

## CONSUMING SUSTAINABLY About consumption and production patterns

### Introduction

The issue of 'sustainable development' has been a favourite of development economists for more than four decades. A very important constituent of this expansive concept which was getting step-motherly treatment was 'sustainable production and consumption.'

It assumed the status of 'everybody's issue' when the 1992 Earth Summit took place. The resultant Agenda 21 became famous as it clearly challenged the callous attitude that the West had adopted till then in the areas of sustainable production and consumption.

The OECD countries took an initiative and arranged a series of meetings to understand and act on the multifaceted issue of sustainable consumption. The second Oslo symposium (1995) ultimately succeeded in stating an 'umbrella' concept of sustainable development and worked out broader concepts to initiate policy measures.

This Briefing Paper looks at the evolution of the concept of sustainable development and subsequently evaluates the concepts chosen by the OECD countries to frame their policies and its relativity with the problems faced by developing countries.

### “DESIRABILITY OF GROWTH”

The “Desirability of growth” paradigm acquired immense popularity as it propagated models whereby income inequalities could be reduced, qualitative broadening of human choice could be achieved and humans would now be able to exercise greater control over the environment. What automatically followed was exploitation of environmental resources without intra- as well as inter-generational considerations, leading to percolation of inegalitarianism in society. Humans became prey of their own acts. Recommendations that emerged were a policy of zero economic growth and zero population growth.

Out of this debate a more sobering controversy emerged which revolved around the following questions:

- whether continuing growth is possible
- whether growth was a wholesome concept or had to be replaced by some other idea mature enough to circumscribe humans as well as environment
- the role of value judgements with respect to notions of equity and sustainability, when the political-economic framework would get included in the

gamut of discussions.

The answer to the second question became evident when the concept of 'development' was patronised by the international financial and social bodies.

But the answer to the first question sent shockwaves across the world. The 'Club of Rome', a group of some one hundred scientists, businessmen, and academicians using elaborate computer models developed at the M.I.T. concluded that continued growth is impossible due to the catastrophic collision of population, output and pollution growth paths by the year 2100 A.D.

The word 'sustainable' started playing a major role since then. The phrase 'sustainable development' i.e. how much income will accrue to different groups in the society and what would be their consumption of different goods and services without undermining the long term productivity of natural systems, came in vogue.

Also, this (i.e. 'Club of Rome' report) was the first time that the issue of sustainable consumption came before the world as an individual issue and not as a subset of sustainable development. But after this, there was no conscientious effort to propagate 'sustainable consumption' as a serious policy issue.

This concept was once again revived and launched at the Rio Earth Summit (1992). Agenda 21 (Chapter 4) stated 'the major cause of the continued deterioration of the global environment is the unsustainable pattern of consumption and production, particularly in the industrialised countries ....' This was an alarm for the developed world.

### WHAT IS SUSTAINABLE CONSUMPTION?

Agenda 21, did not define sustainable consumption, but clearly indicated that policy attention should be focused on the demand and the usage pattern of natural resources, so as to reduce pollution and prevent their fast depletion. The answer to the third question regarding the role of value judgements with respect to notions of equity in the given political-economic framework, was also given by the Agenda 21 statement as follows: "Measures to be undertaken at the international level for the protection and enhancement of environment must fully take into account the current imbalances in the global patterns of consumption and production", thereby throwing light on the existing consumption-inequity nexus.

The second Oslo symposium (1995) on Sustainable Consumption stated: "Sustainable consumption is an umbrella term that brings together a number of key issues, such as meeting needs, enhancing the quality of life, improving resource efficiency, minimising waste, taking a life cycle perspective and taking into account the equity dimension. Integrating these parts is the central question of how to provide the same or better services to meet the basic requirements of life and aspirations for improvement of both current and future generations".

But then what about the intergenerational discount rate? If we are not able to calculate it then the quest of riding on an 'optimum consumption path' remains unconquered. This issue is now very popular with the economists.

### THE BROAD CONCEPTS

The next logical step was the construction of broad concepts which could be utilised for

initiating policies and action plans to change the current patterns of consumption and production and to clarify the boundaries between sustainable development and sustainable consumption.

