

Fiscal Instruments and Environmental Policy Reforms in India

M N Murty

Professor Rtd.

Institute of Economic Growth

University Enclave

Delhi 110007

India

Constitutional Provisions and Environmental Policy Reforms

Economic and other institutions for environmental management comprise of efficiency (Pareto efficiency) improving instruments and market efficiency reducing traditional budgetary policy (revenue and expenditure policies) instruments.

There is a need for constitutional provisions for making use of these instruments for environmental regulation by national governments. The original constitutions of many countries including India do not have all necessary provisions empowering governments for making use of them.

Federal and state governments are now empowered to design and implement necessary economic instruments for environmental regulation. The land mark 42, 73 and 74 constitutional amendments and associated number of legislations enacted by Indian parliament has paved the way for Federal and State governments using regulatory instruments for environmental management.

The Indian government and participatory institutions could choose among pure environmental instruments like pollution taxes and permits and bargaining and property rights and the instruments of traditional budgetary policies or a combination of both for achieving environmental objectives.

Also it is important to look in to the efficacy of budgetary policy instruments for environmental management in the context of rapidly changing structure of taxes especially of commodity taxes as a result of tax reforms undertaken by Indian government.

The recent tax reforms in India has lead commodity tax structure towards Value Added Tax (VAT) regime making states and centre respectively having Sate VAT and Central VAT. The continuing tax reforms could be leading to have a comprehensive VAT in the name of Goods and Service Tax (GST) with dual taxes of centre GST and state GSTs in the near future.

VAT as ad valorem tax levied at the final stage of product cycle which is more less uniform in the case of say GST. It does not have flexibility to have differentiated commodity taxes depending upon environmental intensities of commodities. Also both centre and states levy GST on same tax base, there could be inter- state competition in levying state GSTs in lieu of environmental regulation.

Amendments of Indian Constitution for Environmental Protection

The Constitution of India which came into force on 26th January, 1950 originally does not contain any specific provisions for environmental protection as it is the case of constitutions of many other countries.

The consideration of issue of the protection of environment by the United Nations Conference on Human Environment held on in June, 1972 at Stockholm has prompted some countries to attempt amendments in their respective constitutions. The constitutional amendments are attempted by some member countries for addressing issues arising out of the following agenda of the conference: (a) Planning and management of human settlements for environmental quality; (b) Environmental aspects of natural resources management; (c) Identifications and control of pollutants and nuisances of broad international significance; (d) Educational, Information, Social and Cultural aspects of environmental issues.; e) Development and environment; and (f) International organizational implications of action proposals.

To comply with the principles of Stockholm declarations, the Government of India has attempted an amendment of Indian constitution through the Constitution 42nd Amendment Act, 1976. This amendment provides for hitherto absent constitutional provisions for the protection and promotion of the environment in India. It incorporates articles 48-A and 51-A(g) in the constitution which form part of Directive Principles of State Policy and the Fundamental Duties respectively.

Article 48-A provides for protection and improvement of environment and safeguarding of forests and wild life stating that "The State shall endeavor to protect and improve the environment and to safeguard the forest and wildlife of the country".

Article 51-A(g) points out the duties of citizens to protect environment by stating that "It shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures".

Therefore the amendments make twofold provisions: on the one hand, it gives directive to the State for the protection and improvement of environment and on the other hand reminds the citizens their constitutional duty to protect and improve natural environment.

The Indian constitution envisages a federal system of governance in India which has implications for environmental management and laws.

The legislative powers are divided into three lists: I the Union List, II the State List, and III the Concurrent List.

Articles 245-263 of Part XI of the constitution provides for the distribution of legislative powers between the centre and the states. The centre list contains 97 subjects and the Parliament alone has the power to legislate. The State List contains 66 subjects and the States have power to legislate. Concurrent List contains 52 subjects and both the Parliament and the State Legislatures have the power to legislate.

The Government of India has attempted further amendments in the constitution by enacting various acts during early 90s of last century. These amendments incorporate 42nd Amendment of constitution in Concurrent List and thus extending the duty of state government apart from Centre to protection of wildlife and forests and for population control and family planning.

