

BARBADOS

Options for promoting Environmental Fiscal Reform in EC Development Cooperation

Country case studies of Barbados

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EXECUTIVE SUMMARY

Contrary to the other countries in this report, is an upper-middle income country with a GDP per capita of US\$89,330. Overall, preconditions for an EFR are quite good in Barbados, not at least since several measures were taken to reduce other more distorting taxes such as on personal income and corporations. Awareness of environmental concerns is fairly high in Barbados in comparison with other Latin American and Caribbean countries. A fair amount of EFR elements are already being implemented in Barbados especially in the transport sector and through an environmental levy. Nevertheless, experience in Barbados with EFR-elements (like in entire Latin America and the Caribbean) is still limited so far. The chance of linking tax reductions of ordinary taxes with higher taxes on environmentally harmful behaviour has not been used to the degree possible yet and deserves intensive studying. The ratio of government revenue to GDP has been at 34.9% in 2008 and very stable over the past years. Direct taxes contributed 42 per cent of total tax revenue in 2008, whereas indirect taxes contributed 57 per cent. The large contribution of indirect taxes to overall tax revenue is mainly based on the large contribution of the value-added tax to public revenue, which amounted to a share of 34 per cent in 2008. Additional and increased environmental taxes could be introduced especially in the energy sector and on fuel. For road and water supply infrastructure there is a need to further strengthen the cost-recovery principle. Additionally, land and property taxation could be reformed to exert additional environmental steering effects.

1. INTRODUCTION

The country report Barbados 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 Barbados.

The main focus of this report is to discuss EFR in the context of the current situation in Barbados 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.

The EFR concept is introduced in the first section and an overview of the current EFR instruments implemented in Barbados 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 a desk study only. Owing to the limited amount of time and available resources the intention of this report is not to provide an

¹ I am very grateful for valuable contributions and comments by Eike Meyer, scientific staff at Green Budget Germany (www.foes.de).

exhaustive and complete coverage of the situation of EFR in Barbados. 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. BACKGROUND INFORMATION ON BARBADOS

Barbados, situated just east of the Caribbean Sea, is a West Indian continental island-nation in the western Atlantic Ocean. After a brief claim by Spain in 1492 and later Portugal, Barbados became a colony and protectorate of the United Kingdom for over three centuries, achieving independence in 1966. Barbados' total land area is about 430 square kilometres (166 square miles), and is primarily low-lying, with some higher areas in the country's interior. With a population of approximately 272,000 people, Barbados is one of the most densely populated countries in the world.

The island's climate is tropical, with constant trade winds off the Atlantic Ocean serving to keep temperatures mild. Some less developed areas of the country contain tropical woodland and mangroves.

Barbados has a GDP per capita of US\$89,330² and is in these terms the 51st richest country in the world, one of the richest countries in the region, and can be classified as a middle-income country. Its Human Development Index ranking is consistently among the top 75 countries in the world. In 2009, it was ranked 37th in the world, and third in the Americas, behind Canada and the United States³.

Historically, the Barbadian economy was dependent on sugarcane cultivation and related activities. However, in recent years the economy has diversified into light industry and tourism with about three-quarters of GDP and 80 per cent of exports being attributed to services. Tourism has become the single largest foreign exchange earner and the sugar cane industry is undergoing fundamental restructuring to survive in a post preferential markets environment. The country is one of the largest global domiciles of captive insurance, and a growing number of companies have been expanding call centres to Barbados. Also, offshore financial services have become important and there is a healthy light manufacturing sector. Since the 1990s the Barbados Government has been seen as business-friendly and economically sound. The island has seen a construction boom, with the development and redevelopment of hotels, office complexes, and homes.

3. AN OVERVIEW OF FISCAL AND TAX POLICY

One aspect of primary concern when speaking of EFR is the linkage between environmental and fiscal policy which implies a discussion of the overall fiscal strategy. The tables below give the relevant background information on Barbados. The ratio of government revenue to GDP has been at 34.9% in 2008 and very stable over the past years. Tax revenue amounted to 94% of total revenue in 2008. As an upper middle-income country Barbados has not been receiving official development aid (ODA) over the past years except for minor contributions in 2007 and 2008.

Table 1: Overview over Government Revenue and Expenditure

	2002	2003	2004	2005	2006	2007	2008
GDP (Current Prices)	4952.2	5389.7	5634.2	6011.1	6381.8	6903.7	7082.1
Total Revenue	1712.2	1843.8	1895.6	2021.1	2.278.5	2440.6	2473.8

² <http://data.worldbank.org/country/barbados>

³ <http://hdr.undp.org/en/statistics/>

Tax Revenue	1585.0	1724.4	1812.7	1888.9	2176.0	2307.2	2332.6
Grants	0.0	0.0	0.0	0.0	0.0	4	7.5
Total Expenditure	1671.0	1736.2	1804.4	1959.0	2038.3	2324.9	2600.0
Current Account Balance	41.2	107.7	91.1	62.1	240.2	115.7	137.7
Current Account Balance	41.2	107.7	91.1	62.1	240.2	115.7	137.7
Total Expenditure and Net Fiscal Balance	2027.3	2008.3	2019.6	2278.2	2408.0	2560.0	2894.7
Fiscal Balance	-315.1	-164.5	-124.0	-257.1	-129.5	-119.4	-420.9
Tax Revenue (% of GDP)	32.0%	32.0%	32.2%	31.4%	34.1%	33.4%	32.9%
Tax Rev. (% of Total Rev.)	93%	94%	96%	93%	96%	95%	94%
Total Grants (% of GDP)	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Total Revenue (% of GDP)	34.6%	34.2%	33.6%	33.6%	35.7%	35.4%	34.9%
Total Expendit. (% of GDP)	33.7%	32.2%	32.0%	32.6%	31.9%	33.7%	36.7%

