

## **LEGAL ISSUES ON ENVIRONMENTAL TAXATION**

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### **Abstract**

*This paper considers the role of environmental taxes both as instruments for improving the environment and as a source of revenue for funding economic development. It reviews the general case for environmental taxes and the particular issues that arise for the adoption of such taxes. It also discusses the possibility for political acceptance of such taxes when tax revenue is linked to the goal of economic development. The revenue potentials of environmental taxes are evaluated with special reference to a carbon tax. It is found that this tax alone has the potentials to raise sufficient revenue to finance government goals. In doing this, we will examine: Why Use Environment Taxes and Scope; The General Theory of Environmental Taxation; Global Externalities; Tax Designs and Political Acceptability; Location and Existence of Environmental Taxes in Nigeria; Revenue Potential of Environmental Taxes; Conclusion and Remarks.*

Keywords: Environmental, Taxation, Funding, Political, Revenue, Carbon.

### **1.0 Introduction**

Environmental challenges are increasing the pressures of governments to find ways to reduce environmental damage. While minimizing harm to economic growth governments have a range of tools at their disposal, including regulations, information, programmes, innovation policies, environmental subsidies and environmental taxes. Taxes in particular are a key part of this tool kit.

Environmental taxes have many significant advantages such as economic efficiency, environmental effectiveness the ability to raise public revenue and transparency. Furthermore, environmental taxes have been successfully used to address a wide range of issues including waste disposal, water pollution and air emission. Regardless of the policy area, the design of environmental taxes and political economy considerations in their implementations are crucial determinant of their overall success.

## **1.1 Why Use Environment Taxes and Scope?**

Without government intervention, there is no market incentive for firms and households to take into account environmental damage, since its impact is spread across many people and it has little or no direct cost to the polluter. Therefore, protection of the environment generally requires collective actions, usually led by government.

In the past, environmental policies were typically dominated by “command-and-control” regulations. These approaches were generally prescriptive and lightly targeted – e.g., banning or limiting particular substance or requiring certain industries to use specific technologies. Over recent decades, interest has grown in using market-based instruments such as taxes and tradable emission permits. There are a number of reasons for the increasing use of environmental taxes:

- i. Taxes leave consumers and businesses with flexibility to determine the least-cost way to reduce the environmental damage;
- ii. Taxes directly address the market failure by “pricing in” environmental costs.

The flexibility of response associated with environmental taxes also provides other benefits:

- a. Ongoing incentive to abate;
- b. Improves competitiveness of low emission alternatives;
- c. Strong incentive to innovative.

Environmental taxes also have other important features such as:

- i. Transparency;
- ii. Cost certainty and environmental certainty.

The scope of an environmental tax should ideally be as broad as the scope of the environmental damage. It should apply uniformly with few (if any) exception. A tax applied on a uniform basis also minimizes the cost of compliance for tax payers and the costs of administration for government, and reduces the opportunity for tax evasion.

Nevertheless, policy makers need to consider the impact of such taxes on groups such as low-income households or pollution intensive, trade exposed business, lower tax rates or exemption are sometimes put into place to limit impacts on such groups. This reduces the incentive provided by the tax for some but not others. Differing incentives increase the costs of meeting a given environmental target since abatement falls disproportionately on some polluters, creating a different kind of inequity. Governments should therefore try to implement environmental taxes as broadly as possible, with few or no exemptions. It is usually preferable to address distributional impact outside the tax in order to preserve the incentive effect of the tax.

In setting the tax rate it should be commensurate with the environmental damage, reflecting non environmental policy instruments, such as consumer subsidies, typically have a much higher implicit cost than the optimal tax required to achieve the same reductions in pollution.<sup>1</sup> For example, in an analysis of European countries, it was found that applying reduce Value Added Tax (VAT) rates to energy efficient refrigerators would lead to a reduction in CO<sub>2</sub> emissions of 1.6 million tones over an average fifteen-year life. This would cost treasuries €119 million in foregone revenues, implying an implicit carbon price of €73 per ton of CO<sub>2</sub> avoided. This considerably exceeds the estimated implicit carbon price under the E.U. emission trading system of €15 - €25 per ton of CO<sub>2</sub>.

Furthermore, in policy credibility and predictability the tax must be credible and its rate predictable in order to motivate environmental improvements.

