

Research Article

Trade, Environment and Development - an Ecological Economics Perspective

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Abstract: The growing importance of international trade has resulted in many debates concerning growth and the consequent impact on environment. This paper will critically analyze the impact of international trade on environment in developing countries. In addition, the paper will also compare the two approaches to evaluate the impact of economic activities including trade on environment. These two approaches are environmental economics and ecological economics. A case will then be made in favor of ecological economics as a more applicable approach for developing countries when evaluating environmental impact of trade.

Introduction

International trade has been perceived as an engine of growth by many economists in the past few decades. International trade is certainly not a new phenomenon. It has been a part of human history for centuries now. Travelers in the past have travelled far and wide in search of new places and goods to trade. The entire process of colonization can be attributed to the search for new lands to carry out trade. The basic rationale behind trade is the theory of comparative advantage advocated by David Ricardo. The theory asserts that free trade is beneficial to all parties taking part in the trading activity. This theory is based on three assumptions: a) constant returns to scale, b) no technical inefficiency and c) competitive markets. The theory states that if two given countries specialize in the production of different goods, then the countries might gain more by trading the two goods between them rather than trying to produce both the goods individually.

In the post-WW II period, there has been a steady increase in the volume of international trade. Trade has increased between developed nations and also between developed nations and developing nations. The proponents of free trade claim that international trade will help the developing countries to develop faster due to the trickledown effect, where in the developing countries will face expanding markets due to trade with the more affluent countries (Common 1995). Trade specialization minimizes costs and consequently increase the world output, i.e. there will be a greater joint pie to share (Ropke 1994).

There are of course many debates revolving around the pros and cons of free trade. Does free trade really help in the development of developing countries? Does trade increase income inequality? In this paper my focus would be on the debate surrounding the impact

of trade on the environment. It is now a well- documented fact that free trade has lead to many environmental problems around the world. However, one of the main arguments against free trade comes from the third world countries. According to them free trade leads to not only an unfair exchange of resources, but also leads to significant amount of environmental damage in these countries. It is therefore certainly a matter of discussion, if free trade helps developing nations at all or it is just an instrument used by the more developed nations to use cheaper natural resources of the developing nations and exporting economic problems to these regions.

Section II will discuss the policy stance of World Trade Organization (WTO) with respect to environment. Section III of the paper will give a brief discussion on the adverse impact of trade on the environment with emphasis on developing nations. Section IV will then discuss two approaches in economics, which tackle with environment related problems namely Environmental and Resource Economics and Ecological Economics. Section V will take a look at ecological economics as an alternative approach. Section VI will conclude the paper by describing as to why ecological economics might be a better option for developing nations as a strategy, when it comes to environmental standards.

WTO and Environment

The General Agreement on Tariffs and Trade (GATT) was created in 1947 to help rebuild the post war world economy. The main aim of GATT was to liberalize international trade with the help of tariff reductions, quantitative restrictions etc. Though initially there was no provision for environment in GATT, two major developments forced GATT to

incorporate environment in its framework. One of them was the emergence of Multilateral Trade Agreements (MTA). Some of these trade agreements are in fact trade restricting. For example, the Convention on International Trade in Endangered Species (CITES) in 1973, the Montreal Protocol on the substances that deplete the ozone layer, Kyoto protocol in reduction of greenhouse emission in 1997 etc. The second development was the growing concerns of the developing world about the international order and the need to have inward looking policies and ecodevelopment (Damien and Graz 2001). The World Commission on Environment and Development (WCED) produced the Brundtland report, which introduced the concept of sustainable development. The report also suggested the collaboration of organizations like the GATT and UNCTAD¹ in order to understand the relationship between international trade and development. However, in the 1986 Uruguay Round of GATT, environment was not in the framework at all. But by the 90s it became increasingly difficult for World Trade Organization² (WTO) to ignore the problems associated with environment and the Committee on Trade and Environment was formed in 1994. The basic premise of this committee is to identify the relationship between trade measures and environmental measures in order to promote sustainable development. (Damien and Graz 2001).

Despite this, many developing countries feel that WTO does not do enough to protect the environment and the local cultures of these countries. For example, opening up of agricultural goods has created havoc in many poor countries, where farmers are either forced out of agriculture or forced to adopt technology intensive methods of production, which are not compatible with environment standards. Besides environment, there are many

¹ UNCTAD-The United Nations Conference on Trade and Development

² WTO was formed in 1995 as a result of Uruguay round of negotiations from 1986-94 (www.wto.org)

complaints against WTO supported free international trade like the ones related to labor laws, increasing income inequality between the rich and poor nations, increasing disparity in power position.