Source: Barbados Central Bank

Table 2: Government Revenue (in Million BBD):

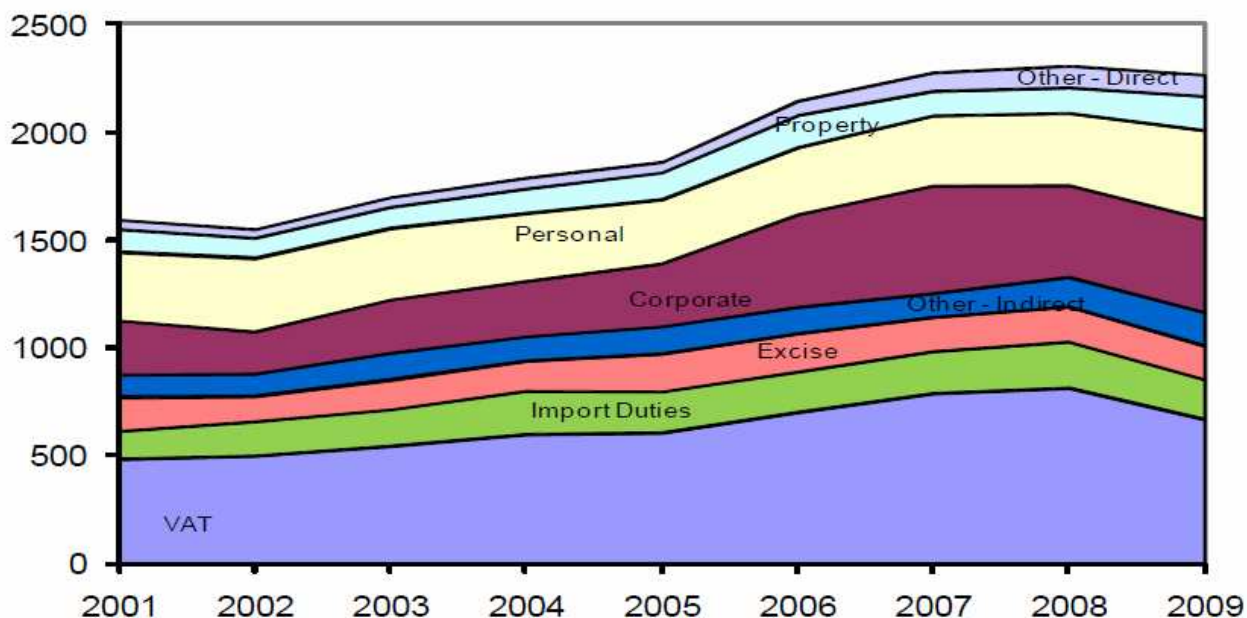
	2002	2003	2004	2005	2006	2007	2008
Total Revenue	1712.2	1843.8	1895.6	2021.1	2,278.5	2440.6	2473.8
Tax Revenue	1585.0	1724.4	1812.7	1888.9	2176.0	2307.2	2332.6
Direct Taxes	691.4	731.1	739.5	766.8	959.2	1026.2	982.9
Direct Taxes (% of Tax Rev.)	44%	42%	41%	41%	44%	44%	42%
- Personal	338.1	329.0	312.6	295.7	310.3	325.3	332.7
- Corporate	198.5	250.1	258.9	294.3	430.9	499.8	425.6
- Levy	17.5	4.7	-	-	-	-	-
- Property	97.8	101.7	116.9	127.4	151.7	115.6	123.4
- Others	39.5	45.6	51.1	49.4	66.3	85.5	101.2
Indirect Taxes	893.6	993.4	1073.2	1122.1	1216.9	1280.9	1335.1
Indirect Taxes (% of Tax Rev.)	56%	58%	59%	59%	56%	56%	57%
- Stamp Duty	10.9	14.8	18.2	20.8	25.1	24.7	19.4
- VAT	502.5	548.8	603.2	609.9	704.6	792.5	802.0
- Excises (Imports and Alcohol)	113.4	135.4	137.1	172.4	175.7	157.2	162.7
- Import Duties	162.5	170.6	201.0	191.7	188.6	194.3	212.7
- Hotel & Restaurants	1.3	0.2	-	-	-	-	-
- Others	103.0	123.6	113.7	127.4	122.9	112.2	138.2
Non-tax Rev. & Grants	127.2	119.4	82.0	132.2	102.5	133.4	144.3
Non-Tax Revenue	110.6	102.7	64.5	109.8	82.2	107.6	111.7
Grants	-	-	-	-	-	4.0	7.5
Post Office Revenue	16.6	16.7	18.3	22.4	20.3	21.8	25.1

Source: Barbados Central Bank

Direct taxes contributed 42 per cent of total tax revenue in 2008, whereas indirect taxes contributed 57 per cent. The large contribution of indirect taxes to overall tax revenue is mainly based on the large contribution of the value-added tax to public revenue, which amounts to a share of 34 per cent. Direct tax revenue is mainly based on personal and corporate taxation, which amounted to 77 per cent of direct taxes in 2008. (Contribution of the individual tax categories to overall tax revenue is shown in the graph below.) Overall,

Barbados has established a strong and consistent tax revenue base on the basis of an expanding economy, direct and indirect tax reform initiatives and an overall efficient tax system.

