

EQUITY, ECONOMIC SCALE, AND THE ROLE OF EXCHANGE

IN A SUSTAINABLE ECONOMY

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### IN A SUSTAINABLE ECONOMY

#### I. Introduction

Environmentalists who are critical of “free trade” often point to the accelerating resource depletion, rampant pollution, reduced government power to regulate ever-growing corporations, and threats to democratic decision-making which can be seen to result from increased international trade as facilitated by institutions like the World Trade Organization and NAFTA.

The alternative which is sometimes put forth by environmentalists -- calling for more local economic autonomy and self-sufficiency, reduced international trade, and closer spatial links between production and consumption so that environmental impacts are clear and can be factored into democratic political-economic decision-making -- is attractive in many ways. It evokes a pre-industrial, human-scale, pre-fossil fuel type economy, adapted to a post-fossil fuel world, which also makes use of post-modern information exchanges, technological development, and design to maximize human potential (Milani 1999, Morrison 1995, Aberley 1994, Douthwaite 1996, Schroyer 1997). Such localized “green” economies are nascent in some places, and the institutions and consumption patterns necessary to build such local economies are in fact emerging throughout the industrialized North (Perkins 1999, Perkins 1996a, Hudson 1996; Roberts and Brandum 1995). However, many observers are still very doubtful whether the juggernaut of globalization will be substantially affected by such “green-fringe” activity, even when rising fuel costs make traded goods much more expensive than they are today; technological optimism holds sway in many circles, and the politics of a democratic switch to a lower-consumption, reduced-variety economy are problematic.

Moreover, there are two major issues that need to be addressed in principle before the local-economy solution can be

termed a progressive or utopian one. Both problematic issues relate to *equity*. In the first place, local production for local consumption is usually more expensive than exploitative and polluting production mediated by transnational corporations and international trade; higher prices hurt low-income people most; so is this approach not, in some senses, regressive? Whether it is the rising cost of fossil fuels, the cost of internalizing environmental externalities, or the cost of fair labour practices which pushes up the prices of traded goods and thus makes locally-produced ones more competitive, the impact of these price increases on those who are most vulnerable economically must be a concern for anyone advocating local-economy sovereignty. Most emergent local-economy institutions (such as LET systems, organic food co-ops, community shared agriculture schemes, and energy-efficient housing retrofit programs) are aimed at middle and upper-middle class people – those who own their homes, are able to travel farther and pay more for vegetables, and are in the market for massages and music lessons offered (along with other things) on the LETS. So is the “green” local-economy alternative really an alternative for everyone?

Secondly, the implications of reduced trade for international and North-South equity are also very problematic. While trade has doubtless contributed to environmental depletion, political repression, and human rights abuses in many places, especially in the South, it has also contributed to an absolute increase in living standards, health care, education, and international mobility for many. More important, it is virtually the only existing mechanism with some potential to bring about increases in the equity of global income distribution (despite the fact that absolute income inequality has been increasing over the past twenty years, fueled, some argue, by cutthroat trade patterns). If we are unhappy with current North-South and other global inequities, a system for reducing these inequities and ensuring a more progressive dynamic in global interchanges must be posited. The local-economy alternative, viewed only from the perspective of the North, externalizes the pressing issue of global intra-generational inequity.

This paper explores these theoretical and practical issues, considering the question of the environmental and ecological impacts of economic activity from the viewpoint of the scale at which this activity takes place and the exchanges across time and space which affect its sustainability. Following a consideration of the dynamics of economic change in the next section, the paper discusses the meaning of trade/exchange, economic scale, and political/ecological/economic boundaries before returning in the final section to the two equity-related issues

outlined above.

## II. Negative Feedbacks and Globalization

Much of the current literature on globalization stresses the snowballing impetus of trade patterns controlled by multinational corporations, who increasingly make global production decisions (which are also consumption and resource-depletion decisions) with very little input from the political process in any jurisdiction. The steps along the “positive-feedback loop” of globalization include advertising, increased consumer demand and waste, long-distance transport of goods, pollution, high profits, strategic political influence, reduced local institutional control, mechanization, reduced demand for labour, and centralized private decision-making. Each step tends to reinforce the effects of the others and create the conditions for an expansion of trade and of the global economy.

