If You Really Want To Save The Environment

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It is important to distinguish between two sorts of greenies. First there are those who think that the environmental problem can be solved by more attention to clearing up, or minimising in future, the damage caused by industrial-affluent society. Most environmentally concerned people are in this category, calling for things like more pollution control, but having no recognition of any need to question our affluent lifestyles or the rate of producing and consuming and economic growth their society involves. The first part of the following discussion argues that this common position is mistaken, that there is no chance of solving the environment problem without facing up to drastic reduction in GNP and 'living standards'.

Unfortunately there are at present few greenies of the second type; people who realise that environmental damage is just one more huge problem being generated by our unsustainable 'growth and greed' society. There is no more important issue for environmental educators to focus on than the question of whether it is sufficient to patch up the damage being caused while plunging on down the track to ever-greater affluence and GNP, or whether the problems can only be solved by fundamental transition to a very different society, a radical conserver society. The argument below is that there is no chance of solving the environment problem nor any of the other major global problems facing us unless we move to lifestyles, patterns of settlement, values, and especially to an economic system which permit us to live well on far lower rates of per capita resource use and environmental impact that we have at the present in countries like Australia.

There is now a considerable 'limits growth' literature arguing that we must 'de-develop' if we are to solve problems of resource scarcity, Third World deprivation, environmental destruction, international conflict and social breakdown. The first section below sketches some of the main arguments for this position.

The Problem - The quest for growth and affluence

The nature of our predicament can be illustrated by considering the greenhouse problem. How can this problem be solved?

Changing to nuclear energy can't make a significant difference, even ignoring the many problems to do with safety, because nuclear energy only produces electricity and that makes up only about 16% of the energy we use in Australia. In addition most of the Greenhouse gases come from sources other than electricity generation.

Some people mistakenly think we can solve the problem by adopting alternative or renewable energy technologies and sources. 'Coal, oil and gas cause air pollution and are limited, so lets just shift to using the sun and the wind'. But there is no chance of providing anything like the energy-affluent way of life we have in rich countries from alternative energy sources. (Trainer, 1994.) This is basically because there would be very large losses in transforming, storing and transmitting energy in winter from sunny regions to the high latitude countries where most rich world people live. For example if a liquid hydrogen system is used to supply electricity to Europe from sunny latitudes, 96% of the collected energy would be lost in the process. The cost of the electricity would probably be about 25 times its present cost. No industrialised society could survive such an increase. There are insufficient wind energy resources to solve the problem, even in the best sites, such as England. It is also impossible to explain how sufficient liquid fuel could be provided. (For detailed explanation see Trainer, 1994, Chapter 9.) We could live well in a conserver society on alternative energy sources, but at nothing like the per capita use levels we average now in Australia, equal to 7 tonnes of coal per person every year.

What must be stressed here is the magnitude of the reduction in fossil fuel use that would be needed to solve the greenhouse problem. The Inter governmental Panel on Climate Control has concluded that if we are to prevent the concentration of carbon in the atmosphere from increasing any further (let alone reduce it) we must cut fossil fuel use *by 60 to 80%*. Now if we cut it by 60% and shared it equally among the 11 billion people the world will have by 2050 each person would receive *only 1/18* of the present Australian per capita energy use. There is no possibility of achieving anything like this unless we face up to drastic reduction in the amount of producing and consuming going on. Yet the supreme goal in all countries is to increase production and consumption as fast as possible, and without end.

Our agricultural practises are among the most obviously unsustainable aspects of our way of life. The Americans have lost 1/3 of their topsoil. The world's farms lose at least 25 billion tonnes of soil to erosion every year, meaning that for every kg of food eaten more than 7kg of soil is lost! The best Australian wheat farmers harvest about 3 tonnes of wheat per ha, but lose about 10 tonnes of soil.

