

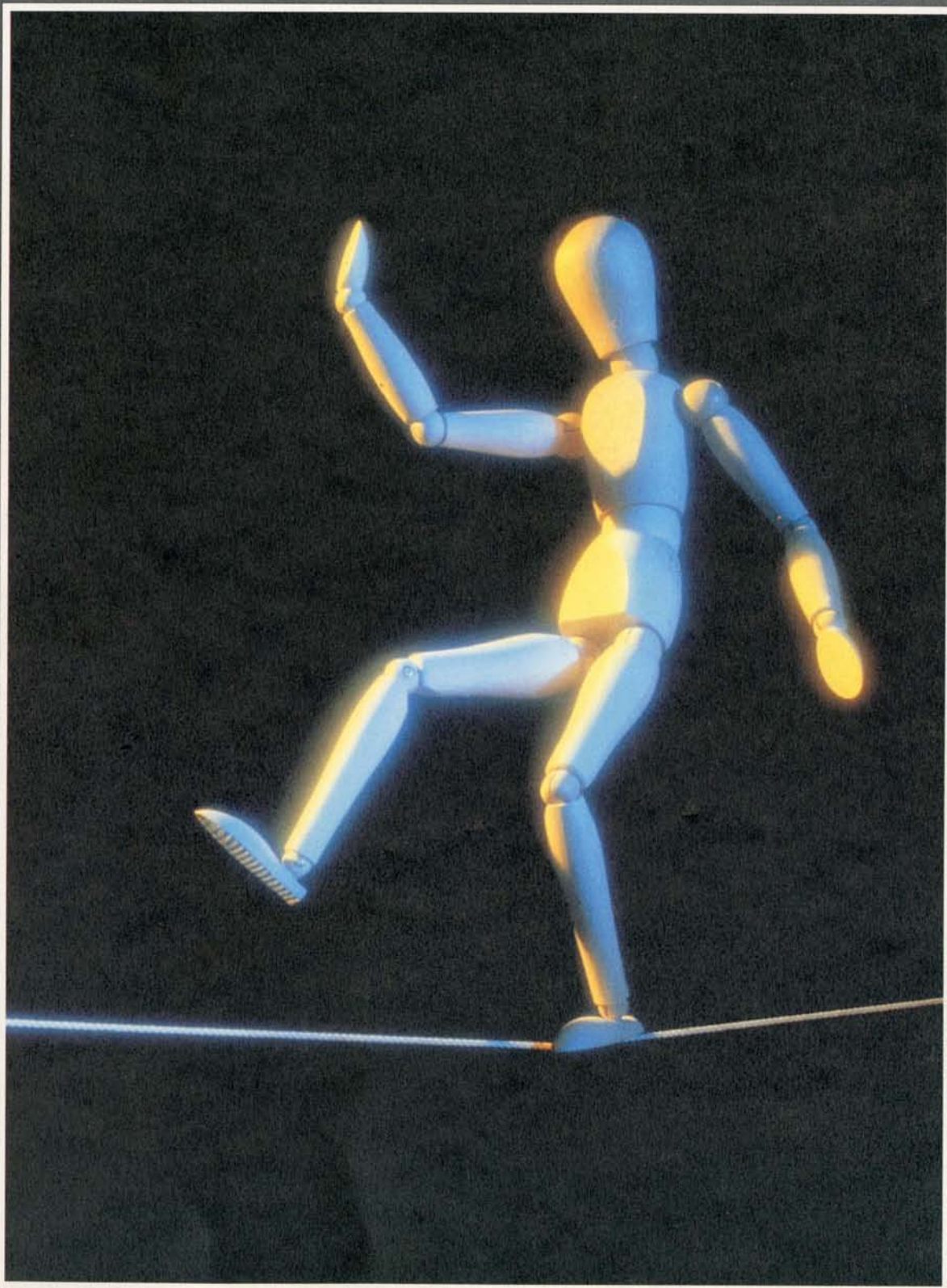
# The Ecologist

Vol 25 No 6 November/December 1995

£3.50 (US \$7)

Distributed in North America by The MIT Press

- Shell  
Boycott
- The Benefits  
of Famine
- Dams in  
Lesotho
- Cement  
Kilns –  
Backdoor  
Incineration
- Wal-Mart  
Worldwide



ISSN 0261-3131



## Flexible Bodies, Flexible Work

### The New Social Darwinism



# Ecological Resistance Movements

## *The Global Emergence of Radical and Popular Environmentalism*

Bron Raymond Taylor, editor

Ecological resistance movements are proliferating around the world. Some are explicitly radical in their ideas and militant in their tactics while others have emerged from a variety of social movements that, in response to environmental deterioration, have taken up ecological sustainability as a central objective. This book brings together a team of international scholars to examine contemporary movements of ecological resistance. The first four sections focus on the Americas, Asia and the Pacific, Africa, and Europe, and the book concludes with a selection of articles that address the philosophical and moral issues these movements pose, assess trends found among them, and evaluate their impacts and prospects. Among the many contributors to the volume are Daniel Deudney, Robert Edwards, Heidi Hadsell, Sheldon Kamieniecki, Lois Lorentzen, David Rothenberg, Wolfgang Rudig, Jerry Stark, Paul Wapner, and Ben Wisner.

A volume in the SUNY series in International Environmental Policy and Theory

Sheldon Kamieniecki, editor

434 pages • \$19.95 paperback • ISBN 0-7914-2646-7

"The authors pay serious, systematic attention to a social and political phenomenon (grassroots ecological resistance) of global importance. Taylor is correct in his claim in the Preface that insufficient scholarly attention has been paid to grassroots environmentalism. This book takes a big step in the right direction. It will appeal to a wide audience within the academy and without."

— Steve Breyman, Rensselaer Polytechnic Institute

"This book provides diverse points of view and gives a hearing for frequently unheard voices. It provides new information about environmental activism on a regional and global scale."

— J. Baird Callicott, University of Wisconsin, Stevens Point

New from SUNY Press

at bookstores or call 1-800-666-2211

### **The Ecologist is published by Ecosystems Ltd.**

**Editorial Office and Back Issues:** Agriculture House, Bath Road, Sturminster Newton, Dorset, DT10 1DU, UK.

Tel: (01258) 473476, Fax: (01258) 473748, E-Mail: [ecologist@gn.apc.org](mailto:ecologist@gn.apc.org)

**Subscriptions:** The Ecologist, c/o Cissbury House, Furze View, Five Oaks Road, Slinfold, W. Sussex RH13 7RH, UK

Tel/Fax: (01403) 782644

**Retail Distribution:** Central Books, 99 Wallis Road, London E9 5LN, United Kingdom

Tel: (0181) 986 4854, Fax: (0181) 533 5821

### **Annual Subscription Rates**

**£24 (US\$35)** for individuals and schools;

**£50 (US\$90)** for institutions;

**£18 (US\$28)** concessionary rate (subscribers in the Third World and Eastern Europe; unwaged—ID required).

Air mail **£11 (US\$19)** extra.

Concessionary rate only available from RED Computing and The MIT Press and not through other subscription agents.

*The Ecologist* is published bi-monthly. The rates above are for six issues, including postage and annual index.

Subscriptions outside North America payable to *The Ecologist* and sent to the Subscriptions address above. We welcome payment by UK£ cheque drawn on UK bank, US\$ check drawn on US bank, eurocheque written in UK£, banker's draft payable through a British bank, UK or international postal order, Access, Visa or MasterCard.

North American subscriptions payable by check drawn on US banks in US funds to: **MIT Press Journals, 55 Hayward Street, Cambridge, MA 02142. Fax: (617)**

**258-6779; E-mail: [journals-orders@mit.edu](mailto:journals-orders@mit.edu)**

### **Advertising**

For information, rates and booking, contact:  
**Wallace Kingston (Ecologist agent),**  
6 Cynthia Street, London, N1 9JF, UK  
Tel: (0171) 278 6399, Fax: (0171) 278 4427

### **Inserts**

Up to 265x185mm, not more than 10g each:  
£45 per thousand, full run, plus VAT; £60 per thousand, part run (minimum 4,000), plus VAT.  
Further information from the Editorial Office.

### **Classified**

See inside back cover

### **Contributions**

The editors welcome contributions, which should be typed, double-spaced, on one side of the paper only. Two copies should be sent with original. Word processed contributions should be on a 3.5 inch disk (MS-DOS or Macintosh) in Microsoft Word or text file (ASCII) format. Illustrations (B/W or colour prints or transparencies, line drawings, tables, maps, etc.) should be included where appropriate. Detailed guidelines for contributors are available on request. Manuscripts should be addressed to the editors and sent to the Editorial Office.

While every care is taken with manuscripts submitted for publication, the editors cannot guarantee to return those not accepted. Articles published in *The Ecologist* do not necessarily express the views of the editors.

*The Ecologist* International Serial Number is: ISSN 0261-3131.

Printed by Penwell Ltd, Station Road, Kelly Bray, Callington, Cornwall, PL17 8ER, UK.  
Tel: (01579) 383777

Copyright: *The Ecologist* 1995

*The Ecologist* is available on microfilm from University Microfilms International, 300 North Zeeb St., Ann Arbor, MI, USA

## Publisher

EDWARD GOLDSMITH

## Founding Editors

EDWARD GOLDSMITH

PETER BUNYARD

## Editorial

NICHOLAS HILDYARD

SARAH SEXTON

## Editorial Assistant

SALLY SNOW

## Associate Editors

PATRICIA ADAMS

*Probe International  
(Canada)*

TRACEY CLUNIES-ROSS

*(UK)*

MARCUS COLCHESTER

*World Rainforest Movement  
(UK)*

RAYMOND DASMANN

*University of California,  
Santa Cruz (USA)*

SAMUEL S. EPSTEIN

*University of Illinois  
(USA)*

SIMON FAIRLIE

*(UK)*

ROSS HUME HALL

*(USA)*

SANDY IRVINE

*(UK)*

MICK KELLY

*University of East Anglia  
(UK)*

MARTIN KHOR KOK PENG

*Consumers Association of  
Penang (Malaysia)*

SMITHU KOTHARI

*Lokayan Social Action  
Group (India)*

SIGMUND KVALØY

*Ecopolitical Ring of Cooperation  
(Norway)*

PATRICK MCCULLY

*International Rivers Network  
(USA)*

JOHN MILTON

*(USA)*

JIMOH OMO-FADAKA

*African Environmental  
Network (Kenya)*

JOHN PAPWORTH

*Fourth World Review  
(UK)*

ROBERT PRESCOTT-ALLEN

*PADATA  
(Canada)*

JOHN SEED

*Rainforest Information Centre  
(Australia)*

VANDANA SHIVA

*Research Centre for Science  
and Ecology (India)*

ROBERT WALLER

*Commonwealth Human Ecology Centre  
(UK)*

RICHARD WILLSON

*(UK)*

DONALD WORSTER

*University of Kansas  
(USA)*

EDITORIAL OFFICE,

AGRICULTURE HOUSE, BATH ROAD,

STURMINSTER NEWTON, DORSET,

DT10 1DU, ENGLAND, UK.

TEL +44-1258-473476 FAX +44-1258-

473748

E-MAIL ECOLOGIST@GN.APC.ORG

## Editorial

### Oil, Shell and Nigeria. .... 210

Andy Rowell

## Feature Articles

### The Benefits of Famine: A Case Study of the Sudan. .... 214

David Keen

Discussions of famine relief — and the development process in general — tend to assume that the policies of national and international agencies alike reflect benevolent aims. The possibility that politically powerful groups may actively promote famine, and obstruct relief, for rational purposes of their own is rarely considered or addressed.

### Flexible Bodies: Health and Work in an Age of Systems ..... 221

Emily Martin

Current ways of thinking about the body and the workplace increasingly reflect the influence of managerial "systems thinking". Great emphasis is now placed on the need to be "flexible" — and the need to "train" our bodies and personalities to "adapt" to all conceivable challenges. But depictions of ideal flexible bodies and workers are, in reality, new versions of old hierarchies. A new social Darwinism is emerging whereby "flexibility" becomes the yardstick for differentiating the "fit" from the "unfit".

### The Mountain Kingdom's White Oil: The Lesotho Highlands Water Project ..... 227

Korinna Horta

Some 20,000 people have already lost part or all of their livelihoods as a result of the Highlands Water Project, a massive interbasin transfer scheme now being constructed in Lesotho. One dam has been built, with funding from the World Bank, and a second is in the pipeline. Local people will receive few benefits: instead the water will be diverted to industries in South Africa. Indeed, the scheme was originally conceived as a means of circumventing UN sanctions against the South African apartheid regime.

### Incineration by the Back Door: Cement Kilns as Waste Sinks ..... 232

Tom Hellberg

Since 1992, a number of UK cement manufacturers have been burning highly toxic waste as a "fuel" for their cement kilns. Subject to less stringent emission standards than specialized incinerators, kilns offer a cheap but dirty disposal option which waste generators are exploiting to the full. Pollution and ill-health are the results.

### Wal-Mart Worldwide: The Making of a Global Retailer ..... 238

Kai Mander and Alex Boston

Shrewd manufacturing, sleek purchasing and its own automated inventory and distribution system have made Wal-Mart, the US discount chain, the world's biggest retailer. But its expansion has invariably been at the expense of local communities and jobs. Even its vaunted low prices are exaggerated.

## Books ..... 242

Chinese Markets — Ecofeminist Thought — Amazon Gold Rush — The Power of the Gene — Greening of Education

## Letters ..... 248

## Campaigns and Updates ..... Centre Pages

Cover Photo: Gary S. Chapman/Image Bank.

The Ecologist is printed on recycled paper, whitened with hydrogen peroxide.



# Oil, Shell and Nigeria

## Ken Saro-Wiwa Calls for a Boycott

On 10 November 1995, Ken Saro-Wiwa and eight other Ogoni were hanged in what British prime minister John Major called a "judicial killing". They had been convicted in a kangaroo court of murdering four political opponents, a charge all had denied. The 54-year-old Saro-Wiwa, the leader of MOSOP, the Movement for the Survival of the Ogoni People, and an internationally respected author and environmentalist, had long campaigned against Shell's record of environmental destruction in Nigeria.

Since his arrest in May 1994, the Nigerian dissident's supporters had pleaded with Shell, the largest oil company in Nigeria, to use its influence with the Nigerian military junta to save Saro-Wiwa. But Shell refused, saying it could not get involved in the affairs of a sovereign state. An emerging paper trail of new evidence, however, suggests that the real reason for Shell's refusal may be that the company was acting in collusion with the Nigerian military dictatorship to silence Saro-Wiwa.

Restricted Nigerian military memos suggest Shell may have funded military operations against MOSOP; leaked company minutes also detail how Shell and the military held meetings after Saro-Wiwa was arrested to discuss public relations strategies for the company. Potentially far more damning, however, are allegations contained in sworn affidavits from two key prosecution witnesses that they were offered bribes by the military, in the presence of Shell officials, to testify against Saro-Wiwa.

### Oil and Shell in Nigeria

Nigeria's economy is totally dependent on the oil industry. Oil revenues account for 90 per cent of the country's export earnings and 80 per cent of the government's total revenue. The Shell Petroleum Development Company (SPDC) is by far the largest oil operator in the country (others include Chevron, Agip, Elf, Texaco and Mobil) and as such holds enormous influence over the Nigerian authorities. Shell's daily output from Nigeria is some 900,000 barrels per day. Until 1993 when Shell suspended its operations in the 400-square-mile area of Ogoniland because of local unrest, between 20,000 and 28,000 barrels of oil came from the area. Nigeria represents 13 per cent of Shell's total worldwide production of oil.

Shell's position in Nigeria is unique. According to one Ogoni activist, "With such an illegitimate political system, each bunch of unelected military rulers that comes into power simply dances to the tune of this company . . . Shell is in the position to dictate, because Nigeria is economically and politically weak".

The company has been a force in Nigeria since at least 1958 when oil production started. With explorations throughout the Niger Delta, the main oil-producing region, Shell has been accused by local communities such as the Ogoni of destroying their lands and livelihoods. Ken Saro-Wiwa was the Ogoni's most vocal spokesperson and critic of Shell, accusing the company of "waging an ecological war against the Ogoni."

### Environmental Devastation

The communities in the Delta accuse Shell of not compensating them adequately for farmland taken over for oil exploration. It is widely reported that when Shell acquired land in the Delta, it only compensated villagers for that year's crop, not for the land itself. Furthermore, three-quarters of Ogoni people cannot read or write and could not understand the compensation forms they had to sign. Other Ogoni maintain that they were forced to accept money "under duress" and that money promised by Shell was never paid.

The Ogoni, who number only 500,000, also contend that Shell's oil ventures have had a devastating effect on the environment and the people of the Niger Delta. Shell's high-pressure pipelines criss-cross the region, passing over, not under, farmland and within feet of people's homes. For over 30 years, up until Shell suspended its operations in Ogoniland, the company flared gas, emitting air and noise pollution as well as a bright flame of light, sometimes no more than 100 metres from Ogoni houses. This would never be tolerated in the United States and Europe. As British environmentalist Nick Ashton-Jones wrote after visiting the Delta in 1993, "Some children have never known a dark night even though they have no electricity."

Oil spills from pipelines and other operations have become endemic and routine, polluting land and water. Fishing and farming have been devastated. From 1982 to 1992, 1.6 million gallons of oil were spilled from Shell's Nigerian fields in 27 separate incidents. Forty per cent of all spills attributed to the company's worldwide operations came from Nigeria. Unlined pits for oily waste litter the Delta region. The European Parliament called the suffering of the Ogoni people "an environmental nightmare."

### Condemnation

Shell's operations in Ogoniland have met a barrage of national and international condemnation. "Shell Petroleum Company wants a free hand to maximize profits, even at the expense of the protection of the basic rights of people and considerations of environmental sustainability," says Claude Aké, Director of the Centre for Advanced Social Studies in Nigeria and a consultant to the UN World Commission on Development and Culture. In response to such criticisms, Shell has charged that the majority of the oil spills in Ogoniland have been caused by sabotage. Aké adamantly rejects this:

"I think that this is the kind of irresponsible propaganda that the oil companies are putting out in order to discredit those who are trying to do something about the environment . . . If Shell puts this out, it can only be a smokescreen."

Until he resigned on 16 November 1995, Aké was also a member of the \$2 million Shell-commissioned Niger Delta Environmental Survey, recently set up by the company to evaluate the environmental "make-up" of the Delta. Saro-Wiwa had encouraged Aké to serve on the Survey's steering committee because it "could be a window of opportunity for



constructive engagement". But Aké stated in his resignation that the Environmental Survey:

"does not enjoy the enthusiastic support of the oil industry at large. There is nothing in the recent performance of the oil companies... to suggest that [the Niger Delta Environmental Survey] is associated with increasing sensitivity to the plight of oil producing communities."

## Impoverishment

The Ogoni claim that Shell has contributed next to nothing to the Ogoni economy. It provides few basic amenities, and most villages lack adequate clean water, health facilities, schooling, accessible roads or electricity. For its part, Shell has publicly stated it gave large sums of money to Ogoni community projects. But as pointed out in *The Guardian*, "Privately, officials conceded these donations never reached their intended destination." *The Wall Street Journal* reported that just 88 of Shell's 5,000 Nigerian employees were Ogoni. "I have explored for oil in Venezuela, I have explored for oil in Kuwait, I have never seen an oil-rich town as completely impoverished as Olobiri," wrote one British Petroleum engineer after visiting the town where Shell first found oil in the Delta.

## Rising Dissent

By 1990, local Delta communities from various ethnic groups had started to demonstrate publicly against Shell's abuses — that year, Shell officials admitted that there were some 63 protests against the company by different communities. Ken Saro-Wiwa was chosen to head a new activist organization, MOSOP, a movement he described as standing for "social justice and environmental protection," which posed a direct threat to Shell and the military regime.

In 1990, Shell company managers heard about a protest planned by the Etche people also living in the Niger Delta against the Shell plant in Umuechem, and sent a request to the local commissioner of police for the support of the notorious Mobile Police Force. Headed "Threat of Disruption of Our Operations at Umuechem by Members of Umuechem Community," the letter read, "we request that you urgently provide us with security protection (preferably Mobile Police Force) at this location." The request was acceded to: the MPF brought order to Umuechem by massacring 80 people and destroying 495 homes. "They just unleashed terror on the peaceful demonstrators and started killing and maiming whoever came their way," recalled one witness.

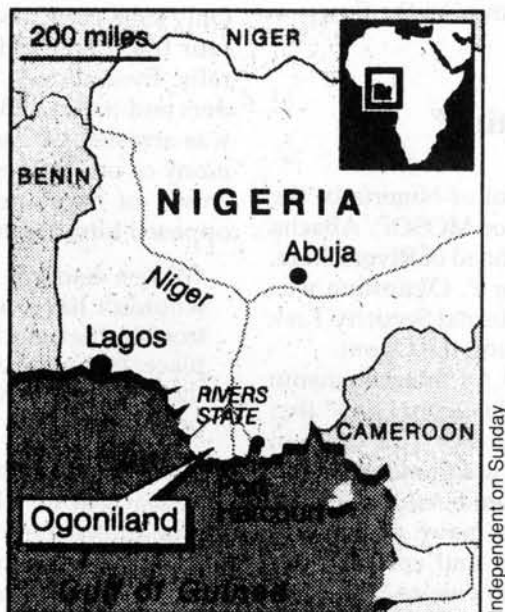
Some three years previously, the Mobile Police Force had been called in to suppress a demonstration of the Iko community against Shell; two people were shot dead. In 1992, the Mobile Police Force killed a 21-year-old man, wounded another 30, and beat up 150 people protesting in the town of Bonny at Shell's operations. Later that year, after a Nigerian judicial enquiry lambasted the MPF over Umuechem, Shell issued a statement expressing regret for the massacre but defending its actions: "The request for police assistance was in strict accordance with legal requirements when an interruption to oil production may be caused." Ogoni activists

were outraged by Shell's employment of the MPF. As one described it:

"The company has gone out of its way to make sure it has an agreement that guarantees the direct use of force. Shell knows full well that the army does not go to settle things [by] peaceful means, so they decided to protect their interests with violence."

Oronto Douglas, a lawyer with the Nigerian Civil Liberties organization, agrees:

"Shell should know that it is operating under unjust laws, which would not have been allowed in America or any part of Europe. Shell enjoys the laws [in Nigeria] because they give it room to disregard environmental standards, to call in soldiers [who] burned down villages as they did at Umuechem or to burn down Ogoni villages."



## Military Backlash

During 1992, an internal political struggle emerged for the leadership of MOSOP between Ken Saro-Wiwa and more traditional leaders. Saro-Wiwa represented a younger generation, which wanted a more radical, more democratic movement to represent the Ogoni. The older leaders preferred a more conservative, hierarchical approach. There was open dissent between the two camps and, according to a Nigerian newspaper, the Nigerian authorities worked with the traditional Ogoni to undermine Saro-Wiwa and MOSOP. The government also helped fund the rival Ogoni's attempts to stop Saro-Wiwa. Although the government and Shell tried to tar MOSOP and its youth organization, NYCOP, as radical vigilante groups, Saro-Wiwa had always pledged a campaign of non-violence.

"Basically, what the government and Shell are doing is to demonize MOSOP," says one Ogoni activist, "to damage its credibility, but they have not been successful in Ogoniland among the grassroots. The grassroots see MOSOP as the only single organization that can bring them their emancipation."

Dissent against Shell grew through Ogoniland in 1992, culminating in a rally on 4 January 1993 to celebrate the Year of Indigenous Peoples. Three hundred thousand people attended, the largest demonstration ever held against the oil industry. Since the rally, the military backlash against the Ogoni has been devastating and up to 1,800 Ogoni have been killed.

In January 1993, because of the continuing unrest, Shell withdrew its staff from Ogoniland. In a statement released just two days before Saro-Wiwa was hung, Brian Anderson, managing director of Shell Nigeria, stated "we have not attempted to resume operations since that time."

However, on 3 May 1993, a US company, Willbros, under contract to Shell and under the protection of the Nigerian military, wrote to Shell detailing community outrage over its attempts to clear land for the company's Rumuekpe-Bomy pipeline running through Ogoniland, commenting that "fortunately there was a military presence to control the situation and to offer protection to the workers and equipment". One farmer, Karalolo Korgbara, had her arm shot off by the military for attempting to collect what remained of her crops.

The incident led to four days of demonstrations by the

Ogoni, in which one protester was killed and 20 wounded. In June 1993, Shell reportedly let a spill from its Bomu-Tai pipeline continue for 40 days before stemming the flow.

## "Law and Order" — and "Wasting"

When General Sani Abacha took control of Nigeria in the autumn of 1993, things became worse for MOSOP. Abacha appointed Lieutenant Colonel Komo as head of Rivers State, the region containing Ogoniland. Major P. Okuntimo was appointed head of the newly-formed Internal Security Task Force. Its task — to destroy dissent among the Ogoni.

On 21 April 1994, Okuntimo issued an internal memo entitled "Restoration of Law and Order in Ogoni Land" that outlined plans for an extensive military presence in Ogoniland. "Manpower for this onerous assignment shall be drawn from the following forces," the memo read, and went on to list the Nigerian army, air force, navy and police, including both the Mobile Police Force and conventional units. One of the stated missions was to ensure that those "carrying out business ventures . . . within Ogoniland are not molested."

Less than a month later, Okuntimo sent a "restricted" memo to Komo, the head of Rivers State. Dated 12 May 1994, the memo read: "Shell operations still impossible unless ruthless military operations are undertaken for smooth economic activities to commence." One of Okuntimo's recommendations was to institute "wasting operations during MOSOP and other gatherings making constant military presence justifiable." He further advocated "wasting operations coupled with psychological tactics", "wasting . . . especially [of] vocal individuals" and the "restriction of unauthorized visitors especially those from Europe to the Ogoni."

Under the heading "Financial Implications (Estimates/Funding)", the security chief advised putting "pressure on oil companies for prompt regular inputs as discussed." Was Shell bankrolling the military attacks on the Ogoni? In a written response to such allegations, Shell denies that it "has supported any alleged operations of a Task Force under . . . Okuntimo." Its critics, however, are not convinced. "This memo exposes the unholy alliance between the oil companies in Ogoniland and the military," says Ken Wiwa, Saro-Wiwa's son.

Further allegations of Shell payments to the military emerged when lawyer Oronto Douglas and environmentalist Nick Ashton-Jones were detained by Okuntimo in June 1994 and beaten on Okuntimo's orders while visiting prisoners in Port Harcourt. According to Douglas, Okuntimo said, "Shell company has not been fair to him in these operations. He said he has been risking his life and that of his soldiers to protect Shell oil installations. He said his soldiers are not been [sic] paid as they were used to."

Ashton-Jones confirms the conversation, recalling Okuntimo saying, "He was doing it all for Shell . . . But he was not happy because the last time he had asked Shell to pay his men their out-station allowances, he had been refused, which was not the usual procedure." According to Human Rights Watch, a highly-placed government source in Rivers State has confirmed that Shell representatives were also meeting regularly with Okuntimo and the director of the Rivers State Security Service.

Douglas holds Shell "morally responsible" for his being beaten because "they created the atmosphere upon which the brutality was rained on myself". Journalists from *The Wall Street Journal* and various Nigerian newspapers have also been detained for writing stories on Ogoni.

## Arrests, Terror and Trial

Only nine days after Okuntimo wrote the memo to Komo, four traditional elders were murdered by a mob at a local rally. Even though Saro-Wiwa was nowhere near the murders and under a military escort at the time of the attack, he was arrested the next day, 22 May 1994. Based on the testimony of one witness, Saro-Wiwa was accused of inciting a crowd of supporters to "deal" with "the vultures" who opposed him, a remark he denied making. Says one activist:

"If Ken had not been campaigning against Shell, he wouldn't have been arrested in the first place. All this trouble that started in the area wouldn't have taken place. If the people had not risen up to complain about their predicament, none of the things would have happened."

The murders gave the military the green light to enter Ogoniland as they had planned. Under the guise of looking for the killers, the Nigerian military systematically terrorized the region. Pregnant women and girls as young as 10-years-old were gang-raped at gunpoint and told they would have their eyes plucked out if they complained. "I am going to sanitize Ogoniland," Okuntimo boasted to Douglas when he detained him.

After nine months in jail — during which time Saro-Wiwa and the eight other men arrested with him were routinely tortured and chained to a wall — they were brought to trial in January 1995 before a specially-designated military tribunal of two judges and a military officer, by-passing Nigeria's civil judicial system. After visiting the tribunal, Michael Birnbaum QC, a senior British lawyer, offered this opinion in a report titled *Nigeria: Fundamental Rights Denied*:

"It is my view that the breaches of fundamental rights are so serious as to arouse grave concern that any trial before this tribunal will be fundamentally flawed and unfair."

Birnbaum also reported that two prosecution witnesses against Saro-Wiwa, the eyewitnesses to his inciting his supporters, had signed affidavits stating that they and a number of other witnesses had been bribed to testify against Saro-Wiwa. According to the affidavit of one witness, Charles Danwi, signed on 16 February 1995, "He was told that he would be given a house, a contract from Shell and Ompadec [Oil Minerals Producing Areas Development Commission] and some money." The affidavit states that he received 30,000 Naira (about £250). It continues, "At a later meeting, security agents, government officials and the Kobani, Orage and Badey families, representatives of Shell and Ompadec were all present and they all agreed [to the bribery]." The other witness, Nayone Akpa, also claimed he was offered "30,000 Naira, employment with the Gokana Local Government at Grade Level 5, weekly allowances and contracts with Ompadec and Shell" if he signed a document that implicated and incriminated Saro-Wiwa. Both these accusations were dismissed as "too good to be true" by the tribunal. Shell has denied all allegations of bribery, saying "We have not paid cash, awarded contracts or used any other means to try to influence events surrounding the cases before the tribunal." As Birnbaum points out, the tribunal:

"convicted and sentenced to death nine people without ever attempting to investigate [Danwi's] allegation that most of the principal witnesses for the prosecution had either taken or received bribes and had conspired to commit perjury".

