

TRADE AND ENVIRONMENTAL SUSTAINABILITY: AN EVOLUTIONARY PERSPECTIVE

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Abstract

Economy completely dependent upon local environmental resources must have a greater incentive to preserve those resources than economies based on specialization and trade. Evidence from the past and prehistory, however, shows that many regionally based economies have misshapen because of environmental overexploitation. Evidence from the past shows that there is a strong relationship between environmental degradation, power, and social instability. There seems to be a complex and frequent pattern in early civilizations of expansion, a flourishing of culture and art, and then social dissolution and collapse as ruling elites short of the expansion of textile culture beyond the limits of the environment to support it. Recognizing the significance of the relationship between power, environmental sustainability, and social liability, it is essential in formulating ecologically sustainable trade policies.

Key words: Environmental sustainability, equity, power, sustainable trade, etc.

1. Introduction

Environmental sustainability is defined as those practices that minimize energy use, pollution and water consumption, resulting in a smaller carbon footprint for the district through innovative efforts focused to reduce, renew and recycle. A recurring theme in the sustainable development literature is the argument that regionally based economies are more likely to promote environmental sustainability than those based on trade with distant markets. There is considerable evidence for this position, particularly with regard to agricultural sustainability. A number of traditional agricultural societies have experienced a loss of genetic diversity in local agricultural system after a switch from traditional practices to mono crop production for export. Economies dependent on a variety of local resources must have a greater incentive to preserve them than economies that can specialize and trade for these resources with distant markets. On the other hand, a regionally based economy is not a sufficient condition for sustainability. A growing body of archaeological evidence shows that, since the widespread adoption of agriculture, scores of regionally based economies have overexploited their resource base and collapsed. The first civilizations in the Middle East caused widespread environmental disruption relatively soon after their formation. There seems to be a complex but recurring pattern in the early societies of soil exhaustion, increased salinity through irrigation, deforestation, and overpopulation which eventually results in social disintegration. In almost every early civilization, from

the Middle East, to Mesoamerica, to the American Southwest, societal collapse and the abandonment of settlements occurs when increasingly complex and increasingly vulnerable cultures can no longer cope with inevitable environmental shocks such as prolonged drought. This is an important point to consider when formulating trade policies which affect environmental sustainability but at the same time serve the interests of economic and political elites. Encouraging regionally based economies by restricting trade may move us in the direction of sustainability.

2. Society and environment before the industrial revolution

For almost all the time of our existence, our species lived as hunter gathers more or less in harmony with the natural world. The change from hunter-gatherer to predominantly agriculture economies began about 10000 years ago. Evidently, agriculture was adopted as the primary means of subsistence as a response to climate change after the last glaciations and the subsequent extinction of big game animals on which Pleistocene hunters depended. Soon after the adoption of agriculture, human societies became stratified and tightly controlled by religious and political elites. Compared to the benign impact of hunter gatherer economic systems on the environment, agricultural economic systems led relatively quickly to huge increases in population and large-scale environmental disruption. Evidence from central Jordan suggests that within about a thousand years of the emergence of settled communities, villages were being abandoned because of the effects of environmental disruption on crop yields. There are examples of environmental over exploitation even in much localized economies that had no trade at all. One of the most dramatic examples of shortsighted neglect of ecological limits is the case of Easter Island. The remarkable thing about Easter Island is that in spite of its extreme isolation and small size its inhabitants stripped the island of almost all trees, overworked the soil, and in general created an environmental catastrophe for themselves. If such obvious self-inflicted environmental collapse could happen in isolated island societies where environmental damage is immediate and obvious this is certainly an indication that there are no "natural" mechanisms present in regional post-hunter-gatherer societies to halt environmental degradation.

3. Egalitarian societies and trade

James Woodburn uses the term "egalitarian" to describe hunter gatherer social organization. He describes the following characteristics of hunter-gatherer societies that serve to promote social equality.

- Individuals are not dependent on specific others for access to basic requirements.
- Social groupings are flexible and are constantly changing in composition.
- All relationships stress sharing and mutuality without requiring long-term binding commitments.
- Individuals have almost a complete freedom of choice as to whom they associate with in residence, and in trade and exchange.

These characteristics not only insure social equality, they are also vital to the kind of democratic social decision-making essential for sustainable resource use. Under this kind of egalitarian social structure, trade is unlikely to have the negative impact seen in other types of social organization. Evidence for trade among prehistoric hunter-gatherers is, of course, limited to physical archaeological evidence. We can only speculate about the role of trade in hunter-gatherer social relationships but, given the egalitarian nature of historic hunter-gatherer cultures, one would expect that trade items would have a utilitarian function. In early agricultural systems, trade begins to take on a dynamic role in reinforcing power relationships among individuals and classes. The most famous example of trade in the anthropological literature is Malinowski's description of the coloring of the Trobriand Islanders. With the adoption of agriculture as the primary means of subsistence came permanent surpluses, social divisions, and the control of production and distribution by elites. Thus, there is a relationship between trade, the creation of economic surplus, equity, centralized decision-making, and environmental sustainability.

4. Trade among early agriculturists

As a justification for promoting trade as a means of protecting biodiversity some writers point to the fact that trade has existed among human societies for ten thousands of years. Although true, this overlooks the facts that there is a difference between trade as the bilateral exchange of exotic items and trade as a means of expanding economic surpluses, and although market trade as a means to acquire economic surplus may have existed for millennia it also has a long record of promoting environmental abuse. Milicic in a graph-theoretic analysis of the community of Hvar in the Eastern Adriatic during the Venetian period found a systematic relationship between trade, vocational advantage, and social stratification. Graph-theoretic models have also been used to explain social stratification based on favourable trade location for the prehistoric city of Cahokia, along the Mississippi River as well as in the Trobriand islands. There was a growing dependence on certain categories of trade goods, leading to the disappearance of their native cognates and hence to an even greater, and presently irrevocable, involvement in the commerce in furs. It appears that widespread polygony; a tendency towards social stratification, and a shift towards economically acquisitive, venture taking, individualistic patterns of leadership all can be traced to the influence of trade.

