UGANDA

Options for promoting Environmental Fiscal Reform in EC Development Cooperation

Country report Uganda

Stefan Speck[1]

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EXECUTIVE SUMMARY

Uganda makes use of a range of environmental taxes and charges but the overall concept of an environmental fiscal reform (EFR) as promoted by international organisations, such as the OECD and the World Bank, is not well-known. The underlying principle of EFR is seen as an important part of the development policy tool kit as it allows – when designed properly – to achieve multiple benefits simultaneously namely in the fiscal/economical field, environmental sphere as well as with regard to poverty eradication.

When analysing the situation with environmental taxes in Uganda applying the broadly accepted definition of an environmental tax, then it can be concluded that taxes levied on energy products are significant in terms of revenues generated and that the tax rates are rather on the higher end when compared internationally.

The discussion of the two main aspects of an EFR, i.e. the environmental and fiscal dimension, show that there are some challenges Uganda is facing – namely addressing environmental challenges and the mobilisation of domestic budgetary revenues. One of the issues at stake is how to generate additional revenues through domestic resources and three different options can be thought of:

- Increasing the efficiency in tax collection
- Increasing the tax rates of existing taxes
- Broadening the tax base – including the introduction of new taxes including environmental taxes.

International experience shows that EFR instruments can be appropriate tools for addressing environmental problems and for the generation of fiscal resources. However, their design has to be based on the relevant country-specific conditions. Reports studying the options of the more widespread application of EFR in Uganda and the implications of an EFR qualitatively as well as quantitatively in detail have not been identified. Such studies are very important as they show policy-makers the benefits of a properly designed EFR package.

Transfer of experiences with EFR, in particular from developed countries to developing countries, are only of limited use as the environmental problems and challenges as well as socio-economic considerations are very different. For instance, Uganda has huge challenges to cope with regarding the loss of biodiversity, land degradation and to construct additional electricity generation capacity as a source of power and thus reduce the pressure on the environment, in particular under the consideration that more than 90 percent of total energy consumption is fuel wood.

Proposals of revising of existing or introducing new EFR measures must be closely linked to the Poverty Eradication Action Plan (PEAP). For instance, the PEAP anticipates that setting of water tariffs based on the full cost recovery principle is considered not being practicable and implying that the financing of water and sanitation investments is under the responsibility of the Government of Uganda.

[1] Kommunalkredit Public Consulting GmbH, Vienna, Austria, email: stefanspeck@hotmail.com

The purpose of this report is not only discussing EFR in the context of Uganda but also to focus on EFR in development cooperation. Studies do exist assessing the potential of EFR in developing countries thereby identifying criteria and conditions which are essential for the successful implementation of EFR as well as for the success in attaining the pre-determined policy goals[2]. It is quite apparent to us that donors can support the development of EFR in development cooperation and that there are many different indication and pathways for support. Capacity building and good governance is not only essential for the proper functioning of EFR but for politics in general. In addition, the authors of the UNDP-UNEP report are pointing out the lack of undertaking of preparatory studies as an obvious shortcoming as such studies could provide some helpful information for making the EFR instruments more effective. It can therefore be concluded that there a range of starting points for donors to promote EFR in development cooperation.

1. INTRODUCTION

The country report Uganda is part of the study 'Options for promoting Environmental Fiscal Reform in EC Development Cooperation' commissioned by the European Commission providing an overview of environmental fiscal reform (EFR) activities implemented and currently discussed at the political level in Uganda[3].

The main focus of this report is to discuss EFR in the context of the current situation in Uganda emphasizing whether EFR instruments are in use. Based on this discussion some initial remarks are drawn attempting to answer the question whether EFR and EFR instruments respectively could be anticipated as options for addressing some of the challenges in the fiscal and environmental sphere. Following this stock-taking exercise of the current situation, different criteria are derived which are deemed to be significant for promoting the concept of EFR in the context of low-income countries.

The EFR concept is introduced in the first section and an overview of the current EFR instruments implemented in Uganda follows in the second section. The focus of the subsequent sections is to pursue options of EFR in development cooperation by providing proposals, in particular related to different EFR instruments, and identifying essential criteria for promoting EFR in development cooperation.

At this stage it is crucial to express a caveat as this report as its findings are based on interviews and a desk study. Owing to the limited amount of time and available resources the intention of this report is not to provide an exhaustive and complete coverage of the situation of EFR in Uganda. The key findings of this country report are consolidated with the findings of similar country studies carried out under this project and discussed in the final report. A more detailed discussion of the EFR concept can also be found in the final report.

2. ENVIRONMENTAL FISCAL REFORM CONCEPT

The 'environmental fiscal reform' (EFR) concept received some attention with the publication of two reports by the OECD Development Assistance Committee (OECD, 2005) and the World Bank (World Bank, 2005) discussing it in particular in the context of development policy.

The basic idea of EFR is quite straightforward as it aims to combine environmental and fiscal policy considerations[4]. The EFR concept is explained as follows (World Bank, 2005, p.1):

[2] Analytical studies have been undertaken in South Africa revealing that multiple benefits can be achieved simultaneously – see the country case study South Africa.

[3] The information and data presented in this report were compiled during a mission to Uganda which took place between November 14 and 20, 2009 and as part of a desk / literature study. See Annex 1 for a list of people interviewed.

[4] See the inception / final report of the project for a more detailed discussion of the EFR concept.

> The term environmental fiscal reform (EFR) refers to: a range of taxation or pricing instruments that can raise revenue, while simultaneously furthering environmental goals. This is achieved by providing economic incentives to correct market failure in the management of natural resources and the control of pollution.

The interest in this policy tool must also be seen in the context of the Millennium Development Goals (MDGs) to which the international community has committed itself (World Bank, 2005, p.1):

> To help achieve the MDGs, developing country governments need to mobilise revenue to invest in schools, healthcare, infrastructure and the environment. This is where Environmental Fiscal Reform can play an important role.

The concept of EFR namely the notion of domestic resource/revenue mobilisation is of great relevance (see for example: Pagiola et al., 2002 and Gupta and Tareq, 2008) and should not be regarded as detached from the current political discussion on reforming the taxation systems. The policy tools of an EFR are covering a whole range of taxation and pricing instruments.

The focus of this report is to study the application of economic instruments belonging to the EFR basket of policy instruments in Uganda. It is rather self-explanatory that the application of economic instruments is country-specific meaning that some of the instruments may not be appropriate for countries, like Uganda. In general, the EFR instruments[5] are differentiated between the following main categories:

- Environmental taxes and charges: this category encompasses instruments, such as taxes on natural resource extraction (including forestry and fishery), product taxes, such as energy taxes, plastic bag taxes and taxes levied on vehicles, as well as emission taxes, such as CO_2 taxes and trade effluent taxes, i.e. taxes levied on water pollutants, such as biological and chemical oxygen demand (BOD, COD), total suspended solids (TSS).
- Subsidies: the main focus of an EFR is to reform environmentally harmful subsidies, such as subsidies for energy products, fertilisers and water. They all have in common encouraging the over-use of the relevant product and thereby leading to increased environmental pollution. In addition, they are binding scarce financial resources which could instead be used for other policy areas, such as for the eradication of poverty. However, the EFR concept does not necessarily promote the complete abolition of all subsidies but rather reforming them by considering environmental aspects. For example, the provision of feed-in tariffs for electricity generated from renewable energy sources is seen as an environmentally friendly subsidy and implemented in many countries, including Uganda. Subsidies must also be perceived as significant when discussing the fiscal aspect of EFR as the reform of them can free up scarce financial resources to be then used for anti-poverty programmes or for investment programmes.
- Pricing instruments: user charges / cost recovery fees: this last type of an economic instrument differs from those mentioned above as they are in general payments to cover the costs for the provision of a service. They include tariffs for the provision of water and sanitation and for waste collection and disposal as well as electricity pricing. From the theoretical point of view user charges should be set in accordance with the full cost recovery principle meaning that the full costs of service provision should be recovered, i.e. the full coverage of operation and maintenance (O&M) costs, depreciation, financing costs, return on capital employed as well as environmental and resource costs.

It is necessary to clarify the term environmental taxes as used in this study by referring to the widely accepted definition of environmental taxes. This definition is based on the statistical framework and is jointly developed by international organisations, such as the OECD, Eurostat (the statistical office of the European Communities), IEA (International Energy Agency) and the European Commission. An environmental tax is:

[5] The terms ‘EFR instrument’ and ‘economic instrument’ is used interchangeable throughout this report.

> 'A tax whose tax base is a physical unit (or a proxy of it) of something that has a proven, specific negative impact on the environment.' (Eurostat 2001, p.9)

The crucial point of this definition is the fact that the tax base is considered as '*the only objective basis for identifying environmental taxes for the purpose of international comparisons'* (ibid, p.9). This implies that neither the name nor the purpose of the tax as well as the motivation or intent for implementing this economic tool are reflected in this widely accepted definition at all. Hence, also taxes introduced mainly for 'revenue raising' purposes are regarded as environmental taxes under this definition[6].

3. BACKGROUND INFORMATION ON UGANDA

The Republic of Uganda is located on the East African plateau and lies about 1,100 metre above sea level. Uganda is a landlocked country and has borders with five countries: in the east with Kenya, on the north with Sudan, on the west with the Democratic Republic of the Congo, on the southwest with Rwanda, and on the south with Tanzania.

The population of Uganda is estimated to be 30.6 million in 2009 and has one of the highest population growth rates of 3.2 percent per year which is the highest in East Africa and also one of the highest at the world[7]. The majority (85 percent) of the population live in rural areas (MWE, 2009a).

During recent years Uganda's economy continues to grow at high rates. The latest figures for the fiscal year 2008/09 reveals a growth rate of 7 percent at market prices despite the global financial crisis (MFPED, 2009). This development is also reflected in an increase in the per capita income (Gross National Income) which grew from around 300 USD in 2004 to 420 USD in 2008. Average income of Uganda remains far below the sub-Saharan Africa average of 1,082 USD in 2008 (World Bank figures).

Agriculture including fishery and forestry provides about 73.3 percent of total employment in Uganda in 2005/06 and the share increased from 65.5 percent in 2002/03. During the last fiscal year (2008/09) the share of agriculture in total GDP increased slightly to around 25 percent of total GDP. The growth rate of the industry sector dropped to 3.8 percent in the fiscal year 2008/09 but is still higher than the growth rate of agriculture which increased to 2.6 percent during the fiscal year 2008/09. The share of the industry sector amounting to 25 percent is comparable to agriculture and therefore lower than the share of the service sector which accounted for 49 percent of total GDP in the fiscal year 2008/09 (MWE, 2009a). The most current employment figures are revealing that manufacturing employed 4.2 percent and 22.5 percent in the service sector in 2005/06 (UBS, 2009).

