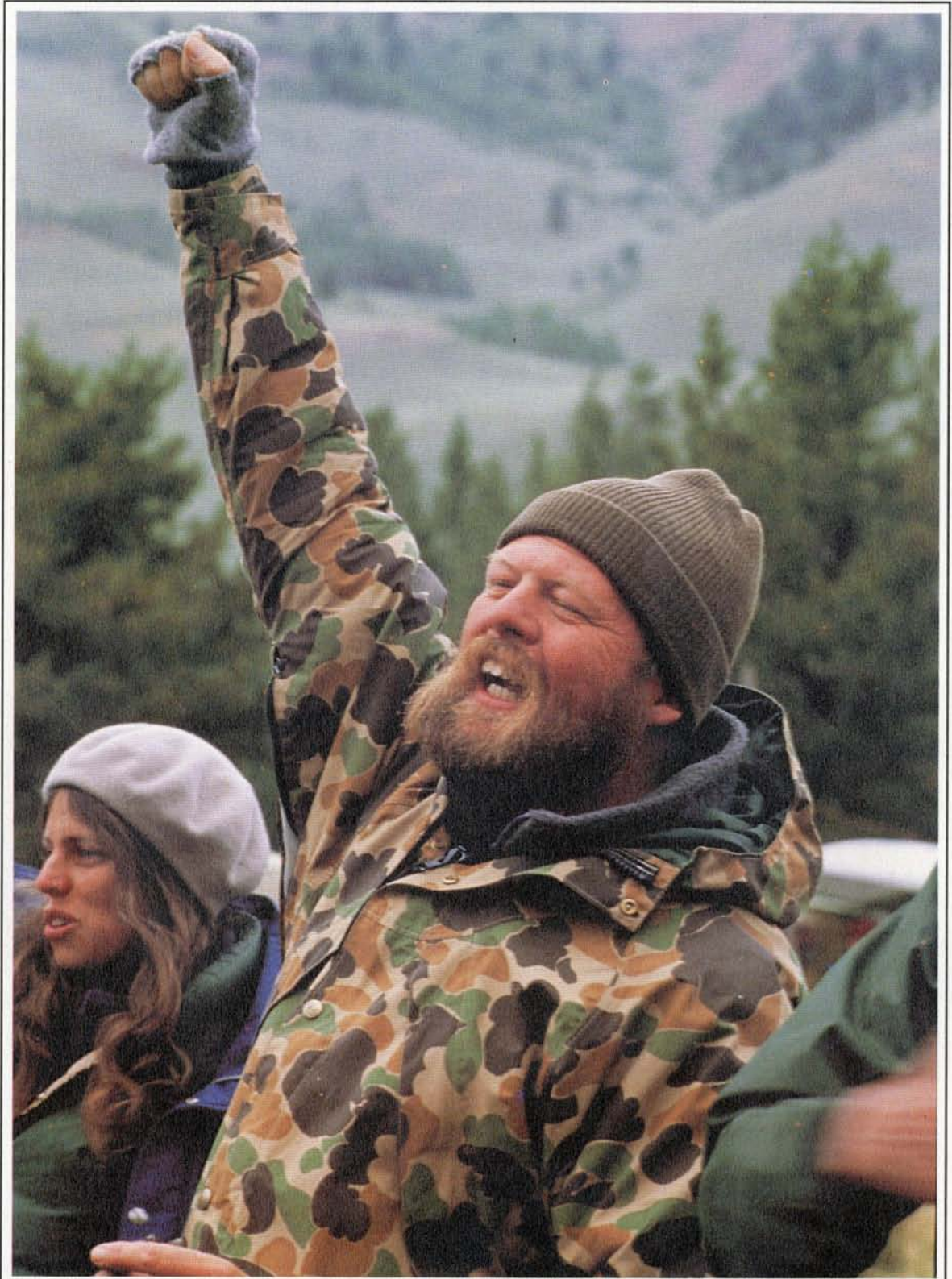


The Ecologist

Vol 21 No 6 November/December 1991

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The Ecologist

Vol. 21, No. 6, November/December 1991

Editorial

Quotas Against the Great Car Economy	234
<i>Simon Fairlie</i>	
FAO 'Sets the Record Straight'	236
Nicholas Hildyard Replies for <i>The Ecologist</i>	237

Feature Articles

Sustaining the Hunger Machine: A Critique of FAO's SARD Strategy	239
<i>Nicholas Hildyard</i>	
The UN Food and Agriculture Organization has recently announced an <i>Agenda for Action for Sustainable Agriculture and Rural Development</i> (SARD). Taken at face value, SARD represents a significant victory for many of FAO's critics. A close look behind the rhetoric of the new strategy, however, shows that FAO is using the language of sustainability to promote many of the same discredited policies as before.	

The Case Against Climate Aid	244
<i>Patrick McCully</i>	

A huge increase in international aid is seen by many as an essential element of any effort to deal with global warming. However, the history of aid and technology transfer is one of discredited economic theories, corruption and failure. There is no reason why climate aid should be any different. Emphasising the cost of dealing with global warming obscures the fact that the solutions are political not financial.

Environment and Development: The Story of a Dangerous Liaison	252
<i>Wolfgang Sachs</i>	

Governments and institutions have managed to overcome the critics of the ecological and social costs of their activities by interpreting the problems as being due to poverty and inefficiency. These, in turn, are seen as a result of the insufficient application of development policies. Development is thus transformed from destroyer to redeemer.

The Religion and Politics of Earth First!	258
<i>Bron Taylor</i>	

Underpinning the ethics and actions of the radical US environmental group Earth First! are fundamentally religious sentiments. The recent schism in the movement has less to do with disagreements about biocentric beliefs and more with judgements about strategy and tactics.

Books	267
Letters	271

Cover photo: Dave Foreman at Idaho Earth First! gathering in 1986 (David Cross/Impact Visuals). *The Ecologist* is printed on recycled paper whitened with hydrogen peroxide.

Quotas Against the Great Car Economy

"We are not going to do away with the great car economy"

Margaret Thatcher, 1990.

Mrs Thatcher's words are memorable, and will doubtless find their way into future dictionaries of quotations. Whether or not we agree with her sentiments, there is no denying that her pithy characterization of modern society is apt. We could not talk with such conviction of the "great fridge economy", the "great television economy", nor even of the "great Coca Cola economy". If any one commodity is central to our way of life, it is the motor car.

Since Mrs Thatcher's demise, the Conservative party has been publicly less gung-ho about "the great car economy". But it continues to stand by the Department of Transport's forecast that road traffic will increase in Britain by between 83 and 142 per cent by the year 2025; and it retains its touching faith in the ability of technology and market forces to lessen the ecological impact of road transport, with only a minimum of fiscal prodding.

According to the Department of Trade and Industry, road transport accounts for 18 per cent of Britain's CO₂ emissions. Moreover, cars and lorries need to be built, maintained and provided with tarmac; a significant proportion of emissions from manufacturing industries, oil refineries and electricity production should therefore also be attributed to the motor industry.

The car also imposes many other costs upon society, in the form of chemical pollution, roadbuilding, accidents, policing and so on. So pervasive has been its influence that there is hardly a sector of society that has not been burdened with problems and rising costs. Whatever our special concern — be it the preservation of old buildings or the protection of natural habitats, the safety of children or the control of rioting joyriders, the mobility of the blind or the prevention of obesity — close to the heart of the problem we are likely to find the motor car.

John Whitelegg of Lancaster University estimates that motorists pay only 27 per cent of the more obvious costs they inflict upon the nation, and that they are subsidized to the tune of more than £20 billion annually, (about £1000 per car). To represent their true cost, he calculates there would have to be a fivefold increase in fuel tax, plus additional taxation upon roads, car parks and related developments.

Cruising on Overbuilt Roads

Of the British political parties, only the Liberal Democrats and the Greens advocate significant additional petrol taxation, and of these only the Liberal Democrats have volunteered any figures. They envisage an annual increase of 4.3 per cent per year in fuel prices, so that in 2005 the real price of petrol would be 87 per cent more than it is today. This would be part of their target of a 30 per cent reduction in the UK's carbon emissions by 2005. The proceeds of the tax would be ploughed back into the economy through "environmental subsidies, higher social security payments, investment in public transport infrastructure, reduction in other taxes such as VAT and so on."

Promising though these proposals may be, there is little doubt that they fall short of the measures ultimately needed to reduce atmospheric carbon. A reduction of more than 60 per cent in global emissions is necessary to stabilize the concentration of

carbon in the atmosphere: the reduction required from the car economies of the industrialized world will be far greater.

Let us then imagine a rigorous level of taxation: one geared to reducing drastically Britain's emissions of CO₂ and other pollutants; and to reflecting properly the costs that the car economy imposes upon society. For the sake of argument, let us assume measures that would reduce car traffic in Britain by 60 per cent, putting us back to the dark days of 1965. And suppose also that the revenue from this taxation was reinjected into the economy via measures such as public transport subsidies and VAT reduction. What might we expect?

Clearly, increases in petrol prices would hit rich and poor alike with the same impartial force; the financially strong might wince a little, the weak would be out for the count. A proportion of middle-income motorists, helped by tax breaks elsewhere in the economy, would opt to keep their cars. But the poorest would have to sell theirs; leaving the well off to cruise around on an overbuilt road system. Car density would be the same as in the mid-sixties; but improved car performance and a half-empty road system would accentuate the gulf between the haves and the have-nots.

A Two-Tier Society

It might be argued that the vast amount of money gathered from petrol taxation could pay for a public transport network so perfect that nobody would object to being without a car. But this is to indulge a misapprehension that has consistently dogged much of the discussion of this issue: namely, that private cars are simply another form of personal transport.

Consider the benefits of owning a car — I list them at length because environmentalists and social engineers tend to forget them: you do not have to change at stations; you can stop when you like; if you forget something you can go back and get it; you can put a fishtank in the boot, a wardrobe on the roof-rack, and tow a pleasure boat behind; you can lock your belongings up and leave them safely; you can lock yourself in and other people out; you can snooze, fart, sing or swear in privacy; you can make love on the back seat; you can live in it; you can smoke, or play your favourite tape; you can make as much, or as little mess as you like; you can decorate it with bumper stickers and go-faster stripes; you can personalize your number-plate; you can wash it every weekend, and respray it every year, spend hours tinkering with the engine, tuning it to perfection; you can pounce from 0 to 60 in 6 seconds; you can exult in the mastery of power, as your machine ploughs remorselessly through the night.

In short, a car is a mobile locker and private palace, a servant and a lover, an alter-ego and a way of life. No public transport system, however lavishly subsidized, however extravagant its Club Class facilities, can provide anything remotely like it.

Any realistically stringent level of petrol tax will, in the name of the environment, restrict to an élite, and deny to a majority, a way of life that we have grown up to believe is everybody's birthright. It will create a two-tier society by crushing the dreams and the identity of the less privileged, engendering jealousy, envy, resentment . . . and a massive increase in car theft. This is emphatically not the way to protect our planet.

Transferable Petrol Quotas

The motor industry is a threat to our existence because we are running out of atmosphere to absorb CO₂ and other pollutants; and less urgently, running out of raw materials for cars, and space for roads.

The traditional response, when an industry runs out of resources, is not to tax these resources, but to issue quotas. When herring stocks run low, we do not tax herring: we give out herring quotas. When the market for dairy products declines, we do not tax milk production: farmers are given milk quotas.

Since very few of us wish to fish for herring or raise dairy cattle, the dispensing of such quotas has been a relatively small-scale, straightforward affair. On the other hand, the majority of us want or need to use cars, and all of us breathe. If we were to issue quotas of "atmosphere", which would mean the right to pollute it, or in this context petrol, these quotas would have to be allocated equally to every citizen, or alternatively to everyone old enough to hold a driving license.

Suppose that the British government decided that it could safely and sustainably allow nine billion litres (two billion gallons) of petrol to be combusted by private vehicles throughout one year — about one-third of today's level. That would be about 200 litres (44 gallons) for each adult, who would receive her or his quota for that amount of petrol for the year. This could be issued as coupons to be handed in at the petrol station; but it would more likely be in the form of a plastic computerized Quota Card (or KwotaKard?), obtainable from the central Vehicle Licensing Centre. This would be inserted, like a phonecard, into a slot in the petrol pump.

To anyone over the age of 40, the word coupon will recall "rationing". Yet there is one difference: a petrol quota, like herring and milk quotas, is legally transferable. You can sell it — all of it, or part of it — or if you prefer you can buy someone else's. It is a commodity obeying all those laws of supply and demand, so beloved by free market economists. There should be no objection to this. It is quite appropriate that citizens who refrain from polluting their share of the environment should benefit from their modest lifestyle. We cannot give everybody a car, but we can give everyone a stake in an automobile society.

Within such a scheme we could identify three different kinds of consumer. At one end of the scale, motorists who insisted on driving their own car whenever they liked would have to pay very dearly for the privilege, by acquiring other people's quotas, as well as paying the market price for petrol. They would be buying the right to indulge in all the perks that go with full ownership: personal locker space, freight potential, privacy, ego-boost, etc.

In the middle would lie those drivers who consumed more or less than their quota of petrol. They would be paying only the market price of the petrol, up to the point that they decided to buy a few extra litres of "quota". If the number of miles they covered did not justify the expense of owning a vehicle, they might enter into a car sharing scheme; or they might hire a vehicle, once a week for the shopping, twice a year for family holidays.

At the other end of the scale we would find those who chose not to drive at all, particularly the elderly, poorer people and those living in inner cities. They would be rewarded for their forbearance with a fat dividend for the sale of their quota.

The price of the quotas would fluctuate according to supply and demand, in the same way as any other commodity. We may imagine a flourishing new sector of the business economy, bristling with flashy brokers and dealers, busy buying up quotas in anticipation of a summer rush, trying to unload surplus stock in December, checking the Futures Index in the *Financial Times*.

A major influence on the price would be the state of public transport. A cheap well-run public network would tend to lower demand for quotas, and reduce their price. An inefficient system

would increase demand and push the price up. The value of quotas would thus be a partial indicator of the state of public transport: and the threat of inflation would be an incentive for any government to ensure a decent public service.

We may also envisage the revival of an infrastructure of services that would accommodate the non-car owner. Shops, schools, hospitals and places of work would once again be sited close to residential communities; and regular deliveries of basic commodities such as groceries, bread and meat would be revived. For this reason it would not be necessary to allocate additional quotas to those who lived in isolated rural areas. The motor car, by opening up the countryside to second home owners and urban commuters, and by centralizing services in large country towns, has contributed more than any other factor to the breakdown of village life.

Finally, there is one other advantage to a quota system. With a petrol tax, no government can reliably predict how the public will react, how much petrol will in fact be consumed. Rather than driving less, motorists might choose to cut down on other less environmentally damaging forms of conspicuous consumption. With a quota the government does not need to predict the amount — it stipulates it.

The above is not presented as a confident blueprint for the future; it is merely the sketchiest of models, designed to provoke planners to think in other directions. There are inevitably problems that cannot be tackled here: to what extent, and how, should one distinguish between commercial and private use? How to prevent fraud without infringing upon civil liberties?

Yet it is not that hard to organize a quota system to keep consumption beneath an externally imposed limit. It was done in Britain during and immediately after World War II; and we did not even have computers.

A Short Term Repairing Lease

A quota system is intriguing because it tips its cap to the current enthusiasm for market forces, and yet its net effect is to transfer money from the rich, directly into the hands of the underprivileged. We have come to expect market systems to be more efficient; we do not often expect them to be more just. It should, in theory, appeal to conservative and socialist alike.

The explanation for this benign paradox lies in the fact that there can be no accumulation of capital. Whereas conventional free market economies have consistently led to the monopolization of common resources — land, buildings, mineral rights etc — in our quota system this is impossible. The commodity being traded is not a resource (atmosphere), but a short term lease upon that resource. Non-drivers rent out their allocation of atmosphere for others to pollute to an accepted level; at the end of the year they get it back — it is inalienable.

It is illuminating to extend the principle of leasing into other areas. Already the British Green Party, with its Community Ground Rent scheme, is working towards a system where land is not owned, but can only be rented from the common pool.

Such projections are not within the scope of this article. But we would do well to remember that the Earth and its four elements — atmosphere, energy, oceans, land — belong to all of us, to our children, to no one. They are our "Common Inheritance". Margaret Thatcher once remarked that "we have a short term repairing lease upon the Earth". We should devise solutions that properly reflect this self-evident truth.

Simon Fairlie

Simon Fairlie is a freelance writer and stonemason.

FAO "Sets the Record Straight"

The following text is the summary of a 20-page document received from FAO in September. It is a revised version of a reply dated 12 April, entitled "The Disinformation Campaign of The Ecologist".

“ In its March/April 1991 issue, *The Ecologist* launched a campaign against the UN Food and Agriculture Organization (FAO). A 3,000-word editorial in the form of an Open Letter to FAO's Director-General and some of the accompanying articles on the Organization distort FAO's roles, policies and programmes.

Journals like *The Ecologist* can play a useful role by criticizing the work of publicly funded bodies such as FAO and taking issue with the general international consensus on how agricultural development should be tackled. In a complex field like this no one has all the answers. Informed and constructive suggestions on how to improve FAO's performance are always welcome. However, *The Ecologist's* special issue attacking FAO, tall on fantasy and short on facts, goes well beyond the limits of responsible journalism.

To hold FAO responsible for all the problems facing world agriculture, fisheries and forestry, for rural poverty, hunger and environmental degradation, is like blaming a doctor for illness, a pacifist for war and an ecologist for environmental degradation.

FAO assists its member nations, particularly those from the Third World, in their agricultural and rural development, but it is not a Global Ministry of Agriculture, Fisheries and Forestry with the power to set policies and programmes. *The Ecologist* asserts repeatedly that the Director-General of FAO "imposes" policies. This is incorrect. FAO's policies and programmes are decided by its members, all of which are sovereign states. FAO's role is to act as a catalyst by providing advice and guidelines on policy, to serve as a neutral forum for global accords and to offer the technical assistance that member countries need to implement their food, agricultural and rural development policies.

FAO is not a donor agency. What monetary assistance it does give is only a minute portion of the total flowing to developing countries. All multilateral assistance, including what the World Bank provides, amounts to 6 to 8 per cent of official development assistance, the bulk of which is bilateral, government-to-government. And this, in turn, is far less than what developing countries themselves spend on development programmes.

In personalizing its attack on the FAO Director-General, *The Ecologist* distorts his views, holding him responsible for policies and programmes that are set by member-nations themselves. By calling on governments to withhold payments to FAO, the magazine is, in effect, asking them to punish themselves for not agreeing with *The Ecologist*.

The editorial lists policies that, it states, FAO does not pursue. A rudimentary knowledge of the Organization's policies would show that FAO most often espouses what the editorial says it should. FAO's long-term strategy aims to meet four basic challenges: encouraging economic growth with equity; alleviating poverty and ensuring food security;

developing human resources and institutions, and achieving sustainable development that protects rather than plunders the environment.

This paper is intended to set the record straight by summarizing and then outlining in some detail FAO's actions as opposed to some of the glaring false accusations by *The Ecologist*.

"The Corporate Stranglehold" — There is no instance in which "agrochemical corporations" and "farm machinery manufacturers" have succeeded in "pushing FAO" into policies favouring them. Rather than allowing these "powerful lobbies" to influence FAO policy, as *The Ecologist* asserts, the Director-General with the agreement of the Member States discontinued FAO's Industry Cooperative Programme in order to ensure this did not happen.

Fertilizers — FAO promotes integrated plant nutrition systems that are ecologically, economically and socially viable. Where mineral fertilizers are essential to maintain soil fertility, they are part of a system that also makes efficient use of all organic sources of plant nutrients that are available locally.

Pesticides — FAO favours the use of integrated pest management, which utilizes all suitable means of control in a compatible manner. For instance, the rice programme in Southeast Asia, involving more than 500,000 farmers, greatly reduces the need for pesticides by using natural biological control. It was FAO that established the now widely accepted International Code of Conduct on the Distribution and Use of Pesticides.

Mechanization — FAO supports mechanization only where it is appropriate to physical and social conditions. At the same time, it promotes local production of hand tools and animal draught equipment and helps train blacksmiths and farmers to use and maintain them.

Crops — FAO does not encourage monocultures and export crops at the expense of food crops. The Organization helps Third World countries to diversify crops. No more than 15 per cent of its agricultural projects involve cash crops. These are recommended where they would bring the farmer significantly more income than would food and so promote household food security through self-reliance rather than self-sufficiency.

The food crop projects in which FAO has generated investment outnumber those for cash crops by a ratio of six to one. FAO is active in promoting such local food crops as cassava, yams, sweet potatoes and plantains and has pioneered the technique of making "wheatless bread" from local crops to reduce Third World dependency on imported wheat.

But FAO does not share *The Ecologist's* view that devel-

oping countries, many of which still depend on agricultural commodities to generate foreign exchange earnings, should stop all production for export.

Trade — FAO has consistently assailed artificial barriers and unfair practices that restrict the access of Third World agricultural products to trade. It provides advice to developing countries to strengthen their trade positions.

The Small Farmer — FAO has not abandoned small farmers. Most of the Organization's programmes are designed to help smaller farmers, especially the poor and women, and FAO acts as their champion in the international arena.

It was the World Conference on Agrarian Reform and Rural Development, convened by FAO in 1979, that adopted the historic "Peasants' Charter", endorsing the concept of equity in the development process. In 1987, the Organization mounted a year-long campaign in some 150 nations to highlight the importance of small farmers and to lobby for improved land ownership, credit, education, inputs and income.

Land Reform — FAO supports land reform and opposes policies that permit the concentration of land ownership in a few hands while increasing the numbers of the landless poor. The Organization has sent high-level policy missions to 24

countries to advise governments on the issues of agrarian reform, rural development and the alleviation of poverty.

Food Security — Food security is the Director-General's overriding concern. Mr Saouma proposed the introduction of a Plan of Action for World Food Security which was adopted by FAO Governing Bodies and then broadened to bring in the elements that *The Ecologist* erroneously claims are missing. The plan moves beyond promoting food production to exploring the conditions for providing a stable supply of food "to ensure that all people at all times have both the physical and economic access to the basic food they need." A World Food Security Compact adopted in 1985 embodies a moral commitment by governments, organizations and individuals to world food security.

The Need for Changes — FAO is constantly evolving to meet changing situations and requirements. *The Ecologist* fails to mention a comprehensive and independent two-year review of FAO's goals and operations completed in 1989 and reported to the FAO Conference. The review concluded that FAO is "sound, solid, innovative and dynamic." It added that "there was room for improvements in some aspects of FAO's work," and the Organization is now working to achieve these improvements."

The Ecologist Replies . . .

It is indicative of FAO's cavalier attitude to facts that it should have been forced to withdraw its initial reply to *The Ecologist's* 'Open Letter to Edouard Saouma' after an official from the Colombian government complained that the reply was misleading. In an attempt to rebut the charge that the Tropical Forestry Action Plan was responsible for furthering deforestation, FAO claimed that the handing over of a huge area of tropical forest in Colombia to Indian communities was undertaken under the auspices of TFAP. The Colombian official rightly pointed out that the initiative had nothing to do with TFAP and nothing to do with FAO.