The legislative powers of government with respect to environment management in the seventh schedule of constitution are now distributed between three lists as follows:

Union List

52. Industries

53. Regulation and development of oil fields and mineral oil resources

54. Regulation of mines and mineral development

56. Regulation and development of inter-State rivers and river valleys

57. Fishing and fisheries beyond territorial waters.

State List

6. Public health and sanitation

14. Agriculture, protection against pest and prevention of plant diseases

18. Land, colonisation, etc.

21. Fisheries

23. Regulation of mines and mineral development subject to the provisions of List-I.

24. Industries subject to the provisions of List-I.

Concurrent List

17A. Forests.

17B. Protection of wild animals and birds.

20. Economic and social planning.

20A. Population control and family planning

The landmark 73rd and 74th constitutional amendments by Government of India, which were passed in 1992 and came into force in April 1994, have facilitated more decentralization of governance with devolution of some fiscal and administrative powers to local self governments (municipalities and village panchayats). These amendments have created multiple levels of governance in India.

The 73rd Amendment Act provides for a three-tier Panchayati Raj system at the village, intermediate (block or taluka) and district levels.

The 74th Amendments Act provides for the constitution of three types of local self- governing institutions in the urban areas: Municipal Corporations for major cities, Municipal Councils for Middle rung cities, and Village Panchayats for small towns. These two amendments taken together assign 29 subjects of rural importance to the panchayats at village, block and district levels and 18 subjects of urban importance to the municipalities. The local self- government bodies (both rural and urban) are also entrusted with the responsibility to prepare and implement a number of development plans based on local needs

Central and State legislations on Environmental Protection

Wildlife (Protection) Act, 1972;
Water (Prevention and Control of Pollution) Act, 1974;
Water (Prevention and Control of Pollution) Cess Act, 1977;
Forest (Conservation) Act, 1980;
Air (Prevention and Control of Pollution) Act, 1981;
Environment (Protection) Act, 1986;
Public Liability Insurance Act, 1991;
National Environment Tribunal Act, 1995 and
National Environment Appellate Authority Act, 1997.

Economic Instruments and other Institutions for Environmental Policy Reforms

Alternative institutions for the control of environmental pollution are (a) Market, (b) Government, and (c) Community or Associations of people.

A practical policy may involve all these institutions.

Normally one does not come across a market with producers of waste and processors of waste acting with same price/cost arrangements to abate pollution. Therefore it is generally stated that market forces fail to control environmental pollution.

Government has been viewed as an alternative institution to deal or manage the environment.

Community action or people's participation is now gaining prominence as an alternative to Governmental agencies for the management of environmental resources

Command and Controls (CAC)

The CAC instruments are in the form of fines, penalties and threats of legal action for closure of the factories and imprisonment of the owners.

They can be used either for facilitating the use of specific technologies for the environment management or for the realization of specific environmental standards.

It can be shown that the cost of imposing and implementing compliance are generally higher when CAC instruments are used than with economic instruments.

Under CAC instruments, there can be no incentives for firms to innovate or invest in more efficient pollution control technologies or in cleaner process technologies.

Economic Instruments

Price based instruments: Taxes and Subsidies

Quantity based instruments: Tradable Permits

Hybrid instruments: Environmental Standards, Taxes and permits

These instruments are often called as market based instruments.

Together with supply-demand forces of the market, economic instruments help achieve efficiency even with the presence of environmental externalities like air and water pollution.

Pollution Tax

Pollution tax could be interpreted as the price the polluter has to pay for using the waste disposal services from the environmental media. Since the market is missing for the waste disposal service, this price could not be determined in the market. The supply and demand schedules for this service could not be observed in the market.

Demand for Pollution Disposal

Given a constitutional provision enforcing property right to the environmental resource to the public, environmental regulation by the government or public could make the polluter liable to pay a price for the waste disposal service. The polluter pays the price in the form of cost he incurs for complying with the environmental regulation. Therefore, the marginal cost of pollution abatement or the cost the polluter is willing to incur for reducing every successive unit of pollution abatement (MCA) could be interpreted as the demand price of waste disposal service.