Poverty eradication is a key component of all policies implemented by the Government of Uganda and success can be clearly recorded considering that the number of Ugandans living below the poverty line reduced from 56 percent in 1992 to 31 percent in 2005 (MFPED, 2009)[8].

3.1 An overview of the fiscal and tax policy

One of the interesting aspects of EFR is the linkage between environmental and fiscal policy which implies discussion of the overall fiscal strategy. The current situation in Uganda differs from other sub-Saharan countries. A recent paper concludes: '*Domestic revenue – defined as tax and non-tax public revenues excluding grants – increased by almost four percentage points of GDP between 2002 and 2007, reaching an average of over 25% in 2007 for the whole of sub-Saharan Africa* (NEPAD/OECD, 2009, p.7)'.

[6] It is custom not to consider Value-Added Tax (VAT) as an environmental tax since it is related not to environmentally damaging goods *per se*, but to price (i.e. not something which itself has a negative environmental impact).
[7] The fertility rate is reported to be 6.7 children per woman (Akella and Kaggwa, 2009).
[8] see for information on poverty eradication MFPED, 2004 and 2008.

Table 1 provides the background information for Uganda showing increased ratio of domestic revenues to GDP although the current ratio of 12.4 percent is significantly lower than the average of sub-Saharan countries[9]. Furthermore, the table is revealing additional interesting aspects. There is an evident declining trend in the budget deficits with the exception of the current fiscal year 2008/2009. A further aspect is the significance of non-domestic revenues, i.e. grants. Although the share of grants has reduced over time, the figures in the last row still show quite a high vulnerability to aid cuts. The significance of donor support can also be seen when assessing the development of expenditure. The drop in expenditure during the fiscal year 2007/08 was 'd*ue to significant delays in donor disbursements of particularly budget support loans. The phenomenon underlines the importance of donor resource predictability in the execution of the national budget, and the need to strengthen mutual accountability in the politics of donor assistance* (MFPED, 2009, p.51)'.

Table 1: Government revenue and expenditure, fiscal years 2000/01-2008/09 (UGX billion in nominal terms, unless otherwise stated)

	2000/01	**2001/02**	**2002/03**	**2003/04**	**2004/05**	**2005/06**	**2006/07**	**2007/08**	**2008/09 (prov)**	growth – period	growth p.a.
Total revenue & grants	1,868	1,968	2,251	2,935	3,170	3,210	3,994	3,898	5,111	174%	12%
recurrent revenue / taxes	1,083	1,254	1,434	1,659	1,888	2,231	2,626	3,161	3,670	241%	15%
grants	785	715	818	1276	1255	896	1271	651	1288	64%	6%
budget support					824	484	733	475	663		
project support					432	412	538	176	626		
GDP current prices	10,296	10,907	12,438	13,972	16,026	18,172	21,187	24,709	29,824	190%	13%
GDP constant 2002 prices	10,591	11,493	12,237	13,07	13,897	15,396	16,691	18,202			
total revenue in % GDP	18.1%	18.0%	18.1%	20.2%	19.3%	17.7%	18.0%	15.8%	17.1%		
total revenue (excl grants) in % GDP	10.5%	11.5%	11.5%	11.8%	11.8%	12.3%	12.4%	12.8%	12.4%		
total expenditure in % of GDP	21.2%	24.4%	23.0%	21.6%	19.5%	19.5%	18.7%	17.3%	19.6%		
budget deficit (incl. grants) in % of GDP	-2.3%	-5.3%	-4.0%	-1.5%	-0.5%	-2.2%	-1.9%	-2.0%	-3.4%		
budget deficit (excl. grants) in % of GDP	-10.1%	-12.2%	-10.8%	-9.8%	-7.8%	-7.1%	-7.0%	-4.6%	-7.8%		
donor assistance /total budget (vulnerability to aid cuts)				52.3%	46.9%	38.5%	48.4%	27.6%	42.4%		

[9] This overview of Uganda's taxation / fiscal policy is by far not exhaustive. The attempt is made to highlight the key issues which are important in the discussion of the concept of environmental fiscal reform. See for a more detailed discussion of the tax policy: MFPED, 2009, Ayoki, 2007 and UDN, 2008.

Source: Ayoki, 2007 and MFPED, 2009

The growth rates presented in the last two columns of Table 1 are revealing the different developments between domestic revenues and grants also compared to the increase in GDP clearly showing that domestic resource mobilisation is playing a bigger part in the overall budget of Uganda. The increase in domestic taxes shows a higher growth rate than the GDP.

The tax structure of Uganda is also necessary to discuss as it shows the dependency on international trade taxes, with over 50 percent of tax revenues accruing from international trade taxes. The reliance on revenues from international trade taxes can also be found in many African countries and their share was highest in Uganda (Ayoki, 2007). One of the reasons for this reliance is their relatively easy management. International trade taxes, such as import tariffs, are conflicting with the overall programme of trade liberalisation and it can be anticipated that these taxes will forfeit their significance, in particular in terms of their revenue generating potential, during the coming years. The importance of direct taxes raised increased over time as their share increased from 18.5 percent in the fiscal year 2000/01 to around 28.4 percent in 2008/09 (see Table 2).

Table 2: Tax structure indicators

	2000/01	**2001/02**	**2002/03**	**2003/04**	**2004/05**	**2005/06**	**2006/07**	**2007/08**	**2008/09 (prov. outturn)**
direct tax as % of total tax revenues	18.5%	20.7%	22.3%	24.2%	27.2%	27.1%	27.7%	27.3%	28.4%
indirect tax as % of total tax revenues	24.5%	26.1%	24.6%	21.8%	21.9%	22.9%	22.8%	22.1%	20.9%
international trade tax as % of total tax revenues	56.4%	50.5%	50.3%	51.9%	50.8%	50.4%	50.1%	51.6%	51.2%

Source: Ayoki, 2007, MFPED, 2009 and author's own calculation

However, this classification is slightly puzzling because of the allocation of the revenues generated by the petroleum duty to the category of international trade taxes. The revenues presented as generated by a petroleum duty are actually the revenues of the excise duties levied on petrol, diesel and LPG[10]. Revenues of excise duties are generally classified under the heading of indirect taxes and the revised allocation shows that the share of indirect taxes is in the same range with international trade taxes (see Table 3).

Table 3: Tax structure indicators

	2000/ 2001	**2001/ 2002**	**2002/ 2003**	**2003/ 2004**	**2004/ 2005**	**2005/ 2006**	**2006/ 2007**	**2007/ 2008**	**2008/09 (prov. outturn)**
direct tax as % of total tax revenues	18.5%	20.7%	22.3%	24.2%	27.2%	27.1%	27.7%	27.3%	28.4%
indirect tax (incl. petroleum tax) as % of total tax revenues	42.9%	43.8%	41.4%	38.1%	38.1%	40.1%	38.1%	38.2%	36.1%
international trade tax (excl. petroleum duty) as % of total tax revenues	38.0%	32.8%	33.6%	35.7%	34.4%	33.3%	34.7%	35.5%	36.1%

Source: Ayoki, 2007, MFPED, 2009 and author's own calculation

[10] Personal communication with Michael Wamibu, Ag. Commissioner of the Tax Policy Directorate, Ministry of Finance, Planning and Economic Development (November 2009).

The significance of international trade taxes in terms of their potential in generating revenues is clearly visible in Table 3. However, the share of this type of taxes of more than 20 percent of total tax revenues in Uganda is quite high as this share amounts on to 24 percent in lower-income countries to which Uganda belongs. One of the advantages of these taxes is the rather low administrative burden of collecting them as there are only a limited number of collection points to be supervised (EC, 2010b, p.5).

A regularly used benchmark when making an analysis of the current situation of environmental taxes in a country is to assess the ratio of revenues generated by environmental taxes to total tax revenue, and to GDP. International organisations, such as the OECD and the European Environment Agency (EEA), now publish such ratios regularly. However, these figures have to be interpreted with some care because they do not say anything meaningful about whether a tax system is, in its totality, 'environmentally friendly' or not. However, they can be quite useful in a trend analysis.

The revenues generated by environmental taxes amounts to around 6.2 percent (2.5 per cent) of the total taxation (GDP) in EU member states in 2007 ranging from 4.9 percent (1.8 percent) in Spain to 12.1 percent (5.9 percent) in Denmark (Eurostat, 2009). The tax revenues presented in Table 4 are only illustrating revenues from the excise duty on energy products and from vehicle taxation[11] but undoubtedly reveal the importance of environmental taxes in terms of their revenue generating effects. The ratio of environmental tax-to-total tax revenues and to total revenues (including grants) is very high when compared to countries which are regularly described as main promoter of environmental taxes, such as Denmark. It is not surprising that the ratio of environmental tax-to-GDP is rather low in contrast. But this is the result of the overall lower ratio of total revenues-to-GDP amounting to about 17 percent in Uganda (see Table 1) as compared to a ratio of 48 percent in the case of Denmark. The Ugandan ratios of 2.2 percent and 17.4 percent (see Table 4 below) are higher than the comparative figures for South Africa which are around 1.8 percent and 6.3 percent respectively (see country case study South Africa).

Table 4: Indicators regarding environmental taxes (UGX billion in nominal terms, unless otherwise stated)

	2004/05	**2005/06**	**2006/07**	**2007/08**	**2008/09 (prov. outturn)**
petroleum duty - excise duty on energy products (petrol, diesel, kerosene)	309	383	403	510	561
motor vehicle tax	51	61	76	43	83
environmental tax revenue	360	444	479	553	644
share of environmental taxes to total tax revenues	19.1%	19.9%	18.2%	17.5%	17.4%
share of environmental taxes to total revenue (incl grants)	11.3%	13.8%	12.0%	14.2%	12.6%
Share of environmental taxes to GDP	2.2%	2.4%	2.3%	2.2%	2.2%

Source: Ayoki, 2007, MFPED, 2009 and author's own calculation

It can be recorded that environmental taxes are playing a significant role in generating revenues but this does not say anything about their environmental effectiveness[12]. This short overview clarifies the necessity of

[11] A caveat has to be made because of constraints regarding time and funds it was not possible to undertake a rather detailed analysis implying that for example revenues from other environmental taxes, such as the water waste discharge fee, are not included. However, international data are showing that taxes levied on energy products and vehicle taxation are by far raising the biggest share of environmental tax revenues (OECD, 2001). See below for a detailed discussion regarding these environmental taxes.

[12] A commonly used classification of environmental taxes distinguishes between revenue-raising taxes and incentive taxes, which are levied with the objective of changing environmentally damaging behavior without the intention to raise revenues.

mobilising domestic resources as an option to reduce the budget deficit and to reduce the reliance on donor grants.

