Global Trade and Sustainable Development: Complementary or Contradictory?

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Introduction

The inequities of the current global trading system and the contribution of this to increasing poverty in many parts of the world are well documented. So indeed are the environmental problems caused by current patterns of trade. This paper intends to review the latter, and specifically draws on the results of eco-footprint analysis to illuminate unsustainable trade patterns.

If one examines the debates about the costs and benefits of increasing levels of world trade you could be forgiven for believing that we are living on two different planets. The dominant paradigm of free trade is increasingly criticized as being inherently unsustainable.. While conventional western economic thinking abut the importance of continued economic growth as the engine of development still dominates policy circles, we cannot get away from the fact that if everyone on the planet aspired to the high levels of material consumption enjoyed by the rich nations of the world, we would need three planets.

A key question asked here is can eco-footprint analysis be useful amongst other things in demonstrating the results of trade patterns, particularly inequitable trade patterns, based on current power relations embedded in the rules of the international trading system. On analysis of eco-footprints, some countries may appear to be living within their biocapacity, but if the goods that country is producing for export rely heavily on, for example, production of agricultural commodities that deplete natural capital (through, for example intensive production systems leading to depleting water tables, use of chemical inputs, soil erosion and loss of biodiversity) then they may be depleting their natural capital.

The fact is that eco-footprint analysis strongly suggests that current global resource use is exceeding 'global biocapacity'; that is, we are eating into global natural capital. Furthermore, footprinting shows us that high consuming countries are using up resources from less developed countries, and that unbalanced terms of trade allow this to happen. However, there is an increasingly polarised debate about whether the solution to this is a move towards localisation, or to change trade rules to make trade fairer and more sustainable.

First of all, the arguments for and against free trade are reviewed. Then, the next section reviews eco-footprinting methodology, and goes on to look at what footprints can and cannot tell us about the 'export of unsustainability'. In the light of this, the arguments for and against a localisation agenda are examined, and the implications for the future of global trade patterns are commented on.

The conclusion is that the world needs to trade less and trade more carefully. We need to look closely at global supply chains and also adopt the principles of fair trade

more generally in international trade rules. Finally, implications of this for policy makers at all levels, and for corporate stakeholders in particular, are suggested.

Trade, Development and the Environment

David Ricardo, the 19th century economist, first put forward the law of 'comparative advantage', which says that if every country concentrates on producing the goods that they have a relative advantage in, then every trading partner gains. This is the key to contemporary arguments advocating free trade, that is, moving towards an open global economy unrestricted by tariff and non-tariff barriers. However, if one looks more closely at the history of trade relationships between countries, this is not how countries successfully developed in the past. For example, the British textile industry was nurtured by tariffs and prohibition of competing goods; the UK only opened its markets in the mid-nineteenth century. For many years USA was most heavily protected nation on earth. (Monbiot, 2003, Massarart, 1997). More recently, the great success stories of 'globalisation' – the Asian economies of Japan, Taiwan and South Korea, were allowed to encourage their developing industries through protectionist measures. Countries today being asked to remove trade barriers are being asked to do the opposite of what rich countries did during their industrial revolutions, and the newly industrialised countries of Asia during the 1970s.

It is also highly significant that the Ricardian idea of overall welfare gains from trade was based upon the assumption that capital was not mobile. The British economist John Maynard Keynes was convinced that a precondition for international economic stability was control of capital investment by nation states. As relatively recently as 1974 the UN Charter on Economic Rights and Duties of States recognised the responsibilities of national governments to regulate foreign investment to serve the economic, social and environmental priorities of development. Capital today, is ever more mobile. And of course the global economic system now, dominated by a few hundred transnational companies with turnovers greater than the GDP of many nation states, is very different from that of the 1940s when trading rules were established by the General Agreement on Tariffs and Trade. (Ekins et al, 1994)

Higher than average tariff barriers often exist on products of export importance to developing countries, for example staple food products, tobacco, some beverages, fruit and vegetables, food-industry products, textiles, clothing and footwear. Despite growth of manufacturing exports from developing countries, agriculture accounts for one third of export earnings in half of all developing countries. Poor people and women produce most of the goods affected by import barriers: agriculture and labour-intensive manufactured goods (agriculture accounts for 62% of women's employment in developing countries, and women make up 70% of the workforce in export-processing zones (Oxfam, 2002)

Many poor nations are locked into dependence on volatile primary commodity markets, and existing trade rules discourage locally added value and diversification.

