR. Increasing the amount of financial assistance to developing countries and economies in transition is one important element – but more aid without capacity development to accompany it will merely stretch the absorption capacity of individuals, organisations and societies. GTZ will therefore continue to focus on developing approaches that facilitate the delivery of external support to capacity development in the field of EFR and MBIs for environmental policy.

¹⁰ GTZ (2005): EFR and National Forest Policies.

¹¹ GTZ (2004): Natural Resources and Governance: Incentives for Sustainable Resource Use.

¹² Fuchs, Hans et al. (2005): Reforma Tributario Ecológico para el Sector Forestal – Ejemplo Nicaragua, GTZ.

Plenary Session: Innovation, Technology, Employment and Poverty Reduction:
Policy Design, Public Choice and Governance

Environmental Fiscal Reform in Developing, Emerging and Transition Economies

Paul Hassing, *Co-Chair, OECD Development Assistance Committee (DAC), Network on Environment and Development Cooperation (ENVIRONET)*

Environment and development policy is focussing more and more on governance, while financial support is moving towards sectoral budget support. Within this context EFR has been of great interest to the OECD. The objective of our work has been to provide insights and good practices on how development cooperation agencies can help developing countries take advantage of EFR approaches in their poverty reduction and development strategies.

EFR can have a direct effect on poverty reduction, helping to address environmental problems by influencing behaviour, through price mechanisms and markets or paid licences. It can also have an indirect effect by generating or freeing up resources for anti-poverty programmes in areas such as water supply and sanitation, or for pro-poor investments in health and education. Moreover, it can contribute to combating corruption by explicitly and transparently reaping the benefits of natural resources, so that individuals – at national or sub-national level – have less reason to do so covertly.

EFR measures are feasible in most developing countries and indeed are being applied. It is fair to say that EFR is an important part of the development policy tool kit. EFR approaches and instruments complement and strengthen regulatory and other approaches to fiscal and environmental management. However, because of the inherent complexity of their application, as well as political and institutional constraints, they remain the exception rather than the rule in developing, emerging and transition economies.

To promote the implementation of EFR, we must pay great attention to its political economy by identifying the likely winners and losers of proposed reforms, considering how coalitions for change can be developed, and negotiating with those likely to oppose progress. This requires us to understand the characteristics of actors in the political arena related to the management of a particular resource. Often, agriculture, forest, water or fisheries ministries have to pursue competing goals such as the production and exploitation of a resource and its protection for long term use. Their understanding of their own role and the expectations of other actors are not always in line. Parliaments have an impor-

tant role to play in shaping national policies, including in the area of natural resource management, but in many cases they represent elite interests and favour the status quo rather than reforms. The backing of a key political player can also prove vital to reform. In Indonesia, for example, the Minister for Forests has sought to take on many of the stakeholder interests in the forestry sector, which has played a vital role in driving change at the national level. The judiciary may also prove important, owing to its capacity to clarify legal provisions, and in several countries judicial activism has been a driving force in pro-poor environmental outcomes.

Understanding the policy cycle and making use of windows of opportunity is also critical. Sometimes, political change follows the stages of a typical policy cycle, but often problems are well known for some time but low on the agenda before (sudden) events call for political action. Increased public awareness of the implications of poor resource management and waste, often following tragic disasters, can help to bring about change.



Paul Hassing, *Co-Chair, OECD Development Assistance Committee (DAC), Network on Environment and Development Cooperation (ENVIRONET)*

For example, in many countries severe floods affected society as a whole have triggered drastic efforts to enforce existing forestry regulations (including cracking down on politically powerful logging corporations) or to establish new regulations.

Pro-poor improvements in resource management are also generally accompanied by broader pro-poor political change. Many positive examples of pro-poor natural resource management have arisen after a regime change. In South Africa the election of the African National Congress led to a massive expansion in access to water and sanitation, which not only improved health and welfare in general but also created a large number of temporary jobs. A period of active agenda-setting provided a window of opportunity to implement changes on the operational, organisational and process level, which gave rise to an attempt to embed changes in an appropriate institutional framework.

Pro-poor policy changes can also take place in response to bottom-up pressure. The poor are not passive in the face of political pressure, although they often face major hurdles and opposition. Much can be learned from processes where they have themselves initiated political change to demand a share of benefits from natural resources. There are some striking examples of how poor groups, with strong leadership and sophisticated use of the media, have joined forces to demand access to natural resources, especially land – a process widespread in Latin America. Thus, alliances with national and international civil society organisations (including religious groups, professional associations and trade unions) can help drive political change. The role of civil society is essential in the political process to balance the interests of all stakeholders. It is hence necessary that capacity development within the public sector be accompanied by capacity development among civil society organizations.

Donors have a role to play within all these processes. They can be drivers of change, support governance reform and recognise the special opportunities offered by EFR. Donors can influence change through technical and financial assistance, technical advisory services and international exchange. For instance, they can develop capacity to design and negotiate effective natural resource agreements with national or international companies. They can provide advisory services on policy processes and help establish anti-corruption strategies. In addition, as parliaments in partner countries are not always effective, international organisations can help defend the interests of the poor and promote EFR by putting pressure on reluctant governments.

Let me conclude by noting that OECD has proved to be well-placed in mobilising fiscal, environmental and development experts to help us identify approaches to EFR that will work well in most developing countries. However, further exchange of knowledge, improved co-operation and partnership building is needed to operationalise policies in developing countries for the benefit of the environment and to reduce poverty.

Plenary Session: Innovation, Technology, Employment and Poverty Reduction:
Policy Design, Public Choice and Governance

Eco-Tax Reform: Tool for Ecological Efficiency and Green Growth in the Asia-Pacific Region

Rae Kwon Chung, *Director, Environment and Sustainable Development Division, United Nations Economic and Social Commission for Asia and the Pacific*

Environmental tax reform (ETR) is an important tool for improved ecological efficiency and green growth in the Asia-Pacific region. The major characteristics of the region include rapid economic growth, a largely limited ecological carrying capacity and high population density. The region is home to two thirds of the world's poor and produces 34% of global greenhouse gas (GHG) emissions. For all these reasons, it is essential that the region pursue economic growth compatible with environmental sustainability.

The Seoul Initiative on Environmentally Sustainable Economic Growth was adopted at the fifth Ministerial Conference on Environment and Development in Asia and the Pacific, which took place in Seoul, Korea in March 2005. The Initiative focusses on the social, ecological and economic quality of growth by applying the concept of ecological efficiency (EE) – i.e. the minimisation of ecological costs such as resource depletion and pollution. The main drivers in this process should be state governments, and the major tool for improving ecological growth should be ETR. Governments can use ETR to improve pricing structures and close the gap between market and ecological prices. Of course, sceptics often claim that ETR has a negative impact on competitiveness and growth, and such concerns should be taken into account and counterarguments found, e.g. the German case.

ETR can improve the ecological efficiency of a number of sectors, including transport and infrastructure, and various environmental issues can be addressed, such as demand side management and climate change. In Asia-Pacific's transport sector, for example, ecological efficiency is seriously lacking: public transport systems are ineffective and the dependency on private vehicles means that congestion costs have skyrocketed. The nature of infrastructural investments today is significant for the future management of the sector and for this reason, it is essential that the long-term ecological efficiency of such investments be taken into account and included as a criterion for public infrastructure investment.

Demand side management, or energy demand management, is fundamental to the establishment of sustainable consumption patterns, particularly as energy demand tends to rise dramatically

as growth increases. Although in the medium term, the ecological efficiency of production patterns can be reasonably expected to improve,¹³ consumption patterns can be expected to deteriorate.¹⁴ If improvements in the ecological efficiency of consumption are not predicted as an outcome of the development process, other measures are required to achieve them. In this regard, ETR is an extremely powerful tool, as it can manage demand by changing the price of consumption and thus consumption patterns.

Climate change has been described in the Stern Review as 'the greatest and widest-ranging market failure ever seen'.¹⁵ To address this market failure, the ecological cost of climate change must be internalized into the market price of energy. ETR is a perfect tool for closing the gap between the market and ecological price of energy, thus improving the ecological quality of growth in terms of both production and consumption. UNESCAP promotes the market mechanism to provide incentives for climate action, such as reforming CDM to remove the condition of technical additivity, and by discounting CER and not imposing fixed targets.



Rae Kwon Chung,
Director, Environment and Sustainable Development Division, UNESCAP

In particular, UNESCAP focuses on ETR, improving the ecological efficiency of urban infrastructure, demand side management, sustainable consumption patterns, ways of turning the climate change crisis into economic opportunities, and ways of supporting green business. UNESCAP has organised policy forums and seminars to promote the implementation of ETR in Asia and focusses its concern on small income tax shares, low levels of consumption, competitiveness concerns, the potential burden of ETR on the economy, the regressive impacts of a tax, and lack of managerial capacity. As elsewhere, there is considerable confusion surrounding the issue of ETR, a lack of understanding of the role of ETR in changing the tax base from income tax to pollution, its revenue neutrality component, and its double dividend potential. For this reason fears are often expressed that ETR, perceived as an additional tax, places an excessive burden on already struggling economies. In addition, the lack of interministerial coordination, a lack of interest in ETR on the part of both environment and finance ministries, and widespread negative bias to ETR measures are significant obstacles to implementation. Improved information on ETR measures and improved 'marketing' of the concepts of ETR and EFR would presumably increase the willingness of governments in developing, emerging and transition economies to instigate reform. European examples can facilitate this process.

While some countries, including Korea, China, Kazakhstan and Cambodia, have expressed an interest in the revenue neutrality aspect of ETR, more information on successful examples of ETR from Europe and elsewhere is required to facilitate the broader implementation of ETR. Improved knowledge of the design of ETR for countries with low income and consumption and of the benefits of ETR for poverty reduction and the environment will facilitate the implementation of further measures.

¹³ At least according to the environmental Kuznets curve (EKC) hypothesis, which posits an empirical U-shaped relationship between pollution and income (i.e. per capita GDP). It posits that low-growth countries have relatively low rates of environmental damage, but that economic growth will initially result in pollution and environmental degradation, until higher living standards increase demand for environmental quality, thus resulting in environmental improvements.

¹⁴ This is because there is no empirical evidence that the Environmental Kuznets Curve (EKC) applies to the ecological efficiency of consumption (see also footnote 17 above for more detail).

¹⁵ See Stern Review Executive Summary, p.1. The Stern Review can be accessed via: www.hm-treasury.gov.uk.

Workshop 1: Governance for EFR in Developing Emerging and Transition Economies

Chair: Matthias Rhein, Senior Policy Advisor, Policy Division, Growth & Investment Group (DFID)

EFR – Differences and Similarities Between Developed and Developing Countries A Case Study of Sri Lanka

Dr. Stefan Speck, *Independent Consultant*
Anjan Datta, *Programme Officer, UNEP/GPA*

This study analysed existing economic instruments for environmental policy, assessed their role and potential for generating funds for sustainable development, and made recommendations for future policy implementation. It also addressed the potential of EFR to raise revenue to facilitate the achievement of the MDGs in Sri Lanka.

Sri Lanka does not have a coherent policy strategy. Rather, a number of individual EFR measures are in place. The transport (fuels, imports) and energy sectors have been most targeted by environmental taxation legislation. Both electricity and water supplies have been priced using an inverted block tariff system, rendering initial shares of consumption cheap – by means of so-called ‘lifeline tariffs’ – and later shares correspondingly more expensive. Economic instruments are also in place in the fisheries, agriculture and tourism sectors.

Petroleum products and fertiliser are subsidised. In addition, state-owned companies are offered financial support for implementing electricity pricing measures, which contributes to poverty reduction schemes but also represents a drain on scarce public funds. The true beneficiaries of such measures remain unclear.

Although a legislative framework is in place, the implementation and enforcement of economic instruments for environmental policy is relatively poor. Proposals to implement new economic instruments have been put forward in the past. For example, the National Strategy for Solid Waste Management states that ‘a system of user fees should be introduced’, the National Water Supply and Drainage Board has called for a ‘Sewerage Service Charge’, and the Central Environmental Authority has proposed a ‘Load-Based License Fee Scheme’ (a type of water effluent tax).

The inefficient enforcement and collection of EFR seems to be heavily driven by social considerations, while the environmental benefits and revenue raising potential of EFR are neither understood nor fully utilised. Almost all revenues raised by environmental taxes – in 2005, 10.6% of total tax revenues and 1.6% of GDP – are recycled in the form of subsidies.

Proposals for future policy developments in Sri Lanka include:

- the adjustment of fuel taxes and a reduction of the disparity between petrol and diesel taxation rates;
- revision of electricity tariffs;
- restructuring of the water pricing regime and the introduction of user charges for wastewater;
- introduction of groundwater/surface water extraction charges and a water effluent tax;
- introduction of user fees for waste collection and disposal;
- introduction of product taxes (e.g. on plastic bags) and a deposit-refund scheme for plastic bottles;
- indexation of tax and charge rates to inflation;
- introduction of an Environmental Fund.

The main findings of the study were that while economic instruments (environmental taxes) are being applied in Sri Lanka, various factors limit the efficacy of these instruments, from design deficiencies in environmental taxes and tariffs to various aspects of the institutional, administrative, regulatory and political framework. In addition, the political priority given to environmental projects and the environment overall seems rather low, and although several strategies and policies are in place they are not enforced. An essential element of a future EFR policy package should include subsidy reform and a revised pricing structure for electricity and water.

The study’s findings have already had a positive impact on policy development within Sri Lanka. The Ministry of Environment and Natural Resources (MENR) has agreed with the Ministry of Finance & Planning to introduce new environmental tax measures in the 2008 budget, and the Ministry of Finance & Planning has asked the MENR to draft new laws for the implementation of new environmental taxes. These new laws must be vigorously enforced.



Dr. Stefan Speck, *Independent Consultant*

Workshop 1: Governance for EFR in Developing Emerging and Transition Economies

The Moroccan Path Towards Environmental Fiscal Reform

Mohammed Maktit, *Chef de Service de la Prospective, Ministry for Territorial Planning, Water and Environment (MATEE), Morocco*

Moulay Hassan El Badraoui, *Directeur des Etudes de la Planification et de la Prospective, MATEE, Morocco*

Since 1972 considerable progress has been made in Morocco on consolidating the institutional framework of environmental management, culminating in the creation of an autonomous ministerial department that coordinates government action in this field, and of the National Council of Environment.