The concepts that were selected by the OECD directorate were as follows:

- (1) Carrying capacity: environment's maximum persistently supportable load, usually expressed in terms of population numbers of a defined species,
- (2) Steady state economy: a human economy characterised by constant population, capital stocks and rate of material/energy throughput.
- (3) Environmental utilisation space or ecospace: The capacity of the biosphere's environmental functions to support human economic activities, sometimes defined at a national or per capita level according to a 'global fair share principle'.
- (4) Ecological Footprint: The area of land functionally required to support a community which lies beyond the land occupied by that community, 'appropriated carrying capacity'.
- (5) Ecological Rucksack: The total mass of material

<b>Comparison of per capita consumption levels of USA with all-India and Urban Top 10% of India for selected commodities</b>			
Items (0)	Ratio of per capita consumption levels		
	average-USA/all-India average (1)	Urban-Top-10%-of-India/all-India average (2)	average-USA/Urban-Top-10%-of-India (3)
<b>FOOD</b>			
Cereals	6.0	1.4	4.2
Milk	4.0	3.5	1.2
Meat	52.0	3.5	15.0
<b>FOREST</b>			
Roundwood	6.0	2.1	2.6
Sawnwood	18.0	2.3	7.9
Paper	115.0	6.2	18.6
<b>INDUSTRIAL</b>			
Fertilizers	6.0	2.1	2.8
Cement	7.0	5.7	1.2
Cotton & Wool Fabrics	64.0	3.3	19.3
<b>METALS</b>			
Iron & Steel	22.0	5.4	4.0
Copper	245.0	5.5	44.8
Aluminium	85.0	5.5	15.5
<b>CHEMICALS</b>			
Inorganic	54.0	4.2	13.0
Organic	28.0	4.2	6.7
<b>TRANSPORT VEHICLES</b>			
Cars	320.0	9.9	32.2
Commercial Vehicles	102.0	8.8	11.5

flow carried by' an item of consumption in the source of its life cycle.

(6) Natural Resource Accounting and Green GDP: Alternative systems of national accounting and performance measures, which incorporate ecological and human welfare.

(7) Ecoefficiency: More efficient use of materials and energy in order to reduce economic costs and environmental impacts - 'more from less'.

(Reference: Final Report, OECD Workshop, 2-4 July, 1995, Rosendal, Norway)

These concepts were studied with respect to their underlying assumptions, linkages with sustainable development, measures/indicators, economic implications (eg wealth, production, consumption, employment potential), trade and development, technology, appropriate scale of action, proposed policy approaches and very importantly the scope of Government action.

### THE DOABLE CONCEPTS

The Rosendal workshop identified 3 concepts (even if they may mention 'a number of concepts'), as being especially promising for policy development:

- (1) Carrying capacity - a quantitative basis for decision making.
- (2) Ecospace - a quantitative basis for and moral guide to, objective setting.
- (3) Ecoefficiency - a set of practical ideas to improve economic and environmental performance.

### FEASIBILITY OF THE DOABLE CONCEPTS

The developing world would not complain about the choice of 'carrying capacity' as a quantitative basis for decision making. But the usage of 'ecospace', especially as a moral guide for objective setting is challenging keeping in mind the path that the developing countries are going to traverse to achieve sustainable consumption.

When we define equity as an essential attribute to 'sustainable development' there might arise a confusion of issues as it introduces an additional element of subjective value judgement. But now that we have provided a separate umbrella definition (cum concept) of 'sustainable consumption', it becomes essential for us to magnify the importance of subjective value judgements.

Even if the underlying assumption regarding ecospace may portray the necessity of greater

### Is the top income class in India comparable to an average citizen of USA or Belgium?

A widely held view is that a largely populated country like India contains a Belgium within it (termed BELINDIA) on the assumption that the total income accruing to the richest few millions of Indian population would be comparable to that of Belgium as a whole. Does the data justify this assumption?

The top one per cent of India's population constitute above 8 million people. A population of this size is about the same as total population of say, Belgium, 10 million. But, the average income of top 1 per cent of India's population is about \$4600 as against an average Belgian's income of about \$13,000 using comparable estimates taking into account purchasing power parity differences.

How does level of living in India compare with US citizen? Average per capita GDP is \$1150 for India compared to \$21,360 for USA in 1990. The top 10 per cent of Indian population have an average income of \$3070. On the other hand, the bottom 20 per cent of American population earn a per capita income of about \$5000 (See Figure Box 1).