Trade and Environment

While on one hand many economists have supported free trade, various environmental groups and developing nations claim that they are at a receiving end when it comes to free trade. Besides the social and the economic impact of trade many developing nations are facing serious environmental repercussion as a result of trade liberalization. Free trade enthusiasts feel that liberalizing trade will actually help environmental conservation. Trade and Environment, a report published by GATT in 1992 highlights many contributions of free trade to environment. For example, with an increase in trade there is an increase in per capita income and this would lead to more resources being spent on pollution control and waste management. With most environment friendly technology being produced in the developed nations, trade helps such technology to spread in the developing countries, thereby helping improve the overall environmental standards. Also, free trade help consumers world over to choose more eco friendly goods. An example given here is that free trade gives an option to import low sulphur coal rather than use the more polluting version of high sulphur coal. Lastly, free trade helps to form an environment, which is conducive for multilateral cooperation to solve environmental problems.

With these arguments in place, it is now necessary to highlight the downside of free trade. The negative impact of trade stem from the very same arguments put forth by GATT.

There are some arguments against trade, which are applicable to the whole world. For example, increase in overall level of pollution due to the increase in transportation, which is an essential part of international trade. However, here I would like to draw attention to the impact trade has had on the environment of the third world nations, A number of studies have been carried out by economists in these nations (Qureshi 2006), where it has become quite evident that far from bringing about efficiency in production and distribution, free trade has brought about more environmental problems for these nations and their citizens.

Direct impact of trade can be seen in the following phenomenon:

Toxic Dumping or Imperialism: There is enough evidence across the world that toxic waste from developed nations is exported to poorer nations. Trade enthusiasts might feel that there is a comparative advantage in exporting waste to poor countries in terms of lower wages and other costs. However, there are obvious problems with this argument. To begin with if export of toxic waste continues, there would be no incentive for developed nations to develop technology, which is eco-friendly. Besides more often than not the importers in the poor nations are not aware of the potential dangers of the toxic waste they import (Daly and Goodland 1994). A report via Exporting Harm: A High-Tech Trashing of Asia has highlighted the growing exports of e-waste into developing countries The report claims that large number of computers and computer parts are shipped to parts of China, India and Pakistan to recycle. This process has taken a toll on both the environment and the health of people of the region. People in these regions are exposed to burning plastics, toxic solder, dumping of toxic waste in rivers and other water sources. The report further claims that 50-

80 per cent of the e-waste collected from the US ends up in these countries. Most of the workers in such places do not have any protective gear and are constantly exposed to toxic fumes. In China, the region of Guiyu is now facing the problem of ground water contamination.

Contrary to the argument put forth by GATT (as described above), international trade seems to have encouraged the export of more eco-unfriendly goods to the third world instead of giving people of this region an opportunity to buy more eco friendly goods.

Pollution Haven Hypothesis: According to this hypothesis, due to strict environmental laws in the developed countries, many of the polluting industries have migrated from these countries to the less developed countries, where environmental laws are usually much more lax. Though of course there are many contradicting reports claiming this hypothesis to be untrue. However, many studies that have been carried out in the third world countries like India and Pakistan show a different picture. According to a study carried out by M.S. Qureshi of the composition of Pakistan's export reveals that during the period between 1975-2003, there has been an increase in the export of pollution intensive goods from Pakistan to OECD³ countries. Qureshi adds that this trend coincides with the opening up of the domestic markets to international market. Once again we find a contradiction to GATT's argument that free trade will transfer environment friendly technology to the developing country. On the contrary the only transfer that seems to be taking place is that of polluting industry from the first world to the third world.

Policy stance: The impact of free trade can be seen in the policy stance of developing

³ OECD: Organization for Economic Cooperation and Development

countries. Free trade brings about increased competition. With an increase in competition, it becomes rather difficult for the poorer nations to incorporate environmental costs into their productions costs so as to maintain their competitiveness in the international markets. Consequently, these countries experience lower environmental awareness, less stringent rules regarding pollution control and little resources being spent on cleaning up of the environment. The argument about multilateral environmental cooperation put forth by free trade enthusiasts also seems to be a weak one.

Resource depletion: Besides the above-mentioned impact, there is the obvious impact of trade on the natural resources of developing nations. One example of this would be the pulp and paper industry in Indonesia. Almost 72 per cent of Indonesia's forest cover has been destroyed in the recent times by the paper industry. This has led to the destruction of the eco system and much of the wild life inhabiting these forests. Most of the exports from Indonesia go to England, where Indonesian paper had captured the markets due to its lower prices, which has been primarily due to the reckless cutting of the rainforests and lower environmental regulations in Indonesia.