Table 3: Tax Revenue by Category (in Million BBD):



Source: Barbados Central Bank (*Economic Review*, January 2010)

Corporate Taxes

Interestingly, although Barbados is generally considered to have a rather diversified and production-based economy, the importance of taxes levied on companies and businesses in Barbados is below average. The percentage of tax revenue from taxes on companies and businesses was only 18 per cent in 2008. The government reduced corporation taxes in 2002. While the tax rate on profits was 40 per cent prior to 2002, it was reduced to 37.5 per cent and 25 per cent in 2006 making it one among the lowest in the CARRICOM region. However, due to many incentives which take the form of tax holidays, investment allowances and, in particular, tax credits relating to earnings of foreign exchange, hence granting foreign firms significant concessions, the result is even a significantly lower effective corporate tax rate. Alleyne and Howard (2004) estimate the effective corporate tax rate in 2002 was approximately 25 per cent for companies benefiting from incentives, compared to the nominal 37.5 per cent applicable.

Value-added Tax

While the introduction of value-added taxation has failed in some other Caribbean states (e.g. Grenada and Belize) it has gained a strong foothold in Barbados (ECLAC 2007: 15). Currently, the largest proportion of overall tax revenue is generated through a value-added tax (VAT). Revenues from VAT made up 34 per cent of overall tax earnings (11 per cent of GDP) in 2008. The VAT was introduced in 1997 in a move to simplify the tax system as well as to increase its efficiency and equity. It was introduced to replace 11 other taxes (a consumption tax, a luxury tax on goods [surcharge], stamp duties on imports, an entertainment tax, a hotel and restaurant sales tax, a service tax on pleasure cruises, a tax on quarriable minerals, a travel ticket tax, an airline business tax, a tax on overseas telephone calls and a surcharge on rental income) many of which amounted to less than BBD 5 million revenue per annum, respectively. VAT is applied at a standard rate of 15 per cent, with a reduced rate of 7.5 per cent on accommodation in the tourism sector, as well as an exemption for the export sector and for staple food items, financial services, real estate, transportation, as well as medical and dental services.

International Trade Taxes

While the Barbadian economy is heavily reliant on goods (light industry), services, particularly tourism and the financial services form the backbone of the economy. As a result, international trade taxes contribute only a minor share to overall government revenue. Revenue from international trade consists of several different components, including import duties, consumption taxes, service charges, and export and stamp taxes. In 2008, taxes on imports and exports amounted to 9 per cent of overall tax revenue (only 3 per cent of GDP). While the contribution of the VAT to overall tax revenue has slightly increased since 2002 (by 3 per cent) the contribution of trade taxes was slightly decreasing (by 1 per cent since 2002).

Property Tax

Property taxation has long been a contentious issue in Barbados. Usually this tax is collected annually and is based on the market value of the property, as assessed usually in three year intervals. Collection of this tax has not always been timely; in fact, in 1998 arrears still relating to the period 1972 and 1981 were written off. One of the issues leading to the general unwillingness to pay this tax is related to the fact that property prices are burgeoning – often as (direct or indirect) consequence of the vibrant tourism sector, resulting in relatively high tax liabilities. To counteract these dynamics, tax rates were decreased and an exemption threshold was introduced in 1998 on properties with an improved value of BBD 125,000 or less, which essentially removed half of all properties from the tax role. This notwithstanding, the contribution of property taxation to overall revenue in Barbados is the highest in the CARICOM region. However, the most recent valuation resulted in significant average increases in property values (between 25 and 30 per cent on average); this has led to a reduction in the rate of tax for properties valued between BBD 350,000 and BBD 850,000 from 0.65 per cent to 0.45 per cent. (ECLAC 2007)

Personal Taxes

The burden of taxation for individuals has been reduced over the last few years through the reduction in personal tax rates and through increases in allowances applicable to individual tax payers. Overall, in recent years, the tax scheme in Barbados has been simplified, while the tax base has been broadened. Although the contribution of personal income taxation relative to overall tax revenue has declined over the last decade slightly (from 20 per cent per cent in 1996 to 14 per cent in 2008) this decrease was more than offset by the increases in corporate taxation.

Tax reform in Barbados was particularly pronounced at end-1980s and the 1990s. In line with a shift to supply-side oriented taxation, income-taxes were reduced significantly in 1986; whilst the highest marginal tax rate was reduced (from 60 per cent to 50 per cent), the number of tax bands was reduced from six to five and an income threshold for tax-exemption of BBD 15,000 was introduced to ensure that households with low incomes were affected as little as possible by the reform. The income threshold has since been raised in 2006 to BBD 22,500. Simultaneously, the basic income tax rate has been reduced to 20 per cent (2004) whilst the top marginal income tax was reduced to 35 per cent in 2006. These reforms have led to a situation where Barbadians now easily enjoy more favourable tax conditions than most people in other CARICOM countries and indeed in most other countries worldwide. (ECLAC 2007: 25)