However, there are also “negative feedback loops” at work in the global trading system -- processes which, like a pituitary gland, work to limit the growth of trade and to counter its insalubrious effects on income distribution, resource depletion and local political systems. The economics of self-limiting systems is not well-developed, but -- flowing from work in ecology and biology -- new theoretical approaches to understanding self-limiting economic systems are becoming more widely known. The essence of the concept of a negative feedback is that one step in a process leads to a second step which has an opposite effect on the overall system. For example, in a plant or animal, increases in age and physical size eventually lead to hormonal changes which halt further growth in stature. The factors involved in natural negative feedbacks include biochemical changes, hormones, and genetic coding, which spark changes in response to environmental signals such as light, solar and lunar cycles, nutrient availability, and biochemical signals from within or outside the organism itself. Often these processes are subtle, complex and delicately balanced.

The primary negative feedback in a competitive market system is that of prices, whose rise induces a fall in the quantity demanded of the good in question, which causes more of it to be available, causing the price to fall again, and so on. Insofar as the price of natural resources and energy is competitively set, price increases can induce

technological change which reduces the demand for increasingly scarce resources, thus perhaps causing production processes to become more sustainable. Likewise, to the extent that negative “externalities” such as pollution or labour exploitation can be internalized in competitive markets (through, for example, well-enforced government taxation or other policies), the effect will be to make production processes more sustainable than before. Since most global markets are not competitive and are growing progressively less so, the actual impact of these feedback mechanisms is probably minimal. They do, however, perhaps have resonance for anyone who has studied economics.

Consumer pressure represents another negative feedback process at work, even in non-competitive markets, which can be a strong motivator for progressive environmental and social movement by corporations. Especially in Europe, “green” consumer pressure has brought about many progressive changes in production processes.

There are two other negative feedback processes which facilitate the development and adoption of “green” and socially-positive technological change in the face of globalization:

- 1) The spread and democratization of scientific knowledge, via the Internet and other means, allows technological solutions to local problems to be developed by the people who need them, in response to their own resource constraints, social situations, and awareness of global potentialities as well as inequities. In other words, globalization leads to the international dissemination of ideas which can permit some people to remove themselves from the global market if it does not meet their needs. Smaller-scale and more appropriate technological development, and the use of “green” technologies developed in one place by people in other places, can result.
- 2) Globalization of markets also makes consumer boycotts, “whistle-blower” actions, and international campaigns for corporate responsibility much more effective and powerful than they would be in segmented national markets. Environmental, health, and human rights concerns arising in one place can receive international attention, and large firms may devote extra attention

to product testing, worker safety and pollution control to ensure that they do not receive uncontrollable negative publicity.

Both of these mechanisms, while given impetus by the momentum of globalization, have the effect of generating beneficial changes in both production processes and the social effects of production, from a sustainability viewpoint. They are effective primarily because they cause changes in international trade patterns, generally in the sense of reducing the kind of trade which is most harmful to sustainable economies.

As the global implications of fossil fuel and other resource depletion, climate change, biotechnology risks, and toxic waste generation become clearer (and/or as crisis situations bring these dangers into focus for many people), there will be increasing pressure for the kind of technological change which will allow reduced material throughput with no loss in use-value of the goods produced. This redefinition of the meaning of productivity growth -- instead of more output per unit input of a factor, more *use* (e.g. longer product life, or more consumer satisfaction) per unit of output produced and sold -- leads organically to a second redefinition, of the meaning of consumer satisfaction itself. Instead of positing insatiability, and equating greater consumer satisfaction with higher consumption as measured in dollars spent, economists must continue to explore and theorize the non-material, and indeed the non-consumption, component of human satisfaction.

Meaningful work is clearly a primary determinant of human satisfaction. Because most "green" production processes require more labour and less capital in comparison with traditional production processes (since they use less energy and fewer machines, and take more effort to reduce wastes), they often have the side-effect of creating more jobs -- which is a crucial need in both North and South. This is another negative feedback in the global system: for both ecological reasons and for social ones, the limit to mechanization of production processes is becoming apparent; a switch to greener and more labour-intensive production processes implies positive effects both environmentally and socially.

Fine, but what is the real potential of all of these feedback mechanisms to actually reduce the overall volume of

world trade or to slow globalization? And would that be a good thing? Would it not harm those in both South and North who are already the worst off? The following section takes up these important questions.

### III. Globalization, Trade, and Exchange

The idea of sustainability encompasses a number of components. In the context of trade and its effects, three elements stand out:

- 1) Resource depletion, and the environmental effects of producing, distributing and consuming traded goods and services instead of local goods and services.
- 2) Income distribution, or the effects on different social groups of their participation or non-participation in a global trading system.
- 3) Political equilibrium, or the impact of trade on the institutional infrastructure of the countries involved.

