

Chapter 9

The International Side of Ecological Structural Change

Can we rely on the fact that enough people will bring about a solution quickly enough to save the modern world? This question is frequently asked, but no matter what the answer is, it will be misleading. The answer "Yes" would lead to smugness, the answer "No" to despair. It would be desirable to leave these speculations behind and get to work.

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Ecological structural change will happen internationally or it won't happen at all

Should the Western approach to satisfying service demands, presently enjoyed by twenty percent of humanity, be expanded to one hundred percent? This sometimes seems to be the present dream of all of humanity--were it to come true, the trend toward ever greater changes in the biosphere initiated by the industrialized world would increase in speed by a factor of five. The consequences would not necessarily be reinforced linearly; they would probably reinforce each other much faster, reducing even further the time remaining in which to realize any form of sustainable development.

In 1992, thousands of decision makers from all over the world met at a UN conference in Rio de Janeiro, the "Earth Summit." The industrial nations referred to it as a conference on "Environment and Development." Representatives from Southern countries preferred to speak of--or at least to think--in terms of "Development and Environment." The word game represents diametrically opposed priorities and a conceptual separation of the world into two spheres, which--although it has no correspondence to the cultural and economic diversity of the peoples of this earth--might nevertheless prove very significant in the future.

The term "developing country," or formerly "undeveloped country," is a term coined by President Harry Truman in his inauguration speech. He was referring to some of the most pressing economic needs of several countries immediately after the Second World War, but the concept inadvertently precipitated a strange and simplistic division of the world into two camps. Some of the "developing countries" are now and have always been richer than some OECD or NATO member states.

Many of the "developing countries" are unwilling to make any sort of concessions in favor of the environment, as long as they fear that the countries of the North are merely paying lip-service to environmental change. They fear that any contractual commitment on their part would only further cement the present economic imbalance between North and South. They claim their share of the world's resources, the most radical of their spokesmen even admitting that they will do so at the expense of the environment.

In October of 1992, the Malaysian Minister of Economic Affairs threatened the people of the world with burning down the Malaysian tropical rainforests, if the industrialized nations succeeded in carrying out an import-ban on tropical hardwoods. In that case--the Minister quipped--they would simply be forced to farm these areas. Independent of whether he was merely bluffing or whether he was aware that the action would be suicidal for his own country, this example makes one thing abundantly clear. We are entering an era of unmerciful conflicts over the resources of this earth. The population growth curve is still pointing steeply upward in most countries of the Third World. If we are determined to grant them the freedom to develop themselves out of poverty it would mean an increase in their demand for material and energy until we are able and willing to provide them with dematerialized alternatives.

Provide? Does that mean give? Well, maybe not. But the planning and development of processes, facilities and goods with radically improved resource productivity is first and foremost *our* responsibility in the Western world, if for no other reason, then because other countries do not have the capacity for such developments. We should tackle these problems jointly with experts from the less fortunate countries, developing larger facilities such as

energy and transport infrastructures together--and with their needs in mind--as well as our own. We will not only learn from such efforts, but will also work out technologies and export opportunities for the world markets of tomorrow. As for the money: we presently spend billions every year on "economic aid." In reality, these are often *de facto* export-credits for our un-ecological fossil-technologies that contribute their share to the rapidly worsening ecological situation. We could probably improve on these arrangements.

By persuasiveness, doing without, the development of convincing technologies, and altered consumer behavior in the industrialized countries themselves, it will be possible to persuade the "South" to strive for the ecologically preferable. For almost two hundred years the OECD, and especially the G-7 countries, have managed to displace ever greater energy and material flows, strengthening their economies to the point of their present power. Their success has become the world-wide model for development. For the people of the "Third World," therefore, an automobile has become a major goal along with a full stomach and decent health care.

There is no national biosphere.

The conference in Rio showed how difficult even small steps can be at times when the industrialized countries are not experiencing rapid enough economic growth. If an international redistribution of resources is to take place peacefully, then far more drastic steps will be necessary than were agreed upon in Rio. Such steps must be voted on and monitored internationally; they require international economic and technology policies worthy of the name; they need international eco-policies for their realization. Without these international ties, a transformation of the economy will encounter great difficulties in trying to deal with the global flow of goods and services, if such a transformation will be possible at all. Presently existing international organizations are not in a position to successfully support these fundamental changes. New--and often regional--institutions will be necessary to coordinate the economic and ecological questions and answers--circumventing the otherwise frequent popularity contests between economy and ecology. Even at the OECD in Paris, the symbiosis between the two merely takes the form of weary assertions. One need only take a look at the most recent OECD report on Germany's ecological situation¹. It would help the productivity of such organizations if, in the future, international secretariats were instituted for fixed terms. Every ten years or so, they would then have to disband, unless an overwhelming majority of the member states demanded an extension.