3.2 Environmental policy

The Ministry of Water and Environment (MWE) is the key player in developing policies in the water and environment sector. This sector is deemed to be significant in contributing to the Poverty Eradication Action Plan (PEAP). The policy objectives of the Government of Uganda with regard to the water and environment sector are summarised as follows (MWE, 2009a, p.2):

(i) "To manage and develop the water resources of Uganda in an integrated and sustainable manner, so as to secure and provide water of adequate quantity and quality for all social and economic needs of the present and future generations with the full participation of all stakeholders" (MWLE, 1999).

(ii) "To provide "sustainable provision of safe water within easy reach and hygienic sanitation facilities, based on management responsibility and ownership by the users, to 77% of the population in rural areas and 100% of the urban population by the year 2015 with an 80%-90% effective use and functionality of facilities" (MWLE, 2004a). This is more ambitious than the Millennium Development Goal (MDG) which aims to halve the percentage of people without access to safe water by 2015 in Uganda.

(iii) "Promote development of water supply for agricultural production in order to modernise agriculture and mitigate effects of climatic variations on rain fed agriculture" (MWLE, 1999).

(iv) The objective of the natural resources sub-sector is "to increase productivity of the natural resource base and harnessing natural resources in a sustainable manner" (Ministerial Policy Statement, 2009/10).

No direct reference is given to energy issues as policies associated with the energy sector are dealt by the Ministry of Energy and Minerals.

Although the natural conditions with regard to climate, freshwater and biodiversity are said to be quite favourable, Uganda is nowadays facing several environmental challenges including climatic variability, pollution of surface and ground water bodies, land degradation and soil nutrient loss, loss of biodiversity through habitat alteration and over-harvesting of natural resources (UNEP, no date given). These environmental challenges are being somehow addressed as the overall environmental policy objectives.

Furthermore, the National Environment Management Authority (NEMA) stated the causes of these environmental challenges as follows: 'T*he challenges ranging from poor solid waste management, pollution of land, air and water and degradation of ecosystems due to soil erosion clearly have anthropogenic causes* (NEMA, 2008, p. 223)'.

One of the main drivers for the environmental challenges is the growing population. The implications are particular visible in the deforestation and conversion of forests and woodlands for subsistence agriculture (MWE, 2009a). Changes in forest cover differ between districts and the worst affected district is Mayuge from where a deforestation rate of 100 percent is reported, i.e. all forests have been depleted leading to a worsening of land degradation and soil erosion. The increase in deforestation rates is reflected in the rising fuel wood consumption in Uganda as '*about 91% of the total energy used in the country is derived from biomass (firewood, charcoal, shrubs, grasses, forest and agricultural crop waste and agro-industrial residues) and it is likely to remain so for the foreseeable future* (MWE, 2009a, p.18)'.

Pollution (water, air as well as industrial pollution) and solid waste, especially in urban areas, are increasingly becoming environmental challenges in Uganda. Policies are in place addressing these challenges but new policy measures including market-based instruments, such as environmental taxes and charges and deposit-refund system, are required to cope with these challenges.

Although the water and environment sector is assessed as a decisive factor for the development of Uganda, more attention is directed to the energy and transport sectors as they are considered to be essential for the

overall development of growth and private sector development[13]. It is essential to find the right balance between requirements of a growing economy satisfying the needs of the Ugandan economy and people and environmental protection. A growing economy combined with the growing population will increase the demand on water and energy products and land for cultivation and will also increase the pressure on the environment in terms of increase air and water pollution. Policy measures, such as EFR instruments like environmental taxes, can mitigate the environmentally negative consequences of this development as international experiences shows[14].

4. EXPERIENCES WITH MARKET-BASED INSTRUMENTS/EFR IN UGANDA

A whole range of EFR instruments[15] are in place in Uganda. A recently published study commissioned by the UNDP/UNEP Poverty-Environment Initiative provides an overview of the current situation of the application of EFR instruments in Uganda (UNDP-UNEP, 2009a – see Annex 2 below).

The centre of this analysis is directed to assess some of the introduced economic instruments – but this analysis is far from exhaustive as it would be going beyond the assignment[16].

4.1 Energy sector

A tax levied on different energy products - often being listed under the term excise duties in public finance - are probably the most striking example of an EFR instrument. Sometimes a slight confusion exists with this type of an environmental tax as the underlying motivation for introducing this tax is to generate revenues. As discussed above the concept of an EFR can be summarised as domestic resource mobilisation with furthering environmental goals and it is therefore straightforward to state that the Ugandan excise duties on petrol, diesel (gas oils) and kerosene should be classified as an EFR instrument. The end-user prices and tax of several energy products are shown in Table 5 below.

Table 5: Energy end-user prices and excise tax

	end-user price (as of Nov 2009)	**excise tax (Nov 2009)**	**share of tax /end-user price**	**end-user price**	**excise tax**
	UGX/litre	UGX/litre		Euro/litre	Euro/litre
Petrol	2,400	850	35%	0.86	0.34
Diesel / gas oil	2,000	530	27%	0.72	0.21
Kerosene	1,700	200	12%	0.61	0.08

[13] '*The medium-term outlook for Uganda remains favourable, but constraints on growth are likely to become binding. Scaling up investment in transport and energy infrastructure is a critical priority for sustaining and indeed raising Uganda's medium-term growth potential. However, the international environment will be more challenging, perhaps for some years to come, which could affect the financing of investment projects. This places an additional premium on broadening the domestic revenue base and ensuring value for money in public spending* (IMF, 2009, page 23)'.
The Government of Uganda is pursuing a policy of private sector-led economic development. http://www.ugrevenue.com/pdfs/UK%20TAXATION%20PAPER.pdf

[14] It has clearly to be stated that international practice regarding the application of economic instruments for environmental policy cannot and should not be directly transferred between countries. However, the underlying concept of these instruments can be adopted between countries by considering country-specific conditions. An interesting case is the Dutch experience of wastewater taxes as a clear relationship between increases in the tax rates and decreases in water pollution is reported (see EEA, 2005). See also Malaysia and the Philippines experience with wastewater discharge fees (MENR, 2008).

[15] EFR instruments are also named as market-based instruments, green instruments and economic instruments in the literature. All these names can be in general used interchangeable.

[16] The analysis should be seen in the context of the overall project objective namely to *establish criteria to identify where there is a good potential for successful EFR support by the EC within the context of the current generation of CSPs and RSPs (2007-2013)*.

Note: UGX values are converted into Euro by using the exchange rate of 2,780 UGX per Euro

The Ugandan end-user prices for transport fuels are rather high when compared with other countries as shown in Table 6. In addition, it has to be stated that the sale of energy products, such as petrol and diesel, is not subject to VAT in Uganda.

Table 6: Transport fuel prices in selected countries as of mid November 2008

	petrol/gasoline	**diesel**	**petrol/gasoline**	**diesel**
	US cents per litre	US cents per litre	PPP US cents per litre	PPP US cents per litre
UK	144	165	115	131
Belgium	150	134	118	105
Spain	123	128	120	125
Burkina Faso	138	133	334	321
Jamaica	74	84	112	127
Uganda	130	122	353	331
Kenya	120	114	246	234
Tanzania	111	130	310	363
South Africa	87	95	146	160

Source: GTZ http://www.gtz.de/de/dokumente/en-international-fuel-prices-data-preview-2009.pdf and author's own calculation based on PPP data published by the World Bank[17]

When comparing the Ugandan excise tax rates with those implemented in the neighbouring countries and South Africa, it has to be stated that the rates in Tanzania (petrol: 0.267 Euro per litre and diesel: 0.255 Euro per litre) are very comparable to the Ugandan ones. The rates in Kenya are slightly lower as well as the fuel taxes implemented in South Africa (petrol: 0.198 Euro per litre and diesel: 0.183 Euro per litre).

Despite the relatively high prices for transport fuels the sale of transport fuel in Uganda increased as shown in Table 7 and therewith environmental problems like further congestion in urban areas, such as Kampala, and air pollution.

Table 7: Sales of petroleum products by type (cubic litres) 2004 – 2008[18]

	2004	**2005**	**2006**	**2007**	**2008**	**Percentage change between 2004-2008**
Petrol	186,285	174,054	198,125	191,713	250,256	34%
Aviation fuel	79,131	88,932	89,995	92,616	44,572	-44%
Diesel	260,978	319,574	417,449	464,122	514,114	97%
Fuel oil	53,313	44,423	38,289	34,384	28,311	-47%
Kerosene	49,340	39,836	42,897	34,309	62,377	26%
LPG	4,500	4,486	5,800	7,273	8,272	84%

Source: Petroleum Supplies Department, Ministry of Energy and Mineral Resource

[17] PPP is purchasing power parity; an international dollar has the same purchasing power over GDP as a U.S. dollar has in the United States.

[18] It is interesting to note that the sale of petrol was rather flat between 2004 and 2007. A massive increase occurred in 2008 as compared to 2007 resulting in the overall growth between the 2004 and 2008 as reported above. This result is in contrast to the data presented in the 'State of Environment Report for Uganda 2008' showing a negative growth of petrol consumption between 2002 and 2007 (NEMA, 2008, Table 10.3, p. 197).

4.2 Vehicle taxation

Environmental considerations as well as generating revenues were to the fore when the Government of Uganda introduced an environmental levy on motor vehicles aged 8 years or older in 2006 aiming to discourage the use is of "environmentally hazardous used goods"' (UNDP-UNEP, 2009a, p.17). The initially introduced tax rate of 10 percent was in the meantime increased to 20 percent due to be paid in addition to an import duty rate, COMESSA[19] duty rate and VAT (URA, 2007). The tax base of the environmental levy was extended as used motor vehicle spare parts are also subject to this tax.

All these taxes are based on the customs value of the car. In this context it is worthwhile to state that Uganda has set no limit on the age of vehicles to be imported and also no roadworthiness inspection before they are shipped to Uganda. This certificate is required in Tanzania for example and Kenya allows import of used cars only if they are younger than 8 years. Data presented in UNDP-UNEP report are showing that the trend of importing vehicles has not changed – at least until 2007.

Apart from these taxes payable when purchasing a car an annual circulation tax in form of a road license fee was in place in Uganda. However, this tax was abolished in the budget of the fiscal year 2007/08.

4.3 Water related EFR instruments

During the last decades the Ugandan water sector was further developed as reflected in a significant increase in water coverage. The indicator of water coverage rates are in so far of great interest as one of the MDGs is exactly addressing this issue. The rate of access to safe water increased and stands currently at 65 percent in rural areas and 66 percent in urban areas (MWE, 2009a).

Pricing instruments in form of water and wastewater tariffs are also part of the EFR instrument package and are implemented widely in Uganda. Table 8 provides some background information on the size of the tariffs distinguishing between different water users. In addition to the volume base (variable) tariffs fixed rates are also applicable.