That FAO made such a claim (ironically in a document that accused its critics of "waging a disinformation campaign") suggests either that it does not know the projects it is involved with or that it is prepared to doctor the record in order to portray itself in a more favourable light; or, indeed, a rich combination of the two. Like its earlier response (which it now claims was simply a "draft"), FAO's attempt to "set the record straight" reveals the top echelons of the organization to be self-serving, utterly devoid of any honest self-criticism and pervasively economical with the truth.

From the moment that it received *The Ecologist's* special issue, FAO has retreated behind a wall of half-truths and outright falsehoods in order to defend its reputation. Indeed, in stark contrast to the World Bank (which, for all its faults, has at least been candid enough to admit that many of its projects have been environmental and social failures), FAO has refused to concede that its policies are in any way deficient. Nowhere in its reply is there a glimmer of recognition that any

of the criticisms we raised might be well-founded, or even worthy of investigation. On the contrary, FAO's stance is entirely defensive, reinforcing the fears of many critics that the organization is now so inward-looking, so beset by a bunker mentality, that it is beyond hope of reform from within. In that respect, it is alarming that FAO's immediate response to *The Ecologist's* 'Open Letter' was to ban the issue from the FAO library — thus denying its staff the possibility of judging for themselves the validity of the criticisms we raised. Given that the Open Letter has now been signed by over 80 environment and development groups from around the world such censorship does little to inspire confidence in FAO's professed commitment to greater NGO participation in the formulation of its policies.

FAO's Power and Influence

FAO's first line of defence — that it is simply a servant of national governments and not a "Global Ministry of Agriculture, Fisheries and Forestry" — is misleading in the extreme. *The Ecologist* has nowhere blamed all the world's agricultural and related problems on FAO; we have consistently pointed out that the majority of these problems can be traced to the model of industrial development espoused by all the major agencies and the governments which fund them.

Whilst it is true that the implementation of policy is a matter for national governments, it would be wrong to infer from this that FAO does not have a major — and often decisive — say

in drawing up such policy. That power and influence, as *The Ecologist* special issue pointed out, derives not from the funds that FAO controls, which by the standards of the international development community are trifling, but rather from the role that FAO plays in providing technical advice and assistance. The bulk of the 320 forestry projects in which FAO is currently involved, for example, are funded by bilateral or multilateral sources, with FAO providing "technical assistance". Yet it is that technical assistance that effectively shapes the projects.

For FAO to shift the blame for the abject failure of its policies entirely onto the shoulders of governments is simply dishonest. The truth is that FAO's policies reflect the interests of governments — and vice versa. Indeed, it is this convergence of interests that lies at the root of the degradation and misery that FAO's projects have brought to the people of the Third World.

Hand-in-Glove Relationship With Industry

Equally misleading are its responses to specific points we raised. Whilst it is true that Edouard Saouma discontinued FAO's Industrial Cooperative Programme, under which representatives of the pesticide industry had offices within the FAO building, it is wrong to imply that this has put an end to corporate influence on FAO's policies. One has only to look at the composition of its committees to see the hand-in-glove relationship that FAO enjoys with the major industrial lobbies. Typical is the composition of the FAO/World Health Organization Codex Alimentarius Commission, a body whose objective is to "harmonize" international regulations concerning food safety. Its pesticide committee currently has 197 participants, of which 50 are from the agrochemical companies, 14 from food companies and only two from consumer organizations.

FAO's comments on fertilizers and pesticides are also mendacious. Although FAO has indeed had an Integrated Pest Management (IPM) Programme for the last 25 years, its impact has been minimal. Like other "special programmes" set up by FAO (its women's programme is another example), its very status as a "special programme" has led to it being ghettoized within the organization, thus reducing its importance to the mainstream. Indeed, FAO's claim that it only advocates the use of chemical inputs where "nature" (in its view) necessitates them, reveals a willingness to rewrite history that is worthy of George Orwell's 1984. Were we to accept such a claim, we would not only have to ignore the central role that FAO's policies played in hooking farmers onto the chemical treadmill through the Green Revolution (significantly not even mentioned in FAO's reply), but would also have to turn a blind eye to FAO's continuing espousal of intensification through increased chemical inputs as the "only option" open to Third World governments if they are to "raise production in line with needs" (see pp.241-242 *this issue*).

Increased Chemical Inputs

It is hard to reconcile such a strategy of further intensification — with or without elements of biological pest control — with FAO's mandate to "better the conditions of rural populations". As *The Ecologist* has amply documented, chemical intensification has already led to the concentration of food production in fewer and fewer hands, to the detriment of the rural

poor: yet FAO resolutely ignores this criticism of its policies. In that respect, the emphasis it now chooses to put on IPM is doubly deceptive, since it not only implies that FAO has taken up the cause of biological husbandry but also that it is espousing a less "top down" approach to pest control. In fact, the IPM programme is highly technocratic, aimed more at promoting the "efficient use" of pesticides rather than eliminating their use. As Winnin Pereira of the Maharashtra Centre for Holistic Studies points out:

"IPM uses biological pest control but does not exclude the use of synthetic pesticides. It requires formal scientists to identify pest types and quantify their damage. It needs the artificial multiplication of natural parasites and predators. And it has been designed for commercialization and control by 'experts' and big business."

FAO's claim that it "does not encourage monocultures and export crops at the expense of food crops" is so at odds with the recommendations of its own reports, let alone with the record of the Green Revolution, that one can only assume that the organization is suffering from collective amnesia. Even today, FAO specifically recommends that the best land in the Third World — what the organization terms "high potential areas" — should be used primarily for intensive chemical agriculture, with "maximum efficiency in the production process [being] sought by specialising in one crop or in one type of animal product" (see pp.241, *this issue*). It also states that the primary purpose of zoning such land for intensive monocultures "is to meet the needs of the urban and rural non-farming communities" and goes on to list a range of crops which it apparently deems appropriate for growing in such "specialised production systems". These include coffee, tea, cocoa, oil palm, rubber and fibres — all of which are major export crops, many of which are non-food crops and few of which are likely to be consumed by the urban poor in the Third World.

Enemy of the Small Farmer

Likewise, the claim that FAO acts as the small farmers' "champion in the international arena" is cynical in the extreme. Despite regular pronouncements on the need for land reform, FAO has consistently pushed policies — from the further intensification of agriculture to the promotion of industrial fisheries and the logging of tropical forests — that actively contribute to the problems of landlessness and rural impoverishment. In that respect, FAO's "Peasants' Charter" is not worth the paper it is written on — and it will remain a worthless scrap of paper until FAO adopts policies that place the security of peasant livelihoods above the security of Third World governments and corporate interests. This it has refused to do. Indeed, were FAO sincere in its self-appointed role of "champion" of the rural poor, it would, at a minimum, have opened up its own organization to scrutiny by those groups that genuinely represent the interests of rural producers, the poor and the landless. Yet such groups are excluded from FAO's policy-making process.

FAO accuses *The Ecologist* of making a case that "is tall on fantasy and short on facts". Would that this were so.

Nicholas Hildyard

Sustaining the Hunger Machine: A Critique of FAO's Sustainable Agriculture and Rural Development Strategy

by
Nicholas Hildyard

FAO's recent adoption of SARD — Sustainable Agriculture and Rural Development — seeks to answer many of the concerns of the organization's critics. But despite the rhetoric of "participation", "greater recourse to biological processes" and "combating environmental degradation", the strategy recommended by SARD differs little from past policies. The agenda remains one of intensification through increased chemical inputs, albeit with an emphasis on efficient use. More disturbingly, FAO now advocates that the best land in the Third World be "zoned" for the intensive production of cash crops. Meanwhile in marginal lands peasants are to be "encouraged" to "transmigrate".

Throughout history, local cultures have resisted the appropriation, be it by outsiders or local élites, of the forests, rangelands, fields, fishing grounds, lakes, rivers, streams, plants and animals that they rely upon to maintain their ways of life and ensure their wellbeing. In the modern era, such resistance has become commonplace as local people have fought successive attempts — first by colonial regimes and then by their "own" post-independence governments, acting in consort with commercial interests and international development agencies — to transform their homelands and themselves into "resources" for the global economy, an economy over which they have no control and in which both they and their environment are counted as expendable. Timber operations have been sabotaged, logging roads blockaded, dams delayed, commercial plantations uprooted, crops burned and rallies held in an endless effort to keep outside forces at bay.¹

At best, the major actors in the development industry — governments, aid agencies, companies and the like — have viewed such resistance to development programmes as a failure on the part of the authorities to involve local people actively enough in "project planning and implementation", the assumption being that opposition does not stem from objections to development programmes *per se*, but simply to the manner in which they are implemented. The contrary view — that in opposing projects, local people are voicing different priorities, different views of how they want to run their lives, and a different vision of the future — is one that is distinctly unwelcome, not least because it implies that by its very nature the development lobby creates more problems and conflicts than it can solve.

Developers thus cast about for a vocabulary that enables them to approximate the language of opposition in an attempt to defuse the demands that lie behind this language.

Beguiling Rhetoric . . .

FAO's recently announced *Agenda for Action for Sustainable Agriculture and Rural Development* (SARD)² is firmly rooted in this tradition. Drawn up as part of FAO's effort to insert its policies into Agenda 21, the "action plan" being prepared for the forthcoming "Earth Summit" in Rio de Janeiro in 1992, SARD was launched officially in April 1991, at a conference jointly held by FAO and the Dutch Government at 's-Hertogenbosch in the Netherlands. The conference culminated in the *Den Bosch Declaration and Agenda for Action*, described by FAO as a "consensus" representing "the best collective judgement" of "governments, intergovernmental institutions and NGOs". The concept of SARD has since been endorsed by the World Bank, UNESCO, UNEP and IFAD and is currently being "formulated into a global strategy" for the Rio conference.³

Taken at face value, the *Den Bosch Declaration* and the five sets of background documents that provide its rationale signal a significant shift in policy. Banished from the documents are phrases that might suggest the gung-ho promotion of western technology and the market as panaceas for rural impoverishment.⁴ Banished is the uncritical promotion of pesticides and fertilizers that has pervaded past FAO policy statements.⁵ Banished are the diatribes against "subsistence agriculture" which characterized FAO policy documents in the 1970s and 1980s.⁶ And banished is the overt espousal of policies that suggest a "top-down" approach to agricultural development.⁷

Instead, FAO adopts some of the language of its critics and repeatedly calls for a "holistic approach" to agriculture, for "greater recourse to biological processes"⁸ and, above all, for a policy that involves local people.⁹ Typical of the new tone are passages in which SARD calls upon governments to ensure:

- "The active involvement and participation of rural people

through their organizations, such as co-operatives and informal groups in the research and development of integrated farm management systems compatible with maintaining the essential biological processes”:

- “Decentralization by devolving more decision-making authority and responsibility down to the local level, by providing incentives and resources for initiatives by local communities, by enhancing their management capacity, including that of women, rather than relying on ‘top-down’ administrative mechanisms”; and,
- “The [allocation of] clear and fair legal rights and obligations with regard to the use of land and other natural resources, including land reforms where necessary.”¹⁰



Third World Network Features

Penan tribespeople in Sarawak blockading a logging road on their lands. Large-scale logging in Sarawak started after an FAO field mission to the province in 1970 recommended a huge increase in its timber exports. In SARD, FAO calls for the active involvement and participation of local people in development decisions but it is silent on how this participation can be achieved or on how to counter the vested interests of logging companies and states.

... And Shattering Reality

Were SARD truly committed to a “bottom up” development policy, however, it would surely have begun by taking seriously the demands of popular movements, and then proceeded to set out how it could best help implement them. Instead, it either ignores those demands or distorts them, with the result that the policies it advocates run directly contrary to those being articulated at the grassroots:

- Whereas SARD couples its recommendations for greater public “participation” in agricultural development projects with the proviso that “local leaders” should receive “training” so that “they can effectively address the issues in the new and more difficult circumstances of the late 20th century”,¹¹ local people see no need to be educated in the task of running their own affairs. In demanding a decisive say in the decisions that affect their lives, they are not seeking to have their communal organizations incorporated into the state, or to act as the lowest tier of local government. They are seeking to translate their own ability to decide what they want into action. As one farmer in Zimbabwe has put it: “We don’t call ourselves groups but rather *amalima*, which means meeting together for working and helping ourselves . . . We know what we want. We did not come into being as beggars: we have something to contribute to development ourselves.”¹²
- Whereas SARD sees land reform and the allocation of rights over resources as primarily the allocation of rights of *access to* and *use of* land and other resources, local movements are demanding the outright *control* of such resources.¹³ The distinction is critical. Under SARD, a land reform programme which consisted only of providing

peasants with tenancies on land owned by large companies, in effect using “land reform” to provide labour for national and transnational corporations, would be an acceptable (even desirable) “solution” to the problem of landlessness. By contrast, a land reform programme based on giving communities title to land would require, at a minimum, breaking up large estates. To recognize in addition their right to control local water resources, forests, fishing grounds and the plants and animals therein would present a direct challenge to the status quo.

- Whereas SARD recommends that local people should be encouraged to market more of their produce, local movements — particularly women’s groups — are increasingly taking action to move out of the cash crop economy, giving priority instead to growing food crops and selling only what is surplus to their requirements. In India, “Peasant women know the nutritional needs of their families and nutritive content of the crops they grow . . . That is why women in Garhwal continue to cultivate *mandua* and women in Karnataka cultivate *ragi* in spite of all attempts by state policy to shift to cash crops and commercial foodgrains, to which all financial incentives of agricultural ‘development’ are tied.”¹⁴

Best Land for Cash Crops

Indeed, it quickly becomes apparent that, despite the rhetoric of “building upon” traditional systems, of “participation”, and of “the clear allocation of rights to resources”, SARD’s true priorities lie in a very different direction.

Thus, SARD’s starting point is identical to that of FAO’s

previous policy statement *Agriculture: Toward 2000*, namely, that the central aim of future agricultural policy should be both to increase output and to increase rural incomes, food shortages being viewed as the result of low incomes rather than the denial of access to the means to produce food. But whilst *Toward 2000* justifies this primarily on the grounds of the need to transform agriculture into a "dynamic, productive sector", SARD adds the language of sustainability. Intensification thus becomes the means to "protect" the environment, to "enable" land reform, to "secure" biodiversity and to "relieve" rural poverty. Or, as SARD puts it:

"Intensification appears as the only option for raising production in line with needs . . . Most developing countries will have to intensify their agriculture to meet future demands, to avoid encroachment of agriculture on areas which should be protected or used otherwise, and to relieve production pressures on fragile marginal arable lands and grazing lands."¹⁵

In that context, "participation" is only relevant to the SARD strategies in so far as it promotes intensification: environmental degradation only in so far as it helps to justify it. Thus, in order to "protect" the environment and move agriculture towards "sustainability", SARD recommends that national governments should take rapid steps to "zone" agricultural lands, rangelands and forests. Predictably, the focus is on boosting aggregate production rather than ensuring peasant control and security.

Under this zoning policy, "high potential areas" would be set aside for intensive monocultures or livestock rearing.¹⁶ Because such "intensive systems export large quantities of nutrients"¹⁷ and because "waste recycling possibilities are limited" (in effect, the crops will not be consumed locally and their biomass cannot therefore be returned to the land), "reliance on external inputs" to compensate for the lost biomass is recognized to be inevitable.¹⁸ As a consequence, "such systems must generate sufficient income to meet the cost of environmental protection"¹⁹ — in other words, they must grow cash crops, in all likelihood for export.

In effect, SARD is not only recommending that the best land in the Third World be degraded in the pursuit of "sustainable agriculture" but also, by equating "sustainability" with "intensification", it is seeking to institutionalize as "environmentally desirable" the very patterns of land use that have forced peasants onto more and more marginal lands and denied them access to food (See *The Ecologist*, 'FAO: Promoting World Hunger', Special Issue, Vol. 21, No. 2, 1991).

SARD's recommended policy for less fertile lands is no less undesirable. Such lands, it states, should be subject to a policy of "intensification through diversification", whereby "maximum efficiency in the use of natural resources is sought through mixed cropping, associated with livestock and trees." But here too, SARD recommends that "higher inputs of energy, fertilizers, better seeds, water and other inputs, and particularly increased knowledge" must be "selectively applied to areas with low-input agriculture" in order to increase production.²⁰ To achieve those ends, SARD argues for "increased investments that are matched by improved marketing facilities."²¹ No consideration is given to who will control these marketing facilities and no mention is made of the social consequences — particularly in terms of increasing poverty — of drawing peasants further into the market.

Only in those areas where "natural resource limitations", or "environmental or socioeconomic constraints" preclude inten-

sification does SARD recommend that farmers be allowed to grow their own food for their own use. Even then, it adds the caveat that "In many cases, achieving food security through local self-sufficiency may not be environmentally and/or economically sustainable. It may have high opportunity costs and lead to subsidizing crops on land which is only marginally suitable, foregoing the benefit of producing suitable crops and products that could be traded favourably for food."²²

Transmigration

Coupled to this "zoning policy" is the recommendation that governments should "evaluate the carrying and population supporting capacity of major agricultural areas", and, where such areas are deemed to be "overpopulated", take steps to change the "man/land ratio" by "facilitating the accommodation of migrating populations in better-endowed areas".²³ Elsewhere, SARD is more candid, specifically recommending "transmigration" programmes.²⁴

Peasants who have been forced onto marginal lands as a result of "high potential areas" being taken over for intensive export-orientated agriculture will thus be liable to resettlement at the whim of any government that deems them a threat to the environment. Since FAO itself admits that there are few "better endowed areas" that can be opened up for agriculture, the majority of the new transmigrants will have no option but to move to the slums of the large cities or to clear land in forests. Many of the displaced are likely to wind up as labourers or "tied-producers" growing cash crops under contract to large corporations — a trend that the corporations have already set in train, since it effectively places the risks of production onto the shoulders of their peasant "contractees". Predictably perhaps, SARD does not even consider the possibility that ecological stress in marginal areas would be better relieved by reclaiming "high potential areas" for peasant agriculture.

Two Track Agriculture

The combined effects of SARD's twin policies of zoning and transmigration are likely to be devastating. Quite apart from the social impact of resettlement, SARD will effectively set in stone the ruinous "two track" system of agriculture — with intensive farming on the best land and peasants eking out a living in marginal areas — that has brought environmental degradation and impoverishment to millions in the Third World. Although SARD insists that its policy will promote "a myriad of production units operating in very diverse natural and socioeconomic environments",²⁵ it neglects to mention that those "myriad production units" are unequal and that where they find themselves in competition with each other, the dominant intensive systems will win out — not because they are more efficient, nor because they are better for the environment, but because they have the backing of power and money. Just as the best land is appropriated for commercial monocultures, so other resources, when allocated through the market, flow towards those with the greatest economic and political clout. If the villages of Maharashtra lack water for their own dryland agriculture, for example, it is not because their water consumption is high but because local water resources have been diverted for sugarcane production.²⁶

Indeed, to expect intensive chemical systems to be able to co-

exist alongside traditional "low input" agriculture is to ignore reality. Eventually, the bulk of the traditional farmers will be forced out of production, simply because they cannot afford the inputs upon which they rely — water and seeds, for example — and which were previously free to them. Only the more powerful farmers — those who have managed to work the system — will remain in business. It is a story that has been repeated in country after country, in the Third World and the First, yet FAO seems oblivious to its implications.

The ecological impact of SARD is also likely to be severe. SARD estimates that African countries will need to quadruple fertilizer use and Asian and Latin American countries to double it. The use of "plant protection chemicals" under the SARD programme — even allowing for the "more efficient use" of pesticides through the introduction of integrated pest management programmes — is predicted to rise by 50-60 per cent in the next ten years alone.²⁷ Although NGOs attending the 's-Hertogenbosch meeting persuaded FAO to recommend that pesticide use should not be increased, it is dubious that this could be achieved if SARD is implemented as proposed. Indeed, to claim that SARD will "protect" the environment, let alone promote rural development, plunges the depths of cynicism.

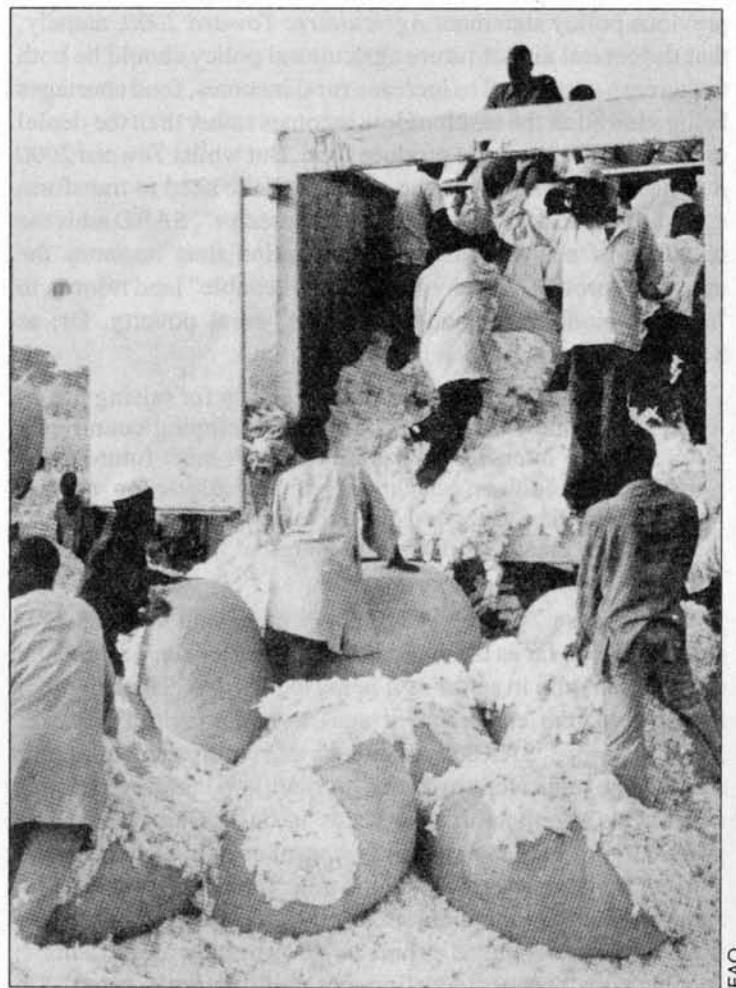
Dubious Assumptions

Following the common line of the major players in the development industry, SARD justifies its policies for further intensification on the grounds that traditional "low external input technologies" are no longer able to meet the food and other needs of farm households", due principally to population pressure.²⁸ In support of that view, it quotes data that purport to "indicate that in all regions except Asia, the long-term agricultural production growth rate has lagged behind demand."²⁹ Yet, as Philip Raikes points out, such data (long cited by FAO in favour of further intensification) are misleading:

"There is simply no way of getting accurate estimates for either area cultivated or yield [and] there exists no basis for estimating production, except what is marketed . . . Where marketing is not state controlled, primary purchasing tends to be dominated by small to medium operators . . . few of whom are likely to make a voluntary gift of tax to the government by declaring their levels of sales. Even where marketing is officially monopolized by a state agency, this will seldom handle more than a minority of total produce."³⁰

Official production figures thus tend to underestimate the amount produced, a bias which is reinforced by the increasing tendency for many peasants to sell their produce on the black market or to consume it themselves.³¹ An honest interpretation of the figures would simply admit that the proportion of food marketed via official channels is declining. FAO and others, however, have preferred to interpret this trend as a decline in production. There are a number of reasons for this:

"Firstly, it is a simpler thesis and fits well with the assumption held by many officials and experts that peasant conservatism and resistance to innovation are the real roots of the problem. Secondly, to admit that produce is being diverted onto the black market is an indication of the ineffectiveness of government policy . . . But most importantly, it points to conclusions which most policy-makers would like to draw in the first place: that more food needs to be imported and that rapid technical change is needed to increase aggregate production."³²



Cotton being packed for export. While recognizing that an export-led agricultural policy "may be in contradiction with the objectives of sustainability", SARD nonetheless calls for the best land in the Third World to be used for the production of cash crops. These would most likely go for export.