Other witnesses have since come forward saying that they too were bribed to testify against Saro-Wiwa.



## Shell's Concern

Ever since it stopped oil production in Ogoniland, Shell has been preoccupied with shoring up its public image. Two meetings were held in The Hague and London in February 1993 to address community relations and the environment. Leaked draft minutes of the meetings reveal that Shell officials were becoming very concerned. One reads:

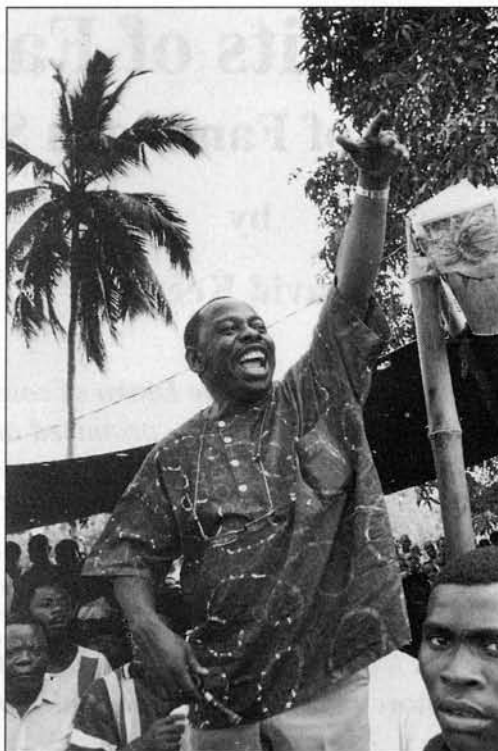
"SPDC and Shell International Petroleum Company Public Affairs departments to keep each other more closely informed to ensure that movements of key players, what they say, and to whom is more effectively monitored to avoid unpleasant surprises and adversely affect the reputation of the Group as a whole."

As Shell's reputation plummeted, the company held meetings with the Abacha regime, both in London and Nigeria. One leaked company memo shows that a meeting took place between four senior Shell officials — Malcolm Williams, A. J. Brack, D. Van dan Brook and A. Detheridge — and the Nigerian High Commissioner at Shell Centre in London on 16 March 1995. Also in attendance were representatives from the Nigerian army and police force. At the meeting, the High Commissioner expressed dismay at "misinformation [regarding Ogoniland] orchestrated by Gordon and Anita Roddick of the Body Shop." The memo records Shell executives as being concerned about any response "that will play into the hands of the propagandists." At no point did the talks address the plight of Ken Saro-Wiwa. After months of denial, Shell was forced to admit that a meeting had indeed taken place, but the company still refuses to disclose publicly what was discussed.

## Who's on Trial?

When Saro-Wiwa was sentenced to death on 31 October 1995, the world waited for Shell's response. While world leaders appealed for clemency, it was generally acknowledged that only Shell could really persuade the Abacha regime to save Saro-Wiwa. The company, however, maintained it could not intervene. Finally, on 8 November, Shell issued a statement in which it called for "quiet diplomacy" to resolve the situation. But the statement also proclaimed: "We believe that to interfere in the processes, either political or legal, here in Nigeria would be wrong. A large multinational company such as Shell cannot and must not interfere with the affairs or any sovereign state." Saro-Wiwa and the other convicted men were hanged two days later.

Despite its continued denials, there is overwhelming evidence that Shell has been involved in the legal and political process of Nigeria. Dr. Owens Wiwa, younger brother of Ken Saro-Wiwa, met with SPDC's Brian Anderson three times between May and July 1994 and asked him to help secure the release of Saro-Wiwa and the eight other Ogoni. Wiwa says, "He said he would be able to help us get Ken freed if we stopped the protest campaign abroad . . . Shell are involved in Nigerian politics up to their neck. If they had threatened to withdraw from Nigeria unless Ken was released, he would



Ken Saro-Wiwa addressing the 4 January 1993 Ogoni rally

have been alive today."

In his closing testimony at the trial, Saro-Wiwa said:

"I and my colleagues are not the only ones on trial . . . The company has, indeed, ducked this particular trial, but its day will surely come and the lessons learned here may prove useful to it, or there is no doubt in my mind that the ecological war that the company has waged in the Delta will be called into question sooner than later and the crimes of that war be duly punished."

## Back to Business

For Shell's part, it is back to business as usual. Despite the calls for the company to withdraw its operations from Nigeria, Shell has said it will proceed with a £2.6 billion liquefied natural gas plant and pipeline, which would cross Ogoniland, benefiting both themselves and the military regime. An environ-

mental impact assessment commissioned for MOSOP notes that "there are no contingency plans for spillages of condensate, lube oils, biocides or other chemical products. It is optimistic to expect that technical measures and staff training will reduce the risk of spillages to zero". The International Finance Corporation (IFC), the private lending arm of the World Bank, withdrew its proposed loan for the natural gas project on 10 November 1995.

Meanwhile, at least 40 more Ogoni, arrested at the same time as those who were hanged in November, face trial in 1996 in front of the same military tribunal on charges of complicity in the same murders with which Ken Saro-Wiwa was charged.

## Boycott Shell

From his jail, Ken Saro-Wiwa wrote in August 1995:

"At the root of my travails lies Shell, which has exploited, traduced and driven the Ogoni people to extinction in the last three decades. The company has . . . left a completely devastated environment and a trail of human misery. When I organized the Ogoni people to protest peacefully against Shell's ecological war, the company invited the Nigerian military to intervene . . . I have one suggestion for those whose conscience has been disturbed by my story: boycott all Shell products. Picket Shell garages. Do not allow them to profit by their destruction of the people and ecology of the Niger delta . . . Support the call for a worldwide boycott of Nigerian oil. Help save life and the environment of the Niger delta."

Multinational companies are clearly complicit in the environmental destruction and human rights abuses in Nigeria. Consumers can send them the only signals that they seem to understand.

Andy Rowell

Andy Rowell is an independent environment consultant and author of *Green Backlash*, Routledge (forthcoming). A version of this editorial appeared in the *Village Voice*, 21 November 1995. For further information, contact Ogoni Community Association, Suite 5, 3/4 Albion Place, Galena Road, London W6 0LT, UK. Tel: +44 (0)181-563 8614.

# The Benefits of Famine

## A Political Economy of Famine in Southern Sudan

by

David Keen

*In 1985-89, a severe famine developed among the Dinka of southern Sudan. The famine — which killed an estimated 500,000 people in 1988 — promised and, to a large extent, yielded significant benefits, many of them economic and military, for a variety of powerful Sudanese interests who had helped to create the famine in the first place. The apparent “failure” of the*

*Sudanese government and donors to relieve this famine cannot be understood without comprehending how these “beneficiaries” — at the local level and in central government — were able and permitted to manipulate famine and famine relief for their own purposes. The devastation of the South continues today through famine, exploitation and a civil war that is estimated to have killed more than one and a half million people since 1983.*

Famine is typically referred to as a “disaster” which has victims — thousands of them — and victims alone. It is hardly ever portrayed as bringing any benefits to anyone or having any “winners”.<sup>1</sup> The causes of famine are usually held to lie either in “Acts of God” — drought, floods or earthquakes — or in anonymous forces such as “inappropriate agricultural practices”,<sup>2</sup> “population growth”,<sup>3</sup> “market forces”, “poverty” or “policy failure.” The possibility that governments and politically powerful groups may, in fact, actively promote famine and actively obstruct famine relief for rational purposes of their own is rarely considered or addressed.

Famine in southern Sudan during the late 1980s was commonly blamed on drought and civil war — a war which, in turn, has tended to be portrayed solely as a geographical-cum-ethnic-religious conflict between supposedly homogeneous Muslim Arabs from the desert scrublands of northern Sudan and Christian black Africans in the high rainfall savannah of the South.

More accurately, the civil war and associated famines can be regarded as a continuation and reinforcement of long-standing conflicts between competing economic and political groups — who have different regional, tribal and class-based loyalties — over Sudan’s resources, notably cattle, grain, labour, land and oil. Indeed, the famine of 1985 to 1989 cannot be understood without considering the wider political economy of Sudan and, in particular, the intense political and economic pressures on various groups in the north of the country in the early 1980s. These pressures gradually changed the balance of power at local and national levels so that a diverse coalition of interests emerged which created and used the famine, together with war, violence and famine relief, to further their own economic and political ends.

Several factors propelled this changing balance of power: the government’s increasing interest in exploiting the economic resources of the south; a growing threat of rebellion by the Arab Baggara cattle herders in Kordofan and Darfur provinces; and the outbreak of civil war in the south.<sup>4</sup>

### Economics of the North

In the late 1970s and early 1980s, the Sudanese government was faced with a declining economy and mounting international debt; this was all the more difficult to service because of the north’s shrinking resource base and a significant environmental crisis stemming from drought, declining soil fertility in some areas and growing pressure on scarce rangelands. The government thus renewed its interest in securing access to the resources of the south, in particular, land, water and oil.

Large oil deposits had been discovered in the south in 1978 under land occupied by the Dinka<sup>5</sup> and other peoples. But under the terms of the 1972 Addis Ababa agreement (which ended Sudan’s first 17-year civil war between Khartoum and a separatist movement based in the South), all taxes and government profits arising from the exploitation of any oil resources would accrue to the southern regional government.<sup>6</sup> Thus in 1980, the government attempted to redraw the map of Sudan legally so that the mineral-rich and fertile parts of the south (including the major oil fields and significant uranium deposits) would be included in the north, while administrative reforms in 1983 reallocated oil revenues to central government.<sup>7</sup> These and other actions triggered the second civil war which started in 1983 with the formation of the rebel Sudan People’s Liberation Army (SPLA). One of the SPLA’s first actions was to bring a halt to oil extraction, which prompted the central government to try to secure access to the oil by force.<sup>8</sup>

As the civil war intensified, the cattle-herding Dinka, who inhabit the central grasslands of the south and who had been largely excluded from any benefits of economic development, were increasingly likely to be identified by the government as rebel supporters. (Many Dinka did, in fact, support the SPLA.) Political representation for the Dinka at central and local government levels was already minimal, despite the resumption of a formally democratic government in 1986, but they were now stripped of all genuine representation within the Sudanese administration. This removed any institutional checks on the crude exploitation of the Dinka, making human-made famine possible.

David Keen is a research officer at Queen Elizabeth House, University of Oxford.



## Fomenting Strife

Besides being concerned about Sudan's precarious financial state, governments in Khartoum were also concerned about political unrest among the various peoples of the Kordofan and Darfur regions, particularly the nomadic Arab Baggara cattle herders.<sup>9</sup> Like the Dinka, the Baggara were economically marginalized; they had seen relatively few benefits from the infusion of capital into Sudan, largely from the oil-rich Arab world, from the late 1950s onwards, which had largely gone into the hands of elites from central and eastern Sudan.

The Baggara's economic marginalization was exacerbated by drought and environmental degradation which had increased pressure on grazing land, already severe because of a dramatic rise in the numbers of cattle. Numbers of cattle in Kordofan had risen from some 1 million in 1953 to around 2.4 million in 1976, while in Darfur numbers had risen from around 1 million to more than 3.6 million over the same period.<sup>10</sup>

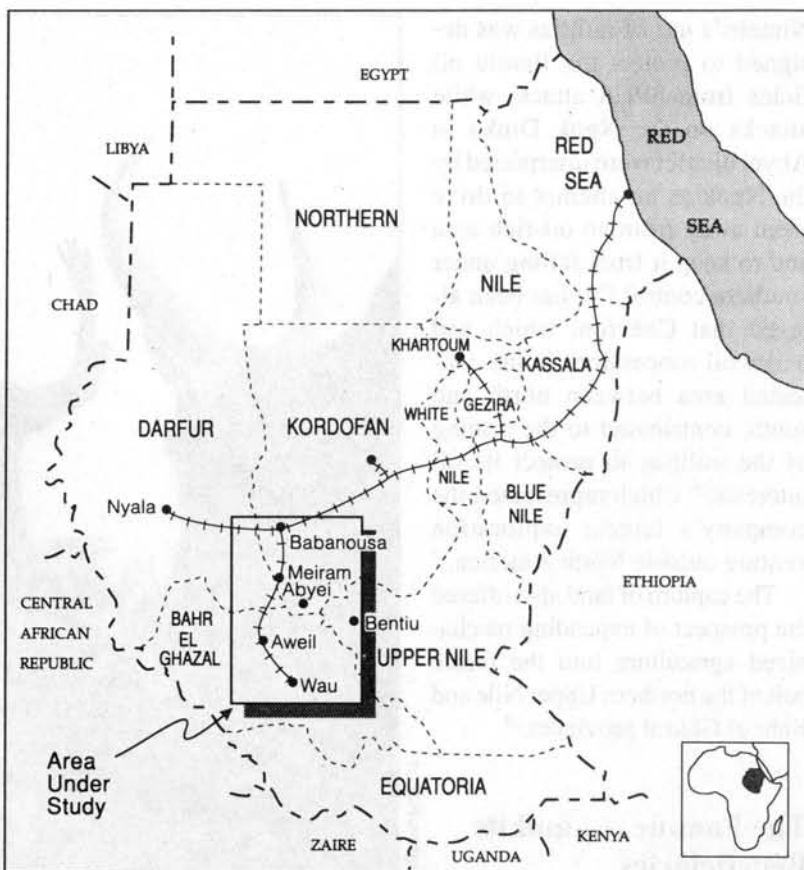
Particularly damaging to the Baggara had been the expansion of mechanized farms in southern Kordofan and (to a lesser extent) southern Darfur which cultivated sorghum, notably for export.<sup>11</sup> Facilitated by changes in land ownership law, the government, like the British colonial rulers before them, granted certain groups of people cheap leases to land (and privileged access to cheap inputs) to win political support,<sup>12</sup> paying little or no compensation to the previous land users.<sup>13</sup> The state-run Mechanized Farming Corporation, established in 1968, acted as the conduit for loans from the World Bank and the state-owned Agricultural Bank of Sudan to clear and cultivate around five million acres of land by 1984.

Within some 15 years of being ploughed with tractors, however, and with no crop rotation or fertilizer, the land soon became exhausted (a pattern that characterized commercial agriculture in much of Sudan), fuelling the land hunger of the mechanized farming sector still further.<sup>14</sup> As mechanized farming spread westwards from the Kassala and Blue Nile provinces to southern Kordofan, Upper Nile and other areas of Sudan,<sup>15</sup> the total area available for grazing was severely restricted with some migration routes of the Baggara and other nomadic groups cut off.

Another source of pressure on the Baggara was rapid inflation. The price of grain increased throughout the 1970s and 1980s, with a particular surge during the drought-led famine of 1983-85 in the west.<sup>16</sup> The expansion of large mechanized farms in southern Kordofan had not brought cheap grain to the area, since the food was largely exported.<sup>17</sup> The grain market in southern Kordofan was monopolized by a small number of merchants-cum-mechanized farm owners based outside the area.<sup>18</sup> In addition, the Agricultural Bank of Sudan boosted the prices wealthy individuals could obtain by advancing them loans to allow speculative grain storage.

These price and land squeezes on the Baggara were part of a wider process of increasing social and economic differentiation between large mechanized farmers, on the one hand, and nomads and peasant farmers on the other; perhaps 90 per cent of Sudan's marketable food surplus was controlled by less than one per cent of farmers by the end of the 1980s.<sup>19</sup>

Most critical in terms of the southern famine, however, was the fact that while the economic pressures on the Baggara



intensified, their links with the central government became closer during the late 1970s and early 1980s. Baggara participation in a 1976 rebellion had encouraged Khartoum to bring a number of Baggara leaders inside the central government. Thus the political muscle of the Baggara increased.

## Look South

In other circumstances, the economic marginalization of the Baggara and other ethnic groups and classes might have led to a broad-based opposition to Sudan's riverain elites from which successive Sudanese governments tended to be drawn. But as a result of the central government's active encouragement of ethnic hostilities in a bid to maintain its power, this discontent was to a large extent deflected toward the south.<sup>20</sup>

Ill-equipped to suppress rebellion in the South — the heavily-indebted government could little afford to fund a large army in a protracted war<sup>21</sup> — the central administration opted to arm disaffected and marginalized Baggara and other Arab groups and to encourage them to direct their discontent at even more marginalized groups in the South, notably the Dinka. It provided these militias with weapons, ammunition and intelligence as well as immunity from prosecution for theft, killings and other violations of the law as they raided southern villages for cattle, grain and people.<sup>22</sup>

The government thereby gained a cheap means of quelling southern opposition<sup>23</sup> whilst at the same time defusing unrest amongst the Baggara, Islamic elements and even the Sudanese army itself. This tactic was not new: central governments in nineteenth- and twentieth-century Sudan repeatedly attempted to appease potentially disaffected elements in the north of the country by tolerating or encouraging their exploitation of the south.

The strategy also offered the prospect of harnessing southern oil and other resources.<sup>24</sup> In 1983-84, for instance, President

Nimeiri's use of militias was designed to protect the Bentiu oil fields from SPLA attack, while attacks on the Ngok Dinka in Abyei district were interpreted by the Ngok as an attempt to drive them away from an oil-rich area and to keep it from falling under southern control.<sup>25</sup> It has been alleged that Chevron, which had major oil concessions in the contested area between north and south, contributed to the arming of the militias to protect its oil interests,<sup>26</sup> which represented the company's largest exploration venture outside North America.<sup>27</sup>

The capture of land also offered the prospect of expanding mechanized agriculture into the fertile belt of the northern Upper Nile and Bahr el Ghazal provinces.<sup>28</sup>

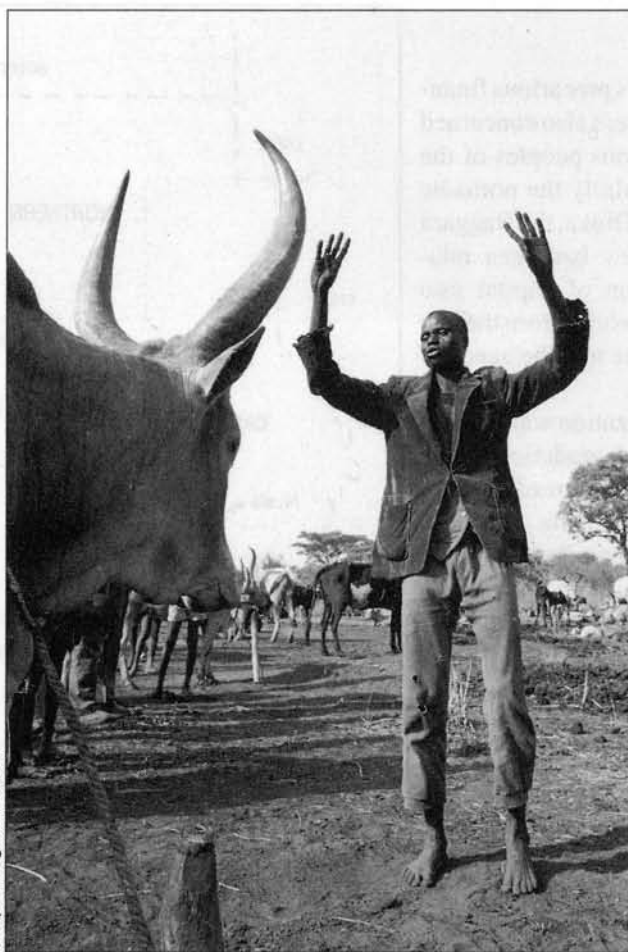
## The Famine . . . and its Beneficiaries

With weaponry and political protection, armed militias repeatedly raided the south from 1983 onwards, stealing cattle, grain and people, burning countless granaries and killing people. The raiding precipitated the movement of large numbers of people, notably to Sudanese towns and to Ethiopia, thereby disrupting future grain planting and depopulating rural areas.

These various processes precipitated starvation and famine. By 1988, death rates among southern Sudanese were among the highest ever recorded anywhere in the world. In the southern Kordofan camp at Meiram, in just one week at the end of July, no less than 475 people died; on average in the period from the end of June to mid-August, some 7.1 per cent of those in the camp were dying every week. By comparison, at the height of the 1984-85 Ethiopian famine, an average of about 1.6 per cent of all famine victims died every week in Korem.

Moreover, the famine did not simply cause individuals to die; it also destroyed — at least for a time — a way of life. By mid-1989, an estimated 30 per cent of the south's population had been uprooted to northern Sudan or Ethiopia.<sup>29</sup> The economy of the Dinka had been massively disrupted, with the loss of hundreds of thousands of their revered cattle.

If the famine was a disaster for the Dinka and other southern Sudanese groups, it nevertheless conferred (and promised) substantial benefits for a variety of interests in northern Sudan. While not every group that benefited from famine deliberately



Crispin Hughes/Panos

*A Dinka cattle camp close to the front line between the SPLA and government troops. Cattle are very important in Dinka culture. Although the central government (and some international observers) have sought to portray the violence between the Baggara and the Dinka as the latest manifestation of "natural" tribal hostilities, the conflict was by no means "inevitable", "natural" or "traditional". "Tribal" distinctions had been reinforced in divide-and-rule tactics that were part of a long and inglorious tradition embracing the earlier years of British governance. Like the British, post-Independence governments have resorted to the manipulation of conflicts in civil society in order to retain some semblance of control.*

set out to create it, it is clear that several powerful groups actively promoted processes to bring foreseeable benefits to themselves while bringing foreseeable suffering and death to others.

## Local Interests

For those Baggara of Kordofan and Darfur who joined the militias, raiding allowed the direct acquisition of cattle which, although unsuited to the ecology of northern Sudan, could be sold for cash.

Raiding and subsequent famine also offered the prospect of improved access to grazing land and water. The scorched earth tactics employed in the raids — with villages, crops and trees being burned — suggested an intention to depopulate much of northern Bahr el Ghazal and northern Upper Nile. A Minority Rights Group report stated:

*"Well-placed sources speak of a government policy to depopulate northern Bahr el Ghazal through Arab militia activity, just as earlier raids tried to drive the Dinka out of Abyei. The outcome of such a plan, if successful, would be to place the crucial pastures of the Bahr al-Arab completely under Baggara control."<sup>30</sup>*

Another promised benefit of raiding for elements of the Baggara was improved access to southern labour, supplies of which had been decreasing since the onset of the second civil war in 1983. Capture of civilians during militia raids was widespread,<sup>31</sup> and captives were held in conditions of slavery, or something very close to it. Elders from the

Twic Dinka said that some of their people, including children, had had their hands pierced and had been chained together before being led away by raiders.<sup>32</sup> On just one day, 12 January 1986, more than 700 children and women were taken in raids by militias on several villages in Bahr el Ghazal province. Others were captured after they had left their home villages.<sup>33</sup>

Captured Dinka were used for unpaid herding, farming and domestic work in the north. They were often subjected to violence and sexual abuse. Many reported that they had been addressed as *Abid* or "Slave". Many were bought and sold, and knew their price. In reemerging slave markets, the greatest demand, as in the nineteenth century, has been for adolescent girls and young women who might be sold for 50 times the price of an elderly man or woman.<sup>34</sup> Benefits could also be derived by demanding payment of ransoms before releasing captives. Conditions of slavery can still be found in Sudan today.



Women waiting for food distribution at a refugee camp in Wau. Sexual abuse of militia captives (including the rape of women and the castration of men) was widespread during the raiding of the 1980s and has continued in the 1990s. The sexual exploitation of southern Sudanese women has accompanied a renewed Islamic drive to protect the "purity" of northern women. The tendency to "purify" one group of women while "sexualizing" a subordinated group has been notable in other historical contexts, with sexual abuse serving to symbolize the domination of one group by another.



## Grain and Cattle Merchants

Famine also allowed a variety of relatively powerful groups to appropriate a greater share of the benefits of market transactions than they did before the famine. While changes in grain, cattle and labour prices were an important *cause* of famine, they were also part of the *function* of famine.

One of the main groups to benefit was army officers. In many parts of the south, officers worked together with merchants to shape grain and other food markets to their mutual advantage, using the army's control of movement in and out of these garrison towns.<sup>35</sup>

Northern merchants also shaped, and benefited from, high grain prices. In theory, grain prices were limited by administrative controls;<sup>36</sup> in practice, merchants often used their local political influence (and sometimes the threat of withholding stocks) to circumvent these regulations and to control the movement of goods between one area and another.

Another set of market transactions contributing to famine was the sale of cattle. Selling livestock was one of the principal ways in which the Dinka obtained grain during times of food shortage. For those fleeing northwards from raiding and famine, the towns of Safaha (on the boundary between Darfur and Bahr el Ghazal provinces) and Abyei (in southern Kordofan) became key centres for selling livestock. But just when grain prices were rising, livestock prices were declining. These price changes cannot be adequately explained by "market forces": the markets were skewed by the exercise of force, or threatened force, at a number of levels.

Militia raids, for example, had created a flood of migrants from the rural areas of the south who were desperate to sell whatever livestock they had retained to buy grain. Sales of cattle captured by the militias lowered prices further. Police action against the sale of raided cattle, although urged by Dinka police officers, was generally weak.<sup>37</sup>

Significantly, some of the chief beneficiaries of livestock price cuts had contributed to the raiding, chiefly by providing finance. For example, merchants in Ed Daien — one of the two biggest cattle markets in Darfur and an important centre for stolen cattle — funded purchases of guns and ammunition for several militias.<sup>38</sup> Army personnel involved in raiding also reaped monetary rewards from cattle sales.

## Labour Markets

Substantial benefits were also available to those who could mobilize refugees as cheap labour.

In Meiram in southern Kordofan, farmers complained in 1988 of a shortage of local labour, made worse by widespread malaria which debilitated local people at a time when they needed to be working the fields. Their concerns were echoed by farmers elsewhere in some of the major groundnut production areas.<sup>39</sup>

The cheap labour of famine migrants and captured Dinka offered a partial solution to these problems as well as reducing outlays for portering, wood collecting and other low-status tasks.<sup>40</sup>

The extent to which large-scale, famine-driven migration to northern Sudan was specifically intended to supply labour remains a moot point. Nevertheless, famine did yield benefits for those using southern labour. Labour markets were distorted (and labour rates diminished) as raiding and resultant famine sent large numbers of migrants north into southern Darfur and southern Kordofan.<sup>41</sup> The threat of attack or capture for those attempting to move further north (and the restricted transport market) boosted the local supply of labour and inevitably reduced its price. Labour markets were still further distorted by the threat of violence faced by many workers; even where there were no such threats, the availability of slave labour tended to depress labour rates.<sup>42</sup>

## The Inadequacy of Relief

The beneficiaries of famine also helped to ensure that famine relief was gravely insufficient so as to further their own ends. The market processes creating famine were allowed to proceed virtually unchecked. In addition, since the lack of relief forced many to leave their home areas, the ability of famine victims to maintain their assets and production was greatly impeded. The limited supplies of relief in the south (mainly from the US and the European Community) were concentrated on government-held towns to the neglect of rural areas. This not only helped to undermine rural economic life but also added greatly to people's exposure to disease in overcrowded urban areas.<sup>43</sup>

## "Policy Failure": Protecting against Blame

Discussions of famine relief — and the development process in general — generally take it for granted that the "policies" of governments and aid agencies alike result from the pursuit of benevolent aims. Policy is "problem oriented": it seeks to remedy poverty, disease, underdevelopment, famine or whatever. If such benevolent policies "fail" (for example, if aid interventions fail to make a dent in the poverty of the intended beneficiaries), then the blame lies with "poor implementation".

An alternative perspective rejects the assumption that policy aims are necessarily benevolent, and questions the usefulness of the very concept of "policy failure". As policymakers "fail" to achieve stated goals, they may be achieving other, unstated goals. "Policy" and "good intentions" cannot be neatly separated from what happens in practice.

One reason why "policy failures" should not be taken at face value is that policy outcomes may be shaped by groups with goals that differ from those expressed by policymakers themselves. Indeed, one way policymakers can escape responsibility for poor outcomes is through a rigid distinction between "policy" and (subsequent) "implementation". Declining to take responsibility for "implementation" may serve other functions, too, since any real attempt at intervention to cajole "implementing" agencies into doing the will of others might upset powerful groups. It might also reveal the powerlessness of the group doing the cajoling.

Blaming "poor implementation" is only one of the escape routes open to officials when accounting for "policy failure". As Edward Clay and Bernard Schaffer, two authors who have written extensively on the issue, point out, a further escape route lies in refusing to question the data on which decisions are made and agendas shaped. To the extent that decisions can be presented as springing automatically from a given set of data, officials can argue that "there was no alternative" to the policy pursued. Yet, alternatives always exist: other data — and other agendas — are

always available for consideration. There is always scope for doing things differently.

Limiting the data — and the range of issues — which they take into account when making decisions is one way in which officials shape agendas. But the shaping of agendas is not always an active, calculating process on the part of officials. Indeed, while officials may manipulate data and definitions, the existing data and prevailing definitions may in some sense manipulate officials — an aspect of "policy failure" that is rarely, if ever, mentioned. A concentration on the "landless" in Bangladesh, for example, might appear uncontroversial and benevolent, but it risks ignoring the processes through which people lose their land. Speaking of "dispossession" rather than "landlessness" might encourage a very different set of policies, with different beneficiaries.