Figure-1 depicts the demand curve for the waste disposal service as the falling MCA or demand price with respect to the pollution load generated. Alternatively, it could be seen as the curve depicting the rising MCA with respect to the pollution load reduction.

Demand for Pollution Disposal

Given a constitutional provision enforcing property right to the environmental resource to the public, environmental regulation by the government or public could make the polluter liable to pay a price for the waste disposal service. The polluter pays the price in the form of cost he incurs for complying with the environmental regulation. Therefore, the marginal cost of pollution abatement or the cost the polluter is willing to incur for reducing every successive unit of pollution abatement (MCA) could be interpreted as the demand price of waste disposal service.

Figure-1 depicts the demand curve for the waste disposal service as the falling MCA or demand price with respect to the pollution load generated. Alternatively, it could be seen as the curve depicting the rising MCA with respect to the pollution load reduction.

Supply of Pollution Disposal Service

There is an opportunity cost or health and other damages suffered by the public from pollution. The supply price of waste disposal service is the price charged to the polluter by the government or public for every unit disposal of waste in to the environmental media. Therefore, the marginal damages (MD) or damages from every successive unit of pollution that the public is willing to bear could be interpreted as the supply price of waste disposal service. Figure-1 describes the supply curve of waste disposal service as the rising marginal damages (MD) or supply price with respect to the pollution loads.

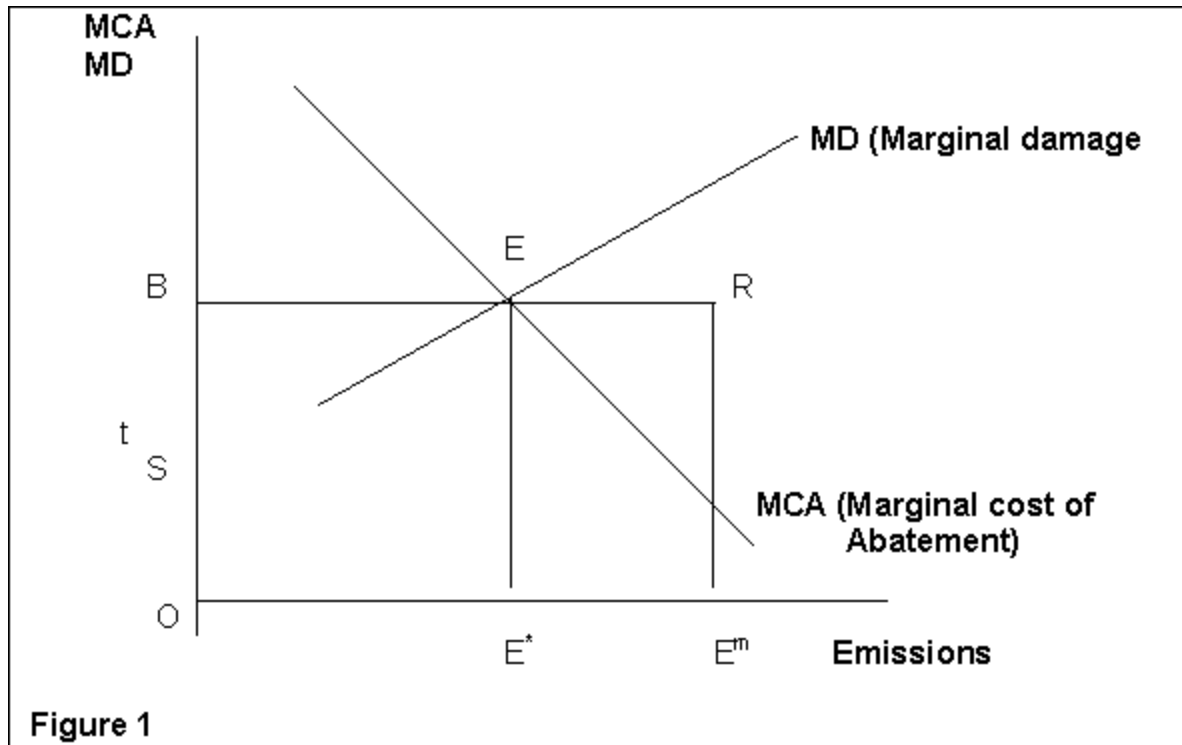


Figure 1

Quantity Based Instruments

A system of tradable pollution rights for the management of environment proposes that the property rights be defined to the use and abuse of environment and such entitlement be offered for sale to the highest bidder.