3.1 Environmental policy

Institutions

Principal environmental agencies are the Ministry of Housing, Lands, and Environment, established in 1978, the Government's policy-making arm for environment and sustainable development issues, and the Barbados Water Authority (1980). Institutionally, two major national structures are in place to effect sustainable development (Oderson/Singh 2003):

- The National Commission on Sustainable Development driving the National Sustainable Development Policy (NSP)
- Barbados National Strategic Planning 2005-2025

The **National Commission on Sustainable Development (NCSD)** was appointed in 1994 and became fully formalized in 1996. It comprises of 30 members representing Government NGOs, The work of its Steering Committees, combined with the results of 5 national dialogues held in 1997 on Sustainable Water Management, Energy, Youth and Community, Solid Waste Management and Agriculture were used to draft a National Sustainable Development Policy which identifies strategies for achieving sustainability in various sectors. The Ministry of Housing, Lands and the Environment facilitates the work of the NCSD by acting as the Secretariat. It's major task is to educate the public and decision-makers on the National Sustainable Development Policy and to encourage persons to inculcate the recommendations of the policy into their practices as applicable.

The **National Sustainable Development Policy (NSP)** was adopted by parliament in October 2003. Its objective is to ensure the optimisation of the quality of life for every person by ensuring that economic growth and development does not occur to the detriment of ecological capital. Major objectives are:

- To formulate a national definition of sustainable development
- To provide a national framework for decision-making based on our principles of sustainable development;
- To promote principles of sustainable development and encourage all persons to adopt and apply these principles in every aspect of decision-making; and
- To sensitise and educate all persons in Barbados about key issues and conflicts between development and environment and the need to make wise consumption and production choices.

National Strategic Planning was incepted in 2003, mainly driven by the Ministry of Finance, Economic Affairs and Development, Labour, Civil Service and Energy. It establishes a vision of a fully developed, internationally competitive and just society for 2025. As one out of six strategic objectives it identifies the establishment of a "green economy" and the preservation of nature. In order to reach this objective the strategy establishes i.a. the goals to increase the production of renewable energies, to strengthen regulatory policy for tackling challenges from the use of fertilizers and waste disposal and to expand public education and awareness on environmental concerns. On an operational level, national strategic planning is overseen by the Ministry of Finance and is implemented through the establishment of periodic sectoral strategic plans, that are the product of inter-agency consultations between government agencies, the private sector, trade unions, the Central Bank and academia (Government of Barbados 2005).

Challenges

The most significant challenges to sustainable development in Barbados are the impact of climate change and its high dependency on imports of fossil fuel. Further environmental challenges are soil erosion and desertification especially in the northeast of the island and pollution of coastal waters.

As a small, low-lying island in a region with a high occurrence of hurricanes, Barbados is very vulnerable to sea-level rise as a result of climate change. The high population density in combination with the fact that a large part of the population lives in coastal areas and a lot of infrastructure has been built on the coast, further increases this vulnerability. Luckily, most coastal infrastructure has been built to withstand extreme weather conditions. Under the Global Environment Facility and World Bank financed the Caribbean Planning & Adaptation to Climate Change project, which was implemented from 1997 to 2001, an initial coastal vulnerability assessment was conducted. This assessment showed that mainly the northwest, west, and southwest coasts are vulnerable, as they are low lying, sandy and narrow. The frequency of flooding will also increase, as rainfall increases during certain periods of the year. Barbados has a relatively good financial

capacity to construct flood prevention infrastructure, but increased spending on flood prevention will mean that less budget is available for other important sectors. (Government of Barbados 2001). Within the last decade, there has been increasing evidence of soil erosion in Barbados, especially in its north-eastern parts. The main efforts towards the control of soil erosion, especially in the Scotland District, include engineering works such as bench terracing, slope reduction, installation of solid and perforated pipes at various depths beneath the soil surface, and excavation of silt dams at strategic locations. Reforestation with fruit and forest species is employed to reinforce the engineering works. Legislation that applies to the Scotland District is used to address issues such as stray livestock, settling and construction, and the types of agricultural practices and techniques used by farmers (Ministry of Housing Lands and the Environment 2004).

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

4.1 Energy sector

Contrary to the other Caribbean islands (apart from Trinidad), Barbados possesses a limited amount of petroleum resources that serve along with imported fossil fuels to cover the country's energy requirements, including power generation. Nevertheless, Barbados depends on imports for most of its energy needs and is thus highly vulnerable to the volatile international energy market. In 2005, imported oil cost the country some BBD 350 million (GTZ 2007). With few possibilities of expanding its own limited production of fossil fuels, the most effective alternative to balance demand and supply is to: 1.) contain demand growth by increasing energy efficiency, and 2.) expand production from renewable energy sources. Neither of these two areas has an established policy/regulatory framework for the promotion of public or private investments (IDB 2009). The share of renewable energies in total energy supply has been remaining constant at slightly over 7 per cent over the last years. Given its high dependency on imports of fossil fuels on the one hand and extremely favourable conditions for solar and also wind energy, Barbados urgently needs to step up efforts to expand renewable energies.