Possibly even more serious than erosion is the fact that modern agriculture returns to the soil almost none of the nutrients taken out in the form of food. We are thus constantly depleting our soils of their nutrients. Our agriculture has been well-described as 'soil mining'. Every year the Australian wheat export crop depletes the soil of minerals equal to those in 150,000 tonnes of fertiliser (Lipsett and Dann, 1984).

Modern agriculture is also extremely energy-intensive. We use tractors, pesticides, fertilisers and irrigation, all very oil dependent. After the food leaves the farm possibly 7 to 10 times as much energy is then used before it reaches your table, especially in transport. It has been estimated that on average each item of American food has travelled 1300km! (Rodale Press 1981, p.1).

Now these and other major forms of soil degradation cannot be remedied unless we radically change not just agriculture, but lifestyles and patterns of human settlement. Food must not be transported so far. Above all, nutrients must be returned to the soil. This cannot be done unless most food is produced close to where people live. This points to one of the most important characteristics of a conserver society. The pattern of human settlement must be changed so that, a) significant numbers of people can move out of the energy devouring large cities and into smaller cities and towns, b) a great deal of food can be produced within and close to cities and suburbs, cutting transport costs and artificial fertiliser use, and enabling nutrient return to the soil.

The environmental problem is essentially due to the fact that there is far too much producing and consuming going on. On average each American uses 20 tonnes of new materials each year. It takes 20 tonnes of materials to make a car. These must be taken from the environment and eventually will be dumped back into it. An environmentally sustainable society cannot be achieved unless we develop ways of life which do not involve anywhere near these levels of per capita resource use.

The Limits to Growth

The crucial issue that is ignored by almost all discussion of the environment problem among politicians, economists and people in general is that there are limits to growth and affluence and that our society has already gone beyond many of them. We live in a ways that are totally unsustainable. We in rich countries like Australia live on levels of resource consumption and environmental impact that can not possibly be shared by all people, that we can only have for a short time historically, and that we can only have because we are hogging most of the world's scarce and dwindling resource output. The richest countries with about one quarter of the world's people consume three quarters or more of the world's annual resource production. Their per capita resource use is 17 times that of the poorest half of the world's people. If all the expected 11 billion people the world will have by 2060 were to live as we do annual world resource production would have to be 10 times what it is now, for one-third of the minerals and all of the fossil fuels estimated potentially recoverable mineral and fuel resources would be exhausted in about four decades (Trainer, 1985).

The same basic conclusion is evident when we consider the typical western diet. It takes 2 ha of land to produce an American diet (Rees, 1992). If 11 billion people were to have such a diet 22 billion ha of land would be required. But there are only 14 billion ha of land on the entire planet, and world cropland is unlikely to exceed 1.5 billion ha. It is therefore impossible for all people to have the diet people in rich countries take for granted.

The most important limits are set by the biological resources of the planet. For some time rapid deterioration has been evident regarding forest loss, loss of biodiversity, spread of deserts, and many other factors. More recently it has become increasingly apparent that we are reaching a number of crucial agricultural limits. Several indices of global biological and agricultural productivity have grown rapidly in recent decades but have slowed, plateaued or fallen in the 1980s. Grain production rose at 3% p.a. for thirty years to 1980, but at an average of only 1% p.a. since then. A faltering trend for meat production indicates that rangelands are nearing their productive limit. Similar trends exist with respect to irrigated area and fertiliser use. World fish catch has fallen since the early 1980s. The area of land cropped has probably peaked and is likely to fall from here on.

It appears therefore that after hundreds of years of constant increase we are in a short period when many crucial biological limits are being reached. As the Worldwatch Institute concludes, 'The earth's biological productivity is shrinking' (Brown 1990, p.7).

These indices mean that *present* levels of output and consumption are inflicting unsustainable burdens on the planet and are close to their limits, yet high living standards are being provided for only 1 billion people and *11 times* as many will probably have to be provided for soon.

The same disturbing picture emerges if we assume that world economic output will average (only) 3% p.a. until 2060. World total output in that year would then be *8 times* as great as at present, and would double every 23 years after that. Such multiples cannot possibly be achieved if we are already approaching limits for agricultural production.