For example in the case of air pollution, this approach first determines the optimal level pollution in a given geographical area. This level of pollution to be tolerated is then divided in to a number of permits among the various polluting units within the area (either by free distribution or by auctioning). Firms that face lower unit cost for pollution control may continue their original level of production and emissions. But they will have some extra pollution permits (or entitlements) to spare. They can sell such extra permits to firms that face higher unit costs for pollution abatement. In this process, a market for pollution permits is created in which trading in permits takes place up to the point at which the aggregate supply of permits is equal to the aggregate demand for permits and the equilibrium permit price is equal to the marginal cost of abatement to each firm.

Mixed Instruments: A Practical Approach

In practice, it may be required to have a mixture of both command and controls and economic instruments. Fixation of pollution standards by Pollution Control Boards and using either pollution tax or marketable permits instrument to induce the polluter industry to meet those standards is a hybrid method using regulatory and economic instruments. Once the environmental standards are given a priori, the difficult problem of estimating the damages to all the affected people from pollution can be avoided for designing the economic instruments.. It is economically feasible to obtain an estimate of pollution abatement costs. Using the firm level data on pollution loads, costs of abatement and production levels the pollution abatement cost functions can be estimated using econometric techniques. Given the environmental standards and the estimated marginal abatement cost function, a rate of tax can be fixed such that the firms will automatically have an incentive to reduce pollution for meeting the standards. This is explained in Fig-2.