Environmental tax revenues can assist fiscal consolidation or help to reduce other taxes. Generally, revenue from

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<sup>1</sup> See Environmental Taxation a guide for policy makers. Organization for Economic Co-operation and Development (September 2011) pp 2 – 5 <[www.oecd.org](http://www.oecd.org)>; Professor Sani Adam M. and Ibrahim Mohammed: 'Conceptual Foundation of Environmental Taxation Law and Why Nigeria should develop an Environmental Tax Regime' in Josephine Agbonika A. A: *Topical Issues on Nigerian Tax Laws and Related Areas*. (Ibadan: Ababa Press Ltd., 2015), pp. 357 – 362.

environmental taxes should be treated as general government revenue and used to maintain spending in other areas, reduce debt or reduce taxes. While in theory some of the revenue could be used to compensate those most affected by the environmental damage, in practice this may not be possible:

- i. Measuring the impact of environmental damage from a range of pollutants on individual is extremely difficult;
- ii. The environment itself is a public good with the impacts, or environmental damage spread widely, suggesting that revenues could be deployed widely to offset increased cost for hospitals, adaptations to environmental damage etc; and
- iii. Many environmental issues also have significant intergenerational aspects.

It is sometimes that “earmarking” revenues from an environmental tax – e.g. to fund public spending on environmental innovation or subsidies – can help to increase the political acceptability of the tax. In practice, however, the level of revenue from a particular tax is unlikely to track the appropriate level of spending in a particular policy area, resulting in under-funding or over-funding or continual adjustment in the tax rate.

As a matter of fiscal planning, therefore, it is normally more prudent for governments to manage their individual revenue sources and spending needs independently. This does not, however, prevent a new tax from being linked in a general sense with a roughly off setting “use” at the new revenues earned. At one profit, there was considerable interest in the potential of a “double dividend” from environmental taxes. According to this hypothesis “green” taxes would yield environmental improvement – the first dividend – and the revenues could be used to reduce the effects of existing disturbing in the tax system – the second dividend.

This argument does not take into account that an environmental tax may itself distort tax bases, or accentuate pre-existing distortions, with adverse effects on economic activity. For instance, an environmental tax will increase production cost. This may mean that other factors of production get paid less (e.g. lower

wages) or costs get passed on to consumers. Nonetheless, using part of the revenues to offset some of these effects, or example by reducing personal and corporate income tax rates, can help to offset some of the unintended effects of environmental taxes while creating a tax system that is less damaging to economic growth. (Environmental regulations would similarly reduce real wages and push up prices and probably by a greater amount – albeit less transparently and with no additional government revenues available to offset such effects).

In a political economy context, a reduction of other taxes can also help to garner political support for environmental taxes. The climate change levy in the United Kingdom was announced simultaneously with 0.3 percentage point reduction in employers' social security contribution rates. In Canada, revenues from British Columbians carbon tax are explicitly “recycled” by way of targeted and general reductions in corporate and personal income taxes. More direct approaches have seen cheques being sent to all households to accompany a “green” tax implementation. Revenues can also be used to offset some of the more direct effects of environmental taxation such as addressing distribution concerns and preserving competitiveness can be a significant challenge.

In overcoming challenges to implementing environmental taxes, distributional concerns can and generally should be addressed through policies outside the tax and competitiveness concerns needs to be carefully assessed: coordination and transitional relief can be effective responses.

By seeking to reduce polluting behaviours, environmental taxes by definitions are intended to alter production decision and to have a disproportionate impact on polluters. There are concerns, however, the high rates of environmental taxation can encourage business to relocate to lower taxes jurisdictions or result in them being subject to “unfair” competition from foreign firms that are not subject to similar policies. If the type of pollution in question has only a local regional or national impact, then the jurisdiction to which business relocate will presumably be prepared to accept a higher level of pollution than the taxing jurisdiction. However, in the case of emissions such as greenhouse gases, relocation to a low

or no tax jurisdiction would cause economic detriment in the taxing country, with minimal environmental gain. This is one part of what sometimes is referred to as “carbon leakage” in the climate change context. Competitiveness impacts need to be carefully evaluated. These impacts need to be placed in the context of the myriad competitiveness if their true significance is to be assessed. Where the expected impacts are in fact material, various policy strategies have been developed to preserve competitiveness when environmental taxes are introduced:

- a. International co-ordination in environmental policies;
- b. Provision of a transitional period;
- c. Recycling revenues
- d. Rate reductions and exemptions for energy – intensive users;
- e. Border adjustment taxes or tariffs.