When quoted in conjunction with estimated projections for population increase (which, for all we know, may also be inaccurate), SARD's figures on declining production make a case for intensification which many may find persuasive. But analyze those figures on a country by country basis and the "crisis" may be of a different order and complexity to that which SARD seeks to suggest. In the mid-1980s, for example, FAO's figures appeared to show that per capita grain availability in Kenya had fallen by between two-thirds and three-quarters over the previous decade at a time when population was estimated to be increasing at four per cent per year. In fact, a close look at the relevant *FAO Production Yearbooks* shows that the apparent decrease in grain output was due to comparing a mid-1980s' figure for the area under cereals with an earlier 1970s' figure which had grossly overestimated the relevant acreage, putting it at 10 per cent more than the total area of arable land.³³

Moreover, even if the figures were reliable, further intensification in the absence of deep structural changes to the national and international economy would not enable even current populations to be fed. Quite apart from the ecological damage that intensification (as promoted by SARD) would cause, the problem is not simply one of inadequate output but rather of the denial of access to food and the means to produce it: people are starving and malnourished because the production and distribution of food has become concentrated in fewer and fewer hands,

primarily as a consequence of the very process of intensification that SARD seeks to extend.

Similarly, SARD's attempts to blame environmental degradation (for example through shortened fallow periods) on overpopulation grossly oversimplify a much more complex problem. In particular, SARD studiously ignores both the role of past agricultural policies in creating localized population pressure — for example where peasants have been squeezed onto marginal lands or, conversely, where encroachment has denied communities access to their traditional lands — and the connection between such ecological stress and increased consumption, both in the North and by Southern élites. Similarly, no consideration is given to how fallow periods are reduced as a result of the lack of labour in many rural areas, due to out-migration. Yet in Africa, there are many areas where "a more intensive cutting of trees and a shortening of the fallow periods have occurred as households adapt to the lack of farm labour in the absence of men."³⁴ In this instance, it is difficult to blame the problem on "overpopulation": if anything, it results from local depopulation.

Raising such issues should not be taken to imply that population is not an issue. It is — particularly in those Northern countries whose consumption patterns place such an intolerable stress on the resources of the South. Using "population growth" as a justification for intensifying agriculture, however, is intentionally to divert attention from the deeper structural forces that are denying people food and creating famine, poverty and

human misery on an unprecedented scale. Indeed, within the context of increased population growth, SARD's policy of taking over the best land for export crop production — rather than feeding local people — is a recipe for disaster.

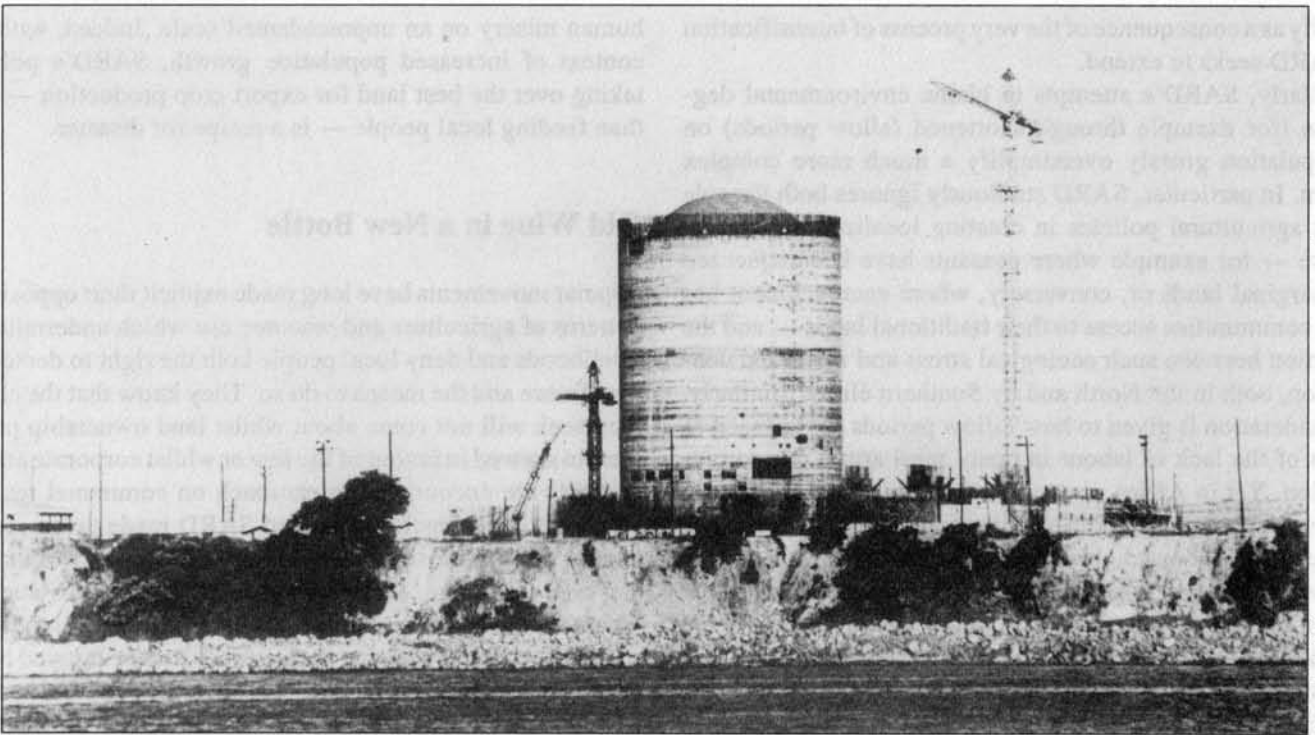
Old Wine in a New Bottle

Popular movements have long made explicit their opposition to patterns of agriculture and resource use which undermine their livelihoods and deny local people both the right to decide their own future and the means to do so. They know that the changes they seek will not come about whilst land ownership patterns remain skewed in favour of the few or whilst corporate and state interests are encouraged to encroach on communal resources and community institutions. Had SARD made those concerns central to its proposals, it would have been worthy of its name. But it gives no substantive consideration to such issues. Nowhere are there concrete proposals for securing local rights over resources or for countering the power currently enjoyed by such established interests as large landowners, corporations, the military and the state: nor any discussion of how "participation" is to be achieved.

In that respect, SARD should be recognized for what it is. A cunning attempt to co-opt the language of sustainability to promote the same worn-out policies. It is simply old wine in a new bottle.

Notes and References

1. Lohmann, L. 'Resisting Green Globalism', unpublished ms, 1991.
2. FAO/Ministry of Agriculture, Nature Management and Fisheries of the Netherlands, *The Den Bosch Declaration and Agenda for Action on Sustainable Agriculture and Rural Development*, 's-Hertogenbosch, The Netherlands, April, 1991.
3. World Bank, *The World Bank Experience in Sustainable Agriculture and Strategies for the Future*, Draft Report, Washington, 1991, p.2.
4. See in particular: FAO/Ministry of Agriculture, op. cit. 2, p.3; *SARD Draft Proposals*, pp.16, 26; *SARD Main Document 1*, p.11. SARD states that "technological fixes for individual problems have proved unable to provide lasting solutions" and that intensification "encourages consumption patterns that are ecologically and economically unsustainable." Lifestyles in the North are criticized for placing "excessive claims on global resources". There is also criticism of the free market ("unfettered free trade and free market economies, pursued with a view to maximizing profits for the participants, do not appear to be geared to protecting natural resources and ensuring sustainability, since they are not by nature concerned with longer-term issues") and of the "inappropriate policies" which have proved "one of the chief contributors of unsustainable agricultural practices in most developing countries" (although, predictably perhaps, there is no mention of FAO's role in framing and promoting those policies). Specifically, SARD acknowledges that "many developing countries have undertaken an environmentally damaging expansion of cash crop production for export".
5. See in particular: FAO/Ministry of Agriculture, *SARD Background Document 1*, p.4; *SARD Draft Proposals*, pp.2-7, 21; *SARD Main Document 1*, p.14. SARD recognizes that "intensification has often been accompanied by large demands on non-renewable resources, environmental pollution, problems of waste disposal, an accelerated rural exodus and the development of unsustainable production patterns." As an alternative to "massive injections of external inputs", says the report, greater attention should be paid to "more productive methods using internal inputs and improved traditional systems, such as multiple cropping associated with livestock raising". In coastal zones, there should be an outright ban on "agrochemicals which are toxic to fish" and, in general, "greater recourse to biological processes (nitrogen, fixing plants, crop rotations, use of trees as nutrients, use of trees as nutrient pumps, recycling of wastes) is highly recommended." Whereas *Agriculture: Toward 2000* called for bringing more land into production, particularly through irrigation, SARD recognizes that "the prospects for major expansions in irrigated area in the 1990s and beyond are limited."
6. See in particular: FAO/Ministry of Agriculture, *SARD Miscellaneous Document 1*, p.2; *SARD Draft Proposals*, pp.10, 2-2, 18; *SARD Miscellaneous Document 2*, p.26. Whereas previously "shifting agriculture" was castigated as "inefficient" and "environmentally destructive", SARD acknowledges that many of the features of sustainable agriculture "can be found among traditional practices" and that these "have been disrupted by excessive reliance on modern technology". Moreover, FAO has shifted its position on common property resources systems which it now suggests should be encouraged through "fostering self-managed community organizations".
7. See e.g. FAO/Ministry of Agriculture, op. cit. 2, pp.7, 8; *Draft Proposals*, pp.11, 2-1—2-11; *Summaries of Background Documents*, pp.19-20.
8. FAO/Ministry of Agriculture, *SARD Draft Proposals*, pp.17, 21.
9. FAO/Ministry of Agriculture, *SARD Draft Proposals*, pp.11, 2-1—2-11; *SARD Summaries of Background Documents*, pp.19-20.
10. FAO/Ministry of Agriculture, op. cit. 2, p.8.
11. FAO/Ministry of Agriculture, *SARD Draft Proposals*, p.17.
12. Quoted in Rau, B. *From Feast to Famine*, Zed Books, London, 1991.
13. SARD states that "poverty is often associated with landlessness, inequitable access to land and land tenancy malpractices rather than with land or resource ownership". FAO/Ministry of Agriculture, *Main Document 1*, p.10.
14. Vandana Shiva, *Staying Alive: Women, Ecology and Survival in India*, Kali for Women, New Delhi, India, 1988, p.129.
15. FAO/Ministry of Agriculture, *SARD Main Document 1*, p.v; and *SARD Draft Proposals*, p.iii.
16. FAO/Ministry of Agriculture, *SARD Draft Proposals*, p.10.
17. Ibid, p.1-1.
18. Ibid, p.10.
19. Ibid, p.10.
20. FAO/Ministry of Agriculture, *SARD Background Document 1*, p.iv.
21. Ibid.
22. FAO/Ministry of Agriculture, *SARD Draft Proposals*, p.7.
23. Ibid, p.16 and FAO et al., op. cit. 2, p.9.
24. FAO/Ministry of Agriculture, *SARD Draft Proposals*, p.12.
25. Ibid, p.1.
26. Bandyopadhyay, J. 'The Ecology of Drought and Water Scarcity', *The Ecologist* 18, 2/3, 1988, p.91.
27. FAO/Ministry of Agriculture, *SARD Main Document 1*, p.15.
28. FAO/Ministry of Agriculture, *SARD Draft Proposals*, p.1-4.
29. FAO/Ministry of Agriculture, *SARD Main Document 1*, p.5.
30. Raikes, P. *Modernizing Hunger*, Catholic Institute for International Relations, in collaboration with James Currey, London, 1988, p.20.
31. Ibid.
32. Ibid.
33. Ibid, p.21.
34. Ibid.



Associated Press

The Bataan nuclear power plant has cost the Philippines \$2.3 billion yet design flaws and its siting in an earthquake zone mean that it will never produce electricity. The reactor was bought from the US company Westinghouse after a vigorous sales campaign which allegedly included a \$40 million bribe to the Marcos regime. The Philippine government are now suing Westinghouse. It is certain that the nuclear industry would lobby heavily for a share of any new climate funds for developing countries.

The Case Against Climate Aid

by
Patrick McCully

A huge increase in international aid is seen by many as an essential part of any effort to deal with global warming. However, this ignores the fact that aid has left a legacy of neo-colonialism, debt, dependency, corruption and failure. The history of the transfer of western technologies to the Third World has been similarly dismal. Emphasis on the need for transfers of money and machinery to the Third World obscures the urgent need for radical changes in First World consumption patterns and global economic and political structures.

"Do not attempt to do us any more good. Your good has done us too much harm already."¹

It is widely assumed that an essential element in any international agreement on climate change is a massive transfer of money and technology to the Third World. Without this, it is argued, it will be impossible for developing countries to curb their huge projected growth in greenhouse gas emissions. Indeed the developing countries have made the transfer of "adequate, new and additional resources" from the First World a condition of their

involvement in any international convention on global warming.²

NGOs have also stressed the importance of huge sums of money flowing to the South. The New Delhi-based Centre for Science and Environment (CSE), for example, have suggested a system which would result in the high greenhouse gas emitting nations paying over \$100 billion annually to the rest of the world.³ Energy analyst Michael Grubb of the UK Royal Institute for International Affairs, who also quotes a figure in the order of \$100 billion annually, states that: "Resource transfer is a crucial element of any global

abatement strategy . . . to pay for more efficient infrastructure and deployment of non-fossil sources; and to speed up the development process in order to give the best prospects for population control."⁴ In 1988, the Washington-based Worldwatch Institute proposed a \$28 billion fund to pay for "massive investments in energy efficiency and reforestation in developing countries", and more recently Greenpeace have advocated a \$30 billion fund to be made available to Third World signatories of a climate convention as well as to support the development of renewable energies.⁵

While some observers have suggested that a climate fund should be financed from a carbon tax levied on all global fossil fuel-related emissions,⁶ international disparities in wealth, exchange rate problems and incompatible fiscal systems, as well as the differing historic contributions which countries have made to the problem make a global tax both unworkable and unfair. A better system would be for contributions to a climate fund to be funded from an energy tax applied in the 24 countries of the OECD; together they account for almost half of global energy-related carbon releases yet contain only 16 per cent of the world's population.⁷ Historically their contribution to the problem is much greater, especially when their past and present political and economic influence on the rest of the world is taken into account.

Although there are structural differences between them, all the OECD countries have industrial market-based economies, already tax energy in various forms and have a history of economic and other forms of co-operation. The OECD formally adopted a form of "polluter pays principle" in 1974 as a guide to environmental policy and several OECD countries — Sweden, Finland, Norway, Denmark and the Netherlands — have already introduced carbon taxes.⁸ The European Commission has recently proposed an EC energy tax which would increase to the equivalent of \$10 on a barrel of oil or \$83 per tonne of carbon by the year 2000. Half the charge would be on all non-renewable energy, while half would be an additional levy on fossil fuels. A tax at this level applied across the EC would raise a sum in the order of \$70 billion with present patterns of energy consumption. Across the OECD as a whole it would raise \$228 billion.⁹

Massive sums could therefore be raised by even a quite moderate level of energy/carbon taxes in the industrialized countries. However not all this money could be made available for the Third World. If the energy tax was to be made politically acceptable, roughly commensurable tax cuts and benefit increases would have to be made elsewhere in national economies, with the loss to treasuries being made up with income from the energy tax. The new tax would also be expected to fund research and development of renewable and energy efficient technologies in the industrialized countries.

Another important proviso is that at present it is almost impossible to envis-

age such a tax being imposed in the US. The world's biggest polluter refuses to make any commitment to cut its CO₂ emissions, disputing both the scientific evidence for global warming and the economic advantage of trying to do anything about it even if the projected warming does occur.¹⁰ The rest of the OECD countries which do admit the need for at least some steps to be taken to cut greenhouse gas emissions, will have to make the US's position increasingly unacceptable to the international community by committing themselves to strong action. With regard to tackling climate change, it may well be more cost-effective to spend the funds from a non-North American energy tax on environmental education projects, energy efficiency offices and political lobbying in the US than in the Third World.

An important use to which an energy tax should be put is the global climate insurance fund which has been suggested by Papua New Guinea and some of the members of the Alliance of Small Island States. The fund would pay for disaster relief for those hit by rising sea levels and the increasingly damaging cyclones and floods expected. It could also pay for the eventual costs of moving the inhabitants of small islands to safer locations if sea levels rise to threatening levels.¹¹

Dependency and Impoverishment

Despite the above it would still be politically and economically possible to create a large climate fund to help the Third World pay for limiting its greenhouse gas emissions. Much more difficult would be spending the money — the total global aid disbursed in 1989 was only \$46.5 billion¹² — in a way which would actually limit carbon emissions while not exacerbating international and national inequalities.

The experience of the Third World in the post-War era has been that the transfer of capital from the First World has led to dependency, debt and impoverishment. Far from helping the Third World, the economic instrument which goes under the ironic misnomer "aid" has been used to turn political colonialism into economic colonialism. In the words of the Ethiopian economist Fantu Cheru:

"The overwhelming consensus among the poor in Africa today is that development, over the past 25 years,

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has been an instrument of social control. For these people, development has always meant the progressive modernization of their poverty. The absence of freedom, the sacrifice of culture, the loss of solidarity and self-reliance . . . explains why a growing number of poor Africans beg: please do not develop us!"¹³

While many of those in the development and environment community are aware of the disastrous history of aid, it is generally assumed that these problems can be "ironed out" with a bit of extra care and, usually, the greater involvement of NGOs. Thus, most critics of the development industry see little contradiction between lambasting the industry's failures and calling for it to be given more money to spend.¹⁴ However, while the current patterns of economic and political power prevail, there is little hope that a massive influx of new aid to enable developing countries to limit their greenhouse gas emissions would do anything other than exacerbate the plight of the impoverished of the Third World. Given that aid projects are so rarely successful, it is also very doubtful whether it could actually have any impact upon global warming.¹⁵

Who Benefits From Aid?

Perhaps the most damaging misconception of "aid" is that it is donated as a magnanimous gesture by rich countries to assist the poor. Instead, aid is an instrument of foreign policy which is given to promote the donor's economic and security interests. As development economist Cheryl Payer notes, the US aid programme, "was originally set up by those who wished to wage a propaganda war against communism and those (such as US farmers) who wished to export their surpluses on credit."¹⁶ It would be naive to think that the objectives of US aid have since changed: in 1986, according to the World Bank, only eight per cent of the budget of the US Agency for International Development could be identified as "development assistance devoted to low-income countries".¹⁷ The record of other countries is little, if any, better, although for most commercial interests take precedence over those of national security. Well over half of Western bilateral aid is "tied", that is it is used to buy goods and services from companies in the donor country. According to Graham Hancock:

"The UK allocates some £850 mil-

lion to its bilateral aid programmes. Out of this substantial sum, around 80 per cent is typically spent on the purchase of British goods and services — a share that approaches 100 per cent in the case of some recipients, like Bangladesh."¹⁸

Such tied aid is notorious for resulting in imports of overpriced goods and inappropriate or obsolete technologies as well as for favouring capital- rather than labour-intensive projects in areas with high unemployment and scarce financial resources. It gives little stimulus to local suppliers, and the maintenance, staffing and administration costs are usually left to the recipient country to pay, normally in foreign exchange to the donor country. A recent leaked internal report from the British Overseas Development Administration revealed that three out of six power stations funded by an ODA programme and largely built by British companies were "seriously unreliable". The report said of the power plant built in Bangladesh

that, "local staff are unable to run the equipment and are thought unlikely to learn to do so . . ."¹⁹

As low-interest loans are an important element of aid financing, countries may be paying off the cost of failed projects for decades. For example, in 1983 an Italian contractor built a road in Somalia with funding from a \$100 million EC contract which is supposed to be repaid over 40 years. Five years after its construction the road was impassable.²⁰

Indeed as Cheryl Payer explains in her incisive book on the subject, *Lent and Lost: Foreign Credit and Third World Development*, the present Third World debt crisis is "the direct result of the ideology . . . which insists that . . . poor countries require large and sustained inflows of foreign capital for their development."²¹ Payer shows that the belief that the debt crisis was caused by the OPEC price hikes of the 1970s is pure myth. In fact, the crisis was around long before the oil price rises and is a direct

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result of the aid policy followed by the Western powers after the Second World War. According to Payer: "... international flows of funds must be subjected to stringent controls of a strictly non-political nature if the disaster of the 1980s is not to be repeated."²²

Who Will Control the Flows?

The control of any new climate funds has been the subject of much debate in the international climate talks with most industrialized countries favouring channeling the funds through existing institutions, in particular the Global Environment Facility (GEF). The GEF, launched in November 1990 by the World Bank in co-operation with the UN Environment and Development Programmes (UNEP and UNDP), has come in for strong criticism from environmentalists who have called on donor governments to halt further funding until the Facility is made more accountable and responsive to the desires of local communities.²³

Considering the harsh treatment that they have received from the World Bank and its sister institution the IMF, it is not surprising that the developing countries are fiercely opposed to the new funds they are calling for being channelled through any institution connected with the Bank. The "G-77" group of 127 developing countries and China favour the setting up of a new institution to deal with the climate funds which should be managed "on the basis of equitable representation from developing and developed countries and should ensure easy access for developing countries".

Yet any new institution set up within the existing economic and political framework will be little different from the present international funding agencies. Its staff would be likely to be made up of bankers, economists and "development experts" transferred from existing agencies. These people would bring with them the same values, beliefs and theories which have caused the existing agencies to do so much harm to the people and environment of the Third World and would be doing business with the same government officials and business élites.

Moreover, the new fund would inevitably have to channel its money through the existing "implementing agencies" such as FAO and UNDP, whose policies and practices have come under fierce criticism from environmental and social



The World Bank headquarters in Washington, DC. While the Bank is lending \$22 billion a year for development projects — and demanding that the money be repaid with the "help" of the IMF and "structural adjustment" measures — its Global Environment Facility can be little more than a sticking plaster on a gaping sore of failed economic theory.