Much of the literature on “Trade and Environment” focuses on the first of these elements, and concludes that the Ricardian efficiencies associated with trade lead to economic growth which makes possible environmental protection strategies such as pollution taxes and emissions control mechanisms, which would be too costly for autarchic economies. Natural resources are also used more efficiently via trade, it is argued: more economic benefit can be derived from a given level of resource throughput, with less pollution, when trade allows factors to be used efficiently. Because of technological change and substitution possibilities, resource depletion is not seen by some as an important issue.

Dissenters in this discussion argue that trade skews incentives toward use of new natural resources and over-

consumption rather than re-use of goods and materials, and that the beneficial environmental policy effects of trade-related economic growth are limited to a few kinds of pollution control in a few countries. Crucial global environmental questions, such as climate change and trade in toxic wastes, require urgent attention. Unlimited resource substitution is not possible, due among other things to the laws of thermodynamics; trade contributes dramatically to the depletion of fossil fuels, accounting by one estimate for about an eighth of all fossil fuel use (Ekins 1995, p. 309). Thus, even considering only the “environmental” effects of trade, opinions in the literature are mixed but tend toward the negative regarding trade’s implications (Johnstone 1995, Steining 1994; Daly and Goodland 1992, Lang 1993, Daly 1993, Jackson 1993).

When social and political effects are added to the question, this tendency is reinforced. Income inequality within countries seems to increase with globalization, which puts some people out of work in the North and puts increasing competitive pressure on other workers in the South; income inequality is also increasing internationally, in part as a result of trade expansion, as the rich become better able to take advantage of global market opportunities (Van der Stichele 1997, Krugman 1995). According to United Nations statistics, the gap between the richest 10 percent and the poorest 10 percent of the world’s population increased almost tenfold during the 1980s; between 1975 and 1990, the volume of world exports nearly doubled (Gill 1995, p. 77; French 1993, p. 7). Gender-based inequality also increases with trade in many instances (Ward 1990, Cameron 1994, Cohen 1992, Elson 1993, Gabriel 1996).

For some commentators, however, the most insidious effects of increasing trade are those on political institutions and the policy-making system. “Regulatory chill”, reduced government revenues and provision of social and other services, lowered emphasis on enforcing environmental regulations, international competition for foreign direct investment, increased currency speculation and financial/monetary instability, and growing unanimity between corporate and government agendas, are some of the aspects of this process (Campbell 1993, Perkins 1996b, Low 1997).

From a thermodynamic viewpoint (in which global entropy unavoidably increases over time and this can only be countered by the use of solar radiation), sustainable economic growth can be viewed as the amount of incoming

sunlight and its capture through photosynthesis. Trade can thus allow ecological constraints on economic growth to be avoided *spatially*, just as leaving mountains of waste behind for future generations avoids ecological constraints *temporally*. But the potential for such avoidance of ecological constraints is absolutely limited also by thermodynamics, and “ecological limits turn into social limits and finally into barriers to economic rationality” (Altvater 1993; Rees 1994, p. 377; Jackson 1996). The distinction between trade which allows “entropy-shifting”, and trade which does not, therefore becomes important in assessing its sustainability.

Taking all the above considerations into account, we are left with the issue of how much trade is “sustainable”. The stronger one’s definition of “sustainability,” the less trade seems to be desirable (Perkins 1997). Moreover, far more than environmental impacts must be considered if true long-term sustainability of the economic (and also the social and political) system is the goal. These trade-related effects include those at the local or community level as well as the national and global levels (Norgaard 1995, p. 82; Nozick 1993; Huq 1985).

In effect, the sort of trade which does no harm to a sustainable economy might be defined as follows: It is an exchange of goods or services across national or bioregional borders which involves and requires only renewable physical resources and energy supplies, does not exceed the natural generative and assimilative capacities of the ecosystems where it takes place, is engaged in freely and voluntarily by all (even indirect) participants, contributes to the potential, interest and diversity of people’s lives without undermining their own productive abilities or independence, and has no deleterious effects on social structures, political institutions, culture or democracy in the areas involved. This definition, by its very contrast with the reality of the current global trading system, points up the political challenges inherent in transforming the global political economy to allow for the possibility of sustainable local -- or larger-than-local -- economies.