The revision, modernisation and reinforcement of the legislative framework has been prioritised. Some forty laws, decrees and departmental orders covering different fields of environmental protection and sustainable development have been adopted.

Since the 1992 Earth Summit in Rio de Janeiro, Morocco has endeavoured to reconcile environmental preservation with sustainable development. Several environmental protection instruments have been introduced, including planning, norms, elaboration of the legal framework, economic instruments, impact analysis, etc. These have not proven sufficient, however: the environment is under increasingly complex pressure and the costs of environmental damage has risen. The lack of funds to preserve the environment is the main problem hindering the good management of environmental quality.

Public expenditure on the environment is 4.3 billions dirhams – US\$ 0.6 billion – or 0.007% of GDP. In contrast, the cost of environmental degradation has been estimated at 3.7% of GDP¹⁶ and the cost of remediation at 1.8% of GDP.

To coordinate efforts to preserve the environment, Morocco has commissioned a report on EFR in association with Swiss consultancies Ecosys and Oberson. The report aims to explore existing possibilities for EFR to fulfil Morocco's environmental and economic objectives. It is important to understand the fiscal system of a country by studying the appropriateness of various fiscal policy options. One of the priorities of the report was to understand the present fiscal system in Morocco before proposing EFR, and to make recommendations for EFR in four fields of the environment: water, air, solid waste, and the littoral, soil and landscape.

Water

In Morocco, water resources are being degraded due to untreated industrial and domestic effluents. Water is increasingly scarce due to fluctuating rainfall and irrational water management. In response, the Water Law was adopted in 1995, which aims to rationalise the use of water, generalise access to water resources, and reduce disparities between cities and villages with a view to ensuring access to water throughout the country. Water pollution charges are levied on all kinds of dumping, discharge, and the direct or indirect disposal of effluents into surface and groundwater. Revenues must be used to finance measures to reduce water pollution.

The diversity of issues in the water sector presents opportunities for a number of different fiscal instruments.

A water pollution study recommended the continuation of water effluent charges, the introduction of higher tariffs on water consumption and scaled tariffs according to the type of water use, including a surcharge on water effluents. The long-term aim of these measures is to cover the complete price of water by reforming the tariff structure.

Air

In Morocco, localised air pollution is a major problem in large metropolitan areas and industrialized zones. In 2003, an air law was adopted to prevent, eliminate and reduce the release of pollutants by fixed or mobile sources. The report recommends reinforcing voluntary agreements with industry, reforming the transport tax on road travel, and introducing a landing tax for aircraft and fuel taxes to cover the cost of resulting environmental damage.

Solid waste

Problems related to solid waste are beginning to take on a national dimension, and decision-makers in this sector need to find emergency solutions. In 2006, a Law on Solid Waste and its Elimination filled the legal gap in the field of domestic, industrial and medical hazardous waste, and obliged local governments to introduce a waste charge system. These charges would be levied on each household depending on the quantity of waste generated, along with a recycling tax on batteries, a plastic bag tax, and a tax on stored industrial waste.

Littoral, soils and landscape

The littoral in Morocco is permanently under attack and exploited, and no specific law is in place to protect it. The report recommended that taxes on quarries be modified, that extractors have to apply for authorisation prior to quarrying, and that an environmental tax should be levied on tourists and paid into the National Environment Fund to finance projects linked to soil and landscape preservation.

Summary

EFR represents an opportunity for Morocco to induce a change in the behaviour of economic agents; to generate income and raise revenues for environmental investments; to improve the urban and suburban environment; to protect natural environments; to preserve air quality and promote renewable energies; to reduce the volume of solid waste and the cost of solid waste management; and to protect water resources against all forms of pollution.



Mohammed Maktit, *Chef de Service de la Prospective, Ministry for Territorial Planning, Water and Environment (MATEE), Morocco*

¹⁶ World Bank 2003.

Workshop 1: Governance for EFR in Developing Emerging and Transition Economies

Application of Environmental Fiscal Reforms and Other Market-Based Instruments for Environmental Management in Uganda: Progress, Challenges and Future Prospects

Alice Ruhweza, National Environment Management Authority (NEMA), Uganda, East and Southern Africa Katoomba Group

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. Well designed EFR results in tangible environmental improvement and generates revenues that can be used to reduce poverty, while EFR is more efficient and entails lower enforcement costs than regulation.

An enabling legal and policy framework for the implementation of EFR is already in place in Uganda. The 1995 National Environment Act permits NEMA, in consultation with the Ministry of Finance, Planning and Economic Development, to recommend EFR measures. Other legislation provides for the polluter-pays and beneficiary-pays principles.

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, of which approximately one fifth of was paid into the general budget.

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. The impact of this legislation remains to be seen.

Uganda also has an environmental levy on imported vehicles which targets motor vehicles over eight years old; its effectiveness and regressive impact merit further research. 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. There has been some progress in this area, especially in relation to afforestation on private land, reforestation of degraded land, methane capture, carbon cogeneration and compensation for environmental services, e.g. biodiversity offsets.

Water charging is also in place (permit system) and penalty charges are payable if effluent standards are not met, although more work is needed in this area. The law also provides for performance bonds and deposit refund systems, which are mostly used in the mining sector, but not to a sufficient extent. Corporate biodiversity conservation is also an issue, including biodiversity friendly products, eco-labelling measures, certification, e.g. certified organic / biodiversity friendly / carbon neutral / fair trade products. There is a great deal more potential in this field and the market is still being developed.

Property owners are encouraged to exercise their rights, while their duties are also enforced, creating an incentive to invest in natural resource management or maintain environmental quality, e.g. land titles/certificates in forest reserves and wetlands.

The benefits for poverty reduction are many. Central government has a new source of foreign exchange earnings; local government can raise revenues for poverty reduction independently; enforcement costs are lower; employment has increased; and new sources of income have arisen in the shape of ecosystem services.

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. Public mistrust, caused by fears of corruption (do foreign exchange earnings benefit Uganda?), was also identified as a challenge to the policy process.

One possible way to meet this challenge is to earmark revenues for poverty reduction and sustainable development. However, as the Ugandan Ministry of Finance is opposed to earmarking, public trust cannot be won in this way.

Prospects for future EFR in Uganda include carbon storage, ecotourism, biodiversity option values (pharmaceuticals industry), non-timber forest products, and water quality charges.

Recommendations for the future include the further development of fiscal instruments, including cap and trade and pollution taxes; packaging ecosystem services into saleable products and finding buyers (The Katoomba Group); research on the wider impacts of applying economic instruments on FDI, equity, competitiveness, and other variables; development of a polluter database to guide the development of appropriate fiscal measures and build consensus; coordination across sectors, especially Finance, Planning and Local Government to ensure that the revenue from such taxes is earmarked and allocated in a way that helps to achieve other development goals (such as the MDGs) while furthering environmental goals; increased involvement of the private sector; investment in environmental shares/bonds; and Green Business/Certification.

Regulatory measures should be complemented by social and economic incentives and/or disincentives, including pricing that will encourage individual organisations to invest in sustainable environment management. The tax structure should provide incentives for socially desirable activities and disincentives for actions which compromise social welfare. The enforcement responsibilities of many government agencies should be reduced to a critical set of regulations which can be effectively enforced.

EFR has a great deal of potential to reverse environmental degradation in Uganda. To realise this potential, NEMA, MFPED and other ministries, local governments and other stakeholders need to work as a team.



Alice Ruhweza, National Environment Management Authority (NEMA), Uganda, East and Southern Africa Katoomba Group

Building Coalitions for Change to Implement Pro-Poor Environmental Fiscal Reforms (EFR) in Pakistan

Alamgir Khan Gandapur, *Biodiversity and Environmental Economics, IUCN, Pakistan*

Environmental issues in Pakistan can be divided into three broad areas. First, the over-exploitation of natural resources – forests, biodiversity, water, sand, stones and minerals. Second, the limited coverage and low quality of social services, including the provision of safe drinking water and disposal of municipal and hospital waste. Third, socially undesirable levels of air, water and soil pollution. The IUCN, together with other partners, is currently running a project to examine various options for EFR to tackle these problems.

The EFR project in Pakistan is funded by the SDC, the Swiss Agency for Development and Cooperation, to the tune of US\$ 890,000 and will run from May 2006 to April 2009. Research partner for the project is PIDE, the Pakistan Institute of Development Economics, and the pilot district is Abbottabad. The project is divided into five components: action research and awareness raising; enabling the institutional, legal and policy framework for EFR at the district level; capacity building; piloting selected EFR options in collaboration with local partners; and dissemination of effective policies and lessons learnt to replicate EFR options and processes.

In essence, the object of the action research stage is to identify legal, institutional and political opportunities for adopting EFR and to consider ways of overcoming constraints to its adoption. This first stage sets out to identify key sectors for EFR and potential EFR options and to establish the extent to which the population is willing to pay for environmental services in these key sectors, as well as to identify any potential funding gaps and consider possible measures to bridge them.

The impacts and benefits of implementing an improvement of environmental services are also a focus of action research, including the analysis of political and administrative issues. An estimate of the revenues generated by EFR measures is performed, and awareness raised of its predicted fiscal and environmental benefits, e.g. innovation, technological development, employment, environmental improvements, fiscal returns and poverty reduction.

Initial findings have revealed a number of policy gaps. Extractors of natural resources – forests, biodiversity, water, etc. – are not participating in the social cost of resource extraction. Public service users – drinking water and waste disposal – are paying little or nothing for these services. As a result, there is little evidence that existing environmental fiscal measures are doing a great deal to encourage innovation and technological development.

In the short term, solutions suggested by the action research programme include the promotion of forestry and nature conservation through eco-tourism fees and CDM; user fees on solid waste disposal and drinking water; and environmental taxes on sand, stone and mineral extraction. In the medium term, budgetary support processes for pro-poor and pro-environment programmes should be implemented. In the long term, fiscal decentralization and greater transfers should be implemented.

Eco-tourism was identified as a key sector for EFR as a means of conserving natural resources. Innovations in the sector include integrated land use planning and landscape management; planned building construction; compliance with architectural and safety standards in construction; biodiversity conservation; soil and water conservation; energy conservation; waste management; hospitality management; and marketing management and public relations through events and festivals. Technological advances include the promotion and use of GIS/RS and GPS; the use of appropriate technology for landscape management; waste management technologies; and hygiene and preventive health care technologies. The research predicted that employment would be generated in the marketing and promotion of ecotourism; hotels and restaurants; guided tours; the transport sector; the sale of ecotourism equipment; and training and capacity building. For examples in the field of waste management and mining, please see the attached CD-ROM.



Alamgir Khan Gandapur, *Biodiversity and Environmental Economics, IUCN, Pakistan*

Workshop 2: Social and Environmental Impacts of EFR in Developing, Emerging and Transition Economies

Chair: Paul Steele, *Environment Advisor, Asia & Pacific Regional Centre Colombo, Sri Lanka UNDP*

Environmental Fiscal Reforms in China: Progress and Prospects

PhD Wu Jian, *Associate Professor School of Environment and Natural Resources, Renmin University of 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. 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 utilised to create such incentives.

The Progress of EFR in China

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.

Comparatively speaking, there has long been interest in ETR and it is attracting increasing attention. However, it does not yet play a significant environmental role, although the implementation of a new ETR is currently undergoing consideration. This would incorporate a reform of the natural resource tax and the introduction of fuel taxes, although many stakeholders both within and outside the government are opposed to such measures and have not yet been involved in the current decision-making process. A pollution levy that would raise RMB 14.4 billion – approximately US \$2 billion – and doubling SO₂ charges from RMB 0.6/kg to RMB 1.2 /kg (8 to 16 US cents) are currently under discussion. In addition, urban waste water discharge fees are widely levied.

Environmental and Economic Impacts

At the end of 2004 the total desulphurization capacity of China's power plants was 30 million kilowatts, incentivised by the preferential desulphurized electricity price. Desulphurization currently costs RMB 2.475 billion (US\$ 344 million) annually, but the benefits are many. As a result, SO₂ emissions are dropping by 1.8 million tons per year – already 70% of the target set out in the 11th Five Year Plan. These reductions have cut the cost of environmental damage by RMB 36 billion (US\$ 5 billion). Savings have also been made for the power industry due to lower pollution levy payments, which have been reduced by RMB 1.08 billion (US\$ 150 million), the current rate being RMB 0.6 per kg of SO₂. In addition, desulphurization facilities worth RMB 8-13.4 billion (US\$ 1-1.9 billion) have been built at a cost of RMB 300-500 per kW, or US\$ 42-70 per kW.

In other sectors, environmental investments have been less successful. Investments in sewage treatment plant construction have been concentrated in economically developed areas – the lower reaches of rivers and in big cities – while in relatively poor medium to upstream locations, investment lags far behind. This reflects a general pattern of capital flows from east to west. Environmental measures in China are not targeted at redressing this balance, but rather at reducing environmental damage where it occurs. Although well-designed EFR measures are required to improve this situation, taking commercial reasoning into consideration, at present the concept of environmental taxation has not been mainstreamed and institutional obstacles – in the form of the National Development Reform Commission (NDRC) and the monopoly of the sector – remain in place and must be addressed if real progress is to be made.

Prospects for EFR in China

The government in China is coming to realise the potential of fiscal revenues raised through EFR, and heightened economic development has resulted in a boom in EFR revenue volumes. Once the economy of a particular country has been kick-started and a cycle of revenue generation established, more funds can be made available for implementing a range of EFR measures to create incentives for good environmental behaviour.

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. The government should make more efforts to fulfil its financial responsibilities: both in terms of fiscal accounting and keeping fiscal sources stable, and in terms of establishing whether central or local government is responsible for particular issues, and building capacity at the appropriate level to ensure this responsibility can be met.

This should hopefully pave the way for the more comprehensive use of EFR to achieve environmental goals, and the introduction of ETR measures hand-in-hand with new pricing reforms.



PhD Wu Jian, *Associate Professor School of Environment and Natural Resources, Renmin University of China*

Workshop 2: Social and Environmental Impacts of EFR
in Developing, Emerging and Transition Economies

Environmental Fiscal Reforms in India: Progress and Prospects

Professor Amitabh Kundu, *Professor of Economics, Jawaharlal Nehru University, New Delhi, India*

Strategies in India employed in relation to EFR and poverty are very different to those used in OECD countries and China. The significance of India lies in the critical environmental challenge it faces: two of the six most polluted areas in the world are in India and every fourth poor person on earth is Indian. In spite of this, the economy is currently growing by 9% and in forty years will have become the world's third largest economy.