'Tariff and non-tariff barriers penalise developing countries in precisely the areas where they have strong comparative advantage' (Oxfam, 2002:95).

Furthermore, specialisation through comparative advantage can lock countries into non-renewable resource exploitation, which is highly polluting, and expansion of agriculture for export, which can affect habitat and biodiversity. Often agricultural commodities grown for export have severe environmental impacts. For example, growing cotton uses large inputs of pesticides and water, curing tobacco uses large volumes of wood, and cutting down mangrove forests for intensive shrimp farming irreversibly destroys the mangrove swamp habitat. (Ekins et al, 1994). Massarrat (1997) concludes that the existing 'free market' is actually an efficient instrument in establishing non-sustainable structures.

Development is a very uneven process. There is no doubt that material well-being has increased dramatically for a lot of people as a result of increasing globalisation. Within the two decades between 1975 and 1995, over 300 million people were lifted out of poverty in East Asia. Since, 1960 world trade has increased fifteen-fold, average global per capita incomes have doubled, and many developing countries have diversified their economies. Trade has grown at a much faster rate than world GDP. During the twenty years from 1992 to 2002, the value of world exports tripled, while the value of global GDP doubled (Oxfam, 2002).

The problem is that the wealth being generated is not shared equally between countries, or within countries. Kuznets has proposed that one could expects an inverted U-shape relationship between development and equality in a country: in the early stages of development countries will experience growing inequality, but that at a certain stage of economic development there will be growing equality as a result of increased wealth. The Kuznets proposal reflects the era when it was expected that increased wealth due to development would 'trickle down' to the poor. However, this is not borne out by the facts. The evidence that in the era of globalisation there has been an increase in inequity both within and between nations is well documented (see for example Gray, 1999, Massarrat, 1997, Monbiot, 2003, Korten , 1995)

Environment and Development – Questioning the Kuznets Hypothesis

The relationship between economic development and the environment has also been analysed in terms of a Kuznets curve. The Environmental Kuznets Curve (EKC) hypothesis suggests that as a country develops and becomes wealthy, environmental quality will first deteriorate from industrialisation, and then improve as the ability to pay for environmental improvement increases, and as technologies become more eco-efficient. However, this is based on an analysis of environmental deterioration occurring from production processes, focusing on local indicators of environmental performance. Borghesi and Vercelli (2003) suggest that although industrialised countries may follow an EKC trend, this is less likely for developing countries, and that this is essentially due to lack of democratic systems allowing people to express a preference for the environment. But the EKC hypothesis is also questionable for an industrialised nation. For example, while in this country we have seen many improvements in local environments such as improved water and air quality, other environmental problems such as carbon dioxide emissions and waste production have

increased with increasing material wealth. Rothman (1998) suggests a bias exists in favour of acceptance of the EKC hypothesis precisely because it is a production-based measure. Environmental indicators such as carbon dioxide emissions or waste production increase with consumption, not production.

Tisdell (2001) criticises the EKC approach because it assumes that pollution is not cumulative, nor its impacts reversible. If economic growth itself by continually converting natural resources into goods undermines global natural capital, then the idea that we can improve environmental quality when, and only when, we get richer, is severely challenged. Under strong sustainability conditions man-made capital is no substitute for natural capital, hence EKC analysis does not tell the whole story, and in fact may fall flat on its feet.

So, EKC analysis is based on the belief that environmental problems are essentially reversible. Ecological footprint analysis, on the other hand, is a strong sustainability measure, and assumes that natural capital (taken to mean nature's endowment) can be irreversibly destroyed and that this cannot be compensated for by increases in man made capital

Ecological footprinting

Ecological footprinting, which was initially developed by Wackernagel and Rees, is a measure of the extent to which a country uses natural resources. It is defined as follows:

'*..the ecological footprint of a specified population is defined as the area of land and water ecosystems required, on a continuous basis, to produce the resources that the population consumes, and to assimilate the wastes that the population produces, wherever on Earth that the land/water is located'.* (Rees 2002)