It is worthy to note that, clear communication is critical to public acceptance of environmental taxation and environmental taxes may need to be combined with other policy instruments to address certain issues, despite the advantages of environmental taxation, taxes alone cannot always bring about the intended environmental outcome. Distortions within the economy may prevent optimal actions from occurring. In such circumstances, additional policy tools may be needed to provide an optimal instrument mix. Three examples of when other policy measures may be required are illustrated below:

- i. Consumers may be unaware of the environmental impact of their purchases;
- ii. Incentives that are not fully realized can limit the scope for enhanced environmental performances;
- iii. Innovation plays a critical role in delivering improved environmental outcome at lower costs.

Therefore, using a range of policy tools can play an important role when they are mutually reinforcing and do not apply similar deterrent to the same environmentally harmful activity on the other hand, if multiple environmental policy instruments in

respect of the same pollutant overlap, they can have a negligible effect or, more perversely, distort abatement and innovation decisions leading to a less efficient overall strategy. It was for such reason for example, that the advent of the European Union carbon Emission Trading System (ETS) encouraged the Danish Government to abolish carbon taxes on emissions that are covered by the ETS.<sup>2</sup>

## **1.2 The General Theory of Environmental Taxation**

A basic economic insight is that a competitive economy, under ideal conditions will generate a social efficient or pareto optimal allocation of private goods, meaning that it is not possible to reallocate resources in such a way that everyone becomes better off. In partial equilibrium terminology, an efficient allocation or private goods is achieved when:

- i. Marginal cost of producing a commodity is the same for all producers, this requirement is what is known as production efficiency.
- ii. The marginal willingness to pay for the community – the marginal benefit – should be the same for all consumers, ensuring consumption efficiency.
- iv. The marginal cost or production should equal the marginal willingness to pay.

This final requirement ensures overall pareto optimally. In an ideal competitive environment, optimizing behaviour by firms and consumers will ensure that marginal cost and marginal benefits will be equated to the equilibrium prices for all goods. Thus, a competitive equilibrium is a pareto optimum, and there is no waste of resources. One element of the “ideal condition” requirement is the absence of external effects, originally introduced by Alfred Marshall. The externality concept was further developed by Arthur

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<sup>2</sup> See Environmental Taxation a guide for policy makers. *Op.cit*, pp 8 – 12; Professor Sani Adam M. and Ibrahim Mohammed: ‘Conceptual Foundation of Environmental Taxation Law and Why Nigeria should develop an Environmental Tax Regime in Josephine Agbonika A. A: *Topical Issues on Nigerian Tax Laws and Related Areas. Op.cit*, p 358.

C. Pigou, who also pioneered the application of the theory to environmental problems in the modern sense. In recent decades, the increasing awareness of the environmental damaged caused by modern societies has greatly increased the importance of externality theory as a tool for applied policy analysis.<sup>3</sup>

Environmental externalities may be both positive and negative, but we focus here on the latter case. Externalities may arise both on the production and consumption side of the economy. A famous type of production externalities is the category known as the tragedy of the common. If there is common ownership at land, each owner has an incentive to let his cattle graze more than is rational from the view point of the group of owners as a whole. A more modern example is where manufacturing plant releases emissions into air, soil or water so as to affect negatively the production possibilities or cost of firms in the tourism or fishing industries. This case can be seen as another example of the tragedy of the common, since the natural recipient can be defined as common in a more general sense.<sup>4</sup> A central example of consumption externalities is traffic congestion, which arises from the fact that no individual car owner has an incentive to take account of the additional cost imposed on other drivers by his own car use. Thus, externalities may be generated by actions both by producers and consumers, and they may also affect both producers and consumers. A common element of the examples is that the agents who generate the externalities increase the cost or reduce the benefit of other agents. The competitive price mechanism fails to equate marginal social cost and marginal social benefit. Another unifying perspective on these examples is that negative externalities from the consumption or production of private goods

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<sup>3</sup> It is interesting to note that as late as 1957, George Stigler wrote that after Marshall, it was left for Pigou to elaborate and exaggerate, the importance of this source of disharmonies (1957). With the increasing awareness of environmental problems over the last few decades, few would now argue that Pigou was guilty of any exaggeration.