India is a latecomer to EFR, and as in many other developing economies, environmental issues are considered to be subject to regulation and administration rather than to market-based instruments (MBIs). For example, solar power is subsidised and energy is priced according to source, while pollution abatement measures on the part of industry are subsidised. A huge problem is posed by massive fertiliser subsidies, which pollute groundwater resources and are currently being reduced as a result of EFR measures. An important element of EFR in India is not intervention in the commodity market, but rather measures to address and legislate the population's access to basic factors of production.

Forestry

Since independence in 1947, deforestation has been a significant problem in India, displacing 40 million people and destroying and degrading large forest areas. This has deprived many of their livelihoods and homes, increasing poverty and exacerbating social problems as a result.

This situation is aggravated by poor and piecemeal forest management. The Indian supreme court has been responsible for managing the forestry sector since the 1990s and there have been 200 separate pieces of legislation and court judgements on forestry since 1995. Issues in this sector are often complex and difficult to understand.

The issue of conflicting rights, for example, and the court's ways of resolving these, can spark off major disagreements and conflicts of interest and potentially result in more rather than less deforestation. When forest rights were awarded to tribes in India in 2006, a move welcomed by much of the pro-poor lobby, protests were heard from many conflicting interest groups. For example, environmentalists protested that deforestation would increase as the tribes did not necessarily want to maintain forested land.

A thorough and detailed analysis of the political economy of the forestry sector is required before the best and most environmentally sound course of action can be identified. Perceptions of forests and their uses differ significantly between sectors of society. While governments perceive forests as an economic (and ecological) asset, tribal populations perceive them as a means of life support. In this context, it should be noted that forests are an underused asset in India – they generated 2% of the national income in 1980 and generate less than 1% today – and that sustainable forest management requires considerable improvement before an increased contribution to the Indian economy can be provided sustainably by forest resources. Furthermore, the development of EFR legislation to improve the productivity of forest resources and heighten the sustainability of forestry management also requires clear property rights in relation to any potential financial gains.

Groundwater

Groundwater is another extreme case that shows how formal, informal and illegal markets can emerge in parallel. The interventions that can be used to tackle such problems merit serious consideration. Article 21 of the Indian Constitution can be interpreted as stating that anyone with a plot of land has the right to all the groundwater beneath it, although a fairer system of property rights would consider that this water belongs to the community as a whole. Poor management and the absence of a well designed system of property rights for groundwater mean that public agencies are unable to function and deliver water supplies effectively to the whole of the population, and that there is no affordable market for water.

Because water is already very expensive for many poor sections of the population, it would be politically very difficult to introduce water price increases. However, it is the middle and upper classes that resist water price increases most vocally, claiming that they would be regressive and restrict access to a 'necessity' and thus not in the interest of the poor – but in any case these classes are fringe users of water markets, as water prices are sufficiently high to significantly limit their access. The reality is that the middle and upper classes, which only account for about 15% of the population, consume 15 times more water than the poor. Low water prices hence subsidise their water consumption far more than that of the poor. An increase in water prices would incentivise the reduction of consumption rates – per capita water consumption in Delhi is twice that in London – and raise revenues to subsidise the provision of water to those least able to afford it.

Conclusions

What is urgently needed is a fundamental reform of price and supply structures in the water sector, particularly because there is considerable evidence that the private water market is a growing and extremely profitable sector. EFR measures in this field are urgently required and must be enforced. The current target of halving poverty in India from 38 to 19% will not be fulfilled unless provision of drinking water is prioritised alongside nutrition-based poverty issues. In turn, this reflects a more general problem: how to measure poverty in statistical terms, and to extend the scope of a definition of poverty currently based on consumption and expenditure.

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Potential for Revenue Generation through Environmental Fiscal Reforms in Tanzania and Kenya?

Dr. Moses Ikiara, *Kenya Institute for Public Policy Research and Analysis (KIPPRA)*

Adolf Mkenda, *University of Dar Es Salaam*

Daniel Slunge and Prof. Thomas Sterner, *University of Gothenburg*

Prospects for EFR: Revenue Raising Potential in Kenya

EFR is not major source of revenue in Kenya today, and raising money from the environment is a challenge that requires considerable preparation before it can be met. EFIs are used in a limited way, largely in the form of expenditure, i.e. subsidies. While there have been some positive developments – for example, the 120% increase in excise duty on plastic bags introduced in the 2007/2008 budget – EFR measures are generally not stringent enough to incentivise change. For example, mining and forestry fees and royalties account for only 0.16% of total tax revenue. User fees levied in Nairobi are too low to change consumption patterns. Higher revenues are collected from petroleum taxes, which bring in about 5 to 6% of total revenue. In total, revenue from EFR taxes accounts for around 6% of total tax revenue and 1.7% of GDP.

The potential for raising revenues through EFR is high, not least because the economy is heavily dependent on wood fuel, which supplies 70% of energy, and on ecosystem services. The government is under pressure to exploit this potential from stakeholders, donors, civil society and consumers, and has obligations under the MEA¹⁷ and its hosting of UNEP in Nairobi. The country's exclusive economic zone (EEZ) and the strong demand for Nile Perch in the export market are also potential areas for revenue raising. What is more, there is a facilitative legal structure in Kenya and its persistently high budget deficits – despite high VAT, corporate and income tax rates – are an incentive for the Kenyan government to consider EFR purely for revenue raising reasons.

To realise its potential, a number of strategies should be implemented, including developing a proactive EFR policy; boosting political will within the country; strengthening the Kenyan administrative and revenue collection capacity and the country's capacity to design effective EFR instruments; and tackling governance issues, including corruption, more effectively.

Prospects for EFR: Revenue Raising Potential in Tanzania

In Tanzania, various policy and legal documents specifically encourage and permit the use of economic policy instruments for environmental management. Some economic policy instruments are already in place. Like Kenya, Tanzania has a 120% excise duty on plastic shopping bags. A scaled import duty on cars is also levied, depending on engine size and vehicle age (for second hand cars).

Isolated studies have revealed that there is considerable potential to raise revenue through a new/adjusted mix of policy instruments and through improved revenue collection in specific sectors. However, few systematic studies have been conducted and there is certainly room for further research and analysis in this area. A framework for the implementation of further EFR measures is already in place in the shape of policies and legal documents that contain a number of provisions for EFR. Some environmental taxes are already in place which could be revised. The potential of EFR to raise revenue by adjusting the policy mix and/or by means of improved revenue collection is a further incentive to pursue reform.

Poor revenue collection is a significant problem. In the forestry sector, US\$ 58 million are lost annually due to the under-collection of natural forest product royalties in the districts, and a recent study revealed that China imported ten times more timber products from Tanzania than appeared on the country's export records!¹⁸ Similarly, in fisheries, revenue collection is poor, with only approximately 30% accruing to local government being collected.¹⁹

In 2004, the Tanzanian government conducted a Public Environmental Expenditure Review, which proved critical in highlighting the following: the potential of environmental resources to contribute to the public purse; significant underpricing and extremely poor revenue collection rates in fisheries and wildlife protection schemes; and relatively low levels of investment and recurrent expenditure on environmental assets and improved revenue capture.

This proved to be a critical turning point in the country's environmental policy. The Review highlighted the potential of EFR for raising significant amounts of revenue and recognised the opportunity to integrate environmental policy in growth and poverty reduction strategies. Statistical evidence empowered those pushing for environmental integration within the policy process – although data was poor and crucial sectors worth 7% of total so-called government revenue were not taken into consideration, including revenues from the mining sector and from fuel taxation.

Potential for Fuel Taxation in Kenya and Tanzania?

Fuel taxation can raise significant revenue, and there is potential to raise further revenues from fuel in both Tanzania and Kenya, at least inasmuch as fuel taxation levels are far below the average in OECD countries, where 90% of revenues from environmentally related taxes stem from fuel taxation. On the other hand, in both countries fuel prices are already higher than in e.g. South Africa, and gasoline consumption per capita is very low. Nevertheless, if taxes remain at current levels, fuel demand will increase in line with increased income (GDP). The introduction of fuel taxation could both yield considerable government revenue and curb growth in fuel consumption. The introduction of a fuel tax should take effects on poverty and on the environment into account.

Conclusions

The role of EFR in raising revenue can be used as an entry point to discussions of EFR, and its importance should not be underestimated. More systematic research is required to provide governments with more and better data. Theoretical considerations should be accompanied by empirical (and comparative) research. The presentation (see PowerPoint presentation on attached CD-ROM) reveals that some of the implications of contraction and convergence merit further analysis and discussion, because in Kenya and Tanzania – and other countries with very low CO₂ emissions – they imply dramatic increases in carbon emissions.



Dr. Moses Ikiara,
Kenya Institute for Public Policy Research and Analysis (KIPPRA)

¹⁷ The UNEP Manual on Compliance with and Enforcement of Multilateral Environment Agreements.

¹⁸ See Forestry, Governance and National Development: Lessons Learned from a Logging Boom in Southern Tanzania (Milledge et al, 2007) for details.

¹⁹ Fiscal arrangements in the Tanzanian fisheries sector (FAO, 2004).

Workshop 2: Social and Environmental Impacts of EFR
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South Africa's Path towards an Environmental Fiscal Reform Agenda

Dr. Cecil Morden and Sharlin Hemraj, *National Treasury South Africa*

Between 2004 and 2006 the South African economy experienced 5% annual growth, yet it is characterised by huge inequalities. Its current development path is unsustainable, relying on high levels of natural resource consumption and accelerated environmental degradation.

The draft National Framework for Sustainable Development (NFSD)²⁰ has identified the need to mainstream environmental considerations into economic and social policy. It has also identified a number of worrying trends: rising electricity and water consumption, increasing CO₂ emissions, rising demand for oil, poor growth rates in the renewable energy sector, an increase municipal solid waste, a lack of alternatives to landfill, and no viable recycling systems. In response, the South African government has introduced a suite of regulatory and institutional reforms to encourage sustainable development, regulate resource use and support implementation. However, policy gaps and tensions remain that require attention in the interest of sustaining ecosystems and natural resources that are needed to achieve accelerated and shared growth.

Policy Paper on EFR

To address the above issues, the National Treasury commissioned a study on environmental taxes. The aim was to provide a framework for orientation, as well as identify criteria for the development and evaluation of environment related tax policy proposals, thus laying the foundation for a sound and coherent fiscal policy framework.²¹ Considerations include environmental effectiveness; competitiveness concerns for industry; distributional concerns; alignment of policy interventions; tax revenues; public support for interventions; and legislative, technical and administrative issues.

Existing Environment-Related Taxes and Charges

Taxes are levied on transport fuels and VAT (14%) is levied on vehicle and electricity sales. Municipalities can levy taxes on road users and implement lifeline tariffs for domestic customers, providing free or reduced-price electricity to low-income households. At the national level, the only (very small) levy imposed on electricity is at the generation stage, the revenues of which are earmarked to co-fund the National Energy Regulator of South Africa (NERSA).

A water pricing strategy is also in place and the sale of water is subject to VAT at the standard rate. The environmental damage caused by mining must be covered by the responsible mining company. The levy on plastic shopping bags (implemented in June 2004) is to date the only waste-related product tax in South Africa – although at its current level, the levy does not really incentivise changes in consumer behaviour. Bearing in mind landfill problems and high rates of solid waste per capita, more legislation is urgently required in this sector. Charges for waste disposal are also comparatively low.



Dr. Cecil Morden,
National Treasury South Africa

Potential for Environment Related Taxes in South Africa and Legislative Reform

- *Fuel input tax and / or an electricity consumption tax*
South Africa derives most of its electricity and about 30% of its liquid fuel supplies from coal. A fuel input tax on coal used for power generation or an electricity consumption tax has considerable potential and should be considered.
- *Waste water discharge charge system*
A proposed waste water discharge charge system seeks to recover the costs associated with various water treatment and water quality management programmes and provide incentives for water users who return water to the source to reduce their pollution concentrations. A potential obstacle is the need to keep the system manageable, particularly with respect to accurate monitoring of effluent loads and granting sufficient independence to regulatory bodies.
- *The Air Quality Act 39 of 2004*
This Act seeks to address air pollution holistically and covers a broad range of atmospheric pollutants, the generation and control of dust and offensive odours, and indoor air pollutants. The Act allows for the establishment of ETS and incentives to encourage behavioural change, but it is unclear whether the Act in its current form makes provisions for MBIs such as taxes and charges.
- *Draft Waste Bill*
The Bill introduces waste management from inception to final disposal and attempts to apply a range of new waste management concepts and terminology, such as cleaner production, life cycle assessment, decommissioning and remediation. The use of MBIs as part of a package of financial incentives and / or disincentives should be further explored.
- *Tax legislation*
Amendments to the Income Tax Act have been proposed to ensure that corporate expenditure on environmental protection is treated similarly to other business expenses. Consideration has also been given to amend provisions of the municipal property rates regime to encourage private land owners to preserve the environment and promote biodiversity conservation.

The Future

It is important that the role of MBIs be considered in the context of existing regulatory provisions and institutional capacities. Capacity constraints pose potential problems and MBIs can only be effective if they are adequately monitored and enforced. Appropriate regulations have a huge role to play in enhancing their effectiveness.

The draft EFR policy paper, the development of appropriate environmental regulations, and the establishment of appropriate enforcement and monitoring capacity could potentially contribute to the effective implementation of EFR to achieve environmental objectives.

²⁰ Department of Environmental Affairs and Tourism (DEAT), *A National Framework for Sustainable Development in South Africa*, 30 June 2007, p. 16.

²¹ The report can be downloaded from the Treasury web site at: <http://www.treasury.gov.za/>.

Workshop 3: Debate on the Future of EFR in Developing, Emerging and Transition Economies

Chair: Harald Lossack

Project Coordinator, Rioplus: Environmental Policy and Promotion of Strategies for Sustainable Development

Facilitated Fishbowl Discussion

Environmental Perspectives on EFR

Prof. Thomas Sterner, University of Gothenburg, Sweden

Context and EFR

Defining EFR instruments according to their applicability in specific cases is extremely difficult, if not impossible. Moreover, such delineation is too inflexible and cannot account for the specificities of individual economies – which must be taken into account when considering the implementation of EFR. Even broader categories – e.g. economic, legal, regulation instruments – are not particularly useful. While it is possible to claim that economic instruments are about money in a narrower sense, an instrument built solidly on economic theory may include regulatory aspects or indeed may be a regulatory instrument, as economic theory may well dictate that regulation is the most efficient option.

