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- World Bank (1981) *Accelerated Development in Sub-Saharan Africa: An Agenda for Action*, Washington, DC: World Bank.

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ANIL AGARWAL (1947–2002)

Activist, journalist and scholar, Anil Agarwal was a prominent Indian environmentalist who redefined environmental problems through the eyes of poor people, and who was not afraid to challenge powerful organisations and governments in order to do so. During the rise of global environmentalism in the 1960s and 1970s, it became common to blame poor people for environmental problems through acts such as population growth and deforestation. Agarwal was one of the first critics to challenge these generalisations, and to focus instead on questions of international justice in environmental politics and the choices and risks faced by poor people. Agarwal left various legacies. He founded the Indian think-tank, Centre for Science and Environment in Delhi, which today remains one of the foremost centres of critical thinking about environment and development. More conceptually, however, Agarwal was a pioneer in debates that are today called political ecology and science and technology studies. Rather than accepting environmental explanations from large organisations as scientifically and politically neutral, Agarwal sought to expose the politics underlying each statement of causality, and to show how such science legitimised or delegitimised different policies. He demonstrated how justice, as a concept, could be integrated into environmental policy between North and South. Agarwal also brought his own style of influencing politics, through a combination of scholarly work, acerbic journalism and careful political campaigning.

Agarwal was born in Kanpur in Uttar Pradesh in 1947, the son of a local landowner. He attended the Indian Institute of Technology in Kanpur, where he studied mechanical engineering, and learnt information about technology that was to characterise his later writings. In a change of career direction, in 1973, Agarwal became a science correspondent at the *Hindustan Times*. In 1974, he wrote about the Chipko movement in the Indian Himalayas, where local villagers opposed logging, and which has more recently become an icon for local environmental struggles in the South. His writing attracted international attention, and in 1979, he won the first A.H. Boerma Award given by the United Nations' Food and Agricultural Organisation in Rome.

In 1980, Agarwal founded the Centre for Science and Environment (CSE) in New Delhi. The CSE was new because it was a non-governmental organisation that focused on environmental matters, and which sought to influence the Indian government and transnational corporations, a role it continues to play today. At the time, mainstream environmental groups in India tended to focus on conservation, and especially conservation of wilderness and wildlife, as their main concern. The CSE, however, highlighted environmental risks faced by poor people in India at a time when livelihoods were being challenged by the decline in traditional biomass-based rural economies and when industrialisation was growing. Agarwal communicated these views widely by editing the CSE journal, *Down to Earth*, which included a supplement for children known as the *Gobar* (or Cowdung) *Times*. Much of the writing was translated into Hindi, Kannada and other Indian languages.

The approach adopted by Agarwal and the CSE began to influence wider debates about the meaning of 'sustainable development'. His reports on *The State of India's Environment*, written with colleagues at the CSE from 1982, challenged the elitist basis of environmentalism, and sought to portray the environment as a political problem partly reflecting international and class-based divisions of power and wealth. Analysts have described this approach as 'red-green environmentalism' – which acknowledges both resources and livelihoods – rather than just the 'green' approach, which highlights conservation alone. Agarwal also believed that orthodox development thinking was wrong to place faith in rapid economic growth as the chief means of achieving social development. He proposed that a new concept of 'gross nature product' should replace 'gross national product' in order to express the impact of growth on environment and livelihoods. Agarwal was also sensitive to the roles of women in protecting resources, and in being vulnerable to environmental hazards. He argued that poverty and environment are interrelated, but that poor people were commonly more protective of resources than commonly thought, and that economic policy should be tailored more closely to address poverty.

Because of such writings, both Agarwal and the CSE quickly developed international reputations. From 1983 to 1987, Agarwal chaired the Environmental Liaison Centre International (ELCI), a Nairobi-based network of environmentalists. His work was reported in the England-based *New Scientist* and *Economist* magazines, as well as the broadsheets, *Le Monde* (France) and *Asahi Shimbun* (Japan). In 1986, the then Indian Prime Minister, Rajiv Gandhi, invited him to address the Union Council of Ministers, and honoured him with the Padma Shri Award. Agarwal was later asked to address all twenty-seven Parliamentary Consultative Committees in India to educate MPs about his concerns, and to initiate discussions to identify

solutions. In 1987, he was elected to the Global 500 Honor *Roll* of the United Nations Environment Programme.