<sup>4</sup> In addition to its effect on production possibilities this type of emission also has negative consequences for consumers through health effect and the degradation of natural beauty.

reduce the availability of public goods like clean air, clean water or uncongested roads.

It is far from obvious that having identified potential cases of market failure economists should proceed to recommend government actions for their resolution. The inefficiency generated by environmental externalities arise because individual agents do not take account of the effect of their own actions on the welfare of others. Levying a tax on the actions in question that reflects the social impact of these harmful effect, leads agents to act as if they take the effect into account. The optimal environmental tax internalizes the externalities and restores the efficiency of the market mechanism.

How high should optimal environmental taxes be? There are two issues here:

- i. Concerning the theoretical principles behind the determination of the taxes.
- ii. One that concerns the empirical implementations of these principles.

The theoretical principles can briefly be described as follows:

If the damage takes the form of deterioration of an environmental public good, the tax should reflect the marginal loss of that deterioration of society as a whole, and that marginal value is the sum of the losses suffered by all agents affected by the externality. In the perfect world of first – best welfare economics, these corrective or pigouvian taxes are the only indirect taxes that are consistent with efficient market equilibrium. Any further revenue to finance public expenditure or redistribute income should be raised by individualized lump sum taxes.<sup>5</sup> When, more realistically, a distortion taxes have to be used for revenue purposes, a pigouvian element should be included in the second best optimal taxes for the commodities that generate the externalities. In both cases one sees the operation of the principles of targeting the tax incentive aims to affect the decisions that

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<sup>5</sup> A simple model of the first best cases is set out in a formal model of environmental taxation, the single country case.

directly influence the externality and to be as neutral as possible with respect to other decisions.<sup>6</sup>

How should one estimate the marginal social loss or damage? Obviously an estimate that is built up from information about the losses suffered by thousands or millions of individual is not practicable, and simple methods have to be employed. The value of the idea theoretical measure of marginal social damage is mainly to guide one's thought in the selection of a practical estimation procedure. Empirical analyses of environmental taxes typically start with some targeted reductions in the amount of emissions and then ask what level of taxes (or other instruments) is required to achieve the target. For this procedure to be optimal one must assume that the target reduction has been chosen as a result of a cost-benefit analysis of the benefit and costs of the reduction emission.

Although the use of taxes is not the only alternative for policy implementation, they have a number of advantages from an efficiency point of view. Consider the case where the externality is generated through the activity of a large number of individual firms, and where the government aims is to reduce the aggregate level of these activities. To reduce the activity in question imposes a cost on each individual polluter, and in the interest of production efficiency one would like the total cost of achieving the reduction to be as small as possible. Assuming that the marginal cost is increasing, this is achieved when all polluters have the same marginal cost of pollution reduction, which will be the case when they all face the same tax. If the polluters are consumers instead of firms, the argument has to be modified in terms of expenditure rather than cost, and the effect of the tax is to achieve consumption efficiency rather than production efficiency, but the basic economic insight is the same. The environmental tax can achieve

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<sup>6</sup> The principle of second best environmental taxation were discussed in Agnar-Sandmo: 'Environmental Taxation and Revenue for Development, Economic Research' (UNU Wider) Conference on Sharing Global Prosperity Hesinki Finland (6 – 7 September 2003) Ch 5.

the desired reduction of the activity in question at minimal sacrifice to society as a whole.<sup>7</sup>

### **1.3 Global Externalities, Tax Designs and Political Acceptability**

Many types of environmental externalities are transnational; harmful emissions in one country are carried by land, sea or air to cause damage in other countries. In some cases like the emission of greenhouse gases that contribute to global warming; all countries are both polluters and victims of pollution. A direct application of standard insight should lead one to recommend taxes on polluters in order that they may internalize the damage that they cause but there are some difficulties with this solution in an international setting. The United Nations Framework Convention on Climate change (UNFCCC) has defined green house gases as those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorbs and re-emits infrared radiations.<sup>8</sup> Global warming or climate change are often use interchangeably. The former is the increase in the average temperature of the earths near surface, air and oceans, since the mid-twentieth century and its projected continuation. The global surface temperature increases  $0.74 \pm 0.18^{\circ}C$  ( $1.33 \pm 0.32^{\circ}F$ ) during the last century. According to the Intergovernmental Panel on Climate Change (IPCC), the green house gas concentration resulting from human activity such as burning fossil fuel like coals, oil and gas deforestations causes most of the observed temperature increase since the middle of the twentieth century. Greenhouse gasses such as water vapour, carbon dioxide, nitrogen oxide, methane, chlorofluorocarbons and ozone trap heat in the atmosphere instead of allowing it to radiate back into space. Except chlorofluorocarbons, greenhouse gases are natural and the green