Another bureaucratic escape route highlighted by Clay and Schaffer is a lack of openness and a lack of proper evaluation of policy outcomes, including a frequent failure to consult the intended beneficiaries. As Clay and Schaffer note, "without any revelations, responsibility scarcely arises." Once again, by neatly separating "policy" and "good intentions" from "what happens in practice", official discussion of "policy failure" is often framed in a way that protects both the policies themselves and the policymakers behind them.

In the case of the Sudan famine, the major international donors such as the US and the European Community generally attributed relief inadequacies — when these were admitted at all — to "poor implementation" whilst failing to take potential (political) difficulties into account in the design of relief policy.

Sources: Clay, E.J. and Schaffer, B.B., (eds.) *Room for Manoeuvre: An Exploration of Public Policy in Agriculture and Rural Development*, Heinemann Educational Books, London, 1984; Barrett, S. and Fudge, C., *Policy and Action: Essays on the Implementation of Public Policy*, Methuen, London and New York, 1981.

Inequalities at the political level were also influential in determining what happened to relief grain. More often than not, such grain failed to reach the designated beneficiaries, but went instead to local authorities and government soldiers. While it is possible to regard such diversion as the undermining of relief efforts by corruption — that is, as policy failure — it can also be seen as a manifestation of policy. The inadequacy of relief, after all, served important military and commercial functions (See Box above).

The depopulation of large areas of Bahr el Ghazal — and the debilitation of those people who remained — weakened the SPLA's main source of support, the Dinka, while bringing large numbers of southern Sudanese civilians directly under government control in southern garrison towns. Adequate relief to rural areas — particularly if combined with effective human rights advocacy — would have helped to stem the tide of outmigration, assisting the Dinka to remain in their traditional lands.<sup>44</sup> The government did not explicitly state its intention to starve the Dinka from their homelands, but did explicitly justify its denial of relief to rebel-held areas (which by 1988 came to include most of the lands of the Dinka) on military grounds.<sup>45</sup>

Meanwhile, the SPLA had a strategy of starving government-held towns in the south.

The benefits derived from high grain prices were also dependent on the absence of effective famine relief.<sup>46</sup> Indeed, on the rare occasions when relief deliveries were substantial, they lowered grain prices in famine areas dramatically,<sup>47</sup> in part due to the release of grain from private stocks;<sup>48</sup> merchants who had been hoarding grain sought to sell it before additional relief further reduced grain prices. The inadequacy of relief also increased the benefits derived by merchants and army officers from cattle, through both market and non-market channels, and cheap labour.

Effective relief supplies to northern Bahr el Ghazal would have greatly reduced the Dinkas' exposure to looting as they headed north, as well as removing their need to sell cattle at "desperation" prices. In effect, obstructing relief offered the opportunity to maximize the benefits from famine. At the same time, however, local authorities in the north tended to perceive the withholding of relief as one way of discouraging inflows of famine migrants with the attendant health and security risks such migrants were perceived as posing.



## Powerlessness and Famine

From available evidence, it seems clear that the famine in southern Sudan in the late 1980s was actively promoted by a number of powerful interests who stood to gain from it. The widespread conception of famine as simply a "disaster" and short-term emergency — and the emphasis placed on the "negligence" of the Sudanese government — are unhelpful in understanding why the famine happened. So, too, is the idea of "policy failure": relief outcomes were actively shaped by a number of actors, who appear to have fulfilled many of their most important goals, famine notwithstanding.

Aid agencies and major international donors generally sought to maintain good relations with the government. Exposing official obstruction of famine relief could have led to the aid agencies being expelled from the country. Highlighting that relief had not reached its intended beneficiaries threatened to discourage contributions from the general public and could have been embarrassing for aid organizations. Highlighting human rights' abuses and diversion of aid threatened to jeopardize relations between Western governments and the Sudanese government which was perceived at the time as a strategic ally.

What is most striking about the victims of the famine is not that they were poor, although those who were still alive once famine had run its course were extremely poor. Most evident is their near-total lack of rights or political muscle within the institutions of the Sudanese state. It was this that exposed them to the complex processes of famine, leaving them with no redress against violence and little or no access to famine relief.

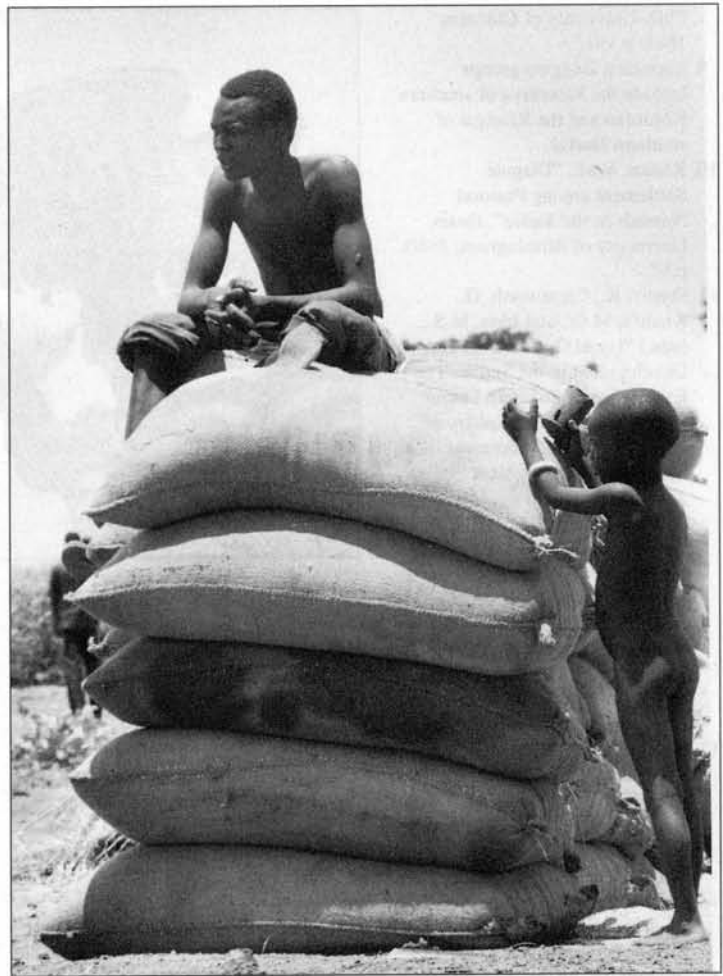
The use of various kinds of force helps to explain how even people who are relatively rich in natural resources (and relatively protected from natural shocks) can suffer severe famine. Indeed, it may be the wealth of a particular group, as much as its poverty, that exposes it to famine — as politically powerful groups resort to the use of force in order to transfer the victims' wealth to themselves.

Thus, the real roots of famine may lie less in a lack of purchasing power within the market (although this will be one of the mechanisms of famine) than in a lack of lobbying power within national (and international) institutions. Certainly, poverty can lead to famine as people's access to market goods collapses — but other forms of powerlessness may be a still more important determinant of why people starve and die.

This article is drawn from David Keen, *The Benefits of Famine: A Political Economy of Famine and Relief in Southwestern Sudan, 1983-1989*, Princeton University Press, Princeton, New Jersey and Chichester, UK, 1994, ISBN 0-691-03423-0

## Notes and References

1. Famine involves a combination of hunger, destitution and death. See de Waal, A.W.L., *Famine That Kills: Darfur, Sudan 1984-1985*, Clarendon Press, Oxford, 1989. However, as long as famine is identified simply with starving to death, it is hard to credit that it may confer benefits. If it is conceived of as an extended economic and political process, however, its economic and military functions can be recognized.
2. Ibrahim, F.N., *Ecological Imbalance in the Republic of the Sudan — with Reference to Desertification in Darfur*, Bayreuther Goewissenschaftliche Arbeiten, Bayreuth, 1984.
3. Firth, R., *Social Change in Tikopia*, Macmillan, New York, 1959.
4. Also significant in changing the balance of power was the rise of Islamic fundamentalism in the north. The militia strategy defused the threat of Islamic fundamentalism in the north with what appeared to be an aggressively "Islamic" agenda in relation to the south.
5. The Dinka are the largest linguistic group in the south of Sudan and comprise a number of smaller groups such as the Ngok Dinka and the Twic Dinka.
6. Alier, A., *Southern Sudan: Too Many Agreements Dishonoured*, Ithaca Press, Exeter, 1990, p.223.
7. Malwal, B., *The Sudan: A Second Challenge to Nationhood*, Thornton Books, New York, 1985, p.32; Alier, A., op. cit. 6., pp.182, 219. In 1980, President Jaafar Nimeiri's government — ominously from a southern point of view — planned to build a refinery in Kosti in the north (on the White Nile, south of Khartoum) rather than in the south. See Holt, P.M. and Daly, M.W., *A History of the Sudan: From the Coming of Islam to the Present Day*, Longman, London and New York, 1988, p.204.
8. Africa Watch, *Denying the "Honor of Living": Sudan, a Human Rights Disaster*, New York, Washington, DC and London, 1990, pp.78-80, 88; Hutchinson, S., "The Nuer in Crisis: Coping with Money, War and the State",



Caroline Penn

Waiting for grain distribution in a refugee camp in Wau, southern Sudan. Speedy relief in rural areas tends to help people maintain productive activity. But beneficiaries of famine often have an interest in preventing effective relief. In medieval Europe, withholding alms and poor relief on the grounds that they promoted laziness and moral laxity was commonplace. In England, the 1349 Statute of Labourers threatened the imprisonment of anyone providing alms to beggars capable of work, as landowners attempted to secure labour in the aftermath of the Black Death plague. Restricting relief to "encourage" the poor to work remained a pressing concern right through to imperial times and imperial outposts from India to Sudan and southern Africa. When thousands of starving Xhosa entered Cape Colony in 1856-7, the governor refused relief to the able-bodied unless they contracted to work for a European employer for three to five years. Meanwhile, private relief was sabotaged by the Cape government. One newspaper explained that such relief prevented the Xhosa "from becoming what we would find it so much to our and their interest for them to be — labourers".

PhD, University of Chicago, 1988, p.viii.

9. Important Baggara groups include the Messiriya of southern Kordofan and the Rizeigat of southern Darfur.
10. Karam, K.M., "Dispute Settlement among Pastoral Nomads in the Sudan", thesis, University of Birmingham, 1980, p.87.
11. Davey, K., Glentworth, G., Khalifa, M.O., and Idris, M.S., (eds.) "Local Government and Development in the Sudan: The Experience of Southern Darfur Province", Vol. 1., Ministry of People's Local Government, Sudan, and Development Administration Group, University of Birmingham, 1976, p.27; Karam, K.M., op. cit. 10, p.5; El Sammani, M.O., (ed.) "El Khuwei-Mazroub-Tinna Study Area, North Central Kordofan and Messeriya Study Area, Southern Kordofan", Project no. 698-0427, Institute of Environmental Studies, University of Khartoum, and USAID, 1985, pp.86, 99-100. See also Suliman, M., "Civil War in the Sudan: From Ethnic to Ecological Conflict", *The Ecologist*, Vol. 23, No. 3, May/June 1993, pp.104-109.
12. Ali, T.M.A., "The State and Agricultural Policy: In Quest of a Framework for Analysis of Development Strategies," in Barnett, T., Abdelkarim, T. and Abdelkarim, A., (eds.) *Sudan: State, Capital and Transformation*, Croon Helm, London, New York and Sydney, 1988, p.187; Ibrahim, H., "Agricultural Development Policy, Ethnicity and Socio-Political Change in the Nuba Mountains, Sudan", PhD, University of Connecticut, 1988, p.187.
13. Shepherd, A.W., "Nomads, Farmers and Merchants: Old Strategies in a Changing Sudan" in Scott, E. (ed.) *Life before the Drought*, Allen and Unwin, Boston, 1984, p.89.
14. Ibrahim, H., op. cit. 12., p.110.
15. Ibid., p.89; Ali, T.M.A., op. cit. 12, p.29.
16. Ahmed, M.B., "Agrarian Change in Dar Hamar: A Study in the Development of Crop Production and Desertification from Western Sudan", PhD, University of Hull, 1987, pp.323-32; El Hassan, A.M., "The State and the Development of Capitalism in Agriculture in Sudan: The Case of the Savannah Rainland", PhD, University of East Anglia, 1985, pp.205-6; Keen, D., "The Incidence and Origins of Food Crises in Darfur, Sudan, since the Second World War", master's thesis, London School of Economics and Political Science, 1986.
17. Ibrahim, H., op. cit. 12., pp.112, 191.
18. Ibrahim, A.R.A., "Regional Inequality and Underdevelopment in Western Sudan", PhD, University of Sussex, 1985; Abdel-Aziz, O.E., "Production and Marketing of Sorghum and Sesame in the Eastern Central Rainlands of the Sudan: The Contrast between the Public and Private Sectors", PhD, University of Leeds, 1979, pp.71-73.
19. Duffield, M., "Sudan at the Crossroads: From Emergency Preparedness to Social Security", Institute of Development Studies, paper no. DP275, May 1990, p.10.
20. Many Baggara elders opposed the raiding, but their influence was undermined by their inability to deliver resources to the Baggara people, by the increasing availability of weaponry, and by the increasing hostility towards the Dinka in the context of civil war.
21. See, for example, Brown, R.P.C., "A Background Note on the Final Round of Economic Austerity Measures Imposed by the Numeiry Regime: June 1984-March 1985" in Barnett, T., et al., op. cit. 12., pp.73-83.
22. Amnesty International, "Sudan: Human Rights Violations in the Context of Civil War", Amnesty International, London, 1989, sec.4.1; Africa Watch, op. cit. 8, pp.78-97; Oxfam-UK, "Political Situation in Abyei", 29 March 1986, p.1; Alier, A., op. cit. 6, p.256; *Sudan Times*, 25 October 1988.
23. Africa Watch, op. cit. 8; Amnesty International, op. cit. 22.
24. See, for example, Johnson, D.H., "The Southern Sudan", Report no. 78, Minority Rights Group, London, 1988; Hutchinson, S., op. cit. 8., p.viii. In late 1988, an official from the Ministry of Energy and Mining told me that the government was ready to move supplies to major oil fields to begin extraction. I said there would be resistance. He replied, "Yes, but there is the resettlement to Ethiopia".
25. Mawson, A.M.M. "Southern Sudan: A Growing Conflict", *The World Today*, December 1984, p.522.
26. See, for example, Alier, A., op. cit. 6., p.222.
27. Gurdon, C., *Sudan at the Crossroads*, Menas Press, Wisbech, UK, 1984, p.85.
28. Duffield, M., op. cit. 19., pp.31-32.
29. An estimated 1,445,500 had settled in northern Sudan and some 290,000 in Ethiopia. See USAID, "Sudan: A Good Start of the Rainy Season", Famine Early Warning System, 1988, p.3.

Caroline Penn



30. Johnson, D.H., op. cit. 24., p.10.
31. Amnesty International, op. cit. 22.; Ryle, J., "The Road to Abyei", *Granta* (Cambridge), 26 (spring), 1989, p.62; Alier, A., op. cit. 6, pp.263-5.
32. Letter from representatives of the Twic community to H. E. The Chairman, 25 January 1986.
33. Testimonies collected by the writer include 16 first-hand accounts of those who were subjected to some form of slavery. Full testimonies are in Keen, D., "Benefits of Famine: A Political Economy of Famine and Relief in South-west Sudan, 1983-89", DPhil, University of Oxford, 1991.
34. Testimonies of enslaved Dinka. See Keen, D., op. cit. 33, App.1. It was not only captives who were subject to sexual exploitation. The combination of army garrisons and impoverished famine migrants encouraged widespread male and female prostitution in army-occupied towns, notably in southern Kordofan. See Interagency Situation Report, "South Kordofan, June 1988".
35. de Waal, A.W.L., "Starving Out the South: Famine, War and Famine, 1983-9", mimeo, 1990, pp.16, 20.
36. In May 1988, the official price of a sack of sorghum in Abyei was Sud£45-75; the actual price was Sud£250-300. See Interagency Situation Report, op. cit. 33., p.7.
37. Oxfam-UK, "Tour Report, Abu Zaba, El Fula, Babanousa, En Nahud, Kadugli, 17th-27th June 1986", 1 July 1986, p.22.
38. Oxfam UK, "Ed Daien Tour Report", 18 June 1986, p.5; Mahmud, U.A. and Baldo, S.A., *Al Daien Massacre: Slavery in the Sudan*, Human Rights Violations in the Sudan, Khartoum, 1987, p.2.
39. Interviews with farmers in Meiram market, 24 November 1988. See also *Sudan Times*, 4 November 1988, 11 January 1989; USAID, "Record Harvest in the North, Famine Continues in the South", Famine Early Warning System, 1988, p.3.
40. Noted in Muglad by Concern, untitled internal memo, 24 November 1988.
41. de Waal, A.W.L., op. cit. 35., p.24.
42. Another critical element in the evolution of famine among the Dinka and other southern groups was the severe constraints put on "non-market" survival strategies — gathering wild foods, seeking assistance from kin or tribes with whom there had been intermarriage, and walking to safer, better-provisioned areas — by the famine's beneficiaries, particularly army personnel. Preventing the movement of people between government-controlled towns and surrounding rural areas where the rebels exerted greater influence ensured that substantial numbers of civilians remained under government control. Such control also created the possibility of using civilians as a human shield against attack by the rebel Sudan People's Liberation Army. Restrictions on non-market survival strategies also forced famine migrants to enter into exploitative market transactions, whether in grain, livestock, labour or transport, thereby increasing the profits to be made from such transactions.
43. See de Waal, A.W.L. op. cit. 1; African Rights, *Somalia—Operation Restore Hope: A Preliminary Assessment*, African Rights, London, 1993, pp.17, 49.
44. In May 1989, UN officials were told in the SPLA-held town of Makeir that people had been planning to move north into southern Kordofan and had dropped this plan only when told a relief train was imminent. See Wannop, B., "Report on the First Muglad-Aweil Relief Train, May 20 to May 28", UNDP, Khartoum, June 1989, p.22. Indirectly, the deprivation of relief may also have boosted outmigration by forcing the army and southern militias (both the government and the SPLA-supported ones) to resort to plundering civilians.
45. *Sudan Times*, 8 May 1988.
46. These high prices were sometimes boosted by the purchase of grain for relief purposes from local merchants, when significant relief had failed to arrive.
47. In the late spring of 1986, food relief brought sorghum prices down from Sud£240 per sack to Sud£140 per sack. See Oxfam-UK, "Tour Report, Wau, 18-22 May 1986", 6 June 1986, p.2. For an account of relief's breaking garrison town monopolies and lowering grain prices in 1989, see also Minear, L., *Humanitarianism under Siege: A Critical Review of Operation Lifeline Sudan*, Red Sea Press, Trenton, New Jersey/Bread for the World, Washington, DC, 1991, pp.42, 69.
48. Interview with Bryan Wannop, UNDP, New York, 6 September 1990. Release of trader stocks upon the arrival of relief had been noted as long ago as 1866 in India. See Government of India, "Report, Commissioners Appointed to Enquire into the Famine in Bengal and Orissa, 1866", 1867, Vol.2, p.58. As famine in the south deepened, however, very large quantities of grain were exported from Sudan, for instance, to Europe and Saudi Arabia. Most of the exports were eaten by animals.



# Flexible Bodies

## Health and Work in an Age of Systems

by

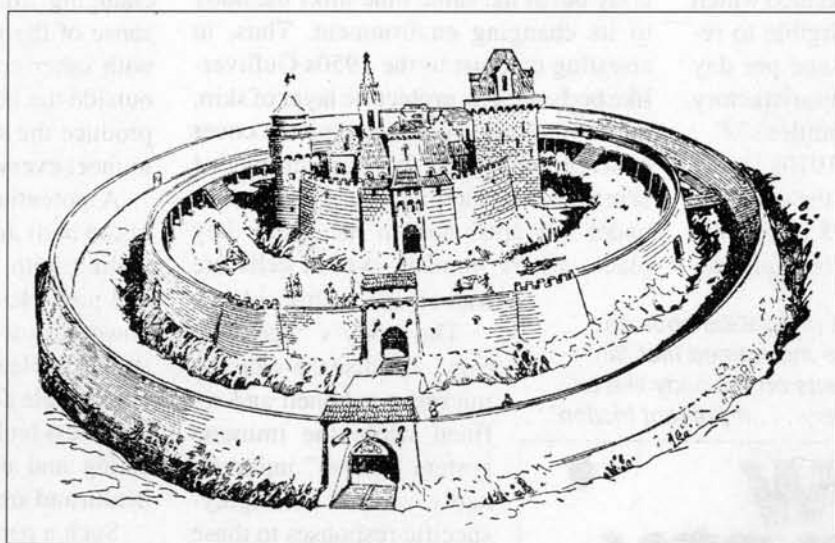
Emily Martin

*In late twentieth century Western culture, people increasingly think about their bodies, work and society in terms of complex systems. Discussions in all areas of health, for instance, focus on the immune system which has begun to be regarded as the key guarantor of health. The logic by which health and "fitness" are judged is changing; in particular, "flexibility" is increasingly stressed as a cherished trait to be cultivated not only in people's bodies, personalities and skills but also in organizations, corporations and products. A powerful, scarce and highly-valued commodity, "flexibility" becomes a mark of differential survival, a yardstick for defining who will survive plagues or corporate downsizing and who will not. A new social Darwinism is emerging.*

In 1951, my brother contracted polio during an epidemic and died at the age of two. I can recall vividly not only my fear of germs in general and the injunctions against having unwashed hands but also the particular injunctions against being in crowds or swimming pools where the polio "germs" might lurk. I recall how I was allowed to see my paralyzed brother only through the closed window of his hospital ward for fear of his contagion. I recall how my family was quarantined and a yellow placard hung on our front door by order of the Department of Public Health.

Judging by the public health recommendations for AIDS, our fears seem to have changed. While working for three years as a volunteer "buddy" with people who had advanced AIDS, I believed I did not have to worry about contracting AIDS nor any of the other "opportunistic" diseases my companions with HIV/AIDS had such as tuberculosis, herpes or

**Emily Martin** is professor of anthropology at Princeton University. She has been researching the anthropology of science and reproduction in the US. She is author of *The Woman in the Body: A Cultural Analysis of Reproduction*, Beacon Press, 1987.



*The Castle of Health — an early twentieth-century view of the healthy body protected behind castle walls*

toxoplasmosis. In my training to be a volunteer, I was often told that only those with impaired immune systems would be susceptible. The germs and viruses posed no threat as long as my immune system was strong.<sup>1</sup>

### Healthy Bodies

Current ways of talking and thinking about health and the body are significantly different from everyday understandings which prevailed only a few decades ago. In the early twentieth century, defending the body against ill health was thought of as strictly preventing any germs from entering the body. A 1918 illustration of

environment just outside the body. Any opening in the body's surfaces could allow disease to get in. An illustration from a 1955 article on polio in *Life* magazine shows a prostrate, Gulliver-like, seamless human body, besieged on its surface by "Lilliputian hordes" of menacing germs and viruses — tetanus, measles, diphtheria, whooping cough, typhoid, tuberculosis, cholera, dysentery, polio, plague, yellow fever, smallpox — all trying to get through the body's surface by drilling away with tools or lashing out with cutlasses. Some lie slain, their corpses skewered with vaccine syringes.<sup>3</sup>

Elsewhere, the body's efficiency was measured and compared to that of industrial machines, "amenable to the same

"The Castle of Health" in *The Primer of Sanitation and Physiology* shows a castle, representing the body, dwarfed by outer defences against disease: one to "keep germs from being spread about" and one to "guard the gateways by which they enter the body". The illustration does not let us see into the castle, the body, at all.<sup>2</sup>

In the 1940s and 1950s, popular health publications portray the most important threats to health as lying in the en-

chemical and physical laws as most of the machines man makes himself for his own ends".<sup>4</sup> If parts of the body went wrong, they could be fixed so that the whole body functioned smoothly again. Such images abounded at a time when the moving assembly line, designed for mass production, dominated manufacturing processes.

The "supreme importance" of regular, predictable habits was stressed in schools, advertising and public health programmes. The good habits of personal hygiene and of maintaining clean surfaces in the home were paralleled by the good habits learned by cells in the body to produce antibodies to germs.

It was not only schools which advocated hygienic habits. By 1915, Henry Ford, architect of the moving assembly line, had begun to send investigators into workers' homes to scrutinize their private lives and to admonish them to practice thrifty and hygienic habits and to avoid smoking, gambling and drinking. These early social workers decided which factory workers were not eligible to receive the full five-dollar wage per day Ford offered "because of unsatisfactory personal habits or home conditions".<sup>5</sup>

During the 1960s and 1970s, more attention began to be paid to the defences *within* the body. In a 1975 children's illustrated book, the body is again de-

picted as a castle, complete with moat, turrets and garrisons of medieval knights-in-armour protecting the castle from the invading "barbarian" germ army. But compared with the 1918 "Castle of Health", these castle walls are cut away on one side; through the breach, rank upon rank of soldiers stretch back inside the body, all ready to fight any germs that may enter.<sup>6</sup>

As the body's interior came into focus, concern with the cleanliness of surfaces outside the body diminished. Whatever was "out there", however deadly and dirty, the body's interior lines of defence could handle it.

Today, accounts of the interior of the body dominate biology and health books. In contrast to the 1970s, when there was little sense of anything holding the whole body together, the body's defences are now perceived as a single, interconnected system — the immune system. This complex system resides entirely within the body but at the same time links the body to its changing environment. Thus, in arresting contrast to the 1950s Gulliver-like body with its protective layer of skin, the 1990s body, as depicted on the cover of *Science* magazine, has been stripped of skin to reveal gleaming white lymph nodes under the arms and in the groin, key places where immune system cells are trained and mobilized.<sup>7</sup>

The body's "recognition" of disease-causing microbes is honed and refined while the immune system "tailors" unimaginably various but highly-specific responses to these microbes as needed. The body, drawing on an immense genetically-generated and constantly-changing arsenal of resources, can no longer rely on mere habit to defend itself against disease. The late twentieth-century body actively relates to the world and actively selects from a cornucopia of continually-produced new antibodies to keep the body healthy and to enable it to meet any and every new challenge. Possessed of agile responses and "flexible specificity", our adroit, innovative bodies are poised to anticipate any conceivable challenge.

## From Body to System

**Bill Walters** "I don't even think about the heart anymore, I think about the immune system as being the major thing that's keeping the heart going in the first place . . . The immune system . . . isn't even a vital organ, it's just an act, you know?"

**Peter Herman** "It's like a complete network . . . if one thing fails . . ."

**Bill Walters** "... if something goes wrong, the immune system fixes it, it's like a back up system."

**Steven Baker** "The immune system is the whole body, it's not just the lungs or the abdomen . . . I mean, it's everywhere."<sup>8</sup>

My aim is not to examine the "truth" of these different views of health, but to explore how, as many of us begin to think of ourselves as having this "thing" called an *immune system*, the logic of health, of sickness, and of fitness for survival is changing.<sup>9</sup> Many people now have a vivid sense of the immune system interacting with other complex systems inside and outside the body, changing constantly to produce the specific response necessary to meet every challenge.

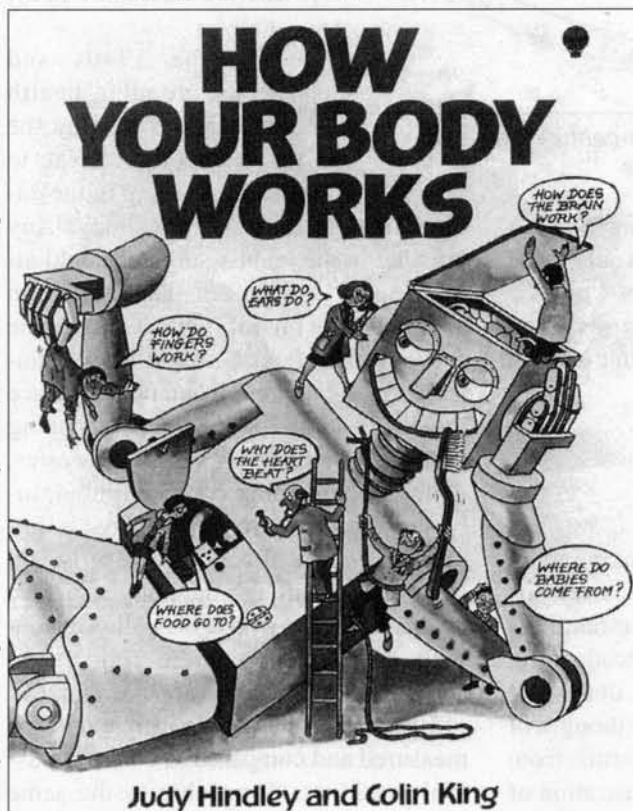
A potential consequence of thinking of the body in this way is the paradox of feeling both responsible for everything and powerless at the same time — empowered powerlessness. For instance, if a person has learned to feel at least partially responsible for her own health, she will doubtless feel that personal habits such as eating and exercise directly affect her health and are entirely within her control.

Such a person may gradually come to believe that wider and wider circles of her existence — family relationships, community activities, work situation — are also directly related to her personal health. The scale of the "management" task of controlling one's body and health becomes overwhelming. In the face of systemic forces that proceed inexorably, individuals can lose a sense of being able to do anything about them.

With respect to AIDS, people can simultaneously experience a sense of universal agency — "Everything is related to this disease; I will fix everything" — and of helplessness — "If I can't fix everything, and who could?, then I will die from this disease".

