Last year the Lancet published one of the most controversial papers that has ever appeared in that journal (King 1990). Although the controversy centred round the ethical dilemmas of the demographic trap, its main purpose was to break the taboo on discussing the trap at all, and to encourage aid agencies to adapt their policies to it. The resolution of ethical dilemmas is a social process of balancing competing premisses, and unless the taboo is broken, this cannot be done for the trap. An accompanying editorial quoted the paper as saying that, for communities deep in the demographic trap “such . . . measures as oral rehydration should not be introduced on a public health scale since they increase the man-years of human misery, ultimately from starvation”. Subsequently this has sometimes been misinterpreted as meaning all health measures rather than particular ones. The Times carried a headline “Doctor says let sick children die”, but although there was no popular debate in the United Kingdom, nor yet any significant academic one, this was not so in Sweden or the Netherlands.

The Demographic Trap is a Disorder of “(Eco)sustainability”

Sustainability has several meanings, two of which are commonly confused. It can mean “able to be maintained or continued”, for example, “the sustainability of a health programme after the donor agency has left . . .”. The important new meaning of sustainability is “able to support life in quantity and variety”, for example, “a community has exceeded the (eco)sustainability of its agricultural land so that it will no longer support them and the community starves”. To avoid confusion this new meaning should be distinguished as “ecosustainability”. Theoretically, both meanings ultimately converge, because if something is to be continued for long enough, it has to be ecosustainable.

“The trap” may be considered as it affects an isolated community and the global community.
An Isolated Community

All communities in the process of modernising start their demographic transitions with high death rates and high birth rates, and low and more-or-less stable populations – they are in the “trap open” stage; few such communities now remain. As soon as the death rate in a community starts to fall and its population starts to rise, the “trap is set”. If it is lucky its birth rate eventually falls to match its death rate, it escapes out of the trap, and it is left with a stable but now much larger population. It has successfully completed its demographic transition, as have all communities in the industrial world.

Unfortunately, a community can only remain in the “trap set” stage for a limited time. If it stays there too long because its birth rate does not drop to match its death rate, its rising population eventually outgrows and destroys its biological support system (ecosystem), and its death rate starts rising; it has entered the “trap closing” stage. As the trap shuts people either die where they are from starvation, or flee as ecological refugees, as has happened recently in parts of Ethiopia and the Sahel, where communities have exceeded the ecosustainability of their farm land.

The critical point in this model is that which divides the “trap set” from the “trap closing” stages, since this determines whether a community will progress towards a demographic transition or towards starvation. It is the point at which “ordinary family planning” is too late to prevent death from starvation; from then on this can only be prevented by the “extraordinary family planning” of one-child families. This point has been shown here as that at which the death rate starts to rise, as is already happening in several developing countries. There is presumably also a point (not shown) at which, due to the demographic momentum of a community, even one-child families are too late.

The Global Community

The opposite extreme to an isolated community is the whole world and the global food supply. UNFPA (1991) reports that the world’s present population of 5.4 billion will probably double and could triple. Future projections are continually being revised upwards, so that it is now following the United Nations “high variant” and is expected to reach 8.5 billion by 2025.

Unfortunately, Brown (1991) reports that the world’s farmers are already having increasing difficulty in feeding us. Global per capita grain production, having risen for many years, has now started to fall. Most of the land that could usefully be cultivated has been; the cultivated area per head is steadily falling and will only be a tenth of a hectare by the year 2000. The main hope for more food lies in increased yields, and although the global average grain yield is only about 2.5 tonnes per hectare, whereas the most productive countries produce about 7 tonnes, there are major constraints on increased productivity, particularly a shortage of water and the deterioration of the soil. A further threat is that global warming is more likely to impair than to improve productivity.

If there is little hope for much more food, and there are certainly going to be many more people, those who eat the most are going to have to eat less. An intake of 2000 kcal per day requires about 200 kg of grain per year. The UN Subcommittee on Nutrition (1991) reports that the world now produces