Much of Agarwal's writing included a critical stance on environmental science, and especially statements that blamed poor people for causing environmental degradation. Instead, he urged a more holistic appreciation of the social and political conditions that make environmental changes problematic, and how proposed solutions may aggravate social injustice. Describing the oft-cited belief that upland deforestation causes lowland flooding in the Himalayas, for example, Agarwal argued that the phenomenon of floods was caused by various factors including lowland water demand, rather than simply deforestation in the uplands. Consequently, policies need to consider how resources (and access to resources) have changed, and for whom, rather than apply simple mechanistic controls on water flow or forest use. He wrote in *Down to Earth* in 1987, 'Floods and shifting of river courses is ... inevitable. Deforestation can aggravate the problem but afforestation cannot get rid of it. Embankments and dams have become an important cause of floods. We need better flood plain management, rather than flood control.'

This criticism of popular scientific statements, and concern about social justice also affected Agarwal's work in international environmental politics. In one of his most famous works, *Global Warming in an Unequal World* (co-authored with Sunita Narain in 1991) Agarwal criticised the tendency for some analysts to assume that anthropogenic climate change should be addressed by controlling deforestation in developing countries. In particular, Agarwal and Narain condemned a report issued by the Washington DC-based think-tank, World Resources Institute, which allocated national responsibilities for greenhouse gas emissions based on an index largely dependent on current rates of deforestation and methane emissions from wet rice and livestock. The report put the three developing countries of Brazil, India and China among the top six emitting countries.

Agarwal and Narain contested the report on various grounds. First, the report was based on total national emissions, rather than on per capita emissions, which, of course, were smaller in developing countries than in developed countries. Second, the index used highly simplistic estimates for both deforestation and methane emissions. For example, estimates of wet-rice methane emissions were extrapolated globally from Italian figures; deforestation was treated uniformly, with no distinction made between export-led logging and smallholder food production; and no account was taken of the impacts of vegetation that might replace forest. Third, the index focused chiefly on current tropical deforestation, and did not consider historic deforestation in developed countries (which is important as greenhouse gases can exist for many years). Fourth, and perhaps most importantly, the

index did not refer to questions of social justice in greenhouse gas emissions, such as acknowledging that much deforestation in developing countries may occur because of poverty and food production, whereas in developed countries burning fossil fuels may be linked to affluence. Agarwal's and Narain's criticisms of this index were a watershed in international environmental politics, and demonstrated that scientific reports about environmental problems should not be considered politically neutral, but contain deep political implications about which activities are considered damaging or not, and which countries or people may be considered responsible. Agarwal worked on this theme during the approach to the 1992 Rio Earth Summit (the United Nations Conference on Environment and Development), by advising both the Indian Prime Minister, P.V. Narasimha Rao, and the former Tanzanian President, **Julius Nyerere**, at the South Centre in Geneva, and by joining India's official delegation to the Rio conference. The Rio Summit contained much discussion of sustainable development, and facilitated the signing of the United Nations Framework Convention on Climate Change, and Convention on Biological Diversity.

Agarwal's work after Rio involved a new attention to urban environmental problems, and to the justice of economic globalisation. In particular, he studied how trade and government policy can encourage the provision of clean technology to poor people in cities. In 1996, the CSE published a report on vehicular pollution in Indian cities, which blamed petroleum companies, car manufacturers and regulators and planners. The report was followed by a media campaign, and eventually by government action to phase out polluting cars. In a typically acerbic editorial in *Down to Earth*, Agarwal wrote (1996):

The western economic dream is a toxic dream. And don't listen to the typical tripe from Indian scientists and officials that India's consumption and production of toxic substances per capita is zilch compared to Western countries. This is utter scientific nonsense trotted out to make you apathetic. It is the exposure levels that matter, which can be very high in India, because of among other causes, high pesticide residue in our food and low quality of drinking water.¹

Agarwal wrote a series of editorials and writings urging greater global democracy in how environmental problems were solved, and in the processes of globalisation. For Agarwal, it was unacceptable that trade should be used as a means to control environmental misbehaviour by richer countries when poorer countries who suffer pollution or rising sea levels because of these richer countries cannot impose trade sanctions. Yet, globalisation

– if conducted with attention to political conflicts and alliances between campaigners in North and South – could also bring opportunities for strengthening the political role of developing countries in international affairs.