Another consequence of thinking of the body in terms of an immune system which is held together by communication and feedback<sup>10</sup> and connected with

*The body as a machine. A mid-1930s book on biology and human welfare maintained that "an optimistic view of life . . . acts on the body like oil on the working on machinery . . . it prevent friction".*



Judy Hindley and Colin King



everything else is that a sense of boundaries quickly erodes. As Peter Senge puts it: "Systems thinking shows us that there is no outside; that you and the cause of your problems are part of a single system".<sup>11</sup>

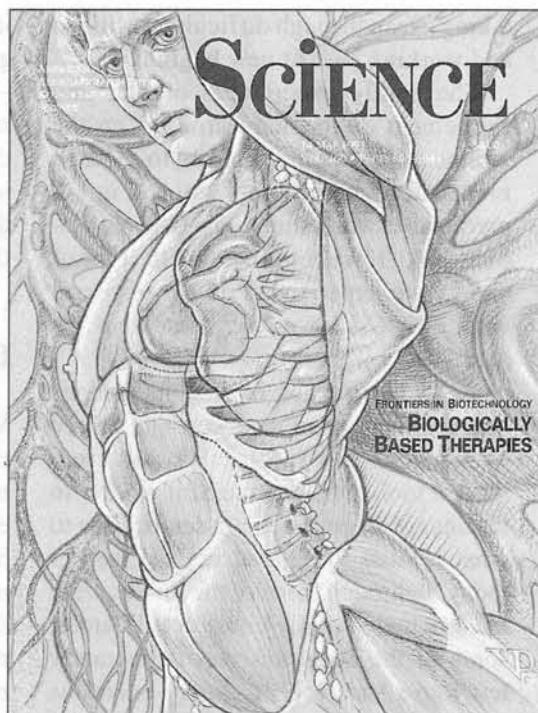
People who see themselves as persons or bodies in a system which has no clear, stable internal borders and which cannot be viewed from "outside" can easily regard the defence of ever-changing borders — fighting an army of germs off from invading the body, for instance — as a fruitless exercise. Harry Wilson, a white man in his '40s working in computers, for instance, sees a similarity between the lack of borders in the Vietnam War and the lack of borders in the "fight" against AIDS:

"See we have to keep in mind, regardless of what you did over there, whether you were a cook, a door gunner, a pilot, a grunt, a radio man, a cook, a typist, you could still get killed any minute, because it was no fun in Vietnam. [It was not] like you saw the fronts of World War I, World War II, trenches . . . There was no front, there was no front line. Yeah, my personal opinion, I don't think there's any front line in the war with AIDS."

There is a common perception too that the "system" may suddenly and catastrophically collapse as its internal checks and balances break down and fail to produce the appropriate immune response. For many people, part of the horror of AIDS is the horror of system breakdown, foreshadowing nightmarish, random disasters, all the more horrible because known beforehand to be an ever-present possibility. A young white office manager, Janey Wilcox, explained how she imagined AIDS:

"When I imagine what it's like to have AIDS. I imagine dying from within . . . All over the body, just dying, every single inch of the body dying from within . . . That's how I look at it, and just shivering up and down . . . No one's told me what it's like. I mean, I've seen and read a lot, and you see . . . AIDS sufferers on TV and I've known a few, and that's what it looks like, and that's what it made me feel like it would be from inside. All the way into your heart and your mind and everything."

Causes of this breakdown of the whole body system can come from many places



within the larger systems in which we live. The current epidemic worldwide of immune system dysfunctions of which AIDS is a part (lupus, chronic fatigue syndrome, asthma) is regarded by many as a result of harmful forces affecting our bodies: pesticides in our water and food, background radiation, environmental pollution of all sorts and vaccinations against infectious diseases. By thinking of health in terms of the immune system, however, many people tend to focus on the well-being of the system to ward off threats to the body, rather than on creating an environment that is free from threat. As Rebecca Patrides, a director of a holistic health centre, puts it:

"To me, it's all systemic. You can't localize and say this pathology here doesn't affect there. To me it's all one. When you look at what is it that makes the immune system break down, well, there are so many co-factors now, and because we don't want to acknowledge how many co-factors there are, we're always missing the boat. We don't acknowledge the environmental impact . . . We don't acknowledge the background radiation. We don't acknowledge our food supply. We don't acknowledge the breakup of the family. We don't acknowledge the lack of spiritual meaning in people's lives. I mean, the bottom line is, we don't acknowledge the loss of meaning in people's lives and what that does to the human being. To me, the HIV virus is a signature of an already weakened immune system."

## Immune-Machismo

The immune system — its strength or weakness — is beginning to function as a measure of health. As such, it allows a single standard of comparison among people and among groups of people. Says Gillian Lewis, a young librarian: "Some people have stronger immune systems than others, just because of the way they're made up". Financial adviser John Parker in his '20s maintains that one person gets HIV while another person does not because "maybe your immune system just isn't as beefed up". Carol Neilson, a bartender in her '30s, believes that women don't get AIDS as much as men because they have stronger immune systems. Acupuncturist and herbalist Barry Folsom, meanwhile, thinks that people without a good standard of living or education need vaccines, whereas vaccines would only clog up the more refined immune systems of middle-class or upper-class people.

Having a scale of immune strength on which people and groups of people can be measured allows some people to feel especially potent. Quite a few people we interviewed, especially young male doctors or medical students, expressed a kind of immune-machismo. One medical resident dismissed the possibility of contracting HIV infection from blood in the emergency room where he worked, claiming his immune system could "kick ass". In an invidious twist to this attitude, a local newspaper ran an article headlined "Five Texas girls say they had sex with an HIV-infected male to get into gang" which reported that "if the test came up negative, then it was like they were brave to have unprotected sex and they were tough enough and their body was tough enough to fight the disease".<sup>12</sup>

In addition to this kind of "given" superiority, people and texts often mention "training" of our immune systems: "Like an army which is prepared and waiting but never called into action, an unused immune system may become obsolete, not sufficiently prepared for new types of attack".<sup>13</sup> One "immuno-macho" doctor, Ken Holden, believes that, through practice and training, he can develop an immune system that will enable him to survive illness and disease better:

"Like, for example, eating things that are not particularly well cleaned, or, you know, go on trips and drink

water from a river, and, it's sort of, to build up my immune system. Now, I don't know if it has any advantage for me, or, if actually I'm exposing myself to any more danger and, I guess I should think a little bit more about that, but that's sort of my little idiosyncratic attitude about my own immune system. I'm trying to train it, sometimes."

## Working Bodies

In contexts seemingly far removed from neighbourhood discussions about health, new conceptions are also emerging of what kind of person and organization will survive in the future and the training they will need to undergo in order to do so. These conceptions again reflect the pervasiveness of "systems thinking" and a critical characteristic called "flexibility".

In 1991, for example, a training company took the 22,000 employees of a Fortune 500 multinational corporation through "experiential training" courses.<sup>14</sup>

Protected by sophisticated mountain climbing ropes and harnesses, teams of men and women, both workers and managers, of all ages and physiques climbed 40-foot towers and then leapt off into space, suspended from a wire cable or zipline; climbed vertical 40-foot-high walls and rappelled down again; climbed a 25-foot-high telephone pole which wobbled, stood up on a 12-inch swivelling platform, turned around 180 degrees and again leapt off into space. (This last is called the "pamper pole" by the training staff because people so often defecate in their pants while trying to stand up on it.)

The corporation's human resource director explained that this (very costly) investment in the retraining of workers and managers, which the corporation called "empowered learning", was being undertaken only after severe "down-sizing" during the 1980s — making a significant portion of the workforce redundant. Such retraining is necessary, according to a corporate brochure, because:

"We are facing an unprecedented challenge. The world is changing faster than ever before. Our markets are becoming more complex; our products are changing; and we are facing global competition on a scale never before imagined . . . Our survival in the '90s depends upon our ability to change our ways of doing things."

Success in the 1990s will require "letting go of old patterns and behaviours . . .

taking a leap through difficult transitions and working hard at new beginnings."

The bodily experiences of fear and excitement deliberately aroused on the zipline and the pole are meant to serve as models for what workers will feel in unpredictable work situations. One participant said, "If we could capture the type of energy we experienced on the tower, at work, there'd be no limit to what we could do."

As a participant in the high ropes course, the experience seemed to me emblematic of a spectacular shift from what it took to be a successful worker in the days of Henry Ford's assembly line to what it takes to be a successful worker today. Although some of the towers were made of huge, solidly-constructed frames, some of the apparatus was deliberately left loose and wobbly. Many exercises involved walking across a high wire. Not only did I experience the fear of no visible support at a great height, but on those wobbly poles, wires and platforms, the fear of being unmoored in space was almost intolerable. The exercises combined the vertigo of standing on the edge of a high cliff with the stomach-dropping feeling of the edge of the cliff itself beginning to crumble. I was literally moving from one position of instability to another and experiencing viscerally the need for continuous flexibility.

In this terrified condition, each of us had to jump off to be caught by our harness belayed by a co-worker. There we hung comfortably for a while, swinging gently not far from the ground. The harness completely and securely supports the whole torso, so that one's reaction is to slump like a baby in a backpack. This experience models physically the nature of the new worker that corporations now desire: individuals — women and men — able to risk the unknown and tolerate fear, willing to explore unknown territories, adrift in space, but simultaneously able to accept their dependence on the help and support of their co-workers.

An executive of this multinational corporation was very aware of the magnitude of change the employees were being asked to make. Evoking some of the characteristics of the 1940s and 1950s' "passive" worker and machine-like work organization, he said:

"We have treated people in the industrial environment as if they had no brain. Now they are becoming whole people, and that is rewarding."

These new "whole people" are to be active

in their willingness to tolerate risk, danger and the insecurity of being ungrounded — literally — but passive in their willingness to depend on the work group. Like the shifting poles, platforms, ropes and wires unmoored in space, the nature of the person is to shift and to be able, flexibly, to tolerate continuing shifts.

## Flexible Production

While interviewing the head of the experiential training company, I told him about my research on the immune system. He exclaimed, "That is the very image I use because it works so perfectly to communicate what we want" — the image of a flexible and innovative person, poised to respond in a continuously changing environment while constantly communicating with other such persons.

Such imagery of the ideal worker is connected to a major shift in industrial production. From the 1970s onwards, companies began to make use of new microelectronic technologies — computers — which enabled the integration of product design, manufacture, marketing and distribution. Design processes became more versatile, products more flexible, and technology more able to adapt rapidly to the needs of production. These technological changes were developed and applied in connection with the demands of increasingly mobile capital in an intensely competitive and globalizing economic system.

To compete in this global arena, companies needed to "produce small quantities of high-quality, semi-customized goods tailored to niche markets, thereby displacing economies of scale as the central dynamic of competition"<sup>15</sup> — and displacing mass production of standardized products involving mechanical technologies and routine jobs.<sup>16</sup>

New forms of organization were spawned such as "just-in-time" deliveries which cut down radically on stocks required to keep production flow going.<sup>17</sup> In addition:

"Improved systems of communication and information flow, coupled with rationalizations in techniques of distribution (packaging, inventory control, containerization, market feedback) make it possible to circulate commodities through the market system with greater speed".<sup>18</sup>

Such custom-made production and marketing has been termed "flexible



## Our Flexible Friends

**Flexigraphs, Flexibar,**  
**Flexisread,** a type of presentation software

**Flexion,** a new jump rope  
**FlexiTrace,** data acquisition software

**Flex-a-sizer,** a rod to strengthen and stretch muscles

**Tyrolia Free Flex,** a new ski binding

**Pro Flex,** wrist supports for repetitive motion jobs

**Nordic Flex Gold,** a home exercise machine

**Flexeril,** a muscle relaxant

**FlexFile,** a labelling system

**Flex buildings, Flex space,** in which tenants can carry out multiple operations — warehouse, assembly, research, design, office work

**Flexible factory,** in which the same production line turns out different products



**Flex-n-gate,** a car parts company

**Petroflex,** a rubber manufacturer  
**Flexi-van,** a truck lease and rental company

**Flex Products,** manufacturers of packaging that disintegrates in soil

**Flexible Interconnections, Flextronics,** electronic components manufacturers

**Flexible Bond, Inc.,** securitites

**Flex plans,** flexible benefit plans

**Flexography,** a method of printing newspapers on lighter paper

**Flexitime,** adjustable working hours

**Flexiplace** where technology allows workers to roam or work at home

**Flexible weapons,** hand-to-hand fighting.

specialization" which is "the signature of a new economic epoch".<sup>19</sup> The "flexibility" in this new kind of economy affects workers because firms which are:

"dynamic, innovative and responsive to change . . . require a committed, educated, multiskilled workforce, able to learn new abilities continuously and take up new functions as the market dictates".<sup>20</sup>

The processes involving human labour speed up and become more variable as workers take on managerial tasks and managers spend time on the assembly floor as changing production conditions dictate. Constant worker retraining is required, and workers move in and out of the work force more rapidly. When President Bill Clinton was asked whether he intended to raise taxes on the middle class, he replied:

"No, but the middle classes will have their jobs cut out for them anyway; they will have to get used to continuous education and retraining if they are going to be able to compete in the new society that must be forged".

Time and space are compressed.<sup>21</sup> Today, multinational capital operates in a globally integrated environment: ideally, capital flows unimpeded across all borders, all points are connected by instantaneous communications, and products are

made as needed for the momentary and continuously changing market.<sup>22</sup> Thus *A Manager's Guide to Globalization* maintains that:

"The management of a global corporate culture that is adaptable and capable of dealing with rapid changes in the environment requires managers who are extremely flexible. Flexibility allows managers to meet the needs of the organization and to constantly adjust to global and local demands through coordination and allocation of the organization's resources."<sup>23</sup>

The successful and ideal organization is no longer a monolithic, hierarchical bureaucracy but a fleeting, fluid network of alliances with great organizational flexibility.

### Survival of the Fittest

The emphasis on flexibility in work and health can lead to liberating escapes from rigid constraints: the elimination of hierarchies between management and labour; the effort to include women and minorities; the integration of mental and manual skills on the job; the wish to treat workers as whole people; and the attempt to see mind and body as one. Equally appealing may be the ideal person for the future: innovative, flexible, whole in mind and

body, nimbly managing a multitude of relationships and circumstances to maintain a vigorous state of health.

But flexibility has its downside as well. A *Fortune* magazine article entitled "A Brave New Darwinian Workplace" spells it out: as rigidly hierarchical schemes for organizing work are destroyed — schemes that have limited the ability of "people, organizations and markets to behave in natural ways" — the transition will "be brutal for all concerned". People will have to realize that they should "forget old notions of advancement and loyalty. In a more flexible, more chaotic world of work you're responsible for your career."<sup>24</sup>

For the adaptable, this may be a "good deal". But as the title of *Fortune's* article suggests, depictions of ideal flexible bodies and workers are, in reality, new versions of old hierarchies. Some of us have flexible enough — or fit enough — immune systems, bodies or personalities to survive plagues or corporate downsizing. Others are so inflexible that they are doomed to succumb to illness, death and unemployment. In this brave new Darwinism, certain categories of people will, yet again, be found wanting. Particular social groups will be seen as having rigid or unresponsive selves and bodies, making them relatively unfit for society.

A description of such differential

survival was given by John Marcellino, a community leader in the urban neighbourhood of Warren which has high levels of unemployment and poverty:

"I figure . . . one of the ways of distinguishing poor people from the rest of the population is we all got bad teeth [laughs] . . . And so you won't get rid of the drug abuse or the prostitution or the crime or stuff, until the people who live here are no longer here. And that to me is the same as the underclass thing, disposable people . . . As soon as they can't figure out a need for us, they'll get rid of us."

When asked what he thought was the current need for people such as those in his community, he replied:

"We still make money for somebody or another . . . They need some people in the service economy, they try to retrain . . . but if not, they're no use, they'll put you in jail . . . they'll choke you off so that you can't make a living doing anything else, so they get rid of you, or you know, hopefully, you'll go back to Virginia or somewhere else, right? You know, you'll crawl in a crack or you won't have children or something."

Only the "fit" will survive. But today's visions of the "survival of the fittest" differ from those of the nineteenth cen-

## "Workers who gain flexibility may lose job security, health insurance, paid holidays, paid sick days, bonuses and corporate pension schemes."

tury in that survival is not so much linked to the original biological material with which one was born, but to "training". "Training" becomes "natural" and, like the "nature" of anything, a differential basis for inequality can be perceived not as arbitrary or artificial but based on good sense, progress or the fruits of knowledge. Those who have been exposed to advanced training are perceived as having a "natural" competitive advantage.

In contrast to John Marcellino's concern for his community, it is a solitary advantage. The organization for which such training is required is unmoored from place, working across time and space barriers. Spatial relations become irrelevant, causing the very particular face-

to-face relationships produced in communities and workplaces to disappear. Those who have been trained for the future, with their access to electronic mail, fax machines, computers and jet travel, can orbit in hyperspace, ignoring those stuck on the ground or inbetween. Indeed, financier Jacques Attali describes the emerging "empowered, liberated nomads" as an elite which is "severing its ties with any particular place, whether nation or neighbourhood".<sup>25</sup>

A conception of such a new elite may find the desirable qualities of flexibility and adaptability in certain superior individuals of any ethnic, racial, gender, sexual identity or age group. The "currency" in which these desirable qualities will be figured is health, especially the health of one's immune system. What is being forged is a conception of "fitness" in which, just as surely as in nineteenth-century social Darwinism (although the terms and mechanisms may differ), some will survive and some will not.

This article is drawn from *Flexible Bodies: Tracking Immunity in American Culture From the Days of Polio to the Age of AIDS* by Emily Martin, Beacon Press, Boston, 1994 (hb) ISBN 0-8070-4626-4 [1995 (pb) ISBN 0-8070-4627-2 \$14/£11.99], distributed in Britain by Airlift Books, London.

### Notes and References

1. This is despite HIV's route of transmission being very different from that of polio so that fear of simple proximity is unnecessary.
2. Cited in Ritchie, J. W., *Biology and Human Affairs*, World Book Co., Yonkers-on-Hudson, NY, 1948, p.16.
3. Coughlan, R., "Science moves in on viruses", *Life* 38, 20 June 1955, pp.122-123.
4. Clark, R.L. and Cumley, R.W., *The Book of Health*, Elsevier, Houston, 1953, p.69.
5. Gelderman, C., *Henry Ford: The Wayward Capitalist*, St. Martin's Press, New York, 1981, pp.56-57.
6. Hindley, J. and King, C., *How Your Body Works*, Usborne, London, 1975, pp.34-35.
7. *Science*, Vol. 260, 14 May 1993.
8. All names of people interviewed are pseudonyms.
9. Tracking the history of the immune system and its many contemporary manifestations led me to undertake a complex ethnographic project, carrying out fieldwork, mostly in Baltimore City, in such settings as an immunology research laboratory, HIV clinics and support groups, a variety of urban neighbourhoods, the local chapter of ACT UP (a national AIDS activist organization), and the training grounds of a top Fortune 500 corporation. This involved extended, informal interviews with more than two hundred people from many walks of life, who lived in diverse socio-economic settings and who were not necessarily sick or scientific experts. In the process, I saw from many different angles how what goes to make up a person is being reconfigured today. My research was funded with the generous support of the Spencer Foundation.
10. Graduate students who assisted with the research were Bjorn Claeson, Laury Oaks, Monica Schoch-Spana, Karen-Sue Taussig, Wendy Richardson, and Ariane van der Straten.
11. In an analogy of warfare, others have described the immune system as: "an incredibly elaborate and dynamic regulatory-communications network. Millions and millions of cells, organized into sets and subsets, pass information back and forth . . . The result is a sensitive system of checks and balances that produces an immune response that is prompt, appropriate, effective and self-limiting". See Schindler, L.W., *Understanding the Immune System*, US Department of Health and Human Services, Washington, DC, 1988, p.1.
12. Senge, P.M., *The Fifth Discipline: The Art and Practice of the Learning Organization*, Doubleday, New York, 1990, p.67.
13. "Five Texas girls say they had sex with an HIV-infected male to get into gang", *Baltimore Sun*, 27 April 1993, p.7.
14. Pearsall, P., *Super Immunity: Master Your Emotions and Improve Your Health*, Fawcett, New York, 1987, p.39.
15. Karen-Sue Taussig and myself participated in this training.
16. Nolan, P. and O'Donnell, K., "Restructuring and the Politics of Industrial Renewal: The Limits of Flexible Specialization" in Pollert, A. (ed.) *Farewell to Flexibility?*, Blackwell, Oxford, 1991, p.161.
17. Smith, C., "From 1960s' Automation to Flexible Specialization: a Déjà Vu of Technological Panaceas" in Pollert, A. (ed.) op. cit. 15., p.139.
18. Harvey, D., *The Condition of Postmodernity: An Enquiry into the Origins of Social Change*, Basil Blackwell, Oxford, 1989, p.156. See also Lang, T. and Raven, H., "From Market to Hypermarket: Food Retailing in Britain", *The Ecologist*, Vol. 24, No. 4, July/August 1994, pp.124-129.
19. Harvey, D., op. cit. 17., p.285.
20. Borgmann, A., *Crossing the Postmodern Divide*, University of Chicago, Chicago, IL, 1992, p.75.
21. Nolan, P. and O'Donnell, K., op. cit. 15., p.162.
22. Harvey, D., op. cit. 17., p.147.
23. For a different analysis of the relation between the global division of labour and flexible specialization, see Piore, M.J. and Sabel, C.F., *The Second Industrial Divide: Possibilities for Prosperity*, Basic Books, New York, 1984. See also The Editors, "Cakes and Caviar? The Dunkel Draft and Third World Agriculture", *The Ecologist*, Vol. 23, No. 6, Nov/Dec 1993, pp.219-222; Bello, W. and Cunningham, S., "Dark Victory: The Global Impact of Structural Adjustment", *The Ecologist*, Vol. 24, No. 3, May/June 1994; Rifkin, J., "Laid Off! Computer Technologies and the Re-engineered Workplace", *The Ecologist*, Vol. 24, No. 5, Sept/Oct 1994, pp.182-188.
24. Rhinesmith, S.H., *A Manager's Guide to Globalization: Six Keys to Success in a Changing World*, American Society for Training and Development, Alexandria, Va, 1993, p.29.
25. Sherman, S., "A Brave New Darwinian Workplace", *Fortune*, 25 January 1993, pp.50-56.
26. Attali, J., *Millennium: Winners and Losers in the Coming World Order*, Times Books, New York, 1991, p.88.

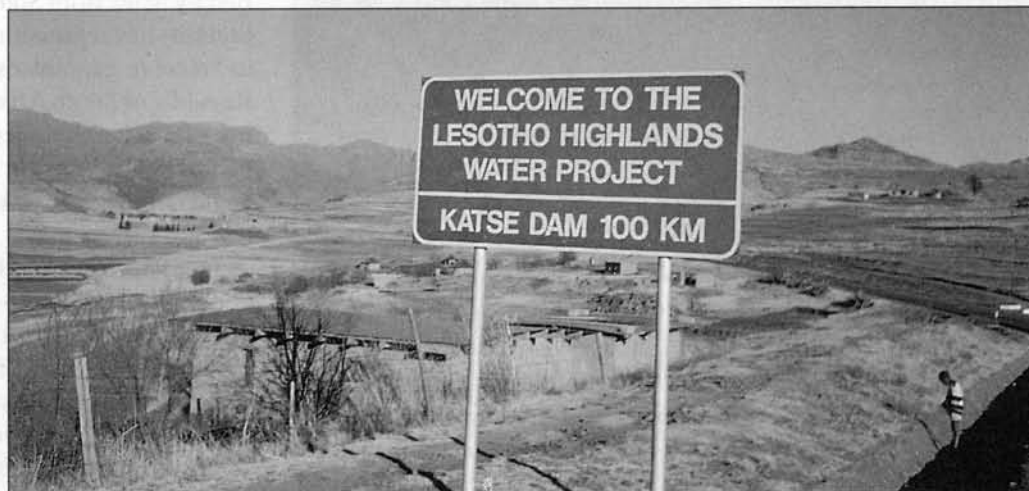


# The Mountain Kingdom's White Oil

## The Lesotho Highlands Water Project

by

Korinna Horta



Korinna Horta

*The Lesotho Highlands Water Project — a gigantic interbasin water transfer scheme — is the biggest single infrastructure development in Africa today. Coordinated by the World Bank, the scheme was originally conceived as a means of supplying water to industries in apartheid South Africa, thereby circumventing international sanctions. One dam has already been completed, affecting some 20,000 people who have lost part or all of their livelihoods. Notwithstanding the myriad social and environmental problems the Project has created, preparations for the next phase are already underway and will leave profound marks on the present and future generations of Basotho.*

**“We were told that we would benefit from the project. When we are driven off of the land, is that our benefit? Can we then lick our fingers?”**

*Lesotho Highlands Farmer,  
interviewed by the Highlands Church  
Action Group,  
May 1993*

On 20 October 1985, the 182-metre high Katse dam on the Senqu (Orange) river in Lesotho, the highest dam ever built in Africa and the centrepiece of Phase 1A of the Lesotho Highlands Water Project, was closed so that water could be impounded. The Project, which is scheduled to built in five phases, consists of six large dams linked by a series of water tunnels and pumping stations at an estimated cost of about US\$8 billion. Phase 1A alone is estimated to cost some US\$ 2.4 billion

and is already one of the largest infrastructure projects in the world today.<sup>1</sup> Preparations for the Project were so complex that it required “the amount of staff work that would normally go into about 10 projects”.<sup>2</sup>

The aim of the Project is to export water to South Africa’s industrial heartland in Johannesburg and Pretoria<sup>3</sup> by storing the south-westerly flowing headwaters of the Senqu (Orange) river and diverting them northwards. A secondary and relatively minor aim is to generate hydroelectricity for Lesotho.

Plans for the gigantic interbasin water transfer scheme were agreed in 1986 and construction started in 1989; all five phases are scheduled for completion by the year 2017. However, considerable cost overruns are expected. The International Rivers Network, a US-based NGO working on water development issues, reports that the 48-kilometre tunnel from the Katse dam — one of the longest water supply pressure tunnels in the world which

was blasted through the Maluti Mountains to transfer water to the underground Muela hydropower station — is already in need of major repairs: the entire tunnel now has to be lined with concrete at a cost of an additional \$70 million.<sup>4</sup>

### The Mountain Kingdom's White Oil

Lesotho is the size of Belgium and is inhabited by some two million Basotho people.<sup>5</sup> The current boundaries of the country were determined by the wars of conquest waged by encroaching Dutch settlers between 1840 and 1869 during which the Basotho lost most of their best agricultural land. Sometimes referred to as the “Kingdom in the Sky”, Lesotho is more than 1,000 metres above sea-level. Three-quarters of the country are highlands, reaching from the foothills of the Maluti Mountains to Thabana-Ntlenyana, the highest peak in southern Africa at

**Korinna Horta** is an economist with the Environmental Defense Fund, a non-profit organization based in Washington, DC.



The Katse dam is the highest dam in Africa.

3,428 metres. The land below 1,800 metres, the "lowlands", comprises the west-end region of the country.

Lesotho's landlocked geography — the country is completely surrounded by South Africa — its traditional reliance on remittances from Basotho migrant workers working in South African mines and industries, and the fact that its trade is almost entirely with South Africa indicates its overwhelming economic dependence on that country. During the apartheid era, when the Lesotho government gave refuge to anti-apartheid activists, South Africa's regime showed its might: besides efforts to destabilize Lesotho, such as blocking the country's borders in January 1986, the South African military carried out military raids in Lesotho on several occasions.<sup>6</sup>

The Lesotho Highlands Water Project was first conceived in the mid-1950s. Concerned about South Africa's stranglehold on their country, however, Lesotho governments have tended to view schemes to use the country's water, which has been compared to the finding of oil, with scepticism. As one Lesotho official put it: "First the Boers took our land away from us and now they want to take our water".<sup>7</sup>

Chief Leabua Jonathan, Lesotho's Prime Minister since 1966 when the country became independent from Britain, is reported to have agreed to the Project only on the condition that Lesotho would control the levers regulating the outflow of water.<sup>8</sup> He was promptly overthrown in January 1986 by a military coup engineered by South Africa.<sup>9</sup> With little public debate, the incoming military govern-

ment of Lesotho did not hesitate to sign the October 1986 Treaty with the Republic of South Africa which established the Lesotho Highlands Water Project.

The lack of consultation with and discussion among the Basotho people is deeply resented by the Highlands communities. Prior to the signing of the Treaty, Lesotho's King Moeshoeshe II visited the Highlands, but as a member of an NGO, the Highlands Church Action Group, said: "When the King came through, what could we do but smile and clap hands? We did not understand anything [he] said".<sup>10</sup>

### Bypassing Sanctions

How did a small country of less than two million inhabitants with a 1991 annual per capita income of US\$440 qualify for a \$2.4 billion investment in one single project? The 1991 appraisal report of the World Bank, the financial coordinator of the Project, states quite clearly that Lesotho was not sufficiently creditworthy to qualify for the Bank's \$110 million loan for Phase 1A — yet recommends that the Bank fund the Project to the tune of \$110 million, guaranteed by the Lesotho government.<sup>11</sup>

The answer to this apparent contradiction is quite simple: Lesotho is only the nominal borrower for the Project; South Africa, subject at the time of the loan to international economic sanctions, is in fact responsible for servicing the debt and repaying the loans. The World Bank's financial risk analysis in its appraisal report deals only with the risks that South

Africa would default on the loan.

Because of the sanctions on the apartheid regime, however, the Bank was concerned about the "project being perceived as being in the Republic of South Africa's interest".<sup>12</sup> Other lenders, including the major European export credit agencies, appeared to be equally concerned about "political sensitivities" at a time when international public opinion was horrified by news from South Africa of police brutality and repression; they did not want to "receive guarantees directly from the Republic of South Africa".<sup>13</sup> Thus financing of a scheme to benefit South Africa had to be designed in such a way that it could not easily be linked to the apartheid regime.