When developing environmental policy, it is necessary to analyse the problems facing the policy maker and consider which instrument would be best in each particular case. While criteria include efficiency and political feasibility, in practical terms the distribution of costs often carries more political weight than efficiency, and political feasibility considerations may often result in an instrument that is the exact opposite of efficient. In many cases, for an instrument to be politically feasible it should not change the status quo or have too great an effect on the wealthier and more powerful strata of society.

If efficiency is to be taken into account when choosing a policy instrument, the degree to which abatement costs are variable can be a deciding factor. If abatement costs are roughly the same across the board, a regulatory instrument can be as efficient as a market-based instrument. However, if abatement costs do differ, then the potential gains of implementing MBIs are huge.

Case studies

If a tax is applied to reduce sulphur content in oil or to phase out lead in petrol, both pollutants will probably be eliminated relatively quickly and the tax base eroded. This is because implementing change is relatively easy in both cases, as alternative technologies already exist. Indeed, to bring about the desired result it may be sufficient to threaten the implementation of MBIs.

On the other hand, the problem of climate change is not so easily solved. The size of rent is extremely large and the potential value handed out in carbon trading permits enormous. It is reasonable to presume that it will take between 50 and 100 years to solve the problem. Potential revenues are huge. In such a case it does not make sense not to employ MBIs, thus generating high rents and collecting revenues at low administrative cost.

Many cases are not so clear-cut, however. Fisheries are a clear case of market and policy failure. All over the world, fisheries have an extremely powerful lobby and receive huge subsidies. Almost all countries have fisheries policies and almost all of them are the opposite of what they should be. To encourage sustainable fisheries practices, the industry should be paying a large tax, rather than being subsidised to overfish. However, it is politically impossible to make a dramatic change in this sector, and auctioning fisheries quota rights to fishermen is simply not politically feasible. For this reason it remains more realistic to give away fishing rights and quotas.

On the other hand, gasoline taxes are a good example of a highly effective, non-regressive tax that is easy to implement at low administrative cost. High fuel taxation in Europe, for example, has done more to reduce or at least stabilise emissions than anything undertaken since Kyoto. Claims that fuel taxes are inflationary are incorrect. Due to the potential of fuel taxes to reduce emissions, extending their reach to encompass the USA, Australia, New Zealand and the oil-producing countries should be regarded as an absolute priority. In Europe fuel taxes need to be raised continuously to counteract the effects of economic growth on fuel consumption – at growth rates of 3% per annum, gasoline prices should be increased by 4-5%. While such measures may seem politically impossible, experience has shown that even seemingly impossible measures are sometimes implemented.

Financial Perspectives on EFR

Dr. Matthias Witt, Senior Economist, Public Finance, Administrative Reform and Decentralisation, Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH, Germany

As the workshop has shown, there is no tax on environmentally damaging practices, e.g. on fuel consumption and resource use, in most developing, emerging and transition economies. Similarly, VAT and income tax are not environmentally sensitive, and the institutions necessary to implement an effective taxation system are lacking. Within this context EFR should be seen as the environment aspect of a general tax reform. A good tax system can help enforce good environmental policy. Moreover, a possible third dividend of EFR, alongside improved environmental quality and poverty reduction, is enhanced political accountability.

Often governments fail to profit from even the easy pickings of EFR, such as the implementation of fuel taxation in oil-rich countries. In Iran, for example, in both environmental and fiscal terms there is an extremely strong case for the imposition of a tax on fuels. There are 7 million cars in Tehran alone, and fuel prices are extremely low at US\$ 0.11 per litre because fuel is heavily subsidised and sold at approximately one fifth of its actual cost. The taxation of kerosene as a fuel in Kenya and elsewhere poses a similar political challenge as it can be regarded as regressive (see box p.11). There are many reasons why legislation is not implemented: lack of capacity or awareness of the potential of EFR; lack of political will; concerns of political feasibility; fears of impairing economic growth; and lack of communication in inter-governmental relations, to name but a few.

The importance of intergovernmental relations should not be underestimated. The level of government we wish to use to implement a particular EFR measure merits careful consideration, and instrument design should take local and central government into account. Demand elasticity and the availability of substitutes for taxed products should also be considered carefully during the design process. Consideration must also be given to property rights, particularly in oil-rich countries – i.e. to whom does underground oil belong – central or local government, or the local community? These are often extremely complex and country-specific.

The problem of intergovernmental relations and property rights has been dealt with successfully in Cameroon. Here, the

Ministries of Forestry and Finance have cooperated successfully to implement and enforce legislation governing taxation and subsidies in the forestry sector. Taxation on extraction is used to fund subsidies for plantations, thus creating incentives to invest in timber and protect forests, rather than fell them, to generate revenue.

As a result of these and many more limitations to the implementation of EFR in developing countries, it is becoming increasingly necessary to look at the opportunities that EFR revenues can provide. In addition, consideration should be given to the potential lack of institutional capacity to enforce and collect taxes – often, administrative systems to facilitate doing so are not in place. Thus tax evasion is frequent and extremely widespread. In many cases, a detailed analysis of existing taxes and of a country's capacity to collect them should take priority over designing new EFR instruments. Increasing knowledge of tax systems in their entirety is required to understand their environmental effects and identify ways of improving them. Transparency is fundamental to effective EFR, and its importance should not be underestimated.

Although demand for EFR is increasing, its implementation still faces widespread opposition. It is important that we link international processes reflecting increasing demand for EFR with governments and environmental groups within specific countries, to support their internal efforts to promote EFR. The Extractive Industries Transparency Initiative, for example, could be used to increase demand for more effective and efficient tax administration, thus combining environmental and governance aspects. Similarly, the G8 Action Plan for Africa includes plans for tax reform and has room for a broad range of EFR measures. Within this and other international processes between the fiscal and the environmental, we need to identify and strengthen alliances in favour of EFR.

From the development point of view, bearing in mind the concentration of donor development efforts on Africa and the G8 Action Plan, it might be worth considering prioritising support for EFR measures in Africa, particularly in the light of their potential for poverty reduction. Conversely, emerging economies are not located in Africa but elsewhere, and from a purely environmental point of view it is on these countries that we should focus our efforts. Whichever option we choose to prioritise, we should remember that at the end of the day, the global environmental problems we currently face require a global solution.

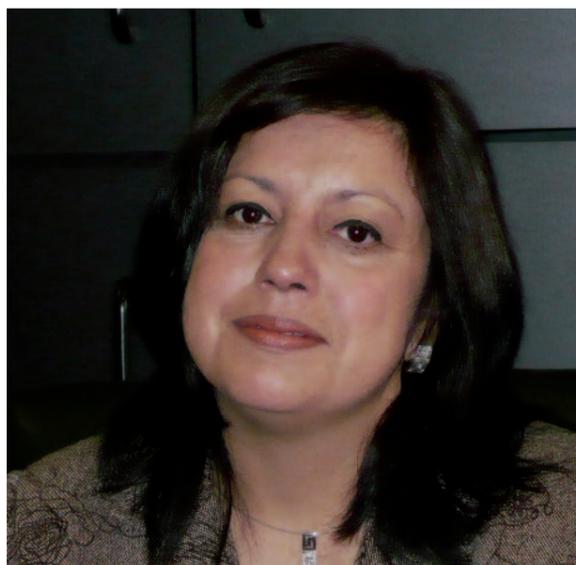
Workshop 3: Debate on the Future of EFR in Developing, Emerging and Transition Economies

Lessons Learned by a Political Practitioner within the Conflicting Areas of Environmental Objectives and the Reality of Public Financial Management

Maria Cristina Chimeno, *Ministry of Economy and Production, Secretariat of Trade, Industry and Small and Medium Enterprises, Brazil*

The Argentinean state's attention in terms of environmental policy is concentrated on industrial restructuring and the use of clean technologies. The structure of the Argentinean economy, which is heavily oriented towards agricultural products for processing and export, also dictates that restructuring efforts concentrate on the agricultural sector. Biofuel production, most of it earmarked for export, represents an increasingly important sector within the economy and its further growth is being fostered by the government. Clearly, environmental considerations must also be addressed in this regard to ensure that the industry can continue to grow without causing excessive environmental damage.

As with the vast majority of Latin American countries, Argentina has little experience of applying EFR instruments in development. Environment politicians have focussed on regulation. Two main kinds of instrument have been applied at provincial and national level: corrective instruments to enforce the polluter-pays principle, and preventive measures to control and mitigate pollution and effluent discharges. Charges are based on a number of factors including the risk posed by a particular type of pollution and the damage it does; the pollutant load and concentration; and the daily discharge volume. Other measures directly promoting clean technologies in small and medium enterprises (SMEs) have also been implemented, yet because they have only been running for six months it is difficult to evaluate whether they have thus far been successful. Within this context, preventive approaches, substitution of materials, technological changes and innovations in product design and efficiency have been encouraged. Argentina is well aware of the need to take care of the environment and be attentive to the necessities of sustainable development. To facilitate these processes it is considering the experiences made in other countries.



Maria Cristina Chimeno, *Ministry of Economy and Production, Secretariat of Trade, Industry and Small and Medium Enterprises, Brazil*



Dr. Matthias Witt, *Senior Economist, GTZ GmbH* (left) and **Paul Steele**, *Environment Advisor, Sri Lanka UNDP*

Interactive Discussion

The issues raised and parallels drawn between experiences with EFR in developing, emerging and transition economies during the discussion are highlighted below.

Communication problems between ministries

The difficulties associated with bringing together ministries of finance, environment, forestry, fisheries, etc. to embark upon the process of implementing EFR, and the time required to discuss and design EFR measures, were identified as a common problem. Specifically, communication problems between ministries and their different approaches were highlighted as particularly problematic. In this context, the importance of concentrating on the political economy of EFR and underlying political and governmental structures was emphasised.

A further problem highlighted during the session seems to be that ministries of finance and the environment have often never heard of EFR, and that the primary focus of finance ministries tends to be on fiscal reforms linked with objectives outside the environment field. Moreover, once finance ministries do start to discuss EFR, they tend to approach it in purely fiscal terms as a means of raising revenue. Thus, while environmental objectives should not be lost sight of, it is fundamental that EFR proposals raise sufficient revenue to interest finance ministries – which is unlikely if EFR represents a very small percentage of the budget. If potential revenues are sufficiently large, both ministries will come under pressure to find solutions and manage their conflicting mandates and so, political demand for EFR will increase.

Regressivity and the problem of powerful interest groups

The problem of powerful interest groups was also addressed during the discussion. It is important that the purpose and impacts of EFR be clearly defined so it cannot be applied to serve the interest of more powerful and vocal groups within society. For example, powerful interest groups often argue in favour of basic goods, such as electricity and water supplies, being virtually free of charge, claiming higher charges would be regressive. However, this means that costs incurred are higher than the tariffs that can potentially be collected, which often results in poor services and barring access for the poorest in society. This is a further area that requires in-depth analysis and exploration of the political economy. Clearly, the best way of ensuring access to water and electricity for all is not to maintain artificially low prices for such services.

It would be far more advisable, it was suggested, to set variable tariffs on consumption, rendering a basic supply inexpensive while charging higher rates for higher consumption.

Concerns of regressivity emerged as a general stumbling block to implementing EFR. To overcome this, the potential for targeted subsidies for poverty reduction using revenue raised by an environmental tax should be emphasised to governments and decision makers alike. Whereas incentive aspects of EFR are particularly important within the context of EFR in OECD countries, in developing countries definitions of EFR should focus much more on the revenue dimension recycling revenues within sectors were also revealed as a potential means of placating EFR opponents. The key role to be played by civil society and NGOs in disseminating information on EFR and its purpose and potential should be given greater consideration.

The future

The workshop revealed a change in the dynamic of EFR, which in many developing, emerging and transition economies has recently been driven more by finance ministries rather than environment ministries. This has obvious advantages. Finance ministries are more powerful than environment ministries and economists are involved in the EFR policy process from an early stage. This allows EFR to move into the broader public finance arena. On the other hand, while the appeal of EFR for finance ministries undoubtedly lies in its consideration of the entire budget – raising one tax in conjunction with lowering others – there is a risk that their greater involvement, and the potential of EFR to become part of a more general tax reform, might be lost of environmental aspects.

One area where considerable progress can be made is developing approaches to deal with the lack of enforcement of EFR measures in many developing, emerging and transition economies. A great deal of effort at the design stage is not sufficient to ensure that measures are enforced on the ground. The improved enforcement of existing EFR measures should become a major priority for governments and donors alike.

Alexander Ross Paterson, *University of Cape Town, South Africa*

Observations based on GCET workshop Case Studies in Environmental Fiscal Reform and the Special Workshop

Workshop chair: Professor Monika Böhm, Philipps University Marburg, Germany

The Evaluation of the Effectiveness of Environmental Tax Expenditures in the Netherlands

Mark Arts, Ministry of Finance, Netherlands

Spanish Environmental Fiscal Reform

Dr. Maria Luisa Fernández de Soto Blass, School of Economics and Business Administration, Madrid, Spain

On the Road to a Sustainable Transport Sector in South Africa: The Role of MBIs

Alexander Ross Paterson, Faculty of Law, University of Cape Town, South Africa

Environmental Taxation on Fuel and Vehicles.

The case of Brazil

Jose Marcos Domingues, Professor of Law, Rio de Janeiro State University, Brazil



Alexander Ross Paterson, *University of Cape Town, South Africa*

Reflections and Key Lessons learnt

Set out below is a summary of recommendations and reflections gained during the above workshop. As large sections of the workshop (particularly those presentations on the Netherlands and Spain) were of limited relevance to the future of EFR in developing, emerging and transition economies, I have included some generic reflections gained whilst attending various special workshop sessions and participating in the fishbowl discussion.