Ecofootprinting is based on the belief that sustainability requires the maintenance of natural capital (i.e. the stock of natural resources) and living within the regenerative capacity of the biosphere. This suggests a strong sustainability perspective, which rejects the substitution of natural capital with man-made resources (Defra, 2005)

The footprint methodology calculates the land area needed to maintain current lifestyles – it converts land needed for food, energy use, transport and waste disposal into a global hectare measure. In essence it uses a single unit, the global hectare (gha), to look at land and sea areas necessary to maintain our current lifestyles. Six different types of land are identified: crop land, pasture land, forest land for timber and paper products, forest land for sequestering of carbon dioxide emissions from energy generation, sea area for marine products, and built/degraded land. The global hectare is based on average global yields. Footprints can be calculated for localities, regions and nations., and are increasingly being analysed to demonstrate the impact of rich western lifestyles on the rest of the world.

Unsurprisingly, the size of national footprints, ranging from over 10gha in the USA to less than 1 gha in very poor countries, usually correlate closely with measures of wealth such as GDP (although there are exceptions). Whilst criticisms can be made regarding methodology, accuracy, comprehensiveness, reproducibility and

transparency (see for example van den Bergh and Verbruggen, 1999, and van Kooten, G.C. and Bulte, E.H., 2000) eco-footprinting is generally recognised as having useful attributes as a measure for highlighting how near or far we are from sustainability.

The footprint can be related to estimated biocapacity - that is, the endowment of natural capital - of the world, a nation or a region, to give an indicator of 'overshoot'. The average footprint of humanity is estimated at 2.8 global hectares per person, a total of 17 billion hectares, whilst global available biocapacity is estimated at 12 billion hectares. According to these figures there is already a global 'overshoot' of 40% (Rees 2002).

Overshoot within a country occurs either by depleting natural resources domestically or by importing ecological capital (Defra, 2005). Depending on available biocapacity, both rich and poor nations may have spare biocapacity. Footprinting analysis suggests that many countries are living beyond their biocapacity, and are only able to do this because they can afford to buy biocapacity from other countries. But not all countries can import biocapacity.

If there is a negative ecological trade deficit while in a state of ecological overshoot, a country would be liquidating natural capital to service exports. Eco-footprinting in essence reveals the hidden thermodynamic role of trade (Wackernagel et al, 2005), and can illustrate the dependence of a population on ecosystem services outside its boundary (Defra, 2005).

This paper focuses on this aspect of trade, and presents an analysis of work carried out which amply demonstrate that high consuming countries are increasingly living off the backs of less-developed nations, or as Jorgensen and Rice (2005) put it, we are *'tapping the resources of less developed countries*'. And the fact is that not all countries of the world can 'import sustainability'.

Criticisms of this argument say that global trade is a way of sharing the world's bioproductive capacity. Van den Bergh and Verbruggen suggest that:

…'trade can in principle spatially distribute the environmental burden among the least sensitive natural systems.' (Van den Bergh and Verbruggen, 1999:67*).*

But documented patterns of environmental deterioration do not bear this out. The sorts of serious environmental problems facing many parts of the globe tell us that irreversible changes are occurring, e.g. deforestation, loss of biodiversity, soil erosion, and global warming (see, for example, United Nations Environment Programme, 2002)

The relationship between national footprints and export levels

It is important to remember that the ecofootprint = domestic production + imports – exports. Production for export does not appear in national footprint account. For example, a product manufactured in Japan and imported into the UK contributes to the British, not the Japanese, footprint. This can reduce the footprint of export-driven economies. Hammond (2006) calculates an 'overshoot ratio' (defined as national footprint/biocapacity). Some countries, for example, Argentina, Australia and many

developing countries, have an overshoot ratio of less than one, and Hammond concludes that these countries are living within their carrying capacities. But this ignores exports, and so does not tell the whole story.