Yosef Hadar/World Bank

activists. The shortcomings of the multi-lateral development agencies are largely a product of the international system in which they operate; environmentalists' experience in campaigning against them has shown that they are largely unreformable without wider changes in that international system. It would be naive to suppose that they can change their ways just because they are given funds to spend on climate-related projects.

If the climate fund is as big as CSE or other NGOs advocate, any new institution may end up doing even more harm than the World Bank, if only because it would have more funds at its disposal. Even in the unlikely event that those who contribute to the fund discard the principle of self-interest which has motivated foreign policy since the birth of the state, and give up control over their contributions, there is still little chance that the money would actually promote the long-term benefit of the majority of the Third World and help to deal with climate change. The Third World élites who wish to gain access to the funds differ little in their view of the world from their counterparts in the rich countries; they just feel that they are not being given a fair crack of the whip of industrial growth.

The Greatest Wrong

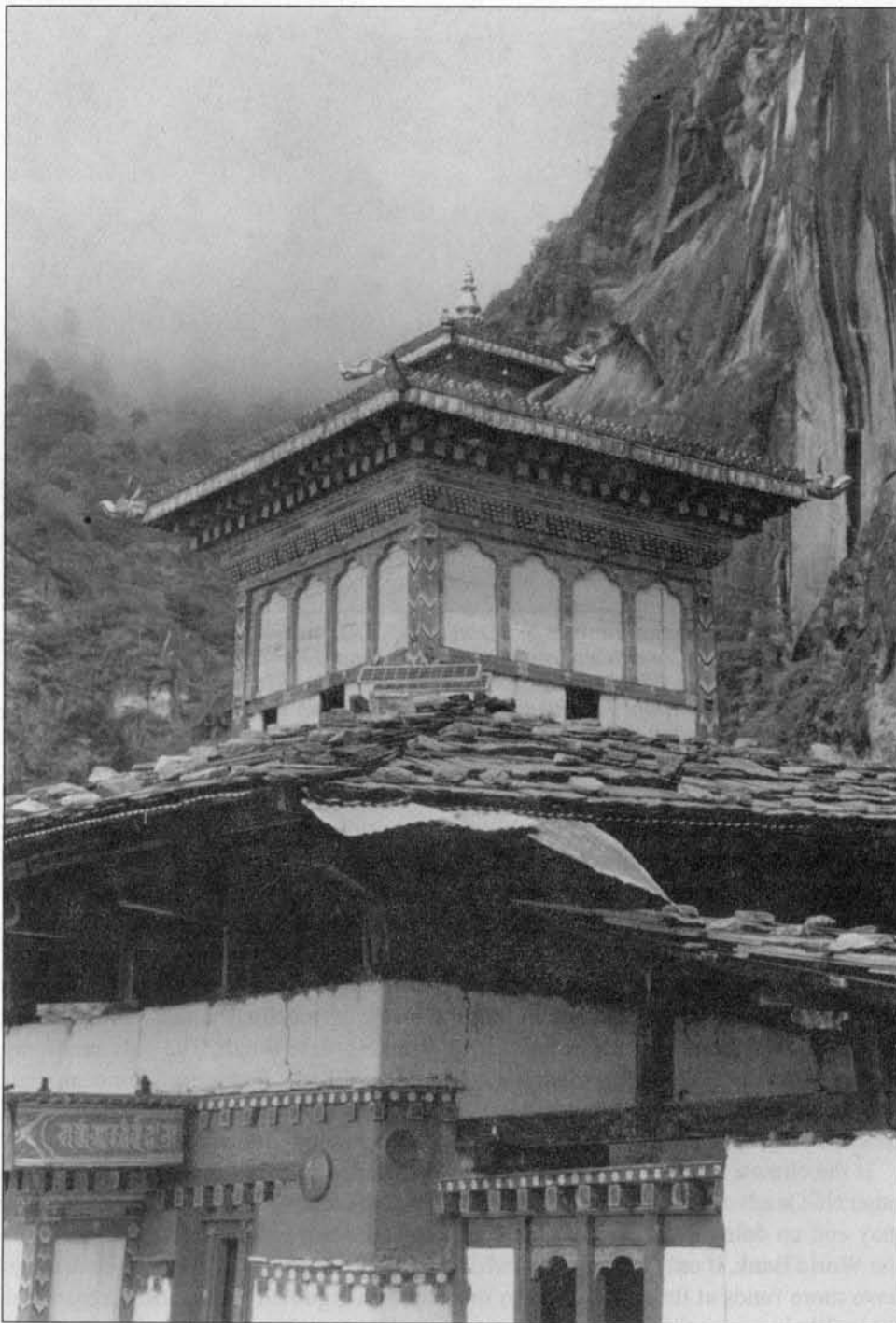
The main use advocated for a prospective

climate fund is to pay for the transfer of "environmentally-friendly" technology from the First World to the Third. Within the context of international environment negotiations, technology transfer is presented as a simple matter of shipping pieces of machinery and "know-how" from North to South. The only problems arise over the financing of the process and the issue of patent ownership.

Technology transfer is not so straightforward. Ian Smillie, an ex-Director of the Canadian voluntary aid agency CUSO, calls the expression 'transfer of technology' "Perhaps one of the greatest wrongs in the misguided lexicon of international development":

"... in the hands of governments, foreign engineers, experts, amateurs, bureaucrats and aid officials, the lessons of technology in history have largely been ignored. In the quest for sales and the search for the big breakthrough, they have colluded in one of the most expensive and tragic hoaxes of all time. Vast numbers of inappropriate tractors and threshers and factories have been shipped south, at ever-increasing prices, to be used at a fraction of capacity or to end prematurely, simply rusting in the rain."²⁴

The current enthusiasm among governments and NGOs in both First and Third Worlds for the transfer of technology has interesting historical parallels. In the late 1950s and early 1960s, it was



Taksang Monastery in Bhutan with solar cells which provide electricity for lighting. Small solar and other renewable systems are more likely to be installed where there is a lack of capital for bigger schemes rather than where funds for power supply projects are readily available. In Kenya, 10,000 small photovoltaic systems have been installed in rural homes and schools and are supported by a growing cottage industry of local technicians. Meanwhile, the photovoltaic systems promoted by aid agencies and foreign companies are too large and expensive for most rural households.

widely believed that Western science and technology would play a major role in eliminating poverty, hunger and disease.²⁵ In the words of Lord Blackett, poor countries would be able to draw up a "shopping list" of what to buy in "the world's well-stocked supermarket for production goods and processes".²⁶

Disillusionment with the results of the products on the supermarket shelves set

in by the end of the first UN Development Decade in 1970, and led to the rise of the concept of "appropriate technology". It is perhaps rarely realized now how much the idea was taken up by the official agencies. Appropriate Technology International in the US, for example, was given a direct mandate from Congress and funded by the US Agency for International Development. In 1976, a World

Bank report stated that "Bank support for appropriate technology will have a significant long-term impact on the choice and effectiveness of technological operations in the developing world."²⁷ In the same year an OECD report echoed an earlier generation of misguided technological optimists:

"... in a few years time, the consumer of appropriate technology will probably find himself in the equivalent of a supermarket with dozens of different tools or technologies to meet every single one of his needs."²⁷

Naturally "the consumer" had little say in what was actually "appropriate" for him (women were rarely even allowed into the technology supermarket). These decisions were made in the offices of aid agencies and ministries by people whose lives are ruled by modern Western technology and who have little idea of the desires and social relations of rural people and the communities in which they live. The results, in the words of Ian Smillie, "left the Third World littered with windmills that didn't turn, solar water heaters that wouldn't heat, and biogas experiments that were full of hot air before they started."²⁹

Like a succession of development fads — rural development, the eradication of poverty, basic needs, women and environment — "appropriate technology" was chewed up and spat out by the big development agencies, its original aims masticated out of recognition. It is difficult to see why the fate of climate aid should be any different.

The Acheampong Weed

More important than the failure of transferred technologies to achieve what was intended for them is their many unpredicted effects. In the early 1970s, the Japanese agreed to construct a network of power lines for Ghana's rural electrification programme (using "carbon-free" current generated by the Akasombo Dam). Unfortunately, the Japanese engineers soon discovered that a local plant would rapidly grow up their pylons and interfere with the lines at the top. Attempts to spray and cut the rampant climbers proved fruitless so the Japanese decided to use an "environment-friendly" alternative — an equally rampant non-climbing plant from Japan which they planted around the bottom of the pylons. The idea was a brilliant success as far as the power lines went —

but a disaster for the farmers of southern Ghana who now struggle to keep their plots free of the invasive "Acheampong weed", named after the Ghanaian president at the time the pylons were constructed.

The transfer of technologies will invariably have unintended results. Most damaging of all can be the social "Acheampong weeds", the changes in social structures and values which technologies — no matter how environmentally-appropriate — can cause. The introduction of methane gas digesters (which turn animal dung into gas for cooking and heating) into Indian villages, for example, had the unexpected effect of worsening the lot of the village poor. Only the wealthy villagers could afford to run the digesters, and dung, which had previously been available free, gained a cash value which lessened its availability to the landless villagers who depend on it for fuel.³⁰

The "Green Revolution" is perhaps the best known example of the promotion of a technology (or rather a package of related technologies) with terrible social and environmental consequences. As Vandana Shiva notes of the Punjab, the heartland of the rural revolution:

"... after two decades of the Green Revolution, Punjab is neither a land of prosperity, nor peace. It is a region riddled with discontent and violence. Instead of abundance, Punjab has been left with diseased soils, pest-infested crops, waterlogged deserts and indebted and discontented farmers."³¹

By concentrating land ownership and impoverishing the majority of the Pun-

jab's Sikh farmers, the technologies of the Green Revolution have widened both ethnic and class divisions.

New technologies affect the relationships not only between rich and poor but also between men and women. By reducing the importance of the subsistence economy in which women play a major role, introduced technologies often erode women's independence and make them more dependent on men.³² In Africa, the small-scale production by women of beer, cloth and clothing, bread, bricks and cookware has been progressively taken over by factories controlled by men.

The Trojan Horse

Perhaps the most common misconception of technology is that it is socially "neutral", that it is purely machinery. But western technology in the Third World is a Trojan Horse of western economic and social values and beliefs. Wolfgang Sachs gives an excellent illustration of this process using the seemingly innocuous example of an electric mixer:

"Whirring and slightly vibrating, it makes juice from solid fruit in next to no time. A wonderful tool! So it seems. But a quick look at cord and wall-socket shows that what we have before us is rather the domestic terminal of a national, indeed world-wide system.

"The electricity arrives via a network of cables and overhead utility lines, which are fed by power stations that depend on water pressures, pipelines or tanker consignments, which in turn require dams, off-shore platforms or

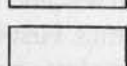
derricks in distant deserts. The whole chain only guarantees an adequate and prompt delivery if every one of its parts is staffed by armies of engineers, planners and financial experts, who themselves can fall back on administrations, universities, indeed entire industries (and sometimes even the military) . . . Whoever flicks a switch on is not using a tool. He or she is plugging into a combine of functioning systems. Between the use of simple techniques and that of modern equipment lies the reorganization of a whole society."³³

The role of technology in changing cultural attitudes is made explicit in a text prepared for a pre-UNCED seminar organized by the Norwegian government and attended principally by representatives of the large dam-building industry. This states that hydropower projects, "are often very appropriate vehicles for introducing an appropriate mechanical culture into a developing country".³⁴

A real danger of a massive influx of Western money into energy efficient and renewable technologies in the Third World is that it will strengthen the technological dependence of the South on the North. In fact, Southern dependence would be one of the main reasons for Northern governments to support such transfers, as it guarantees markets for Northern companies. There is also the danger that the people of the Third World will be used as guinea pigs for untested Western technologies.

As David Burch points out, looking upon overseas aid as a major source of appropriate technologies is to undermine the autonomy and "self-reliance" which is an explicit goal of these technologies.

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Burch also shows that if the means for manufacturing western technologies are transferred this will almost inevitably mean the transfer of capital-intensive, high-tech production methods.³⁵ Susan George also comments on this problem: "All Western technology has been aimed at getting greater productivity for fewer man hours . . . All underdeveloped countries have . . . only one really abundant capital resource: people".³⁶

Expressions like "environmentally-friendly" and "appropriate" are of course relative; their meaning depends upon those who use them. The nuclear industry, for example, believes that its power stations are an appropriate technology for cutting emissions of CO₂ and it is certain that they will try to bribe and lobby themselves a share of any funds for this purpose. The intense lobbying undertaken by Electricité de France to sell nuclear reactors to Hungary gives an example of what could come.³⁷ The promoters of large dams in both North and South would also fight for their share of the cake.

Despite the rhetoric of environmental and social concern used in international negotiations, governments see the aim of technology transfer as being to sustain development, which in political terms means to sustain the vested interests of those whose decisions have led the world into its present predicament.

Green Conditionality

Even if pressure from environmental groups succeeded in having tight conditions imposed on the use of the climate funds, this would not stop them from freeing up capital for the construction of, for example, the nuclear plants and large dams planned for India or indeed for military purchases (increased arms sales for the donor nations would provide a major incentive for them not to try and stop this).

It is also probable that a large amount of the funds would very quickly end up in Western bank accounts and other capital havens. In the three years from 1980 to 1982 — the climax of the debt bubble — \$71 billion from eight of the world's largest debtors (Brazil, Mexico, Argentina, Venezuela, Indonesia, Egypt, the Philippines and Nigeria) was lost in capital flight. This figure equals 70 per cent of these countries' new borrowing in those years.³⁸ The overseas assets of President Mobutu of Zaire are reputed to be roughly

equal to the country's foreign debt of \$8 billion, while a recent UN report estimated that \$40 billion left Africa in capital flight between 1986 and 1990.³⁹

Any suggestions to restrict the payment of the climate funds to countries with "approved" environmental policies are fiercely resisted by Third World governments, with good reason given the effects of previous outside interference in their countries. In any case, "creditors only fool themselves if they believe they can control [the uses of their capital]. And conditions imposed by outsiders far from the site of the investment usually do more harm than good."⁴⁰

Strict conditions on the use of climate funds would have the effect of making them extremely difficult to disburse. It is perhaps not often realized that practically all agencies have a "disbursement problem" — they cannot find enough attractive projects to put their money into:

"It is left to the aid officials on the ground to figure out how to turn tons of liquidity into economies that can profitably absorb only quarts or gallons — without wasting the amounts that can't be absorbed. Of course it can't be done, and something has to give. Either the money is "wasted" on projects whose profitability has been exaggerated by doctored cost-benefit exercises, or it is siphoned into the pockets of recipient country officials who have an obvious pecuniary interest in not revealing that it cannot be profitably invested."⁴¹

It is an indication of the assumption of Western superiority inherent in discussions on environmental technology transfer that so few observers remark on the irony of the situation where the most heavily polluting countries in the world are supposed to be helping the rest to clean up. Indian ecologist Vandana Shiva has eloquently expressed the conundrum: "The leadership of the North in the generation of environmentally unsound technologies does not automatically translate into a leadership to generate environmentally sound technologies."⁴² With the above in mind it would be much more logical to advocate the transfer of technology from South to North rather than vice versa.

Technology Diffusion

The above arguments are not anti-technological: technologies have been

passed on, adopted and adapted since the emergence of our species and the process cannot be stopped now, even if this were desirable. However the emphasis on technology transfer within the climate change debate obscures the fact that the processes which are causing increased emissions of greenhouse gases are essentially political and economic and not technical in nature. The reason that the US is the most polluting nation in the world has little to do with a lack of energy efficient technologies or renewable methods of producing electricity: it has a lot to do with the size of the country's oil, coal and automobile industries and the influence they have on the political establishment. In the UK, the public transport system is expensive, unreliable and infrequent, not because the government cannot afford to improve it or does not know how, but because the vested interests behind public transport have negligible power compared to the influential road and car lobbies. Similarly, in the developing world plenty of funds have been found in the past for expanding energy supplies yet little has been made available for energy efficiency.⁴³ Huge sums have been spent on large dams yet little on micro-hydro schemes.

That the Southern countries are being impoverished by the current international financial system is not in doubt. Since 1982 the Third World has been paying an average of \$30 billion a year more to the North in debt repayments than they have received in new lending. But the answer is not to increase the financial flows within the framework which has caused the present problems, but rather to halt the flows — for the Third World to repudiate the debt and to take on a minimum of new lending so that it does not get into the same situation again in another few decades. Any massive new flows of resources from North to South — loans or grants — will merely deepen Third World dependency and repeat the mistakes of the last three decades of development.⁴⁴

Putting Our Own House in Order

Those in the industrialized countries who want to see both firm action on global warming and a better deal for the Third World would do best to concentrate on reducing the massive and wasteful use of energy in their own countries. First World energy consumption is the largest single

cause of global warming, the effects of which are going to strike the Third World first and hardest (if they have not already begun to do so). A radical change in this pattern of consumption would have a profound effect on the overall structure of Western society and also perhaps on the fundamental economic beliefs which have done so much harm to the world both North and South.

Demands for huge amounts of climate aid for the Third World give First World governments an excuse to do nothing except point out to their electorates the huge costs of dealing with the problem and enable them to shift the blame for global warming from the historic and present high emissions from industrial countries onto the projected future emissions from the Third World. It also gives Third World governments the excuse of not doing anything because they can claim it is too expensive and the First World will not stump up the money. But dealing with global warming is not a question of expense — it is a question of economic and political restructuring.

Notes and References

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2. The International Negotiating Committee on a Framework Convention on Climate Change (usually shortened to "INC") has been brought together under the auspices of the UN General Assembly to prepare a convention to be signed at the UN Conference on Environment and Development (UNCED) in Rio de Janeiro in June 1992. The INC has met three times and will probably meet at least twice more before Rio. Progress has been painfully slow with the US, the biggest emitter of greenhouse gases, refusing to agree to any commitments to limit CO₂.
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5. Flavin, C. 'Slowing Global Warming: A Worldwide Strategy', *Worldwatch Paper* 91, Worldwatch Institute, Washington, 1989, pp.70-71; 'Prevent Climate Holocaust — Greenpeace', *Geneva ECO NGO Newsletter* 3, 21 June, 1991.
6. See e.g. Flavin, ibid; 'Claiming Green Kudos', *The Times* (editorial), 26 September, 1991.
7. *OECD Environmental Data Compendium 1991*, OECD, Paris, 1991. Although the ex-Soviet Union and Eastern Europe burn huge amounts of fossil fuels (accounting for around one-quarter of energy-related CO₂ emissions), their chaotic political and economic condition militates against including them in a convention with fixed financial commitments in the near term. In any case, CO₂ emissions from these states should fall considerably over the next decade with the phasing-out of energy subsidies and the closure of much heavy industry. (See e.g. Kats, G.H. 'Energy Options for Hungary: A Model for Eastern Europe', *Energy Policy* 19, 9, Nov. 1991.)
8. 'Cool It: A Survey of Energy and the Environment', *The Economist*, 31 August, 1991, p.42.
9. While taxes on this scale could raise considerable sums of money they would do little to reduce CO₂ emissions. If market mechanisms alone were to be used prices would have to be raised several times above current levels to achieve even moderate cuts in CO₂ emissions (see e.g. Grubb, op. cit. 4, p.88). High energy taxes are, however, already accepted in many countries — petrol taxes in some European countries are levied at the equivalent of a carbon tax of around \$200 per tonne. (*The Economist*, op. cit. 8, p.44.) The tradeable emissions permits suggested by CSE and others are a possible mechanism for the OECD to use to help it reduce emissions. For the reasons of the structural differences between economies and the horrific problems of monitoring and implementation it is difficult to envisage this type of scheme working on a global level. It would be much better to try tradeable permits within a limited group of countries first and so assess the advantages and drawbacks of the idea.
10. See e.g. National Academy of Sciences, *Policy Implications of Greenhouse Warming*, NAS, Washington, DC, 1991. This astonishingly complacent report argues the US will be able to adapt to climate change at "reasonable cost". *Science* described the report as reading "like a virtual paen to human adaptability, technological innovation and the market." (Roberts, L. 'Academy Split on Greenhouse Adaptation', *Science* 253, 13 Sept., 1991, p.1206).
11. Leggett, J. 'The View From Tuvalu', *Nairobi ECO NGO Newsletter* 8, 18 Sept., 1991. The Alliance of Small Island States (AOSIS) was set up at the Second World Climate Conference in Geneva in November 1990 to co-ordinate the positions of the nations most threatened by global warming. Greenpeace have also advocated a global climate insurance fund.
12. *Financial Times*, 28 September, 1990.
13. Cheru, F. *The Silent Revolution in Africa: Debt, Development and Democracy*, Zed Books, London and New Jersey/Anvil Press, Harare, 1989, p.20.
14. For example see Timberlake, L. *Africa in Crisis*, Earthscan, London, 1985; Clark, J. *Democratizing Development*, Earthscan, London, 1991; Smillie, I. *Mastering the Machine: Poverty, Aid and Technology*, Intermediate Technology, London, 1991.
15. A suppressed World Bank internal report on 1000 of its projects undertaken between 1976 and 1986 showed that half of them failed to meet their original goals. Some had closed down totally, while others had only ever existed on paper — yet the Bank still insisted that the loans for the projects were repaid. See Ziegler, K. 'Accountability Needed at World Bank', letter in *Wall Street Journal*, 22 October, 1990.
16. Payer, op. cit. 1, p.46.
17. World Bank, *World Development Report 1990: Poverty*, World Bank, Washington, 1990, p.128.
18. Hancock, G. *Lords of Poverty*, Macmillan, Basingstoke, 1989, p.156.
19. 'Report "Doctored" to Hide Failure of Projects to Aid Third World', *The Guardian*, 20 Sept., 1991.
20. Hancock, op. cit. 17.
21. Payer, op. cit. 1, p.x.
22. Ibid, p.xi.
23. World Rainforest Movement, 'NGO Statement on the GEF', Penang, 30 April, 1990. The GEF gives loans and grants which are supposed to counter ozone depletion, global warming, water pollution and the loss of biodiversity. Environmentalists fear that the GEF is being used to "grease the skids" for prospective loans by superficially "greening" otherwise environmentally-destructive schemes.
24. Smillie, op. cit. 13, p.242-3.
25. For an excellent summary of attitudes to technology and development see Burch, D. 'Appropriate Technology for the Third World: Why the Will is Lacking', *The Ecologist* 12, 2, March/April 1982.
26. Blackett, P.M.S. 'Planning for Science and Technology in Emerging Countries', *New Scientist*, 14 February, 1963, cited in Burch, op. cit. 24.
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28. Jequier, N. (ed.) *Appropriate Technology: Problems and Promises*, OECD, Paris, 1976 cited in Burch, op. cit. 24.
29. Smillie, op. cit. 13, p.133.
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31. Shiva, V. *The Violence of the Green Revolution: Third World Agriculture, Ecology and Politics*, Third World Network, Penang, 1991, p.19. An edited extract from this book was published as 'The Failure of the Green Revolution: A Case Study of the Punjab' in *The Ecologist* 21, 2, March/April 1991.
32. See e.g. Stamp, P. *Technology, Gender, and Power in Africa*, IDRC Technical Study 63e, Ottawa, 1989.
33. Sachs, W. 'Six Essays on the Archaeology of Development', *Interculture* 109, 4, Fall 1990.
34. Norwegian Water Resources and Energy Administration, 'Hydropower: Its Potential and Environmental Properties in a Global Context' (Draft), Oslo, 1991.
35. Burch, op. cit. 24.
36. George, S. *How the Other Half Dies: The Real Reasons for World Hunger*, Pelican, Harmondsworth, 1976, p.100. Original emphasis.
37. Kats, op. cit. 7. EdF have commissioned opinion polls whose results they have distorted, produced a series of television adverts, and joined up with the Hungarian nuclear industry in political lobbying. Kats says that the size and expense of the campaign "is reminiscent of a western presidential campaign".
38. Payer, op. cit. 1, p.86.
39. 'Swiss Banks Urged to Take the Lid off African Deposits', *The Daily Telegraph*, 25 Sept., 1991.
40. Payer, op. cit. 1, p.125.
41. Ibid, p. 118.
42. Shiva, V. 'Transfer of Technology', Briefing Paper for UNCED, Third World Network, Penang, 1991.
43. While power projects account for 20-40 per cent of Third World debt (*The Economist*, op. cit. 8, p.37), the World Bank spends just one per cent of its average £1.8 billion annual investment on energy projects on promoting energy conservation and efficiency ('World Bank's Conservation Record Under Fire', *New Scientist*, 19 October, 1991).
44. See Payer, op. cit. 1 and Cheru, op. cit. 21 for discussions on the necessity and the consequences of debt repudiation.