In 1986, the World Bank provided concessionary loans — through its International Development Association — of US\$8 million to help finance project design and arrange the complicated financial package. The arrangement included setting up a trust in Britain through which South Africa could service the debt. To assure other cofinanciers, the World Bank agreed to participate on a *pari passu* basis; that is, it would expose itself to the same risks as other lenders.

This arrangement lent the Project international credibility and cofinancing was provided by the African Development Bank, the European export credit agencies of Germany, France, Italy, and Britain, the European Development Fund, the European Investment Bank and European commercial banks. Bilateral aid was also provided by Germany, France, Britain.

An additional strategy was that international contractors had to provide their own financing from export credit agencies and commercial banks,<sup>14</sup> a strategy fraught with potential conflicts of interest because of the focus on which supplier has the most financial backing rather than on the quality and price of the goods. Yet replication of this strategy is being considered for Phase 1B.<sup>15</sup>

### Social Distress

Under Phase 1A of the Lesotho Highlands Water Project, 20,000 mountain people have lost all or part of their fields and grazing lands which are central to their livelihoods, while even larger numbers of people may become "development refugees" if subsequent phases are implemented. Considerably more land will be flooded by the Phase 1B Mohale



dam, including some of the best agricultural land in Lesotho, than was flooded by the Phase 1A dams.

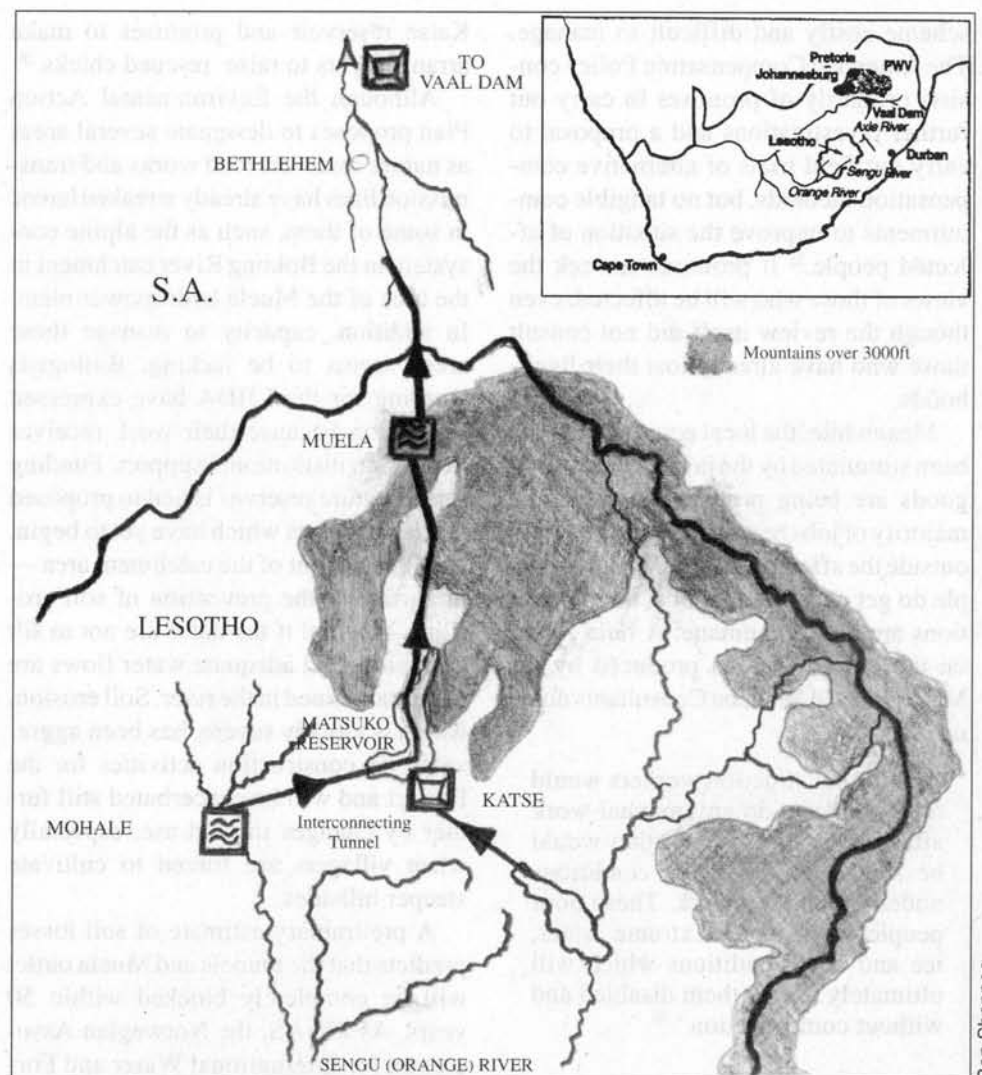
Internal World Bank documents recognize that the Highland people are among the poorest people in Lesotho and are already living under very harsh conditions. Just a small plot of land represents the difference between having access to food and malnutrition.<sup>16</sup>

The Project, however, is depriving many people of all or part of their livelihoods. Communal grazing lands have been enclosed and declared off limits to villagers; agricultural land has been used to build roads, transmission lines and other infrastructure such as construction camps and quarries or will be flooded as the Katse and Muela dams fill up. Housing has been destroyed or damaged as have top soils and water springs. Dust and noise pollution is severe in places, while a large influx of job-seekers has increased sanitation and public health problems. Destitution, prostitution, disease and severe hardship have all escalated.

The Lesotho parastatal in charge of the scheme, the Lesotho Highlands Development Authority (LHDA), appears to have developed into a state within a state: its budget is likely to surpass the government's budget while staff salaries are much higher than those for civil servants. LHDA has such a poor record in dealing with local communities and their plight that staff are not trusted by the Highlands people. Dedicated and competent staff members within LHDA, who try to raise the concerns of the Highlands people have great difficulties in getting their voices heard.<sup>17</sup> LHDA is also in deep turmoil and mired in conflict; in March 1995, its chief executive was suspended on criminal charges while the head of the environment division resigned in June 1995.

## Inadequate Compensation

Some of the social implications of the Project were addressed by an Environmental Action Plan (EAP), produced by the Lesotho Highlands Development Authority in 1990 with financial assistance from the European Community after construction was already underway.<sup>18</sup> The EAP covers compensation for affected people, a rural development plan and a natural environment and heritage plan. Its foremost task is to ensure compliance with the 1986 treaty between South Af-



Ben Sheppes

rica and Lesotho establishing the Water Project which promised that the people of Lesotho's Highlands "would not be left with a standard of living inferior to that prevailing at the time of the first disturbance".<sup>19</sup> This provision is mirrored by the minimum requirement of the World Bank's policy on involuntary resettlement that affected people should at least be provided with the means to restore their living standards to pre-project levels.<sup>20</sup> But the scarcity of arable land in Lesotho severely limits resettlement options for those affected by the Project.

The compensation policy of the EAP provided for a lump sum cash payment for people who lost less than 1,000 square metres of land. Those who lost more were to receive an annual delivery of corn for 15 years — the quantity depending on the amount of land lost — after which the rural development plan is supposed to have generated enough employment for local people to earn a living.<sup>21</sup> The nutritional value of the compensation package is clearly inadequate. According to an LHDA health official, "micro-nutrients are a problem, the package does not sus-

tain the life of an individual".<sup>22</sup>

In addition, fodder to feed livestock was delivered for five years (from 1990 until the present). As with all the Water Project's other inputs, the bales of fodder are imported from South Africa, and transportation costs up to the Highlands represent a considerable expense, which is of little benefit to the local economy.<sup>23</sup>

In a 1993 LHDA survey, the vast majority of affected people expressed strong dissatisfaction with the compensation package.<sup>24</sup> They said that the cash payments did not reflect the productive value of the land and that the 15-year compensation package did not take into account the loss of many varieties of food eaten by the Highlands people. Wild plants, fuelwood and building materials that their land used to provide was not compensated for either.

A review of the compensation package was carried out by the Lesotho Highlands Development Authority in June 1995, driven by the need to simplify its logistics — Project planners are concerned that the greater number of people to be affected by Phase 1B will render the existing

scheme costly and difficult to manage. The Amended Compensation Policy consists primarily of promises to carry out further investigations and a proposal to carry out field trials of alternative compensation methods, but no tangible commitments to improve the situation of affected people.<sup>25</sup> It promises to seek the views of those who will be affected, even though the review itself did not consult those who have already lost their livelihoods.

Meanwhile, the local economy has not been stimulated by the project because no goods are being procured locally. The majority of jobs have gone to people from outside the affected area. When local people do get construction jobs, their conditions are often inhumane. A field report on the Phase 1A area produced by the Maseru-based Sechaba Consultants noted in 1994 that:

"novice construction workers would not be able to do any manual work after this because, by then, they would be scraps owing to the conditions under which they work. These poor people work under extreme water, ice and cold conditions which will ultimately render them disabled and without compensation".<sup>26</sup>

## Environmental Degradation

The 1986 feasibility studies for the Project, carried out by British-German engineering consortium Lahmeyer-McDonald, concluded that there were no major "environmental obstacles" to the project,<sup>27</sup> even though no comprehensive environmental impact assessment was undertaken. Since 1986, a few sketchy environmental studies, most of which were sponsored by the European Union, have been carried out. But according to biologists familiar with the Project, there are few useful baseline data, and little is known about Lesotho's endemic fish and bird populations or the impact that the gigantic construction works are having on them.

Among the known endangered animal species in the project area, however, are the Maloti Minnow and the Bearded Vulture (both on IUCN's endangered species list) as well as the Spiral Aloe which is endemic to Lesotho and plays an important role in traditional medicine. The project proposes to carry out a rescue operation for the Bald Ibis (an IUCN threatened species), the Black Stork and other birds which nest within the area of

Katse reservoir and promises to make arrangements to raise rescued chicks.<sup>28</sup>

Although the Environmental Action Plan proposes to designate several areas as nature reserves, road works and transmission lines have already wreaked havoc in some of them, such as the alpine ecosystem in the Bokong River catchment in the area of the Muela hydropower plant. In addition, capacity to manage these areas seems to be lacking. Biologists working for the LHDA have expressed frustration because their work receives little or no institutional support. Funding for the nature reserves is tied to proposed tourism projects which have yet to begin.

Management of the catchment area — in particular the prevention of soil erosion — is vital if the dams are not to silt up rapidly and adequate water flows are to be maintained in the river. Soil erosion, which is already severe, has been aggravated by construction activities for the Project and will be exacerbated still further by changes in land-use, especially when villagers are forced to cultivate steeper hillsides.

A preliminary estimate of soil losses predicts that the tunnels and Muela outlet will be completely blocked within 50 years. As FIVAS, the Norwegian Association for International Water and Forest Studies, points out, "it will be extremely difficult to control the erosion even if it is possible to find the money and the will".<sup>29</sup> Yet, no erosion and sedimentation study was carried out for Phase 1A. The World Bank now claims that the earlier erosion estimate was based on false assumptions of local rock types and that there is no threat to the Project's technical feasibility.

The downstream impacts of the Lesotho Highlands Water Project also appear to have been overlooked. Diverting large amounts of water from the Senqu (Orange) River will have consequences in the regions that the river traverses, western South Africa and Namibia — it is the border between the two countries — before it enters the Atlantic Ocean. Thayer Scudder, a US expert on large water development schemes and a member of the Panel of Environmental Experts of the Lesotho Highlands Water Project, set up by the Bank to monitor compliance with the Bank's resettlement guidelines, points out that large-scale water development projects are likely to impoverish a much larger number of people downstream of the project than those living in its immediate vicinity.<sup>30</sup>

## Fine Words, Little Action

Several internal reports written by World Bank environmental experts and social anthropologists have also expressed concern over the Project.<sup>31</sup> One suggests that further disbursements for Phase 1A should be linked to on-the-ground improvements, and that an independent assessment of the profound impact of Phase 1A on local communities should be carried out before a Bank decision on funding for Phase 1B is taken.<sup>32</sup> Britain's Overseas Development Administration (ODA), which cofunded Phase 1A under its bilateral aid programme and is funding the Muela hydropower project under Phase 1A, is equally candid about the social impacts of the Project to date: "There is a considerable negative impact of the LHWP on the people of the Lesotho Highlands. This is not being adequately dealt with."<sup>33</sup>

An important source of information on the day-to-day impact of the Project, however, has been a small Lesotho NGO, the Highlands Church Action Group. For several years, this group has documented specific cases of hardship and suffering of villagers as a result of the water scheme. The group has written numerous letters to the responsible project authorities asking for compensation for damage done to village people, letters which have largely remained unanswered. Some of the problems would have been easy to solve with minimal cost and would have meant a world of difference for affected people.

For instance, the garden of the school at Ha Theko, which provided food for the school children, was destroyed when a road camp and quarry were built near the school building.<sup>34</sup> One of the many project trucks could easily have delivered top soil from the (soon-to-be flooded) valley bottom in order to create a new garden, but this was never done. In contrast, top soil was delivered for the flower beds in the European-style village (complete with tennis courts and restaurants) which houses Project staff.

Similarly, whilst the houses of the project staff have running water, local people in the village where the water supply is sited were forbidden to draw water from it. It took over one year — and the personal intervention of the Chief Executive of the Lesotho's Highlands Water Authority — before a tap to the supply tank was installed for the benefit of the villagers. Promised water supplies and sanitation works for the village have still not been implemented.



The Lesotho Highlands Development Authority has been largely incapable of responding to the complaints of affected people. The former head of LHDA's Environment Division summarized the problems before his June 1995 resignation:

"The existing strategies and assessment of performance in implementation of the strategies is heavily top-down, inefficient and needs to be reversed".<sup>35</sup>

There are no indications that any "reversal" is taking place, nor that alternative approaches are being considered,<sup>36</sup> even as preparations for Phase 1B forge ahead. Indeed to proceed with the Project is to fly in the face of recommendation of the World Bank's own resettlement review, namely that:

"the Bank should not finance any new project involving resettlement

for a borrowing agency that is not living up to its existing commitments for resettlement in an ongoing project".<sup>37</sup>

## Fundamental Questions

The World Bank insists that the Project will bring "development" to Lesotho, enabling the country to transform its water into export revenue by charging South Africa water royalties and thus to embark on an era of export-led growth that will "benefit" Lesotho's poor.<sup>38</sup> Fundamental questions — Who is the water for? At what cost? At whose cost? — are not being asked, let alone answered, by the Project and its financial backers.

The governments which put in place the Lesotho Highlands Water Project were the South African apartheid regime and

the military rulers of Lesotho at a time when downstream Namibia was governed by the United Nations Council. However, Nelson Mandela is now president of South Africa, Lesotho is run by a civilian government — although its control over the country's armed forces is tenuous — and Namibia became an independent nation in 1990. With such a changed political situation, there should be the possibility for a vigorous public debate about water equity which ought to open up fresh perspectives and dynamic new approaches to ensure people's rights of access to water and land and environmental sustainability.

Such a debate and exploration of other approaches should be explored before another \$ 1.1. billion, including a World Bank non-concessional loan for \$120 million, are invested in the Lesotho Highlands Water Project.<sup>39</sup>

## Notes and References

1. Phase 1A involves building two dams, the Katse and Muela; a subterranean hydropower station at Muela; 82 kilometres of tunnels blasted through the Maluti Mountains; and the building or upgrading of over 400 kilometres of roads. Water is to be delivered from the Katse dam by gravity through a 48 kilometre-long transfer tunnel to the underground Muela hydropower station from where it would continue through other delivery tunnels to South Africa's Axle River and the Vaal dam. Phase 1A is designed to transfer water at 18 cubic metres per second and install 72 MW capacity of hydropower. Once all project phases are completed, water delivery capacity is intended to reach 70 cubic metres per second.
2. The World Bank, Summary of Discussions at the Meeting of the Executive Directors of the Bank and IDA, 23 July 1991, Washington, DC, 10 September 1991, p.17.
3. The area was formerly known as PWV (Pretoria-Witwatersrand-Vereeniging) but has now been called Gauteng Province by the new South African government.
4. Coleman, C., "Troubles at Highlands Water Project", *World Rivers Review*, Jan. 1995, p.20.
5. Lesotho was known as the British protectorate of Basutoland until its independence in 1966.
6. In the 1982 incursion into Maseru, Lesotho's capital, numerous Basotho and South African refugees and exiles were killed. As a result, the Lesotho government succumbed to South African pressure and expelled members of the African National Congress that had taken refuge inside its borders.
7. Personal communication to the author.
8. Rosenblum, M. and Williamson, D., *Squandering Eden: Africa at the Edge*, Harcourt, Brace, Jovanovich Publishers, New York, 1987, p.207.
9. Marches Tropicau, Conjoncture, *Le Lesotho: Chateau d'Eau Sous Influence*, Paris, Dec. 1994.
10. Highlands Church Action Group, written response to LHDA concerning an article "Lesotho's Water Project Betraying the People", no date.
11. The loan was provided at near commercial interest rates plus an additional 10 per cent mark-up on the prevailing interest rate. See the World Bank, Staff Appraisal Report, Lesotho Highlands Water Project (Phase 1A) 2 July 1991, pp.66, 69.
12. Ibid., p.67.
13. Ibid., p.47.
14. The World Bank, op. cit. 2, p.17.
15. The World Bank, Project Information Document, Lesotho Highlands Water Project (Construction Phase 1B), no date.
16. The World Bank, Office Memorandum, 6 April 1994.
17. Author's Interviews with members of the Highlands Church Action Group and numerous officials from the Lesotho Highlands Development Authority.
18. Lesotho Highlands Development Authority, Environmental Action Plan, 1990. The EAP is distinct from the World Bank-sponsored National Environmental Action Plan for Lesotho, which only includes a cursory mention of the project.
19. The Trans-Caledon Transfer Authority and the Lesotho Highlands Development Authority, brochure on the Lesotho Highlands Water Project, quoting the 1986 Treaty between the Republic of South Africa and Lesotho, Oct. 1994.
20. The World Bank, Operational Directive 4.30 on Involuntary Resettlement, 1990.
21. This compensation package now consists of 97 per cent corn and 3 per cent beans.
22. Personal communication with the author, Maseru, 4 July 1995.
23. Interview with Lesotho Highlands Development Authority Chief Compensation Officer, 4 July 1995.
24. Maema, M. and Reynolds, N., "Lesotho Highlands Water Project-induced Displacement: Context, Impacts, Rehabilitation Strategies, Implementation Experience and Future Options", paper presented at the Refugee Studies Programme, University of Oxford, 3-7 Jan. 1995.
25. Lesotho Highlands Development Authority, Amended Compensation Policy, 28 June 1995.
26. Sechaba Consultants, Field Notes from Phase 1A Area, 3 May 1994.
27. Project feasibility study, as quoted in The World Bank, op. cit. 11.
28. Lesotho Highlands Water Project, Environmental Action Program, attachment to The World Bank, op. cit. 11.
29. FIVAS (Association for International Water and Forest Studies, Norway), letter to NORAD, 18 March 1993.
30. Scudder, T., "Development-Induced Impoverishment, Resistance and River Basin Development", paper prepared for the Refugee Studies Programme, Oxford University, 3-7 Jan. 1995.
31. World Bank, internal office memoranda, 4 April 1994, 6 April 1994, 7 December 1994, 10 August 1995.
32. The author of the report has not returned to Lesotho since because, reportedly, the World Bank acceded to a Lesotho government request that she not be sent back on a mission to Lesotho, because she had declined a comfortable helicopter flight over the Project area and spent too much time in the field. Interview with officials from the Lesotho Highlands Development Authority, Maseru, 4 July 1995.
33. ODA, draft "Back to Office Report on Visit to Lesotho, 4-13 October 1994.
34. Letter from the Ha Theko Primary School Committee and Highlands Church Action Group to the Chief Executive of the Lesotho Highlands Development Authority, 19 April 1994.
35. Maema, M. and Reynolds, N., op. cit. 24, p.21.
36. The Group for Environmental Monitoring, a Johannesburg-based NGO, has developed a list of proposals to provide water to Gauteng province sustainably including systematic water conservation, upgrading of old and faulty pipes which are estimated to lose about 50 per cent of the water, and locating industries and jobs in water-rich catchments. See Fig. D., Group for Environmental Monitoring, Letter to Environmental Defense Fund, 20 October 1995.
37. The World Bank, Environment Department, *Resettlement and Development: The Bankwide Review of Projects Involving Involuntary Resettlement 1986-1993*, 4 April 1995. See also, Wilks, A. and Hildyard, N., "Evicted! The World Bank and Forced Resettlement", *The Ecologist*, Vol. 24, No. 6, November/December 1994, pp.225-229.
38. The World Bank, op. cit. 11, p.3.
39. The World Bank, op. cit. 15.

# Incineration by the Back Door

## Cement Kilns as Waste Sinks

by

Tom Hellberg

*"Trial" burning in cement kilns of hazardous industrial waste as a "substitute fuel" to supplement coal burning has been taking place since 1992 in Britain. Two kilns now have permanent authorization to burn waste. Subject to less stringent emission standards than specialized incinerators, kilns offer a cheap but dirty disposal option which waste generators are exploiting to the full. Pollution and ill-health are the results.*

Owned by Castle Cement, the cement works in Clitheroe, north Lancashire, has been a major local employer for some 50 years. In the early 1990s, some residents began to notice that the colour of thick dense plumes of dust from the cement kiln had changed as had the smell. By chance, one resident discovered that the kiln had been legally burning hazardous waste since mid-1992. Castle Cement described the waste as a "new light fuel oil".

Today, local residents in the river valley where the cement works are located complain that chimney gases frequently descend on nearby villages, depending on which way the wind is blowing.<sup>1</sup> Clitheroe resident Mary Horner is one of those whose health has been severely affected. Her short-term physical reactions to the plumes have included a sore throat, prickly eyes "like sand in them", headaches, hallucinations, incoordination, blurred vision, "the pounding of my heart as though it wanted to jump out of my chest" and involuntary muscle twitching; some of these reactions have persisted for several days.<sup>2</sup>

With unexplained skin rashes, headaches and soaring asthma rates among children, 11 families in Clitheroe won legal aid in July 1995 to pay for air quality monitoring and to claim compensation from Castle Cement. Commented Mary Horner, "It has been hard for families to come forward because it is very much a company town, but what is happening to the children's health is too serious to ignore".<sup>3</sup>

### Burning Waste

Cement has been made for decades by combining calcium (from chalk), aluminium and iron silicon (from clay) and oxygen at a high temperature in a cement kiln to produce cement "clinker" which is then mixed with gypsum before being ground up to produce cement powder. The wet kiln process<sup>4</sup> uses an inclined 500-foot-long revolving steel cylinder in which the various materials are introduced at the top end while the furnace, usually fuelled by coal and petroleum coke, burns at the bottom end. The incline allows the material to slide through the kiln.

In the early 1990s, Castle Cement requested authorization from the local office of Her Majesty's Inspectorate of Pollution (HMIP) in Lancaster to replace 25 per cent of its coal fuel with a "fuel blend" derived from industrial waste. The company

claimed that burning the waste-derived fuel would reduce the cement kiln's emissions of sulphur dioxide and nitrogen oxide by some 50 per cent and 25 per cent respectively. Both these gases are major causes of acid rain.<sup>5</sup>

HMIP drew up (together with Castle Cement) a specification of maximum quantities of certain substances — heavy metals, sulphur, halogens, PCBs — that the waste could contain.<sup>6</sup> In July 1992, Castle Cement was licensed to burn the waste at its Clitheroe plant on a trial basis; authorization became permanent in 1993.<sup>7</sup> The Lancashire County Council, classifying the waste as a "fuel", ruled that burning waste instead of coal did not constitute a substantial change of land use for the cement kiln.<sup>8</sup>

Clitheroe's approval to burn waste was followed by permission being awarded to a second company — Rugby Cement — to undertake a six-month "trial burn" at its Barrington plant in Cambridgeshire so as "to determine the effect on the environment by burning [waste-derived] fuels and also the effect of the quality of the cement product".<sup>9</sup> Burning started in September 1993. Today, five of Britain's 20 cement works, operated by three main cement companies — Blue Circle, Castle Cement and Rugby Cement — and two lime kilns are burning waste, each licensed on a site-by-site basis.<sup>10</sup> An estimated 150,000 tonnes of hazardous waste have been burnt in this way since 1992.

Because of mounting public concern at "continual trialling", however, HMIP announced in May 1995 that it would issue a national policy on the burning of waste in cement kilns by September 1995 rather than licensing on a site-by-site basis. As of December 1995, it has yet to decide — but nevertheless in November 1995, permanent authorization was given to one of these sites, Rugby Cement's plant at Barrington, to burn 25 per cent "secondary liquid fuel".<sup>11</sup>

### Waste Derived Fuel

The waste now being burnt in these cement kilns is variously described as "waste-derived fuel", "secondary" or "substitute liquid fuel", "recycled liquid fuel" or Cemfuel™, the trade name of the cement kiln "fuel" with the largest market share. The "fuel" is derived from solid and liquid wastes from the chemicals, plastics, pharmaceutical and automotive industries. Collected by waste processors such as Solrec, Safety-Kleen, Leigh, DuPont and UK Waste, the wastes are processed in order

Tom Hellberg is a member of Communities Against Toxics and of the National Alliance for Cleaning Up Cement Kilns.



to extract flammable solvents which are then blended together to produce a fuel stock.

There is no national standard governing the composition of waste-derived fuel, which varies from batch to batch, depending on the source of the waste and the blending process. HMIP sets maximum levels for specific wastes — chlorine, PCBs, sulphur, heavy metals and sediment — for each cement plant, based on the total environmental impact.<sup>7</sup> In some cases, no limits have been set for other toxic substances such as fluorine and bromine. The wastes which the HMIP are willing to licence, however, include non-combustible substances which do not add to the mixture's calorific value and may even lower it. This waste has included old exhaust gas emission filters from hospital and municipal incinerators, saturated with carbon and other particulates, which are ground up and put into the cement kiln "fuel". Many of these non-combustible substances are highly toxic and their presence in waste derived fuel is of grave concern to communities living near cement kilns.

### Cement Kiln or Incinerator?

The licensing of cement kilns to burn wastes which have no combustible value has raised fears that the kilns are being used as cheap hazardous waste incinerators. One attraction of cement kilns to waste generators is that they have lower emissions standards (even when burning coal) than hazardous waste incinerators for a number of important pollutants, notably nitrous and sulphur oxides and hydrogen chloride. The 1990 Environmental Protection Act (EPA) sets higher emission standards for various industrial processes, but gives them several years to meet the standards. Incinerators have to meet the higher standards for nitrous oxides, sulphur oxides and particulates by 1996 whereas cement kilns have until 1998. Yet for the trial burns, HMIP has allowed cement kilns<sup>13</sup> to emit three times more particulates than would be permitted for a cement kiln once the EPA comes into force. This trial particulate level is more than seven times what would be permitted for an incinerator.<sup>14</sup> At Clitheroe, meanwhile, limits have been set for dust (particulates) and dioxin only, not for other pollutants.<sup>15</sup>

Community groups, environmental organizations and local authorities are now campaigning for the waste being burnt in cement kilns to be consistently treated as "waste" and not "fuel". Classified as waste, the substances would be subject to tighter regulations concerning their transport, handling and disposal. Information concerning the waste's origin and composition would have to be disclosed.<sup>16</sup>

### A Better Disposal Option?

Cement kiln operators respond by arguing that cement kilns are a more efficient disposal route than specialized hazardous waste incinerators. The industry points out, for instance, that kilns burn at higher temperatures — an average of 1400°C and a maximum of 2000°C — than incinerators; and that they have a "residence time" (the time which the waste spends in the kiln) of five seconds compared with two seconds in an incinerator.

However, the temperature in a cement kiln is not uniform; it ranges from 1400°C within the furnace end to less than 200°C at the other end of the kiln. Indeed, at the point where the waste is introduced into the kiln, the temperature is typically well below 800°C. In addition, when carbon monoxide (CO) builds up within the kiln, the electrostatic precipitators (which filter



*Castle Cement's works at Clitheroe*

some of the dust in the exhaust gases) have to be switched off to prevent an explosion<sup>17</sup> and the kiln shut down, causing temperatures to fall. Such "CO trips" occur "every two to three days",<sup>18</sup> whether coal or waste is being burnt, and are usually accompanied by thick plumes of smoke being emitted unfiltered into the atmosphere as the kiln is purged. At the Clitheroe plant, the particulate and dioxin limits do not apply when the plant is shut down during CO trips.

Just as important as temperature and residence time for ensuring the effective incineration of hazardous wastes is the amount of oxygen and turbulence in the furnace. Where there is adequate oxygen, the carbon and the hydrogen in the waste stream combine with oxygen molecules to form water and carbon dioxide. Without adequate oxygen, however, this combustion process is incomplete, causing potentially toxic products — known as Products of Incomplete Combustion or PICs — to form or hazardous waste to survive the incineration process. Commercial waste incinerators use about four to seven times more oxygen than a cement kiln, which, because it is designed to make cement clinker, needs a low oxygen environment.<sup>19</sup> Thus although the operating temperature in a kiln may, in places, be higher than in an incinerator, the lower air/fuel mix means that the kiln is not as efficient a combustion chamber. As a result, PICs, such as dioxins and dibenzofurans, both known to cause cancer and birth defects in mammals, are routinely formed because of chemical reactions with catalysts such as copper and hydrogen chloride in or above the chimney.