Impressions to the contrary are created in public perceptions because, persons abroad are impressed by servants, jewellery or lavish marriage or death ceremonies. There are economic and traditional aspects in these apparent dichotomy. Servants provide labour to compensate for absence of appliances or absence of packaged and processed food. Jewellery is a preferred mode of investment which serves as financial security in possession of women. Some Indians prefer jewellery over, say car. Which is environmentally more benign? Lavish ceremonies for wedding or death are again due to social pressure.

There are only a few such events in one's life time and are known to bankrupt many families for a lifetime. Selling family land to finance marriages is not common. These symptoms are symbols of social compulsions and not wealth. Part of the reason for low consumption by the rich in India may be also that they are not a part of the society based on mass consumption and "throw-away" economy. They do not have supermarkets and do not use packaged food, paper towels and dishes, running hot water and so on. They do not junk furniture, refrigerators or cars but "resell" it after many, many years of use.

Thus, there seems to be no basis for assuming that top 10% or even 1% compares with average person of USA or Belgium in their income levels.

(All income figures in this box are based on UN International Comparison Program (ICP) as reported in World Development Report, 1992).

global equity for sustainability, the ones for Ecological Footprints (EF) and Ecological Rucksack (ER) bring out more sharply the growing consumption patterns of the West, inhibiting the development of the developing economies due to existence of insufficient carrying capacity. Another important assumption not inbuilt in the idea of ecospace, but present in those of EF and ER is that "Technology and Trade do not expand the earth's carrying capacity in the long term, but only displace the effects of increased consumption levels".

EF and ER are also superior to ecospace in terms of measures/indicators as EF helps us measure the sustainability gap (global per capita land available - population's actual land). In case of ER we can use 'Total Material Consumption (TMC), per capita and Material Input Per Service (MIPS)', an indicator based on the material flow. As compared to this, ecospace still has not been able to incorporate the dynamic element of the impact which changes in the human demand have over environment.

In fact ER provides a framework for starting international debates/negotiations relating to "who will pay for the indirect sufferers" problems pertaining to lethal emissions and global resource re-distribution. ER by implication supports equity oriented measures which ecospace does not, such as debt relief, technology transfer and development rights and while doing this also involves the proposed policy approaches mentioned under ecospace which include input reduction targets for energy and key raw materials, stimulating efficiency and limiting pollution.

Ecospace does not recommend price reform, included under EF and ER, which would have far reaching effects on the sustainable consumption path and subsequently on the sustainable development path. On considering all the above facts, it becomes difficult for the LDCs to understand the logic behind the choice of ecospace when compared to EF and ER.

The need of the hour is that Ecological Footprints and Ecological Rucksacks are given their due importance in the OECD agenda and the onus of lobbying across this issue lies jointly on the North-South NGO coalitions.

'Employment level' is an influential facet in developing sustainable consumption patterns for the developed and the developing economies. High rate of unemployment has always been a deterrent in the development process of LDCs. The reasons

need not be expounded.

A general notion that gets created due to the 'workable eco-efficiency' measures is, the expansion of the service sector will increase the employment levels. In case of the LDCs, one has to study whether the vast illiterate, uneducated lower sections of the society involved in the primary sector would be employed due to these ecoefficiency measures. When we take a look at the pace of the fast growing labour displacing technology, large sections of the uneducated labour under the present conditions would be jobless.

The developing economies therefore need to rethink on their current social sector budgetary allocations. Else, in the long run they will have to keep on importing technology and labour, pay the fees and royalties, and deplete foreign exchange reserves.

## **PROBLEMS OF LDCs**

### **The problem of resource allocations**

For a large number of developing countries, land is one of the most important resources. This factor of production automatically determines the possibility of sustainable consumption. According to Kirit Parekh of the Indira Gandhi Institute for Development Research (IGIDR), Mumbai (1995), the problems that need attention are:

- (1) How to prevent soil erosion
- (2) How to prevent over use of chemicals
- (3) How to prevent waterlogging and salination resulting from overuse of water
- (4) How to prevent overexploitation of ground water

The poverty and environment nexus is complex. When food and related basic amenities for subsistence are inadequate, poor depend upon the environment for their provision. As the property rights over the environmental resources are not well defined, overexploitation of forests, water bodies and pastures takes place. One important point to note is that all these needs are of 'basic' nature. with stupendous population growth the situation gets further aggravated.

The consumption patterns of the rich in the developing economies make things look even worse, eg. water resources as a source of recreation.