Table 8: Water and wastewater tariff of NWSC in 2008

	water supply	**sewage**	**total**	**water supply**	**sewage**	**total**
	UGX/m3	UGX/m3	UGX/m3	Euro/m3	Euro/m3	Euro/m3
residential consumers	1,341	1,006	2,347	0.48	0.36	0.84
institutional/government	1,651	1,651	3,302	0.59	0.59	1.19
industry	between 1,697 and 2,085	between 1,697 and 2,085	between 3,394 and 4,070	between 0.61 and 0.75	between 0.61 and 0.75	between 1.22 and 1.50

Source: National Water and Sewerage Corporations (NWSC[20])

The data provided in Table 8 are not valid for the whole country but only for large urban centres which are serviced by NWSC which is a parastatal water and wastewater service cooperation. A very interesting and novel approach recommendable for water utilities is the tariff indexation policy of NWSC introduced in 2002. This policy aims at '*protecting the operating tariff against input price escalation resulting from inflation, foreign exchange costs and other external factors. This has helped to attain price stability, in real terms, which has in turn enhanced the Corporation's efforts towards cost recovery (financial sustainability)* (Muhairwe, 2006)'.

[19] COMESSA – Community of Sahel-Saharan States

[20] For more information on tariffs also for non-metered water usage see the information provided by NWSC at http://www.nwsc.co.ug/index10.php

The bill collection rate in Uganda is quite high amounting to 90 percent (AfDB/OECD 2007) but non-revenue water increased from 29.7 percent in 2005/06 to 35.8 percent in 2008/09. This development is not satisfactorily as the target was a rate of 28.7 percent in the financial year 2008/09 (MWE, 2009a, p.58).

The setting of water tariffs should be done in accordance with the full cost recovery principle implying that not only the O&M costs are covered but also all financial costs (loan amortisation and interest payments as well as a return on capital) and environmental and resource costs. It must be clearly stated that tarification regimes are rarely adhered to this principle in full at the world scale including in many European countries. In particular, the inclusion of environmental and resource costs are considered a huge challenge, although it is explicitly mentioned in the 2000 EU Water Framework Directive.

The use of economic instruments in the field of water has been advocated by many as an effective means of promoting the protection of the environment and internalising environmental concerns and impacts into economic actors' decisions. Economic instruments, such as water abstraction taxes addressing the water supply and trade effluent taxes or wastewater discharge taxes tackling water quality issues, are tools guaranteeing that environmental and resource costs are being part of water and wastewater tariffs.

An environmental tax in the water sector has been introduced in Uganda. The Government of Uganda established the water waste discharge regulation in 1998 by combining regulatory measures with the economic instrument of a pollution charge (waste water discharge fee) levied on biological oxygen demand (BOD). The charge itself is closely connected to the setting of permits as only discharges above the permitted levels are subject to the charge (UNDP-UNEP, 2009a). The objective of the charge was as follows: *(i) providing incentives for conservation and minimisation of water wastage, (ii) influencing the users' habits regarding consumption and use of water and, (iii) encouraging reduction of concentration of pollutants in waste water discharge and enhancing environmental conservation* (UNDP-UNEP, 2009a, p.21). The revenues generated by the pollution charge are part of the national budget. The pollution charge is also not in full accordance with the polluter pays principle which is seen as one of the central legal principles of environmental policy as polluters have only to pay for emissions exceeding the level stated in the permit[21].

4.4 EFR in the context of financing the infrastructure in the water and sanitation sector

The EFR concept is much broader than only assessing the different EFR instruments as discussed briefly above (see for a detailed discussion: OECD, 2005 and World Bank, 2005). Financing the physical infrastructure is closely connected to the concept of EFR and is therefore quite appropriate to cover this topic in this report too.

Recent figures are revealing a declining trend of total budget allocation to the financing of the water and sanitation sector. The overall development is presented in Table 9 and revealing that the funds available for financing water and sanitation infrastructure dropped as a share as well as in nominal terms between 2004/05 and 2008/09. The same trend is reported for the environment and natural resource sector (MWE, 2009a). The budget allocation of the latter is lower as compared to the water and sanitation sector amounting to 0.56 percent of the national budget in 2008/09.

[21] The polluter pays principle (PPP) means that the polluter should bear the expenses of carrying out the above mentioned measures decided by public authorities to ensure that the environment is in an acceptable state. In other words, the cost of these measures should be reflected in the cost of goods and services which cause pollution in production and/or consumption. This principle is explicitly mentioned in the Rio Declaration on Environment and Development and endorsed by many international organisation, such as the OECD and EC, and implemented in many national environmental laws.

Table 9: Water and sanitation sector finance – recent developments

	2004/05	2005/06	2006/07	2007/08	2008/09
Water and sanitation finance in % of national budget	4.9%	4.4%	4.1%	2.8%	2.4%
Water and sanitation finance in % of GDP	1.0%	0.8%	0.7%	0.4%	0.4%

Source: MWE, 2009a and author's own calculation

The nominal data distinguishing between donor funds and national funding are rather intriguing as they reveal the reasons for the funding trend of the water and sanitation sector. Donor funding has more than halved between 2004/05 and 2008/09 as compared to the Government of Uganda (GoU) funding which almost doubled during the same period. Quite interesting is the fact when determining the share of GoU funding share as a percentage of total domestic revenue, i.e. national budget without any foreign grants. This indicator reveals the share of domestically generated revenues from all types of taxes which has been allocated to financing the water and sanitation sector. This indicator is presented in the last row of Table 10 and shows that the share has a slight negative trend thereby ignoring the development in 2005/06.

Table 10: Trend in financing of water and sanitation sector- allocation between donor and Government of Uganda (GoU – budget allocation)

	2004/05	2005/06	2006/07	2007/08	2008/09
Donor funding (million UGX)	97,692	112,109	79,822	42,053	48,271
GoU funding (million UGX)	58,68	45,265	73,105	88,468	101,184
Total funding (million UGX)	156,372	157,374	152,927	130,521	149,455
Donor funding share to total funding	62%	71%	52%	32%	32%
GoU funding share to total funding	38%	29%	48%	68%	68%
GoU funding share in % of total domestic revenues (national budget excluding grants)	3.1%	2.0%	2.8%	2.8%	2.7%

Source: MWE, 2009a and author's own calculation

Financing water and wastewater infrastructure is a huge challenge in developing countries. In this context it is appropriate to make reference to the 'eThekweni declaration' in which Africa countries are committing themselves on allocating 0.5% of GDP to finance sanitation[22]. Looking at the latest available figures it has to be stated that the trend in financing water and sanitation in Uganda does not fulfil the obligation of eThekweni declaration which was also signed by Uganda.

The efficient delivery of infrastructure and social services is critical to alleviate poverty and to develop economic opportunities. However, the problem developing countries are facing is to mobilise domestic resources to undertake water including wastewater investment programmes. Three sources of financing water investment do exist (UNEP, 2004):

- International Transfers (Official Development Assistance (ODA) and international lending from development banks and commercial banks);
- Private Sector Investments (International and domestic); and
- Other Domestic Sources (budgetary allocations, domestic lending and user finances).

This fact is highlighted in this UNEP report (2004) while quoting the result of a study carried out by WaterAid (UK). The authors of this study are estimating that '*approximately 70 per cent of the current global spending*

[22] The Declaration called for governments to establish specific public sector budget allocations for sanitation programme

on water and sanitation is provided by the domestic public sector, 20 per cent by ODA, and 10 per cent by private sector that comprises 7 per cent by international private flows while only 3 per cent comes from domestic private sector investments (UNEP, 2004).' Considering these findings it has to be stated that the current breakdown of budget allocation for funding water and sanitation sector is still rather supportive to Uganda taking into account that donor funds contribute around 32 percent to the overall budget of this sector.

The funding of the infrastructure of the water and sanitation sector is considered as important and benefits from the Poverty Action Fund. The policy objectives of the Government of Uganda (GoU) for this sector are in full accordance with the Poverty Eradication Action Plan (PEAP 2004) and one of the objectives is (MWE, 2009b, p.i):

> To achieve sustainable provision of safe water within easy reach and hygienic sanitation facilities, based on management responsibility and ownership by the users, to 77% of the population in rural areas and 100% of the urban population by the year 2015 with an 80-90% effective use and functionality of facilities.

Uganda is facing huge challenges with regard to water and sanitation investment in achieving the MDGs as set out in its Sector Investment Plans (SIPs) as well as in the PEAP. It is worthwhile to indicate the dimension of these financial challenges and to set the financial requirements for achieving these policy objectives in relation to the most current budget allocation to the water and sanitation sector.

It is reported – based on the SIPs - that '*the total investment requirements for achieving the Water Supply and Sanitation (WSS) MDGs range from$1.5 billion to $1.85 billion in five key sub-sectors: rural water supply and sanitation (43 per cent of the investment requirement), small towns WSS (32 per cent), large towns WSS (16 per cent), water for use in production (3 per cent) and water resources management (6 per cent)* (AfdB/OECD, 2007, p.541)'.

Table 11 below clarifies that – under the current budget allocation - the MDGs will not be achieved in the foreseeable future and that the realisation of the even more ambitious objectives laid out in the 'Strategic Sector Investment Plan for Water and Sanitation Sector in Uganda' published by the Ministry of Water and Environment in July 2009 (MWE, 2009b) is also in question.

Table 11: Investment needs to achieve the MDGs versus current budget allocation to the water and sanitation sector

	investment needs (total investment of 1.5 billion USD – scenario 1)	**investment needs (total investment of 1.85 billion USD – scenario 2)**	**budget allocation (2008/09)**	**number of years to achieve MDGs under current budget allocation years**	
	billion UGX	billion UGX	billion UGX	number of years (scenario 1)	number of years (scenario 2)
Rural WSS	1,109	1,368	55	20	25
Small town WSS	826	1,018	43	19	24
Large towns WSS	413	509	21	20	24
Water for production	77	95	10	8	9
Water resource management	155	191	11	14	18
Total	2,580 (1.5 bill USD)	3,182 (1.85 bill USD)	141	18	23

Source: AfDB/OECD, 2007, MWE, 2009a and author's own calculation

4.5 Electricity pricing – an EFR instrument

Energy is one of the keys for economic growth and for improving the living conditions. As mentioned above biomass energy is by far the most used source of energy (more than 90 percent) followed by petroleum products (about 6 percent). The share of electricity is currently a rather marginal source of energy accounting for around 1 percent (MWE, 2008). However, efforts are underway to increase the electricity generation capacity because of several reasons. Economic performance of Uganda is partly affected by an acute electricity crisis (i.e. power shortage) which is a threat to the economic expansion. Electricity is considered as an essential production factor for industry and is also seen as a substitute for the use of biomass by households. Data presented in the National Household Survey 2005/2006 (UBS, 2006) are showing the divergence between rural and urban areas as more then 86 percent of urban communities are reported to be connected to the electricity grid as compared to a 9.3 percent of rural communities in 2005/06. The average reported community connection rate was 19.5 percent in 2005/06 increased from 17.8 percent in 2001, i.e. only 5 percent of total population is reported to have access to electricity resulting in one of the lowest per capita energy consumption rates in the world[23].