These have been a number of lines of argument supporting the conclusion that the levels of output and consumption and of per capita resource use taken for granted in rich countries at present cannot be extended to all people. It follows that our way of life cannot be endorsed if it is only possible for a few who insist on living at rates of consumption far beyond those all could share for any length of time.

But what is our supreme goal? Virtually no one doubts that it is of the utmost importance to constantly strive for increased living standards, more total economic output, more production and consumption endless growth of GNP. If there is any validity in the limits to growth analysis of our predicament what we urgently need is a vast reduction in the amount of producing and consuming going on -- yet virtually all are obsessed

with increasing it as far and as fast as possible, without any concept of a point at which we would think living standards or GNP were high enough.

In the 1980s Australia averaged 3.2% pa growth, but all our problems became worse; poverty and inequality increased, real wages fell, unemployment almost trebled and the foreign debt multiplied by about 20. Clearly more than 3.2% pa growth would be necessary to make our economy healthy. Let's assume 4% is required. As the Prime Minister and others have pointed out, at least 4% growth is necessary to start reducing unemployment. If we have 4% growth until 2060 our GNP will be 16 times as big as it is now. If all the people the world will have then were to rise to the living standards we would have *total world economic output would be 220 times what it is today.*

Even if the goal were for us to average only 3% growth and for the Third World to rise to our present living standards by 2060, total world output p.a. would be 20 times what it is today. These multiples are absurdly impossible. The limits to growth argument is that *present* levels of production and consumption are far beyond sustainable levels, yet almost no one questions the dominant commitment to an economic system and a value system which must see these levels multiplied many times in coming decades. Most people supporting the Green movement appear not to have faced up to these issues.

What about better pollution control and more energy efficiency?

It is not plausible that increased effort on pollution control and resource use efficiency could make a significant long term difference to this limits to growth predicament. Of course in the short term future we can be expected to make spectacular improvements given that we are at the end of an era in which abundant cheap energy enabled us to develop very wasteful ways. But before long the big and easy savings and improvements will have been made and it will become more and more difficult to improve performance.

Let us assume that at a point in time a 1/3 reduction in energy use or pollution per dollar of output was made, but output went on increasing at 3% pa. In only 14 years the energy needed or the pollution generated would be back up to what it was before the cut, and in another 23 years it would be twice as high. In other words so long as there is determination to have growth in output any likely gains in energy efficiency or pollution control will soon be overwhelmed. Is it plausible that if we have 4% growth in output to 2060 environmental impact per unit of output will be 1/16 its present level? It would have to be that low if total impact were to be no greater than it is now, (which is far too high), because total output will be 16 times as great ... and doubling every 17 years thereafter.

The Global Predicament

It is important to recognise that the environmental problem is only one of a range of enormous global problems being generated by our unsustainable growth and affluence society. The very same mindless quest for every-rising living standards and ceaseless growth, and the resulting problem of vast overproduction, over consumption and overdevelopment is also the direct cause of problems of Third World deprivation and poverty, resource depletion, conflict, rural decline and social breakdown. (For detailed summary of the extensive literature relating these areas to the limits to growth theme see Trainer, 1985, 1989, 1994). A brief reference to the connections with Third World problem is appropriate here.

Conventional development theory defines development as 'getting the economy going'; cranking up as much production for sale and as much growth of GNP as is possible. This theory encourages investment in whatever ventures will maximise sales and profits. This is one major reason why forests are being stripped, since they constitute the most accessible things to sell off. Conventional development theory does not encourage anyone to ask what development would be best for people or the environment; it deceives us into accepting that 'the essential task is to stimulate as much increase as possible in production for the market, because that will generate more national wealth and then there will be more to trickle down to enrich all of us'.