Table 5: Energy Supply in Barbados

	Unit	2002	2003	2004	2005	2006	2007
Total Energy Supply	1,000 barrels of oil equivalent	2832,76	2862,18	2942,3	3059,97	3120,25	3120,21
Supply of Renewable Energies	1,000 barrels of oil equivalent	209,9	210	215,88	224,3	228,67	228,68
% Supply of Renewable Energies		7,41per cent	7,34&	7,34per cent	7,33per cent	7,33per cent	7,33per cent
Supply of Non-Renewable Energies	1,000 barrels of oil equivalent	2622,86	2652,18	2726,42	2835,67	2891,58	2891,53
% Supply of Non-Renewable Energies		92,59per cent	92,66per cent	92,66per cent	92,67per cent	92,67per cent	92,67per cent

Source: Economic Commission of Latin America and the Caribbean

Total energy consumption has increased by almost 30 per cent between 2002 and 2007, while the energy intensity of GDP has decreased by 7per cent over the same period. Data for energy consumption per capita is only available since 2005 and shows no significant development in either direction. Electricity generation (~ 50per cent) and transport (33per cent) are by far the two largest consumers of the fuel imported into the island. The manufacturing sector is a distant third at ~5per cent of the electricity generated (~885 million

kWh in 2005), domestic consumption was the major user at 34 per cent. The commercial sector was the second largest consumer with 23 per cent (MoEE 2006).

Table 6: Energy Consumption in Barbados

	Unit	2002	2003	2004	2005	2006	2007
Total Energy Consumption	Thousands of barrels of oil equivalent	4952.2	5389.7	5634.2	6011.1	6381.8	6903.7
Energy Consumption per capita	barrels of oil equivalent per capita	n.a.	n.a.	n.a.	8,014	8,141	8,109
Energy Intensity of GDP	1,000 barrels of oil equivalent per million \$ of GDP (2000 prices)	1,126	1,123	1,102	1,102	1,089	1,053

Source: Economic Commission of Latin America and the Caribbean

The total installed electricity generating capacity in 2005 amounted to 239.1 MW, with peak load reaching 154.2 MW. Most of the generators used for producing electricity are diesel-electric units that run on heavy fuel oil. Some gas turbines are kept in reserve for peak loads and emergencies. In 2005 BL&P generated 953.4 GWh of electricity. (GTZ 2007)

Currently, Barbados' energy sector is regulated, with central Government exercising control over the pricing of petroleum products (gasoline, diesel, kerosene, and liquefied petroleum gas); electricity and natural gas pricing are regulated by the Fair Trading Commission. The electricity sector is a monopoly with only one company involved in the generation, distribution and transmission of electricity (MoEE 2006). Energy policy is overseen by the Ministry of Finance, Economic Affairs and Development, Labour, Civil Service and Energy. It is remarkable that this Ministry unites fiscal and energy policies. This potentially sets favourable preconditions for implementing a policy which integrates one into another and makes a more consistent policy.

Electricity Pricing:

Electricity pricing is one of the EFR instruments and the discussion regarding the full cost recovery principle also applies to the setting of the electricity tariffs. Electricity supply tariffs in Barbados are set according to the provisions of the Utilities Regulation Act. The household electricity tariff comprises a monthly fixed rate of 1.07 €, and tariff groups as laid out in the table below. (maximum monthly consumption of 2,000 kWh). Small scale commercial users (up to a maximum of 5 kW and/or a monthly consumption of 1,000 kWh) have a similar tariff structure; they are charged a fixed tariff of 1.78 € and a consumption dependent rate of 0.0804 €/ kWh. Large consumers are exempted from a fixed fee, but are charged per power rate of 1 €/kW and a consumption dependent rate of 69.80 €/MWh.⁴ The following table shows that it has relatively high rates for a developing country.

⁴ See: http://www.blpc.com.bb/cus_dtar.cfm.

Table 7: Electricity Prices in Barbados

Monthly consumption rate	Basic charge (€/kWh)
First 100 kWh	0.0626
Next 900 kWh	0.0698
Over 1000 kWh	0.0769
(The legally prescribed 15 per cent value-added tax is not included. An additional fuel clause adjustment 6 of 8.33 € is also charged)	
Conversion rate: 1€ = 2.81 BBD	

Source: BL&P 2009

Table 8: Household electricity tariffs in selected countries:

Country	Euro/kWh	Year
Croatia	0.190	2008
Austria	0.155	2009
Slovakia	0.150	2008
UK	0.134	2009
Singapore	0.128	2009
Czech Republic	0.115	2009
Latvia	0.100	2008
Norway	0.095	2009
Estonia	0.090	2008
Barbados	0.070	2009
Mexico	0.050	2009
Indonesia	0.049	2006
South Africa	0.047	2006

Source: OECD/IEA, 2009

Solar Heating

The government offers fiscal incentives for energy conservation such as rebates and subsidies on solar heating. Several provisions of the tax code are designed to promote renewable energies, particularly with respect to solar water heaters. The Fiscal Incentive Act of 1974 grants import benefits and tax exemptions to producers of such equipment. Tax concessions are also offered for the installation of solar water heaters under the 1984 Income Tax Amendment: the cost of such systems can be directly and fully deducted from the purchaser's income tax. In addition, all electric water heaters are subject to a 60 per cent consumption tax, and are accordingly unattractive to purchase (Mycoo 2006: 503). Approximately 34,000 solar water heaters have been installed by residential and non-residential users (Wright 2002)