Electricity pricing is one of the EFR instruments and the discussion regarding the full cost recovery principle – as it is the case concerning water tariffs - also applies to the setting of the electricity tariffs.

Table 12 presents the development of the electricity tariffs distinguishing between the main user categories.

Table 12: Development of electricity tariffs (2004-2008)[24]

	2004	**2005**	**2006**	**2007**	**2008**	**2008**
	UGX/kWh	UGX/kWh	UGX/kWh	UGX/kWh	UGX/kWh	Euro/kWh
Domestic	171.4	216.9	298.2	426.1	426.1	0.153
Commercial	164.8	208.3	286.8	398.8	398.8	0.143
Medium industry	150.3	182.8	261.5	369.7	369.7	0.133
Large industry	60.4	73.6	120.8	187.2	187.2	0.067

[23] see http://www.icafrica.org/en/infrastructure-issues/aims11/aims1100/

[24] The total end-user electricity tariff consists of three components: fixed standing charge, capacity demand charge and the energy or usage charge. Only the last component is presented in Table 12 (see for further information: Electricity Regulatory Authority at www.era.or.ug.

Source: UBS, 2009 and author's own calculation (an exchange rate of 2,780 UGX/Euro is used)

During the period 2004 – 2007 electricity tariffs have been increased by about 35 percent per annum and only in 2008 the tariffs have been hold constant.

The total installed capacity amounted to 416 MW and is based on hydro facilities (about 316 MW) and thermal facilities (100 MW) as compared to a peak demand of around 260-350 MW (MWE, 2008). However, the total power output was below the peak demand leading to load shedding. In particular the renewable facilities could only operate below capacity implying that the thermal facilities operated at full capacity. This development is also reflected in the increase in the electricity tariffs as the electricity generation costs of thermal units are much higher than the comparable unit generation costs of hydro facilities. The tariff indexation policy takes into account the increase in fuel prices (i.e. electricity generation) as this policy aims to secure the revenues by adjusting the tariffs against exchange rate fluctuations, fuel price increases and inflation. It seems that this indexation policy was adjourned for 2008. Increased electricity tariffs are obviously limiting the option for using electricity as a substitute for fuel wood (firewood & charcoal) under the assumption that energy users have access to both energy sources. The consequences of a slower adoption of the use of electricity for lighting and cooking is a big pressure on the environment in the form of even faster and higher harvesting rate of forests leading to increased rate of land deterioration and biodiversity losses.

Uganda's electricity tariffs are on the higher end when compared to developed and neighbouring countries (Tables 13 and 14).

Table 13: Household electricity tariffs in selected countries[25]

Country	**Euro/kWh**	**Year**
Austria	0.155	2009
Czech Republic	0.115	2009
Mexico	0.050	2009
Norway	0.095	2009
UK	0.134	2009
Indonesia	0.049	2006
Singapore	0.128	2009
South Africa	0.047	2006

Source: OECD/IEA, 2009

Worthwhile to mention is also the tarification policy adopted in Kenya as tariffs are set according to an increasing block tariff as shown in Table 14. The size of tariff levied on domestic consumers for consuming more than 1,500 kWh is comparable to the tariff in Uganda. This also reflects that Ugandan households are facing a relative high electricity bill.

Table 14: Electricity tariff for domestic consumers in Kenya

	0-50 kWh	**51-1,500 kWh**	**>1,501 kWh**
KES/kWh	2	8	18,57
Euro/kWh	0.0178	0.0712	0.165

Source: Energy regulatory Commission of Kenya, http://www.erc.go.ke/ctariff.pdf

[25] The electricity tariff of South Africa must be treated with care as during recent years the tariffs have been adjusted dramatically (increase by 27.5 percent in 2008/2009 and a further increase of 31.3 percent is planned in 2009/10 (see country study South Africa)).

The construction of new hydropower plants will increase the electricity generation capacity and load shedding should no longer be necessary in the future. The overall electrical power generation potential is reported to exceed 5,300 MW comprised of hydro (2,000 MW), mini-hydro (200 MW), solar (200), biomass (1,650), geothermal (450 MW) and peat (800 MW). One of the EFR instruments to support the construction of renewable electricity generation facilities is the provision of feed-in-tariffs. This policy is also applied in Uganda by guaranteeing the purchase of electricity from renewable energy sources to a fixed tariff over a period of up to 20 years. The operators of such facilities can secure an average tariff of 5.89 UScent per kWh generated in small hydro power plants (less than 20 MW) and 5.96 UScent per kWh for bagasse[26]. The same policy of feed-in-tariffs is also in place in Kenya where the operators of wind power plants are also eligible for selling electricity at a feed-in-tariff to the national grid[27].

The discovery of oil in western Uganda and future exploration of this energy source will probably have some future implications for electricity generation potential. The use of oil products for electricity generation is clearly second choice from the climate protection perspective and renewable energy source, such as biomass, is the preferable option. However, the question of future electricity generation potential must also be seen in the context of the very advanced stages of deforestation and loss of biodiversity in Uganda. Furthermore, recent estimates are predicting '*that Uganda is likely to be importing fuel wood by 2020* (MWE, 2009a , p.IV)'. These slightly contradicting aspects have to be conciliated in the process of how to extend the power sector in Uganda.

4.6 Other EFR instruments

There are other EFR instruments implemented in Uganda. One of the interesting measures is the excise duty levied on polythene and plastic bags of more than 30 microns which was introduced in 2007/2008 (UDN, 2008) and is part of a whole policy package including a ban on other plastic bags. This instrument addresses one of the most urgent environmental problems namely the rapid increase in solid wastes. It can be anticipated that the environmental pollution caused by an increase in solid waste amounts will be aggravated, in particular in urban areas as a consequence of the increase in population and the inadequate waste management infrastructure. Policies tackling this challenge are underway as for example private companies are providing waste collection services in Kampala '*at a nominal fee of less than US$15 per household per month* (MWE, 2009, p.23)'. Door-to-door waste collection is definitely an option dealing with the poor waste collection rates in urban areas. However, the fees of up to 180 USD per household per annum seems to be rather high compared with the reported per capita income (as measured in gross national income per capita) of 420 USD in 2008. Our assumption seems not to be far-fetched that poorer households will not be able to pay this fee for waste collection if the waste collection by private companies will be extended to areas which are currently not covered and therefore fly-tipping will continue. Not only waste collection of household wastes but also the safe and environmental friendly disposal of electrical goods, such as computers and refrigerators, is an environmental challenge Uganda is facing. These goods may be imported and distributed to Ugandan people by aid organisation but without considering a concept of their disposal after their end of usage[28]. This issue is in particular problematic as these products must often be classified as hazardous waste (for instance, CFCs 'i.e. ozone depleting substances' in refrigerators) requiring special dismantling and recycling facilities for the secure disposal.

[26] See for more information: http://www.era.or.ug/Feed_In_Tariffs.php

[27] It seems that the feed-in-tariffs in Kenya are higher than in Uganda. For example, the feed-in-tariff for biomass derived electricity amounts to 0.07 UScent per kWh and for electricity generated in small hydro power facilities are between 0.08 and 0.10 UScent per kWh (http://www.erc.go.ke/feed-in-tariffs.pdf).

[28] This issue was highlighted by C.M Kassami, Permanent Secretary / Secretary to the Treasury, Ministry of Finance, Planning and Economic Development (personal communication, November 2009).

A whole range of market-based instruments are implemented in the fishery sector. For instance, the fisheries user levy has been implemented as a management tool and to generate revenues. In addition, EFR instruments are also implemented at the regional/local level, such as a fishing vessel permit fee[29].

The energy sector deserves some more attention because Uganda established an Energy Fund with seed capital from the budget to develop power projects, such as the Karuma hydro electricity generation project. The budget allocation is planned to increase from 72 billion UGX (26 million Euro) in the financial year 2008/09 to 356 billion UGX (128 million Euro - fiscal year 2010/11).

The EFR concept includes the reform of subsidies. This policy is insofar of great importance as the provision of subsidies is regularly in conflict to environmental considerations as it provides environmental disincentives, i.e. environmental unfriendly behaviour is supported, and it uses up scarce financial resources[30]. Energy subsidies are very widespread in developed and developing countries and became very obvious during the 2008 hike in international oil prices. Subsidies were granted to compensate domestic consumers for the increase in international energy prices. This policy was not adopted by the Ugandan authorities as the increases in international oil prices were fully passed-through (Baif et al., 2007). Nevertheless, energy subsidies are also granted in Uganda as electricity tariffs for consumers are subsidised. The subsidy was introduced in fiscal year 2006/07 amounting to 208 billion UGX (75 million Euro) and was reduced to 92 billion UGX (33 million Euro) for the following years. The corresponding share to total governmental revenues (including grants) amounted to 5.2 percent in 2006/07 and 1.8 percent in 2008/09 respectively.

The discovery of petroleum in Uganda must also be mentioned as international experience reveals that natural resource taxation can be a significant source for domestic revenue mobilisation. The concept of natural resource taxation is far from straightforward[31]. Preliminary discussions of designing a scheme of natural resource taxation have only started in Uganda[32].

New types of a market-based instrument are attracting more and more attention, in particular in the climate change debate: Payment for Ecosystem Services (PES), also known as Payment for Environmental Services[33]. These instruments have in common establishing a voluntary transaction between consumers of ecosystem services and the suppliers of these services. These instruments can be implemented in different environmental fields and policy areas. One of the areas is the climate change policy. A very recently registered reforestation project in the Rwoho Central Forest Reserve developed under the Clean Development Mechanism (CDM) of the UN Framework Convention on Climate Change is an example of combing environmental considerations, i.e. the planting of trees to absorb carbon dioxide from the atmosphere, and revenue generating objectives as the National Forest Authority (NFA) and local communities are receiving some funds in exchange of planting the trees. The PES instrument can also be classified as an EFR instrument. Interesting noting is that this instrument has not been discussed in the background report of the World Bank (2005) and the OECD (2005) in detail, thereby revealing the very recent occurrence of these instruments as a potential option in the EFR discussion. Different forms of PES do exist and the revenue aspect, which is central in the EFR discussion, can show different characteristics. In the above mentioned case funds are allocated to the NFA and communities for planting trees but it is also possible that funds are given to the communities for not harvesting /cutting trees, i.e. maintaining the source for absorbing carbon dioxide emission. The environmental benefit, i.e. absorption of carbon dioxide from the atmosphere, is being achieved in both cases and the emission reduction can be purchased by third parties as a CDM measure. However, the transfer of funds can be between project developer, i.e. third party, and

[29] see for further information: Ruhweza and Kaggwa, 2007 and the report Uganda: Integrated Assessment of Uganda's National Trade and Fisheries Polices (UNEP, no date given).
[30] For example, it is reported that Indonesia used about 20% of total of total Government of Indonesia spending for subsidies on fuels and electricity in 2008. This amount outstripped the resources spent on housing, law and order, health and education combined (OECD/IEA, 2009).
[31] see Baunsgaard, 2001
[32] personal communication with Gjermund Saether (Royal Norwegian Embassy), November 2009.
[33] see for further details: Katoomba Group, UNEP and Forest Trends (2008 http://www.unep.org/pdf/PaymentsForEcosystemServices_en.pdf) and http://www.worldwildlife.org/science/projects/ecosystemserv/item1987.html

the local community directly implying that the fiscal and budgetary position of the national government is not affected.