Shanmugaratnam explains, "The causes of deforestation are many and the factors contributing to serious and irreversible environmental damage are often linked to each other in multi linear causal chains" (1989). He adds that since the countries of the north have sustainable forest management policies, there is greater dependence on the less developed countries for wood and other raw materials.

Apart from the problems mentioned above there are other environmental issues that can be related directly or indirectly to international trade like Bio piracy, increasing

inequality in energy consumption between the north and the south, increasing trans-boundary pollution and so on.

Free trade enthusiasts are hopeful when they say that free trade will increase the per capita income and this will eventually help reduce the environmental deterioration caused by trade. In other words economic growth is being associated with better environmental standards. However, the problems associated with the environment are usually irreversible in nature. According to Ropke, trade has increased the problem of emission accumulation by “providing people with cheap primary products, including fossil fuels and giving very poor incentive for saving natural resource.”

With environmental issues constituting a large proportion in world politics, there has been a significant interest in strong environment conscious policies and theories. The next segment will discuss two of the main branches of economics, which deal with environment related issues i.e. Environment and Resource Economics (ERE) and Ecological Economics (EE).

Environment and Resource Economics (ERE) v. Ecological Economics (EE)

Environment Economics: This branch of economics is primarily based on neo classical assumptions of economic rationality and market clearing condition. As Bergh puts it, “ The core of ERE is theory of (negative) externalities or external costs.” ERE treats negative externality such as pollution as market failure. The incorporation of this failure in to price would help reach efficient outcome. In other words, environmental costs need to be internalized by the market system, so as to reach an optimal solution. ERE suggest solutions

like pollution taxes or tariffs, i.e. to make polluting more costly so as to discourage firms from polluting or tradable emission permits.

Ecological Economics: This branch on the other hand has a more holistic approach. As Costanza describes, “Ecological Economics describes the relationship between ecosystems and the economic system in the broadest sense.” Ecological Economics considers the economy to be a part of the larger ecosystem and not vice versa.

According to Costanza there are two different sets of arguments related to growth.

1) Technological optimism: This idea is based on the assumption of continued and unlimited growth. Technological optimists feel that advancement in technology will take care of the problems presented by scarce resource and energy. Costanza feels that most of the economics paradigms are based on this assumption, be it socialist or capitalist.

2) Technological pessimism: Proponents of this thought process feel that there is a limit to growth, i.e. natural resources cannot support unending growth. According to this argument, “A healthy ecosystem is one which maintains a constant level”. This belief is mainly held by ecologists and life scientists.

Of course, technological optimists insist that human or social systems are not the same as the natural system and therefore it is possible for humans to circumvent these resource constraints to continue the growth process forever (Costanza 1989). Costanza agrees that there is a great degree of uncertainty and it would be difficult to determine which

of the two arguments would eventually be true. But he feels that EE might be able to bridge the gap between these two viewpoints. According to him, “Ecological Economics will encourage elaboration of these prudently pessimistic policies and issues and compare them to alternative optimistic policies while trying to help reduce our uncertainty about the real state of the world vis a vis the ability of technology to circumvent fundamental resource and energy limits.”

Though both ERE and EE focus on the impact on environment, their fundamental approach towards solving the problem is very different. At this point of time it becomes necessary to highlight the main differences between ERE and EE. Most Ecological economists have a problem with the narrow focus of the Environment economists when they deal with environment issue.

According to Bergh, ERE focuses on optimal allocation of resources by internalizing external costs and reaching Pareto efficiency. On the other hand EE tries to put emphasis on sustainable development. Bergh asserts, “... (EE) pays more attention to cause and effect chains, interactions and feedback between natural and human eco-economic systems.” While ERE has neo classical paradigm as its foundation, EE has a more evolutionary approach. Evolutionary approach takes in to account concepts like path dependence, historical accidents etc. Due to this approach, “EE considers systems, including markets, as adaptive and coincidental rather than optimal” (Bergh 2000).

There are also major differences between the two branches of economics when it comes to policy evaluation. For ERE efficiency or cost effectiveness is the major point when evaluating a policy proposal. Distribution and equity take a back seat when it comes to ERE. On the other hand EE treats distribution and equity as its main concern. According to Bergh, “...EE is best characterized by „precautionary principle“ linked with environmental

sustainability, with much attention to “small probability large impact combinations.” EE also differs from ERE when it comes to value aspect. While ERE prefers to measure everything in terms of utility and welfare by using costs and benefit analysis, EE tries to incorporate various aspects into consideration like productivity, bio diversity, resilience of eco systems etc when making economic decisions (Bergh 2000).