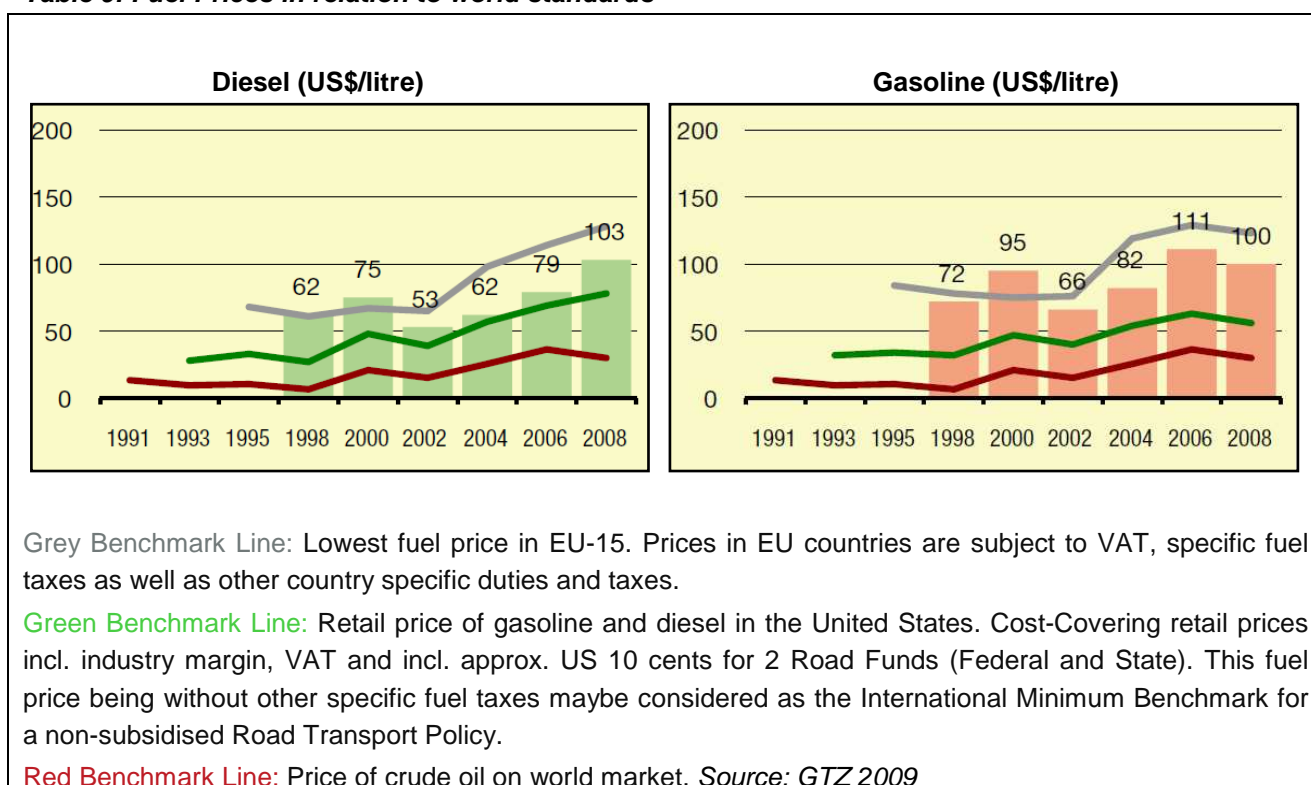
4.2 Transport Sector

In the Barbados National Strategic Plan 2005-2025, the assessment is made that the state is under pressure from generally high costs for infrastructural services in relation to the population and tax base. At the same time, there is a lack of adequate maintenance of infrastructure, especially roads. (Government of Barbados, 2005). In fact the government is trying to apply the cost-recovery principle in the transport sector through a number of taxes and charges on transport. This is through taxes on gasoline and diesel, through the taxation of vehicles and through a departure tax for aircraft passengers leaving the island. Taxation on transport is hence more consistent and higher than in other countries in the region. However, rates are still below a level where taxation can be considered as an instrument to encourage behavioural adaptation or significantly enforce the cost-recovery principle in the transport sector

Fuel

The Government has in the past attempted to shield consumers from high oil prices by adjusting the tax take. The Government recognises that it will be unable to do so when the price of oil reaches prohibitively high levels. It is set to determine the optimum level at which the tax take will not be able to be adjusted and will create a new tax regime that will be revenue neutral (Ministry of Finance, Economic Affairs and Development, Labour, Civil Service and Energy 2006). The graphs below show the development of fuel prices in Barbados over the past 12 years (columns). Red lines indicate the benchmark below which fuel prices are highly subsidised, green lines the benchmark, below which fuel prices can still be considered as subsidised, grey lines indicate the level above which taxation of fuels can be considered as high⁵. Accordingly, fuel prices in Barbados are not subsidised but neither is taxation of fuels significantly being used to generate revenue or to encourage energy efficiency in the transport sector. The table shows that countries in the Caribbean employ different strategies. While Grenada and Guadelupe levy significant taxes on diesel and gasoline, most countries only put a minor burden on fuels. Ecuador strongly subsidises the price of fuels.