There are many different ways in which a country can export unsustainability and essentially blur responsibility for the ecological effects of production and consumption:

'*….trade can be a subtle mechanism, which preserves ecological sustainability in some countries by means of importing biomass and sink-capacities from other countries'*. (Andersson and Lindroth, 2001:114)

They suggest that trade is unsustainable if there is a continuous reduction of the ecological capital of at least one of the trading partners (and they also suggest that ecological capital will in future become more valuable than financial capital). Jorgensen and Rice (2005) created a weighted export index, to test the hypothesis that the structure of exports, and particularly the extent of export to rich countries, is negatively related to the size of the footprint of less developed countries. The negative relationship was shown to be statistically significant, strongly pointing to the fact that rich countries are 'tapping' the resources of poor countries, to the extent that domestic consumption is being slowed i.e. these countries are concentrating on export for rich countries rather than production for domestic consumption. It is significant that they found the *structure* of export markets rather than the total level of exports of a country to be negatively correlated to the size of the footprint. They summarise their findings as follows:

'….these relationships are illustrative of structural conditions and asymmetrical processes in which more-developed countries externalise their consumption-based environmental impacts through the tapping of natural resources and produced commodities of less-developed countries, reducing material consumption for the latter while increasing certain types of environmental destruction within their borders.' (Jorgensen and Rice, 2005:57)

In summary, very poor countries (as measured by GDP) have a low footprint because they have low levels of development and consumption. But this should not be taken to imply that they are not depleting natural capital – we need to remember that the footprint reflects consumption levels in a country and not production for exports, which might be depleting natural capital.

Historical roots of ecological trade imbalances

What eco-footprinting is telling us about the ecological imbalance of trade in the world is not a new phenomenon, but has obvious historical roots This is important, as it points to the fact that the issues discussed here are structurally deeply embedded in global trading relationships. In her discussion of 'dependent development', Carvalho reminds us that early capitalism depended on colonialism, the colonies providing slave labour as well as resources. Europe became the centre for manufactured goods. Africa was a source of cheap (slave) labour and the American

colonies a source of natural resources. In this sense, the colonies became recognised as 'extractive peripheries'.

Populations in Europe were able to enjoy a supply of semi-luxurious goods, representing an extreme form of cost externalisation. The social and environmental costs that had been a feature of the industrial revolutions in Europe (poor working and living conditions, poor environments) were changing due years of struggle by the European Labour movements and also by philanthropy, but were increasingly being displaced to the colonies at the periphery of the economic system (Massarrat, 1997).

Carvalho also discusses the under-valuation of natural capital:

'……*surplus accumulation depend in large part on the under-valuation of natural resources from the periphery and the sale of final manufacture goods at full market value by core countries'*. (Carvalho, 2001:66)

Carvalho further points out that large-scale cultivation of agricultural commodities such as sugar, cotton, and tobacco, and generally the introduction of new animal and plant species, changed local ecosystems.

These dependent relations in effect continue in today's trading system, with continued extraction and resource exploitation in the periphery. (even though North America, Russia and Europe possess larger reserves of non-renewable energy and mineral resources than the three continents of the South). Current global trading rules, because of high tariff and non-tariff barriers, keep less developed countries locked into production of primary commodities, both mineral resources and agricultural commodities. One would expect that costs of non-renewable (finite) resources would increase over time, but in fact the opposite trend has been observed over recent decades. This means that such countries have had to run to stand still, expanding production and export volumes in order to maintain value of exports. Monbiot summarises the result of this in terms of depletion of natural capital:

'*when the poor nations are unable to process the food they produce, they must export more in order to obtain the same value, which means that they must devote more of their land for cash cropping (and less to producing food for their own people), pay their workers less, clear more tropical forest, drain more marshland, use more pesticides in production and more fossil fuels in transport'* (Monbiot, 2003:192)

One way of understanding this pattern of dependency and unequal terms of trade, as Massarrat (1997) points out, is that the demand side of the trade equation actually regulates the supply side as well, leading to overexploitation of scarce resources, structural overproduction and loss of scarcity signals in relation to non-renewable resources. The survival strategies of states, in terms of minerals policy, and small scale farmers, is to increase supply through increasing intensity of labour and overexploitation of natural resources to stabilise income. Massarrat cites a World Bank study, which identifies that the growth success of several developing countries has been environmentally destructive.

The current Doha round of World Trade Organisation talks, which on paper promised so much, seem to have reached a stalemate. Since the start of the Doha round there

has been an increasing recognition that development involves more than just opening up markets. But the west has been slow at best in honouring its promises regarding reductions in agricultural subsidies, and in recognising the need for flexibility in how and when developing countries open their markets (Green 2006). New Zealand is the only country which has completely opened up markets to imports from all less developed countries (Oxfam, 2002). Only the very poorest countries have free access to EU markets. Yet many would say that progression of the Doha round is the way forward. For a full discussion of current WTO rules in relation to environment and trade issues, see International Institute for Sustainable Development/United Nations Environment Programme, 2005.

