

accordingly. The latter is believed to be preferable when there is uncertainty about the damage function and there is a possibility that it may be very sensitive to greater than optimal emissions. The allocation can be done through auctions and 'Grandfathering' of the permits, which refers to the free allocation of the permits on the basis of some formula related to current emissions. Although, it is sometimes considered to be more efficient than a tax in terms of achieving a target, any relevant policy should combine taxes, permits and other forms of regulation and One affects the basic social consciousness about climate change and global warming.

References:

1. Dinan, T. (2012), *Offsetting a Carbon Tax's Costs on Low-Income Households, Working Paper No. 16, Working Paper Series, Congressional Budget office, Washington, D.C.*
2. Ekins, P. and Barker, T. (2001), *Carbon Taxes and Carbon Emissions Trading, Journal of Economic Surveys, Vol. 15, pp. 325-376.*
3. Zhang, Z. and Baranzini, A. (2004), *What do we know about Carbon Taxes? - An inquiry into their impacts on competitiveness and distribution of income, Energy Policy, Vol. 32, pp. 507-518.*

THINKING SEEDS: GREEN

ECONOMICS

Green Trade & Commerce

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Growing environmental consciousness has generated a parallel interest in liberalization of trade in Environmental Goods and Services(EGS).According to WTO, this has win-win-win objectives: for trade, environment and development. But the realization of these objectives is fraught with many obstacles, especially regarding market access of Developing Countries. Developing Countries are net importers of EGS. Lack of a universally accepted definition of EGS coupled with many other issues has rendered the trade-environment negotiations to proceed at a slow pace.

This article attempts to identify the Environmentally Preferable Products of Export interest to India using trade balance and Balassa's Revealed Comparative Advantage Index.

First of all, owing largely to the dispersed and diffuse nature of environmental goods and to diverging perceptions of how one defines 'environment', environmental goods and services lack a universal definition; which proved to be one of the main barriers to progress in negotiations on liberalization of trade in EGS. However, according to UNCTAD (2003), an Environmental Good (EG) is considered any equipment, material or technology used to address a particular environmental problem or as a product that is itself "environmentally preferable" to other similar products because of its

relatively benign impact on the environment.

Two categories of EGs have appeared in the WTO discussions (Sugathan, 2009):

- **TYPE 'A' EGs** -: These are traditional environmental goods required for end-of-the-line pollution abatement. They usually do not have inherently environmental characteristics; it is their ability to provide environmental services that qualifies them as environmental goods. E.g.-air pollution monitoring equipment, furnaces used in incineration.
- **TYPE 'B' EGs** -: Environmentally preferable products (EPPs), which include any product with certain environmental benefits arising either during the production, use or disposal stage relative to a substitute or 'like' product. CFC-free refrigerants, chlorine-free paper, compact Fluorescent light etc.

There is no consensus regarding the definition of environmental services as well. The OECD has come up with seven broad groups of ES organized by environmental media (i.e. air, water, soil, noise) and including a distinct category of services like design, engineering, consulting.

History of Trade Negotiations

The foundation of the trade-environment interface was laid down in the Doha Ministerial Declaration, 2001. But so far, WTO members have not agreed on either a definition of environmental goods or, in the absence of a definition, criteria for or an agreed list of such goods. The majority of the goods introduced for discussions have mostly been limited to Type 'A' EGs.

Apart from the definitional and product coverage issues, another stumbling block in the negotiations has been the question of how to liberalize. There have been various approaches discussed so far-list based,

project based, request and offer and hybrid approach.

Further, there are some key issues in this regard that need to be addressed:

- **The Dual Use Problem:** Type 'A' EGs include goods like pumps, valves, tanks and containers, ceramic wares and furnaces used in incineration having both environmental as well as non-environmental uses. It would be natural then that countries will be worried about the import-led impacts of liberalization of dual use goods on domestic industries, trade deficits, employment and tariff revenues; as they may not favor providing differential treatment to the same goods when used for non-environmental purposes.
- **Market access to developing countries:** A big challenge for the EGS negotiations is to include products of export interest to developing countries (Sugathan, 2009). According to Sugathan, EGs; being capital-and technology-intensive; are perceived to be of export interest only to developed countries and a few middle-income developing economies. Removal of barriers and non-trade barriers (NTB) by Developing countries would serve as an expansion of markets of developed countries and result in tariff revenue losses for the developing countries, which could have been utilized on social issues like poverty alleviation etc. The potential gains for developing countries are largely on the environmental front. It is this fact that had led to the argument that the developing countries do not have much to gain from these negotiations at least economically.

Therefore, in order to involve active participation by developing countries, it is essential to have a balance in the trade positions of developed and developing nations.

Developing countries are believed to have a comparative advantage in producing EPPs and these can secure them an appropriate, share of export gains. There is, however, the risk that a too broad liberalization of EGs would cripple nascent domestic environmental industries in the developing countries due to competition from imports. In the long term, domestic capacity building and technology transfer is more crucial to capture sustainable development gains than just trade in EGs.