In fact, for trade (or exchanges of goods among bioregions) to be “sustainable”, what is needed is *congruence among the ecological, political, and economic scales* at which these exchanges are taking place. In other words, the environmental costs of production (be they resource depletion costs or pollution costs) of goods or services destined for use outside the bioregion must be acceptable to those within the bioregion, and these residents must have a way

of debating, deciding, and implementing their choices about production methods and exchange patterns. Where the political scale at which production decisions are made (e.g. the nation-state) does not correspond to the ecological scale at which the impacts of production and waste disposal are felt (the bioregion, watershed, airshed, aquifer, migratory zone, or other space), there is a disjuncture between the environmental impacts of economic activity and the society's ability to address them in a satisfactory democratic way. The spatial impacts of economic activity vary with each production process: a factory's emissions plume affects its airshed while its effluent is mainly felt downriver; agriculture affects entire watersheds and aquifers; a fish-processing plant may draw its "raw material" from the high seas but cause local water-pollution problems. Transnational corporations in fact may exploit differences among jurisdictions' regulations, shifting production to least-cost areas while doing their best to avoid public interference in their internal decision processes. Trade – exchanges among nations or bioregions – exacerbates these disjunctures by adding the complication of global money flows and economic impacts to the already-complex picture.

In the face of the incredible welter of spatial and institutional scales which exists, environmentalists' advocacy of localized economies can be seen as an attempt to bring the political, economic and ecological scales of economic activity together at the local (and therefore perhaps more manageable) level. A global ecological democracy could also unify the scales of production, consumption and waste disposal, and since many of the environmental impacts of production processes are clearly global in impact anyway, perhaps this is the only reasonable goal. But effective, well-functioning democratic institutions on a world scale seem a long way off.

Whether the feedbacks listed above are actually causing reductions in trade overall is a matter for empirical investigation, which as far as I know has not been done. More important than these mechanisms' general effects on trade volumes, however, are their implications for the *kinds* of goods traded. As previously noted, trade which is more sustainable than at present will involve "greener" goods, produced using "greener" production methods by workers who live "greener" lives. The effect of all the mechanisms listed above is to shift overall production and trade in a more sustainable direction.

This shift will be driven by a combination of price changes, financial and ecological crises, social and environmental policy innovation, consumer demand, local economic development and “delinking”, technological and organizational change, and political pressure. Whether it will be fast enough and effective enough to forestall global social and ecological disaster remains to be seen. But the key to understanding this process lies in deconstructing the category “trade” into its component parts, from the standpoint of its sustainability implications. This involves much more than just the traded goods themselves; the whole nexus of social, ecological and political conditions surrounding their production is also important.

For workers and consumers in the South as well as the North, this shift is a positive thing. Notes Enrique Leff with regard to Mexico, “emergent environmental movements

are internalizing the environmental conditions for sustainable production, based on the productivity of nature and the values of social equity and cultural diversity. As these movements deploy their power strategies to construct an alternative productive rationality, resources will be removed from the sphere of market economy, imposing a limit to the capitalization of nature” (Leff 1996, p. 82; Leff 1995).

While a generalized “delinking” from global markets is not frequently espoused from a Southern perspective, due perhaps to the need for economic growth as an engine of international income redistribution, a few Southern theorists have extensively explored and advocated development strategies focusing on national self-reliance in the South. They include Clive Thomas, Samir Amin, Raul Prebisch, and Osvaldo Sunkel (Hudson 1997, pp. 103-126; Khor 1993).

Whether in the North or the South, it is local-level (not national) policy initiatives, and community-based or non-market actions, which are central to many of the feedback mechanisms discussed above. Usually these measures are undertaken by people who are well aware of the specifics of trade’s impact on their communities, and of the reasons for these impacts. In the Toronto area, for example, FTA and NAFTA-related job losses caused by factory closings in the early 1990s led to an upsurge of interest in the Toronto LETS, which allowed people with reduced money

incomes to continue to be economically active while building the institutions of a less-trade-dependent “local economy”. What this indicates is that the specific information needed to analyze trade’s effects *is* available at the local level, for those who look. There is growing theoretical support for such disaggregated, specific and contextual study of economic processes.

#### IV. Conclusion: Exchange, Scale, and Equity

In a steady-state economy based on renewable inputs, the dynamism and change which are necessary to avoid stagnation and perpetuated inequities must come from exchanges and innovation. Development, viewed as the ongoing process of obtaining economic value in new ways from a limited and sustainable amount of throughput, depends on the spread and exchange of ideas, innovations, and their benefits. It is possible to envision a positive-feedback cycle in which social diversity leads to ongoing innovation, pockets of difference within a context of exchange, respect, communication and inquiry, discovery of new ways of using renewable resources and human potential, and increasingly equitable distribution of the shared benefits of economic and social development. Trade (viewed as “sustainable exchange”, among production regions where decisions are made democratically and the ecological impacts of production, consumption and waste are internalized) is vital for the dynamism which is necessary to sustain human development.

Both the green local-economy movement and the movement for global equity are aspects of an inevitable readjustment of world institutions and production systems in the face of ecological realities. The undemocratic privatization of production decisions which have global social and environmental implications in the hands of a few corporate managers is what is unsustainable.



NOTES

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