5. The neoclassical view of free trade

Although the virtues of free trade are usually illustrated by simple examples of comparative advantage, the neoclassical justification for trade can be seen more clearly using the Edgeworth box diagram of market exchange. This model describes the static market exchange of a fixed amount of existing goods among consumers or of productive inputs among producers. The model, as any good model does, focuses on a few essential features and ignores most others. The purpose of the model is to describe the pure exchange of a fixed amount of goods or inputs. It ignores space, time, society, and the biophysical world. Neoclassical trade theory essentially treats trade among countries as being the same as the static exchange of market goods or inputs among individuals or firm. In this simple model, the only effect of trade barriers

between countries is to limit the free exchange of goods and block the attainment. The problem is that neoclassical economists too often become mesmerized by the logical consistency of the model and forget the physical and social realities that surround simple, static market exchange. In the basic neoclassical model of trade all the assumptions of perfect competition are invoked plus some others which are at least as restrictive.

6. Problems with the basic neoclassical model of trade

- It ignores real production in real time. As economists from Ricardo to Daly have pointed out, the arguments about the benefits of trade break down when the mobility of factors of production is taken into account. Even if a static exchange model can prove that trade is mutually beneficial, the dynamic effects can undermine local production systems and local ecological balances that have coevolved over centuries if not millennia.
- It retains the simplistic treatment of the future through discounting. As legions of economists and ecologists have pointed out, the existence of a positive discount rate works against the notion of environmental sustainability.
- It ignores the role of trade in maintaining and extending existing power relationships. This neglect is critical because, to the extent that trade is controlled by economic and political elites, it may exacerbate existing social inequality including gender inequality, and wreck environmental havoc because those who make the decisions about environmental exploitation for trade are those who gain the most and who suffer the least from environmental destruction.

7. Trade, economic surplus, and equity

The importance of the effect of trade on distribution within communities is illustrated by the controversy surrounding rain forest harvesting. The idea seems unambiguously to be a good one. If sustainable rain forest products such as Brazil nuts can earn enough income then not only can the rain forests be saved, but the indigenous people of the forest can reap some of the economic benefits. Some of the main groups supporting the idea of rain forest harvest are Cultural Survival International, the Body Shop, and Ben and Jerry's ice cream, spite of the good intentions of these organizations the effect of increased trade on the native rain forest people seems to have been negative. Cultural Survival has been accused of buying Brazil nuts not from indigenous people but from well-established brokers who continue to exploit indigenous people. Is the purpose of trade to promote efficiency and equity or to promote economic growth Daly points out that more than half of all international trade involves the simultaneous import and export of the same basic goods. The United States imports sugar cookies from Denmark and Denmark imports sugar cookies from the United States. If efficiency were the main goal of trade it would make more sense to exchange recipes. Again the question is who benefits from this inefficiency. If decisions about how trade is to take place are made by an elite who will benefit most by its expansion, these decisions will naturally downplay

the importance of environmental and distribution consequences. In spite of the warnings above about relying on regionalism to ensure ecological sustainability, there is little doubt that indigenous people possess an extensive knowledge of local environmental resources. This knowledge is not only vital to the sustainability of indigenous cultures; it may also be of considerable value in efforts by Northern governments to protect biodiversity. An unintended consequence of trade may be to break down indigenous beliefs and customs which have traditionally maintained ecosystem functions. Does trade serve to pass the environmental problems caused by the North on to the South. A disturbing pattern in the collapse of past civilizations was that it was in areas distant from centers of power that the first signs of environmental catastrophe appeared. Evidently one reason why this occurred was that local agricultural systems were replaced by systems designed to meet the needs of the imperial centers.

8. International trade treaties and the environment

Under the various GATT treaties, individual governments have less ability to override the market to achieve social and environmental goals. Goods produced by child labour or by ecologically destructive practices cannot be treated differentially under the existing GATT treaty and even less under the proposed extensions of the treaty. Among the environmental rulings of the GATT Secretariat are the inadmissibility of raising tariffs to take account of pollution abatement costs and the refusal to adopt the "polluter pays" principle. Free trade agreements are among the favorite policy recommendations of neoclassical economists, in spite of the well-known limitations of the classical theory of trade. As always, when it comes to policy recommendations, neoclassical economists fall back on their basic, simple model of Pareto optimality and perfect competition. The neoclassical explanation of genetic erosion is the lack of property rights for genetic resources. NAFTA and GATT would extend property rights to "intellectual property", that is, to knowledge about and use of agricultural plant varieties.

9. Conclusion

The standard economic view is that increasing trade will generate the income necessary to bring the poor out of poverty and to protect the environment. This is the "more of the hair of the dog that bit you" approach as Daly puts it. On the other side, there are powerful arguments that trade can be disruptive to local environments and local communities. However, evidence from the past shows that regionally based economies have not always been ecologically sustainable. In developing criteria for evaluating the environmental and social desirability of trade, it is useful to consider its positive and negative roles in preindustrial societies. Trade can also be disruptive in reinforcing already existing income disparities. Finally, as preindustrial societies show, the absence of trade and a total reliance on local resources is no guarantee of ecological sustainability.

10. Reference

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