- Although the ideal situation would be for all relevant environmental and fiscal authorities to cooperate with one another when designing and implementing EFR, the absence of effective cooperative governance in many developing, emerging and transition economies does not necessarily appear to undermine initial EFR initiatives.
- Sourcing a ‘champion’ government authority often appears to be a viable alternative. Key factors which should be considered when identifying the ‘champion authority’ include the following:
 - The authority should be relatively well resourced.
 - Its staff should be relatively well versed in the EFR dialogue.
 - The authority should have good links with other relevant government departments.
 - The authority, and its leadership, should hold political sway.
- The value of international support should not be underestimated – perhaps it would be prudent for funding agencies to target these ‘champion authorities’.
- Forms of support could include personnel exchanges, information exchange and capacity-building through workshops and conferences.
- The ‘champion authority’ must ensure that it draws other relevant authorities into the EFR initiative over time. This could take place through information disclosure, cross-consultation, capacity building, etc.
- A failure to integrate other relevant authorities into the EFR programme over time may lead to its ultimate demise, given that effective EFR is frequently dependent on an integrated effort at all levels and branches of government.

- The ‘champion’ authority need not be an environmental authority, as evidenced in the South African context, where EFR is currently driven by the fiscal authorities.
- When choosing initial EFR interventions, due consideration should be given to the following:
 - Avoid the trend to simply transplant what has worked in other countries.
 - EFR solutions have to be tailored to a country’s economic, social and environmental specificities and anomalies.
 - Start with the simple, easy options with immediate rather than delayed results.
 - Choose options with minimal competitiveness and distributional impacts.
 - Choose options with tangible visual results.
 - Build on the current rather than create the new, thereby reducing potential administrative costs.
 - Try to use existing policy and legal frameworks as this frequently facilitates speedy implementation.
- The above should facilitate both public and private buy-in to the notion of EFR and once this initial support has been garnered, EFR initiatives can be expanded to other more challenging and contentious sectors.
- The valuable role of NGOs in the process should not be underestimated. They fulfil a very important information-sharing and lobbying role and as evidenced in South Africa, have contributed significantly to the development and growth of EFR, particularly in the biodiversity sector.

Similarly, the importance of individuals and relationships should not be underestimated. Government is made up of individuals, and securing the buy-in of key individual policy-makers can frequently achieve expedient results.

PART II OBSERVER INPUTS

Professor Margaret Okorodudu-Fubara, *Obafemi Awolowo University, Nigeria*

Observations based on GCET workshop Global Vision: Global Market-Based Solutions to Climate Change and the Special Workshop

Workshop Chair: David Duff, University of Toronto

Option CC/G-77 and China - Inventing a south-south technofiscal policy to douse global warming

Prof. Margaret Okorodudu-Fubara, Faculty of Law, Obafemi Awolowo University, Ife-Ife, Nigeria

The Revival of the World Greenhouse Gas Tax

Prof. Philippe Thalmann, EPFL Swiss Federal Institution of Technology, Lausanne

Carbon Emission Rights - The Key to an Optimal Policy Approach?

Ken Piddington, Prof. Frank Scrimgeour, University of Waikato, New Zealand

Harmonised Universal Carbon Taxing

Prof. Aviel Verbruggen, University of Antwerp, Belgium

Key Observations

If developing, emerging and transition economies are to cut GHG emissions to mitigate climate change, this must take place without prejudicing the pursuit of economic growth, sustainable development and the achievement of the MDGs. Serious questions must be asked of EFR as a fiscal tool to provide the perfect means to bring such economies from where they are now to where they should be by 2015. There are fundamental issues underpinning the political economy of EFR which, if not tackled, will undermine its implementation – in spite of the fact that the same fiscal policies have achieved outstanding results in the advanced economies.

Is a global GHG tax the solution?

While ETR is a sound idea in principle, whether it can directly address the environmental problems that threaten the livelihoods and health of the poor in developing countries, and contribute to the achievement of the MDGs, is questionable. Developing countries face very serious environmental, social and political challenges: negative 'internalities' which must be confronted and reversed

to create the right conditions for EFR to thrive and achieve its goals. While developing, emerging and transition economies are no strangers to fiscal policies or taxation, they have not fared particularly well with them. The macroeconomic environment in most developing countries is extremely unpredictable, with an attendant inefficient utilisation of available/scarcely resources. For example, there is a pervasive loss of revenue arising from inefficient remittance systems for tax revenues paid through banks to the appropriate authority, and significant revenue is lost through diversion and inadequate monitoring of the revenue collection process.

In Nigeria, the last administration, in its well-articulated National Economic Empowerment and Development Strategy (NEEDS) 2005, proposed reforms which aimed at strengthening the machinery for tax collection, tracking all government revenues paid into different bank accounts, and recovering debts. In the short to medium term, the proposed strategy addressed six issues:

- The structure of the tax system.
- Revenue generation.
- Efficiency of collection.
- Tracking and response to comparative and international standards.
- Investment promotion.

Coordination of tax administration.

NEEDS proposed to seek agreement among all tiers of government on which level should collect which taxes and how, in order to avoid too great a multiplicity of taxes and conflicting methods of collection. Thus, foreign businesses would not be discouraged from investing in Nigeria.

An enabling environment must be present before EFR can succeed in generating tax revenue that can be channelled into the appropriate social goals in the vast majority of developing countries. Such enabling conditions must include good governance, transparency and accountability, adherence to rule of law, adequate capacity/capacity building to ensure compliance with and implementation and diligent enforcement of EFR laws/policies and public awareness of the importance and goals of EFR.

PART III SUMMARIES OF GCET PLENARY SESSIONS

Keynote Speech: Environment, Development and Climate Change

Professor Klaus Töpfer, former Executive Director of the United Nations Environment Programme (UNEP), former Federal Environment Minister, Germany

One of the most fundamental questions facing mankind today is how to end poverty and realise the right of poorer countries to development, while also recognising and fostering the link between environment and development. A clean and protected environment is a precondition for ending poverty, not a good to be enjoyed solely by developed nations.

The most pressing problem within this context is that of climate change and those most threatened by it are those sectors of the world population least responsible for its occurrence. The potential for conflict should not be underestimated. Climate change poses a security risk for us all.

On the one hand, it is easy to draw parallels between the current climate change problematic and the Montreal Protocol, which delivered a rapid, international solution to the problem of CFCs and the depletion of the ozone layer. However, while a multilateral fund for developing, emerging and transition economies was set up to help mitigate the impact of the restrictions imposed by the Protocol, no such instrument has yet been agreed to restrict CO₂ emissions, tackle climate change and deal with fairness concerns.

Yet the solution is in principle clear – carbon pricing. There are a number of options available to realise this, including cap and trade mechanisms, and environmental taxes and charges. The question is which ones are truly applicable on a global scale.

A global cap and trade system would distribute emissions rights to all global citizens, allocating individuals the right to emit between 2 and 2.5 tonnes of carbon annually. While per capita CO₂ emissions amount to more than 10 tonnes per annum in Germany and more than 20 tonnes in the USA, less developed countries would stand to gain considerably: per capita CO₂ emissions amount to one tonne per annum in India and an average of 0.3 tonnes per annum in Africa. Thus, trading would result in significant redistribution of wealth and the potential double dividend for poverty alleviation would be considerable.

Alternatively, either stand-alone taxes or taxes combined with subsidies can bring about considerable emission reductions by using the power of the market to incentivise development towards a sustainable, low-carbon economy. Even though it has not as yet

proven possible to harmonise taxation within the European Union, it seems little more than an alibi to claim that global action on ETR is quite simply unrealistic. The way forward must be for countries such as Germany to set a positive example by successfully shifting to low-carbon economies, using environmental taxation regimes to incentivise this shift. Continuing rates of economic growth in China and India cannot continue within the context of the carbon-intensive economy.

In addition, we must quantify and give value to ecosystem services such as those provided by tropical rainforests. EFR is a means of establishing the monetary value of the forest itself, creating financial incentives to preserve it and its biodiversity, as both a carbon sink and a valuable resource. Clearly, one of the main topics at the ninth meeting of the Conference of the Parties to the Convention on Biodiversity ('COP 9') in Bonn, Germany will be to find ways to exploit tropical rainforest resources while maintaining biodiversity, and to find solutions that respect genetic property rights. While such goods should not be reduced to their monetary value, attributing a price to them is the single most important instrument in creating constraints that preserve their existence.

Perhaps the easiest way of summarising what I have said, and emphasising the need for action in the future, is to state that we all need to start living according to a modern version of Kant's categorical imperative, taking not only the rights and needs of today's population into account, but also those of future generations.



Professor Klaus Töpfer, former Executive Director of the United Nations Environment Programme (UNEP), former Federal Environment Minister, Germany

How market-based Instruments, particularly Ecotaxes, have contributed to Innovation, Employment and Environmental Improvement

Prof. Jacqueline McGlade,
Executive Director, European Environment Agency

Insufficient action is a dangerous response to the dangers posed to our global environment by climate change. It is extremely important that market-based instruments are more broadly applied in the European Union – as supported by the preliminary results of the OECD survey on the influence of public policy on stimulating innovations in renewable technologies. If we wish to promote innovation e.g. in the renewable energies sector, then market-based instruments are one key to progress. All over the world, we have already witnessed many examples of successful environmental fiscal policies, not only in the EU but far beyond it. If we wish to ensure that Europe captures and retains a significant share of the global market expansion of clean technologies, far bolder and more comprehensive Environmental Tax Reform is necessary to create more challenging incentives to stimulate business and innovation. Only such ambitious policies can guarantee that the EU's current competitive advantage – resulting from its innovative use of market-based instruments to create incentives for innovation – is not undermined.

The Impact of the Ecological Tax Reform in Germany

Kai Schlegelmilch, *Vice President, Green Budget Germany*

In 1999, the German government introduced an Ecological Tax Reform and has since amended it in the shape of energy tax increases and labour cost reductions. From 2003 onwards only structural changes were made. The success of the German ETR and its impacts on innovation and technological and behavioural change is no longer in doubt and have been studied intensively. The proven positive macroeconomic and microeconomic impacts of Germany's ETR on its economy are many. It should be noted that these developments were supported, at least in part, by a four-fold increase in the world oil price from US\$ 9 per barrel in 1998 to US\$ 35 per barrel in mid 2000. Oil prices had even risen to over US\$ 100 per barrel by March 2008, when this publication went to print. Macroeconomic impacts include increased GDP growth of 0.1-0.2% per annum; the creation of up to 250,000 employment opportunities, partly in new industries; and reductions in CO₂ emissions and energy consumption of between 2-3% in comparison to a business-as-usual scenario.

Sectoral impacts are most evident in the transport sector, not least because price signals were strongest in relation to transport fuels. CO₂ emissions and fuel sales dropped 17% between 1999 and 2005. After fifty years of steady growth, for the first time ever a turnaround in transport emissions has been achieved. No other instrument has ever been so successful. Since the introduction of the reform public transport use has increased by up to 1.5% per annum, and after decades of decrease current passenger numbers are 7-8% higher than in 1999. Consumer preferences for fuel-efficient cars are stronger and the market share for cars consuming between 3 and 5 litres per 100 km has increased from 1% to almost 5%. There have also been booms in car-sharing and in the manufacture of solarthermal plants for water heating, with both industries experiencing double-digit growth (albeit compared with very low baselines).

On a micro-economic level, the impacts of the ETR on sixteen companies, of varying size and representing most sectors, were analysed. Companies have benefited from enhanced market opportunities, energy-efficient innovation, reduced energy costs and tax rates for environmentally friendly technologies and thus, enhanced competitiveness. Private household consumption has also been influenced substantially. In spite of public information campaigns and advertising, social acceptance of the ETR remains limited.

The Contribution of ETR to EU Growth and Employment: Ex Post Evidence from ETRs in seven EU Member States 1995-2010

Dr. Terry Barker, *Director, Cambridge Centre for Climate Change Mitigation Research (4CMR), Department of Land Economy, University of Cambridge; Chairman, Cambridge Econometrics, Ltd.*

The COMETR project – Competitiveness Effects of Environmental Tax Reforms – investigated the positive competitive effects of environmental taxation in seven European Union member states,²² using (amongst others) the well-established Energy-Environment-Economy Model of Europe (E3ME).²³ In five of the EU countries studied, results show that CO₂ and energy taxes, recycled via reductions in labour and other taxes over the last 17 years, have made a small but positive contribution of up to 0.5% to economic growth. Although some sectors lost out as a result of increased carbon taxation, other sectors boomed, producing on the whole a modest but significant positive effect on economic growth. Increases in employment of up to 0.5% were also recorded in four of the countries, while the environmental performance of these countries also improved, ETR having contributed to reductions in greenhouse gas emissions of between 1.5% and 6% in 2004. Clearly, these findings mean that the ‘double dividend’ hypothesis, which suggests a positive effect on both the environment and the economy as a result of ETR, can no longer be rejected in practice.

An interesting result of the COMETR project was the difference in outcomes according to whether energy price or energy tax is increased, not least because in the latter case revenues remain in the public purse and can be used to mitigate the effect of distortive taxation elsewhere in the economy. This is a significant result for policy makers discussing how best to implement taxes as an instrument of climate policy without adversely affecting competitiveness.²⁴

Key effects of ETR in individual countries identified in the COMETR project included

- in Sweden, reductions in household fuel demand of 15-20% by 2010;
- in Denmark, as nearly all ETR revenues were recycled via lower employers' contributions, a boost to employment and GDP via household income and spending;
- in Germany, a similar boost to employment and an increase in GDP of 0.2%, predicted to rise to 0.4% by 2012, and a 3% reduction in energy demand;
- in the UK, in response to the ‘announcement’ of the Climate Change Levy, a 14% cut in fuel use in the commerce/retail sectors, and a 1-2% fall in fuel demand in sectors permitted to negotiate Climate Change Agreements (CCAs).

To conclude, a coordinated EU-wide ETR could make a substantial contribution to the EU achieving its 30% GHG reduction target below 1990 levels by 2020 (the target set by the EU Commission conditional to other non-EU countries also acting), without adversely impacting on the EU's competitiveness.

Long-term Price Elasticity requires Long-Term Environmental Tax Reform

Prof. Dr. Ernst Ulrich von Weizsäcker, *Dean, Bren School of Environmental Science and Management, California, USA*

Short term price elasticity is low for the big things that matter: energy consumption, eco-friendly infrastructures, travel habits, etc. Contrary to popular belief, however, their long term price elasticity is high. Gradual but predictable increases in ETR, for example, can induce dramatic changes – and at present, what we should be aiming to dramatically increase is resource productivity. A consistent long-term policy of increasing energy and resource prices annually by the previous year's increase in resource productivity would create long-term certainty as regards increasing resource prices, thus prompting a ‘race’ towards higher resource productivity. We have already seen that slow but predictable rising wages (or gross labour costs) have induced a steady, and accelerating, increase of labour productivity. It is perfectly plausible to find political and legal ways of implementing similar changes in resource productivity. If this were achieved, by definition, there would be no average increase of ‘suffering’ and resource productivity would be on a perpetual rise. To put this in context: Labour productivity rose roughly twentyfold during the last 100 years!