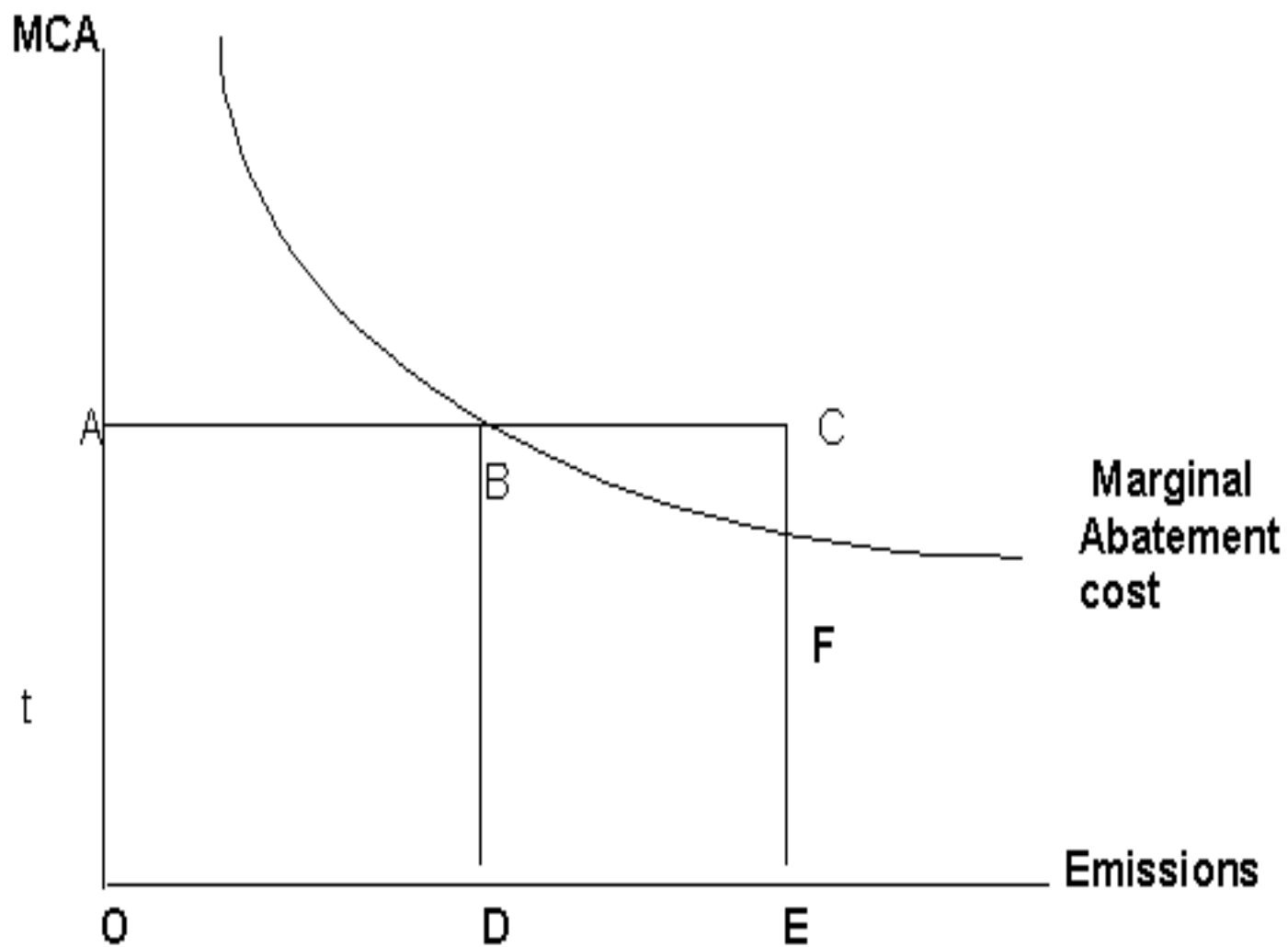


Figure 2

Property Rights, Bargaining and People's Participation

Command and control measures and the economic instruments described above are instruments of government and there could be limitations of using them effectively. The alternatives can be participatory institutions

Participatory institutions for pollution control could be designed by creating specific property rights and opportunities for bargaining to concerned agents. Property rights mean either rights to clean water and air to people or rights to pollute to the producers and consumers.

Consider a situation of an externality (say pollution). These are two agents involved here namely the generator and the affected party. Given the initial property rights to the resource either to the generator of the externality or to the affected party, and if the cost of bargaining is zero, the bargaining between the two parties results in the optimal control of externality. The final outcome of bargaining is invariant to the initial property rights (for example in the case of air pollution whether the right to clean air is vested in the affected people or whether the right to pollute is given to the polluter). Even with positive transaction cost of bargaining, there could be still a reduction in pollution externality though not to the optimal level.

This result is further explained in Fig-2. In this figure the optimal pollution load is given as OE. For the pollution loads higher and lower than OE^* , there are incentives for gainful bargaining between the polluter and the affected party. If the polluter has the right to pollute beyond OE, then the MD is higher than MCA for the pollution loads, the affected party has an incentive to bribe the polluter at any rate lower than MD for a unit reduction in pollution and the polluter has an incentive to accept the bribe at any rate higher than the MCA. Therefore, bargaining between the two parties takes place until the pollution load is reduced to OE. Similarly, since MCA is higher than MD for the pollution loads lower than OE^* , the polluter has an incentive to offer bribe to the affected party at any rate lower than MCA and the affected party has an incentive to accept bribe at any rate higher than MD. Again, the bargaining between them leads to the optimal pollution load OE^* .

Integrating Environmental Policy with Budgetary Policies

Environmental policy objectives could be achieved also through traditional budgetary policy instruments (revenue and expenditure policies) of government if there are institutional constraints in using pure environmental policy instruments like pollution tax and permits etc.

Environmental policy instruments like pollution taxes, pollution permits and the participatory institutions based on Coasean bargaining are efficient or Pareto improving instruments in the economy.

The traditional budgetary policy instruments used to remove market inefficiency arising of environmental externalities are not Pareto improving and could introduce another type of market inefficiencies contributing to consumer and producer surplus losses in the economy.