Environment and Development:

The Story of a Dangerous Liaison

by
Wolfgang Sachs

The analysis that the natural world and human cultures are being destroyed by industrial society has posed a formidable challenge to states and development institutions. They have largely managed to overcome the challenge by redefining the myriad local ecological crises as being caused by the insufficient management of resources on a global level. Under this interpretation, poverty and inefficiency are seen as the real causes of the destruction of the natural world, and economic growth, more efficient production methods and better monitoring of the Biosphere the only answers to the problem. Thus the fundamental issues which society must address — how it should live, how much it should produce and consume — are ignored.

Neil Armstrong's journey to the moon brought us under the spell of a new image — not of the Moon but of the Earth. Looking back from the Apollo spaceship, Armstrong shot those pictures which now adorn the covers of so many reports about the future of the planet: a small and fragile ball, shining blue against the dark of outer space, delicately covered by clouds, oceans, greenery and soils. Never before had the planet in its entirety been visible to the human eye; space photography imparted a new reality to the planet. In its beauty and vulnerability, the floating globe arouses wonder and awe. For the first time it has become possible to speak of *our* planet.

But the possessive noun reveals a deep ambivalence. On the one hand, "our" can imply participation and highlight humanity's dependence on an encompassing reality. On the other hand, it can imply ownership and emphasize humanity's supposed vocation to master and to manage this common property. Consequently, the image of "our" planet conveys a contradictory message; it can either call for moderation or for megalomania.

The same ambivalence characterizes the career of the concept "environment". While it was originally advanced to put development politics under indictment, it

is now raised like a banner to announce a new era of development. Indeed, after "ignorance" and "poverty" in previous decades, "survival of the planet" is likely to become the emergency of the 1990s, in the name of which a new frenzy of development will be unleashed. Significantly, the report of the World Commission on Environment and Development (the Brundtland Report), after having evoked the image of the planet floating in space, concludes its opening paragraph by stating: "This new reality, from which there is no escape, must be recognized — *and managed.*"

The Emergence of Global Issues

For better or worse, the vicissitudes of the international development discussion follow closely the rise and fall of political sensibilities within the Northern countries. Unfettered enthusiasm for economic growth in 1945 reflected the West's desire to restart the economic machine after a devastating war, the emphasis on manpower planning echoed American fears after the shock of Sputnik in 1957, the discovery of basic needs was stimulated by Johnson's domestic war on poverty in the 1960s. What development means depends on how the rich nations feel. "Environment" is no exception to this rule.

The UN Conference on the Human

Environment held in Stockholm in June 1972, the occasion on which "environment" arrived on the international agenda, was first proposed by Sweden, which was worried about acid rain, pollution in the Baltic and the levels of pesticides and heavy metals in fish and birds. Countries discovered that they were not self-contained units but contingent on actions taken by others. Thus a new category of problems, the "global issues", emerged. The Stockholm Conference was the prelude to a series of large UN meetings throughout the 1970s (on population, food, human settlements, water, desertification, science and technology, and renewable energy) that set out to alter the post-War perception of an open global space where many nations can individually strive to maximize economic growth. Instead a different view began to be promoted: the concept of an interrelated world system operating under a number of common constraints.

The cognitive furniture for this shift was provided by a particular school of thought that had gained prominence in interpreting the significance of pollution and non-natural disasters. In the US during the 1960s, environmental issues forced their way into public consciousness: due to Los Angeles smog and the slow death of Lake Erie, oil spills and the planned flooding of the Grand Canyon, the number of articles on the environment in the *New York Times* skyrocketed from about 150

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Indira Gandhi being welcomed to the 1972 UN Conference on the Human Environment in Stockholm. Mrs. Gandhi's statement at the conference that poverty was the greatest polluter helped shift the emphasis in environmental thinking from pollution caused by growth to pollution caused by a lack of growth. This interpretation was vital in justifying the actions of governments and development agencies.

in 1960 to about 1700 in 1970. Local incidents, which were increasingly seen as adding up to a larger picture, were put into a global perspective by scientists who borrowed their conceptual framework from ecosystems theory in order to interpret the predicament of a world rushing towards industrialization. Infinite growth, they maintained, is based on self-delusion, because the world is a closed space, finite and of limited carrying capacity. Perceiving global space as a system whose stability rests on the equilibrium of its components, like population, technology, resources (including food) and environment, they foresaw — echoing Malthus' early challenge to the assumption of inevitable progress — an imminent disruption of the balance between population growth (exacerbated by technology) on the one hand, and resources and environment on the other. Paul Ehrlich's *Population Bomb*, *The Ecologist's* 'Blueprint for Survival', and, especially, the Club of Rome's *Limits to*

lives, as humanist authors like Mumford or Schumacher suggested, would go against the grain of development aspirations and could hardly please the guardians of the growth machine. In fact, only an interpretation which magnified rather than undermined their managerial responsibilities could raise their hopes in the face of a troubled future. The global ecosystems approach perfectly suited their vantage point from the heights of international organizations for it proposed global society as the unit of analysis and put the Third World, by denouncing population growth, at the centre of attention. Moreover, the model simplified and rendered intelligible an otherwise complicated and confusing situation by disembedding resource conflicts from any particular local or political context. The language of aggregate data series suggests a clear cut picture, abstract figures lend themselves to playing with scenarios, and a presumed mechanical causality between the various components creates the

Growth made it seem natural to imagine the future of the globe as being decided by the interaction of quantitative growth curves.

The global ecosystems approach was not without competitors; but both the biocentric and the humanist perspective were foreign to the perception of the international development élite. Attributing absolute value to nature for its own sake, as environmentalists in the tradition of Thoreau, Emerson and Muir did, would have barred the way to continuing, albeit in a more sophisticated and flexible manner, the exploitation of nature. And recognizing the offences against nature as just another sign of the supremacy of technological expansion over people and their

illusion that global strategies can be effective. And even if the ideal of growth crumbled, there was, for those who felt in charge of running the world, still some objective to fall comfortably back to: stability.

The Marriage Between Environment and Development

However, there was still a long way to go until, in 1987, the Brundtland Report could finally announce the marriage between craving for development and concern for the environment. As the adamant rejection of all "no-growth" positions, in particular by Third World governments at the Stockholm Conference demonstrated, the compulsion to drive up the GNP had turned many into cheerful enemies of nature. It was only in the course of the 1970s, under the additional impact of the oil crisis, that it began to dawn on governments that continued growth not only depended upon capital formation and a skilled workforce but also on the long-term availability of natural resources. Concerns about the conservation of inputs to future growth, led to development planners gradually adopting a strand of thought which goes back to the introduction of forest management in Germany around 1800: that — in the words of Gifford Pinchot, the steward of Theodore Roosevelt's conservation programme — "conservation means the greatest good for the greatest number for the longest time." Tomorrow's growth was seen to be under the threat of nature's revenge. Consequently, it was time to extend the attention span of planning and to call for the "efficient management of natural resources" as part of the development package: "We have in the past been concerned about the impacts of economic growth upon the environment. We are now forced", concludes the Brundtland Report, "to concern ourselves with the impacts of ecological stress — degradation of soils, water regimes, atmosphere, and forests — upon our economic prospects."

Another roadblock on the way to wedding "environment" to "development" has been an ossified vision of growth. The decades of smoke-stack industrialization had left the impression that growth was invariably linked to squandering ever more resources. Under the influence of the appropriate technology movement, however, this notion of development began to crumble and give way to an aware-

ness of the availability of technological choices. It was, after all, in Stockholm that NGOs had gathered for the first time to stage a counter-conference which called for alternative paths in development. Later, initiatives like the Declaration of Cocoyoc and the Dag Hammarskjöld Foundation's "What Now?" helped — perhaps unwittingly — to challenge the assumption of an invariable technological process and to pluralize the road to growth. Out of this awareness of technological flexibility grew, towards the end of the 1970s, a new perception of the ecological predicament: the "limits to growth" are no longer seen as an insurmountable barrier blocking the surge of growth, but as discrete obstacles forcing the flow to take a different route. "Soft-path" studies in areas from energy to health care proliferated and charted new beds for the misdirected river.

Finally, environmentalism was regarded as inimical to the alleviation of poverty throughout the 1970s. The claim to be able to abolish poverty has been — and still is — the single most important pretension of the development ideology, in particular after its enthronement as the official priority goal after the speech at Nairobi by the then World Bank President, Robert McNamara, in 1973. Poverty had long been regarded as unrelated

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to environmental degradation, which was attributed to the impact of industrialization; the poor entered the equation only as future claimants to an industrial life style. But with spreading deforestation and desertification, the poor were quickly identified as agents of destruction and became the targets of campaigns to promote "environmental consciousness". Once blaming the victim had entered the professional consensus, the old recipe could be offered for meeting the new disaster: since growth was supposed to remove poverty, the environment could

only be protected through a new era of growth. As it says in the Brundtland Report: "Poverty reduces people's capacity to use resources in a sustainable manner; it intensifies pressure on the environment . . . A necessary but not sufficient condition for the elimination of absolute poverty is a relatively rapid rise in per capita incomes in the Third World." The way was thus cleared for the marriage between "environment" and "development"; the newcomer could be welcomed to the old family.

The Rejuvenation of Development

"No development without sustainability; no sustainability without development" is the formula which establishes the newly-formed bond. "Development" emerges rejuvenated from this liaison, the ailing concept gaining another lease on life. This is nothing less than the repeat of a proven ruse: every time in the last 30 years that the destructive effects of development were recognized, the concept was extended in such a way as to include both injury and therapy. For example, when it became obvious, around 1970, that the pursuit of development actually intensified poverty, the notion of "equitable development" was invented so as to reconcile the irreconcilable: the creation of poverty with the abolition of poverty. In the same vein, the Brundtland Report incorporated concern for the environment into the concept of development by erecting "sustainable development" as the conceptual roof for both violating and healing the environment.

Certainly, the new era requires development experts to widen their attention span and to monitor water and soils, air and energy use. But development remains what it has always been, an array of interventions for boosting GNP: "Given expected population growth, a five-to-tenfold increase in world industrial output can be anticipated by the time world population stabilizes sometime in the next century." Brundtland thus ends up suggesting further growth, but no longer, as in the old days of development, in order to achieve the happiness of the greatest number, but to contain the disaster for the generations to come. The threat to the planet's survival looms large. Has there ever been a better excuse for intrusion? New areas of intervention open up, nature becomes a domain of politics, and a new

breed of technocrats feels the vocation to steer growth along the edge of the abyss.

A Successful Ambivalence

Ecology is both computer modelling and political action, scientific discipline as well as all-embracing worldview. The concept joins two different worlds. On the one side, protest movements all over the globe wage their battles for the con-

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servation of nature, fighting with evidence offered by the scientific discipline which studies the relationships between organisms and their environment. On the other side, academic ecologists have seen with bewilderment how their hypotheses have become a reservoir for political slogans and been elevated to principles for some post-industrial philosophy. The liaison between protest and science can hardly be called a happy one. While the researchers have resented being called on to testify against the rationality of science and its benefits for humanity, activists have, ironically enough, adopted theorems like the "balance of nature" or the "priority of the whole over its parts" at a moment when they had already been abandoned by the discipline.

However, without recourse to science, the ecology movement would probably have remained a bunch of "nature freaks" and never acquired the power of a historical force. One secret of its success lies precisely in its hybrid character. As a movement highly suspicious of science and technical rationality, it plays anew the counter-melody which has accompanied the history of modernity ever since romanticism. But as a science-based movement, it is capable of questioning the foundations of modernity and contesting its logic in the very name of science. In fact, the ecology movement seems to be the first anti-modernist movement attempting to justify its claims with the enemy's own means. It bases its fundamental challenge not on the arts (like the



Norwegian Prime Minister and chairwoman of the World Commission on Environment and Development, Gro Harlem Brundtland. The global management advocated by the WCED assumes that planners, scientists and other "experts" have the tools, the knowledge, the capability and the right to decide how the rest of humanity should lead their lives.

romanticists), on organicism (like the conservatives), on the glory of nature (like preservationists), or on a transcendental creed (like fundamentalists), although all these themes are present, but on ecosystems theory which integrates physics, chemistry and biology. This unique achievement, however cuts both ways: the science of ecology gives rise to a scientific anti-modernism which has largely succeeded in disrupting the dominant discourse, yet the *science* of ecology opens the way for the technocratic recuperation of the protest. This ambivalence of "ecology" is, on the epistemological level, responsible for the success as well as the failure of the movement.

Ecology Between Organicism and Mechanism

While its roots go back to 18th century natural history, ecology became a fully-fledged discipline — with university

the processes within these communities. The competitive/cooperative relations between organisms in a given environment and, under the influence of Darwinism, their adaptive change through time ("succession") emerged as the new discipline's field of study. Impressed by the mutual dependency of species in biotic communities, ecologists began to wonder just how real these units were. Is a given ensemble only the sum of individual organisms or does it express a higher identity? Up to the Second World War, the latter concept was clearly dominant: plant/animal societies were seen as super-organisms that evolve actively, adapting to the environment. In opting for organicism — the postulate that the whole is superior to its parts and an entity in its own right — the ecologists were able firmly to constitute the object of their science.

This anti-reductionist attitude was doomed after the war when, across disciplines, mechanistic conceptions of sci-

ences, journals and professional associations — only during the first two decades of this century. It inherited from its precursors in the 19th century a predilection for looking at the world of plants (and later animals) in terms of geographically-distributed ensembles. The tundra in Canada is evidently different from the rainforest in Amazonia. Consequently, pre-ecology organized its perception of nature, following the core themes of romanticism, around the axiom that place constitutes community. From an emphasis on the impact of climatic and physical circumstances on communities, the attention shifted, around the turn of the century, to

ence again prevailed. Ecology was ripe for a restructuring along the lines of positivist methodology; like any other science, it was supposed to produce causal hypotheses which are empirically testable and prognostically relevant. The search for general laws, however, implies concentrating attention on a minimum of elements which are common to the overwhelming variety of settings. The appreciation of a particular place with a particular community lost importance. Moreover, these elements and their relationships have to be measurable; the quantitative analysis of mass, volume, temperature and the like replaced the qualitative interpretation of an ensemble's unity and order. Following physics, at that time the leading science, ecologists identified energy as the common denominator that links animals and plants with the non-living environment. Generally, the calorie became the unit of measurement for it permitted description of both the organic and the inorganic world as two aspects of the same reality — the flow of energy.

In this way, biology was reduced to energetics. But the holistic tradition of ecology did not wither away. It reappeared in a new language: "system" replaced the concept of "living community", and "homeostasis" the idea of evolution towards a "climax". The concept of "system" integrates an originally anti-modern notion, the "whole" or the "organism", into scientific discourse. It allows one to insist on the priority of the whole without vitalist overtones, while it acknowledges an autonomous role for the parts without, however, relinquishing the idea of a supra-individual reality. This is accomplished by interpreting the meaning of wholeness as "homeostasis" and the relations between the parts and the whole, in the tradition of mechanical engineering, as "self-regulatory feedback mechanisms" steadily maintaining that homeostasis. It was the concept of ecosystem that thus combined the organicist heritage with scientific reductionism. And it is this concept of ecosystem that simultaneously gave to the ecology movement both a quasi-spiritual dimension and scientific credibility.

Since the 1960s ecology has left the university biology departments and migrated into the common consciousness. The scientific term has turned into a worldview. As such, it carries the promise of reuniting what has been fragmented, of healing what has been torn apart, in

short of caring for the whole. The numerous wounds inflicted by modern, goal-specific institutions provoked a renewed desire for wholeness, and that desire found a suitable language in the science of ecology. The conceptual switch that connected the biology circuit with that of society at large was the notion of ecosystem. In retrospect, this comes as no surprise, since the concept is well equipped to serve this function: in scope, as well as in scale, it has an enormous power of inclusion. It unites not only plants and animals — as already the notion of living community did — but also includes within its purview the non-living world on the one hand, and the world of humans on the other. Likewise, ecosystems come in many sizes, small and big, nesting like babouschka dolls, each within the next, from the microscopic to the planetary level. The concept is free-ranging in scale. Omnipresent, as ecosystems appear to be, they are consequently hailed as keys to understanding order in the world. More so, as they appear to be all-essential for the continuance of the webs of life, they call for nothing less than care and reverence. A remarkable career, indeed — a technical term that has strode into the realms of the metaphysical. For many environmentalists, ecology seems to reveal the moral order of being by uncovering simultaneously the *verum*, *bonum* and *pulchrum* of reality: it suggests not only the truth, but also a moral imperative and even aesthetic perfection.

On the other hand, however, ecosystems theory, based on cybernetics as the science of engineering feedback mechanisms, represents anything but a break with the ominous tradition of increasing control over nature. How can a theory of regulation be separated from an interest in manipulation? After all, systems theory aims at control of the second order; it strives to control self-control. As is obvious, the metaphor underlying systems thinking is the self-governing machine, a machine capable of adjusting its performance to changing conditions according to pre-set rules. Whatever the object being observed, be it a factory, a family or a lake, attention focuses on the regulating mechanisms by which the system in question responds to changes in its environment. Once identified, the way is open to condition these mechanisms so as to alter the responsiveness of the system. Looking at nature in terms of self-regulating systems, therefore, implies either the intention to measure how much

more development nature can take or the aim of adjusting her feedback mechanisms through human intervention. Both strategies amount to completing Bacon's vision of dominating nature, albeit with the pretension of manipulating her revenge. In this way, ecosystem technology turns finally against ecology as a worldview. A movement which bid farewell to modernity ends up in welcoming it, in new guise, through the back door.

Survival as a Reason of State

In history, many reasons have been put forward to justify state power and its claim on citizens. Objectives like law and order and welfare through redistribution have been invoked time and again. More recently, development has become the goal in the name of which many Third World governments sacrifice the vital interests of huge sections of their populations. "Survival of the planet" is on its way to becoming the justification for a new wave of state interventions into people's lives all over the world.

The World Bank, for instance, sees a gleam of hope for itself again, after its reputation had been badly shaken by criticism from environmentalists: "I anticipate", declared its Senior Vice-President David Hopper in 1988, "that over the course of the next year, the Bank will be addressing the full range of environmental needs of its partner nations, needs that will run from the technical to the institutional, from the micro-details of project design to the macro-requirements of formulating, implementing and enforcing environmental policies." The voices of protest, after finally penetrating the air-conditioned offices in Washington, only led to the Bank seeing a new area for its activities: the demands to stop World Bank activities provoked their expansion!

While environmentalists have put the spotlight on the numerous vulnerabilities of nature, governments discover a new conflict-ridden area in need of political governance and regulation. This time, it is not peace between people which is at stake, but the orderly relations between humanity and nature. To mediate in this conflict, the state assumes the task of gathering evidence on the state of nature and the effects of humanity, of enacting norms and laws to direct behaviour, and enforcing compliance to the new rules. On the one hand, nature's capacity to provide services such as clean air and

water and a reliable climate has to be closely watched. On the other, society's innumerable actions have to be kept under sufficient control in order to direct the exploitation of nature into tolerable channels. To carry out these formidable objectives, the state has to install the necessary monitoring systems, regulatory mechanisms and executive agencies. A new class of professionals is required, while eco-science provides the epistemology of intervention. In short, the experts who used to look after economic growth now claim to be presiding over survival.

Global Knowledge Versus Local Knowledge

Many rural communities in the Third World, however, do not need to wait until specialists from hastily founded research institutes on sustainable agriculture swarm out to deliver their solutions for, say, soil erosion. Provision for the coming generations has been part of their tribal and peasant practices since time immemorial. What is more, the new centrally designed schemes for the "management of environmental resources" threaten to collide with locally based knowledge about conservation.

For example, the Indian Chipko movement has made the courage and wisdom of those women who protected the trees with their bodies against the chainsaws of the loggers a symbol of local resistance acclaimed far beyond the borders of India. Yet their success had its price: forest managers moved in and claimed responsibility for the trees. Thus, the nature of the conflict changed: the hard-nosed woodcutters gave way to soft-spoken experts. These brought along surveys, showed around diagrams, pointed out growth curves and argued over optimal felling rates. Planting schemes and wood-processing industries were proposed, and attempts made to lure the villagers into becoming small timber producers. Those who had defended the trees to protect their means of subsistence and to bear witness to the interconnectedness of life, saw themselves unexpectedly bombarded with research findings and the abstract categories of resource economics. All along, the "national interest" in "balanced resource development" was invoked. It mattered little in the face of these priorities what significance the forest had for the villagers, or what species of tree would be most suitable for the

people's sustenance. An ecology that aimed at the management of scarce natural resources clashed with an ecology that wished to preserve the local commons. In this way, national resource planning can lead to, albeit with novel means, a continuation of the war against subsistence.

Though the resource experts arrived in the name of protecting nature, their image of nature profoundly contradicts the image of nature held by the villagers. Nature, when she becomes an object of politics and planning, turns into "environment". It is misleading to use the two concepts interchangeably for this impedes the recognition of "environment" as a particular construction of "nature" specific to our time. Contrary to its present aura, there has rarely been a concept that represented nature as more abstract, passive and void of qualities than "environment". Squirrels on the ground are as much a part of the environment as water in aquifers, gases in the atmosphere, marshes at the coast or even high-rise buildings in inner cities. Sticking the label "environment" on the natural world makes any specific and local quality fade away; even more, it makes nature appear passive and lifeless, waiting to be acted upon. This is a far cry from, for instance, the Indian villager's conception of *Prakriti*, the active and productive power which permeates every stone or tree, fruit or animal, and sustains them along with the human world. *Prakriti* grants the blessings of nature as a gift; she has consequently to be honoured and wooed.