But after 40 years of this 'growth and trickle down' approach to development the way it works out is quite clear. Much development takes place, but it is mostly development of industries to export to the rich countries and supply the few local high income receivers. Almost all the export income goes only to the rich few in the Third World. The development does not benefit the poor majority of people much. The development is highly *inappropriate*. It is development in the interests of the local rich, the transnational corporations and the consumers in the rich countries. It draws much of the Third World's productive capacity into producing for export to us.

The recent rapid increase in the amount of Third World land growing crops to export to the rich countries is a prime example of inappropriate development. More than 16 million ha grow tea, coffee and cocoa for export. Export cropping is expanding rapidly. Some of the hungriest people in the world work in those export plantations. Their labour and that land should obviously be growing food for hungry Third World people yet the global economy and the conventional approach to development devote possibly 100 million ha of the best Third World land to producing for the rich few.

As the export plantations grow, large numbers of poor people who could have used that land are forced out onto fragile land where they easily overgraze or destroy forest, or poach scarce animals. Hence most of

the damage being done to Third World environments by Third World people is being done because of the totally inappropriate approach that has been taken to development.

There is, in other words, no chance of solving the Third World problem until there is change from a global economy driven by market forces, and growth. These inevitably generate inappropriate development and deprivation for the poorest billion people on earth while they devote most resources to meeting the demand of the richest billion. The saying that sums the situation up irrefutably is 'The rich must live more simply so that the poor may simply live'. Again it is essential that people in rich countries move to ways of life that will enable them to enjoy a high quality of life on a small fraction of their present per capita resource consumption.

'Ecologically Sustainable Development'? - 'Green Economics'?

It is most unfortunate that almost all discussion by governments, economists and even environmental agencies such as the Australian Conservation Foundation proceeds on the unquestioned assumption that all we have to do is change to environmentally benign ways of providing the same affluent and growing living standards and pursuing the same old goal of rapid and ceaseless growth of GNP. In other words the dominant assumption is that this is possible, whereas the essential 'limits to growth' point is that it is not -- there is no possibility of solving the global ecological problem or the Third World or the resource depletion problem unless we make an enormous change to much less affluent living standards and to an economy which does not have to have constant growth. It is grossly irresponsible for the advocates of ESD to avoid any attempt to explain *how* they think we are going to increase total economic output year by year while cutting resource use and environmental impact to sustainable levels. How for example are we supposed to cut fossil fuel use by 60 - 80% while doubling economic turnover every 23 years (and it would have to be every 17 years given 4% growth if there is to be any reduction in unemployment). The limits to growth analysis shows that the many implications and implicit claims or this sort evident in the ESD rhetoric are impossible and absurd yet they go almost totally unquestioned.

The Economy: The Basic Fault

By far the most important single factor causing the environmental problem and other major problems is our economic system. We have seen that because we are overconsuming the urgent need is to shift to a far lower level of producing and consuming and GNP per capita. But this is not an economic system that can permit such a shift.

Consider waste. There is an enormous amount of unnecessary production, (eg., houses are twice as big as they were a generation ago), but this economy will not allow us to reduce production to the minimum levels sufficient to give all people comfortable living standards. If we ceased producing the unnecessary things we now produce there would be a catastrophic jump in unemployment and bankruptcy. This economy *requires* vast, unnecessary production and waste, it cannot allow us to reduce to sufficient levels.

Nor can this economy produce what is most needed. For example, in the Third World where cheap food and basic health services are among the most needed things this economic system produces Hilton Hotels and coffee for export. Free enterprise market forces and the profit motive do some things will (eg, encourage initiative and efficiency) but they *are appallingly bad at distributing goods according to need* and at getting the most needed things done. All around the world there are large numbers of people who go on deliberately cutting down trees, polluting and wasting, because this is what their job requires, and this economy does not offer many jobs which do little or no damage to the environment. This could be avoided if we moved to patterns of settlement in which we demanded far less from nature because we were all able to live more simply and self-sufficiently. We have no chance of building a satisfactory world order until we construct a very different economic system.

Similarly, the only way this economic system could solve the problem of unemployment is by increasing the amount of producing and therefore the amount to be consumed, when we in Australia already do much more producing and consuming per capita than the resource and ecosystems of the planet would enable all to engage in.