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<sup>7</sup> Agnar Sandmo: 'Environmental Taxation and Revenue for Development', op.cit.

<sup>8</sup> Article 1 (5) (United Nations Framework Convention on Climate Change (1992)). See Okwuzuzu Gaius E: 'Greenhouse Gases; what they are' in Gasiokwu MOU (ed.): *Ecology: concept, politics and legislation*. (Enugu: Cheglo Publishers Ltd, 2013). Pp. 103 – 108.

house effect is a natural phenomenon. Without it, the earth will be about 60% cooler than it is today and life as we know it will be impossible.<sup>9</sup>

The most obvious complications is that there exist at present no international authority to impose taxes, and collect revenue. In a single country, the government that makes decisions about tax rates can also provide the resources for tax administration and enforcement. People, who are opposed to a new tax in their own country because they stand to lose by it, will nevertheless be forced to pay it. But in the international community of nations, with a proposal to impose a uniform tax on CO<sub>2</sub> emission for example, each nation has to agree to the proposal on a voluntary basis. This creates a challenge for tax design which has no direct counterpart in national tax policy. In spite of this, it is of considerable interest to analyse the problem of optimal tax design from the view point of global welfare maximization. One issue that can be discussed in this frame work is whether such a globally optimal tax should reflect equity consideration. Some proponent of the CO<sub>2</sub> tax claims that it should be designed so as to satisfy the conditions for world production efficiency. Indeed, to ensure that emissions will be reduced the most where the marginal cost is lowest, is claimed to be the main advantage of the tax. The question is whether this will lead to an ethnically acceptable distribution of the cost between rich and poor countries. If not, should one design compensatory transfer, or should the design of the environmental taxes themselves have built in distributional element.<sup>10</sup> Should the tax be uniform or differentiated between rich and poor countries? With perfect international transfer and free international trade, the answer is clear the tax should be uniform.

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<sup>9</sup> Atsegbua L: *Environmental Law in Nigeria: Theory and Practice* (Lagos: Abba Press 2003) p. 194: see also Elvis Imo L.R. (Mrs.): 'A Global Warming on a Global Conspiracy' in Gasiokwu MOU (ed.): *Ecology: Concept, Politics and Legislation. Op.cit*, pp. 70 – 71.

<sup>10</sup> Although the analysis, of this paper relates to optimal tax design, the results are also applicable to the problem of tax reforms. The insight that we get from studying for example the optimal combination of environmental and other indirect taxes have a direct application to the study of the welfare effect from substituting environment for other indirect taxes.

From the view point of World welfare, it is rational to increase the global cost of environmental improvement and by so doing one can ensure that the poor country bears less of the cost burden when lump sum transfer are ruled out, we are in the world of the second best where redistributive concerns may have to be reflected in the design of the system of commodity taxes.

Which of the two polar assumptions is the more realistic one? Anyone, who observes the extent of world income inequality and the amount of international transfer, will have difficulties with concluding that his observations can be interpreted as the outcome or global welfare maximization, the case without international transfer is therefore the one that comes closest to reality. To implement such a scheme is however, far from simple. A major difficulty is that in the real world of many countries, there is no simple division of countries into the “developing” and “rich” categories, and a system by which every country pays the tax at a different rate raises major political and administrative difficulties. The problem is even more complicated if one envisages several global pollutants with associated tax rate, where for each tax rate one needs to strike a balance between cost efficiency and distributional equity.