External costs

It is appropriate to note here that Gale (2000) suggests that the debate about international trade is a red herring in relation to devising policy for environmentally sustainable production. He uses example of sustainable forest production in Vancouver Island , and says that key point is not whether trade is national or international, but whether production methods are sustainable or unsustainable. But as the above discussion demonstrates, pressures associated with current inequitable terms of trade can in themselves result in environmentally damaging production. Moreover, the external costs of transport of goods over long distances are highly significant, a point returned to later. As Ropke says:

'*A dynamic perspective reveals the seriousness of the problem and demonstrates that the "transport externality" is a pervasive phenomenon.'* (Ropke, 1994:18)

This under-valuation of transport externalities coupled with the systematic under-valuation of natural resources in the developing world discussed above works to keep prices artificially low in the global economy.

The above discussion has led us to the characterisation of highly significant and important externalities in relation to trade – the under-valuation of natural resources (primary commodities) due to unequal terms of trade, and significant transport externalities. It has been calculated, based on external costs identified by authoritative studies, that in 1994, US corporations externalised $2.6 trillion in social and environmental costs (Monbiot, 2003). Traditionally, economic theory has described externalities as market failures, and assumed them to be small or marginal. Muradian and Martinez-Alier (2001) turn this on its head by suggesting that externalities are not market failures, but cost-shifting successes. Muradian et al (2002) and Ropke (1994) further point out that the evaluation of environmental externalities depends on the distribution of power and income.

'*The rich countries are still seeking to secure their access to cheap resources from developing countries without having to pay too much in the form of improved access to their own markets. The trading patterns and the associated institutional arrangements thus reflect the power relationships between and inside countries'* (Ropke, 1994:15)

If externalities, including the run down of natural capital and full costs of transport, were fully accounted for in prices (full cost accounting, or ecological costing) those countries locked into export of raw materials would become the most favoured locations for manufacturing e.g. logs could be processed further into furniture, bauxite would be processed into aluminium, cocoa into chocolate and coffee beans into ground or instant coffee. This is important because it would reduce pressure on over-exploitation; more processing would take place in the country of origin- it is much more costly to transport bulky raw materials than finished goods.

Arguments for localisation

Advocates of a much more localised patterns of production certainly look at the issues of unsustainable patterns of world trade discussed above. But it is not just an argument relating to unsustainable trade between rich countries and poor countries. The madness of thousands of tonnes of basic foodstuffs, whether chickens, potatoes or chocolate biscuits, passing each other in the sky, on the sea and on the roads, has been well documented. For example, in 1998, the UK exported 61400 tonnes of poultry meat to the Netherlands, and imported 33100 tonnes from the Netherlands. And similar statistics exist for many other basic foodstuffs, including pork, lamb, milk and apples (Lucas 2001). And it is not just food. In Europe, lorries often take cloth that has been cut out for items of clothing on journeys of thousands of miles to areas of cheap labour (e.g. Portugal, former Eastern Europe) to be sewn together, and then the finished items sent back thousands of miles where they are sold.

Present day advocates of a return to greater local production are not new. As long ago as 1936, Keynes said

'*I would sympathize with those who would minimise rather than those who would maximize economic entanglements between nations. Ideas, knowledge, art, hospitality, travel – these are the things that should of their nature be international. But let good be homespun wherever it is reasonable and conveniently impossible, and above all let finance be primarily national'* (Keynes, 1936, cited in Porritt, 2005:77)

Certainly, some of the arguments for a more autarkic and protectionist economic system are appealing. Certainly, just on the level of the environmental externalities caused by the transport of more and more goods, this seems logical. Korhonen contrasts the globalisation of modernity with a locality principle, and notes that economic specialisation seems to work against ecological diversity, further pointing out that commercially managed monocultures risk ecosystem diversity, and suggests that:

'*…when the product flows and the life cycles and their resource use are increasingly within local boundaries, the environmental effects of these flows may be easier to monitor, control and manage than with inter-regional life cycles. This also reduces the overall use of energy and related emission generation.'* (Korhonen, 2002:72)