Apologists for the dispersion by incineration of these persistent bioaccumulative toxins into the atmosphere usually excuse their activities by stating that the amounts released are only "vanishingly small".<sup>20</sup> Even though the levels of dioxin emissions from incinerators and cement kilns burning waste derived fuel are historically low, this does not mean that they cannot harm. On the contrary, they persist for many decades; are assimilated by flora and then ingested by fauna; and are concentrated at each stage in the food chain.

In addition to the problem of PICs, heavy metals are inevitably emitted from all incinerators, including cement kilns, for the very simple reason that, although compounds can be reduced through combustion, elements cannot be destroyed. Such toxic substances — whose health effects range from damage to the kidneys and heart in the case of cadmium to brain damage in the case of mercury — are not only emitted in the exhaust gases. Data from the United States where hazardous waste has been burnt in some cement kilns for some

20 years (*see* Box, p.235) indicates that when chemical waste is used as a fuel, heavy metals are also found in the cement clinker and waste dusts<sup>21</sup> and may ultimately end up in cement and cement products and in the sites where the waste dusts are disposed.

In the US, restrictions have now been imposed on the use of cement contaminated with industrial waste in the construction of water pipes, an issue which is now causing concern to water companies in Britain. Controls were recently strengthened in the US over wastes from the cement industry.

Given these known health hazards, scientific director of Greenpeace, Dr Sue Mayer, concludes of the “trial burns”: “Experiments with compounds as dangerous as dioxins and heavy metals like cadmium and mercury can never be justified.”

## Trial Burns

In June 1994, HMIP belatedly issued a protocol to monitor the trials, known as the Bedford Protocol. However, many of its safeguards have, in practice, been ignored. The data that has been collected is, at best, insufficient to draw any meaningful conclusions and at worst misleading.

Under the Protocol, trial burns with waste fuel should compare emission concentrations with baseline data. However, little or no baseline data on depositions from conventionally-fuelled cement kilns is available, making it all but impossible to monitor the effects on animals and people living nearby the plants of burning hazardous waste in cement kilns. The Protocol requires tests for dioxins and heavy metals in dust and in soil samples taken downwind of the kiln's stack, but not in people. As Dr Sue Mayer concludes, “The trials are not even being conducted in a proper manner. Lack of data is being used to claim lack of evidence of harm”.

Despite patchy monitoring of emissions when cement kilns are burning waste, cement companies continue to claim that the burning of waste is more environmentally-friendly than burning coal or petroleum coke because sulphur and nitrous oxides emissions are lower.<sup>22</sup> Some test results do indeed show lower emissions of some of these gases, but others do not. The first trial results at Blue Circle's plant at Weardale, for instance, showed no improvement in nitrous oxide emissions, but did register a fall in sulphur dioxide compared to the burning of coal alone, while those at Castle Cement's works in Clitheroe indicated the reverse. More recent results from Clitheroe have shown no change in sulphur emissions which Castle Cement's Technical Manager Peter Weller blames on “process upsets”.



*Burning Cemfuel™ inside a kiln at Clitheroe*

Test results from Rugby Cement's Barrington's plant indicated dioxin emissions 70 times greater than when burning coal or coke.<sup>23</sup> Given the varying composition of the waste, it is not surprising that the burning of different wastes in different furnaces produces large fluctuations in toxic emissions which can not be replicated.

In addition, monitoring seems to have been undertaken under the most favourable conditions and to have ceased when the kiln is shut down because of carbon monoxide trips, thereby yielding

misleading emissions estimates. For instance, of eight visits by HMIP to the Clitheroe plant to take samples, one visit was delayed four hours to allow the kiln to stabilize while four others had to be abandoned because of plant failure. Unfavourable results — such as higher than hoped for emissions — have been dismissed as “untypical” and favourable results interpreted as “normal”. Cement companies have successfully avoided undertaking “worst scenario” tests — burning fuels containing the highest concentration of wastes permitted under their licences. Community groups are concerned that kilns may be given permanent approval on the basis of relatively “clean” waste or “untypical” test results and then proceed to burn more hazardous substances.

Those fears have been reinforced by government backsliding. In June 1994, Environment Minister Robert Atkins stated:

“Operators will be expected to discontinue any trial in the event of developments which might adversely affect the whole environment”.<sup>24</sup>

But trial burning of hazardous waste has been suspended in only one instance, when high levels of lead in soils downwind from the Blue Circle kiln in Weardale were noted.<sup>25</sup>

In addition, Atkins stated that “on completion of the agreed trial schedule, operators will be required to revert to routine manufacture not using the substitute fuel”. But no kiln has brought its “trial” to an end. Indeed, Rugby Cement's request to proceed straight to permanent authorization — so as not to upset its commercial supply of waste fuel — has just been granted.<sup>26</sup> The British Cement Association, representing the three cement companies in Britain, argues that the £20 million or so the cement industry and “fuel” suppliers have invested in the burning of waste-derived fuel justifies its permanent use.<sup>27</sup>

## Follow the Money Trail . . .

Despite the green rhetoric being used to push waste-derived fuels, cement companies admitted in June 1995 to a House of Commons Select Committee that economic factors were actually behind their plans to burn hazardous waste in cement kilns.<sup>28</sup>

Fuel bills represent some 35 per cent of direct manufacturing costs of cement. Claiming competition from cheaper imported cement and a depressed construction market in Britain, the cement companies are trying to reduce their fuel bills by some 10 per cent by using waste as fuel.<sup>29</sup> Burning waste is not only cheaper<sup>30</sup> than coal but is also a revenue earner since the cement companies are currently being *paid* to burn waste by the



## Burning Waste in the United States

The legislative loopholes that have allowed cement kilns to burn hazardous waste in Britain have been foreshadowed by developments in the United States over the past 20 years. Under pressure from cement imports from countries such as Korea, which contributed to a 40 per cent drop in price during the 1980s, the US cement industry discovered that their fuel bills could be significantly reduced by burning waste. At first, they burned only "nurse" fuels — fuel of high British thermal units (Btu) — which are relatively clean liquid wastes.

By the early 1990s, however, more and more of these wastes were being burned on-site in captive boilers or furnaces by the industries which generated them. To maintain their income from waste disposal, cement kilns began to take large amounts of low Btu solids or sludges. Such was the commercial attractiveness of burning waste that one cement manufacturer was quoted in 1987 as saying: "It's possible that in the not-too-distant future, cement will be just a by-product of waste burning."

The major legislative loophole that allowed the cement companies to burn waste was the exemption of "recycled" chemical wastes from control under the 1984 (??) Resource Conservation and Recovery Act. Cement companies took advantage of interim status permits, intended to enable trial burns to take place. These permits could be issued after just one restricted public hearing and gave no effective time limit to the duration of the trial. By 1990, there were 24 cement and 17 aggregate (lime) kilns burning three billion pounds of hazardous waste across the US.

In the meantime, opposition from community groups, local government, the medical profession and operators of purpose-built incinerators to the burning of hazardous waste in cement kilns was gradually growing. In 1987 doctors near Artesia, Mississippi, signed a statement opposing the use of waste by the United Cement company. Criticism of the US Environmental Protection Agency (EPA) became more outspoken, even from within the Agency itself. An engineer with the EPA's Office of Solid Waste wrote in 1990 that the EPA:

"appears to be engaged in a pattern and practice of accommodating the regulated cement kiln hazardous waste incineration industry with non-existent, or at best loose, regulation."

In May 1991, the City Council at Fort Collins, Colorado, objected to the burning of waste at Holnam Inc.'s cement kiln which was within its jurisdiction and outlawed the use of cement from waste-burning kilns on any city-funded construction projects. Other authorities in the states of Maryland, Montana, Pennsylvania, Alabama, Colorado and Texas passed similar legislation. A major US hardware store, Home Depot, wrote to all its suppliers that it would not sell goods which used waste-derived cement.

Communities continued to amass evidence of the damage being caused to the health of communities and livestock downwind of waste burning cement plants. Experts have noticed increased incidence of many medical conditions, including sinusitis, asthma, bronchitis and emphysema among people living close to waste-burning cement plants.

In February 1991, the newly-elected Governor of Texas, Ann Richards, issued a six-month moratorium on the granting of new permits to the cement industry to burn

hazardous waste in Texas. A special investigation committee of the Texas Air Control Board (TACB) was set up in the summer of 1992, while in October of that year, the EPA produced a report to Congress on which showed that cement kiln dust contained not only dioxins but also anthropogenic radioactive elements.

The TACB held a public hearing in November 1992, during which dozens of affidavits were collected from residents living downwind of the cement plants in Texas burning the hazardous waste. These painted a stark picture of the human and animal health. The final recommendations of the TACB issued in January 1993 were seen by many campaigners as an inevitable compromise, but a significant decision: cement kilns in Texas had to adhere to same emission standards as hazardous waste incinerators.

The US cement industry was in the middle of a major public relations crisis. The *Louisville Courier* reported in February 1993 that "The cement industry has yet to make a persuasive case that using old kilns, often close to schools and subdivisions, makes sense for us as well as for them." Others such as Ed Kleppinger, an independent environmental consultant and expert on combustion processes, went further and claimed that the cement industry had "destroyed its store of public credibility."

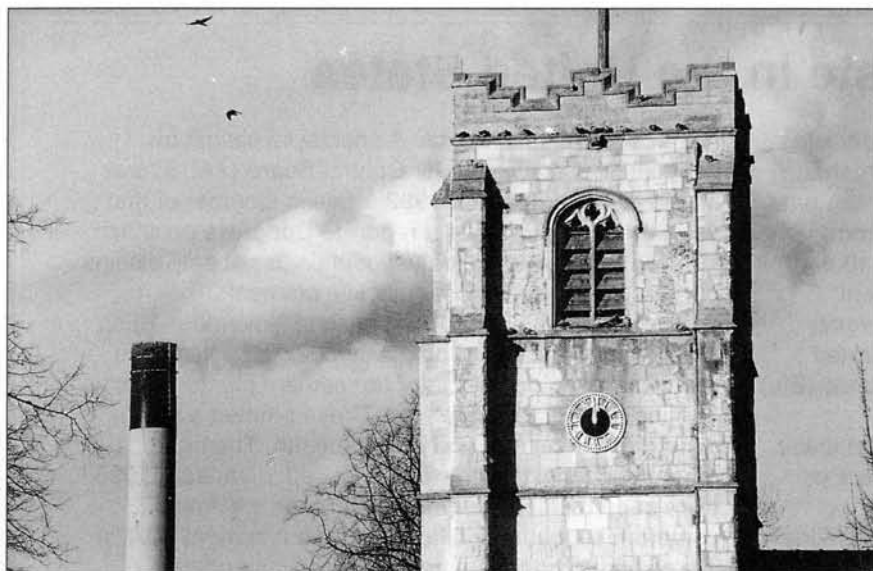
By the spring of 1993, 24 cement and 6 aggregate kilns were burning waste, while a further 8 were seeking interim permits, including Blue Circle for its plant at Tulsa, Oklahoma. Significantly, though, Blue Circle pulled out of a proposal to burn waste at its kiln near Atlanta, Georgia in January 1993. The community groups fighting the cement industry were joined by powerful allies. In September 1993, the American Lung Association (ALA) and the Sierra Club announced their support. The EPA Draft Report on Dioxins fuelled the debate still further when it identified waste-burning cement kilns as a major source of dioxins. In September 1994, the ALA produced a video, "Smoke and Mirrors", on the Texas cement plants which was publicly screened despite the threat of legal action from the cement industry.

Continued campaigning against the burning of waste in cement kilns began to pay off. At the end of 1994, Southdown Cement, the only cement company that had lobbied for greater regulation of waste burning in the cement industry, decided to pull out of the waste business entirely. Many experts such as Kleppinger took this decision as indicative that a cement company could not afford to meet any higher emission standards. Holnam Inc. have since abandoned its plans to burn waste in Montana and Texas.

The interest of regulators then shifted to examination of the waste dust from cement kilns burning hazardous waste and even the cement itself. In January 1995, the EPA determined that stricter controls should be applied to the disposal of cement kiln dust to prevent pollution of ground and drinking water, and to reduce health risks associated with breathing and ingesting dust from cement kilns. In April 1995, campaigners filed a petition with the EPA calling for all cement manufactured using waste to be labelled as such, but the EPA rejected this.

*Roger Lilley*

**Roger Lilley** is Industry & Pollution Campaigner with Friends of the Earth.



*Plumes of dust from Castle Cement's cement works at Barrington, Cambridgeshire. The Bedford Protocol on burning waste in cement kilns requires operators to demonstrate that the exhaust gases are "not normally subject to plume grounding". Yet six of the cement works now burning waste are in valleys where air dispersion is poor.*

"solvent recoverers" who pass the costs onto the waste producers.

For waste generators, sending their waste to cement operators for disposal also brings major economic benefits. Although the costs are difficult to calculate, it would seem that disposing of a tonne of waste in a hazardous waste incinerator costs some £200-£300 per tonne compared to £25-35 in a cement kiln. Some incinerators have thus dropped their prices to compete.<sup>31</sup> It has been estimated that between them, the pharmaceutical, chemical and automotive industries have saved some £25 million per year so far during these "trials".<sup>32</sup>

Communities are concerned that if cement kilns receive permanent authorization to burn waste "fuel", more and more waste will be left or added to the mixture — the higher the waste content, the higher the revenue. In several European countries and the US, "many kilns now burn wastes with very low calorific values and act purely as a disposal route".<sup>33</sup> UK cement companies themselves believe that kilns can dispose of a wide range of waste streams including medical waste, plastics, pesticides and sewage sludge.<sup>34</sup> The government's consultation waste strategy paper, issued in January 1995, has also suggested that cement kilns could be used to dispose of liquid waste and PCB wastes.<sup>35</sup>

## Squeezing Out Recycling

Already waste disposal companies claim that the economics of hazardous waste incinerators have been disrupted by the burning of the waste in cement kilns and that they are having to buy in fossil fuel to burn the waste they do have. It has been suggested that if cement kilns are given the go-ahead to burn waste-derived fuels, the high temperature incineration industry in Britain will collapse.

The recycling of solvents for reuse is also likely to be undermined. Jeff Higgins of Creda Solvents, which, unlike other major solvent recoverers, has opted not to supply waste-derived fuels, comments: "It didn't make any sense to us to burn material that contained 50 per cent of more of solvents".<sup>36</sup> Indeed, Castle Cement's Peter Weller acknowledges that much

of the solvent now being used in Cemfuel™ used to be recycled for use in the automotive industry.<sup>37</sup> CMR, a former supplier of Cemfuel™, believes that over one third of the material destined for cement kilns could be recycled.<sup>38</sup>

Besides reducing the incentive to recycle, the availability of a cheap disposal route also reduces any incentive to reduce production of toxic wastes in various manufacturing processes and even stimulates their production. Increasing the capacity for waste disposal also encourages imports of toxic waste: significantly, Cemfuel™ currently contains wastes of Irish origin. It used to contain waste from Sweden arising from Swedish waste processing firms Euroc and Aker which have a controlling interest in Castle Cement.<sup>39</sup>

## Treating Symptoms not Causes

The 1990 Environmental Protection Act was overtly intended to introduce an enforceable system of integrated pollution control and to regulate most major industrial emissions. One of the aims of the act was supposedly "to reduce industrial pollution at source". However, the will to enforce such regulations has been conspicuous by its absence:

- Much of the legislation has still to be implemented — five years after it was passed.
- Decisions are being made on an *ad hoc* basis, with cheap and quick solutions having more weight than established policy. New policies are being adopted which are in obvious conflict with existing ones.
- Despite the lip service paid to "clean production", there have been few incentives to encourage industry to abandon dirty production processes.
- Examination of the public registers, set up under the 1990 Act, has exposed how emissions well above the statutory limits are in practice regarded as acceptable operating levels.
- Inadequate disposal practises have been encouraged through the licensing of "waste to energy" schemes.
- Cement kilns are becoming mechanisms for dispersing "red list" chemicals (including antimony, arsenic, cadmium, chromium and mercury) into the food chain.

If pollution really is to be prevented, a radically new approach is required: in particular, there is a need to adopt a "zero emission option", with the "sunsetting" of those chemical industries — solvent manufacture, for example — where non-toxic alternatives exist, or to locate the source of the metals which are causing concerns. If hazardous waste is to be burnt in cement kilns, the emission standards should be those for burning hazardous waste.

Treating the symptoms of pollution, however, rather than investing in its prevention, has become the hallmark of policy. The duplicitous attempts to pass highly-toxic wastes off as harmless fuel is indicative of this approach. The public should demand that waste-derived fuel is recognised for what it is — waste, not fuel.



1. Poor dilution of fumes from the kiln was known to HMIP in 1986.
2. Horner, M.V., "Recycled Liquid 'Fuels' in Cement Kilns", Appendix 11, in Environment Committee, *The Burning of Secondary Liquid Fuel in Cement Kilns*, Second Report, HMSO, London, June 1995, pp.86-89.
3. Ghazi, P., "Families sue 'safe' factory over pollution", *The Observer*, 9 July 1995, p.11.
4. Of the 33 cement kilns operating in Britain, 12 use the wet or semi-wet process (rather than the older dry process) and are most easily converted to burning hazardous waste.
5. The cement industry also claims that the various alkaline cement ingredients would absorb acidic gases such as sulphur and nitrogen oxides and thus reduce emissions of these gases. In practice, however, an alkaline environment may encourage the formation of dioxins.
6. Castle Cement's first application to burn waste indicated that it would have a tight specification of 0.8-0.85 specific gravity and a maximum of 5 per cent solids. When the specification was placed on the Public Register, it indicated a 0.7-1.1 specific gravity and a maximum of 30 per cent solids.
7. Permanent authorization was given by HMIP to Castle Cement to burn waste at Clitheroe in February 1993, although the authorization was not signed until November 1993. Details of the authorization placed on the Public Register (established under the 1990 Environmental Protection Act) indicate that Castle Cement was granted full authorization to burn 25 per cent waste in two of its kilns, trial authorization to burn 50 per cent waste in these same two kilns, and trial authorization to burn 25 per cent in its third, older dry kiln. These authorizations were granted prior to the 1990 Environmental Protection Act coming into effect; HMIP subsequently attempted to bring the plant into line with the Act and the 1984 Bedford Protocol on the trial burning of waste in cement kilns. In September 1994, the dry kiln was forced by HMIP to revert to burning coal, but Castle Cement solicitors have upheld the company's right to use Cemfuel™ indefinitely in its other two kilns at 100 per cent substitution (that is, burning waste only) and with no feedrate limit (that is, unlimited quantities). There also does not seem to be a requirement that the kiln actually makes cement when burning the waste. See Letter from Robert Atkins, MP (Environment Minister to Nigel Evans MP for Clitheroe, "Burning Substitute Fuels in Cement Kilns", 8 September 1994; Letter from Peter del Strother, Castle Cement, Clitheroe to Councillor Sowther, Ribbles Valley Borough Council, 10 August 1995. Castle Cement also experimented in 1992 without authorization to burn a different waste fuel, supplied by detergent manufacturer Warwick International, at its Padeswood cement works in North Wales. It burnt this "fuel" for two months until ordered to cease by the Cardiff HMIP office.
8. Local authorities regulate land use while HMIP regulate industrial emissions. If burning waste in a cement kiln were considered to be a change of land use, a cement kiln would have to apply for planning permission to operate as a waste incinerator as well as a cement kiln, a process which is open to lengthy public consultation and appraisal. By treating the waste as "fuel", planning regulations have been "bypassed".
9. IPR 3/1 Chief Inspector's Guidance to Inspector's Cement Manufacture and Associated Processes, HMSO 1992.
10. Castle Cement, Clitheroe, Lancashire; Rugby Cement, Barrington, Cambridgeshire; Castle Cement, Ketton, Leicestershire, burning Cemfuel™ since 1994; Blue Circle Cement, Weardale, County Durham, burning "recycled liquid fuel" since 1994; Rugby Cement, Southam, Warwickshire, burning a waste product of the nylon industry since 1994; Redland Aggregates (lime kiln), Thrislington, County Durham, burning waste with up to 7.5% chlorine since 1993; Redland Aggregates, Whitwell, Derbyshire, burning "secondary liquid fuel".
11. "Rugby Cement wins go-ahead for waste fuels", *ENDS Report*, 250, December 1995, pp.8-9. Since Rugby applied to HMIP for permanent authorization, 317 responses were lodged with HMIP, 98 per cent of them opposed to the use of waste fuel. The limits of the fuel specification, however, are tighter than those in the trial authorization to "reflect actual input to the kiln during the trials".
12. Castle Cement initially claimed "commercial confidentiality" for not disclosing the upper limit specifications of Cemfuel™; HMIP later released these details as a maximum of 30 per cent sediment or solid matter; 100 milligrammes per kilogramme of Group 2 metals; 3,000 milligrammes per kilogramme of Group 3 metals; 1,000 milligrammes per kilogramme of sulphur; 3.75 per cent halogens and 50 milligrammes per kilogramme of PCBs. Group 2 and Group 3 metals are the second and third most toxic group of metals. See Castle Cement Annex 1, BS5750 quality assurance submission to HMIP, 12 July 1994. Blue Circle's application to burn waste-derived fuel at its Weardale plant listed chlorinated solvents and heavy metals (such as antimony, cadmium and chromium) as substances it wished to burn. See "Schofield's Quest", Independent Television, 4 December 1994. At the Southam cement kiln, the hexane and chromium-based waste fuel arising from DuPont's manufacture of nylon® at Teeside is now chlorine free. See HMIP Authorization application 13.6.2, environmental study, p.13.4. In Weardale, HMIP lowered the amount of lead allowed in the waste because it found high background levels of lead in the area due to an old lead mine.
13. Except Weardale. See reference 12.
14. HMIP's Bedford Protocol sets particulate emissions at 150mg/m<sup>3</sup>; the 1990 EPA limit is 50mg/m<sup>3</sup> for cement kilns (and comes into effect in 1998) and 20mg/m<sup>3</sup> for incinerators (and comes into effect in 1996). The EU Hazardous Waste directive's limit is 10mg/m<sup>3</sup>. The trial authorization at Rugby Cement's Barrington plant set particulate limits at 300mg/m<sup>3</sup> but permanent authorization has been granted for 120mg/m<sup>3</sup>. Under the 1990 EPA, emission limits in a cement kiln for sulphur dioxide and nitrogen dioxide are 750mg/m<sup>3</sup> and 1,500mg/m<sup>3</sup> respectively; for an incinerator, they are 50mg/m<sup>3</sup> and 350mg/m<sup>3</sup> respectively.
15. Industrial emissions focus on concentrations or percentages of substances in emissions rather than the total mass emissions over a year. A hazardous waste incinerator does not burn continuously whereas a cement kiln does (except when it has to be shut down because of carbon monoxide "trips").
16. As of September 1995, Lancashire, Derbyshire and Leicestershire County Councils classify the waste-derived "fuel" as hazardous waste for transport purposes. Groups are lobbying that they should therefore also classify it as waste for storage purposes which would require planning permission. The EU Hazardous Waste Directive, which is to be implemented in Britain on 1 January 1997, does allow for the burning of hazardous waste in plants not intended for that purpose. However, according to the Directive, when the substitution of waste for other fuels provides more than 40 per cent of the heat input in the plant, the plant has to meet the same standards as a hazardous waste incinerator.
17. See HMIP's 1993-94 annual report for the de-energizing of electrostatic precipitators during CO trips. More sophisticated scrubbers are standard on commercial incinerators so as to meet higher emission standards, but these do not have to deal with the large volumes of dust that cement kilns emit.
18. Personal communication between the works manager at Castle Cement's Clitheroe cement works and Mary Horner, 8 December 1993.
19. Texans United, Citizen's Briefing Book on Cement Kiln Incineration of Hazardous Waste in Texas, cited in Friends of the Earth, Appendix 7, Environment Committee, op. cit. 1, pp.47-72.
20. For instance, dioxin releases at Rugby Cement's Barrington plant which were 70 times greater when burning the waste-derived fuel were described by HMIP as "very low indeed" and causing "no public health concerns". See *ENDS Report*, op. cit. 11.
21. Kleppinger, E.W., "Cement Clinker: An Environmental Sink for Residues from Hazardous Waste Treatment in Cement Kilns", *Waste Management* 13, 1993, pp.553-572.
22. Sulphur dioxide emissions could be reduced by installing wet scrubbers in the chimneys to remove them.
23. Bott, A.M., "Burning Hazardous Waste (SLF, Cemfuel) in Cement Kilns", Appendix 3, Environment Committee, op. cit. 1., p.29.
24. House of Commons, Written answers, 21 June 1994, col. 105; "Cement Kilns and Hazardous Waste—The Debate Heats Up", *ENDS Report*, 233, June 1994, pp.13-15.
25. The plant has since started burning waste again.
26. "Castle Cement gets go-ahead for more Cemfuel trials", *ENDS Report*, 237, October 1994, p.12.
27. McKenzie, I., Chief Executive of Blue Circle Cement, minutes of evidence, *Environment Committee*, op. cit. 1, p.1.
28. Minutes of evidence, *Environment Committee*, op. cit. 1, pp.1-11.
29. McKenzie, I., op. cit. 27, p.3.
30. Exact comparisons are hard to make, not only because the cement companies are being paid to burn waste but also because burning is limited at present.
31. Dean, A.P.R., Director, Cleanaway Ltd, minutes of evidence, *Environment Committee*, op. cit. 1, p.7-8.
32. Green, J., Director, Organic Technologies Limited, minutes of evidence, *Environment Committee*, op. cit. 1, p.2.
33. *ENDS Report* 233, June 1994 op. cit. 24.
34. Friends of the Earth, op. cit. 19.
35. "A Waste Strategy for England and Wales", Department of the Environment, 31 January 1995; "Draft strategy gives waste policy a new impetus", *ENDS Report* 240, January 1995, pp.34-36; Waste Management Paper No. 6, "Polychlorinated biphenyls", HMSO, January 1995; "DoE paper raises questions over options for PCB phase-out", *ENDS Report* 240, January 1995, p.39.
36. *ENDS Report*, op. cit. 11.
37. Personal communication with Peter Weller, Technical Manager at Castle Cement's Clitheroe plant, 29 April 1994.
38. *ENDS Report*, op. cit. 11.
39. Ketton Parish Council "Burning Cemfuel", Report of a sub-committee of Ketton Parish Council, 10 March 1994. The Basel Convention prohibits the import of hazardous waste, requiring waste to be disposed of at source. The UK, however, currently has a four-year exemption from the Convention for those imports suitable for "energy recovery". In addition, if waste is classified as "fuel", the Convention does not apply. Cement kilns in Britain are already burning more than the 150,000 tonnes of liquid chemical waste which is generated in Britain each year.



Hestoft/Saba/Katz

## Wal-Mart Worldwide The Making of a Global Retailer

by

Kai Mander and Alex Boston

*With its capital, power and infrastructure, Wal-Mart exemplifies the kind of corporation equipped for success in the global economy. Staff of the giant retailer are scouring the globe for countries in which to manufacture and retail Wal-Mart's wide range of everyday products. Following its practice in the United States over the past 30 years of driving down wages and beating off competition, Wal-Mart hopes to have stores in every country, all offering products at prices far below local competitors. Ultimately, it aims to become the first truly global retailer. But citizens' groups in many countries are resisting its expansion.*

Wal-Mart, the giant US-based discount chain, is the largest retailer in terms of global sales in the world. Depending on the locality of its stores, it sells anything from food to furniture, from car accessories to camping equipment, from kitchenware to cosmetics, and from leisure goods to clothes. Its "SuperCentres" average 150,000 square feet (almost four times the size of an average supermarket) and typically carry 150,000 different products, compared with 20,000-30,000 products in a supermarket. It buys more household products from Proctor and Gamble, one of the world's largest manufacturers of soaps and detergents, than Proctor and Gamble sells to the whole of Japan.

Founded in 1962 by Sam Walton (*see* Box, p.239), shrewd manufacturing, sleek purchasing and its own automated inven-

tory and distribution system enabled the company to overtake Sears in 1991 to become the biggest retailer in the US. Taking advantage of the lowering of trade barriers under GATT and NAFTA, it has moved into Mexico, Argentina, Hong Kong, Brazil and Canada; it hopes to have almost 200 Wal-Marts in Canada by 1997. With more than 2,300 warehouse-size outlets worldwide, it is expanding at a frenetic pace, opening a new store somewhere in North America every two days. Many financial analysts expect Wal-Mart's sales to increase from approximately \$85 billion in 1994 to \$200 billion by the year 2000, making it the world's largest company. By then, some predict that Wal-Mart will account for 20 cents of every dollar spent on general merchandise, clothing and furniture in the US.

Wal-Mart, whose profits in 1993 amounted to some \$2.3 billion, claims its success stems from superb service, a wide assortment of quality merchandise and the lowest possible prices. When it goes

about seeking the necessary planning and zoning permits to establish a new store, Wal-Mart portrays itself as a benevolent addition to a local community, providing jobs and sorely needed income to a regional economy and low prices for consumers. But study after study confirms the hard way: the opening of a Wal-Mart leads to a net loss of jobs in a region and decreased income for the community as a whole. Even Wal-Mart's vaunted low prices are exaggerated.

### Ghost Towns

Often when a business opens in a small town, it tries to locate itself in an existing retail area so that it can become a stopping point on a shopper's list. To succeed, the proprietor — who probably lives in town or nearby, and who thus has a financial and emotional stake in the well-being of the community — makes the

**Kai Mander** is former Communications Director at the Institute for Agriculture and Trade Policy. He now works as a freelance writer and teacher. **Alex Boston** is Communications Officer for the Council of Canadians.