## Case study of India

According to the Paper: "Consumption pattern differences and environmental implications: A case study of India" published by IGIDR, Mumbai, (1994):

- (1) only 34.8% urban and 17.7% rural households exclusively use water within their premises. This automatically clarifies how degradation of common water resources must be taking place, thus polluting natural water resources on which the poor depend. Industrial effluents add the required 'colour and flavour' too.
- (2) While the non-poor use relatively cleaner commercial fuels such as kerosene or LPG, the poor use biofuels like fuelwood, crop residues and animal dung to cook food. This has several environment and health linkages which are disastrous in nature. About 33% of the developing countries' energy requirements are met by biofuels as against 3% of those of the developed countries. Around 75% of this go in meeting the cooking energy needs of developing nations, thus affecting women and children.
- (3) Only 36.7% of urban and 8.2% of rural households in India have exclusive latrines. Open spaces are therefore used and these polluted environmental constituents find their way back into the human body. Urban areas face the problem of this waste being released in open environment without treatment as Municipalities are short of funds.
- (4) It has been specifically mentioned in the *Programme Areas* of the Agenda 21 that "... the poorer segments, meanwhile, are unable to meet food, health care, shelter and educational needs. Changing consumption patterns will require a multi-pronged strategy focusing on demand, meeting the basic needs of the poor ..." (Agenda 21, chapter 4, 4.5).

## The Problem of 'The State'

At the same time it is not fair to hurl stones on the North and let the South overlook its own mistakes. The political chaos in many Southern nations has been one of the main reasons for the dilapidated condition of their development programmes. There exists rampant corruption, bureaucracy and centralised decision making which do not allow the 'trickle-down' programme to operate. Distortionary pricing policies giving rise to cumulative distortions coupled with subsidy schemes make it impossible for the State exchequer to spend after some years.

This eventually speaks in the form of cuts in social sector expenditure and deterioration of the quality of welfare activities.

Several industries take advantage of the weak legal regulatory structure in many developing economies and exploit environment without paying any cost, thus 'free-riding' with domestic industries.

Hence what are required are dynamic policies, instruments and their steady implementation.

## ENVIRONMENTAL POLICIES

Environmental policies can be classified into two broad groups, command and control (CAC) policies and incentive-based (IB) policies.

### 1. Command and Control Policies:

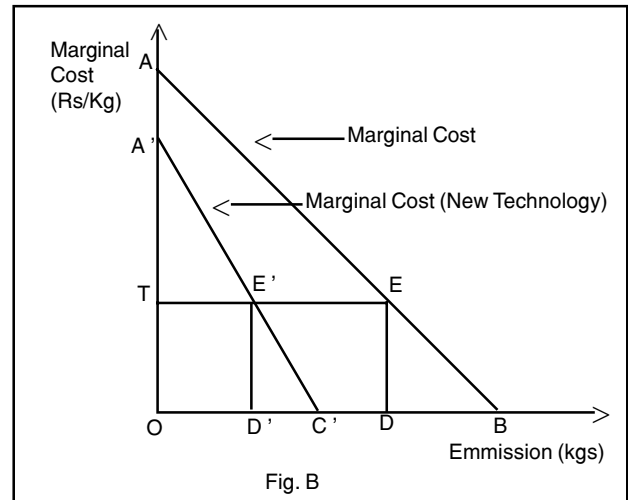
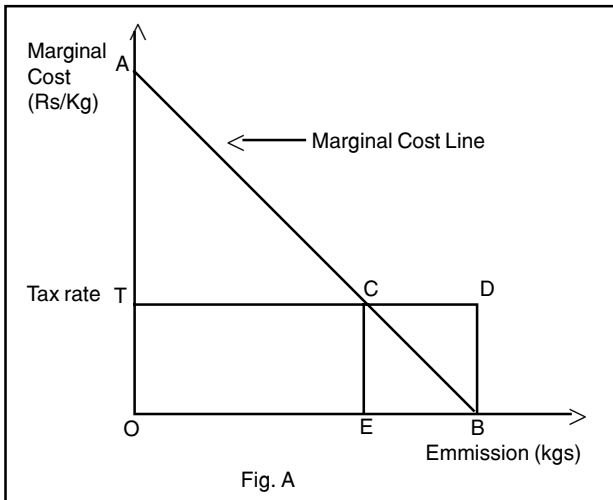
Here the producers must comply with ambient quality, emission, processes and product standards as ruled by the regulators. If these are not respected then fines, penalties or even closures may take place.