Also, the arguments for re-connecting people and communities to the provision of their basic needs are compelling:

A global system composed of localized economies can accomplish what a single globalized economy cannot – encourage the rich and flourishing diversity of robust local cultures and generate the variety of experience and learning that is essential to the enrichment of the whole. Economic globalisation deepens the dependence of localities on detached global institutions that concentrate power, colonize local resources, and share little stake in local success or failure.' (Korten, 1995:269)

Arguments against localisation

However, the arguments that it would be a retrograde step to move to greater localisation and protectionism are equally compelling. A key report produced by Oxfam as part for that organisation's Make Trade Fair campaign presents a wealth of evidence about the problems of the global trading system, but also states categorically that a move to greater localisation would condemn many people in the less developed world to enduring poverty (Oxfam 2002). Monbiot also discusses the environmental implications of a localisation agenda. His criticism of Hines' arguments in favour of localisation is that rich countries would only need to import those goods which could not be produced locally or regionally, that is, minerals and cash crops!

'*Localisation would, moreover, paradoxically damage precisely those interests it seeks to protect. To earn sufficient foreign exchange to import the goods they cannot import themselves, the poor nations would (as this system forbids them to earn it by any other means) need to export more, not less, of their natural wealth, thus increasing their contribution to climate change, soil erosion and the loss of biodiversity.'* (Monbiot, 2003:216)

So, both free trade and localisation can trap nations into a viscous circle of exporting more and more commodities. Also, protectionist measures may in themselves carry environmental costs. Sugar protection policies in US, as well as causing the loss of 400 000 jobs in Caribbean, and an increase in domestic prices, were also responsible for destruction of part of the Everglades in South Florida (Muradian and Martinez-Alier, 2001).

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The above discussion points to the need for more careful and selective trading, in the context of fairer international rules. Ropke makes the case for less trade:

'….the suggestion is not to strive for maximum self-sufficiency, but more modestly, to reverse the tendency of still deepening division of labour and instead strive towards greater self-sufficiency nationally, regionally and locally.' (Ropke, 1994:21)

Fair Trade – its significance

To what extent can the existing Fair Trade Movement point us in the direction of sustainable trade? The first point of course is that the total share of global trade taken by Fair Trade goods, though growing fast, is still small. There is a tension here. If fair trade is indeed a model for sustainable world trade, then how can it be brought into the mainstream? On the other hand, will mainstreaming take away its alternative edge and make it a less powerful force for challenging orthodox business practices?

(Low and Davenport, 2005). Moore (2004) discusses the risk of the progressive agendas of the Fair Trade Movement being captured by those that would seek merely market share and increased profit, and says:

'*This is a more serious risk because the Fair Trade movement stands to lose by being "subverted", "diluted" or "redefined" in such a way that the original message and purpose is lost.'* (Moore, 2004:83)

Moore also raises several other critical issues for Fair Trade. For example, he asks whether the higher price paid could lead to oversupply and disadvantage other producers, and also does it delay producers in looking for higher value-added products – in other words create a dependence effect? Does it only work because it is marginal in scale? There is in effect a tension of being both inside and outside the market (or in and against the market). Nevertheless, the central tenet of the Fair Trade Movement – to produce a working model of international trade that makes a difference to producers and consumers, and also respects the environment, is of central relevance to this discussion.

The proposal made by George Monbiot for a Fair Trade Organisation to replace the WTO as currently constituted is a logical response to identified problems with free trade, and draws on the key values and practices of the Fair Trade Movement. A Fair Trade Organisation would not need an entire set of new regulations. The International Labour Organisation has standards for fair treatment of workers and 'Principles Concerning Multinational Enterprises. Environmental considerations would also have to be prominent.

A FTO would lay down rules governing protection and privilege allowed by countries. Countries would be able to make their own decisions about how and how quickly they open markets; they would be allowed 'infant industry protection' to enable them to diversify their economies. Such an organisation would also address behaviour of multinational companies. Essentially, companies would have to apply for a licence to be allowed to trade internationally, and this in turn would encourage governments to institute improved domestic environmental and social policies. Political change would be facilitated but not imposed, to enable capacity and sustainable structures to evolve. Fair Trade would no longer be voluntary. If externalities were fully internalised, export growth then becomes a measure of something different than at present. The extraction of natural resources would be seen as a loss to national economy, and nations could then see if they were being enriched or impoverished by trade.