Ecological economists often find the assumption of rationality (for consumers) and profit maximization (for firms) too restricting. Various ecological economists feel that instead of well defined preferences as described by standard neo classical approach, alternative preferences like lexicographic preference, satisficing, habits and routines would be more useful when describing the preference of individual over natural resources. For example, Splash and Hanley feel that cost benefit analysis, which is carried out by most ERE specialists to establish monetary value to bio diversity preservation will fail to increase welfare because most consumers have lexicographic preferences. In other words, people refuse to replace other goods with bio diversity (Splash and Hanley 1994).

International Trade: An Ecological Economic Perspective

Many Ecological economists have recognized the growing inequality between poor and rich nations as a result of free trade. One of them is Inge Ropke, who in her article, “Trade, Development and Sustainability- A Critical Assessment of the Free Trade Dogma” asserts that free trade is not really the problem, but the problem lies in the lack of internalization of environmental costs during the process of trade. According to her, GATT and traditional supporters of trade claim that trade is actually beneficial for the environment

once the environmental costs are internalized. Further, it is claimed that trade by itself does not harm the environment, but only acts as a magnifier. Ropke has problems with both of these arguments. Firstly, she feels that environmental costs are rarely, if ever internalized into the price mechanism of the traded goods. Further, due to the “specialization trap”⁴, there is a downward pressure on prices and this impacts the environment adversely. For example, prices of timber from rain forests in no way reflect the actual cost associated with deforestation and associated impact it has on local fauna and flora. Shanmugaratnam observes, “In many LDCs licenses are charged fees only according to the volume of timber removed. This provides....with a very strong incentive to harvest high-grade timber without any obligation to avoid widespread damages to the forest and consequently to the soil” (Shanmugaratnam 1989).

Secondly, the argument that trade is merely a magnifier also does not find support from Ropke. She feels that one of the main activities associated with trade is transportation and she further asserts that the prices of oil does not completely internalize either the pollution created by it or the fact that oil is a scarce resource. In addition, she claims that trade has furthered the demands of developed countries of cheap primary products. According to her, people in the developed countries have become accustomed to a certain way of life and it is trade, which helps them maintain this opulence at the cost of increasing environmental and economic damage in the poorer nations of the world. Ropke suggests some ways to reduce the impact of trade on the environment in the poor countries.

1. Localization of various economic and social activities will reduce environmental

⁴ Due to trade, many developing countries find themselves exporting primary goods, which leads to a specialization trap.

problems related to scale of the economy (Ropke 1992).

2. Economic decentralization will lead to a higher degree of self-sufficiency.

This would also bring people closer to the consequence of their decision.

3. Production can be localized. For example, using animal fodder as manure instead of importing manure from other countries.

4. Ethical constraints on our behaviour so as to take in to consideration the impact our decision might have on other people and the environment.

Ropke has through these arguments tried to make a case for less trade, not a ceasing of trade altogether. She feels that local communities, both in developing and developed nations need to be organized and this would reduce trade between nations. Of course, the viewpoint provided by Ropke seems to be too optimistic, but nonetheless it is a step towards the correct direction to reduce the ill effects of trade.

A commonly found concept in the literature of ecological economics is the idea of ecological footprint. Ecological footprint of a specified population or economy can be defined as the area of ecologically productive land (and water) in various classes –cropland, pasture, forests etc-that would be required on a common basis to a) provide all the energy/material resources consumed and b) absorb all the waste discharged by the population with the prevailing technology, wherever on Earth that land is located. (Wackernagel and Rees 1996). This idea of ecological footprints has been used by many to highlight the relationship between sustainable development and international trade (Andersson and Lindroth 2001). An analysis carried out by Andersson and Lindroth using

ecological footprints, states that trade could lead to import of biomass⁵ and sink capacity⁶ from poor countries by rich countries. This leads to a depletion of natural resources in the poor countries, while the richer countries maintain their natural biocapacity. However, many have criticized the idea of ecological footprint (See Bergh and Verbruggen 1999). According to them, “it is too crude a measure of various types of environmental pressures” and that the method of ecological footprint does not distinguish between sustainable and unsustainable land use. Despite the problems associated with ecological footprints, it still serves to give us some idea about the biocapacity of different countries and the unequal distribution of natural resources within these countries.

Another attractive feature of EE is the incorporation of ethics and values in determining the economic weight of environmental sustainable outcomes (Gupta 1996). According to Gupta, it is not only necessary to incorporate ethical values in determining economics values, but it is also important to recognize the ecological knowledge existing in local communities and use that knowledge. This aspect of ecological economics takes an interesting role when these local communities come in contact with the outside world through trade. More often than not, trade destroys the local knowledge by bringing in new knowledge, which might not be applicable in a given region.

