

Liberalization of Trade in Environmental Goods in South Asia: Some Simulation-Based Quantitative Assessments

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Introduction

- Liberalization in trade of EGs can play a crucial role in protecting the environment as well as promoting international trade in EGs.
- The World Trade Organization (WTO) at its 4th Ministerial meeting in Doha in 2001, decided to negotiate for opening up the market for EGs through reducing tariff and nontariff barriers on EGs trade.



Introduction Cont

- Intra-regional trade among the South Asian countries is very low compared to many other regions in the world, including the trade of EGs.
- South Asian Free Trade Area (SAFTA) was formed in 2006. However, the progress of intra-regional trade under SAFTA has not been very encouraging.
- Trade is restricted due to the presence of high tariff and non-tariff barriers.
- This paper explores & estimates the potential gain from the liberalization of trade in EGs in South Asia



Methodology Of The Study

The WITS/SMART Model

- The paper models liberalization of trade in environmental goods as reductions of bilateral tariffs to zero on environmental goods traded among the South Asian countries.
- The changes in exports are obtained at the 6 digit HS code level from the WITS/SMART model and they are aggregated to the SAM sectors of Bangladesh, India, Pakistan, Nepal and Sri Lanka.

The SAM Multiplier Model

- The total exogenous account is manipulated to estimate their effects on output (through an output multiplier), value-added or GDP (through the GDP multiplier), and household income (through household income multiplier) and commodity demand (via commodity multipliers).



Methodology Of The Study Cont

The GTAP Model

- The changes in the tariff rates, calculated from the WITS/SMART simulation, taking into consideration the respective weights of the environmental goods in the GTAP sectors, are introduced as shocks in the GTAP model.
- The version 8 of the GTAP database has 2007 as the base year & covers 57 commodities, 129 regions/countries, and 5 factors of production.
- The current study has kept the 57-commodity classification but has aggregated 129 regions into 9.



OVERVIEW OF THE TRADE IN EGS IN SOUTH ASIA

Intra Regional Trade in South Asia

- South Asia has been characterized as a region of low intra-regional trade.
- In 1990, the intraregional trade was 2.91 percent, which increased to 5.3 percent in 2003; however it came down to 4.84 percent in 2008.
- The intra-regional trade intensity index was 3.03 percent in 1990, increased to 6.21 percent in 2003 and then came down to 2.53 percent in 2008 (De, Raihan and Khaturia, 2012).
- South Asia, as a region, has higher average tariff rates than in any other region in the world.
- Informal border trade among the South Asian countries could be significant proportions of the recorded trade (Pohit and Taneja, 2003; Taneja et al, 2004; Das and Pohit, 2006; World Bank, 2006).



OVERVIEW OF THE TRADE IN EGS IN SOUTH ASIA

Intra Regional Trade in South Asia

Country	Export to the region as a % of country's total export	Import from the region as a % of the country's total imports
Bangladesh	4.87	13.85
India	5.23	1.09
Nepal	5.23	33.13
Pakistan	4.4	5.33
Sri Lanka	8.42	24.93

Source: Calculated from the UN COMTRADE online data



OVERVIEW OF THE TRADE IN EGS IN SOUTH ASIA

Intra Regional Trade in in EGS in South Asia

Country	Export of EGS to the region as a % of country's total export to the region	Export of EGS to the region as a % of country's total export of EGS
Bangladesh	16.29	27.28
India	1.17	1.19
Nepal	1.65	18.62
Pakistan	1.54	9.30
Sri Lanka	1.46	12.68

Source: Calculated from the UN COMTRADE online data



OVERVIEW OF THE TRADE IN EGS IN SOUTH ASIA

Intra Regional Trade in Environmental Goods in South Asia

- In the case of number of EGs exported bilaterally in South Asia, India exports large number of EGs at the 6 digit HS code level to other four South Asian countries.
- Bangladesh exports larger number of EGs to India than to Pakistan and Sri Lanka and none to Nepal.
- Nepal exports EGs only to India. Pakistan exports larger number of EGs to Bangladesh than to Sri Lanka and India, and none to Nepal.
- The bilateral trade of EGs of Bangladesh, Nepal, Pakistan and Sri Lanka with India are more prominent in terms of volume and number than bilateral trade between any other South Asian countries.



BARRIERS TO TRADE IN EGS

Tariff Rates on EGs

- In the context of South Asia, the average tariff rates on EGs declined quite significantly over the last two decades.
- In Bangladesh, the major reduction took place during the late 1990s, when the average tariff was reduced from more than 70% to around 15%.
- In India, major reduction in average tariff occurred during early 2000s and by the end of 2000s, the tariff rate came down to around 10%.
- Nepal and Sri Lanka initially had lower tariff rates on EGs compared to other South Asian countries. The rate of in tariff rate in Nepal was slower and by the end of 2000s, Nepal had higher average tariff rate than those of Bangladesh, India and Sri Lanka.
- In South Asia, Sri Lanka always had the lowest average tariff rate. However, by the end of 2000s, the average rate was the highest for Pakistan.