Following some of his earlier writings, Agarwal and the CSE also continued to seek ways to demonstrate decentralised rural governance via village communities. Under a campaign entitled ‘Making Water Everyone’s Business’, the CSE supported experiments in water harvesting and land management in Sukhomajri in Haryana, Ralegan Siddhi in Maharashtra and the Tarun Bharat Sangh in Rajasthan. But despite these actions, Agarwal was criticised by some for offering only muted support for the Narmada anti-dam movement in western India, and for allegedly losing some of his initial radical stances by becoming an adviser to the state, thus raising the question as to whether it is possible for a recognised environmentalist to remain radical. Many did not share these criticisms. In 2000, he was given an Environment Leadership Award from the Global Environment Facility – the multilateral funding agency for global environmental problems. In 2001, the Government of India bestowed on him the Padma Bhushan Award, a status reserved for people who have performed distinguished service of a high order to the nation.

Anil Agarwal died in 2002 at just 54. He had experienced a long battle with cancer, and had written about cancer care in India as another example of inadequate attention to social welfare. He left an important legacy through the creation of the CSE, and his personal writings pioneered current thinking about poverty and environment and the hidden politics of environmental scientific assessment. Agarwal made it clear that local questions of environment in developing countries were inherently linked to international political economy, and argued that creating knowledge about environmental problems should not be left to experts in developed countries. He also achieved these aims through establishing a system of campaigning and communication that both harnessed and educated many in poorer countries. Anil Agarwal was one of the most influential thinkers and writers on questions of environment and development because he fought to increase the representation of poor people in both the definition and solution of environmental problems.

Note

1 From online source: <http://www.cseindia.org/aboutus/anilji/anilji-book2.htm>.

Major works

- Agarwal, Anil (1982) *The State of India's Environment: A Citizens' Report*, with Sunita Narain, New Delhi: Centre for Science and Environment.
- (1989) *Towards Green Villages: A Strategy for Environmentally Sound and Participatory Rural Development*, with Sunita Narain, New Delhi: Centre for Science and Environment.
- (1991) *Floods, Flood Plains and Environmental Myths*, edited with Sunita Narain, New Delhi: Centre for Science and Environment.
- (1991) *Global Warming in an Unequal World*, with Sunita Narain, New Delhi: Centre for Science and Environment.
- (1992) *Towards a Greener World: Should Global Environmental Management be Built on Legal Convention or Human Rights?*, New Delhi: Centre for Science and Environment.
- (1997) *Homicide by Pesticides: What Pollution does to our Bodies*, edited, New Delhi: Centre for Science and Environment, State of the Environment Series 4.
- *Down to Earth*, journal published by Centre for Science and Environment, <http://www.downtoearth.org.in/>.

Further reading

There are, to date, no books specifically describing the life of Anil Agarwal, but information about his life can be obtained from the publications and websites of *Down to Earth*, and the Centre for Science and Environment (CSE), and the obituaries below.

CSE: <http://www.cseindia.org/>

CSE official biography: http://www.cseindia.org/html/au/_Hlt70072329_Hlt70072330aBM_1_BM_2_nilji/anilji.htm

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Tim Forsyth

ELMAR ALTVATER (1938–)

As a representative of the school of Critical Political Economy, Altvater has analysed the limits of the dominant (capitalist) mode of production studiously and creatively. He stresses tirelessly that Fordist production structures and patterns of consumption cannot be translated into a universally applicable avenue for social development of all. Unusually among social scientists, he has opened himself to basic natural science laws in searching for viable explanatory models for a future-oriented social development. He insists that the entropy principle sets limits.