## Sam's Club

Sam Walton, Wal-Mart's founder, set up his first store, the Wal-Drug, in Rogers, Arkansas, in 1962. Until his death in 1992, he was unfailingly portrayed by the media as the down-to-earth, kind-hearted embodiment of the American dream. He was lauded for his humility and shunning of excess. Walton spent his final years piloting his own plane to pop around the continent, visiting the stores he owned but had never visited. When a store learned of a planned visit, palpable excitement and euphoria filled the air. When he showed up, Mr. Sam — as he was called by everyone from the store manager to the stock boy — was treated almost like the benevolent leader of a personality cult.

On these visits, Mr. Sam cheered his employees on and extolled the virtues of team work and company pride. He instilled in them a sense that their hard work would enrich them personally and financially. He projected an image of "one of us made good". In reality, Sam Walton was in the business of driving small shops out of business across the United States and paying most of his workers a minimum wage while he amassed a fortune of \$23.5 billion.

Analysts ascribe Walton's success to "a strategy of avoiding early competition by 'putting good-sized discount stores into little one-horse towns which everybody else was avoiding'; his insistence on saturating one area with stores before moving on to the next; his drive to keep costs down and 'sell at everyday low prices'; and his policy of 'empowering' Wal-Mart's staff while keeping trade unions out." In effect, Walton relied on squeezing competitors out of business, union busting and low wages.

Described by *The Economist* as "the greatest innovator in recent retailing history", Walton was also quick to exploit computer technologies in order to exercise close control over his extended chain of stores and to set up a distribution system that undermined the traditional hold of manufacturers over retailers. "In the past," explains *The Econo-*

*mist*, "each store manager would order goods to replace those sold, relying on suppliers to deliver them direct to the shop — a hit-and-miss affair that took up potential selling space for storage and often left shops out of stock." Because the distribution system was effectively in the hands of the manufacturer, large producers could dictate how much each store would take and at what price.

Walton changed all that. He set up a system in which goods were ordered centrally and delivered to the company's own distribution centres, from where they would be batched together with other goods that an individual store required, allowing stores to be serviced by one full truck rather than several half-empty ones. By the early 1980s, he had introduced a computer system that linked each Wal-Mart store to the company distribution centres and to the firm's main suppliers. "The first benefit was just-in-time replenishment across hundreds of stores", reports *The Economist*. The second was financial, the saving on distribution costs in 1992 alone amounting to some \$750 million. The power of the manufacturers too was effectively undermined. Instead of the retailer bearing the costs of storing unsold goods, the tables were turned. The result was a round of plant closures and lay-offs as manufacturers, such as Proctor and Gamble, cut back on production. Meanwhile, Wal-Mart's profits soared.

Computers are now being used to manage customers as well as stock. "Wal-Mart now asks all customers for their zip-codes (although not their names) when they pay to help it plan new store openings." Through computer databases, companies such as Wal-Mart can analyse "what consumers buy, what they have stopped buying and even how they respond to a rise in the price of dog food." From being a person well-known to the retailer, the customer has become a digit in a database. Face-to-face interaction has been replaced by anonymous surveillance.

new shop's prices and opening hours similar to those of other shops in the area. The new shop then attempts to establish a distinctive charm and atmosphere to attract business without infringing the norms of the community.

Wal-Mart, however, tends not so much to join communities as to attempt to take them over. The corporation's success is based on stealing customers away from the shops they used to frequent. Typically, Wal-Mart locates itself on the outskirts of a town and sets prices well below its own costs so as to draw customers away from the commercial centre. It displays special offers — two items for the price of one, loss leaders, category killers — to attract customers. Beginning with automotive supplies, for instance, then moving on to garments, pharmaceuticals and kitchenware, Wal-Mart gradually undercuts all of its local competitors.

The company is large enough to sustain losses for a considerable period and can keep its prices low as long as it has to.

Soon the lure of one-stop shopping and lower prices are too much for local consumers who are watching their weekly budgets. But every time a shopper saves 40 cents on a tube of toothpaste at Wal-Mart, a local shop loses a sale. Soon the financial reserves of small shopowners are depleted and local businesses start folding. According to an Iowa State University study, five years after the opening of a new Wal-Mart, stores within a 20-mile radius suffer an average 19 per cent loss in retail sales. In Anamosa, Iowa, for instance, two men's clothing shops, a shoe shop, a children's clothing shop, a chemist, a hardware store and a dime store closed shortly after a Wal-Mart opened. The formerly thriving towns and neighbourhoods soon resemble ghost towns.

Wal-Mart officials contend that when a new Wal-Mart opens within a community, sales of nearby businesses increase. The Iowa State study confirmed that spillover traffic resulting from people fre-

quenting new Wal-Mart stores did increase the sales of adjacent businesses selling goods and services that were not available at Wal-Mart.

However, a wider range of business owners and employees were fearful for their livelihood as Wal-Mart stores expanded the range of goods and services they offered. More and more Wal-Mart stores in the US now sell groceries and pharmaceuticals, using the corporation's tremendous buying power, distribution efficiency and low labour costs to gain competitive advantages. Wal-Mart stores are also increasingly providing sit-down meals to shoppers. The company recently equipped over 100 of its stores in Canada with McDonald's restaurants.

For the future, Wal-Mart plans to increase the number of its stores offering a wider range of goods than at present through its "SuperCentre" concept — open 24 hours a day, featuring bakeries, delicatessens and in-store cafes, and offering services such as dry cleaning, eye

care, banking and photo processing. Wal-Mart has 105 SuperCentres at present but plans to double that number by the end of 1995.

## Wal-Mart's Paychecks

Wal-Mart employs more people than General Motors, Ford and Chrysler, the three largest US automakers combined. Company spokespeople claim that in some parts of the US, a Wal-Mart exists for every 35,000 people, providing them with much-needed jobs. Studies have shown, however, that the entry of a Wal-Mart to a town or region does not, in fact, provide a net increase in a region's jobs, but that for every job created by Wal-Mart, as many as 1.5 jobs are lost.

What jobs the company does provide are at the bottom end of the wage scale. Notorious for wringing the most work out of its employees for the least pay, Wal-Mart rarely pays its workers more than the minimum wage. The average annual income for a full-time worker at Wal-Mart in the US, even with a well-publicized profit-sharing plan, hovers around \$12,000 (£8,000). Most "associates", as the company calls its employees, are part-timers, enabling the company to avoid paying the benefits that full-time workers receive such as job security, health benefits and pensions.

In return, Wal-Mart demands complete and unquestioning loyalty from its sales clerks. They have to pass drug tests and, until recently, had to submit to lie-detector tests. Wal-Mart prohibits dating among employees. Workers are also expected to work long and irregular "free hours" for no additional pay. Many stores require their employees to start each day with a company cheer such as "Give me a W, give me an A, give me an L..." and so on. Some stores cheer: "Stack it deep, sell it cheap, watch it fly, hear those downtown merchants cry!"

When he was 17-years-old, Nathan Hoff worked at the Wal-Mart in Fergus Falls, Minnesota for the summer. He says:

"Sam Walton was considered to be a God at Wal-Mart. On the first day of training, the new employees were shown a 20-minute video on the life of Sam Walton and the growing of the Wal-Mart corporation. It told about the first Wal-Drug, I think it was called, and how it eventually grew into Wal-Mart... It sort of felt like a cult working there. If you weren't friendly to everyone who set

---

## *"As local competition is killed off, all Wal-Mart's prices begin to climb."*

---

foot in the store, you were regarded as a bad person. Everybody took things so seriously. It wasn't an enjoyable experience."

Employees can do little about their working conditions. Wal-Mart's anti-union stance has succeeded in keeping unions out of all its stores in the United States and Canada. In its 1994 purchase of Canada's Woolco retail chain, Wal-Mart refused to buy the seven unionized Woolcos, putting 1,000 Canadians out of work. Woolco staff at the union-free stores were soon given the option of accepting lower wages or losing their jobs. The company fired 500 well-paid Woolco warehouse workers and then offered to rehire them at the minimum wage. Wal-Mart told 750 former Woolco supervisors they could keep their C\$28,000 a year salaries but only if they worked an extra 12 hours per week in addition to their regular 40 hours. In Quebec, Wal-Mart forced all workers, even those who spoke only French, to sign new contracts in English. Wal-Mart also converted Woolco car repair garages to more profitable "oil and lube" operations, where the only service provided is a change of oil and lubricants. Because this requires little training, the workers can be paid far less than skilled mechanics, enabling Wal-Mart to demand 50 per cent pay cuts from the Woolco mechanics.

In Mexico, which has encouraged foreign investment by lax enforcement of labour laws, Wal-Mart has opened 11 SuperCentre stores and 22 discount clubs — known as Sam's Clubs — since 1991, employing 6,900 people. Within days of the peso devaluation in December 1994, however, Wal-Mart held back trucks of goods headed for Mexican stores and laid off 250 people at its Laredo, Texas warehouse.

In garment sweatshops in Bangladesh, 9- to 12-year-old boys and girls work long into the night producing clothes for Wal-Mart for as little as five cents an hour. In China, false labels are sewn into Wal-Mart's clothes to indicate they were made in countries other than China, which

is known for its use of forced labour. In the United States, most of these Asian garments are sold under "Made in America" signs.

When Wal-Mart decided to enter Canada, it launched a massive public relations and advertising campaign to convince Canadians that it was as Canadian as maple sugar and hockey. "Wal-Mart Canada is a Canadian company, managed by Canadians and staffed with Canadian Associates" proclaimed full-page newspaper advertisements. Wal-Mart Canada President Bruce West gave speeches assuring Canadians of Wal-Mart's commitment to the Canadian economy. But since the Canadian government dropped its requirement that subsidiaries of foreign-based transnationals release their yearly financial audits, Canadians have no way of finding out how much profit Wal-Mart makes in Canada, how much is reinvested in Canada and how much is diverted back to the United States.

## Loss of Community Income

Wal-Mart's economic impact on communities goes beyond the number of employees it fires or hires and the wages it does or does not pay them. Wal-Mart almost always locates outside established commercial districts, frequently displacing farm land. By doing so, Wal-Mart avoids paying high property taxes and often forces the county to extend services to that area. A study of DuPage county in Illinois found that the increased cost of roads, water and sewage, security, telephone and other services for these peripheral locations exceeded the sales and property tax revenues collected from the new stores.

Furthermore, as local businesses collapse under Wal-Mart's formidable competition, regional income declines, the community's tax base erodes and the funds needed to maintain adequate municipal services dwindle.

University of Massachusetts researchers found that one dollar spent in a locally-owned business has four to five times the economic spin-off of one dollar spent in a Wal-Mart store. Whereas locally-based businesses inevitably funnel their profits back into the community one way or another, each Wal-Mart store sends its profits back to the head office in Bentonville, Arkansas, removing from the community money that was formerly deposited in local banks or invested in



local projects. Under NAFTA and GATT, Wal-Mart can "repatriate" money from around the world.

Local media have become increasingly vocal in their criticism of Wal-Mart. They have found that after an initial promotional blitz surrounding a Wal-Mart opening, their advertising revenue declines as Wal-Mart begins to dominate the area. In an attempt to recapture the media's favour, Wal-Mart Chief Executive David Glass recently told a gathering of newspaper business writers and editors that the company would increase advertising.

In contrast to most independent businesses which often contribute up to 5 per cent of their profit to local causes, Wal-Mart donations in the US amount to a mere 0.0004 per cent of a store's sales, about \$4,000 per year per store. Much of the charity provided by the Wal-Mart Foundation comes in the form of matched employee donations: for every cent the employees take out of their own pockets, the Foundation provides an equal amount but usually receives the full credit. Wal-Mart tries to get maximum mileage from the little bit of charity it provides to a community.

Wal-Mart has so many stores that it can close and relocate at any time it feels its profits in one area are not high enough. Some small towns have thus been double losers. First, they lost their high street stores and saw the commercial centre turn into a ghost town, then they lost the Wal-Mart. As a result, the community lost its tax base, and residents had to drive as much as 25 miles to shop.

Even Wal-Mart's low prices have come into question. A US advertising association recently forced the company to stop using the slogan "Always the low price, always" because it was misleading. Researchers found that Wal-Mart puts its 1,500 or so lowest-priced items at the front of the store which tend to be everyday, frequently purchased products like toothpaste and toilet paper which people tend to know the price of. Further into the store are the approximately 80,000 high-profit items. As local competition is killed off, all of Wal-Mart's prices begin to climb.

## Holding Wal-Mart Back

In his autobiography, Sam Walton wrote: "If some community, for whatever reason, doesn't want us in there, we aren't interested in going in and creating a fuss."

Thousands of people across North America are taking steps to show the

has developed a tough official plan outlining the type of development envisioned for the community; only if Wal-Mart conforms to the guidelines will it be allowed to establish in the area.

Unions, manufacturers, small businesses and municipal governments have filed lawsuits against Wal-Mart. Several churches and a garment workers' union won a court case which forced Wal-Mart to stop violating legislation promoting the hiring of minorities and women. In 1993, an Arkansas court found Wal-Mart guilty of selling merchandise below cost to drive smaller stores out of business and awarded almost \$300,000 to three small pharmacies. In January 1995, however, the Arkansas Supreme Court overturned the lower court ruling by a 4-3 vote. The Supreme Court acknowledged that Wal-Mart sold some items below cost to entice customers into the store, but found the pricing policies were not intended to injure competitors. Nonetheless, small businesses are forging ahead with similar lawsuits in 20 states.

*US News and World Report* stated recently that battles with community groups have made Wal-Mart look "less and less like a juggernaut." Unlike some of the faceless corporations posed to dominate the new global economy, Wal-Mart invades our communities directly and is thus familiar to most consumers.

Stopping Wal-Mart offers people a concrete opportunity to act locally to fight globalization. And, ironically, it is Sam Walton himself who points to the company's Achilles Heel: "There is only one boss. The customer. And he can fire everybody in the company, from the chairman on down, simply by spending his money somewhere else." Words to live by.

## Sources

Vance, S.S. and Scott, R.V., *Wal-Mart: A History of Sam Walton's Retail Phenomenon*, Twayne Publishers, New York, 1994;  
Walton, S., with Huey, J., *Sam Walton: Made in America*, Doubleday, New York, 1992;  
*The Economist*, "Change at the check-out: A Survey of Retailing", 4 March 1995.  
*Financial Times*, 2 November 1994.



*A single superstore may have as much square footage as an entire small town's high street.*

global giant that it is not welcome in their community. In the past two years, citizens of small towns in Massachusetts, New Hampshire and Maine rejected new Wal-Mart stores in their areas. People have joined together in Oregon, Colorado, Iowa, Florida, Pennsylvania, Maryland, New York, Connecticut and Rhode Island to fend off new Wal-Marts.

Vermont — the only US state without a Wal-Mart until autumn 1995 when it lost a five year struggle to resist the company — told the retail giant that it could set up only in existing downtowns and if it agreed to a long list of demands regarding the size and operations of the store.

Puerto Rico rejected a Wal-Mart because of its likely effect on small- and medium-sized business. An Ontario town



## Chinese Markets

**FROM HEAVEN TO EARTH: Images and Experiences of Development in China** by Elisabeth Croll, Routledge, London/New York, 1994, £14.99 (pb) 317pp. ISBN 0-415-101875

**PATTERNS OF CHINA'S LOST HARMONY: A Survey of the Country's Environmental Degradation and Protection** by Richard Louis Edmonds, Routledge, London/New York, 1994, £40 (hb) 334pp. ISBN 0-415-10478-5

Since the collapse of communism in the former Soviet Union and Eastern Europe, economic planning is held not only to be rationally impossible but also inherently totalitarian. Capitalism, retailed as "market reform," is hailed instead as the panacea everywhere for stagnation, poverty and even environmental degradation. These two books, however, raise serious doubts about the wisdom and long-term consequences of untrammelled economic development via an Invisible Hand.

Elisabeth Croll's sensitive and nuanced anthropological study of Chinese villages grapples with the complex and often contradictory impacts of market reform in China which, since 1978, has brought numerous opportunities for rural income generation via farm sidelines, handicrafts and industries. The availability and variety of food, clothes, colour televisions, tape recorders, refrigerators, air conditioners, scooters and cars has rapidly increased.

But at the same time, the dismantling of rural collective institutions that used to provide subsidized agricultural inputs and social services, such as education and health care, has forced peasants to depend more upon the market.

China's peasants have responded to market reform, Croll says, by shifting their focus "from heaven to earth" — from "we" the collective to "we" the family or even "I" the economic individual. Instead of revolution, China's peasants seem to have become obsessed with consumption — building and renovating their houses, amassing electrical appliances and furniture, and lashing out on children's toys, interior decorations and convenience foods.

Yet Croll finds a deep malaise throughout rural China. She senses a societal-wide sense of "loss or bereavement" because the new religion of materialism has not replaced fully the "faded dream" of socialism. While state price increases for peasant produce and newly-opened free markets for business sidelines initially brought economic gains to almost all peasants and few if any losses, peasants are still forced to sell the bulk of farm output (grains, oilseeds, cotton) to the state at below market prices — even though the prices of inputs like fertilizer and fuels have soared.

As a result, people face debt, uneven access to markets and supplies, and competition. They are increasingly losing their farmland to drought, soil erosion and construction projects — all of these have adversely affected or cancelled out the benefits of the early market reform years. Peasants are also increasingly burdened by various levies for services — hydroelectricity, water, crop protection, technical services and social services (some mismanaged or even non-existent).

They are thus forced to maximize their family labour resources so as to maximize production for the market. Family members of all generations are now pressed into some form of income-generating activity, leading to new divisions of labour. In some rural areas, industry has drawn women off into factories, while in others, men are fully employed in construction, industry or mining, while women farm and sell produce on their own.

With the demise of state-funded education, peasants find that "while farming makes money, schooling takes money." Croll cites recent reports showing that in Guangdong, China's most marketized province, only 72 per cent of children over six were in school and only 54 per cent of 15-17 year olds. Throughout the countryside, there has been a sharp increase in the use of "child farmers, workers and pedlars" — 85 per cent of them girls. Some 10 to 20 per cent of workers

in rural factories, where some of the most dangerous and polluted work in China is carried out, are children.

Such market-driven pressure to maximize family labour power has run up against the government's one- to two-child population policy, introduced simultaneously with market reforms, and has pit "production against reproduction." In a society without a social security system and in which rural women marry out of the family, the population policy has put extreme pressure on families to ensure that the first-born is a boy and has led to a dramatic increase in female infanticide. Skewed gender ratios have now put a premium on rural brides. Despite being illegal, the purchase of women for marriage is now widespread in rural China.

Family concern to recruit female labour power has also led to a rise in child betrothals and under-age marriage. There has been a parallel rise in abductions and traffic in young women.

Croll's book ends on a note of doubt and concern: as the inexorable march of marketization proceeds and social polarization grows, there is "no certainty that tomorrow will be better than today." Just how tenuous China's gains have been is underscored by *Patterns of China's Lost Harmony* which illustrates how the pell-mell pursuit of gain today is undermining the potential for economic and social well-being tomorrow.

Richard Edmonds' excellent book combines a systematic and comprehensive study of China's present environmental crisis, a historical overview of the cumulative impact of Chinese civilization from the earliest times up to the present, and an assessment of the global impact of China's environmental problems. He devotes concise, readable and informative chapters to the history of environmental degradation, deforestation and vegetation reduction, soil erosion, desertification, water shortage, soil, air, water and solid waste pollution, and nature conservation.

Feeding China's 1.2 billion people is a formidable task when the country's arable land has shrunk by half since 1949 and continues to shrink because of rural industrialization, and house- and road-building. One third of the arable land is seriously eroded and soil fertility is dropping.

China has only one fourth the amount of fresh water per capita compared to the world's average. More than 200 cities are "seriously short" of water; rivers, lakes



and reservoirs are drying up. Dozens of cities, including Shanghai, Tianjin and Suzhou are subsiding due to overdrawing of groundwater.

Water pollution has become a major problem since the 1980s. All main rivers and many tributaries are now polluted. In urban areas, 80 per cent of surface water and 40 per cent of potable water is contaminated. Only 6 of 27 major cities can provide drinking water which reaches state standards. Shanghai's drinking water comes from the Huangpu River and the Suzhou Creek which receive 5.2 million tonnes of untreated wastewater every day, 70 per cent of it industrial waste. The Huangpu, Edmonds says, is black and stinks; Suzhou Creek is anoxic — biologically dead. It is no surprise that Shanghai has China's highest levels of stomach, liver, intestinal and lung cancers.

China's air pollution, due mainly to its coal-fired industrialization, is just as bad. High-sulphur coal provides three-fourths of China's energy. The country's industries pump many other substances including benzene, lead, zinc, arsenic, manganese, cadmium and molybdenum into the atmosphere. Consequently, air quality in many of China's cities is among the worst in the world. Particulate levels have been known to reach 1,000 microgrammes per cubic metre in some places, compared with London's norm of 48 and Tokyo's 22. Emissions of automobile and industrial petrol fumes, which have been rising faster than those of coal, suggest that nitrogen oxide pollution will grow in the 1990s.

China's leaders are not oblivious to their mounting environmental problems. They have introduced pollution controls and plan sewerage treatment works and other infrastructure improvements. But given the scale of the present problems, investment in pollution control is insufficient and environmental clean-up is almost non-existent. Edmonds notes that China does not have any laws governing the disposal of hazardous waste. What environmental legislation there is is often vague and irregularly enforced.

The transition to the market system has worsened existing problems by diminishing government restraints on pollution:

"By the late 1980s, regulations to control pollution were in existence and having some positive effects in the state controlled sector . . . But as the role of the state sector . . . was secondary to the expansion of small-

scale private enterprise, pollution problems remained largely out of control."

Edmonds concludes that the "market-oriented development now in practice in China cannot provide for a sustainable future any more than it has in other market economies." Yet any "return to the command economy of Maoist times is no solution either." The emerging environmental crisis in China (and the rest of Asia) seems to cry out for social restraints on the free market. And while planning "by the bureaucracy, for the bureaucracy" was no solution, unless some kind of national and international economic planning "by society and for society" is put on the agenda, the road to capitalism may very well turn out to be the end of the road for the people of China.

Richard Smith

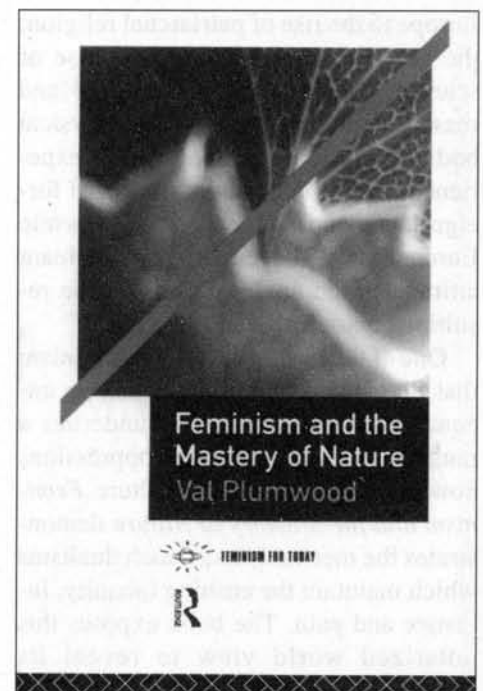
**Dr Richard Smith** is a historian and has written on Chinese economic development for *The New Left Review* and *Against the Current*.

## Ecofeminist Thought

**FEMINISM AND THE MASTERY OF NATURE** by Val Plumwood, Routledge, London, 1993, £11.99 (pb) 239pp. ISBN 0-414-06810X

At the grassroots, ecofeminist action has flourished over the last decade as women around the world have voiced their concerns and resisted what they perceive to be a value system which places the earth and the lives of future generations at stake. Well-publicized examples include the actions of the Chipko movement in India and the Kenyan Green Belt Movement. In Australia and Canada, women have been at the forefront of demonstrations against uranium mining, while women all the way from the Pacific to the heartland of Native American territory in the United States have been campaigning to stop the devastation caused by nuclear testing. Worldwide, women have been acting against toxic dumping and waste incineration, campaigning against excess pesticides and packaging, and stressing the effects and responsibilities of mass production and mass consumption.

However, ecofeminism as a political analysis and a philosophy has frequently been criticized or ignored by feminists



and environmental philosophers alike. It has been criticized for appearing to promote the return of the Earth Mother and the continued oppression of women, and derided as a disparate collection of ideas which are seemingly full of contradictions and inconsistencies.

Ecofeminism has, in fact, often been misunderstood as a feminism and undervalued as a philosophy, perhaps not surprisingly given that it is a relatively young subject which is still growing and evolving in practice and theory. Now, for the first time, in Val Plumwood's *Feminism and the Mastery of Nature*, a clear, well-crafted, academic analysis of ecofeminism is presented which refutes many of the misconceptions of ecofeminism and which makes a persuasive argument for ecofeminism as a valuable philosophy.

Ecofeminist perspectives derive from and have focused on the examination of the relationship between women and nature — yet as Plumwood argues, a new paradigm offered by ecofeminism is not confined to issues of women and the environment but highlights the underlying mechanisms that weave a web of oppressions across gender, class, race and the natural world.

Unlike social feminism, which argues for equality of women and men without questioning underlying cultural value systems, ecofeminism demonstrates how Western culture has progressively promoted an inequitable and biased system which values men over women, culture over nature and mind over body. Such a system has expressed itself in myriad ways throughout Western history, from the loss of the goddess cultures of Old

Europe to the rise of patriarchal religion; the denigration of magic to the rise of science; the exaltation of mind and reason to the denigration of our physical bodies, especially women's bodily experience; and from the colonization of foreign lands and native peoples by white Europeans to the current predominant attitude to the environment and the resulting ecological crisis.

One of the key themes of ecofeminism that Plumwood highlights is that an unequal, dualistic perspective underlies a range of seemingly disparate oppressions now visible within Western culture. *Feminism and the Mastery of Nature* demonstrates the mechanisms of such dualisms which maintain the ensuing inequity, injustice and pain. The book exposes this polarized world view to reveal its oppositional, exclusive and hierarchical nature. What was once experienced as a continuum of life is constructed as separate and disconnected — mind is separate from body, culture is seen as apart from nature, spirituality is dissociated from sexuality. Each is viewed as a polarity; one pole has been valued and affirmed, while the other is devalued and denigrated into something to be controlled by the dominant sphere. Thus the body serves the mind, women support men, and the earth provides resources for cultural development.

Furthermore, the dependence of the valued poles upon the devalued ones is denied — indeed, human dependency upon the earth is only beginning to be acknowledged in Western culture as we are forced to recognize the causes of the ecological crisis.

Plumwood shows how ecofeminism has drawn on the language of ecology to express the view that solutions to our current crises lie in rekindling a sense of connectedness and relationship, both with the earth and with our bodies, and in revaluing that which has been devalued and denied. Some ecofeminists have used the image of a web to describe ways of relating to each other and the world around us, setting ourselves in nature rather than apart from it.

Ecofeminist perspectives are already influencing mainstream culture in a variety of identifiable areas. The burgeoning alternative healing movement and practice of allopathic medicine acknowledge the mind-body connection. There is a growing awareness of the arguments put forward by the animal rights movement for a more equitable relationship between

human and non-human life. Current debates within religious institutions in Britain over the relationship between sex and religious practice are promoting a cultural re-examination of the split between sexuality and what is considered sacred.

However, rather than offer a homogeneous holistic vision, ecofeminism draws still further on the ecological principle of diversity to suggest that we need to recognize difference. Nature co-exists with culture but is not culture; mind is interconnected with body but is not physical; humans and animals are living beings but are not the same species; and men and women are different. It is respect for diversity and difference, without conferring value judgement, set in a culture of relationship, which offers the greatest hope for a new equitable future.

With *Feminism and the Mastery of Nature*, ecofeminism has come of age as a credible intellectual philosophy. Together with action, thought and vision, it can offer a viable pattern and inspiration for cultural renewal for the future.

Cat Cox

Cat Cox teaches a course on ecofeminism for the Women's Studies programme of Birkbeck College at the University of London.

---

## Gold Rush

---

**AT THE END OF THE RAINBOW? Gold, Land and People in the Brazilian Amazon** by Gordon MacMillan, Earthscan, London/Columbia University Press, New York, 1995, £13.95 (pb) 199pp. ISBN 1-85383-232-4

For many people, gold mining in the Amazon brings to mind the images of Sebastião Salgado's powerful photographs of ant-like bodies toiling in Dantean conditions in Brazil's notorious Serra Pelada mine, images which evoke a sense of fascinated horror. Gordon MacMillan's informative and thoughtful book, *At the End of the Rainbow?*, looks behind these images to examine the various factors which have led to the Amazon gold rush of the last two decades and its impact on the people and environment of the region.

MacMillan looks in particular at the socio-economic impacts of the informal mining sector and its effects on land use patterns in Amazonia, considering what

has made a million or so "wildcat miners" come to the the *garimpo* or gold camp to seek their fortune and what they do with any profits they make. Using his own primary research from Brazil's far northern state of Roraima, he places the gold rush in its regional, national and global context. Interspersed throughout are his interviews which illustrate the daily culture and dynamics of the *garimpo*.

*At the End of the Rainbow?* explores the motives of a diverse range of people from Indians, riverine dwellers, rubber tappers, colonists and smallholders to entrepreneurs, ranchers, prostitutes and politicians, many of whom are linked to the fortunes and failures of the *garimpo*. The fascinating picture which emerges dispels the myth that all miners are poor landless migrants from north-east Brazil. While many miners do not have land holdings, significant numbers do own land in some form or, through family ties, have access to land. Money from the mines is also invested in ranches and is therefore responsible for deforestation.

Although high risk, mining boosts the income of many people, balancing the effects of economic instability, inflation, lack of agrarian reform and the reduction in fiscal incentives for ranching in Brazil. MacMillan estimates that the *garimpo* offers an important seasonal income for an estimated 30 per cent of the Amazon population and thus concludes that agrarian reform might not stem migration.