Concrete means of realising such a policy are not as far removed from reality as might be initially supposed – for claims that energy price increases are not politically or economically viable are quite simply wrong. The price elasticity of energy prices is not low in the long-term in any case, and we have seen many examples where changing energy prices have had a significant impact on behaviour and energy use – such as in EU Member States that have introduced Environmental Taxation – and have not damaged economies. Indeed, developments in Japan and those European Union Member States which have implemented ETR would seem to prove the opposite.

²² Sweden, Denmark, Germany, the U.K., Finland, the Netherlands and Slovenia (which has not implemented environmental taxation as such, but which has adjusted energy taxes in the industrial sector according to their carbon content).

²³ See: <http://www2.dmu.dk/cometr/>.

²⁴ The COMETR Final Report can be accessed at: http://www2.dmu.dk/cometr/COMETR_Final_Report.pdf.

The European Commission's Approach towards market-based Instruments and Environmental Taxation in particular

Alexander Wiedow, *Director, Indirect Taxation and Tax Administration, DG TAXUD, European Commission*

The European Union has set itself ambitious targets by 2020: 20% reduction in GHG emissions, 20% of all energy to come from renewable sources, biofuels to provide at least 10% of all transport fuels, and energy efficiency to be increased by 20%. To this end, a number of possible options exist. EFR and MBIs can correct market failures, influence consumer behaviour, indirectly incentivise change in consumption and production patterns, and generate resources to offset the costs caused by energy policies. As well, direct fiscal incentives can be employed to subsidise corrections within the market, influence consumer behaviour, and directly incentivise change in consumption and production patterns. There is a long history of EFR and MBIs at the European Commission, even prior to the Green Paper on Market-Based Instruments for Environment and Related Policy Purposes.²⁵ The European Commission supports Environmental Taxation as a means of delivering change in the form of innovation, technology and employment. As ex ante studies have shown, ETR has become an integral part of Commission policy.

To reduce energy use, the obvious measure to employ is to increase energy prices by means of a tax or emission trading (cap and trade), modulated according to CO₂ emissions per unit of energy, to encourage innovation and technological development in cleaner energy sectors. The implementation of both instruments in tandem does not necessarily result in a 'double burden' for industry, but care must be taken in instrument design to ensure that this is not the case. All sectors should contribute equally to the achievement of EU targets, and thus sound instrument design is an absolute requirement. Possible options for fiscal incentives in the energy sector include tax incentives for the consumer, i.e. VAT reform, changes to personal and corporate income tax structures, and direct subsidies. However, there are considerable design and structural challenges associated with such policies and some, particularly subsidies, are associated with considerable administrative complexity.

The possible impacts of these policies on business and on the private consumer must be taken into account: the potential for inflation as a result of rising energy prices, reinforced by EFR, and potential negative competitiveness impacts. Revenues raised by means of ETR and other MBIs can be used to combat these effects and targeted measures can address any undue burdens placed on low income consumers.

Innovation, Technology and Employment: Energy

Prof. Michael Rodi, *Greifswald University, Germany*

A workable, flexible, innovation-sensitive legislative framework is required to create planning stability for and to incentivise innovation in the energy sector. The future technological, political and legal design of our energy supply is a central element of sustainable development.

Energy supply is a pillar of modern economic activity, and the sufficient availability of energy is crucial to the future of our economies. For environmental reasons, particularly climate change, an 'energy revolution' in the sense of a fundamental technological reform is essential. Within this context, innovation and the promotion of new technologies as well as technology transfer have become central public tasks. Changes in the energy supply structure have an important social dimension, as a sufficient supply of energy is a basic human need and unemployment has become a central threat to people's livelihoods.

The debate on global warming, in particular, has shown the need for forceful action by national governments and the international community, action which goes beyond merely establishing a legal and political framework. Due to their general responsibility for social welfare, states must actively promote innovation processes in the area of energy supply by increasing energy efficiency and developing new and sustainable energy sources. This requires adequate innovation regulation, which may target both the demand and the supply side.

The ability of regulation to foster innovation depends on the design of the environmental policy framework. An important aspect in this regard is the credibility, consistency and predictability of the environmental regime. Instruments of environmental policy should be geared towards promoting innovation and within this context, sound policy design is crucial – well-designed regulatory measures can be highly beneficial in promoting innovation, while poorly designed MBIs will have few innovation effects.

The social dimension of a sustainable energy supply follows from the basic human needs it satisfies. Securing an adequate supply of energy is an international challenge. On a global scale, it will not be achievable purely through large-scale technologies, but rather will presuppose the development of small-scale, capital-extensive energy sources, as well as a transfer of technologies from industrialised nations to developing countries.

Internationally, a central challenge in modern societies is unemployment. Employment policies need to become an integral part of the public agenda. This fundamental realisation was taken into account in many states' ETRs and will play an important role in a sustainable energy policy. Environmental policy and, in particular, climate policy are paradigmatic representations of the growing challenges for public regulation, characterising a fundamental shift in the legal system.

Accordingly, modern law acquires unprecedented control functions. To this end it can draw on a large number of different instruments and instrumental approaches which need to be brought together to form a consistent instrument mix. Law has long left the realm of balancing interests and is increasingly becoming open to – and focused on – the future. Flexibility, a procedural orientation and the economic dimension take precedence over substantive considerations of the law.

A Comparative Analysis of Emission Trading and Taxation in the Transport Sector

Dr. Markus Pennkamp, *Deutsche Bahn AG*

Curbing climate change poses an enormous challenge to mobility providers. In view of the forecast growth in transport, it is vital to contain its environmental effects. The entire transport sector must limit its GHG emissions. The rail sector has already made a significant contribution towards reaching its environment goals. On its own, Deutsche Bahn reduced its specific CO₂ emissions by more than 25% between 1990 and 2002. In our climate protection programme, we have pledged to reduce specific CO₂ emissions from traction by another 20% by 2020.

Irrespective of the optimisation of all modes of transport, it is also crucial to reorganise transport systems to meet the needs of the global climate and environment. Every journey and every container transported by rail lessens the impact on the atmosphere from GHG emissions. This becomes even more significant when one considers that existing studies confirm that the cost of avoiding CO₂ – especially through hi-tech solutions for motor vehicles – may skyrocket. As a consequence, climate policy challenges can be met efficiently by strengthening rail transport's position as an environmentally friendly and efficient mode of transportation.

The design of the energy policy framework should take these circumstances into account. At present, there are numerous instruments and targets that are inconsistent. For example, the interaction between energy taxation and emission trading puts a unilateral burden on rail and contradicts the goals of sustainable transport and environment policies, while air transportation and inland waterway navigation benefit from energy tax exemptions. Similarly, nearly all rail companies throughout Europe are exempt from energy taxation. In contrast, the burden on Deutsche Bahn from energy taxes and duties amounts to roughly EUR 380 million per year, including around EUR 190 million in eco-tax. In addition, electrically powered rail traction is the only mode of transport affected heavily by emission trading. In 2006 the electricity price increases caused by emission trading cost Deutsche Bahn roughly EUR 45 million. This one-sided burden will increase in 2008. The national definition of emission trading for the period 2008 to 2012 will affect power plants that produce electricity for rail traction, as will the tightening of the allocation scheme and the partial selling/auctioning of certificates. This will cause more than EUR 70 million in additional costs for the electric power supply for rail traction. This topical example confirms the pressing need for better coordination when designing climate policy instruments.

The positive Impact of the London Congestion Charge on Innovation, Technological Change, and the Environment

Lucinda Turner, *Policy Manager, Transport for London*

The London congestion charging scheme raises £ 158 million in revenues annually, in addition to a further £ 55 million in enforcement revenues. Operating costs amount to £ 90 million annually. Thus, the congestion charge generates annual net revenues amounting to £ 123 million – the equivalent of US\$ 245 million. All of these revenues are invested in improvements to bus networks (£ 101 million), roads and bridges (£ 14 million), road safety (£ 5 million) and walking and cycling facilities (£ 3 million). Public information campaigns have helped boost support for the charge.

The congestion charge has had a considerable impact. Traffic entering the charging zone was reduced by 21% in 2006, and the number of chargeable vehicles entering the zone decreased by 30% in the same year. While there has been little change in the number of trips to the central area, between 50-60% of these have moved to public transport, particularly bus services, which have been performing better since the charge was imposed, as a result of increased investment and lower levels of congestion. Cycling has increased by 43%.

The impact on business has been broadly neutral and the central London economy has performed positively since charging was enforced. Environmental improvements include reductions in NO_x, CO₂ and particulate emissions. The initial impact on congestion was high, averaging 26% per annum. However, while congestion remains below pre-charge levels, it has increased as a result of reduced road space due to road safety measures, cycle lanes, road works, etc.

To combat air pollution, a Low Emission Zone or LEZ – covering almost the entire Greater London Authority boundary – was introduced in February 2008. The LEZ aims to accelerate the uptake of cleaner vehicles and the introduction of pollution abatement measures on individual vehicles. Congestion charging will also be reformed from October 2008. Vehicles complying with Euro 4 emission standards²⁶ will be exempt, a standard charge of £ 8 will be levied on vehicles emitting 121-225g/km CO₂, and a £ 25 higher charge will be introduced on vehicles emitting more than 225g/km CO₂.²⁷ This policy will increase awareness of vehicle emissions, emphasise the impact of individual choice on the environment, and incentivise behavioural change.

²⁶ Emission standards are defined by Directive 98/70/EC, see <http://ec.europa.eu/environment/air/transport.htm> for more details.
²⁷ For more details of both schemes, please see: <http://www.tfl.gov.uk/>.

Environmental Policy, Congestion and Land Use

Prof. Alberto Majocchi, *President, ISAE, Rome*

One of the most significant environmental problems we face is the use of land. Land is a scarce good, especially in areas with high population density. In developing countries, it is productive land that is a scarce good. The price of land is determined by demand and supply, disregarding the environmental impact – and the opportunity costs – of excessive use. Population growth, urbanisation and desertification of agricultural land – two thirds of arable land in Africa may well disappear by 2025 – are causing increasing land scarcity.

A related problem is congestion, but alternative modes of meeting mobility demand require that we build infrastructure, foster new technologies and take on a long-term policy perspective when making policy decisions. Within this perspective, road user charging seems particularly justified, as it has the dual effect of reducing use of private vehicles while also generating revenues necessary to improve public transport networks and fund research into new technologies. In Europe, road pricing is spreading, particularly in cities and on motorways. As public transport systems are developed, road pricing should be backed by ever more compelling constraints on the use of private vehicles.

While the environmental, health and safety benefits of such policies are clear, mobility-related policies alone cannot result in a cleaner city, because vehicle use is also dependent upon decision making in urban planning, which designates particular areas of the city as residential or commercial. The boom in out-of-town commercial developments, increasingly prevalent throughout the USA and now Europe, runs counter to our requirements for environmentally friendly mobility policies. Current urban planning singularly fails to take the external costs of mobility into consideration, such as increased energy consumption and congestion; difficulties for the elderly or poorer sections of society without their own means of transport; and reduced security in the inner city due to the closure of small shops. ETR provides a means of internalising these costs, e.g. by imposing high parking fees at commercial sites or by charging developers for the environmental impact of their development.

The environmental impact of tourism can also be managed using ETR, e.g. through the imposition of a charge on all tourists staying in a particular town/area, such as the Aufenthaltsabgabe in Trentino/South Tyrol. Similarly, price differentiations for residents and non-residents for the use of transport systems can also be introduced, e.g. as in Venice.

It is vital that land use policy play a decisive role in the framework of climate change policy, as well as to avoid urban sprawl and the loss of natural habitats and biodiversity. We should not forget that our quality of life is largely dependent on policy choices regarding urban growth, agricultural development and sustainable use of natural resources

Environmental Fiscal Reform as Part of GTZ's Approach to Environmental Finance

Stephanie Lorek and Marina Kosmus, *Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH*

Environmental Fiscal Reform (EFR) should be viewed within the broader context of GTZ's approach to Environmental Finance. The overall concept of Environmental Finance incorporates the experiences development cooperation has made in applying modern environmental policy instruments that are based on economic incentives, which go well beyond the instruments of Environmental Fiscal Reform. The concept takes a problem-solving approach and is notably based on GTZ's environmental governance strategy.²⁸ The conceptual framework of Environmental Finance has been developed within GTZ's pilot project on Environmental Finance.

Pollution and overexploitation of natural resources are often – explicitly or implicitly – due to governance shortcomings in the partner countries. We understand 'governance' to mean all rules, enforcement mechanisms and corresponding interactive processes that guide human behaviour in the light of the potential outcome of that behaviour.²⁹ This includes institutional, legal, political, economic and social conditions. Regulatory deficits, lack of institutional capacities and market failure³⁰ are typical governance problems. The costs and benefits of environmental protection and conservation are often not fully captured, which generates incentives for unsustainable resource use by making pollution or degradation more profitable. At the same time, many partner countries are facing difficulties in mobilising sufficient funds for environmental protection and nature conservation. What is lacking is the development and implementation of a suitable combination of instruments that mobilise budgetary revenue, fund environmental protection, and create incentives for sustainable resource use while remaining politically, economically and technically viable.

The objective of Environmental Finance is therefore to better identify financial gaps and existing incentives for unsustainable resource use, and to develop solution-based approaches. The sustainable use of natural resources is to be furthered through a coherent combination of different, mutually supportive incentive-based instruments and mechanisms. Financial instruments and

mechanisms other than EFR include in particular Payments for Environmental Services (PES), Access and Benefit Sharing (ABS), Tradable Emission Permits, the Clean Development Mechanism (CDM), certification, and conservation and urban-industrial environment funds.

Environmental Finance: Revenue mobilisation and incentive function

The general complementary objectives of Environmental Finance are:

- To create incentives for the sustainable use of natural resources
 - from the perspective of the polluter-pays principle,
 - from the perspective of the beneficiary-pays principle, whereby the provider of an environmental service is remunerated for sustainable resource use and the beneficiary bears the costs of its provision;
- To mobilise funds in the shape of
 - revenues for public sector budgets,
 - funds for private providers and/or the private sector.