Two interesting economic instruments are highlighted in the recently published report by UNDP/UNEP: the exemption of solar equipment from the Common External Tariff and a zero VAT rate on liquid petroleum gas (LPG) (UNDP-UNEP, 2009a). Environmental contemplations are to the fore when these measures have been introduced. In contrast to the EFR instruments discussed above, the two policy measures have negative budgetary implications as they lead to foregone revenues. Other instruments, such as eco-labelling, parking fees and forest certification, are listed in Annex 2 of this report which is based on the UNDP/UNEP study but are not wider discussed.

5. OVERVIEW OF AVAILABLE INFORMATION ON EFR-ELEMENTS OR EFR-RELATED STUDIES

The study commissioned and funded by UNDP-UNEP Poverty-Environment Initiative is – to our knowledge – the most detailed analysing the use of economic instruments in Uganda (UNDP-UNEP, 2009a)[34]. The focus of this study is directed to review their application as well as drawing some lessons from experiences within the country. As discussed in the former section a range of EFR measures are implemented in Uganda. However, studies analysing their performance are rare which is understandable as many of them have been announced and introduced rather recently meaning that there are no data available for the evaluation. Otherwise the most important environmental tax in terms of its revenue generating potential, namely the excise duty on energy products, is not assessed as an environmental tax in Uganda because of a different practice of using the term environmental tax, i.e. considering only those economic instruments as being environmental taxes which are implemented to provide incentives for changing the behaviour of economic actors and thereby excluding those taxes which have been introduced mainly because of their revenue generating potential.

The UNDP-UNEP report states a lack of carrying a detailed ex-ante analysis of the potential implications of the EFR instruments (UNDP-UNEP, 2009a, p.5):

> The information collection systems are not well tailored to monitor their impacts in a consistent manner. Critically, no rigorous analysis was made on the likely effects on poor men and women before introducing EIs [economic instruments] and identifying measures to mitigate/compensate for any adverse effects. Accordingly, the emerging evidence has been used to highlight some of the impacts to monitor in future and the strategies to bring EIs back on course. Secondly, there is lack of a structured approach to study the potential benefits of EIs in the various sectors in which they are implemented. Owing to this problem, the benchmarking for these instruments and the required indicators for their monitoring are still weak and sometimes non-existent.

The lack of reliable data is also mentioned in a study analysing the role of environment in increasing growth and reducing poverty in Uganda (Drakenberg et al., 2009). The study aimed to provide concise policy conclusions and recommendations as input to the Poverty Reduction Strategy Paper (PEAP) and was prepared for the Environmental Natural Resource (ENR) Sector working group and the PEAP sub committee[35]. The outcome of this study is not directly linked to the discussion of EFR as it reveals that '*Uganda's total wealth is declining* (Drakenberg et al., 2009, p. 49)'. However, the implications of this result clarify the necessity for implementing measures, such as EFR instruments, to revise this negative trend.

[34] It has again to be stated that the project does not allow undertaking a detailed analysis of the current situation of Uganda regarding the application of EFR because of time and budget constraints. This clearly implies that we may miss other studies and reports carried out in this field.

[35] The study was carried out by the consultants Gil Yaron and Yakobo Moyini.

6. DEVELOPMENT OF A PROPOSAL FOR EFR-ELEMENTS

Although Uganda applies EFR instruments to pursue environmental objectives a more widespread use of EFR instruments can be considered. It is clear that all measures have to be in line with the development direction "Prosperity for All" purported by the Government of Uganda. Proposals of revising the currently implemented EFR instruments are under political discussion in Uganda. A revision of current economic instruments and also the possible introduction of new ones must include an analysis and evaluation of the legal and institutional framework as the proper functioning of any economic instruments requires the proper functioning of these frameworks as well as guaranteeing that the instruments are accurately monitored and enforced[36].

The UNDP-UNEP study reveals some interesting findings related to the waste water discharge charge as the compliance rate is estimated to be at about 8 percent clearly showing that the institutional framework is not functioning properly. Another point regularly mentioned is the limited institutional capacity of enforcing current regulation (Tindimugaya, 2009 and Akello and Kaggwa, 2009). It is stated '*that if the capacity of the Ministry of Water and Environment was enhanced to enforce the Water (Waste Discharge) Regulation to at least achieve 75% compliance, the annual revenues generated from waste discharge levy would be between US$500,000 and US$800,000. These resources, if well utilized, would be adequate to finance the regulatory needs of the water and sanitation sector (both for water resources management and water supply services) including the implementation of pro-poor oriented projects* (Tindimugaya, 2009).'

Proposals of how to achieve this aim are elaborated by Tindimugaya and the authors of the UNDP-UNEP report (Tindimugaya, 2009):

- Definition of clear responsibilities in regard to waste water regulation (determination of charges, monitoring, enforcement, sanctions).
- Establishment of mechanisms to ensure that the set waste water charges are paid.
- Ring Fencing or Earmarking of Revenues to ensure that they are not utilized for other government expenditure.
- Establishment of mechanism to ensure correct utilization of the revenues (observance of the transparency and accountability principles)

A concrete proposal with regard to this instrument is to increase the number of chargeable pollutants, such as chemical oxygen demand (COD), nitrogen and phosphorous, as currently only one pollutant (biological oxygen demand (BOD)) is subject to the levy. Waste water discharge charges, which are also known under the term industrial effluent charge, are implemented in developed countries as well as in developing countries. The experiences gained in the latter, which can be relevant for Uganda, show that these instruments can be effective in reducing water pollution when properly designed by taking into account country specific conditions. For example, the Philippines implemented an industrial effluent charge scheme in 1997 aimed at curtailing pollution and simultaneously provide incentives for investing in cleaner technologies. The advantage of focusing on industrial discharges is in particular in the context of developing countries of great significance because the monitoring of the functioning of the whole scheme is easier to administer.

Another proposal, which came up during discussions in Uganda, is the introduction of a tax on charcoal / fuel wood. This policy instrument is implemented in some African countries, such as Ghana[37]. The basic idea of this EFR instrument is to generate revenues and to provide a more sustainable production of charcoal. But charcoal is an important source of energy consumption and the increase in the end-user price caused by the tax can affect the poor disproportionately thereby leading to illegal cutting of trees maybe worsening the already tense situation in some areas with regard to deforestation (see MWE, 2009). The challenge is that

[36] A detailed study of the potential of EFR should take into account the analysis of the institutional and legal framework. Unfortunately this aspect is not covered in this study.

[37] See for more information: http://katoombagroup.org/documents/events/event18/NCRCsustainablecharcoalSept08.pdf

the substitution possibilities are rather limited because electricity as an alternative source of energy is not easily available (lack of generation capacity and low connection rates) and other energy products, such as petroleum products (LPG and kerosene) are more expensive and also require the purchase of different stoves for cooking purposes.

Probably one of the most discussed and disputed topic when studying environmental taxes is the question of the size of energy taxes, in particular those levied on transport fuels, and whether they are progressive or regressive. This aspect must be of special attention in countries, such as Uganda, because these taxes are important in the sense that they raise budgetary resources but also that they may have negative implications for the economy and that the poorer part of the society is negatively affected because of the regressive effects. Environmental considerations are often neglected in this discussion as it is claimed that the environmental benefits of fuel taxes is limited because of the rather inelastic fuel demand which is valid for the short term but not necessarily correct in the long run as Sterner (2007) has shown. An interesting study has been carried out by Mutua et al. (forthcoming) analysing the distributional implications of transport fuel taxation in Kenya. It can be probably assumed that the findings of this study have also some relevance for Uganda. Furthermore, the study also aims '*to come up with policy recommendations on fiscal and environmental policy for developing countries that are currently experiencing unprecedented vehicular growth* (Mutua et al., forthcoming, p.7)'. The link to the discussion of the concept of EFR in development policy is straightforward as all aspects (environmental, fiscal and social) of EFR are considered. The authors are summarising their analysis that '*the burden on fuel taxes impacts more on the high income households who spend a higher proportion of their income on transport fuel compared to the low income households. The study therefore can conclude that transport fuel taxes in Kenya are progressive and not regressive. Consequently, the study gives incentives to revise the fuel taxes in order to realise emission abatement as well as increasing revenue potential* (Mutua et al., forthcoming, p.17)'.

These findings should not be assessed as easily transferable to Uganda as for example the Ugandan fuel taxes are slightly higher than in Kenya and also the overall economic, financial and social situation differs. However, the findings provide some useful insights and provide a first indication of the effects of an increase in fuel taxes.

There is a wealth of international experiences with regard to the application of economic instruments in the transport sector. During the fiscal year 2006/07 Uganda introduced an environmental levy on second-hand vehicles levied on the purchase of vehicles older than eight years. This instrument has a clear environmental objective as it should discourage the import of environmental unfriendly vehicles ('environmentally hazardous used goods'). The ad-valorem tax rate was initially 10 percent and was increased to 20 percent in the meantime. Although the underlying rationale of this instrument can be assessed as rather beneficial for the environment, the actual design of the levy could incorporate further environmental considerations as it is done in different European countries. For instance, diesel-powered vehicles are more environmental unfriendly (for instance, emission of particulates) then petrol-powered vehicles and therefore the tax rates could be differentiated between the vehicles. When introducing the use of economic instruments in developing countries like Uganda it is essential to design the instrument in accordance with the existing legal and institutional system, i.e. the instrument has to be monitored and enforced (Bell, 2002 and Panayotou, 1994). This proposal of revising the rates of the environmental levy should be straightforward and not too difficult to introduce as current institutions should be able to implement this revision.

