

That's the limit

Roger Higman, Environmental Limits Co-ordinator, reminds us that the lives of human beings depend on the natural world and the conditions it creates, not on economic theories



Sixteen miles north of Tuscon, Arizona, between the Catalina and Tortolina Mountains, lies a massive glass pyramid with a big story to tell for all humankind.

Biosphere 2 was the brainchild of Texan millionaire, Ed Bass. The idea was to create a self-sustaining environment that could meet all the needs of eight Biospherans for two years – at a cost of \$200 million. The designers built a huge greenhouse containing living areas, farming land, a mini tropical rainforest, a bit of desert and an ocean with coral reef. Leakage from the atmosphere to the world outside was as low as 10 per cent a year.

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However, the experiment went horribly wrong. The farming land was furnished with an extremely rich soil. Rice yields were as good as the world's best, but soil microbes in the humus had a field day. They multiplied, taking oxygen from the atmosphere and converting it to carbon dioxide. Oxygen concentrations fell to levels normally found at 17,500 feet and more had to be pumped in from outside to allow

the occupants to breathe. Meanwhile, nitrous oxide levels got high enough to impair the brain. Nineteen of the 25 vertebrate species and all the pollinators in the Biosphere died out. The inhabitants suffered plagues of cockroaches and were forced to spend hours cutting back runaway vines.

A scientific review of Biosphere 2 by J E Cohen and D Tilman in 1996 concluded that: “there is no demonstrated alternative to maintaining the viability of Earth. No one yet knows how to engineer systems that provide humans with the life-supporting services that natural ecosystems produce for free. Dismembering major biomes into small pieces, a consequence of widespread human activities, must be regarded with caution. Despite its mysteries and hazards, Earth remains the only known home that can support life.”

Biopshere 2 clearly demonstrates our dependence on the natural world – and the processes by which it continually recreates conditions that are favourable to life. This dependence, which is self-evident to many, is unfortunately not evident to trade negotiators and big business lobbyists. Their thinking is dominated by economic theories that take no account of nature.

This creates conflicts as Eve Mitchell demonstrates on pages 16–17. Trade dogma says that human well-being is maximised if trade is free. Yet if we are to safeguard the benefits that

nature brings us we need effective rules to control its use. Too often trade negotiators see the rules set up to protect nature's bounty as barriers to free trade.

Ironically, rural people in poor countries who are supposed to benefit from trade liberalisation often suffer the most from its effects. More than one billion people depend directly on forests for at least some of their needs – food, fuel, forage, materials or medicines. Fish, mainly wild-caught, is the principal source of protein for 20 per cent of the population of Asia and Africa. If trade liberalisation leads to deforestation and over-fishing, the poor will hurt first.

We will all suffer eventually. If trade liberalisation impedes action to stop climate change, we will all suffer very soon. But if we respect nature's limits, we can continue to enjoy its bounty for millions of years.

Biosphere 2 is currently up for sale. Our world is not.

Environmental limits

This is a key theme in Friends of the Earth's five-year strategic plan. It focuses on humanity's dependence on nature and the need to respect nature's limits – globally and nationally – in terms of climate, biodiversity and resource use.