Supply chains and trade

One feature of Fair Trade is the necessity for supply chains to be transparent, and this of course is key to sustainable trade. For example, the Day Chocolate Company say that they can trace their supply chains right back to the village where the cocoa bean has originated:

'……*[other chocolate companies] say they cannot trace supply chains and where products have come from…Whereas we are showing them that we can take it back to each village…'* (Davies and Crane, 2003:83)

Muradian et al discuss the need to determine the 'environmental memory' of products:

'*….the spatial component of the environmental consequences of local consumption patterns can be assessed tracking environmental impacts along international product chains*.' (Muradian et al, 2002:52)

Opschoor agrees with the necessity to look at accumulated environmental impacts along production chains, even if this is not an easy task:

'Consumption related externalities in the form of environmental impacts backward along the production chain may not be visible, as they occur in part at a distance and even beyond national borders.' (Opschoor, 2000:364)

New environmental and social trade requirements are emerging every day – business needs to be at forefront of sustainable trade debate (responding to national and international decisions), and responsive to the demands of retailers and traders. Obviously, many companies are developing sustainability policies and practices and looking closely at their supply chains.

'*….the onus is increasingly on companies to be proactive rather then reactive, to anticipate inevitable change, to fill the space available to them for much more environmentally and socially responsible actions, and to lobby government for faster change…'* (Porritt, 2005:240)

One example of an initiative to promote sustainable trade, creating a platform for dialogue between producers, trade organisations and government organisations, is a recent workshop organised by Landcare Research (Sustainable Business and Government Group) in New Zealand. Here, they discussed the sustainability requirements faced by business when exporting overseas. This was in recognition of the fact that for New Zealand businesses to maintain export performance they needed to be at the forefront of the sustainable trade debate, and as well as being informed of existing market requirements and anticipate future trends What today is a trend can become a condition for accessing the market, leaving little time for business to adapt. They are setting up a web-based 'early warning system' about emerging issues in sustainable trade. Although it was recognized that most exporters and their businesses were well informed about environmental and social export requirements, they did not always capture added value of good practice. One example given is that of New Zealand fisheries has not been an active capturing of added value resulting from sustainable management practices. (Stancu and Smith, 2005)

Conclusions

In conclusion, there are actions to be taken at all levels of society in relation to ensuring more sustainable trade.

Internationally, the institutions governing global trading rules need to reform, to enable trade to work not only give people a chance of realising a fair living, but also to ensure the sustainability of natural systems. Trade between countries should enable current knowledge of ecosystem management to be realised, and that means that consumers wherever on the globe need to pay a fair and realistic price for the goods they consume. Footprint analysis tells us we are already living beyond the carrying capacity of the planet, and this has implications for the way we consume resources in the rich world.

Nationally, governments need to increase pressure on the international institutions governing international funding and trade rules to make trade fairer and more ecologically sustainable. Governments also need to act responsibly and make sure their own purchasing is done with principles of fairness and ecological sustainability in mind.

Trade takes place between and within business organisations. Business has the key to promoting sustainable trade patterns. Business has the knowledge and potential for innovation to make sure its trading, whether local, regional or global, operates within global sustainability constraints. This implies detailed supply chain analysis, and although this is not easy, many companies are undertaking such analyses as part of their Corporate Social Responsibility programmes. The challenges to business if they are to take on a strong sustainability perspective as is suggested by ecofootprint analysis are broad and fundamental. The ecological impact of their operations needs to be better understood. Key questions regarding resource use might include: could this be sourced nearer to home? If not, how is this resource being transported, and are the transport costs internalised? Are there alternatives, which do less harm to the environment? If the business involves the import of renewable (biomass) materials, are these being managed sustainably? Does the price paid for non-renewable materials reflect externalities of production and also cover any costs involved in future substitution of these resources?

Also, business has a proactive role to play in terms of lobbying national governments and putting pressure on international bodies to make the rules of trading fairer.

Consumers are becoming more discerning regarding some of the issues addressed in this paper. Business has an increasing responsibility to provide individual consumers with choices and information, to enable those consumers to exercise ethical choice in the market place. What ecofootprinting tells us about how we are using up the resources on this planet, and how these are currently shared out, has implications for each and every one of us.

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