Moreover, there are mechanisms that do not target the mobilisation of new funds and/or the generation of incentives towards environmentally friendly behaviour. Instead, they further the effective distribution and administration of financial resources, as for instance in case of conservation funds. Such conservation funds can originate from the donor side or public or private foundations and at all levels (local, national, regional, international).

Financing instruments and mechanisms can be categorised according to the following criteria:³¹

1) According to the way funds and incentives are generated

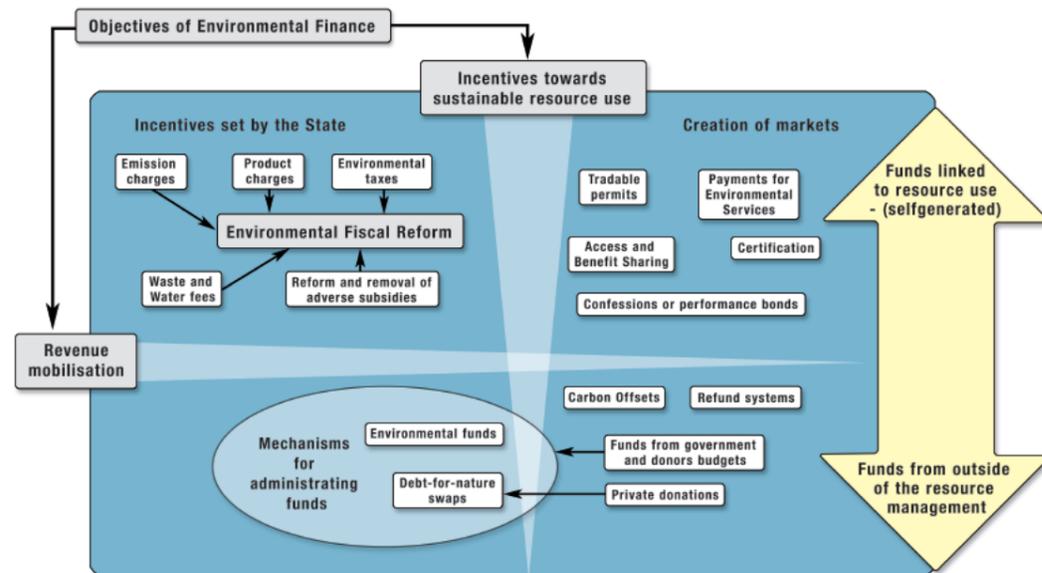
- by the state, as in the case of fiscal instruments (charges, taxes etc.),
- through the creation of markets, as in the case of Payments for Environmental Services;

²⁸ Fischer, A.; Petersen, L.; Huppert, W. (2004): Natural Resources and Governance: Incentives for Sustainable Resource Use, GTZ Eschborn.

²⁹ Huppert, W., Svendsen, M., & Vermillion, D. (2001): Governing Maintenance Provision in Irrigation – A Guide to Institutionally Viable Maintenance Strategies, Wiesbaden: Universum.

³⁰ The term market failure describes a situation where it is not possible to allocate resources on the market efficiently or in the desired manner, compare for instance Baumol, William J./ Oates, Wallace E. (1988): The Theory of Environmental Policy, 2. Edition, Cambridge.

Figure 1: Overview of financing instruments and mechanisms



(Diagram based on Emerton, L. et al. (2006) Sustainable Financing of Protected Areas, IUCN and Fischer, A. / Petersen, L. / Hubbert, W. (2004): Natural Resources and Governance: Incentives for Sustainable Resource Use, GTZ)

2) according to the source of the funds. The key question is whether the mobilisation of funds is directly linked to the process of resource use (or the area of usage) or not.

- Own funds are generated out of the sub-system of natural resource use. They are mobilised in connection with the use or production of environmental goods or services, as in the case of Payments for Environmental Services or taxes on resource extraction (e.g. oil).
- Alternatively, funds originate from external sources, not from the use of natural resources or from the production/provision of environmental goods or services, e.g. environmental subsidies from the general public budget or from private foundations.

The precise classification depends on the design of the instruments and mechanisms in question. For instance, charges and fees can be raised by the legislator on the national level (e.g. water and waste fees) as well as on a local level through the creation of markets (e.g. entrance fee for a nature reserve).

GTZ's focus within the Environmental Finance concept is on financing approaches that pursue both functions - incentive and financing - and are therefore directly linked to resource use. Priority is given to the mobilisation of domestic revenues (local and national) through market-based instruments (upper section of Figure1). These instruments can be applied together with financing mechanisms in order to allocate and administrate the funds efficiently (blue circle).

Appropriate framework conditions must be in place to tap the full potential of environmental financing instruments. Certain financing instruments may not be implemented efficiently or implementation may even fail altogether if policy, institutional or market failures prevail. Therefore, changes in the governance structure can not only foster sustainable resource use but also help to generate funds for conservation in a more effective and efficient manner, while using adequate financing instruments. In this context, Environmental Fiscal Reform in particular can function as a driver of other necessary reforms of the environmental governance structure.

Abbreviations

AU	African Union
CDM	Clean Development Mechanism
CER	Certified Emissions Reductions
DCs	Developing, emerging and transition economies
EE	Ecological Efficiency
EIs	Economic Instruments
EFR	Environmental Fiscal Reform
ETR	Environmental Tax Reform
ETS	Emission Trading System
EU	European Union
GCET	Global Conference on Environmental Taxation
GHG	Greenhouse Gas
MBIs	Market-Based Instruments (in this context, for environmental policy)
MCED	Ministerial Conference on Environment and Development
MDGs	Millennium Development Goals
NEMA	National Environment Management Authority, Uganda
ODA	Official Development Assistance
PES	Payments for Environmental Services
PIDE	Pakistan Institute of Development Economics
PRSP	Poverty Reduction Strategy Paper
SDC	Swiss Agency for Development and Cooperation
SME	Small and Medium Enterprises

31 The classification is quite simplified and by no means exhaustive. More detailed descriptions can be found in the international literature, e.g. Conservation Finance Guide (<http://guide.conservationfinance.org/>); GTZ (2001): Guide to Sustainable Financing of Biodiversity and Protected Area, GTZ.

The Millennium Development Goals³²

- 1 Eradicate extreme poverty and hunger
- 2 Achieve universal primary education
- 3 Promote gender equality and empower women
- 4 Reduce child mortality
- 5 Improve maternal health
- 6 Combat HIV/AIDS, malaria and other diseases
- 7 Ensure environmental sustainability
- 8 Develop a global partnership for development

List of participants at the Eighth Global Conference on Environmental Taxation

Name	Organisation	Country
Masika Abikawe	Yes Bujumbura	Kenya
Laura Acosta	GTZ	Germany
Tolani Olawunmi Afolabi	Language School	Egypt
Susanne Åkerfeldt	Ministry of Finance	Sweden
Akinsola Abraham Akinniran	Adeniran Ogunsanya College	Nigeria
Victoria Alexeeva-Talebi	Zentrum für Europäische Wirtschaftsforschung GmbH	Germany
Mikael Skou Andersen	NERI, University of Aarhus	Denmark
Mark Arts	Ministry of Finance	The Netherlands
Hope Ashiabor	Macquarie University	Australia
Janet Ashiabor	Macquarie University	Australia
Kris Bachus	University of Leuven	Belgium
Bettina Bahn-Walkowiak	Wuppertal Institute for Climate, Environment, Energy	Germany
Mark Bamber	KPMG	Malta
Louise Bank	Ministry of Taxation	Denmark
Rossella Bardazzi	University of Florence	Italy
Siegmar Bardtholdt	Die Grünen	Germany
Terry Barker	4CMR, University of Cambridge	United Kingdom
Isabel Bassas Pérez	University of Pompeu Fabra	Spain
Steffen Baumhauer	Green Budget Germany	Germany
Beate Baumm-Rguig	STZ Nachhaltige Qualitätssysteme	Germany / Morocco
Matthias Bechtolsheim	KfW-Entwicklungsbank	Germany
Christoph Beier	GTZ	Germany
Natascha Beinker	BMZ	Germany
Joshua Belcher	Vermont Law School	United States
Holger Berg	Federal Environment Agency	Germany
Gerhard Berz	Green Budget Germany, Advisory Board	Germany
Aleksandrs Birnsons	State Revenue Service	Latvia
Patricia Blazey	Macquarie University	Australia
Michael Böcher	Georg-August-University Göttingen	Germany
Monika Böhm	University of Marburg FB Jura	Germany
Nils Axel Braathen	OECD	France
Gábor Braun	Ministry of Finance	Hungary
Eleanor Brown	Regent University	United States
William Brown	Regent University	United States
Veronique Bruggeman	accompanying Javier de Cendra	The Netherlands
Hana Bruhova-Foltynova	Charles University Environment Centre	Czech Republic
Wolfgang Buchholz	University of Regensburg	Germany
Martin Bursik	Ecoconsulting GmbH	Czech Republic
Bill Butcher	School of Business Law and Taxation, University of New South Wales	Australia
Alfred Camilleri	Ministry of Finance	Malta

³² For more information on the MDGs, see: <http://www.un.org/millenniumgoals/>.

ANNEXES

Name	Organisation	Country	
Rowena	Cantley-Smith	Monash University	Australia
Fiorenza	Carraro	University of Pavia	Italy
Nathalie	Chalifour	Faculty of Law, University of Ottawa	Canada
Pablo	Chico	URJC - Universidad Rey Juan Carlos	Spain
Maria Cristina	Chimeno	Ministerio de Economía y Producción	Argentina
Rae Kwon	Chung	UNESCAP	Thailand
Bram	Clays	Bond Beter Leefmilieu	Belgium
Raymond	Clemencon	IRPS/UCSD	USA
Horst Rüdiger	Colsman	Green Budget Germany	Germany
Jacqueline	Cottrell	Green Budget Germany	Germany
Nicola	Creighton	Feasta	Ireland
Javier	De Cendra	University of Maastricht	The Netherlands
Marc	de Clerq	Ghent University	Belgium
Miguel	Delaserna	Dexia	Belgium
Claudia	Dias Soares	Portuguese Catholic University	Portugal
Jose Marcos	Domingues	Rio de Janeiro State University	Brazil
Martina	Doppelbauer	Green Budget Germany	Germany
David	Duff	University of Toronto Faculty of Law	Canada
Sophie	Dupressoir	ETUC	Belgium
Søren	Dyck-Madsen	The Danish Ecological Council	Denmark
Christine	Echookit Akello	National Environmental Management Authority	Uganda
Wolfgang	Eckert	U-plus Umweltservice AG	Germany
Volker	Eidems	Press	Germany
Felix	Ekardt	University of Bremen	Germany
Paul	Ekins	Policy Studies Institute (PSI)	United Kingdom
Nwake Obinna	Ekpechuo	Abia State Poly	Nigeria
Mly Hassan	El Badraoui	Ministère d'Aménagement du Territoire, de l'Eau et de l'Environnement (MATEE)	Morocco
Judith	Enders	Bundestagsfraktion Bündnis 90/Die Grünen	Germany
Jo	Feldman	University of Cambridge	United Kingdom
María Luisa	Fernández de Soto Blass	University CEU San Pablo	Spain
Herman	Fickinger	GTZ - PRONALCD	Morocco
Isabelle	Floer	InWEnt Capacity Building International	Germany
Silvia	Foffi	Green Budget Germany	Germany
Frank	Francia	World Ecological Parties	Germany
Michael	Fritsch	BSH Bosch und Siemens Hausgeräte GmbH	Germany
Giuseppina	Galvano	Ministry of Economy and Finance	Italy
Alamgir Khan	Gandapur	IUCN Pakistan	Pakistan
Eric	Gargan	Department of Finance	Ireland
David	Gee	European Environment Agency	Denmark
Kerria	Geller	GTZ	Germany
Roland	Geres	FutureCamp GmbH	Germany
José	Gomes Santos	Ministry of Finance (Centre for Tax Studies)	Portugal
Jose Juan	Gonzalez Marques	Universidad Autonoma Metropolitana	Mexico

Name	Organisation	Country	
Anselm	Görres	Green Budget Germany	Germany
Andreas	Graichen	University of Regensburg	Germany
Amparo	Grau	Universidad Complutense	Spain
Wayne	Gumley	Monash University	Australia
Michael	Gybas	KölnAgenda e.V.	Germany
Manuela	Hager	Landtag Baden-Württemberg	Germany
Mats-Olof	Hansson	Ministry of Finance	Sweden
Ingemar	Hansson	Ministry of Finance	Sweden
Enno	Harks	Deutsche BP	Germany
Clare	Harris	DFID	UK
Paul	Hassing	OECD	France
Paul	Hassing	Ministry of Foreign Affairs	The Netherlands
Marie Louise	Hede	Ministry of Taxation	Denmark
Birgitt	Heinicke	Federal Environment Agency	Germany
Sharlin	Hemraj	National Treasury	South Africa
Bettina	Herlitzius	Mitglied des Deutschen Bundestages, Bundestagsfraktion Bündnis 90/Die Grünen	Germany
Pedro	Herrera Molina	IEF	Spain
Jürgen	Hess	GTZ	Germany
Eric	Heymann	Deutsche Bank AG, DB Research	Germany
Gabi	Hildesheimer	ÖBU	Switzerland
Aleksandar	Hofstaetter		Austria
John	Hontelez	European Environmental Bureau	Belgium
Katarina	Hranaiova	University of West Bohemia	Czech Republic
Shi-Ling	Hsu	University of British Columbia Faculty of Law	Canada
Mona	Hymel	University of Arizona	United States
Cisse	Ibrahima	Public/Private Labelling Programme	Senegal
Bah	Idrissa	JCCG	Guinea
Mohammed Nasser	Igambi	Ayigihugu& co. Advocates	Uganda
Moses	Ikiara	Kenya Institute for Public Policy Research and Analysis	Kenya
Roland	Ismer	LMU Munich	Germany
Chibunna	Israel	c/o Haruna Mohammed Fabit Finance office,	Nigeria
Rolf	Iten	INFRAS AG	Switzerland
Yasushi	Ito	Cind, Uppsala University	Sweden
Deborah	Jarvie	University of Lethbridge	Canada
Wu	Jian	PhD, Associate Professor; School of Environment and Natural Resources	People's R. of China
Mukami	Kamau	United States International University	Kenya
Ion	Karagounis	Swiss found. for env. managem. Pusch/Stift. Prakt. Umweltschutz Schweiz Pusch	Switzerland
Gillian	Kerr	Alberta Environment	Canada
Nepomuk	Kessler	ZMM Zeitmanager München GmbH	Germany
Claudia	Kettner	Austrian Institute of Economic Research	Austria
Károly	Kiss	Corvinus University of Budapest	Hungary
Olga	Kiulla	Warsaw University	Poland
Eddie	Kizito	Ministry of Local Government	Uganda