And of course it is an economy which must have constant growth in output, yet as has been explained above we are already way past sustainable levels of output in rich countries like Australia. A sane economy would only produce as much as was necessary to provide comfortable material living standards and a high quality of life, and would not raise these levels from year to year.

The Solution: The Radical Conserver Society

For three decades there has been a steady increase in the number of individuals, agencies and publications arguing that industrial consumer society is not sustainable.

The above argument has been that we desperately need a rapid and huge reduction in the overall level of producing and consuming going on in the world. Yet we have an economy which must multiply the level of impact several times in a lifetime. As Paul Ehrlich has been arguing for years, we need significant long term de-development; we are over consuming and overdeveloped, yet we have an economy which must have

constant growth. Clearly we have no chance of solving the environmental problem unless we change to an economy that will enable us to produce just enough for satisfactory material living standards without any need to constantly increase 'living standards' and the GNP.

There is now considerable literature on the required alternative, the radical conserver society, in which people could live well on very low rates of resource consumption and environmental impact. (These themes are summarised in Trainer, 1994.) The four essential and inescapable principles of a sustainable society are,

- It must be a much less affluent way of life.
- It must involve a high level of self-sufficiency in all areas, household, neighbourhood, regional and national.
- It must be more co-operative and communal.
- It must be within a zero-growth or steady state economy.

At the personal level the conserver way means living more simply, buying relatively few non-necessities, making things last, recycling, and developing habits and interests that have low or zero non-renewable resource costs. At the societal level it means phasing out some wasteful industries and greatly reducing many others.

The key to the sustainable society is the development of many *small, highly self-sufficient local economies*, whereby most of the things people need for a high quality of life are produced by local labour, land, resources and capital.

Many goods and services can easily be produced in vegetable gardens, chook pens, home garages and via hobby production (fruit bottling, knitters, furniture, repairs, entertainment). Some households might specialise in hobby production for cash, barter or gift exchange. Small firms could function throughout neighbourhoods, many of them decentralised subsidiaries of presently centralised firms. Market gardens could be relocated throughout suburbs and cities, eg, on derelict factory sites (thereby cutting the dollar cost of food by 70%). There could be many communal orchards, woodlots, meadows, bamboo clumps, ponds and fish tanks, providing free goods but managed by elected or voluntary committees. There could be many co-operatives throughout the neighbourhood enabling local people to gain part-timer work providing services to each other. Perma-culture principles would enable every town and suburb and even cities to be planted with dense, permanent and highly productive 'edible landscape'.

A house on each suburban block (preferably a disused petrol station) might be converted into the neighbourhood workshop, barter exchange, recycling store, book and tool library -- and the seat of genuine participatory democracy, because this could be the site where 'town' meetings are held and where small committees organise many of the

activities presently administered by distant and expensive bureaucracies. Many alternatives technologies could be spread through the neighbourhood, including windmills, solar passive housing design (all new houses built from earth at about one tenth the normal outlay), composting, and garbage gas units, each taking wastes from five to ten houses, producing gas to run fridges and recycling food nutrients back to local gardens.

These sorts of well established practices would make it possible for most of the goods and services in a suburb, town or even in a city to be produced by its own local labour, plants, soils and capital, ie, with a low level of transporting or dependence on imports. The scope for local self-sufficiency, especially through Permaculture design principles, is remarkably high and little understood. Local economic self-sufficiency is essential if presently high transport and packaging costs are to be greatly reduced.

The conserver society literature indicates that such initiatives could cut the normal factory and office work week to two days, giving us five days to spend work-playing at a wide variety of interesting and useful activities in our neighbourhoods.

The third element, a more co-operative society, has now partly been explained. We might have voluntary or rostered working bees to perform many community functions (eg, windmill maintenance). We would have a direct stake in contributing to the welfare of our community, its gardens and social organisation.