The basic problem regarding setting up of these policies is that there exists very high asymmetry of information (say, regarding permissible emission levels for different industries, if we are considering air pollution) between the regulators and the firms in different industries. The firms would also make efforts to hide the truth.

If there is no active competition within the industry to attain standards within a given time frame then the dynamic efficiency cannot be realised within the CAC policy web. In the protective environment therefore, a characteristic feature of the LDC's one cannot expect great wonders using CAC policies.

Even if the ambient standards are met by the firms in the industry, the problem of growing number of firms still remains. Especially in the case of developing countries the construction of small, tiny and medium sector firms cannot be adequately monitored thus making enforcement of laws very difficult in this case. The case of pollution around Taj Mahal proves the above point - conditions go out of control when corruption enters the scene.

In certain cases however, the CAC policies may be considered as appropriate policies. We can use CAC policies to ban particular types of poisonous pesticides, save fragile ecosystems and can even moderate inequities generated due to market oriented policies. CAC policies can be used in international treaties too. The Montreal Protocol to phase out CFC's is such a treaty.



## 2. Incentive Based (IB) Policies:

Among the IB policies are taxes/subsidies, tradeable permits/quotas, insurance, bonds and liability law. The basic objective is to internalise the environmental cost in the firm's/individual's decision making process.

### (i) Tax policies to reduce emissions:

(a) Emission charges: When the firm has to pay for the emissions in the form of a tax then it will take pains to reduce it. In the absence of any tax, a firm will emit OB [see Fig.A] pollutions. At a given tax rate, the firm pays OBDT. To reduce tax liability the firm will reduce emissions so that marginal cost equals tax rate i.e. by amount EB. Tax liability now is OECT + (plus) expenditure on emission remission, BEC. The firm saves BOC. Thus the firm has an incentive to reduce emission.

In Fig.B, we see that the firm has improvised on its technology reducing marginal cost from AC to A'C'. Emissions have reduced from ED to ED'. The firm also saves on the tax amount that it pays. But one important thing to remember is that this dynamic efficiency of emission tax is being studied in the closed economy and hence the question of importing technology is not being taken into consideration. Hence the case of the cost of importing the technology exceeding the benefits due to lower emission levels cannot be evaluated.

(b) Input Taxes: The increasing usage of fertilisers poses a problem regarding increasing ground water pollution. A tax on the fertiliser would reduce fertiliser use and reduce ground water pollution. But such a tax would be distortive if it is applied to farmers who carefully use fertilisers.

### (ii) Tradeable Permits:

Under the tradeable quota scheme, quotas

amounting to emissions which will ensure the desired air quality are auctioned off or allocated to different firms, which are then free to trade these. Since permits can be traded, this will be realised at minimum cost. Trading of quotas may be permitted within prescribed limits. For a local air pollution problem, trade may be permitted within the area.

Difficulties in implementation are similar to those of implementing emission tax. Tradeable quotas can promote dynamic efficiency if the system of futures market is introduced.

## ACTION-IMPACT MATRIX

International financial bodies like the World Bank have been keenly monitoring the efforts of economic gains/losses due to Structural Adjustment Programmes and economywide policies on the status of environmental resources and pollution conditions.

Mohan Munasinghe and Wilfrido Cruz in a very influential World Bank paper focus on the environmental implications of economywide policy reforms. Economywide policies primarily involve a variety of economic instruments, ranging from pricing in key sectors (eg energy or water) and broad sectoral taxation or subsidy programs to macroeconomic policies and strategic (exchange rate, interest rate, privatisation, trade liberalisation etc) Economy-wide policies are often packaged within programs of structural adjustment or sectoral reform aimed at promoting economic stability, efficiency and human welfare.

An 'Action Impact Matrix' has been suggested in next page, which introduces the framework for identifying the thrust of policy actions in governments' reform programs and their potential environmental impacts.