The approach to tax design via global welfare optimization leaves open the question of its institutional and political foundation clearly, such a tax will have to be based on some kind of international agreement possibly in combination with the creation of a world tax authorities to ensure voluntary participation by all countries, the tax would have to be designed in such a way that all countries gain by it. All countries will gain from a better global environment, but since both the gains and the tax payment, are likely to be unevenly distributed between countries, it is not clear that the net gain – the environmental minus taxes paid will be positive for all countries but the income received by the world tax authority could be redistributed to the participating countries so that net gains are assured for all participants. The redistribution scheme could also be designed such that the poor countries would of global taxations? We have seen that a strong case can be established for such a system on the basis of welfare economics,

but what are the prospects for its implementation with regard to the case of greenhouse gas emission while efficiency consideration creates a presumption for using coordinated international polices to alter greenhouse gas emission, the prospect for such actions are bleak. There are two main reasons for this:

1. That action taken to prevent or slow down global warming involves the certainty of present cost against the uncertainty of future benefit. The uncertainty element comes in because of our incomplete knowledge concerning the effect of greenhouse gas emission on the global climate in the future. The time element is also of major importance in judging the probability of political enactment. The time perspective in global warming is so long that even with moderate rate of discounting, the costs will easily come to dominate the benefit. This particular ground for pessimism it should be stressed applies both to a single country and to the world community.
2. The fact that an efficient tax policy for global environmental improvement presupposes coordinated actions among countries, but which each country knowing that the main beneficiaries from its own action will be other countries. This create an incentive for each country to be a free ride on the policies of the other leading to a political equilibrium where all country believe that inadequate action is taken, but where all feel powerless to break out of the low tax equilibrium trap. It would seem fruitful, therefore, to try to search for argument that would increase probability of political adoption of global environmental taxes.

One such argument would be that of double dividends from a domestic point of view increasing the tax on fossils fuels would not only correct a market failure, it would also enable the national government to cut other taxes or to expand public expenditures at a lower efficiency cost. Note however, that this argument provides an answer to the pessimism stemming from the long time horizon and the free rider problem.

Another approach would be to introduce global environmental taxes in conjunction with a commitment to use the revenue for a specific purpose as in the current proposal to use it for promising economic development. The emission of greenhouse gases contributes to a deterioration of the quality of the atmosphere, the most global of all commons.

Is such a scheme likely to attract the supports of the rich countries? The presumption is that a slow-down global warming would be a benefit to all.<sup>11</sup> At the same time, however, there would be a net transfer of tax revenue from the rich to the developing countries. On a narrow calculation of national self-interest, some rich countries must find the proposal unattractive. However wider consideration at the fairness involves in charging for the use of the global common as well as the attainment of a more equitable distribution of world income might still appeal to an extended notion of the national self-interest.<sup>12</sup>

There are several alternatives regarding the construction of a system of global environmental taxation that combines efficiency and equity consideration. Two main alternatives emerge:

- i. A uniform tax designed to promote production efficiency combines with a separate system for equity based distribution of the tax revenue.
- ii. A non uniform tax with rates depending on the income level of the tax collection country. In addition a simplified case of (ii) would be.
- v. A positive efficiency based rate of tax on the rich countries combined with a zero tax on developing countries.

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<sup>11</sup> Evidence shows that countries like Canada, Russia might profit from global warming mainly because of higher Agricultural yields. This might seem a narrow concept of the national interest, but in any case the possibility that few countries could come to gain from global warming is not a crucial argument against the scheme.

<sup>12</sup> Analysis of cost-efficient reduction of sulphur emission in a European contest identify countries that gain or lose by an efficient policy. It also develops a system for revenue distribution that makes all countries that participate in the policy into net beneficiaries by the arrangement. Something similar could clearly be worked out on a global scale; which would imply that the rich countries would also get a share of the tax revenue.

An important issue of system design is that particular acceptable treaty, needs to be based on the largest extent possible on criteria that are capable of empirical verifications and are easy to understand. None of the three alternatives satisfy this requirement completely; this is unavoidable because they all involve an element of redistribution which clearly must be based on value judgment.<sup>13</sup>

#### **1.4 Location and Existence of Environmental Taxes in Nigeria**

Environmental tax is a tax whose tax base is a physical unit (or a proxy of it) that has a proven specific negative impact on the environment. Four subsets of environmental taxes are distinguished; energy taxes, transports taxes, pollution taxes and resources taxes.