Table 9: Fuel Prices in relation to world standards



⁵ The benchmarks used here are the world market price for crude oil, retail prices of fuel in the United States and retail prices in Spain. If a country subsidises fuel to a degree that prices remain below the world market price of crude oil this is considered high subsidization. The fuel prices of the United States are average cost-covering retail prices incl. industry margin, VAT and incl. approx. 10 US cents for the 2 road funds (federal and state). This fuel price may be considered as the international minimum benchmark for a non-subsidised road transport policy. Fuel prices in Spain are the lowest in EU-15. Prices in EU countries are subject to VAT, fuel taxes as well as other country-specific duties and taxes. Above this level, countries are effectively using taxes to generate revenue and to encourage energy efficiency in the transport sector.

Table 10: Gasoline and Diesel Retail prices (Nov. 2008):

Country	Diesel (US\$/litre)					Gasoline (US\$/litre)				
	2000	2002	2004	2006	2008	2000	2002	2004	2006	2008
Guadeloupe	-	-	-	-	1,54	-	-	-	-	1,81
Grenada	0,41	0,41	0,68	0,89	1,34	0,54	0,54	0,73	0,89	1,28
Barbados	0,75	0,53	0,62	0,79	1,03	0,95	0,66	0,82	1,11	1,00
Dom. Rep.	0,39	0,27	0,61	0,75	0,94	0,71	0,49	0,85	1,03	1,04
Jamaica	0,49	0,44	0,57	0,75	0,84	0,62	0,52	0,63	0,82	0,74
Colombia	0,35	0,24	0,36	0,57	0,73	0,49	0,44	0,72	0,98	1,04
Ecuador	0,18	0,27	0,27	0,39	0,27	0,31	0,55	0,54	0,47	0,51
Crude Oil Price			0,27	0,38	0,30			0,27	0,38	0,30
US	0,48	0,39	0,57	0,69	0,78	0,47	0,40	0,54	0,63	0,56
Spain	0,65	0,72	1,10	1,10	1,28	0,73	0,83	1,21	1,15	1,23

Source: GTZ 2009

Vehicle Taxation

Except for a few categories of persons which include returning Barbadian nationals and members of the agricultural sector, all individuals are required to pay an annual "Road Tax" on vehicles in addition to the relevant import duties, environmental levy and VAT for vehicles. The Road Tax is based on the chargeable value of the car, which is made up of the cost of the vehicle, plus the import duty and environmental levy. Import duties on all vehicles are at 45 per cent, environmental levy at US\$ 750 per vehicle (Invest Barbados 2009). The Road Tax is paid on the chargeable value as shown in Table

Table 11: Road Tax Rates

engine capacity: <1600cc; chargeable value:<BBD 45,000	46.95%
engine capacity: <1600cc; chargeable value > BBD 45,000	64.35%
engine capacity: <1800cc; chargeable value < BBD 45,000	76.34%
engine capacity: <1800cc; chargeable value > BBD 45,000	93.73%
Engine capacity: >1800cc; chargeable value > BBD 45,000	120%

Source: Invest Barbados 2009

Revenue from the road tax was at BBD 38.1 Million in 2007 and at 43,6 Million in 2008 (Information received from Central Bank of Barbados).

Passenger Service Charge

A departure tax is raised on all airline tickets for passengers leaving the island (exempt for stays under 24 hours) and over the age of 12 years. The amount was raised to BBD 55 in 2007.

4.3 Water Sector

The use of economic instruments in the field of water is 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.

Drinking Water

Barbados is classified as one of the world's top 15 most water scarce countries based on a renewable water resource availability of 390 cubic meters per person per year. Current groundwater abstraction levels either equal or exceed the developable and sustainable groundwater yields for most of the groundwater units for the island based on available fresh water resource estimates (Johnson/Mwansa 2007). The Barbados Water Authority (BWA) has to resort to desalination and is beginning to build respective plants in the 2010. Additionally, the water distribution system is old and insufficient and needs replacement. At the same time, the level of revenue generated from existing water rates is insufficient to cover the costs of providing water and wastewater services. Hence, an increase in rates, has come into consideration and is envisioned for 2010 (Government of Barbados 2009). The rates in existence today came into effect January 1, 2005. (Unfortunately, information on exact levels of charges on water supply and sewage could not be obtained within the scope of this desk-study.)

Incentives for Wastewater Treatment

Under the Tourism Development Act 2002, an operator who incurs expenditure in improving the wastewater disposal system will be allowed a tax credit of 20 per cent of the capital cost of fittings, pipes and pumps used in the improvement of the wastewater system. If the credit cannot be written off in one year, it may be carried forward to a period not exceeding 15 years. The hotel sector in the Caribbean has been lobbying the governments of the region to introduce tax incentives that promote sustainability of operations, sound infrastructure planning, and effective partnerships between the public and private sectors. (Mycoo 2006: 502)

4.4 Other EFR instruments

Environmental Levy

An environmental levy is in force in Barbados. The Environmental Levy Act 1996-8 has been in operation since 1996. Its main purpose is to defray the cost of the disposal of refuse generated by the use of goods imported into Barbados. The general rate is 1 per cent of the CIF (cost, insurance, freight) value of imported goods but some items are subject to specific rates, e.g. motor vehicles \$150 per vehicle; used motor vehicles \$2,000 per used vehicle, and refrigerators \$15 per refrigerator. There are exemptions from the payment of this levy including those organisations listed in Part II-B of the Customs Tariff, the international financial services sector, manufacturers and the diplomatic corps. In an effort to assist with the financing of environmentally friendly solutions, the Government increased the ad valorem rate of the Environmental Levy from 1per cent to 2per cent and doubled the rates on specific items in 2008. Accordingly, revenue from the environmental levy increased from BBD 13.8 Million in 2007 to BBD 34,2 Million in 2008 (Information received from the Barbados Central Bank). From the perspective of an EFR-approach, these are going into the right direction.