Cultures that see nature as a living being tend to carefully circumscribe the range of human intervention, because a hostile response is to be expected when a critical threshold has been passed. "Environment" has nothing in common with this view; through its modernist eyes, limits appear as physical constraints to survival. To call traditional economies "ecological" often neglects that basic difference in belief.

Towards a Global Ecocracy?

In the 1990s, concern about depleting resources and worldwide pollution has reached the commanding heights of international politics. Multilateral agencies distribute biomass converters and design forestry programmes. Economic summits quarrel about carbon dioxide emissions, and scientists launch satellites to check on the planet's health. But the discourse

which is rising to prominence has taken on a fundamentally biased orientation: it calls for extended management, but disregards intelligent self-limitation. As the dangers mount, new products, procedures and programmes, are invented to stave off the threatening effects of industrialism and to keep the system afloat. Capital, bureaucracy and science — the venerable trinity of Western modernization — declare themselves indispensable in the new crisis and promise to prevent the worst through better engineering, integrated planning and more sophisticated models. However, fuel-efficient machines, environmental risk assessments and the close monitoring of natural processes, well-intended as they may be, have two assumptions in common: first, that society will always be driven to test the limits of nature, and second, that the exploitation of nature should neither be maximized nor minimized, but ought to be optimized. As the 1987 report of the World Resources Institute states on its first page: "The human race relies on the environment and therefore must manage it wisely." Clearly, the "therefore" is the crux of the matter; it is relevant only if the competitive dynamic of the industrial system is taken for granted. Otherwise, the environment would not be in danger and could be left without management. Calls for securing the survival of the planet are often, upon closer inspection, nothing else than calls for the survival of the industrial system.

Capital, bureaucracy and science-intensive solutions to environmental decline, however, are not without social costs. The promethean task of keeping the global industrial machine running at an ever increasing speed while at the same time safeguarding the Biosphere, will require a quantum leap in surveillance and regulation. How else should the myriads of decisions, from the individual to the national and the global levels, be made? In this regard, it is of secondary importance whether the streamlining of industrialism will be achieved, if at all, through market incentives, strict legislation, remedial programmes, sophisticated spying or outright prohibitions. What matters is that all these strategies call for more centralism, in particular for a stronger state. Since ecocrats rarely call into question the industrial model of living in order to reduce the burden on nature, they are left with the necessity of synchronizing the innumerable activities of society with all the skill, foresight and technological tools they can muster — a

prospect which could have inspired Orwell to another novel. The real historical challenge, therefore, must be addressed in something other than ecocratic terms: how is it possible to build ecological societies with less government and less professional dominance?

The ecocratic discourse which is set to unfold in the 1990s starts with the conceptual marriage of "environment" and "development", finds its cognitive base in ecosystems theory, and aims at new levels of administrative monitoring and control. Unwilling to reconsider the logic of competitive productivism which is at the root of the planet's ecological plight, it reduces ecology to a set of managerial strategies aimed at resource efficiency and risk management. It treats as a technical problem what in fact amounts to no less than a civilizational impasse — namely, that the level of productive performance already achieved turns out to be not viable in the North, let alone for the rest of the globe. With the rise of ecocracy, however, the fundamental debate that is needed on issues of public morality — like how society should live, or what, how much and in what way it should produce and consume — falls into oblivion. Instead, Western aspirations are implicitly taken for granted, not only in the West but worldwide, and societies which choose not to put all their energy into production and deliberately accept a lower throughput of commodities become unthinkable. What falls by the wayside are efforts to elucidate the much broader range of futures open to societies which limit their levels of material output in order to cherish whatever ideals emerge from their heritages. The ecocratic perception remains blind to diversity outside the economic society of the West.

This article is an edited version of 'Environment', a chapter in *The Development Dictionary: A Guide to Knowledge as Power*, edited by Wolfgang Sachs, to be published by Zed Books in January 1992. The chapter contains a full bibliography. Contributors to the book include Claude Alvares, Barbara Duden, Gustavo Esteva, Ivan Illich, Ashis Nandy and Vandana Shiva. It will be available from Zed Books, 57 Caledonian Road, London N1 9BU, price £14.95/US\$25 (pb) or £36.95/US\$59.95 (hb). Orders in the USA to Humanities Press International, 165 First Avenue, Atlantic Highlands, New Jersey 07716.

AS WOLVES DIE,
SO DOES FREEDOM.
HEAR
THE
WARNING...



Illustration from Earth First! journal. For Earth First!ers the wolf is a potent symbol of wilderness and the interconnectedness of all forms of life.

The Religion and Politics of Earth First!

by
Bron Taylor

Many observers view Earth First! as differing from other environmental groups principally in the militant tactics it espouses. In fact the differences go far deeper. Underpinning their ethics and actions are biocentric beliefs based on fundamentally religious sentiments. The recent schism in the movement has less to do with disagreements about these beliefs than with judgments about strategy and tactics. Despite internal tensions Earth First! and similar radical groups are likely to play an increasingly important role in future ecological struggles.

The bombing of the car of two activists from Earth First! and the FBI's infiltration and arrest of five others has catapulted the group into public view. These radical environmentalists are willing to break the law to save wilderness areas — committing civil disobedience, spiking trees, removing survey stakes or destroying bulldozers, a practice they call "ecotage" or "monkeywrenching".

Both proponents and opponents of Earth First! recognize the importance of religion in environmental conflicts. One extreme example can be found in a letter purportedly from the person who bombed the car of California Earth First!er Judi Bari, who, quoting Genesis 1:26 (the "dominion" creation story), wrote that "this possessed [pagan] demon Judy Bari . . . [told] the multitude that trees were not God's gift to man but that trees were themselves gods and it was a sin to cut them. [So] I felt the Power of the Lord stir within my heart and I knew I had been

Chosen to strike down this demon." The letter concludes with a warning to other tree worshipers that they will suffer the same fate, for "I AM THE LORDS AVENGER." It is not known whether or not the letter is genuine, although it does bear strong internal evidence of authenticity — including an accurate description of the bomb and a hard-to-fabricate narrative that seems to merge Christian fundamentalism and mental illness. But whether authentic or a ploy to cast suspicion away from the true bomber, this letter illustrates dramatically how competing spiritual values can underlie environmental controversies.

Conservationist Alston Chase expresses similar concerns without the violent overtones. He criticizes the "mindless pantheism" and "clandestine heresies" of radical environmentalists and complains that militant environmentalists have uncritically accepted Lynn White's accusation that Judaism and Christianity produced the West's anti-nature tendencies. Chase believes White's article gave the environmental movement "an epistle for spiritual reform" hostile to Western religion.¹

Although Earth First! militants do tend to reject organized religion, and many are uncomfortable with the explicitly reli-

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gious rituals and songs now popular in the movement, most report a "spiritual" connection to nature. Earth First!ers often speak of the need to "resacralize" nature. Indeed, the heart and soul of Earth First! resides in a radical "ecological consciousness" that intuitively, affectively and deeply experiences a sense of the sacredness and interconnection of all life. From this experience is derived the claim that all life, and even ecosystems, are intrinsically valuable.

Earth First! Myths

All religious traditions involve myth, symbol and ritual: the myths usually delineate how the world came to be (cosmogony), what it is like (cosmology), what people are like and capable or incapable of achieving (moral anthropology) and what the future holds (eschatology). The theory of evolution provides a primary cosmogony that promotes the "biocentric ethics" or "Deep Ecology" espoused by Earth First!ers. If all species evolved through the same process, and none were specially created for any particular purpose, then, as Earth First! philosopher Christopher Manes notes, the metaphysical underpinnings of anthropocentrism are displaced, along with the idea that human beings are at the top of the "Great Chain of Being", ruling over all on Earth. "Taken seriously," Manes concludes, "evolution means that there is no basis for seeing humans as more advanced or developed than any other species. *Homo sapiens* is not the goal of evolution, for as near as we can tell evolution has no telos — it simply unfolds, life-form after life-form . . ." The ethical significance of this cosmogony is that since evolution gives life in all its complexity, the evolutionary process itself is of highest value. The central moral priority of Earth First! is to protect and restore wilderness because undisturbed wilderness provides the necessary genetic stock for the very continuance of evolution.²

This still does not answer the question: Why should we care about evolution, or wild places, in the first place? Manes' argument displacing humans from the centre of moral concern does not adequately explain where *value* actually resides. This is why so much spirituality gets pulled into the Earth First! movement: some form of spirituality is needed to provide a basis for valuing the evolutionary process and the resulting life forms. Manes himself roots Deep Ecology and Earth First! in "the profound spiritual attachment people have to nature".³ Even those drawn to a biocentric ethic largely based on an evolutionary cosmogony eventually rely on metaphors of the sacred to explain their feelings.

Some of the diverse tributaries to the Earth First! movement are *explicitly* religious, tracing their biocentric sentiments to Taoism, Buddhism, Hinduism, witchcraft or pagan earth-worship. There are even a few Christian nature mystics among them. The most important spiritual home for Earth First! activists, however, resembles what historian of religion Amanda Porterfield calls "American Indian Spirituality". This exists as "a countercultural [and religious] movement whose proponents define themselves against the cultural system of American Society."⁴ The central tenets of this spirituality, she says, "include the condemnation of American exploitation of nature and mistreatment of Indians, regard to precolonial America as a sacred place where nature and humanity lived in plentiful harmony, certainty that American Indian attitudes are opposite to those of American culture and morally superior on every

count, and an underlying belief that American Indian attitudes toward nature are a means of revitalizing American culture."⁵

A better label for Earth First!'s beliefs would be *primal spirituality*, since Earth First!ers believe we should emulate the indigenous ways of life of most primal peoples, not just those in North America. Moreover, it is not merely the precolonial American landscape which is sacred but wilderness in general, wherever it can be found or restored.

Earth First!ers generally call themselves tribalists, and many Deep Ecologists believe that primal tribes can provide a basis for religion, philosophy and nature conservation applicable to our society.⁶ Moreover, Earth First!ers increasingly discuss the



Paul Dix, Impact Visuals

Earth First!er at a Rendezvous in Montana in 1990. The movement draws the inspiration for its myths and ritual from the religious beliefs and practices of native North Americans.

importance of ritual for any tribal "warrior society." At meetings held in or near wilderness, they sometimes engage in ritual war dances, sometimes howling like wolves. Indeed, wolves, grizzly bears and other animals function as totems, symbolizing a mystical kinship between the tribe and other creature-peoples.

Native Americans often conceive of non-human species as kindred "peoples" and through "rituals of inclusion" extend the community of moral concern beyond human beings. Some Earth First!ers have developed their own rituals of inclusion,

called 'Council of All Beings' workshops, which provide a ritual means to connect people spiritually to other creatures and the entire planet.⁷ During these workshops, rituals are performed where people allow themselves to be imaginatively possessed by the spirits of some non-human creature, or even of rocks and rivers, and verbalize their hurt at having been so poorly treated by human beings. As personifications of these non-human forms, participants cry out for fair treatment and harmonious relations among all ecosystem citizens. Ecstatic ritual dance, celebrating inter-species and even inter-planetary oneness, may continue through the night. Such rituals enhance the sense that all is interconnected and sacred.

Thinking Like Mountains

One of the central myths of the emerging Earth First! tradition has been borrowed from Aldo Leopold's 1949 'Thinking like a Mountain' essay. He begins by suggesting that perhaps mountains have knowledge superior to ours. Then he describes an experience he once had of approaching a wolf he had shot, just

"in time to watch a fierce green fire dying in her eyes. I realized then, and have known ever since, that there was something new to me in those eyes — something known only to her and to the mountain. I was young then . . . I thought that because fewer wolves meant more deer, that no wolves would mean hunters' paradise. But after seeing the green fire die, I sensed that neither the wolf nor the mountain agreed with such a view."

Among Earth First!ers, this story has evolved into a mythic moral fable in which the wolf communicates with human beings, stressing inter-species kinship. (Animal-human communication is a common theme in primal religious myth, and animal-human and human-animal transmutation and communion are a part of shamanism. Many Earth First!ers report shamanistic experiences.) The wolf's "green fire" has

become a symbol of life in the wild, incorporated into the ritual of the tradition. Soon after the group was founded, several Earth First! activists went on "green fire" road shows, essentially biocentric revival meetings. "Dakota" Sid Clifford, a balladeer in these road shows, referred to them as "ecovangelism". Clifford said that often audience members would come forward afterward, tears streaming down their faces. The converts sought to learn what was required to repent of their sins against nature. In these shows, the personified wolf calls on humans to repent from their destructive ways and to revere Earth and her creatures. Some of the shows ended with converts howling in symbolic identification with the wild and wolves.

An ecowarrior dance held at Earth First! wilderness gatherings, described in the *Earth First!* journal, included "pounding drums, naked neanderthals and wild creatures. An industrial machine was [symbolically] stopped in its tracks by monkey-wrench-waving children. Nearly everyone joined in the primal celebration of wild nature." Commenting on the scattering of the warriors after the gathering, the author of the report exclaimed, "the green fire is still running wild and free [as] we are once again scattered across the country."⁸ Thus, primal spirituality is combined with the idea that an authentic human life is lived wildly and spontaneously in defence of Mother Earth.

The Hunting of the Bulldozer

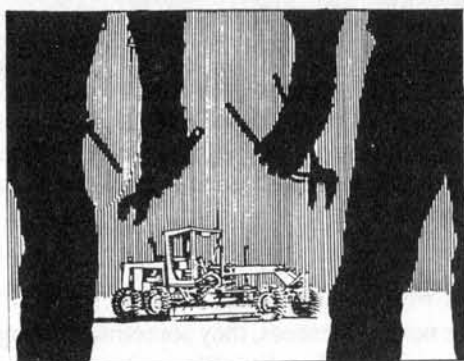
Ecotage, of course, is not merely acted out *symbolically* in ritual dance: ecotage and civil disobedience are themselves ritual actions. Some Earth First!ers recognize this. Leading Earth First!er Dave Foreman, although sometimes claiming to be an atheist,⁹ speaks nevertheless of ecotage as ritual worship: monkeywrenching is "a form of worship toward the earth. It's really a very spiritual thing to go out and do."¹⁰ Religious rituals function to transform ordinary time into sacred time, even to alter consciousness itself.¹¹ Earth First! rituals are no different. One Earth First!er ecstatically explains, "There's a kind of magic that happens when you do an action. You can be up all night, then alert all day. There's a sense of magic, calmness, clarity. It's a life experience you cherish."¹² John Davis, an editor of the *Earth First!* journal, suggested that tribal rites of passage should be developed that require direct action: "Rites of passage were essential for the health of primal cultures . . . so why not reinstitute initiation rites and other rituals in the form of ecodefense actions? Adolescents could earn their adulthood by successful completion of ritual hunts, as in days of yore, but for a new kind of quarry — bulldozers and their ilk."¹³

Ecofeminism provides another tributary to Earth First!'s nature-revering spirituality.¹⁴ Its ideas have been incorporated into Earth First! liturgy: many song-hymns heard at Earth First! gatherings satirize macho-hubris and male domination of nature and women, decry male massacres of witches and praise various pagan Earth Goddesses.

Ecofeminism and primal spirituality have a close affinity with yet another tributary — bioregionalism — which is a countercultural movement with increasing connections to Earth First!. Bioregionalism envisions communities of creatures living harmoniously and simply within the boundaries of distinct ecosystems. It criticizes growth-based industrial societies preferring locally self-sufficient and ecologically sustainable economies and decentralized political self-rule. Bioregionalists share Earth First!'s ecological consciousness regarding the

Earth First! journal's response to Earth Day.

EARTH NIGHT 1990



Go out and do something for the EARTH . . .
at night.

Bombs, Accusations and Infiltrators

In May 1990, a pipe bomb exploded beneath the seat of leading Earth Firster Judi Bari's station wagon as she was driving through Oakland, California with fellow Earth Firster Daryl Cherney. Bari suffered extensive tissue damage and a broken pelvis while Cherney's left eye was injured by flying debris.

The police and the FBI almost immediately blamed Bari and Cherney themselves for the bomb, claiming that it had accidentally exploded while being carried to an unknown location. For weeks after the bombing the FBI and police released information purporting to incriminate Bari and Cherney in the bombing.

However when the case came to court it collapsed and Bari and Cherney were set free. Within days, Greenpeace had hired a private investigator to search for the real culprits — suspected by many in the environmental movement as being linked to the timber industry.

A year before the car bombing the extent of FBI interest in Earth First! became apparent when 50 FBI agents

stormed a group of activists attempting to cut through a power pylon in the Arizona desert. Earth First! co-founder Dave Foreman was arrested at his house the next morning, waking up to find himself staring at an FBI agent's revolver. The group had been infiltrated in 1988 by an FBI agent, Mike Fain, posing as a carpenter.

The "Arizona Five" recently agreed to a plea bargain, admitting to assorted charges related to property destruction, while charges of a conspiracy to sabotage nuclear facility power lines were dismissed. Mark Davis received a six-year jail sentence and a \$20,000 fine for malicious destruction of property while Peg Millet, Mark Baker and Ilse Asplund were convicted of lesser accessory crimes. Foreman was convicted of conspiracy to commit property damage. In an unusual plea-bargain, probably designed to shut him up, his sentencing was postponed until the end of a five-year probationary period, when the charge could be reduced to a misdemeanor.

intrinsic value and sacred interconnection of all life.¹⁵ The earth-spirituality of bioregionalists parallels the primal spirituality prominent among Earth Firsters.

Earth Firsters have a natural affinity for bioregionalism. Dave Foreman even suggested that bioregionalism was one term for what Earth First! was seeking: "the future primitive". He added that Earth First! could be the bioregional militia: as bioregionalists inhabit a place and *become* that place, they should defend it with Earth First!'s militant tactics.¹⁶

Anticipating Ecocollapse

Before bioregionalism can flourish, however, many Earth Firsters believe that industrial society must first collapse under its own ecologically unsustainable weight. The theory that society is creating an ecological catastrophe containing the seeds of its own destruction introduces another key part of Earth First!'s mythic structure: its *apocalyptic eschatology*. After great suffering, if enough of the genetic stock of the planet survives, evolution will resume its natural course. If human beings also survive, they will have the opportunity to re-establish tribal ways of living, such as bioregionalism, that are compatible with the evolutionary future. Edward Abbey, whose novel *The Monkeywrench Gang* helped forge the movement, provides a typical example of Earth First! eschatology:

"Whether [industrial society is] called capitalism or communism makes little difference . . . [both] destroy nature and themselves . . . I predict that the military-industrial state will disappear from the surface of the Earth within 50 years. That belief is the basis of my inherent optimism, the source of my hope for the coming restoration of higher civilization: scattered human populations modest in number that live by fishing, hunting, food-gathering, small-scale farming and ranching, that assemble once a year in the ruins of abandoned cities for great festivals of moral, spiritual, artistic and intellectual renewal — a people for whom the wilderness is not a playground but their natural and native home."¹⁷

So while bioregionalism focuses on developing models for the future, to many within Earth First!'s mainstream, bioregionalism will not flourish without the catalyst of a prior eco-collapse. Thus, while praising its promise, Foreman has criticized the practice of most bioregionalists for becoming "mired in its composting toilets, organic gardens, handcrafts, recycling," and so on. Although, he agrees, "these . . . are important . . . *bioregionalism is more than technique, it is resacralization [of Earth] and self-defense*".¹⁸

All Aboard the Woo Woo Choo Choo

Stopping here would leave a misleading portrait. Certainly biocentric and evolutionary premises, primal spirituality, eastern religions and a panoply of other spiritual tributaries contribute to Earth First!'s worldview. Certainly Earth Firsters often distrust reason, deriving their fundamental premises from intuitions and feelings: their love for wild, sacred places, and their corresponding rage at the destruction of such places. Certainly the tradition has evolved by appropriating and creating a fascinating variety of myths, symbols, and rituals. But reason is not abandoned: ecological science and political analysis is essential to Earth First! praxis. Many within the movement worry about excessive preoccupation with spirituality, with what they call "woo woo". John Davis, himself responsible for much discussion of spirituality and ritual, cautions:

"Spiritual approaches to the planet seem to be of growing concern . . . The last issue of the Journal reflects this trend. We ran many articles on sacred sites, rituals, and such, but very few articles pertaining to specific wild lands. (Almost we replaced 'No Compromise in Defense of Mother Earth' on the masthead with 'All Aboard the Woo Woo Choo Choo'.) . . . Sacred sites, ritual, and matters of personal growth are important . . . However, Earth First! may lose effectiveness if it promotes these matters while neglecting the time-worn practices of presenting wilderness proposals . . . and other such largely left-brain activity."¹⁹

Earth First! co-founder, Mike Roselle (foreground) and other activists blockade a bulldozer in Siskiyou National Forest, Oregon. The "Holies" faction, which is mainly based in Oregon and California, favour civil disobedience over monkey-wrenching.



David Cross, Impact Visuals

The ecological sciences provide the first wave of Earth First!'s left-brain activity. "We're in a war," Foreman says bluntly, "the war of industrial civilization against the natural world. If you look at what the leading scientists are telling us, we could lose one-third of all species in the next 40 years . . . We're in one of the greatest extinction episodes in three-and-a-half billion years of evolution."²⁰ Such analyses, along with the affective/spiritual sense of the intrinsic worth of intact ecosystems, converge in a radical critique of both industrial society and human breeding.

Not only do we need bioregional tribalism as a new social organizing principle, but commitment to negative population growth is a moral "litmus test" for inclusion within the tribe.²¹ The Journal is full of exhortations to breed less, and sometimes runs apparently serious letters advocating genocidal solutions to overpopulation. (At one gathering, a woman asked me, "How can you possibly justify having two children?" Conversation is a powerful means of enforcing procreative orthodoxy within the movement.) The basic procreative ethics is well summarized by Chim Blea: "The impact of each of our middle-class babies is equivalent to that of 40 in the Third World — more old-growth timber clearcut, increased grazing pressures on marginal grasslands, another irrigation project drowning a desert . . . Think before you have that baby. One more to cause suffering. One more to suffer. Have your tubal ligation, your vasectomy now."²² Some have even humorously proposed vasectomy tables for Earth First! wilderness gatherings.

Political analysis provides the second critical wave of Earth First!'s left-brain activity. The founders of Earth First! were disgruntled conservationists, who were licking their wounds after losing an important legislative battle over the Federal Government's 1980 Roadless Area Review and Evaluation process. The lobbyists concluded that the government had protected only "rocks and ice", rather than the areas most important to the preservation of biodiversity.²³ What struck them afterwards was that they had been reasonable and moderate, backing up their proposals with ecological science, while the opponents acted like lunatics, casting the debate in terms of "sacred" values such as private property and the "American way of life". Moreover, despite their moderation, they were repeatedly and absurdly accused of being "environmental extremists". So, they concluded, as reasonableness often fails, perhaps Earth needed a group of wild-eyed, unreasonable fanatics. The overall

strategy was to provide some real extremists and thereby strengthen the hand of the mainstream environmental groups, making them appear more moderate.²⁴ Furthermore, they wanted to promote Deep Ecology — which they knew did not animate most mainstream environmentalists — and shift environmental debates from protecting scenic places to preserving biodiversity.²⁵ In their judgment, this requires the protection and restoration of vast areas to their natural state.²⁶ Mainstream groups rarely proposed restoration at all, and never on a large scale.