We need environmental taxes because environmental taxes provide incentives to lessen environmental burden and preserve the environment by internalizing the environmental costs, (for example, activities that burden the environment will be taxed, whereas activities that contribute to the preservation of the environment will get tax break).<sup>14</sup> Environmental taxes, therefore provide incentives for business and individuals to integrate environmental concerns into economic activities, and minimize negative environmental impacts, because revenues generated by environmental taxes can be used for other environmental preservation projects or cut other taxes.

Tax revenues of environmental taxes can be used for environmental preservation or other non-environmental welfare. The revenues from environmental taxes can be used to cut taxes such as income tax, corporate tax and social insurance premium.

There are actually very few taxes in Nigeria that truly aim for environmental sustainability. Licenses laws and regulations, emission control laws. Environmental impact assessment, environmental Audit and environmental review fees, fees charge by the Department for Petroleum Resources fund, energy and

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<sup>13</sup> Anger Sandmo: 'Environmental Taxation and Revenue for Development'. *Op.cit*, pp. 9 – 14.

<sup>14</sup> See the USA case of *Becker v IRS* (In Re Becker), 407 F. 3d 89 (3.d Cir. N.Y. 2005).

automobile taxes in Nigeria are environmental related taxes, rather than environmental taxes. These taxes are of environmental relevance, but are not levied directly based on the negative environmental impacts.

Nigeria needs environmental taxes to address environmental problems both environmentally effective and economically efficient. The National Environmental Standards, Response and Enforcement Agency and the National Oil Spill Detection and Response Agency are not properly equipped to collect environmental taxes.<sup>15</sup>

Thus, to better utilize environmental taxes as a fiscal instrument to address environmental problems, we must implement a comprehensive green tax reform that entails introduction of new taxes as well as changes in the existing fiscal policies. The three tiers of government, the federal, the state and the local government councils, should be empowered to collect environmental taxes. For example, taxes should be charged for sinking of boreholes and carrying out mining activities etc. The sinking of boreholes and formal and informal mining activities are being carried out daily at a very large scale and virtually unchecked and unregulated, perhaps.

Green taxes are environmental taxes or pollution taxes. They are excise taxes on environmental pollutants or on goods whose use produces such pollutants. Economic theory suggests that taxes on polluting emissions will reduce environmental harm in the least costly manner, by encouraging changes in behavior by those firms and households that can reduce their pollution at the lowest cost. In practice, green taxes even indirect ones, on proxies for emissions or on related goods have rarely been imposed. Some examples can be found in Europe, but virtually none in the United States and even in Africa. Thus, prevention and regulation of pollution is at the centre of green taxes or environmental taxes, as it were.

Pollution, in this context, can be regarded as a cost of producing goods and services, but one that is borne not by the

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<sup>15</sup> See the NESREA Act 2007 and the NOSDRA Act 2008 in Laws of Federation of Nigeria, 2010.

polluter but instead mostly by others (in the form of a damaged environment in forms ranging from noxious odours to impaired health to changes in climate). A pure environmental tax aims to ensure that polluters face the time cost of their activities by charging them for the damages caused to others.

Direct taxes on emissions are economically efficient because they give polluters an incentive to reduce their pollution up to the point where further reduction would cost more than paying the tax, and to do so in the least costly way.

Indirect taxes, such as taxes on related goods, or alternative policies, such as mandated technology standards, may not reduce pollution in the least costly way. For, example, imposing a higher gasoline tax to reduce the environmental damage from automobile emissions gives drivers no incentive to maintain their cars pollution control equipment, and mandating pollution control equipment provides no incentive to drive less.

Direct emissions taxes are also cost-effective because they ensure that pollution reductions are undertaken by those who can do so most cheaply. Firms that find pollution abatement costly will choose to continue to pollute and pay more tax, while those who find it less costly will cut their pollution rather than pay more tax.

Tradable Permit Schemes are another alternative to emissions taxes, and can be just as cost-effective. These schemes limit the quantity of allowable emissions by issuing a fixed quantity of emission permits, which polluters may then trade among themselves. The permit price plays a role analogous to a tax polluter with high costs of reducing their emissions will instead buy permits that let them continue to emit, while those that can cut emissions at lower cost will do so and then sell their unused permits. Tradable permit schemes may have different distributional effects than pollution taxes, however, depending on whether the permits are given away (and to whom, and on what basis) or auctioned off. Examples of such schemes are the acid rain provisions of the US Clean Air Act and the European Union's Greenhouse Gas Emissions Trading Scheme.