THE ACTION IMPACT MATRIX					
ACTIVITY / POLICY	MAIN OBJECTIVE	MATRIX OF OTHER IMPACTS ON KEY SUS. DEV. ISSUES			
		LAND DEGRADATION	AIR POLLUTION	RESETTLEMENT	OTHERS
(1) Macroeconomic & Sectoral Policies	Macroeconomic & Sectoral improvements	Positive impacts due to removal of distortions Negative impacts due to pre-existing constraints			
<ul style="list-style-type: none"> <li>• Exchange Rate</li> <li>• Energy Pricing</li> <li>• Others</li> </ul>					
(2) Compensatory Measures	Specific or Local Social and Environmental improvements	Enhance positive impacts and mitigate negative impacts (above) of Broader Macro and Sectoral Policies			
<ul style="list-style-type: none"> <li>• Market Based</li> <li>• Non-market Based</li> </ul>					
(3) Investment Projects	Improve efficiency of investments	Investment decisions made more consistently with broader policy and institutional framework			
<ul style="list-style-type: none"> <li>• Project 1 (Hydro Dam)</li> <li>• .....</li> <li>• Project N (Reafforest)</li> </ul>					

### SOCIAL INSTRUMENTS

The origin of this instrument is very old. In fact, India's Mahatma Gandhi made India free from the shackles of British using social instruments.

These instruments based on social regulation aim to persuade 'actors' in society to change or aim to encourage them to persuade each other to change. These policy instruments can be pointed at almost

any target group by different 'senders'. The suitability for specific policy relations depends on the type of instrument eg. for many consumers the important factors in purchase decisions are 'quality, price, status, convenience, health and choice'. Any policy devoted to internalising sustainable consumption must connect with these factors.

'Mechanisms' persuade individuals to change their behaviour. But to achieve the necessary results,

Types of Social Instruments		
TYPE	AIM	EXAMPLES
Information	Changing the knowledge base and influencing attitudes	<ul style="list-style-type: none"> <li>• Information campaign on separation of household waste.</li> <li>• Nature education at school</li> </ul>
Hardware	Providing products, services tools and infrastructure to implement change	<ul style="list-style-type: none"> <li>• Battery and/or recycling containers and supermarkets.</li> <li>• Improving public transport system.</li> </ul>
Empowerment	Creating new organisations, relationships, links to facilitate 'information' or 'hardware'	<ul style="list-style-type: none"> <li>• Ecoteam programmes</li> <li>• Developing environmental policies together with industry</li> </ul>

two things are needed. First s/he must be aware of the problem ie. should have adequate knowledge and secondly, should realise and make use of the opportunities available.

Social instruments are rarely used on their own. They very often are a part of a mixed approach where the effects of different instruments cumulate eg. legislative or financial instruments are accompanied by information campaign to reduce enforcement costs.

In developing economies asymetricity lies between amount of information and actual action taken on the basis of that information. This was evident from the initial failure of the Family Planning Programme. Such kind of situations do occur as the social instruments are devised from the planner's perspective and not from the people's perspective, which should convey message in a simple manner,

target the correct sex according to remedies under consideration and should give adequate correctional measures and staff to carry out these measures if anything goes wrong. But many of these requirements were not met. Consequently we see the Government advertising Population Control Programme as: 'of, for and by the people.'

### **TRADE AND SUSTAINABLE CONSUMPTION**

Environment is a key sector where trade and sustainable consumption are linked. The briefing papers published by CUTS give adequate information regarding these issues, namely:

- i. Trade and Environment: the Inequitable Connection
- ii. Greening Consumer Choice? Environmental labelling and the consumer

## **Recommendations**

### **IT IS THUS RECOMMENDED THAT:**

- **The dimension of poverty related issues of Agenda 21 should be considered by the developed nations when they formulate policies on sustainable consumption.**
- **The 'basic needs approach' needs to be emphasised in development of sustainable consumption pattern for the developing countries.**
- **The developing countries need to increase their social sector expenditures so that policies for sustainable consumption can be well understood and implemented by people.**
- **The developing countries should form regional sustainable consumption unions based on their common features of biodiversity, basic items of consumption and other constituents.**
- **Industries not permitted to function in a particular nation due to flouting norms regarding environmental protection should not be allowed to continue their activities in other nations.**
- **Development assistance from the developed world is shrinking over the years as is revealed by the IDA figures. The G-7 nations should take effective steps to contribute more as an interest for their environmental debt with the LDC's.**
- **Linking trade issues with issues of human rights and other environment create severe distortions w.r.t. export earnings of the developing world. This inturn does not allow them to allocate enough to tackle these issues. Measures should be takes to avoid such links in the future.**

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