Other potential EFR instruments to be introduced in Uganda addressing environmental pollution could be some form of deposit refund schemes for products, such as computers, refrigerators and tyres, which must be considered as wastes – sometimes hazardous wastes - after their usage. Deposit refund schemes require a deposit to be paid upon the purchase of potentially polluting products. This deposit is refunded if the product or its residues are returned for disposal and *re-use or recycling*, thereby avoiding pollution. This is a type of an EFR instrument which is designed to encourage re-use or recycling, and/or to cover the costs of environmentally sound waste disposal. These systems provide incentives to prevent pollution, and reward good behaviour (Speck et al., 2006). The design of a deposit refund scheme could also be adapted so that it also covers products, which are imported by international aid organisation and distributed freely to local communities and people, by requesting that the international aid organisations have to pay the deposit which

will also be refunded if the product is returned back to some pre-selected economic actors. The scheme could furthermore be designed so that only a share of the deposit is refunded and the difference between the fee repaid and the fee actually being paid could be used for building up a recycling industry in Uganda thereby guaranteeing the safe disposal of potentially hazardous products and the creation of employment.

International experiences with economic instruments for environmental policy is huge and countries can learn from these experiences. But it is apparent that a direct transfer of experiences and of the design of the economic instruments is the wrong way as country-specific conditions, such as economic, social, legal, institutional, etc., must be adhered to implying that a detailed analysis of the pros and cons of the different proposals has to be carried out.

The issues of earmarking, hypothecating or ring-fencing of revenues from environmental taxes are controversially discussed in the economic and political field. The earmarking of tax revenues raises a number of concerns in light of the discussion of good practice regarding public expenditure and fiscal policy standards. Earmarking has the potential to lead to inefficient allocation of resources and the creation of vested interests. Nevertheless, a range of countries make use of ring-fencing the revenues of environmental taxes. Examples can be found in Central and Eastern European Countries where revenues from pollution charges are earmarked for environmental funds but also in countries like France where the revenues from water-related taxes and charges are not part of the national budget but hypothecated for subsidising water infrastructure investment. It seems therefore a well-considered proposal to earmark the revenues from the waste water discharge charge for improving the institutional and regulatory needs in this field. In this context it must be stated that earmarking of these revenues would definitely not be a new phenomenon in Uganda politics as the law establishing the road fund foresees that revenues from the fuel levy and other economic instruments are the sources of income of this fund[38].

7. IDENTIFICATION OF CRITERIA AND THE IMPLEMENTATION OF EFR

Economic instruments have a multiplicity of advantages over regulatory policies, i.e. command-and-control policies, in developed countries as well as in economies in transition and developing countries (Panayotou 1994 and OECD, 2001 and 2005). Economic instruments can lead to substantial cost-savings while achieving environmental goals and generating revenues. However, different criteria can be identified which have to be addressed when discussing whether economic instruments, and EFR in general, will be able to achieve the attributed policy objectives successfully. Potential challenges and problems with regard to the applicability of economic instruments can be identified as follows (Nguyen, 2008 based on Panayotou, 1994):

- Low capita income has effects on the policy priorities as well as on willingness to pay for environmental amenities in poor countries. The critical concern for many developing countries is economic development and poverty alleviation instead of quality of life and environmental quality.
- The legal and institutional capabilities and capacities are insufficient to support the economic instruments. This results in the weakness of the administrative and enforcement systems.
- The short supply of fiscal and technical resources for environmental policy implementation is another serious problem facing developing countries.

Many of these problems are also evident in Uganda as they are mentioned in reports discussing the country-specific conditions and circumstances (see for example UNDP-UNEP, 2009a and MWE, 2009). Keeping this in mind criteria for the applicability of an EFR can be derived[39]:

[38] see 'Road Fund FAQ' at http://www.finance.go.ug/docs/Road_Fund_FAQ.pdf (accessed on December 16, 2009)

[39] see also Barde, 1994 and Panayotou, 1994 for a more detailed analysis in particular in the context of the use of economic instruments in developing countries

- Defining and prioritising of environmental policy objectives – as part of overall policy objectives - and good governance[40].
- Property rights must be properly defined and also enforced. Property rights, especially on land, must be exclusive, transferable and safe.
- A well defined and stable regulatory framework is a decisive criterion for EFR policies.
- An appropriate legal and institutional framework must be developed over time.
- Good cooperation between different ministries (cross ministry co-operation, sectoral working groups, etc.), in particular Ministry of Finance/Planning and Ministry of Environment. An important role lies with the Ministry of Finance, in particular when the Ministry of Finance supports the role of EFR in fiscal policies[41].
- Political willingness must be available, i.e. the entire government supports the application of any new policy programme.

8. EFR IN DEVELOPMENT COOPERATION

The objective of this country case study is manifold as it reveals EFR actions as well EFR instruments implemented in Uganda, it identifies criteria which are necessary and essential for EFR actions and finally discusses EFR in the context of development cooperation. As shown in Table 1, Uganda's fiscal outlook depends heavily on external inflows not only in form of grants but also on loans amounting to more than 40 percent of total budget revenues in the fiscal year 2008/09. Only focusing on official aid (official development assistance (ODA)) is therefore slightly misleading as this form of external inflow amounts to around 21 percent of total budget expenditure. It can therefore assumed that a decrease in ODA would have some impacts on governmental expenditure including expenditures for achieving poverty eradication goals and environmental and water infrastructure investments. On the other hand the provision of ODA can impair the efforts of governments to strengthen domestic revenue mobilisation. This clearly raises some questions whether the concept of EFR as promoted by international organisation[42] and the donor community counteracts ODA or whether EFR should be seen as a tool for starting a policy process in mobilising domestic revenue and thereby – at least partly - overcoming one of the main constraints namely the lack of domestic tax revenues to finance economic development while furthering environmental goals. In this context ODA can be an important source for establishing the required framework conditions and building capacities in the relevant institutions for the successful implementation of EFR.

The report published jointly by the African Development Bank and OECD addresses this problem too and concludes that '*it is crucial that aid does not crowd out local initiatives or discourage water authorities from becoming financially self-sustaining. Thus, ODA funds should be used to mobilise other flows, such as user charges, other local revenues, bank loans and private capital, and to empower other stakeholders in line with the national water strategy* (AfDB/OECD, 2007, p. 82-83)'. This statement can be understood that ODA and EFR policies and instruments which include issues such as water pricing are closely interlinked. The option of using ODA funds for the provision of subsidies in the context of performance based policies, mainly done in the context of Output-Based Aid (OBA)[43] is going in the same direction.

There are different aid instruments for the disbursement of international aid ranging from general budget support (GBS), to sector budget support (SBS), to common basket funding or common pool funding (CBF)

[40] see also GTZ, 2008
[41] see for example the development in South Africa (Speck, 2010)
[42] The UNDP-UNEP Poverty Environment Initiative is also focusing on EFR in their work as highlighted in the annual progress report 2008. Apart from the Uganda study (UNDP-UNEP, 2009a), they are carrying out studies on EFR in Tanzania and Malawi (UNDP-UNEP, 2009b)
[43] *OBA is a strategy for using explicit performance-based subsidies to support the delivery of basic services where policy concerns would justify public funding to complement or replace user-fee* (AfDB/OECD, 2007, p.83). See for more information on Output-Based Aid: http://www.gpoba.org/gpoba/

and to project support[44]. ODA was disbursed in Uganda applying different aid instruments as shown in Table 1. There is no clear trend recognisable neither about the development of the size of total ODA given in form of grants during the period 2004/05 and 2008/09 nor about the aid instruments by distinguishing between budget support and project support. Table 15 provides the data on ODA in the environmental sector Uganda received and also shows a relatively large fluctuation with regard to the total inflow of international aid.

Table 15: Environmentally-related aid to Uganda 2003-2006 (million 2005 USD)

	2003	**2004**	**2005**	**2006**
core environmental sector	2.1	2.2	1.2	3.5
water supply and sanitation	46.5	31.8	18.1	70
water resources management	0.7	0.7	27.4	5.2
other environmental support	20.8	1.7	65.9	30.9
Total	70.1	36.3	112.6	109.7

Source: OECD, 2009

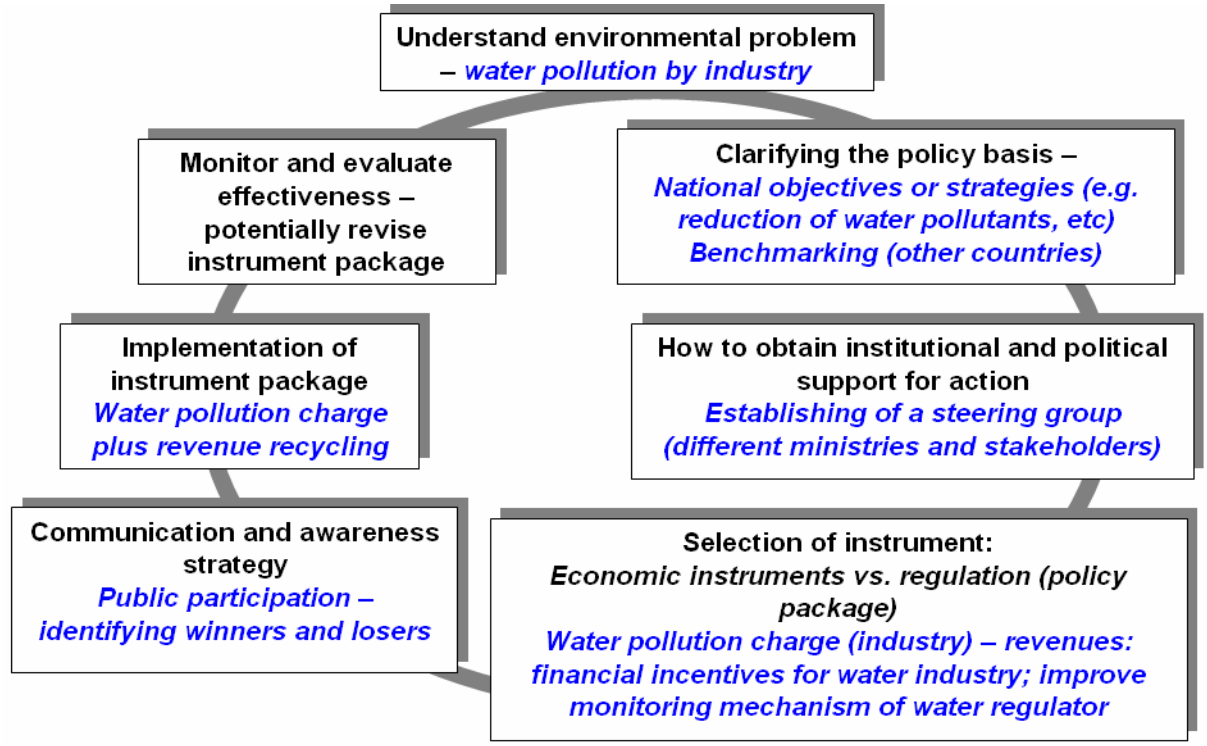
EFR has to be seen as a policy process requiring financial support throughout the different steps of implementation (see Figure 1 below). Therefore, GBS is an appropriate tool for supporting this process as emphasized in a report published by the Overseas Development Institute (ODI, 2006, p.28):

> GBS offers a high level platform for policy dialogue at the core of the government policy process. This can be explored to assist the much needed cross-sectoral visibility of environmental issues and the coordination of approaches across donor and government stakeholders. Given the prominent role played by Ministries of Finance and macroeconomists, the GBS framework constitutes an important entry point for a debate on environmental fiscal reform.