Beyond the effort to provide by their presence a trump card to mainstream environmentalists, Earth First!ers began to experiment with civil disobedience and monkeywrenching in a concerted strategy to protect biodiversity and raise awareness. Civil disobedience, and especially the destruction of equipment used to destroy habitat, dramatically posed the moral premise of the movement: biodiversity is more important than the superfluous desires and property of greedy human beings.

Breaking the Law

When people break the law for reasons of conscience, particularly in formally democratic societies, they feel compelled to justify morally their actions. The major justifications advanced by Earth First!ers could be titled "it's really that bad": representative democracy is a sham, controlled as it is by the true criminals — corporate devils and government co-conspirators — who rape the land with impunity.²⁷ "Wilderness is our true home" and extra-legal direct action is justified as self-defense.²⁸ Meanwhile, environmental groups have failed to protect biodiversity, largely because they share the anthropocentric and industrial premises of mainstream culture. Worse still, the mainstream environmental movement has been overrun by well-paid bureaucrats and attorneys less concerned about Earth than their careers. The mainstream has been co-opted. Wilderness has been sold-out.²⁹

Civil disobedience was originally justified as a stalling tactic: "in the [long-term] hope that an enlightened citizenry will one day appreciate more fully the need for the conservation of

natural resources";³⁰ in the short-term hope of providing time to win legislative victories or to file lawsuits ("paper monkeywrenching"). Ecotage was also conceived of as a means to stall or prevent the destruction of wild places — again, to try to save some biotic diversity short-term. "When the floundering beast," Howie Wolke's metaphor for industrial society, "finally, mercifully chokes in its own dung pile, there'll at least be some wilderness remaining as a seed bed for planet-wide recovery. Maybe even some Griz; . . . some wild humans; . . . some hope . . . maybe even some human wisdom."³¹

Just as important a rationale for ecotage is the idea that monkeywrenching can actually prevent destructive activity already underway — driving the worst Earth destroyers right out of business — erasing their profits by slowing their work and destroying their tools.³² Early successes with tree spiking — some activists put nails into trees and thereby prevented some timber sales — convinced many Earth First!ers that ecotage could be effective.³³

Others within the movement, however, doubt the effectiveness of ecotage. Disagreements about monkeywrenching led to some early disaffections from the movement, and have been part of the tensions leading to the first major schism in the movement since it was founded in 1980.

The Earth First! Schism

Some observers, such as Michael Parfit, see tensions in the movement between "pragmatic" and "spiritual" factions.³⁴ Although some are uncomfortable with the spirituality in the movement, the overwhelming majority respect most forms of Earth spirituality. We have already noted Foreman's spiritual side, but Parfit would place him among the alleged pragmatists. Parfit may have been misled by Foreman's comment that "the woo woo stuff . . . is beyond me." But he does not adequately recognize that Foreman then added "but the diversity is good".³⁵ Nevertheless, not all forms of Earth spirituality are orthodox. "New Age" spirituality is often derided by Earth First!ers for its anthropocentrism and overly optimistic view about the role of humans in creating, through technology, a new golden age.

Dave Foreman and Christopher Manes, and quite a few important Earth First! activists, recently disassociated themselves from the movement. In some of their hyperbole, they have inaccurately claimed that the competing faction — located mostly in California and Oregon — was abdicating biocentrism. Meanwhile, the California/Oregon faction, led by Judi Bari, Darryl Cherney and Mike Roselle (a movement co-founder who recently became an employee of Greenpeace), in turn charged in exaggerated tones that the Foreman faction was misanthropic, racist and elitist, ignoring social justice issues intrinsically related to biocentric concerns. It is possible, however, to characterize these disputes in a way that is more accurate and fair to all parties than the pictures painted by those in the heat of verbal battle. In my judgment, the schism is grounded more in disagreements about strategy and tactics than in fundamental moral differences: both factions remain biocentric. (For example, up until now, the portrait I have been painting generally reflects both factions.)

I call the Foreman/Manes faction the "Wilders", because they fought to keep Earth First!'s focus exclusively on wilderness, and thereby, in their minds, on biodiversity and biocentrism. (The new journal they began publishing in 1991 is called *Wild*

Earth) Wilders believe that tying environmental protection to other issues — such as social justice, anti-imperialism or workers rights — alienates many potential wilderness sympathizers. They also often consider themselves true patriots, trying to preserve the sacred landscape of America. Sometimes they fly the US flag, not out of nationalism (the system being morally bankrupt), but because they believe the flag can also symbolize the love of the land, which fits well with their overall moral sentiments. Moreover, as Foreman once told me, they did not want to leave the power of that symbol purely in the hands of land-rapers like Ronald Reagan and James Watt (Reagan's notorious Secretary of the Interior).

Opposite the Wilders is the group I call the "Holies" — the Bari, Cherney, Roselle faction — who insist that a "holistic" perspective is needed; one has to examine how threats to biodiversity are related to other social issues. (The "Holies" label is also appropriate, because the people in this faction tend toward more overtly spiritual expression.) Holies argue that activism based on the separation of ecological and social issues will ultimately fail because industrial *society* destroys biodiversity — not only commercial incursions into biologically rich wilderness areas.³⁶ According to Judi Bari, Deep Ecology stresses interrelationships, so you cannot separate wilderness from the society around it: the strategy of focusing on wilderness set-asides "contradicts the very theory of biocentrism".³⁷ Bari continues that environmental and class exploitation have to be fought together: "Our society has been built on the exploitation of both the lower classes and the earth."³⁸ The primary dispute, then, is over the relative priority Earth First! should place on social issues which may not at first glance appear as environmental issues.³⁹



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Tactical Disagreements

A related battle is over whether civil disobedience or ecotage is the most effective tactic. This debate is related to another dispute about the ultimate goal of direct action: to create a mass movement, or simply to thwart commercial incursions into biologically sensitive areas.

The Holies want the strategic priority to be the building of a mass movement to stop wilderness destruction, and ultimately, to supplant industrial lifestyles altogether. They believe that civil disobedience, with its focus on arousing the conscience of the community, is the best mass movement strategy. While many of the Holies have monkeywrenched, and most do not condemn it across the board, they do not think it should be emphasized. Some think it usually does more harm than good. Holies have completely rejected tree-spiking, fearing loggers could be hurt, irreparably harming their efforts to organize a mass movement. Roselle complains that "Foreman doesn't realize we can accomplish more these days with civil disobedience than monkeywrenching."⁴⁰ Judi Bari adds, "I don't think people sneaking around in the woods pouring sand in gasoline tanks on bulldozers are going to bring about the level of pressure needed . . . The only thing that brings about change is the fear of [the] loss of social control."⁴¹ To save the Earth, she believes, we are going to have to expand beyond the white middle and upper classes, because they are the ones "who most benefit from the destruction of the Earth."⁴²

Wilders, on the other hand, prefer monkeywrenching to civil disobedience, hoping to thwart industrial society and preserve as much biodiversity and wilderness as possible — at least until the ecological collapse arrives ushering in new, more humble ways of living. They generally agree that civil disobedience is an overrated tactic. Wilders assert that civil disobedience is often impractical because Earth First!ers are usually poor and cannot afford to be arrested and fined. This argument was strengthened when several activists lost a lawsuit filed against them for blockading a logging operation — the logging company was awarded \$58,000 in compensatory and punitive damages.⁴³ Successful monkeywrenching does not entail such risks and costs, Foreman argues, and can be "extremely effective".⁴⁴

Eschatological Differences

I believe the fundamental root of the schism I have been describing can be traced to small but significant differences in beliefs about human nature and eschatology. Holies are more optimistic than Wilders that human beings can be converted to biocentrism and can change their lifestyles. (They tend to be more influenced by "human potential" no-

tions and less hostile to "New Age" beliefs than the Wilders). In short, they have not despaired completely of the potential for *voluntary* reform by the human species.

Wilders tend to be less optimistic than Holies about the human species. Wilders deride what they claim is humanism among Holies-types — a charge deeply resented by Holies such as Judy Bari — who points out that she and others have risked their own lives and been injured in their efforts to save the forest.⁴⁵ Some Wilders are unapologetically misanthropic.⁴⁶ Bari calls Foreman and others macho individualists and élitists, while others suggest that they are even fascistic.⁴⁷ Wilders have either despaired of reform, or believe any reform will be insufficient.⁴⁸ They tend to leave long-term hope to Mother Earth herself. In their more apocalyptic view, ecocollapse is probably inevitable — but if they do their part in thwarting industrial destruction, this may be not be bad. Ecocollapse may be the means Mother Earth will use in her self-defence — a way she

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can remove the human industrial cancer, and create the conditions people need to develop appropriate ways of living.⁴⁹

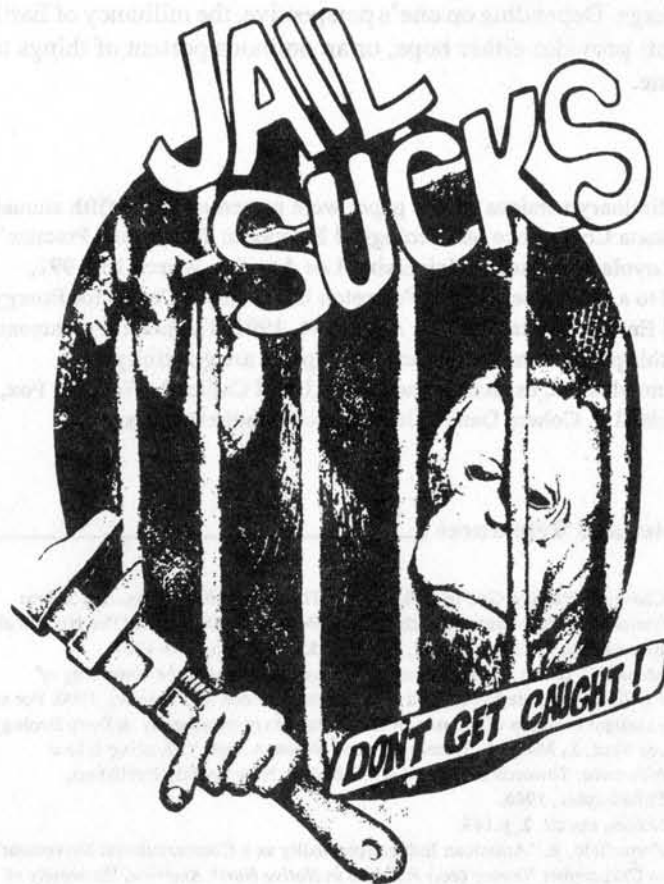
Finally, the schism is also related to disagreements about the proper level of commitment to non-violence. When asked at a gathering, "What are the ethics of monkeywrenching?", Earth First!ers voiced two versions: First, "Don't hurt anybody. Don't get caught. If you get caught, don't fink." The second version reversed the priority: "Don't get caught. Don't hurt anybody. If you get caught, don't fink." These two slogans reflect some of the tensions in the movement: both factions see themselves as non-violent, but Holies tend to place a premium on this. Wilders fear that non-violence is based on a pacifist humanism at odds with nature itself and biocentrism. Human beings are animals, and there may be times when their survival requires an emotional and adrenaline-fueled response. It may be, one corporately-written article suggests, that under certain circumstances violence may be more deeply non-violent in the long-run — violence may be necessary to cut off "the gangrene now infesting" Earth.⁵⁰

Despite these tensions and the recent schism, there is far more that unites than divides these radical environmentalists. They are all animated by a deeply spiritual biocentrism, they share or respect the plural myths, symbols and rituals of the emerging Deep Ecology worldview as well as a cynicism about the system's willingness or ability to respond to the ecological catastrophe descending upon us, and they are committed to extra-legal direct action to save as much of the genetic stock of the planet as possible. Both Holies and Wilders tend to claim success for their preferred tactics, believing that all things considered, their tactics provide the most hope.

The Prospects for Radical Environmentalism

Some Earth First!ers hope for a moral paradigm shift from anthropocentrism to biocentrism, from a stewardship ethic to an ethic of reverence for the land. Some even hope this shift will make the 1990s "make the '60s look like the '50s." Assessing the actual impact of and prospects for such movements, however, is a difficult empirical task. Earth First! is certainly making itself increasingly felt. One indication of this is the FBI infiltration of the movement. Another comes from reports about damage done by "ecoteurs", which has led some commercial interests to increase security and in some cases hire their own infiltrators to keep tabs on radical environmentalists.⁵¹

It would be premature to evaluate definitively the success of these groups, and of course, an evaluation would depend on the standard one applies. Dave Foreman says that saving one tree, one acre of grizzly bear or wolf habitat, is an accomplishment.⁵² Those hoping to create a mass movement have set a higher standard of success, but they also can point to small victories that seem to have been won through direct action. There is widespread agreement that Earth First!ers have brought public exposure and debate to many previously ignored environmental issues. Moreover, many among the mainstream groups acknowledge that their hand is strengthened by the presence of the unreasonable Earth First!. Mainstream environmentalists increasingly, but quietly, inform Earth First!ers of opportunities for their unique form of activism. An American Indian tribal chairman once told me that, although he could not say this publicly, he was glad about an Earth First! campaign to disrupt a commercial activity threatening his reservation.



Earth First!

On the other hand, we have seen that some believe that ecotage does more harm than good. To this, T.O. Hellenbach responds:

"The charge that monkeywrenching alienates public opinion stems from an incomplete understanding of propaganda and history. Scientific studies of propaganda and the press show that the vast majority of the public remembers the news only in vaguest outline . . . Basic concepts like 'opposition to logging' are all that are retained. History informs us that direct action engenders as much support as opposition . . . The majority of the public floats noncommittally between the conflicting forces."⁵³

My speculation is that radical environmentalism does promote its objectives by extending the range of the debate, thereby shifting the middle of public opinion closer to the positions of environmentalists than they would otherwise be. If this is correct, the impact of Earth First! and its derivatives will increase as these groups grow in number and intensify their resistance. There will be, of course, a negative reaction. But in general, concrete opposition to radical groups comes from people already hostile to environmentalists' concerns. This would not produce a shift in public opinion against environmental concern.

More importantly, the growth of biocentric ethics in general, and of this movement in particular, suggests that both will have an increasing impact within North America. In ten years the *Earth First!* journal gained about 15,000 regular readers. Numerous smaller newsletters have sprung up. And Earth First!'s numbers are dwarfed by other less militant sister groups, including Greenpeace and those promoting animal liberation. Radical environmental groups are also emerging abroad — indeed — the boldest acts of ecotage have occurred outside the United States.⁵⁴ As the environmental costs of industrial growth inten-

sify, so will green rage — indeed, this rage has only begun to emerge. Depending on one's perspective, the militancy of Earth First! provides either hope, or an ominous portent of things to come.

Preliminary versions of this paper were presented to the fifth annual Casassa Conference on 'Ecological Prospects: Theory and Practice', at Loyola Marymount University, Los Angeles, March 16, 1991, and to a faculty seminar at Princeton University's Center for Energy and Environmental Studies, August 14, 1991. The helpful comments on this paper from conference participants are gratefully acknowledged, especially those of J. Baird Callicott, Warwick Fox, Michael P. Cohen, Daniel Deudney and Matthew Glass.

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- Recently, Dave Foreman responded to such criticisms, admitting that he has not said enough about his concern for "victims of multinational imperialism around the world" and other typically left-wing issues. "One problem I've had in getting the fullness of my message out comes from my impatience at seeing eco-catastrophe going on all around me while so many of those on the left who are always talking about social justice don't seem to even see the problem or care about species." (Bookchin and Foreman, op. cit. 9).
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- I am trying to characterize the two major types here — as sociologists often do — in an attempt to clarify complex phenomena. Exceptions and overlaps between these two types within Earth First! activists (present and former) could no doubt be found.
- Bats in the Rafters Affinity Group, 'Non-Violent Direct Action Training: Our Tactic vs. their Interiority of Pacifism', *Earth First!* 9, 7, 1 Aug. 1989. Foreman is ambivalent about civil disobedience because it comes largely out of a Christian tradition often more concerned with personal transformation and purity than with results. He worries, however, that concern for results can lead to an "attitude where the ends justify the means" (op. cit. 6).
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The Deep Green Establishment

THE BEST OF RESURGENCE, edited by John Button, Green Books, Bideford, Devon, £11.95 (pb), 383pp. ISBN 1- 870098-27-7

Resurgence: 25 years ago an obscure magazine, with an intimidatingly dense type-set; today, against all odds, a respectable almost glossy mouthpiece of the deep green establishment.

To celebrate its quarter-century, *Resurgence* has published this anthology; an ideal opportunity, one might think, to discover what the original editors were propagating back in the 1960s. Alas, no. Of the 60 articles printed, only two pre-date 1973, the year when Satish Kumar, its present editor, took *Resurgence* over from its founder, John Papworth; the book must surely be the poorer for this omission.

Still, there is plenty worth reading. Admittedly, some articles — Schumacher's 'Buddhist Economics', an early Animal Lib manifesto from Peter Singer — expound ideas now so familiar that their interest is mainly historical. But there is much that remains challenging.

Leopold Kohr, for example, writing in 1966, explains how increasing industrial consumption leads inexorably to lower living standards. Twenty years later, Anil Agarwal explores a similar theme in the Third World, where "a concept like Gross Nature Product . . . is many times more important than the conventional Gross National Product". Valentina Borremans makes fascinating observations about gender-specific tools, and wonders whether "economic growth has been

waiting for Appropriate Technology to wipe out subsistence completely".

Less technical is Ian Lee's 'Not Guilty', essential reading for anyone defending themselves in court; or Rosalind Brackebury's beautiful account of a Greenham Common demonstration. The selection ends with — what else? — Jean Giono's 'The Man Who Planted Trees', surely the most inspiring story of the 20th century.

And there is plenty more. True, some of it is waffle — sub-editors at *Resurgence* have never been noted for their ruthlessness. But the whole represents a rich and coherent body of thought, that is becoming increasingly influential as it achieves maturity.

What's missing? Humour, for a start. Not that they are po-faced at *Resurgence*; how could they be, with the disarmingly witty Sue Limb contributing these days? But she is not represented. Only Anne Herbert's streetwise retelling of Jonah and the Ninevites tries to make us laugh; and at times she tries a little too hard.

Anger too. Reflective and Gandhian in tone, *Resurgence* prefers not to raise its fists. The anthology contains no contemporaneous denunciation of the Falklands War; only a touching account of a conciliatory workshop held in Argentina three years later.

Most conspicuously absent of all, is a great swathe of English life and culture. There are articles aplenty on life in Ladakh, or the aspirations of Hopi Indians. But what of single mums in Rochdale, or motorbike mechanics in Croydon? If we are to establish a sane zero-growth economy in Britain, these people, the majority, will have to be convinced and satisfied. Yet as far as this anthology is concerned, they hardly exist. The magazine's interest in the British social fabric rarely extends beyond isolated villages at the extremities of the country; and holistic therapy conferences in rural mansions.

It is sad that after 25 years there is still no broad-spectrum British radical/environmental magazine selling in newsagents alongside *The Economist* and *The Spectator*. Not that *Resurgence* is aiming to fill this slot — but for the time being it is the closest we have to such a paper. It is not entirely my cup of tea; but I am a subscriber, and I am more than grateful that it exists. Long may it continue.

Simon Fairlie

Simon Fairlie is a freelance writer and stonemason based in Salisbury, Wiltshire.

The IAEA's Chernobyl Report

THE RADIOLOGICAL CONSEQUENCES IN THE USSR OF THE CHERNOBYL ACCIDENT: Assessment of Health and Environmental Effects and Evaluation of Protective Measures, International Atomic Energy Agency, Vienna, 1991.

The IAEA's report on the Chernobyl disaster has caused a furore. It has been severely criticized for being scientifically flawed and politically motivated and has, together with the revelations over the Iraqi nuclear programme, seriously, perhaps terminally, damaged the already tarnished reputation of the IAEA.

According to the IAEA report, exposure to radiation released by the explosion of the Chernobyl reactor has not produced any measurable physical health effects on the local population. No significant thyroid abnormalities due to radiation from the accident were discovered; nor were significant haematological or other effects on the immune system; nor were significant increases in cancers, genetic effects, cataracts or any other of the illnesses generally attributed to exposure to ionizing radiation. The study concludes that the only health effects of the Chernobyl accident are psychological, such as stress — a startling conclusion, fiercely challenged by, among others, the Ukrainian health authorities.

Although large areas in Byelorussia, Russia, and the Ukraine were contaminated with radioactivity from Chernobyl, exposing many hundreds of thousands of people to significant doses of radiation, the independent field studies carried out by the International Chernobyl Project were rushed through in two months — far too short a time for an adequate study.

The areas covered by the study were among those designated by the Soviet government as contaminated by more than five curies per square kilometre of caesium-137. A total area of about 25,000 square kilometres was involved. However, the government-designated areas are believed to considerably underestimate the contaminated regions in the three republics. The study should have covered a much larger area.

The number of people in the area examined by the Project was too small for adequate statistical analysis (the sample contained only 1,700 people from the contaminated and control areas); there was no complete census of the health effects on people in contaminated and comparable uncontaminated areas; the areas in which people in the control groups lived may have been contaminated by the accident; and hot-spots, areas of exceptionally high contamination, were not investigated.

Reliance on Soviet Data

Perhaps the most serious criticism of the International Chernobyl Project is that it relied almost entirely on data supplied by the Soviet government — hardly an objective source. The data was supplied in the form of statistics in tabular form, mainly as averages with no error bands included. Very few raw data or detailed contamination maps were submitted.

The report has also been heavily criticized for excluding the 600,000 "liquidators" — the soldiers and miners drafted in to clean up the mess caused by the explosion of the reactor — as well as people living within 30 kilometres of Chernobyl (the so-called exclusion zone), and people already evacuated or relocated. In other words, the people who received the largest doses of radiation were left out of the study which was confined to about 825,000 people living beyond the exclusion zone. It should be noted that several million people live in areas near Chernobyl where the level of radiation is above that recommended as the maximum permissible for populations.

Ukrainian experts estimate that about 7,000 liquidators have died from radiation exposure since the Chernobyl accident. According to official Soviet figures, however, only two workers died in the explosion and 29 fire-fighters died from radiation sickness within a few weeks. One hundred and thirty-seven liquidators were hospitalized and over 300 suffered from radiation sickness. Given the very high radiation exposures involved, the Ukrainian figures are more believable than the official Soviet ones.

Delayed Evacuation

The evacuation of people living even in areas of the most intense radiation only

began nearly two days after the reactor exploded. In the meantime, life went on as if nothing had happened. Children played as usual in the open air. Nevertheless, the IAEA report chose not to comment on the lack of protective measures taken by the Soviet authorities.

According to figures given at a recent international scientific symposium on the effects of Chernobyl held in Kiev, the thyroids of about 13,000 children and 8,000 adults received dangerously high doses of radiation. Of the 70,000 children eventually evacuated, about 60 per cent sustained damage to their immune system, a condition which has been described as "Chernobyl AIDS". Baldness is reported to be increasingly frequent. One clinic in Kiev reports that it treated 153 bald children in 1989, compared with 49 in 1985.