Conclusion

In this concluding section, I would like to make an argument supporting ecological

⁵ Import of biomass occurs when a country exports goods that require little biological inputs and instead require high labor and technological skills, and imports goods that require more ecologically productive land or more ecologically intensive input (Andersson and Lindroth)

⁶ Import of sink capacity refers to a situation in which a country’s emissions are greater than its absorptive capacity (Andersson and Lindroth)

economics as a more practical alternative to the more traditional approach followed by environmental economics when evaluating the impact of trade on environment in developing countries.

One of the first aspects of ecological economics, which is very crucial for developing countries, is the recognition of the fact that there is a limit to growth. Most developing countries today face an onslaught of neoliberal policies, which have forced them to follow an export led growth path. This in many ways has led to an adverse impact on environment. As discussed above, this increasing focus on export-led growth leads to increasing competitiveness and to what is often described as a race to the bottom⁷. Most traditional societies were aware of the limits of their immediate eco- systems. Hence, economic activities would take into account these limits. But with international trade becoming a major force, it has become increasingly difficult for indigenous people of the poorer countries to maintain their local knowledge and use it to their advantage.

Many ecological economists have argued for „less is better“ as opposed to the traditional assumption of neo classical paradigm of „more is better“. This idea is primarily based on the limit of growth, which has been discussed earlier. Most of the third world nations have not yet reached the stage of mass consumption, which is very evident in the developed nations. This might give the developing nations an opportunity to critically evaluate the mainstream notion of growth, which is based primarily on the narrow measure of increasing output for a society.

Yet another advantage of using ecological economics as a foundation for policy prescription in developing countries is the rejection of markets being the most efficient form

⁷ Race to the bottom refers to the downward pressure on wages, quality of work and environmental deterioration to remain competitive in the world market

of allocation. For environmental economics environmental damages are simply a market failure and therefore can be made efficient by various monetary incentives. An example of this is the costs involved with deforestation. Commenting on the process of afforestation, Shanmugaratnam observes, “Although the role of watershed forests in maintaining ecological balance and sustaining productive crop and animal husbandry is well known, it has not received the importance it deserves in development policies. Afforestation is often seen as a separate departmental activity in the dichotomized view of conservation and economic growth” (Shanmugaratnam 1989). Ecological economics understands this and understands that it is not enough to just internalize ecological costs through the market mechanism (Leff 1996). This aspect is particularly useful for developing countries, since many developing countries are characterized by both market and non-market institutions. Many economic interactions occur outside of the market system. Environmental damages in such cases change the fundamental structure of such societies and the way individuals organize economic activities. In such situations, environmental damages cannot be seen only as a market failure.

It is not only important to understand the limits of our eco system but also to understand the relationship between the economic system and the eco system. Unlike environmental economics, which models the relationship between the economic agents, ecological economics tries to model the relationship between economic system and the ecology by establishing cause and effect relationship between them (Bergh 2000). This too is very important in the context of developing countries. The importance given to the rational agent in the process of growth in the mainstream approach to economics reduces environment or nature as a means to attain greater utility. In traditional societies, the process

of production itself is organized around the community. The focus given to community is inherently linked to a better understanding of the ecological system within which the community operates.

It is important to note that ecological economists are not anti-trade, but their main concern is to make sure that international trade is fair. Many scholars from this field have made a case for „less trade“ and „balanced trade“ (Ropke 1994 & Daly and Goodland 1994). While less trade would refer to trade taking place only when it is absolutely necessary, balanced trade refers to an equal amount of trade, wherein neither of the parties involved in trade become indebted to the other party. In both cases, this will give an opportunity to the developing countries to become more self-sufficient. Since, trade data indicates that most of the exports from the developing countries are primary goods, it becomes imperative for developing countries to indulge in less trade and balanced trade.

Ecological economics has also encouraged feminist economists to voice their opinion about environmental issues. Along with them many indigenous groups across the globe have found the approach advocated by ecological economics more useful. Once again the involvement of these groups encourages local solution for local problems, instead of global solutions to local problems.

The purpose of this paper is to present an alternative approach to the problems faced by developing countries today. As it is very clear that the traditional ideology of growth being equal to development may not mean much to a large section of the population in the world. It would be better for most of us to accept the fact that there are ecological limits to growth and adapt ourselves to policies, which would keep this fact in mind. To conclude the paper, I would like to quote Costanza, “...a more ecological approach to economics and an

economic approach to ecology will be beneficial in order to maintain our life support systems and the aesthetic qualities of the environment.”

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