Special and differentiated treatment to developing countries

The other possible avenue to make the trade negotiations compatible with developing countries' interests is by giving them special and preferential treatment in the form of lower tariff cuts and longer compliance period to reflect the principle of less-than-full reciprocity. In the Indian context, a burning issue is that of the transfer of Environmentally Sound Technologies. Proponents of trade liberalization argue that trade leads to the transfer of valuable skills, technology and know-how embedded in such goods and services in the long run.

However, tariff reductions can prove to be a disincentive for Joint Ventures(JVs), which are the preferred and most effective way for technology transfer, at least in the case of India (Singh,2004). Reasonable import tariffs are often incentives for foreign investors to set up their production base in a country, but with drastic reduction in tariffs, they may prefer to export goods than open up subsidies/JVs.

The Environment Industry

In 2003, the global size of the environmental market was estimated by UNCTAD at US \$500 billion, with the developed countries accounting for about 90 percent while in 2008, the estimated value was US \$782 billion (Claro,Lucas,et al ;2007).

In 2005, developed countries imported USD252 billion (68.3 percent) of EG and

developing countries USD117 billion (31.7 percent).

As far as India is concerned, in order for India to reap the benefits of Liberalization in EGs from a trade perspective, it is imperative to identify its export opportunities.

In this assessment, 2 key criteria are used –

- The EGs which contribute positively to the trade balance of India
- The EGs in which India has a comparative advantage ; determined by using Balassa's Revealed Comparative Advantage Index (RCAI).

Comparative Advantage is a well-established concept in international trade, and it was first illustrated by Ricardo in 1817. According to the basic tenants of comparative advantage, a country should specialize and export items which they can produce at a lower cost vis-à-vis the world.

The Concept of Revealed Comparative Advantage Index:

The study utilizes the Balassa (1965) measure of computing the RCAI. The Balassa RCAI is the most commonly used empirical measure to analyze trade specialization patterns of a country and is used to 'reveal' a country's 'strong' sectors by analyzing the actual export flows (Balassa, 1977; Yeats ,1997 ; Richardson &Zhang,1999; Yue ,2001;Serin&Civan, 2008; Batra& Khan,2009).

The assumption is that the pattern of exports reflects relative costs as well as differences in non-price factors. The RCAI of country i for product j is computed as the product's share in the country's exports in relation to its share in world trade:

$$RCAI_{ij} = \frac{\frac{x_{ij}}{X_{it}}}{\frac{x_{wj}}{X_{wt}}}$$

Where x_{ij} and x_{wj} are the values of country i 's export of product j and world's export of product j and X_{it} and X_{wt} refer to the country's total export and world's total export. (Balassa, 1965)

A value of less than 1 implies that the country has a revealed comparative disadvantage in the product. A value of greater than 1 implies that the country has a revealed comparative advantage in the product.

Limitations of the Study:

The Balassa RCAI suffers from a number of potential drawbacks as an analytical tool. It does not explain what gives rise to comparative advantage-resource endowment, technology etc. Secondly, export growth rates for the different product categories have not been calculated.

Thus, environment protection alone is an insufficient basis to define a negotiating strategy and trade and developmental impacts also need to be analyzed. While negotiating at the WTO; two key areas must be kept in mind by any country:

- Including EGS of export interest
- Strengthening domestic capacity in EGS and improving access to technology

Trade liberalization of EGS opens risks as well as opportunities which must be weighed before arriving at a negotiating position.

India does not stand to gain much commercially in the short run, at least until EPPs are included. Most of the goods are technology and capital intensive and have dual uses as well. Some other goods in which India is expected to have export interests are: raw cotton materials and

cotton textiles, apparel manufactured from natural wool and silk fibers, natural colorings and dyes.

EGs targeted for liberalization must be wide and selective (Hamwey, 2005). A broader category will incorporate goods of export interest of developing countries and will be consistent with Paragraph 16 of Doha Mandate. A selective approach would permit developing countries to exclude from liberalization, those goods which are of export interest and require tariff protection while flexibly liberalizing others in which they have clear import and environmental interests. China's Common List and Development List approach can be used to achieve this objective. Another practical approach can be an initiative open for voluntary participation coming into effect when a certain number of members, constituting a specified percentage of trade in EGS, agree. Rest of the members can join gradually. This would be similar to the Information Technology Agreement.

India's Project Approach deserves a special mention as it can bring a synergy between trade and environment goals, and serve developing country's interests by giving policy space to governments and temporary tariff reductions for only those projects whose end use is indeed environmental.

Transfer of Environmentally Sound Technologies (EST) is important as well, perhaps more than trade in just EGS. Intellectual Property Rights serve as barriers to accessing EST and must be weakened to avert the looming ecological crisis. This will be in concordance with principle 20 of the Stockholm conference and the agreement on TRIPS and public health.