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Name	Organisation	Country
Joachim Klein	Green Budget Germany	Germany
Daniela Kletzan	Austrian Institute of Economic Research (WIFO)	Austria
Alena Koderová	Ministry of Finance	Czech Republic
Melanie Köhler	Green Budget Germany	Germany
Michael Kohlhaas	Cologne Center for Public Economics	Germany
Karel Korba	Ministry of Finance	Czech Republic
Marina Kosmus	GTZ	Germany
Katri Kosonen	European Commission, DG TAXUD	Belgium
Karina Kowoll	Green Budget Germany	Germany
Eva Kraav	Ministry of the Environment	Estonia
Larry Kreiser	Cleveland State University	U.S.A.
Elin Kronqvist	Ministry of the Environment	Sweden
Stefan Krug	Greenpeace	Germany
Amitabh Kundu	Jawaharlal Nehru University, New Dehli	India
Akeem Afolabi Kushimo	Federal Ministry of Environment, Housing and Urban Development	Nigeria
Godwin Kwemarira	Mirembe College School	Uganda
Göran Lagerstedt	Svensk Energi - Swedenergy	Sweden
Valdur Lahtvee	SEI Tallinn Centre	Estonia
Carine Lambert	CDLK (for FICEB water association Luxemburg)	Belgium
Fredrik Lann	Green party in the Swedish Parliament	Sweden
Tim Law	Anglo American plc	United Kingdom
David Legg	Environment Agency	England
Hans-Dieter Lochmann	Leadership-Institut	Germany
Stephanie Lorek	GTZ	Germany
Harald Lossack	GTZ	Germany
András Lukács	Clean Air Action Group	Hungary
Silja Lüpsik	Ministry of the Environment	Estonia
Bernard Luyiga	Kampala City council	Uganda
Lin-Heng Lye	Law Faculty, National University of Singapore	Singapore
Johannes Maier	Green Budget Germany	Germany
Alberto Majocchi	ISAE - Istituto di Studi e Analisi Economica	Italy
Mohammed Maktit	Ministère de l'aménagement du territoire, de l'urban., de l'habitat et de l'envir.	France
Petri Malinen	Ministry of Finance	Finland
Roberta Mann	Widener University	USA
Gerard Marata	Cuatrecasas	Spain
Emilie Marinova	Eurogas	Belgium
Pendo Maro	EEB	Belgium
Rafael Marquez	Ministerio de Medio Ambiente	Spain
Juan Martín	Ministerio de Medio Ambiente	Spain
Orsola Mautone	European Environment Agency	Denmark
Erwin Mayer	Greenpeace CEE	Austria
Jacqueline McGlade	European Environment Agency	Denmark
Jan-Karsten Meier	UnternehmensGrün e.V.	Germany

Name	Organisation	Country
Roland Menges	University of Flensburg	Germany
Tim Mennel	Centre for European Economic Research	Germany
Stephen Mensah		South Africa
Alexnavrose Navrose Mensah	Gamcom Institution	Gambia
Richard Mergner	Bund Naturschutz in Bayern e.V.	Germany
Paul Metz	INTEGeR... consult	The Netherlands
Margot Metz-Nagel	-	The Netherlands
Christian Meyer	Green Budget Germany	Germany
Bettina Meyer	Green Budget Germany	Germany
Janet Milne	Vermont Law School	USA
Alexandra Mittermeier	energiewerk Stiftung	Germany
Richard Modley	GTZ	Nicaragua
Ivett Montelongo Buenavista	Universidad Autonoma Metropolitana	Mexico
Daniel Montoya	Subsecretaría de Ingresos Públicos	Argentina
Cecil Morden	National Treasury	South Africa
Anna Mortimore	Griffith University	Australia
Jonathan Nash	Tulane Law School/University of Chicago Law School	USA
Richard Nelson	accompanying Prof. Mann	USA
Pavla Netusilova	University of West Bohemia	Czech Republic
Carol Ní Ghiollarnáth	Maastricht University	The Netherlands
Abdou Niang	Programme de Labellisation de L'Artisanat du Senegal	Senegal
Niklas Niemann	Förderverein ökologische Steuerreform	Germany
Hiroyasu Noda	Surugadai University	Japan
Caroline Ofen	Green Budget Germany	Germany
Andrew Emmanuel Ogieva	University of Benin	Nigeria
Margaret Okorodudu-Fubara	Faculty of Law	Nigeria
Axel Olearius	GTZ	Germany
Nancy Olewiler	Simon Fraser University	Canada
Tochukwu Jideoffur Orakwe	University of Information Technology and Management	Poland
Giorgio Panella	University of Pavia	Italy
Seung-Joon Park	Kyoto Sangyo University	Japan
Alexander Ross Paterson	University of Cape Town, Institute of Marine and Environmental Law	South Africa
Jan Pavel	IREAS, Institut pro strukturální politiku, o. p. s.	Czech Republic
Maria Grazia Paziienza	University of Florence	Italy
Sonia Pellegrini	Federal Office for the Environment	Switzerland
Markus Pennekamp	Deutsche Bahn AG	Germany
Cathy Phillips	Tax Analysts	USA
Ken Piddington	University of Waikato	New Zealand
Maarit Pihlajaniemi	Elisa Corporation	Finland
Patrizia Poggi	European Commission	Belgium
Florian Prange	Green Budget Germany	Germany
Joana Prates	UNL - FCT	Portugal
Ignasi Puig Ventosa	ENT Environment and Management	Spain

ANNEXES

Name	Organisation	Country	
Stephen	Quansah	Mega Trends Consults	Ghana
Gunnar	Rabe	Confederation of Swedish Enterprise	Sweden
Aldo	Ravazzi Douvan	Italian MoE - OECD-Wpneq Chair	Italy
Sebastien	Raymond	University of Calgary	Canada
Matthias	Rhein	UK Department for International Development (DFID)	United Kingdom
Eberhard	Rhein	European Policy Center	Belgium
Andreas	Riedl	Green Budget Germany	Germany
Klemens	Riegler	Ökosoziales Forum Europa	Austria
Irene	Ring	Helmholtz-Centre for Environmental Research UFZ	Germany
Michael	Rodi	University of Greifswald	Germany
Susana	Rodrigues	Ministry of Finance	Portugal
Thomas	Roesch	Green Budget Germany	Germany
Manfred	Rosenstock	European Commission	Belgium
Rathin	Roy	UNDP	USA
Sven	Rudolph	University of Kassel/BUND	Germany
Alice	Ruhweza	NEMA	Uganda
Rafu	Salau	Language School in Cairo,Egypt	Egypt
Ibrahim	Salim	A.C.P.C.S	Comores
Andrea	Sauer	Green Budget Germany	Germany
Herbert	Schambeck	e.terras AG	Germany
Iman	Schembri	Ministry of Finance	Malta
Pielina	Schindler	GTZ	Germany
Kai	Schlegelmilch	Green Budget Germany	Germany
Sebastian	Schmidt	Green Budget Germany	Germany
Daniel	Scholz	TU München, Rivo Umwelt / FutureCamp	Germany
Riemara	Schuivens	Ministry of Finance	The Netherlands
Akinshola Nur'deen	Shopeju	Tertiary Institute for computers and business studies	South Africa
Binisha	Shrestha	Libra Educational Consultancy Pvt.Ltd	Nepal
Julsuchada	Sirisom	Faculty of Accountancy and Management, Maharakham University	Thailand
Shashi	Sivayoganathan	Monash University	Australia
Mette	Skovgaard	European Topic Centre on Resource and Waste Management	Denmark
Daniel	Slunge	Department of Economics, Göteborg University	Sweden
Tracy	Snoddon	Wilfrid Laurier University	Canada
Anil	Soni	Soni Institute of Management Studies	India
Stefan	Speck	Consultant	Austria
Paul	Steele	Institute of Policy Studies Environment Advisor UNDP	Sri Lanka
Martina	Steinke	BMZ; Head of Environment and Sustainable Use of Resources Division	Germany
Thomas	Sterner	Dept of Economics, University of Gothenburg	Sweden
Natalie	Stoianoff	University of Wollongong	Australia
Thamar	Stolz	Green Budget Germany	Germany
Till	Stowasser	Green Budget Germany	Germany
Jon	Strand	International Monetary Fund	USA
Gabriella	Strauß	Stiftung Solarenergie	Germany / Morocco

Name	Organisation	Country	
Björn	Strenger	Ministry of Finance	Sweden
Rahmat	Tavallali	Walsh University	U.S.A.
Lisa	Tavallali	Walsh University	Ohio, USA
Scott	Taylor	University of St. Thomas	USA
Amy	Taylor	The Pembina Institute	Canada
Sybille	Tempel	Free University of Berlin	Germany
Adela	Tesarova	European Commission	Belgium
Parviz	Teymouri Aminjan	Malayer Azad University	Iran
Philippe	Thalmann	Ecole Polytechnique Fédérale de Lausanne EPFL ENAC INTER REME	Switzerland
Klaus	Töpfer	former UNEP Executive Director	Germany
Fumiaki	Toudou	Niigata University	Japan
Katja	Trinks	GTZ	Germany
Alexandra	Trzeciak-Duval	OECD	France
Bishop	Tuhenua	Solomon Islands National Association of Customary Forest Resource Owners	Solomon Islands
Lucinda	Turner	Transport for London	England
Christian	Ude	Mayor of Munich	Germany
Ricardo	Ulate	Ministry of Environment and Energy	Costa Rica
Herwig	Unnerstall	Helmholtzentr. für Umweltforschung, Department Umwelt- und Planungsrecht	Germany
Phapruke	Ussahawanitchakit	Faculty of Accountancy and Management, Maharakham University	Thailand
Andrew	Van Iterson	Green Budget Coalition	Canada
Erik	van Zadelhoff	IUCN	Belgium
Carlos	Vedovatti	FOES	Germany
Aviel	Verbruggen	University of Antwerp	Belgium
João	Vieira	T&E, European Federation for Transport and Environment	Belgium
Peter	Vogelsanger	ME	Switzerland
Anja	von Moltke	UNEP	Switzerland
Stefanie	von Scheliha	Green Budget Germany	Germany
Ernst Ulrich	von Weizsäcker	Donald Bren School, University of California	USA
Norbert	Walter	Chief Economist, Deutsche Bank Research	Germany
Robert	Werner	Greenpeace energy eG	Germany
Alexander	Wiedow	EU Commission	Belgium
Matthias	Witt	GTZ	Germany
Andreas	Wolfsteiner	Green Budget Germany	Germany
Bjarne	Ytterhus	BI Norwegian School of Management.	Norway
Sadeq	Z. Bigdeli	World Trade Institute	Switzerland
Aminu	Zakari	National Hospital	Nigeria
Andrea	Zatti	University of Pavia	Italy
Jarmila	Zimmermannova	Ministry of Environment	Czech Republic
Pietro	Zoppoli	Ministero economia e finanze	Italy
Tobias	Zoufal	Green Budget Germany	Germany

Environmental Fiscal Reform

A training seminar for Policy Makers, Administration Officials, and NGO Representatives

Background

Environmental fiscal reform (EFR) refers to a range of taxation and pricing measures that can free up economic resources and/or generate revenues while helping to reach environmental goals. Provided the reform is appropriately designed, EFR can also have direct and positive effects on poverty reduction, helping to address environmental problems by influencing behaviour through price mechanisms and markets or paid licences. It can also have an indirect effect by generating resources for anti-poverty programmes in areas such as water supply and sanitation, or for pro-poor investments in health and education, for example. The most relevant instruments in developing countries are:

- cost recovery and pricing measures to improve access to basic services such as water and energy,
- taxes and subsidy reforms to discourage the use of environmentally damaging products,
- taxes and fees to control industrial pollution and waste, and
- taxes on the extraction of natural resources such as fisheries and forests.

Capacity Development and EFR



Many participants at the BMZ/GTZ-hosted Special Workshop on EFR in Developing, Emerging and Transition Economies (part of the Global Conference on Environmental Taxation, October 19 to 20, 2007) stressed the importance of broad capacity development approaches and concrete training seminars on how to design and implement environmental fiscal reform. Taking this into account, and partly based on the OECD Development Assistance Committee (DAC)

Guidelines on “EFR for Poverty Reduction”, on behalf of the Federal Ministry for Economic Cooperation and Development (BMZ), GTZ has designed, with the non-governmental organisation

Green Budget Germany, an interactive training seminar that focuses on the different conceptual and thematic dimensions of EFR.

Objectives of the EFR training seminar

- Understanding of EFR concepts and definitions
- In-depth knowledge of EFR approaches in various sectors and countries
- Detailed knowledge of the potential benefits and limits of EFR
- Increased capacity to discuss and design appropriate EFR strategies

Methodology

The seminar employs innovative methods and uses all available opportunities for interactive group work. Based on the casework methodology of the Harvard Business School, it takes a practical approach to EFR. This method incorporates discussions about nationally appropriate EFR approaches (based on insights put forward by the participants). Furthermore, conclusions are developed through joint debate rather than on the basis of ‘ready-made’ teaching messages. Case studies cover various aspects of EFR such as the analysis of existing EFR instruments, EFR and environmental infrastructure, and EFR to manage fossil fuel energy use. Using a range of materials, participants design and ‘test’ EFR elements in a number of different contexts.

Contact

Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH

Sector project Rioplus - Environmental Policy and Promotion of Strategies for Sustainable Development

Tulpenfeld 2

53113 Bonn / Germany

T +49(228)-985-3329

F +49(228)-985-7018

E Axel.Olearius@gtz.de (SV Rioplus),

and **Stephanie.Lorek@gtz.de, Marina.Kosmus@gtz.de**

(Pilot Project Environmental Finance)

I **www.gtz.de/rioplus**