All these elements would yield a much more satisfying 'work' experience, a strong sense of solidarity and community, and a leisure-rich environment (thereby reducing the urge to spend dollars or petrol seeking entertainment).

The key to the alternative is not getting individuals to make an effort to reduce their personal buying and consuming, although that is important. It is developing *systems and patterns of settlement which make it easy for us to live well without the need to consume much.*

It should not need to be said that none of this is possible without change to a fundamentally different economic system which permitted us to do only that minimum amount of producing and consuming necessary to provide quite adequate but modest material living standards; ie, one in which the GNP per capita would be perhaps only one fifth of its present level. Such an economy could in fact retain much free enterprise in the form of small family firms and co-operatives. However it could not be an economy in which the driving forces were the market, the profit motive and the quest for accumulation. Above all it would have to be a zero growth economy. There would have to be a considerable amount of rational social planning of the economy. although what is emphatically not needed is the 'big state' and more or less authoritarian form of

socialism that was evident in the USSR and Scandinavia. Because of the small scale of communities, most of the planning could be carried out informally by their members and by elected unpaid committees. Devolution of many function from state to neighbourhood level would greatly reduce the need for bureaucracy.

Hence the new economy is best thought of as a third way, characterised mostly by a high degree of local economic self sufficiency and control. A large sector of the economy would be cashless, involving barter, giving and totally free goods and services, ie, many things would simply be taken as needed from local orchards or woodlots and many things would be gifts of surplus production within households or cooperatives. Most people would be able to live well on very low cash incomes, perhaps requiring only one day's work a week for money. Many of the at least 60,000 people presently living in alternative lifestyles in Australia need only that approximate amount of cash income.

It should be stressed that there is no conception here of moving to a more primitive way of life, or of giving up modern technology, research, higher education, or modern health and dental procedures. In fact the transition would liberate resources for application to technical advance in socially useful areas.

In the last decade we have seen the emergence of an eco village development movement, involving many practical experiments in which groups are actually building alternative settlements.

Implications for environmental action and for environmental education

If the foregoing perspective is valid some very important implications follow regarding the goals to which people concerned about the environment should be working, especially environmental educators. Firstly, it is very important to attend to the distinction between light green and dark green concerns. Unfortunately most of the effort being made 'to save the environment' is only light green. It is going into bandaiding, into trying to protect bits of the environment from the threats and impacts imposed by industrial - consumer society. Such effort is entirely commendable; bandaids are essential. But in general such effort makes no contribution to the fundamental social change that must take place if we are to achieve a society which does not systematically and increasingly destroy the environment. Indeed bandaiding often has the reverse effect, because as with the ESD discussion, it reinforces the impression that more energy efficiency, recycling, green products and pollution control are enough and we needn't think about changing lifestyles or the economy. Rather than plead with loggers to cease destroying our forests and accept unemployment instead, we should be presenting to timber towns plans whereby they might develop alternative economies in their region.

If the limits to growth argument is at all valid the top priority must be the dark green concern to work for the long term transition to a radical conserver society. No one has a greater opportunity or responsibility here than the environmental educator.

At the very least it is essential that environmental education should acquaint people with the fact that there are two radically opposed views about sustainability, that there is a weighty case for the limits to growth view, and that there is much literature and practical activity aimed at building an alternative conserver society.

The prospects for the transition depend entirely on whether or not public awareness can be raised adequately regarding the two basic themes argued above; a) that affluent/consumer society is unsustainable and is generating serious global problems; and b) that it would be easy to build a satisfactory alternative society, if enough wished to do so.

Developing greater public understanding of these two broad themes should be the overwhelming by important gaols of environmental education. It might take another two to four decades before we have created sufficient support to enable the crucial structural changes to be made, such as bringing market gardens into cities. But there should be no doubt that there is no possibility of saving the environment, nor of solving the other potentially catastrophic global problems facing us unless we devote most of our effort to explaining the need for and desirability of a less affluent, more self sufficient and cooperative conserver society.

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