Developing EFR is a policy process and should include the collaboration of the whole government and in particular between ministries of environment, ministries of finance and ministries of planning, i.e. this would mean in the context of Uganda the Ministry of Water and Environment (MWE) and the Ministry of Finance, Planning and Economic Development (MFPDE). The role of the former is to assess and to analyse the environmental implications of EFR measures and the latter's role is to evaluate the budgetary implications and synergies or trade-offs with the overall taxation and fiscal scheme and to guarantee that the EFR is integrated into the long-term policy strategies. The different steps of developing EFR are shown in Figure 1. It is self-explanatory that throughout the implementation of the project cycle GBS support can be useful.

[44] See for example for a detailed analysis of the different aid modalities: ODI, 2006.

Figure 1: The project cycle – practical steps for implementation of EFR



Source: Brulez and Speck, 2008

The development of EFR must be part of national budgeting process and should therefore be embedded in the medium-term expenditure framework (MTEF). This instrument of establishing a broad-based approach to multi-year budgeting process is in place in Uganda and a recent OECD report states that '*this process is maturing only now* [in Uganda] (OECD, 2009, p.12)'[45]. A mechanism which is useful in this context is to establish Public Environmental Expenditure Reviews (PEERs), '*as they provide the necessary tools for analysing in detail the sources and destinations of environmental financial resources. The use of technical cooperation and specific earmarked funding are possible ways of supporting these exercises* (ODI, 2006, p.29)'[46]. PEER can be very helpful in the compilation of the background information for carrying out the policy analysis (i.e. the clarification of the policy basis in the project cycle above).

Capacity development and good governance are two factors which are essential for attaining general policy aims and also for the implementation of EFR as stated by Cottrell et al. (2008)[47]. Furthermore, they are clearly stressing that ODA can support the different stages of the EFR process.

[45] Information on MTEF and the link to financial aid inflows can be found in the OECD report which discusses the situation in Uganda in detail.

[46] In this context it is noteworthy to mention that the instrument of CBF is in use in Uganda regarding the water and sanitation sector. Several donors are supporting the CBF including the EC, Austria, Denmark, Germany and Sweden.

[47] It is useful to highlight how capacity development and good governance are described by the authors: *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. 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* (Cottrell et al. in GTZ, 2008).

9. CONCLUSION AND RECOMMENDATION

Uganda makes use of a range of EFR instruments although the underlying EFR concept as promoted by international organisations is not well-known in the country. But this is a rather semantic problem/topic of characterising different policy measures and instruments respectively. Furthermore, this report, which never intended to provide a concise and all-encompassing analysis of EFR policies in Uganda, only offers a snapshot of the current situation revealing that there could be some room for further EFR instruments. The discussion of the two main aspects of EFR, i.e. the environmental and fiscal dimension, show that there are some challenges Uganda is facing – namely addressing environmental challenges and the mobilisation of domestic budgetary revenues. A declining trend in the investment of water, sanitation and environment infrastructure must be recorded which is rather problematic as the environmental problems and pollution are not impeded[48].

One of the issues at stake is how to generate additional revenues through domestic resources and three different options can be thought of:

- Increasing the efficiency in tax collection[49]
- Increasing the tax rates of existing taxes
- Broadening the tax base – including the introduction of new taxes

International experience shows that EFR instruments can be appropriate tools for addressing environmental problems and for the generation of fiscal resources. However, their design has to be based on the relevant country-specific conditions implying that the underlying EFR concept can be used but a direct transfer between countries is limited and if done great care has to be used. A whole range of studies are undertaken in Europe assessing the performance and effectiveness of EFR instruments. But these studies are only of partial use for Uganda as the environmental problems and challenges as well as socio-economic considerations are different. For instance, Uganda has huge challenges to cope with regarding the loss of biodiversity, land degradation and to construct additional electricity generation capacity as a source of power and thus reduce the pressure on the environment, in particular under the consideration that more than 90 percent of total energy consumption is fuel wood. Although it has to be stated that these studies can be useful for designing EFR instruments in developing countries, such as Uganda, as they are also dealing with possible shortcomings in the institutional framework and essential requirements for the proper monitoring of EFR instruments, which may be adapted and transposed to the Ugandan challenges.

Proposals of revising of existing or introducing new EFR measures must be closely linked to the Poverty Eradication Action Plan (PEAP). For instance, the PEAP anticipates that setting of water tariffs based on the full cost recovery principle is considered not being practicable and implying that the financing of water and sanitation investments is under the responsibility of the Government of Uganda (AfDB/OECD, 2007).

By taking into account these aspects and the prevailing conditions the Government of Uganda could consider to revise the existing waste water discharge fee scheme by increasing the number of taxable pollutants as suggested above. This proposal should be relatively easy to be implemented as the regulatory and monitoring framework is already in place.

The purpose of this report is not only discussing EFR in the context of Uganda but also to focus on EFR in development cooperation. Studies do exist assessing the potential of EFR in developing countries thereby identifying criteria and conditions which are essential for the successful implementation of EFR as well as for the success in attaining the pre-determined policy goals. It is quite apparent to us that donors can support

[48] *Some analysts have argued that the escalating levels of environmental degradation in Uganda are reflective of the low levels of investment in the sector and the fact that the sector is not a priority at the centre. Over the years, the planning and budgeting processes have greatly disregarded the ENR [environment] sector as seen in the meagre budgetary allocations that have left resource managers incapacitated and unable to make significant contributions to environmental management* (NEMA, 2008, p.241)

[49] The Government of Uganda pursuits this objective as mentioned in a recent report published by IMF: *The authorities remain committed to their target of increasing tax collection by ½ percent of GDP annually* (IMF, 2009, p.16).

the development of EFR in development cooperation and that there are many different indication for support. Capacity building and good governance is not only essential for the proper functioning of EFR but for politics in general. In addition, the authors of the UNDP-UNEP report are pointing out the lack of undertaking of preparatory studies as an obvious shortcoming as such studies could provide some helpful information for making the EFR instruments more effective. It can therefore be concluded that there a range of starting points for donors to promote EFR in development cooperation.

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Annex 1: Overview of people interviewed[50]

Representatives of governmental institutions

- C.M. Kassami (Permanent Secretary/Secretary to the Treasury, Ministry of Finance, Planning and Economic Development (MFPED))
- Michael Wamibu, James C. Tibenkana and Susan Nakagolo, Tax Policy Department, Ministry of Finance, Planning and Economic Development (MFPED)
- Callist Tindimugaya, Ministry of Water and Environment (MWE)
- Telly Eugene Muramira, Director Policy Planning and Information, National Environmental Management Authority (NEMA)
- Ronald Kaggwa, National Environmental Management Authority (NEMA)

NGOs and private consultants

- Alice Ruhweza, consultant, the Katoomba group
- Moses Masiga, consultant

International institutions

- Bernard Crabbe, Jalia Kobusinge, SybilleSchmidt, EC delegation, Uganda
- Samuel Dawuna Mutono, World Bank office Uganda
- Maarten Van der Ploeg, Hermann Plumm, Daniel Opwonya, Ephraim Kisembo, GTZ / Reform of the Urban Water & Sanitation Sector Programme (GTZ - RUWASS)
- Gjermund Sether, Deputy Head of Mission, Royal Norwegian Embassy

Email communication with Zeridah Zigiti, Ministry of Finance, Planning and Economic Development (MFPED)

Workshop with Water and Environment Development Partners' group

[50] A draft version of report was sent out to them asking for their feedback and comments. All comments could not be integrated due to time and budget constraints.

Annex 2: Overview of economic instruments and their application to sectoral and environmental issues in Uganda (source: UNDP-UNEP, 2009a)

Environmental issue	Property Rights	Market creation	Fiscal Instrument	Charge Systems	Financial Instruments	Liability Systems	Bonds and Deposit Refund Systems
1. Sustainable Land Management	Land title	Eco-labelling (organic products)	Tax waiver to banks lending to agriculture		- Grants - Subsidies		
2. Water for production and consumption				Water tariffs			
3. Fisheries	Fishing licence	Certification		Fish levy			
4. Forestry resources	Permit	Forest certification		Non- compliance fines	- Subsidy (SPGS) - Grants - National Tree Fund		
5. Wildlife	User rights	Eco-tourism			- Sharing Revenue - Wildlife Fund		
6. Wetlands	Communal property rights			User charges			
7. Biodiversity		Bio-trade			- Trust funds e.g MBIFCT - GEF/SGP - Sinking funds		
8. Energy access		Carbon sequestration off-sets	VAT waiver on solar systems and LPG	Electricity tariff	- Payment for ecosystem services - Subsides - Energy Fund		
9. Minerals	Mining rights			Royalties			
10. Urban settlement and traffic management				- Parking fees - Environmental levy on old cars and appliances			
11. Pollution and waste management			Tax differentiation	- Water treatment fees - Water pollution fees - Waste collection charges		Non-compliance charge	Oil spill bond
12. Climate change		Carbon sequestration offsets		Environmental levy on hazardous materials			

Annex 3: Overview of EFR measures in Uganda: 2003/04 – 2007/08 (Source: UDN, 2008)

Fiscal year 2003/04

- Increased excise duty on petrol by Shs 50 per litre and on diesel by Shs 30 per litre
- Increased automobile fees/licenses from Shs 110 per cc to Shs 200 per cc except cars and passenger vehicles carrying more than 28 people

Fiscal year 2004/05

- Revised traffic fees and charges upwards by 10%

Fiscal year 2005/06

- Increased excise duty on petrol from Shs 660 to Shs 720 per litre, for diesel from Shs 400 to Shs 450 per litre
- The duty on kerosene of Shs 200 remained unchanged

Fiscal year 2006/07

- Exempted VAT on Liquid Petrol Gas (LPG) to increase its affordability as an alternate source for lighting and cooking
- Introduced a 10 percent environmental levy on motor vehicles and a specific rate of between Shs 20,000 - 50,000 on household appliances
- Increased traffic fees and licenses on motor vehicles by 5 percent

Fiscal year 2007/08

- Introduced a 10% environmental levy on used motor vehicle spare parts
- Introduced an excise duty of 120% on polythene and plastic bags of more than 30 microns
- Increased/Introduced excise duty on fuel (petrol Shs 720 to Shs 850 & diesel Shs 450 to U Shs 530)
- Reinstated excise duty on diesel for generators on behalf of manufacturers
- Exempt heavy fuel oil from VAT
- Abolished road license fees except for charges on first registration