Procurement Policies

The government vows to take the lead in the introduction of a green economy by using green principles and ethics in its procurement policies. To this end, the Ministry of Energy and the Environment will be mandated to develop a Green Procurement Guide for the Central Purchasing Department. The Guide is supposed to heighten sensitivity about purchasing practices. It is anticipated that the use of a Green Guide will reduce overall costs, reduce wastage and result in cleaner and safer products being used within the Public Service.

Allowance for Home Improvements and Mortgage Interest

This allowance is currently at BBD 10,000 per annum, but it shall be increased to BBD 15,000 to take cognizance of expenditures related to the purchase or installation of products with positive environmental

effects. A list of such products is provided by the Ministry of Energy and Environment. The overall costs of the programme amount to BBD 5,000,000

Within the EFR-approach a differentiation or conditioning according to environmental criteria would be adequate; however, no information on such differentiation/conditioning was available within the scope of this study.

Recycling

A deposit-refund system for plastic bottles has been introduced and is turning out to be the largest incentive for the recycling of plastics. The system has contributed to the creation of central collection points making it easier for the local recycling companies to collect the respective waste. Based on this success, the Government will request the Ministry of Finance, Economic Affairs and Development, Labour, Civil Service and Energy to work together with the Ministry of Health to identify a broader list of products on which will be placed a small deposit fee to enhance their ability to be recycled.

5. 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 per 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.
- These problems are not evident in Barbados as an upper middle-income country. Keeping this in mind criteria for the applicability of an EFR can be derived⁶:
- Defining and prioritising of environmental policy objectives – as part of overall policy objectives - and good governance⁷.
- 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 policies⁸.
- Political willingness must be available, i.e. the entire government supports the application of any new policy programme.

⁶ 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

⁷ see also GTZ, 2008

⁸ see for example the development in South Africa (Speck, 2010)

6. DEVELOPMENT OF A PROPOSAL OF EFR-ELEMENTS

Derived from the situation and process, the following proposals are developed: Overall, preconditions for an EFR are quite good in Barbados, not at least since several measures were taken to reduce other more distorting taxes such as on personal income and corporations. There are a number of EFR elements already being implemented in Barbados especially in the transport sector and through the environmental levy. Additionally, environmental concerns are considered more important in Barbados in comparison to other Latin American and Caribbean countries. Nevertheless, experience in Barbados with EFR-elements (like in entire Latin America and the Caribbean) is still limited so far. The chance of linking tax reductions of ordinary taxes with higher taxes on environmentally harmful behaviour has not been used to the degree possible yet and deserves intensive studying.

Overall, an in-depth screening of diverse fiscal provisions would be required to identify the different impacts, but also alternative ways of design. The ones with the largest fiscal volume should be prioritised.

Taxes on Natural Resource Use

The 2001 re-introduced surcharge on a range of items could be streamlined according to environmental aspects, e.g. by really strengthening the local manufacturing sector while – that would be consequent – focussing on environmental aspects and natural resources on Barbados. So far the items covered are too unspecific (garments, bakery products, paints, food products, furniture and household items).

Regarding the intended new buildings and support mechanisms a serious look should be made at European examples of taxing aggregates for construction, and the issue of wider taxation of natural resources as done in a recent European study (<http://www.eea.europa.eu/highlights/environmental-tax-on-aggregate-materials-in-the-eu-towards-sustainable-construction-1>).

Amendment of environmental taxes and fiscal provisions

- Measures such as the taxes on vehicles are already progressive. They could be improved by explicitly taking the CO₂-emissions as tax bases and not only the value or the size of the motor engine of a car.
- Heavy fuel oil should also be taxed substantially to stop providing implicit support to the use of such, often containing a lot of sulphur fuels. This would provide stronger incentives to shift to efficient and renewable energies instead of using heavy fuel oil.
- The so-called environmental levy requires more environmental focus with a clearly environmentally relevant tax base. So far, it is only a waste-oriented levy where the link mainly seems to be that revenues shall be gathered for covering the costs of scrapping particularly of cars. This in itself is absolutely reasonable and justified, but it should comprise much more.
- The property tax should be based on environmentally relevant factors and not just varied according to the development of housing prices. Not at least since space is very limited on Barbados, it should take over the function of guiding towards optimal allocation of the space, taking environmental aspects into account (e.g. number of persons living per square meter or using categories of classifying the value of the ground used).
- A similar function could be taken by the land tax. However, it is recommended to streamline the tax system and reduce administration by considering merging both tax forms.
- The current reform of the electricity prices and tariffs is a huge window of opportunity to make price incentives consistent with sustainable development. To this end the structure should be as follows:
 - All commodities for which it is environmentally desirable to be used **more** electricity consumers should pay a reasonable lump sum independent of the factual consumption.

- All commodities for which it is environmentally desirable to be used as **less** as possible there should be no lump sum to be paid independent of the factual consumption.
- These principles should also be guiding for any other reform.
- As for promoting renewable energies a more long-term reliable form may be feed-in-tariffs as widely used today while investment grants and loans are less reliable, but can in some cases overcome a lack of bank money lending.

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