Each year developing countries spend more for military purposes than all Western economic aid put together. The five continuous members of the UN security council, the United States, China, France, Russia and Great Britain, belong to the greatest weapons exporters of the world. Germany, too, belongs to the greats in this lineup. One needn't be an expert to see how the use of such technology affects humans and the environment. Television shows it daily. A believable shift toward international ecological politics will also have to take these facts into consideration. But if the remaining contradictions between the traditional economic and military goals on the one hand, and the conditions necessary for maintaining global ecological stability on the other are not dealt with in a convincing fashion, the loss of political credibility will continue unabated. These relationships will have to be dealt with in a serious manner.

GATT--the wrong signal

World trade has made a significant contribution to the dissemination of technology, even with respect to environmental technology. The United States corporation, General Electric, for instance, is producing energy-saving light bulbs in Hungary, and is meeting a pressing need of the Eastern bloc. They are delivering energy efficiency to a location where energy has been wasted most unscrupulously. Free world trade has, in fact, made it possible for many countries to acquire such technology. According to a Worldwatch Institute study, in 1990 the U.S. and Europe were already exporting "environmental technology" to the tune of twenty billion dollars a year². This must be said in advance, before we now concern ourselves with present world trade, with GATT, and with the role of ecological principles as they relate to these issues.

According to the source just quoted, the Worldwatch Institute study indicates that 3.5 trillion dollars worth of raw materials and goods were exported in 1991, world-wide. Each product has managed to accumulate an "ecological rucksack" by the time it makes it to the border of the importing country. In other words, it has already taxed the global environment to a greater or lesser extent from the "cradle to the border," and will obviously continue to do so during its service life and throughout the various steps necessary to eventually dispose of it. This is true regardless of whether it is a raw material, an intermediate, or a final good. It must be considered an international task to determine and subsequently minimize the environmental burden of each phase of a product's life cycle--and the results of these inquiries must appear in international agreements, including GATT. A high standard of environmental quality for goods and services must be organized and harmonized internationally. As long as free world trade with products that significantly stress the environment is encouraged and supported, it will remain all but impossible to achieve sustainable development, as ecologically less "expensive" goods will stand little chance of finding a market.

Many goods and services are primarily or exclusively traded on the international market. International trade therefore contributes directly to international environmental pollution. If these dangers are not met with an internationally harmonized platform, this may lead on the one hand to unfair trade advantages in countries with "cheap environments"--to environmental dumping--and on the other hand, to non-tariff trade barriers.

The improvements toward stabilizing the biosphere would be small indeed, if the call for international harmonization were misunderstood as an invitation to agree on the lowest common level of environmental protection. We are absolutely convinced that a sustainable economic development will never come about unless the environmental burden of everything that is presently traded on the market is significantly reduced. After all, the principle of free trade is not extended to the categories of weapons, medicines and drugs. Products with high environmental stress intensities belong to this category of traded goods in the same way as the above. It is fairly certain that "environmental dumping" will be considered as unacceptable in the future as other forms of dumping are today.

For ecological reasons, high-MIPS products, those with low resource productivities, belong in the same restricted class as ammunition and drugs, which are there for health reasons. They should not be traded freely.

The dictum that economies work better, more rationally and more justly the more international they are in character, is a common one. But is it true? Many things seem to indicate that a thoughtless internationalization of the economy is fundamentally un-ecological and would be counterproductive in the event that the goal of dematerialization were taken seriously. One reason for this is the high ecological effort required for providing cheap transportation, which has become a matter of course over the last few decades. Who would have known, for instance, that some of the flowers which you can buy on any given street-corner in Germany are flown in from as far away as Brazil. The transport prices are so absurdly low, that even goods of marginal economic significance are transported halfway around the globe before they achieve the status of a final product. This cannot be the last word if one includes surface area, energy and material intensity in the calculations. For ecological reasons, a certain amount of regionalization will be necessary. Products won't be export goods so much as will capital, knowledge and information.

In international trade, the resource intensity of products and machinery, from cradle to grave, from extraction of the resources to the eventual disposal of the worn-out product, is never examined. Frequently, basic materials are brought together from all over the world, are subsequently assembled somewhere via transport-chains and incremental production steps, before being shipped all over the world again as final goods. As likely as not, they will even be exported as garbage one day, too. The last step is usually called materials export, because it is not proper to export garbage; in some cases it is even highly illegal.

