

World Bank policy to add ecology to economics

- Environmental protection to gain priority
- Past errors will not be repeated

Washington

THE World Bank has finally conceded to its critics and promised to give higher priority to environmental protection in its lending policy. "Sound ecology is good economics", said the World Bank president, Barber Conable, in a speech announcing the establishment of a top-level environment department employing 60 people within the bank, alongside four regional technical departments and a series of conservation programmes.

The bank, with annual loans of \$12,000 million, is the world's largest source of finance for development projects in the poorer nations. Bank policy has always been that its "decisions to lend must be based exclusively on economic considerations". But pressure to change has grown after some of its large projects had unforeseen effects on the environment.

Most criticized of all was the massive Polonoreste project in Brazil, which provided loans to pave a highway through the tropical forest into the province of Rondonia. The project was intended to open up the forest to thousands of poor farmers. But according to José Lutzenberger, an agronomist based in Porta Allegre who has become the scheme's most noted critic inside Brazil, "their farming methods were unsuitable and the soil was poor. After a few years, many had to sell their smallholdings and move on, even poorer than when they started. Behind them came speculators and big timber companies." Their activities have triggered worldwide concern for the fate of the Amazon's rain forests. Conable himself now concedes that "the bank misread the human, institutional and physical realities of the jungle". Part of the loan was interrupted because Brazil failed to set aside promised reserves for indigenous peoples and for wildlife.

Many other bank projects have been attacked for failing to take their social and environmental consequences into account. In India massive planting of eucalyptus trees has often turned out to be unsuited to local needs, while a \$840-million power station project at Singrauli produced conditions described in US Congress testimony as resembling the "lower circle of Dante's Inferno". And in 1985, the bank funded a cattle development project in Botswana, despite the failure of similar projects, that helped turn grassland into desert.

According to Conable, past errors are

not to be repeated. "If the World Bank has been part of the problem in the past, I intend to make it a leader for finding solutions for the future", he said. A five-year project on environmental threats to 30 of the most vulnerable developing nations will be carried out to prepare a "natural resources balance sheet", so that resources such as topsoil and grass cover, water and "drainage and human skills and traditional lifestyles" can be entered into economic assessment.

At the same time, the bank intends to design a continent-wide initiative against desertification in Africa, to double annual lending to forestry projects, to participate in global programmes to conserve tropical forests, and to explore the possibility of a cooperative project to clean up the Mediterranean.

On a smaller scale, the bank has recently begun to back reserves in Brazil where natural forest products, such as Brazil nuts and rubber, can be sustainably harvested from the forest. Some half a million people in the Amazon basin live by extracting native rubber, but their needs have been largely ignored in development plans.

Environmental groups have warmly welcomed the bank's new policies but find it hard to believe that they are really being given all that they had been demanding for years. One cause of suspicion is that the changes are part of a much wider reorganization of the bank which Conable is having difficulties in carrying through effectively. He intends to reduce staff, and to eliminate levels of bureaucracy to produce a more flexible institution.

Bruce Rich, senior attorney at the Environmental Defense Fund, an organization that has persistently criticized bank policies, questions whether the new department will be created by "shifting dead wood, rather than hiring people trained in natural sciences, ecology and anthropology". If so, he says, "it would be better to have no new department but hire 50 scientists and call them economists". A deeper worry is that the policy changes may be being made primarily to pacify US environmental groups, many of which have their offices within a mile of the bank's Washington headquarters, and will have little effect on loan conditions. Rich insists that environmental groups in the borrower countries must be involved in project planning.

Alun Anderson

Applications for new superconductors are on the horizon

Washington

PRACTICAL uses of the new superconducting ceramics may be much closer than even the most enthusiastic physicists had guessed. Scientists at the IBM Research Division in Yorktown Heights announced on 11 May that they had succeeded in growing a single superconducting crystal, in the form of a thin film, and that it can carry a hundred times more current than the sintered powders made in laboratories previously. The measured current capacity, greater than $100,000 \text{ A cm}^{-2}$ at the temperature of liquid nitrogen, is enough for many large-scale applications, including power transmission.

With higher critical temperatures, greater resistance to magnetic fields, and now the prospect of higher currents, the new materials seem to have the old liquid-helium-cooled superconductors beaten on all counts. Many problems remain to be solved in making usable cables from the brittle ceramics, but materials scientists differ only in their expectation of how long this will take. Dr Praveen Chaudhari, IBM's vice-president of science, says that they chose to make thin films chiefly because they were familiar with the technique and knew how to make high-quality crystals. His research group has ideas for increasing critical currents still further, and for growing bulk crystals of the same standard.

The IBM scientists also cooled their sample to liquid-helium temperature, and measured a current of $2 \times 10^6 \text{ A cm}^{-2}$; this fell to $1 \times 10^6 \text{ A}$ at a magnetic field of 1 Tesla, then fell off more slowly at higher fields. The magnetic properties of the new superconductors have not been studied in detail, but these first measurements suggest that there is no fundamental obstacle to building high-field magnets.

The currents demonstrated by IBM are comparable to what is now attained in niobium-titanium magnets cooled by liquid helium, so this new discovery will profoundly affect the argument over whether to build the Superconducting Super Collider (SSC). High-energy physicists who support the SSC are anxious to get started, and point to the decades of work that were needed to construct the first generation of superconducting magnets, used in the Fermilab Tevatron. But with so many laboratories and so much commercial interest focused on superconductors, development is proceeding rapidly and unpredictably, and it will be hard to persuade Congress to spend billions of dollars on what many now think as outmoded technology. David Lindley