Subsidies for emissions reductions do not have the same effect as emissions taxes. Subsidies increase the benefits of

belonging to the subsidized group and may result in more polluters, each polluting less, with no net decrease in emissions. Carbon tax is another form of green taxes. This would impose an excise levy on the carbon-based content of fossil fuels as a means of reducing greenhouse gas emissions that contribute to global warming. Estimates vary widely of the external costs associated with these fuels, whose combustions release carbon dioxide into the atmosphere.<sup>16</sup>

### **1.5 Revenue Potential of Environmental Taxes**

For the purpose of this paper, it will be useful to limit discussion to the types of pollution that most directly affect the global commons viz the emission of greenhouse gases in particular a tax on carbon (CO<sub>2</sub>) emission. What is the revenue potential of sum taxes? How important could they be in providing funds for development finance? The answer seems to be that they could be very important, but that there are a number of uncertainties attached to the estimation of their revenue potential. In spite of the uncertainty that is attached to the magnitude of the relevant elasticity's there can be no doubt that the revenue potential of a global carbon tax is very high. A modest rate of tax, whether levied globally or only on the rich countries emission would likely raise huge revenue that could potentially be channeled into economic development. But one needs to keep in mind that the estimate of the revenue potential of the carbon tax might not reflect a corresponding increase in tax revenue available for development assistance.

Adoption of the global carbon tax would imply large increase in the outflow of resources for development purposes, and the political system could well react to this by cutting back the

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<sup>16</sup> Professor Sani Adam M. and Ibrahim Mohammed: 'Conceptual Foundation of Environmental Taxation Law and Why Nigeria should develop an Environmental Tax Regime in Josephine Agbonika A. A: *Topical Issues on Nigerian Tax Laws and Related Areas. Op.cit*, pp 358 – 361.

amount of ODA over time or increasing it by less than they would have done, by the global carbon tax not been in place.<sup>17</sup>

### **Conclusion and Remarks**

Environmental taxation has a significant role to play in addressing environmental challenges. Taxes can be extremely effective when they are properly designed and levied as close to the environmentally damaging pollutant or actively as possible, and are set out as adequate role. Administration cost or barriers may necessitate the taxation of proxies to environmentally harmful activities, but care should be taken to ensure this does not impel environmental outcomes. The revenue generated can be used to help with fiscal consolidation or reduce other tax rates.

Environmental taxes give rise to distributional or competitiveness concerns, but these are usually best addressed through other policies tools. Providing information transparency and certainty is critical to public acceptance and to the effectiveness of environmental taxation. Taxes may need to be combined with other instruments to obtain the most efficient and effective environmental policy package, but care should be taken to access the impact of overlapping instruments.

The economic case for global environmental taxes, primarily to control the climate externalities that are of increasing concern to public opinion is very strong. Since these taxes can be use and charges for use of the global commons, there is strong moral case for earmarking the revenue for global development purpose. There is at present wide-spread pessimism concerning the political realism of introducing such taxes. However, earmarking the revenue for development purpose might in fact enhance their political acceptability. The revenue potential of this type of tax appears to be large. A global carbon tax even at modest rates could alone generate sufficient revenue to finance the Millennium Developmental Goals, and with a higher tax rate – one that is designed to achieve a substantial environmental improvement – the potential could be increased even further.

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<sup>17</sup> Anger Sandmo: 'Environmental Taxation and Revenue for Development', *Op.cit*, pp. 14 – 16.

If such a system of taxes were to be enacted, one would clearly be justified in speaking of an international double dividend. First, there would be an improvement of the global environment, second, there would be increase flow of resources into economic development and at a lower marginal source of public funds that is the case for most of other taxes currently being, used to fund development aids. Whether this argument is persuasive enough to overcome the free rider problems inherent in all issues involving global public goods and externalities remain to be seen.

Finally, this paper points the way for reforms in our environmental protection mechanisms, especially by introducing a whole range of environmental taxes that would pave way for attainment of sustainable development. There will be need for reforms and enactment of relevant legislation to capture properly the environmental tax regime in Nigeria. Public enlightenment and awareness would be required to make such legislations efficient and effective.