We have set up global networks, again because the share of the final price constituted by the resource or material intensity is so insignificant, to the point where the assembly line for a Cadillac Allanté has to stretch from Southern Italy to Detroit--and is considered a matter of course. Henry Ford got along just fine with an assembly line which was about 150 meters long. The production of the European Airbus manifests similar absurdities. It appears to have no noticeable effect on its price that the plane has accumulated a good deal of its own frequent-flier miles before it ever learns how to fly itself.

Trade has experienced an extremely intensive internationalization since the Second World War, which has led to the situation today in which it is immaterial whether a car is built in South Africa, Japan or at the North Pole. It is competitive on the world market, independent of transport effort. This is ecologically nuts.

If, in the future, the material intensity were to be assessed as a whole, including the packaging and transport intensity of the product, we will discover that packaging and transport intensity often make up a considerable portion of the total material intensity. In that case, it will be ecologically preferable to concentrate all of the less material intensive aspects, such as design, development, research, marketing, and financing, in one, central location, while organizing the production itself (as well as all requisite re-manufacturing and recycling) closer to the consumers in a more decentralized manner. The present market signals, on the other hand, encourage world trade with ecologically questionable goods. GATT encourages free trafficking with goods, the production and use of which threaten the biosphere. This holds for flowers from South America as well as for cars, refrigerators and plastic knives and forks.

GATT rules permit a single member country to restrict the import of goods by tariffs or outright bans if these goods are considered to be dangerous to either health or the

environment in that country, if the same restrictions are binding for domestic producers. But GATT does not allow an import duty to be placed on a product that has been produced with excessively high material and energy effort. According to GATT, it is immaterial whether fruit is grown under ecologically optimized conditions or on large plantations with considerable use of water, pesticides, fungicides and fertilizers, as well as with high levels of soil erosion. Ecological rucksacks do not exist for GATT.

Eco-technologies for economic aid

Let us imagine the future technological arrangements in developing countries. Roughly 2.5 billion people, or about forty percent of the world population, live in these countries, and their economies are growing at between three and ten percent per year. The overarching goal for some of them is to build and own precisely those dinosaur-technologies which should be relegated to the past as quickly as possible because of their energy, material and surface-use intensity--our Western technologies. The same, with the exception of the economic growth rates, holds true for the former East Bloc countries. They are all doing their best to erect exactly those infrastructures, production systems and consumption institutions (with all attendant increases in waste and pollution) that are undermining any attempts at restabilizing the biosphere. Our direct financial and technical aid is doing its share as well. They don't even have a choice. Their social responsibility, not to mention the perceived limits on time and capacity, prevent them from imagining an alternative course from delaying the transition for the purpose of incorporating as yet non-existent futuristic technologies. Only the OECD countries have the means of bringing about a global technological transformation. With respect to the developing countries, this is particularly true regarding long-term investment goods in traffic and transportation sectors, for buildings, for decentralized energy supplies, as well as for water-saving technologies for all lines of business and the various economic sectors.

The opportunity seems to present itself for planning these technologies in the context of aid programs, working closely with experts from the recipient countries, and carrying out demonstration projects. In doing this, not only would technical facilities be exported, but knowledge as well. A degree of technological leapfrogging could occur that might contribute to a greater level of acceptance in those countries, while maintaining future trade advantages for the aid-giving countries.

Economic aid programs can only hope to be successful over the long term if all partners can benefit. The time has come to see the benefits to ourselves in postponing--or better yet in preventing--the next ecological catastrophe. The improved market opportunities for our eco-technologies will exist in future world markets too. The un-ecological economic upturn in the Third World is decisively shortening the remaining time in which to avoid the painful reactions of the biosphere. The development there quite obviously reduces the overall success of any attempts in the West several times over.

If China succeeds in maintaining its present rate of economic growth over the next five to six years, then roughly ten percent of Chinese families will be able to afford a car. That would be about forty million cars. That many are presently driving around in all of Germany, or in all of Africa. Cars need roads, gas stations and parking lots. We can be sure that the large car manufacturers have already realized this, too. Meanwhile we are getting

nowhere in Germany with the effort to pass a speed limit for five-passenger cars that rarely carry more than one person. The United States Congress recently voted down a gasoline tax of roughly five cents per gallon.

The ecological prospects are still pretty dim. We lack understanding.

^{1.1} OECD, Environmental Performance Reviews: Germany, 1993.

^{2.2} Süddeutsche Zeitung, 29 March 1993.