BARRIERS TO TRADE IN EGS

Sensitive List among the South Asian Countries and EGS

Coverage of Sensitive Lists in the Trade of EGS among
the South Asian Countries (%)

	Bangladesh	India	Nepal	Pakistan	Sri Lanka
Bangladesh		0.00	0.96	0.00	81.30
India	29.11		0.29	16.17	0.17
Nepal	99.99	0.00		0.00	100.00
Pakistan	1.26	0.00	76.65		7.71
Sri Lanka	6.30	10.30	37.07	0.02	

Source: Calculated using the latest sensitive list of SAFTA



BARRIERS TO TRADE IN EGS

Non-tariff Barriers

- Non-tariff barriers to trade contains mostly quota restrictions, licensing, customs procedures, limiting the activities of state trading, export subsidies, countervailing duties, technical barriers to trade, export subsidies, sanitary and phyto-sanitary (SPS) measures, rules of origin, special charges and other technical barriers to trade.
- NTBs such as environmental and production regulations and standards, eco-labeling, certification and subsidies could serve as an implicit obstruction to EGS exports.
- The export interest of Bangladesh and Nepal in EGS lies in the area very near to agricultural goods, which could face the most harsh forms of NTBs, for example, sanitary and phytosanitary (SPS) measures.
- For the export of agricultural products to India, there are requirements of bio-security and sanitary and phyto-sanitary requirement for import permit.



LIBERALISATION OF TRADE IN ENVIRONMENTAL GOODS IN SOUTH ASIA: SIMULATION BASED EXERCISES

Results from the WITS/SMART Simulation

	Export			Import		
	Base export of EGs (million US\$)	Rise in export of EGs (million US\$)	% change in export of EGs	Base import of Egs (million US\$)	Rise in imports of Egs (Million US\$)	% change in import of EGS
Bangladesh	309.95	5.95	1.92	1237.53	27.60	2.23
India	9276.78	89.98	0.97	7874.25	9.45	0.12
Nepal	47.93	3.71	7.73	68.02	0.07	0.10
Pakistan	146.58	4.13	2.82	2129.79	6.18	0.29
Sri Lanka	36.19	2.56	7.08	782.03	16.67	2.13



Source: Calculated from the WITS/SMART simulation results

LIBERALISATION OF TRADE IN ENVIRONMENTAL GOODS IN SOUTH ASIA: SIMULATIONBASED EXERCISES

Results from the SAM Multiplier Models

- All five South Asian countries will experience positive change in gross output, commodity demand, value added and household consumption.
- In terms of changes in total gross output and commodity demand, the largest impacts would be in observed in Nepal and Pakistan would have the smallest impacts.
- In terms of value added and household consumption, Bangladesh would experience the largest impact. In all five South Asian countries, there would be larger rise in the industrial gross output and commodity demand compared to those in the agricultural and services sectors.



LIBERALISATION OF TRADE IN ENVIRONMENTAL GOODS IN SOUTH ASIA: SIMULATIONBASED EXERCISES

Results from the GTAP Model

In the GTAP model, a scenario is considered where the five South Asian countries reduce tariffs on their bilateral imports of EGs to zero.

Countries	Welfare (EV) in Million US\$
Bangladesh	11.62
India	23.51
Nepal	8.26
Pakistan	1.13
Sri Lanka	0.42
Rest of South Asia	0.04
USA	-6.78
EU_25	-6.64
Rest of the World	-11



LIBERALISATION OF TRADE IN ENVIRONMENTAL GOODS IN SOUTH ASIA: SIMULATIONBASED EXERCISES

Results from the GTAP Model (% change from base)

Countries	Real GDP	Total Exports	Total Imports
Bangladesh	0.0076	0.04	0.07
India	0.0011	0.02	0.02
Nepal	0.0204	0.45	0.47
Pakistan	0.0003	0.01	0.02
Sri Lanka	0.0005	0.01	0.01
Rest of South Asia	0.0002	0	0
USA	0	0	0
EU_25	0	0	0
Rest of the World	0	0	0



Source: GTAP Simulation

CONCERNS RELATED TO TRADE IN EGS

- The major problem faced in EGS liberalization negotiation is the definitional problem. There are some goods that fall into more than one subcategory. For example, a commodity at HS 6 digit level can be considered under 'air pollution control' subcategory as well as under the 'waste management' subcategory.
- There are a number of EGS that have uses other than the environmental use. The existing classification does not consider this problem.
- The production process of environmental goods involves materials and equipments that are environmental but mostly, the technology used in the production is hardly environmental. Complexities can arrive in valuation of the good, service or technology for the intention of inclusion in EGS list.
- There is no unique category for environmental goods under which trade occurs. Traded goods are classified up to 6 digit level in the HS system.



CONSLCUSION

- The exercises conducted in this paper clearly suggests, there are still areas of gains from the intra-regional liberalization of the trade in EGS in South Asia.
- There are sensitive lists and NTBs which are holding back the potentials of rise in intra-regional trade in EGS in South Asia.
- Non tariff measures (NTMs) and para-tariff measures (PTMs) not notified in WTO should be prohibited & a code of good practice should be followed.
- Low income countries lack purchasing power, so even if there is availability of EGS, they might not be able to buy or import those goods, hence, reduction of tariff and NTBs on EGS coupled with the purchasing power can bring a real change in the EGS trade.