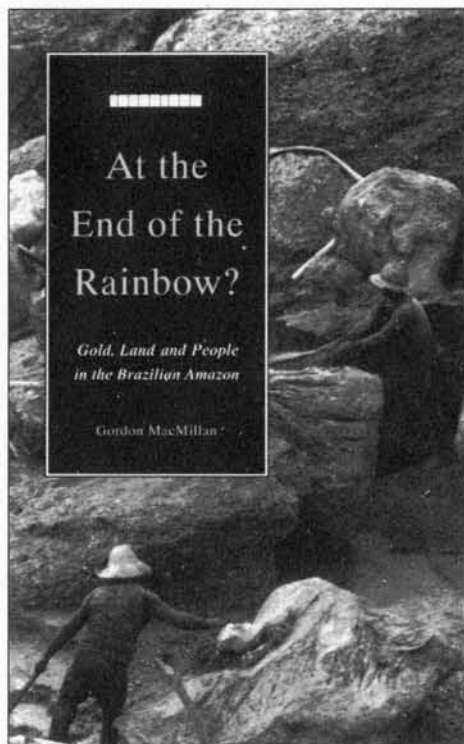
Like all booms, the gold rush has had its winners and its losers. It has been catastrophic for many indigenous peoples whose lands have been invaded, exploited and polluted. Conflicts are common and sometimes fatal. After 16 Yanomami were murdered in 1993 by a group of gold miners, Brazil's Attorney General opened an unprecedented case of genocide. However, political interests allied to the gold mining fraternity have ensured that no one has been tried for this crime.

More devastating have been the diseases transmitted by the miners; in the last seven years, one in five Yanomami has died from hitherto unknown diseases such as malaria and 'flu.

Environmental damage is harder to quantify. Despite a law prohibiting the use of mercury in recovering the gold, an estimated 2,000 tonnes of this metal have entered the Amazon ecosystem either through rivers or through the vapour created when burning off the gold.

Particularly fascinating and topical is





MacMillan's chapter on the politics of gold mining. Informal sector mining has presented politicians with tremendous opportunities to harness votes and increase their influence. This is amply illustrated in the current Congressional debate to amend Brazil's 1988 Constitution; a vociferous group of Amazon politicians closely allied to the informal mining sector are lobbying hard for the demarcation of Indian areas to be reduced so as to facilitate mining, logging and colonization in the areas. As Amazonian states wrest greater political and financial autonomy from an increasingly weak and bureaucratic national government, so they gain more interest in exploiting their resources and the ability to do so.

As Brazil yields still further to "market forces" and encourages more foreign investment in the country, it is likely to follow its neighbours Venezuela and Guyana in handing out mining concessions to foreign companies. But the power of the *garimpeiro* or goldminers' lobby should not be underestimated in preventing this. Earlier this year, miners in Venezuela's Bolivar state, angered at being pushed off the deposits by multinationals, stormed two sites and destroyed much equipment. Fearing a pull-out by the foreign companies, the Venezuelan government has been forced to consider offering the miners gold reserves to be run as cooperative mines. The Amazonas state in Venezuela looks set to follow suit as it debates overturning its ban on mining, the implications of which for the 19 indigenous peoples there, most of whom

have no land titles, are serious.

Inevitably, a book of this kind raises as many questions as it answers. Macmillan does not speculate on strategies for the future. If, for example, mining areas were more effectively administered and more appropriate technology used, could the most harmful effects of the *garimpo* be contained? Would increased inspection of gold mines and plans to recoup lost tax revenues dampen enthusiasm for the *garimpo* way of life?

*At the End of the Rainbow?* is an important book for anyone wishing to understand Amazonia today. For most people, the *garimpo* is a lottery where the stakes are high and the rewards low. The real pot of gold, a fair deal for Amazonia's poor, is like that at the end of the rainbow — frustratingly elusive.

Fiona Watson

Fiona Watson is Campaigns Coordinator for Survival International which supports tribal peoples.

## Gene Talk

**THE DNA MYSTIQUE: The Gene as a Cultural Icon**, by Dorothy Nelkin and M Susan Lindee, 1995, W. H. Freeman and Co., New York/Oxford, £15.95 (hb) 276pp. ISBN 0-7167-2709-4

For those of us whose eyes and ears have become sensitized to the mention of the word, it has become very obvious that, nowadays, everyone is talking about genes. A critic reviewing a play about the persistence of racism says, "It's as if it had a DNA of its own," while a tobacco advert says "Jacket from market, genes from milkman". "Gene talk" has entered the vernacular, and genes have become a subject for drama, a source of humour and an explanation of human behaviour.

In several ways, Dorothy Nelkin and Susan Lindee have done a great service with this book. One of the most important is simply providing a treasury of examples of such gene talk. Their message is that the powers of the gene are not just biological: the meanings of genes in popular culture also affect the way we think about the world and our own lives.

Many of the ways that the gene is used or referred to in popular culture make no sense at all. My favourite examples from *The DNA Mystique* are car advertisements: a BMW has "a genetic advantage", a

Subaru is a "genetic superstar", a Toyota has "a great set of genes". Even when talking about people, gene talk is little better in scientific terms. But as Nelkin and Lindee point out, that is not the issue:

"The precise scientific legitimacy of any image . . . is less important than the cultural use that is made of it. How do scientific concepts serve social ideologies and institutional agendas? Why do certain concepts gain social power to become the focus of significant popular and scientific attention?"

The authors note that the gene can be appropriated by different political persuasions: not only by conservatives, but by feminists, arguing the "native talent and superiority of women"; by gays, arguing that they should not be discriminated against because they are "naturally that way", and by black supremacists, claiming that the natural superiority of blacks is because they have more melanin. "Whoever can successfully argue that biology — and more specifically DNA — supports their particular political viewpoint has a tactical advantage in the public debate."

But the flow of ideas and authority goes in both directions. Nelkin and Lindee perceptively point out that in seeking ways to popularize their work, scientists draw on rhetorical resources from popular culture. These may even be religious metaphors. Genome scientists describe the genome as "the Bible" or the "Book of Man" and the Human Genome Project as a search for "the Holy Grail". One of the most interesting chapters of the book looks at the way that DNA rhetorically fulfils many of the functions of the soul: it is both the essence of the self yet also immortal, (albeit in a somewhat different way from the soul).

Despite the varied ways that the metaphor of the gene is used, it is very clear that, for Nelkin and Lindee, one meaning is dominant, and, indeed, it is a familiar one. They call it "genetic essentialism" — the idea that genes define the unchanging essence of a human being, the "blueprint of our destiny".

They start by looking at the popular literature of the US eugenics movement during the first half of this century, and show how we have inherited many of the ideas and concerns of that movement, in particular popular ideas about heredity which have little to do with science. Subsequent chapters look at how genetic essentialism has permeated different

spheres: the family, which is being increasingly defined in molecular terms; debates about behaviour, violence and criminality; the politics of race, gender and sexuality; and the politics of individual versus social responsibility.

The way that Nelkin and Lindee pile up the examples in all these areas does produce a sense of gloom. Some of the implications are undoubtedly contradictory. For example, genetic essentialism conforms to the individualist ideology that dominates US culture, placing the blame for social problems on the individual; yet, at the same time, it absolves the individual of responsibility, claiming that we are little more than "readouts" of our genes. It thus denies the individualist American Dream that you can improve yourself by hard work and initiative. An interesting trend in this respect is the emergence of antidotes to the traditional self-help book — the "don't help yourself" books such as Martin Seligman's *What You Can Change and What you Can't Change*.

Despite these contradictions, there is little to alleviate the feeling that we are heading for a future dominated by biological determinism and, ultimately, a new eugenics. There is certainly very little in *The DNA Mystique* that points in a progressive direction. I suspect that the situation in Britain is not so bleak.

In the final chapter, the authors return to the question of why we are seeing such an upsurge in gene talk. They argue that:

"[genetic explanations] are a convenient way to address troubling

social issues: the threats implied by the changing roles of women, the perceived decline of the family, the problem of crime, the changes in ethnic and racial structure of American society, and the failure of social welfare programs. The status of the gene — as a determinable agent, a blueprint, a basis for social relations, and a source of good and promises a reassuring certainty, order, predictability and control."

The task for anyone wishing to combat genetic essentialism must first be to understand the depth of those needs. This book is invaluable in introducing this dimension to the debate in a way that is understandable, even without a PhD in cultural studies.

Dave King

Dave King is the editor of *GenEthics News*, an independent, bi-monthly newsletter covering genetic engineering, ethics and the environment, PO Box 6313, London N16 0DY, UK.

## Green Schools

**EARTH IN MIND: On Education, Environment and the Human Prospect**, by David W. Orr, Island Press, Washington DC, (Earthscan, London) 1994, \$16.95 (pb), 213pp. ISBN 1-55963-259-X

David Orr's thesis is simple: many of the world's environmental problems are the result of inadequate and misdirected formal education. Much

of what is taught in schools, colleges and universities actually causes environmental problems rather than resolving them.

In the first section of *Earth in Mind*, "The Problem of Education", Orr questions the conventional wisdom that all formal education is good, and that the more one has, the better. He argues that much of what is taught in schools alienates people from life in the name of human domination and

separates emotion from intellect, practice from theory, thereby deadening what Rachel Carson called the "sense of wonder". The result, according to Orr, is that our institutions graduate each year batch after batch of degree-holding but environmentally illiterate people who are now better equipped to be "more effective vandals of the earth".

In the second section, "First Principles", Orr calls for a rethink of assumptions about learning and the goals of education. He points out, for example, that as various university curricula have become more extensive, complex and technologically sophisticated, they have lost certain "basics" critical to teaching good stewardship.

For example, he highlights that many conservation biologists are content to study conservation biology but have not joined efforts to conserve biological diversity. "Professional science", Orr says, must be taught in the classroom together with "love of life", so that academic institutions produce more than the "terrible simplifiers" — scientists who wish to substitute "number crunching" for human values and environmental advocacy.

"Rethinking Education", the third section, is the real heart of *Earth in Mind* — a critical look at the way Western and Western-influenced academic institutions are set up in terms of disciplinary organization of learning and curricula. Orr concludes that this system is not equipping people to be citizens of the biotic community and consequently must change.

In a chapter on "Rating Colleges", he calls for a new ranking system based on criteria such as how much of various things the institution consumes and discards per student; how adequate the institution's management policies are for materials, waste, recycling, purchasing, landscaping, energy use and building; whether the institution and its faculties are ecologically literate and relate environmental themes to course material; and whether graduates help move the world towards greater sustainability.

The chapter "The Problem of Disciplines and Discipline of Problems" gets at what I consider to be the major problem with university education — loyalty to the profession. Orr maintains:

"Professionalized and specialized knowledge is not about loyalty to places or to the earth, or even to our senses, but rather about loyalty to the abstractions of a discipline."

Most university curricula are based on



"Because my genetic programming prevents me from stopping to ask directions—that's why!"



narrow traditional disciplines such as biology, chemistry or anthropology that merely teach people to become "in-the-box thinkers". According to Orr, those minds (and their students) that stay in boxes are also the ones that degrade ecologies and create global imbalances.

Orr notes that "those who are bold enough" to have developed innovative multi-disciplinary and interdisciplinary programmes, such as environmental studies, are at least attempting to transcend the traditional "box" thinking. Although he does not call for the elimination of disciplinary knowledge, Orr does maintain that we must find ways to situate disciplinary knowledge so as to educate students better about the natural world and its plethora of environmental problems.

Orr criticizes colleges and universities in general for not rewarding, acknowledging or funding interdisciplinary programmes. I would agree with Orr that academia:

"needs a professorate with ideas that are dangerous to greed, shortsightedness, indulgence, exploitation, apathy, high-tech pedantry and narrowness."

In the final section, "Destinations", Orr presents principles by which education could be recreated as broadly as possible, discussing topics such as biophilia, restoring the idea of place and ecological intelligence. He calls for a reorganization of college and university curricula to draw out our "affinity for life". The key concepts of modern environmentalism — humility, human scale, simplicity, efficient use of resources, durability, diversity — must be incorporated into all facets of education if civilizations are to be brought back into line with ecological realities.

As a college administrator of an interdisciplinary environmental programme, Orr is a veteran doer as well as thinker. His book is a manual of ideas and possibilities drawn from years of experience in trying to move educational establishments in a different direction — from being factories of industrialism where students are trained to amplify the Industrial Revolution to being 21st century academies of environmentalism where students, professors and administrators work together towards a new stage in cultural evolution.

Gary A Klee

Gary A. Klee is professor of Environmental Studies at San José State University, US and author of *Conservation of Natural Resources*.

## BOOKS DIGEST

- THE POLITICAL ECONOMY OF HUNGER (Selected Essays), edited by Jean Drèze, Amartya Sen and Athar Hussain, Oxford University Press, Oxford and New York, 1995, £16.95 (pb) 626pp. ISBN 0-19-828883-2.

Hunger kills millions more people each year than wars or political repression. These essays analyse the causes of hunger and deprivation in Africa, South Asia and China, looking at land tenure, agricultural technology, price fluctuations, un- and underemployment, and age and gender discrimination.

- PRESCRIPTION FOR CHANGE: *Health and the Environment*, Friends of the Earth Publications, 56-58 Alma St. Luton LU1 2PH, 1995, £5.95 (pb) 204pp. ISBN 1-85750-242-0.

In Britain today, drinking water is polluted with lead, pesticides, oestrogens and nitrates; air is polluted with motor exhausts and fumes from industry and power stations; food is contaminated with dioxins and pesticides; rivers, seas and land are contaminated with waste; and people are exposed to radiation. This book is an accessible summary, full of facts and figures, of all these threats to human health.

- THE GREENING OF THE REVOLUTION: *Cuba's Experiment with Organic Agriculture*, edited by Peter Rosset and Medea Benjamin, Ocean Press, San Francisco (Central Books, London), 1994, \$11.95/£6.95 (pb), 85pp. ISBN 1-875284-80-X.

Since the collapse of trade between Cuba and the former Soviet Union and Eastern Europe, Cuba's imports of agrochemicals have dropped by more than 80 per cent. As a result, organic farming is becoming the norm in the country. This report provides agricultural and political details of how Cuba is meeting the challenge to double food production while halving inputs.

- GATT AND INDIA: *The Politics of Agriculture*, by Devinder Sharma, Konark Publishers, New Delhi, (Farmer's Link, Norwich; Institute for Agriculture and Trade Policy, Minneapolis) 1994, Rs225/£9.95/\$30 (hb), 198pp. ISBN 81-220-0345-1.

In December 1992, some 1,000 farmers ransacked the Bangalore office of Cargill Seeds in protest at the entry of multinationals in India's seed sector and at GATT proposals for intellectual property rights. Sharma details how GATT, now ratified, will affect India, in particular in terms of "genes and germplasm".

- MORTGAGING WOMEN'S LIVES: *Feminist Critiques of Structural Adjustment*, edited by Pamela Sparr, Zed Books, London (Humanities Press, New Jersey), 1994, £12.95/\$19.95 (pb), 214pp. ISBN 1-85649-102-1.

Adjustment programmes in a free-market economy affect women and men differently: for instance, more women than men may become unemployed; wage differentials grow; more women enter the informal sector; women's unpaid work escalates; and girls' attendance at school drops. These and many other repercussions are documented in case studies from Egypt, Ghana, Turkey, Sri Lanka, Jamaica, the Philippines, Nigeria and Jamaica.

- THIRD WORLD IN THE FIRST: *Development and Indigenous Peoples*, by Elspeth Young, Routledge, London and New York, 1995, £15.99 (pb), 304pp. ISBN 0-415-11673-2.

This book explores what "development" has meant for the aboriginal people and lands of the remote areas of Australia and Canada. Although some have benefited from mining for gold, uranium, bauxite and oil, and from national parks and tourism, the author illustrates how the "first peoples" of these countries have become marginalized.



## Letters

### Whaling Controversies

I would like to alert readers to the nature and agenda of The North Atlantic Marine Mammal Commission (NAMMCO), the sponsor of the International Conference on Marine Mammals and the Marine Environment advertised in the Classified section of *The Ecologist*, January/February 1995.

Established in 1992, NAMMCO has its roots in efforts by the governments of Iceland and Norway and the Home Rule governments of the Faroe Islands and Greenland to challenge the global authority of the International Whaling Commission (IWC). It was spawned in the late 1980s by these countries' dissatisfaction with the IWC's global moratorium on commercial whaling, a moratorium which has the support of a clear majority of IWC members. The whalers see NAMMCO as the "responsible" alternative to the IWC. That is, an organization which will allow catches of marine mammals at levels seen fit by the whalers.

NAMMCO, however, has no authority to manage whales. Any quotas that it sets would be without authority and nations exercising such quotas would be pirate whalers. The conservation and management of whales is, according to Article 65 of the United Nations Convention on the Law of the Sea (UNCLOS), accorded special status, noting cetaceans as "highly migratory species". The IWC is the only international organization that can fulfil this role. UNCED's Agenda 21 reaffirms that the exploitation of cetaceans may be regulated more strictly than that of other "living resources", including by a total prohibition on catching.

To win international acceptability, NAMMCO is now focusing on less openly controversial aspects of the whaling issue. It has started taking steps to build a credible presence for itself in the field of scientific study by holding conferences

such as the one advertised in *The Ecologist*. Through this process, the organization has been able to flesh out its version of a "shadow IWC"; increasingly its committees and its activities mirror the IWC's own agenda. Indeed, the IWC hosted a very similar meeting on contaminants and marine mammals in Bergen, Norway in March 1995.

It is important when dealing with such an important issue as the potential pollution of the marine environment that readers of *The Ecologist* are fully aware of the subtleties of those who seek to use such issues as a cover for their true ambitions.

**Chris Stroud**  
**Campaigns Director**  
**Whale & Dolphin Conservation Society**  
Alexander House  
James Street West  
Bath, Avon BA1 2BT, UK

### The Fisherman's Dilemma

A little more research into game theory and a little less reliance on some utopian vision that people, when informed, make decisions in favour of the common good, would have been useful in the otherwise valuable issue on fisheries and common property (*The Ecologist*, March/April, May/June 1995).

It was accurate to link the Prisoner's Dilemma to the Tragedy of the Commons, but mistaken in the conclusion that the Tragedy of the Commons as manifest in the Fisherman's Dilemma "means nothing in practice".

Uncharitable as it may sound, human beings will cheat, even "when they perceive a cooperative agreement to be mutually beneficial". To disregard this is to be wishful. I am not suggesting a rejection of the capacity of human beings to sustain a commons is grounds for privatization. On the contrary, I believe sustainability can only be found in a *regulated public realm*.

Where the article on bioeconomics could be improved is in the faulty Fisherman's Dilemma analysis. Sebenius and Lax have made a convincing case that defection is rather predictable, even in a climate of trust, mutuality and informed decision-making, when the game is perceived to be near an end. *Timing* of the game is the operative issue you neglected to develop.

Otherwise trusting partners (local artisan fishworkers, for instance) will seriously consider defection as they formulate their individual end game strategies. Given that only 4 of the world's

17 major fishing grounds remain viable, the likelihood that utopian fishworkers will see mutuality and cooperation is far less than the probability that they will view their only acceptable approach to be one of claiming as much as they can in the unwinnable distributional dispute.

A. N. Whitehead's brilliant assertion that "the essence of dramatic tragedy resides in the solemnity of the remorseless working of things" wisely recognized that each individual fishworker will always, inevitably and rationally do exactly what is at odds with the needs of everyone else.

Your insistence that mankind has the capacity to adapt to grave resource scarcity by, upon seeing the gates of hell, changing its ways, was hopeful and unlikely. Only by seeing the gates of hell before one is actually at the doorstep can the inevitability of overshoot and collapse be impeded. Mankind's history suggests that, though rarely, this can occur and cooperation is possible. But game theory astutely understands that this optimism only works when resources exceed demand (i.e. when the end is not near).

**Charles Buki**  
**Loeb Fellow**  
Harvard University  
48 Trowbridge Street  
Cambridge, MA 02138, USA

### Global Interaction

The issue on overfishing (*The Ecologist*, March/April, May/June 1995) contains much valuable information but lacks political focus and perspective. The necessity of community control and a ban on certain technologies is clearly shown, but who is going to achieve this and how?

International agreements and institutions are mentioned only briefly and as part of the problem. But this is where alliances need to be built, if we are to have a chance. The whole process of globalization, short-termism and commercialization of human relationships cannot be reversed by local resistance alone. We need both local and global action — and interaction.

Only a strong global environmental authority — a Trusteeship Council for the Global Commons — would have the power to protect and enhance community control against globally-organized market forces.

**Jakob von Uexkull**  
**The Right Livelihood Award**  
7 Park Crescent  
London W1N 3HE, UK



# Classified

## DIARY DATES

13 February 1996: **ENVIRONMENTAL REFUGEES: Anticipation, Intervention, Restoration.** Baltimore Convention Center, Baltimore, Maryland, USA. Contact Stuart M. Leiderman, Dept of Natural Resources, James Hall, Durham, New Hampshire 03824, USA.

17 March 1996: **GREEN STUDENT NETWORK GATHERING** in Cambridge. Various plenary sessions, networking, entertainment. For further details, contact Hamish Downer, Churchill College, Cambridge, CB3 0DS. Tel: 01223 336176; E-mail: 94hgd@eng.cam.ac.uk.

1-5 May 1996: **INTERNATIONAL EARTH EDUCATION CONFERENCE AND EXPOSITION.** McKeever Environmental Learning Center, Sandy Lake, Pennsylvania, USA. For more information, contact The Institute for Earth Education, Cedar Cove, Greenville, WV 24945, USA. Tel: +1 (304) 832-6404; Fax: +1 (302) 832-6077; E-mail: IEEI@aol.com.

26-30 June 1996: **INTERNATIONAL CONFERENCE ON ENVIRONMENTAL EDUCATION.** Northern Call for the Environment, Savonlinna, Finland. For further information, contact Liisa Jaaskelainen, National Board of Education, Tel: +358 (0) 7747 7267; Fax: +358 (0) 7747 7869; E-mail: liisa.jaaskelainen@oph.fi.

## COURSES

University of London Wye College offers a wide variety of short courses including 18 March - 12 April, 1996 **Agroforestry for Sustainable Land Use** and 22 April - 31 May, 1996 **Poverty, Gender, Participation and Institutional Change.** For more information, contact Mary Arnold, Short Course Manager, Dept of Agricultural Economics, Wye College, Ashford, Kent, TN25 5AH. Tel: 01233 812401; Fax: 01233 813006.

**THE YARNER TRUST** is running courses on all aspects of sustainable living from 1st January 1996 in our beautiful medieval farmhouse in Devon, one mile from the sea. Also available for hire: groups/workshops. Contact: Franceska, Welcombe Barton, Welcombe, North Devon. Tel: 01288 331692.

## CALL FOR PAPERS

The Global Environment & Trade Study will fund papers on topics related to **trade and environment.** Especially interested in providing support to analysts from developing countries. Authors should send 1-2 page proposal to Steve Charnowitz, GETS, Yale Center for Environmental Law and Policy, 205 Prospect Street, New Haven, CT 06511, USA. Fax: +1 (203) 432 3817.

9th Conference of the International Soil Conservation Organisation. **Towards Sustainable Land Use - Promoting Co-operation between People and Institutions,** from 26 to 30 August 1996 in Bonn, Germany. Deadline 1st February. For further information, contact A. Klein, Federal Environmental Agency, FG II 3.2/Soil Quality, PO Box 33 00 22, D-14191 Berlin, GERMANY. Fax: +49 (30) 229 3096; E-Mail: 100434.1121@compuserve.com.

## PUBLICATIONS

**ECO Directory of Environmental Databases in the UK 1995/6.** Comprehensive guide to computerised environmental information sources in the UK. A reference book for all environmentalists — not just those with computers. Contact Monica Barlow or Hugo Nieuwenhuizen, ECO Environmental Information Trust, 10-12 Picton Street, Montpelier, Bristol, BS6 5QA. Tel: 0117 942 0162; Fax: 0117 942 0164; E-mail: ecotrust@gn.apc.org.

## WORLDWATCH PAPERS

### NO. 125

**Hal Kane. THE HOUR OF DEPARTURE: Forces that Create Refugees and Migrants.** 56pp, 115, £3.

### NO. 126

**Hilary F French. PARTNERSHIP FOR THE PLANET: An Environmental Agenda for the United Nations.** 71pp, £3.

Please note that all orders for Worldwatch Papers should now be sent to The Ecologist, Agriculture House, Bath Road, Sturminster Newton, Dorset, DT10 1DU.

**New Majority,** a new research report looks at immigration into Tibet and considers the threat to its political, economic and cultural future. Contact: Tibet Support Group, 9 Islington Green, London N1 2XH, UK. Tel: 0171-359 7575; Fax: 0171-354 1026.

## MISCELLANEOUS

**A gentle oasis of calm in London's Centre?** Yes. We offer facilities for overnight accommodation and meeting rooms to hold your conference in an environment sympathetic to your aims. Excellent home-made food. Low prices. Contact the Quaker International Centre, 1 Byng Place, London WC1E 7JH. Tel: 0171-387 5648; Fax: 0171-383 3722.

**Green Events,** a monthly information and publicity calendar, distributed in and around Oxford, Bristol, Devon and London, listing events, services, businesses, organizations and individuals who consider themselves "green". Estimated readership 10,000. If you would like one to happen in your area, contact: Green Events, 10 Church Street, Bicester, OX6 7AZ, UK. Tel: 01869 252487.

**TRANSLATION, English-French.** Certified translator (CTIC). General and scientific translation in biology and related fields. I also accept long-term projects (textbooks, etc). MSWord, WordPerfect, modem, fax. Jean-Pierre Artigau, 36 Oval Drive, Aylmer, Quebec, J9H 1V1, CANADA. Tel: +1 (819) 685 1075. Fax: +1 (819) 682 0290.

**For Sale.** *The Ecologist* Volumes 2-7, including indexes. Please telephone Joan Bell, 01349 861026.

## Classified Advertising Rates

40p per word, min. 20 words, plus VAT  
Send to: **The Ecologist (Classified),**  
Agriculture House, Bath Road, Sturminster  
Newton, Dorset DT10 1DU, UK.  
Fax: 01258 473748

## WEC BOOK SERVICE

**Karen Christensen, THE GREEN HOME.** How to make your world a better place. A simple-to-use handbook which every household should have. The author shows, among other things, how to create a non-toxic home, set up an effective recycling system, gives advice on down-to-earth gardening and how to simplify life and reduce stress. 323pp, paperback, 1995, £9.99.

**Tim Lang and Colin Hines, THE NEW PROTECTIONISM: Protecting the Future Against Free Trade.** An important book which shows why we must protect our communities, their natural environments and their local economies against market forces which GATT would unleash on them. 184pp, paperback, 1993, £10.95.

**Ralph Nader et al, THE CASE AGAINST FREE TRADE, GATT, NAFTA and the Globalisation of Corporate Power.** Essays by 16 leading activists examine the ideological roots of free trade, discuss trade negotiations and detail the devastating effects these agreements will have on communities and the environment worldwide. 230pp, paperback, 1993, £6.00.

**Marcus Colchester, SLAVE AND ENCLAVE: The Political Ecology of Equatorial Africa.** This new report from the World Rainforest Movement shows that urgent help is needed to protect the tropical forests in Equatorial Africa from unscrupulous dealers and suggests more community control of forest-based enterprises.

**Jerry Mander, IN THE ABSENCE OF THE SACRED: The Failure of Technology and the Survival of the Indian Nations.** A critique of Western technological society and its many specific technological forms, from television and computers to genetics and robotics, as having failed to live up to their well-advertised Utopian promise and instead brought us to the brink of environmental catastrophe. 445pp, paperback, 1992, £7.50.

**Marcus Colchester and Larry Lohmann, THE STRUGGLE FOR LAND AND THE FATE OF THE FORESTS.** Based on six countries, this book illustrates the complexity of the problem and discusses the future options to avoid total destruction of the ecosystems. 389pp, paperback, 1993, £9.00.

**Orders with payment (credit cards accepted) to WEC Book Service, c/o The Wadebridge Bookshop, 43 Molesworth Street, Wadebridge, Cornwall, PL27 7DR. Tel: 01208 812489, Fax: 01208 815705**

# archives of **Environmental Health**

For 50 years, this noted journal has provided objective documentation of the effects of environmental agents on human health. In one single source, *Archives of Environmental Health* consolidates the latest research from such varying fields as epidemiology, toxicology, biostatistics, and biochemistry. In a field where today's certainty often becomes tomorrow's myth, this journal publishes new research with scientific integrity and rigorous methodology.

Recent noteworthy articles include:

- ◆ *Empirical-Bayes and Semi-Bayes Approaches to Occupational and Environmental Hazard Surveillance*
- ◆ *Lead in Hair and Urine of Children and Adults from Industrialized Areas*
- ◆ *Surveillance of Hazardous Substance Releases and Related Health Effects*
- ◆ *Respiratory Function Changes from Inhalation of Polluted Air*
- ◆ *Effect of Chronic Mixed Pesticide Exposure on Peripheral and Autonomic Nerve Function*

*The Official Publication of the  
Society for Occupational and Environmental Health  
and the  
International Society for Environmental Epidemiology*

Annual Subscription Price: \$105



## **HELDREF PUBLICATIONS**

A division of the Helen Dwight Reid Educational Foundation

1319 Eighteenth Street, NW  
Washington, DC 20036-1802

Telephone: (202) 296-6267

Fax: (202) 296-5149

Customer Service/Subscriptions: 1(800) 365-9753