There are cases in which these two sets of policies complement each other. Examples are the case of pollution taxes raising revenue to government while controlling environmental externalities (double dividend property of pollution tax) and direct government spending to deal with environmental problems (river cleaning, afforestation, soil conservation etc.

Tax Reforms in India

The revenue policies of Indian government have undergone major reforms during last two decades. These reforms in India have to take cognisance of its implications to centre-state financial relations and environmental management.

The first major reform of commodity taxes has taken place to introduce value added tax (VAT) in India. Introduction of VAT in India has resulted in making tax base relatively more comprehensive, replacement of specific taxes by ad valorem duties, reducing the multiplicity of tax rates, and giving credit to taxes on inter-regional trade.

As part of reforms, two options were considered for VAT in India: a national VAT with inter-governmental sharing arrangements and joint national and state VAT with federal tax imposed at uniform rate across the nation and a state VAT with variable rates across the states.

Currently, there have been central VAT (MOD VAT or modified value added tax) and state VAT on goods and services in India. Many states have already replaced commodity taxes by VAT in India.

A comprehensive Goods and Services Tax (GST) based on VAT principle is being considered now in India. GST involves taxation of goods and services in an integrated manner. It is a destination based tax as against the present concept of origin based tax. It is a dual tax with the Centre and the States levying it on a common base respectively as central GST and state GST.

The devolution of powers between centre states of levying GST on a common tax base has implications for federal finance in India. Therefore, there is a need for an institutional mechanism that would ensure that decisions about the structure, design and operation of GST are taken jointly by the two. There should be a constitutional provision for having such mechanism in India. For addressing all these problems of adopting GST, the 115th Constitution Amendment Bill was introduced in the Lok Sabha on 22.03.2011. The Bill provides for a levy of GST on all goods or services with some exemptions.

Feasibility of Using GST Regime for Achieving the Environmental Objectives

Given that centre and state GST are uniform ad valorem taxes on goods and services in the economy they are not flexible enough to address the environmental problems. Pure environmental policy instruments help achieve the environmental objectives by providing incentives to firms and households to reduce pollution at various stages of product cycle. In the product cycle, environmental problems arise in making input choices in production, choices of production processes, choices of products quality etc. GST is levied as VAT on the value of product at the final stage of product cycle. Therefore, the burden of any increase in this tax to achieve environmental objectives could not be immediately passed on to intermediate stages of product cycle so that incentives are built to adopt required abatement methods by producers and consumers.

Environmental problems are commodity specific. Commodities differ very significantly in terms of environmental intensity or pollution intensity. A uniform pollution tax on emissions could help reduce pollution by all industries to the desired level. However, an increase in GST say by certain percentage to reduce pollution affects polluting and non-polluting industries equally without resulting in desired reduction of emissions. A more differentiated VAT relating to pollution intensities of commodities is required to achieve emission reductions which may not be feasible in GST regime.

The practical approach could be to group commodities in to high, medium, low and no pollution intensity groups and levy four rates VAT to achieve environmental objectives. The tax changes attempted could be revenue neutral such that increase in taxes on polluting commodities could be accompanied by compensating decrease in taxes on no-polluting commodities.

With the levying of central and state GSTs on the same base interstate tax competition in which each state given the taxes of other states has an incentive to have relatively lower environmental taxes for attracting investments and business. Therefore there is a need for tax coordination of states to avoid inefficiency in environmental management from the tax competition. In the context of GST in India, centre could bring the required tax coordination of state GSTs by making corrective changes in centre GST to plug the observed differences in state GSTs. It could be possible because both central and state GSTs are levied on the same tax base.

Apart from domestic taxes countries could be tempted to use trade taxes to achieve environmental objectives. Export taxes on pollution intensive commodities and import taxes on imports that cause domestic pollution could result in reduction of environmental pollution. But trade instruments while improving domestic environmental quality could cause trade distortion resulting in welfare losses to the country.

Therefore, it is welfare improving to use pure environmental policy instruments if feasible to achieve environmental objectives and avoid using domestic and trade taxes for this purpose.

Thank You