About 135,000 people from the abandoned towns of Pripyat, two kilometres from the power station, and Chernobyl town, 20 kilometres away, will never return to their homes. Some 73,000 people from Byelorussia and the Ukraine are currently being evacuated and a further 200,000 are slated for evacuation from contaminated areas over the next two years. The IAEA report argues against these evacuations because: "The adverse health consequences of relocation should be considered before any further relocation takes place". But some independent experts argue that the estimates of the International Chernobyl Project and the Soviet authorities of radiation doses received by people in the contaminated areas seriously underestimate the exposures.

Some 72 per cent of the people in the contaminated areas want to be evacuated. This is so, according to the IAEA study, because of stress and anxiety arising from a lack of understanding of radiation.

Cancer Deaths

Official estimates suggest that 40,000 people in the Soviet Union will eventually die from exposure to radiation as a result of the Chernobyl nuclear accident and that a similar number will die outside the Soviet Union. Most will die prematurely from cancer.

But independent estimates, taking into account the most recent studies of the effects of exposure to low levels of radiation, suggest that between 280,000 and 500,000 people will die prematurely

worldwide as a result of Chernobyl. These estimates suggest that cancer deaths within the Soviet Union due to exposure to radiation from the Chernobyl accident are likely to be between 100,000 and 200,000.

It is not surprising that excess cancers caused by Chernobyl have not yet been discovered. It can take a long time, even decades, for these cancers to appear. The long-term health effects of radiation are by far the most important. Those caused by the Chernobyl accident have yet to appear in significant numbers.

Exposure to radiation can induce genetic effects which may damage the offspring of exposed people for generations. Crucial data on possible genetic effects from Chernobyl radiation was ignored in the IAEA report because it was described as "unreliable". This is a serious omission because genetic damage resulting from exposure to radiation of a large population is the most worrying of all radiation damage. The most recent statistics from the Ministry of Health in Byelorussia report an 18 per cent increase in birth defects since 1986.

International Collusion

The Project was set up at the request of the Soviet government, an important Member-state of the IAEA. The Agency may, therefore, have been unwilling to diverge far from, or criticize, the official Soviet line about the effects of the Chernobyl accident. A more cynical view is that the International Chernobyl Project is simply a cover-up for the nuclear industry. Greenpeace, for example, comments that: "The report clearly illustrates the collusion of the international community with the cover-up of Chernobyl by Soviet authorities".

Be this as it may, the study does emphasize that serious psychological problems like stress are brought on by worry about the possible health effects of exposure to radiation. This evidence of widespread fear of radiation will bring little comfort to the nuclear industry.

The World Health Organization is planning a more rigorous study to determine the long-term health impacts of the Chernobyl accident. Hopefully, it will be given enough resources to do a good job. We owe it to the victims of Chernobyl that as much information as possible is discovered about the real effects of the accident on human health and the envi-

ronment. Then at least some good will come from the Chernobyl tragedy.

Frank Barnaby

Frank Barnaby is former Director of the Stockholm International Peace Research Institute.

Unwelcome Guests

GUESTS OF THE NATION: People of Ireland Versus the Multinationals, by Robert Allen and Tara Jones, Earthscan, London, 1990, £7.95 (pb), 310pp. ISBN 1-5383-064-X.

Late in the 1950s the Irish economy was opened to foreign investment in the hope of speeding economic growth. This strategy worked successfully in the following decade and it continued to bring dividends for periods in the 1970s and 1980s. But Allen and Jones argue that it has had a serious environmental cost.

To some extent firms were attracted by the lower pollution control standards in Ireland and by the environmental inexperience of local residents. They came precisely to avoid the expensive clean-up costs which they would have had to face at home (usually the USA). Other companies, those which were not particularly seeking to evade pollution regulations, were nevertheless looking to turn a quick profit; accordingly, they were not too fastidious about their pollutants either. For its part the Industrial Development Authority, together with other semi-state bodies, was set on sustaining economic growth; it had no brief to safeguard the environment.

Under these conditions, the only people who were regularly in a position to oppose environmentally-dirty developments were local, community-based groups. Allen and Jones' account is unashamed about taking their side; they are the 'People of Ireland', combating dangerous foreign schemes, schemes which were often supported by state agencies.

The book gives a series of detailed case studies of disputes over planned or actual developments: these include an oil terminal at which there were repeated small spills and a catastrophic fire; mining developments which resulted in air and land contamination; plans for an as-

bestos plant which also needed a dump for asbestos waste; chemical and pharmaceutical factories associated with noxious fumes and water pollution; and the search — by both companies and the authorities — for a site for toxic waste disposal.

Although the authors' partiality sometimes infects their accounts and descriptions (nearly all rivers "shimmer" and elderly residents appear almost uniformly wise and public spirited) their case studies reveal the sociological and technical complexity of many of the disputes. The stories reveal unexpected alliances and other political ironies. For example, some developments were initially opposed primarily by "blow-ins" — people from England or elsewhere in Ireland — who had moved to unspoiled areas precisely to escape modern industrial society. Only later were these objectors joined by others in the local community. On other occasions, the authors suggest that memories of communal struggle two or more generations ago were a potent factor in rallying community-wide resistance.

The authors are equally convincing when they show that foreign investment often leads to a decline in other aspects of the local economy: heavy metal pollution from mine workings reduces local agricultural productivity; shore-side chemical factories can undermine fishing or fish farming; and factory developments can drive tourists away. In each case they survey, the company — and the government — tend to argue that the investment will bring greater profits than it displaces. But this argument fails when we observe that profits from these developments leave the country and find their way into the coffers of the multinational company and when we find that factories only stay for a few years. When factories depart the profits and jobs they generated tend to disappear too, while their legacy of pollution may prevent former economic activities from restarting. Fishing, farming and even tourism tend to be more long-lasting; and to benefit the local economy just as effectively — even if their contribution to GNP does not look as great. Finally in this context, the authors do confront the fact that sometimes successful community resistance leaves local people jobless; there is no guaranteed "green" way of stimulating the local economy.

Guests of the Nation makes its arguments powerfully and convincingly. And the details the authors provide make the

book highly instructive for community campaigners and academic environmentalists alike.

Stephen Yearley

Stephen Yearley is a Reader in Sociology at Queen's University, Belfast.

Putting Figures on the Thought

THE GREEN BUDGET, edited by David Kemball-Cook, Mallen Baker and Chris Mattingly, Green Print, London, 1991, £5.99 (pb), 120pp.

Based on a UK Green Party-published Budget booklet and endorsed by the Green Party Council, *The Green Budget* makes proposals on a wide range of economic issues. Topics addressed include not only obviously "green" ones such as environmental taxation, energy, transport, and agriculture, but also such areas as housing, education, local government and the informal economy. The editors also give space to the broader picture: Europe, world trade and global security. The 1991 Green Budget is described as "a self-financing package of emergency measures that can be taken at once by a British government", not an ultimate Green solution to the problems described in the book.

The book begins with an examination of the conventional objectives of economic policy and contrasts these with the overall goals sought by the authors of this Budget. Individual topics are addressed in detail in the following chapters, which are grouped into sections labelled 'Economic Instruments', 'The Supply Side', and 'Other Dimensions'. At the end of each chapter is a summary of the proposals just presented, with an evaluation of estimated impact on revenue or spending.

Unfortunately the editors have neglected a couple of important points. First, they omit any consideration of the concept of the Laffer curve. This theory — that revenue has the potential to fall as taxation increases — is controversial, yet failure to acknowledge that such a concept exists, and to attempt to meet such criticism, weakens the editors' apparent assumption that higher taxes will bring in greater revenue in most cases.

Second, the editors fail to address the apparent self-contradiction in a programme which holds decentralization as a goal and yet, as the editors note, depends heavily on international cooperation (with the usurpation of sovereignty at the national level which that entails) for its success in several important areas. It would be helpful for the editors to explain why these apparently contradictory goals should not lead to an impasse in green policy-making.

More important than these details, however, is the general question of whether the book succeeds in meeting the goals of its editors. To answer this, one must ask who this book was written for. If it was written for the already-concerned with a strong background in economics and a familiarity with the British Budget system, it will probably be quite adequate as a brief explanation of how green economic philosophy might serve to address the imbalances currently plaguing the British economy while at the same time making it more compatible with ecological limits. If, however, this book was written for members of the wider green movement, more explanation of economic concepts should have been given. Many greens have little background in economics, and even those of us who do are not necessarily familiar with Budgetary concepts and terminology.

On the other hand, if the editors wish to reach a broader readership, the book would benefit from greater length. While there are many works already in existence which set out the principles, goals and rationale of green economic philosophy, *The Green Budget* may be one of the few expositions of green economic thought to reach many economists. It would therefore have been worthwhile to devote more space to an explanation of why green thinking needs to be incorporated into any Budget.

In spite of these criticisms, this effort to formulate concrete proposals in line with green philosophy and objectives, and to estimate their impact on revenue and spending, is an important achievement. It is to be hoped that its success will inspire economists to recognize the vital nature of green thought.

Deborah Davenport

Deborah Davenport is a doctoral student in the field of Political Science, specializing in International Political Economy.

BOOKS DIGEST

- **DICTIONARY OF ENVIRONMENT AND DEVELOPMENT: *People, Places, Ideas and Organizations***, by Andy Crump, Earthscan, London, 1991, £15.00 (pb), 272pp. ISBN 1-85383-078-X.

An extremely useful reference book for writers and lobbyists because of its inclusion of the myriad international organizations, plans, programmes and treaties whose acronyms often make specialist "environment and development" documents look like alphabet soup. Although the foreword declares the book to be "unbiased" it includes criticism of some organizations — such as the World Bank — while giving only potted histories of others — such as FAO. Strangely for a book of this title neither "environment" nor "development" are defined. The inclusion of separate entries on "global warming" and "greenhouse effect" is also rather illogical. Crump says that global warming may only be "half as intense as popularly predicted". He does not elaborate on the concept of a "popular" climate change simulation computer programme.

- **THE GREEN BOOK: *The Essential A-Z Guide to the Environment***, by Stephen Pope, Mike Appleton and Elizabeth-Anne Wheal, Hodder and Stoughton, London, 1991, £12.95 (pb), 337pp. ISBN 0-340-53298-X.

A dictionary of environment and development which does attempt to define the terms. It may be more useful to the non-professional activist than the Earthscan book above, being less concerned with international institutions and more with explaining the history, science and politics of campaign issues.

- **THE GREEN DICTIONARY: *Key Words, Ideas and Relationships for the Future***, compiled by Colin Johnson, Macdonald Optima, London, 1991, £9.99 (pb), 343pp. ISBN 0-356-19568-6.

More interesting to dip into than the two dictionaries above, and much more thought-provoking, the entries in Johnson's book include "hierarchy", "information", "honesty" and "question". *The Green Dictionary* is unashamedly "deep green" and subjective: "illusion" is defined as "the belief in grey culture that things, or most things, can stay the same, while a green, environmental, gloss is applied to business and life as usual."

- **COLLINS DICTIONARY OF ENVIRONMENTAL SCIENCE**, by Gareth Jones, Alan Robertson, Jean Forbes and Graham Hollier, HarperCollins, 1990, £6.99 (pb), 473pp. ISBN 0-00-434348-4.

A scientific dictionary with unexpected entries such as "greenpeace", "pick-your-own-farming" and "antinuclear". Useful for explanations of the more obscure scientific terms but the entries are rather short and skim over some important issues.

- **THE NEW STATE OF WAR AND PEACE: *An International Atlas***, by Michael Kidron and Dan Smith, Grafton Books, London, 1991, £9.99 (pb), £17.99 (hb), 127pp. ISBN 0-246-13867-X (pb) 0-246-13868-8 (hb).

The state of world military activity and spending, the arms trade, adherents to international treaties, the progress of arms reduction and other related subjects dealt with in a series of maps and graphics.

- **P IS FOR POLLUTION: *Your Guide to Pollution and How to Stop It***, by Brian Price, Green Print, London, 1991, £6.99 (pb), 149pp. ISBN 1-85425-059-0.

A very useful book for non-specialists involved in anti-pollution campaigns. Price gives an overview of the chemistry, physics and biology of pollution as well as an A-Z of pollution and pollutants and a section on pollution regulation agencies and campaigning groups.

Patrick McCully



Letters

Power to the Politics

Dear Sirs,

Sandy Irvine and Alec Ponton are right to warn us against populist posturing in the name of the "people" (Letters, Vol. 21, No. 3, May/June 1991). Yet that is not what I understood "Liberation Ecology" to stand for (see Editorial by Nicholas Hildyard, Vol. 21, No. 1). Far from promoting policies in the name of nebulous and unidentified masses, "Liberation Ecology" identifies with the very real struggles of local communities for control of the natural resources that their livelihoods depend on. The cry of "Liberation Ecologists" is not, as Irvine and Ponton suggest, "Amazonia for the Brazilians" but "Amazonia for the Amazonians".

Thus, unlike the Green Politics of the North, which proposes *policies* but identifies no *polities* to carry them forward, Liberation Ecology bases itself on the existing polities of rural communities — be they "tribes", cooperatives, "user-groups" or peasant associations. Securing these groups' rights to their lands and resources is the only way to mitigate the indiscriminate impact of the market and promote a more locally sensitive and responsive use of the environment.

For Liberation Ecologists, the western dichotomy between ecology and society, which structures Irvine and Ponton's argument, is an unreal one. The environment is a social construct and *any* kind of use or conservation must depend on *some* political institutions to own, manage and control it. Environmentalism which fails to identify the appropriate social institutions that will regulate natural resources is doomed to fail.

The real challenge for Liberation Ecology, as I see it, is to find a way of empowering such local groups with con-

trol over their resources in the face of the economically and politically overwhelming demands of the cities. Just as the industrialized North pillages and so "underdevelops" the Third World, so the urban centres in the South are placing ever increasing pressure on the dispersed and politically isolated rural communities. Meanwhile the rural communities of the North have almost vanished.

It is within this framework that many of the concerns voiced by Irvine and Ponton make sense. The pollution and erosion caused by mass tourism in the Mediterranean or mass rambling on the North York moors are expressions of urban demands on unregulated commons.

The ancient "contradiction" between city and country, which is as old as civilization itself, is the most serious obstacle we face to global security. Even were it *technically* feasible to find a way of reducing the material demands of the city on the country to a "sustainable" level, the pressure exerted by urban populations for an easy life will ensure that political decisions favour their interests over those of rural communities, whose ways of life and resources will thus continue to be undermined. History shows that this has been as true under tyranny as within the so-called democracies.

Yours faithfully,

Marcus Colchester

World Rainforest Movement
8 Chapel Row
Chadlington OX7 3NA
England

Culpability or Co-operation?

Dear Sirs,

Your article 'Discord in the Greenhouse' (Patrick McCully, Vol. 21, No. 4, July/August 1991) fails to engage with some key concepts in Green politics and philosophy.

A Green approach to environmental problems such as Global Warming should take as one of its starting points the capacity of individuals and nations to respond to the problem, by doing whatever is required to reduce and/or eliminate it.

Greens seek as far as humanly possible to take personal responsibility for the consequences of their own actions, and to encourage and assist others to do the same. Approaches based on "culpability" cannot be Green, in my opinion.

Ideally we would wish to see every individual doing everything in his or her power to address the problem. As a minimum we would expect that each nation state would respond in proportion to its responsibility for creating the problem in the first place.

This should of course take into account the fact that "Third World" nations now operating "dirty" technology and rushing down destructive development paths will have been greatly encouraged to do so by industrialists and politicians based in the overdeveloped world.

In the case of Global Warming, the urgent need for maximum response at maximum speed also argues against a "blaming" approach. Humanity has identified this problem so late in the process that there is very little time remaining in which to recover, so everyone's contribution is needed absolutely as soon as possible.

Giving half the world an excuse to sit on its bum and point the finger at the other half is surely not the most practical way forward.

But it certainly will go down well with the Third World's Westernized ruling élites. These people will be all in favour of an approach that permits "business as usual" to continue within their bridgeheads of overdevelopment. The alternative would be the Greening of their economies and

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social structures, and the consequent termination of their privileges.

In terms of greenhouse gas emissions per unit of production, I assume that a high proportion of Third World industrial plant is amongst the worst on the planet. Logically such plant should be high on the clean-up priority list.

The other problem with the "per capita" analysis of national emission figures is that it appears to point the finger indiscriminately at many individuals.

As someone living in an overdeveloped country who has not owned or much used a car over the last 15 years, who has only one child and who eats very little meat, I know that I am treading much more lightly than many individuals in the Third World. Any useful form of statistical analysis would be capable of reflecting that reality.

Gaia cannot tell an overdeveloped carbon dioxide molecule from a less-developed one — she only knows and cares that there are now too many of them for her comfort. We all emit carbon dioxide with every breath, so we all owe Gaia an appropriate and balanced response.

Yours sincerely,

Dave Bradney
10 Peploe Road
London NW6 6EB

Totalitarian Ecocide

Dear Sirs,

Your view of environmental damage in the Gulf War (Frank Barnaby, 'The Environmental Impact of the Gulf War', Vol. 21, No. 4, July/August 1991) omitted mention of its root cause, the primitive, personalist nature of Saddam Hussein's unrestrained despotism.

It was Saddam, was it not, who personally gave the orders to torch Kuwait's hundreds of oil wells and spill millions of gallons of oil into Gulf waters?

It was Saddam, was it not, who wasted Iraq's oil revenues building atomic weapons and ordered use of gas warfare (fortunately, ineptitude and loss of nerve among commanders aborted his wishes)?

Was it not Saddam who triggered the ecodisaster by conquering and absorbing a small, independent neighbour in the style of Hitler, his lust for power and wealth unredeemed by the flimsiest ideological or moralist pretext?

Is there not a connection between democracy and environmental protection? A democratically-based Iraqi government,

restrained by a matrix of law, public pressure, a free press, a civil society and international opinion, could never have launched the Kuwait adventure. An oriental despotism like Saddam's however, slave to the darkest impulses of a single ego, committed unprecedented eco-crimes.

Environmentalists should shout for Saddam to be tried for ecocide in the United Nations. You should admit that totalitarians cause more havoc than even capitalists, and human rights and democracy are the best path toward environmental protection.

But I'll not hold my breath waiting for you to agree.

Sincerely,
Edward Mainland
8752 Old Dominion Drive
McLean
Virginia 22102
USA

Self-Interest for the Good of All

Dear Sirs,

In 'Ecology Denies Neo-Darwinism' (Vol. 21, No. 3, May/June 1991), V.C. Wynne-Edwards enunciates his case for "Group Selection". This is the proposition that selection occurs between whole *groups* of reproductively compatible organisms as well as between individual genotypes. It is suggested that the property on which such group selection depends is a species' ability to "control its numbers when necessary", because, "each individual is normally programmed through its genetic code to take part in maintaining the balance of nature." I believe, on the contrary, that there is nothing to suggest that Darwinian selection *at the individual level* cannot provide an adequate description of the observations adduced in favour of Wynne-Edwards' hypothesis.

To begin with, one could argue that a number of statements in the article do not merit the confidence with which they are asserted. For example, it is said to be "vital to keep the rates of consumption and production in balance". The implication is that this is vital *for the group*. This ignores that what is vital *for each organism* is, first, a genetic algorithm to ensure *its own survival*; and, second, a programme giving it the best chance of reproduction under the prevailing circumstances. If temporary non-lethal submis-

sion to a stronger individual best secures these objectives, then that is the efficient strategy. An *incidental* spin-off may be beneficial to the group; but that has nothing to do with any "altruistic" thoughts, any more than does an individual's demand for more space under adverse conditions. Again, the idea, that "traits that increase the viability of groups in their pursuit of immortality are bound in the long run to take priority over those that merely increase the self-advantage of individuals" is a particularly fanciful one. Some human individuals may "pursue immortality", but that is hardly evidence for group selection.

However, what matters most is the interpretation of the observational and experimental evidence from the Red Grouse studies. The data indicate that cockbirds occupy a territory consonant, in any year, with prevailing nutritional conditions of the food supply (i.e. heather). It is claimed that: "This shows that all cockbirds are programmed . . . to procure the same population density under the same nutritional conditions." I would suggest, on the contrary, that what it shows is that they are programmed to take what territory they *individually* require for their *individual* needs — a classical Darwinian interpretation.

With a suitable programme and micro-computer, one can examine the consequences of selection, mutation and inbreeding on genotype distribution when the "selective value" of *each genotype* depends on combinations of independently segregating genes. One can then show that a basically *disadvantageous* gene pair may yet reach fixation because of *advantage* in a particular genotype. The disadvantage might be, for example, low aggressiveness in a territorial dispute. Breeding would be more or less possible for such "submissive" individuals according to whether competition for territory was low or high. Any advantage to the group would be incidental to purely Darwinian selection at individual level. Over 300 years ago, Thomas Hobbes wrote, "of the voluntary acts of everyman, the object is some Good to himselfe"; and William of Occam, "*Entia non sint multiplicanda praeter necessitatem*" — still good maxims today!

Yours sincerely,

Michael Begg
Greens, New Deer
Turri
Aberdeenshire AB53 6XT
Scotland

Classified

MISCELLANEOUS

WANTED: THE ECOLOGIST Vol 1 Nos 12 & 14; Vol 2, No 1; Vol 10 Nos. 1, 2 & 3; Vol 11 Nos 4, 5 & 6; Vol 12 No 1; Vol 14 No 2; Vol 15 Nos 1, 2 & 3; Vol 17 No 1. If you have any of the above issues (now sadly out of print) and are willing to sell them, please contact Dean Godson or Karen West on 0753 830 707.

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INTEGRATED POLLUTION CONTROL FOR THE PROCESS INDUSTRIES. 1991 National Conference Cafe Royal, London, 20 and 21 November 1991. For details contact Stephenie Hodder, Customer Services, Institute for International Research, 11th Floor, Alembic House, 93 Albert Embankment, London SE1 7TY. Tel: 071 587 1117. Fax: 071 587 3703.

FOURTH INTERAMERICAN FILM FESTIVAL OF INDIGENOUS PEOPLE. Peru, June 17-26 1992. For details write to Comision Organizadora IV Festival Americano de Cine de los Pueblos Indigenas CLACPI. Av. Juan de Aliaga 204, Lima 27, Peru, South America.

ENERGY POLICY: Market-Led or Government-Driven? 6th International Energy Conference convened by The Royal Institute of International Affairs, The British Institute of Energy Economics and The International Association for Energy Economics. 2 and 3 December 1991, Chatham House, London. For details contact The Energy Conference, The Conference Unit, The Royal Institute of International Affairs, Chatham House, 10 St James's Square, London SW1Y 4LE. Tel: 071 957 5700. Fax: 071 957 5710.

FOURTH ANNUAL CONFERENCE OF THE SOCIETY FOR ECOLOGICAL RESTORATION. This will be held in Waterloo, Ontario, Canada, 9-14 August 1992. For information contact Laura

Lee Hoefs, 1207 Seminole Highway, Madison, WI 53711, USA (Tel: 608 262 9547).

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