

Strategies for Population Control

Population size of humans imposes a limit on our ability to preserve the environment. If the population is sufficiently small, almost all natural resources can be enjoyed freely; but as population size grows, our ability to conserve declines. Unfortunately, whereas fertility falls in most species of higher animals when they are subjected to crowding, in Man it does not. The human response — migration — has spread modern Man across the globe, so that our overcrowded world now challenges us to control socially what is not controlled biologically.

This need has encouraged many attempts to limit population. These attempts have included social and legal pressures to limit family size, the encouragement of chastity and late marriage, financial inducements for sterilization, and the distribution of free or cheap contraceptives. The overall effect of such attempts, while not negligible, has been disappointing.

Differing Social and Individual Goals

One reason for this disappointment is the perennial conflict between social and individual goals. The need for a nation to limit its population and improve its economy may be evident to those who guide it. But the imposition of what may seem to them necessary measures may be felt, by the individuals affected, as oppressive. Goals that are imposed in an authoritarian way, by legislation or by admonition, have mixed effects on any population which enjoys some freedom of choice and in which individuals may see their interests in different ways. A minority may internalize the social goals presented to them: if cars are deprecated, they take to bicycles; if alcohol is denounced, they refrain from drinking it. But many would rather evade what they experience as deprivations: the motorways remain crowded and, as the experience of prohibition in America showed, alcohol continues to be consumed.

In the same way, when a one-child family is demanded by the state, women may choose to suffer hardship in order to bear additional children in secret, or families may corrupt officials or otherwise defy the law.

Birth-rates have fallen in the West not so much because of social compulsion as because the long-term growth in prosperity has offered individuals attractive alternatives, as well as increasing their freedom to choose between options. Consumer goods, the enjoyment of leisure, or engagement in a career, have competed with child-bearing. The growth of the economy created these options; advertising and the spread of information made them generally known, and birth-control technology developed to meet the need.

Offer Alternatives to Child-bearing

Population control in the developing world cannot wait for future economic development to offer the same choices. Effective measures are needed now: rather than compulsion or exhortation, what is required is an analysis of the motivations for bearing children in each society and group, and the *creation of alternatives* that are attractive to individuals in that society. Members of the society should encounter attractive choices whose side-effects help to limit population. For example, a common reason for excess fertility in the developing world is the desire to have children as an insurance against adversity in old age. This anxiety reflects the lack of any social provision for old age in most developing countries. Such countries often do not have the resources to offer this benefit universally, and so citizens feel they have no choice but to rely on an adequate number of children to safeguard their future.

Consequently a social measure which would help to reduce the desire for large families, and which would be within the resources of many states, would be the provision of state support for a limited class of the old, namely those who have not born or fathered more than two children in their lifetimes. Citizens would then have a choice: either to rely on a larger number of children for support when they are old, or to limit their families so as to ensure that they will have access to the state safety-net if their children should fail them or die. This is a choice which they would have to make in their fertile years.

Such a measure might be introduced as a step towards the staged provision of universal benefits, as and when the state can afford them.

Conditions for Success

For such a measure to be successful, a number of conditions must be met. The option must be popularized and familiar, and must be seen to work. The state must seem stable and its promises reliable, and it should have the organizational resources to monitor the fertility of individuals. Family limitation should not be made to seem a deprivation but a choice with positive attractions: for example, the advantages to children coming from small rather than large families, in better health, with greater chances of survival, better educational opportunities, and eventual greater earning-power, should be stressed. The power of radio and television can be used to show 'soap operas' of families making such choices and benefiting from them.

Other social obstacles to family limitation, such as the preference in some societies for male children, could be considered in the same way — that is, in terms of devising socially acceptable, family-limiting substitutes for a traditional choice.

In short, it is not sufficient to decide on overall social aims alone, important though they are. Attempts to impose them against underlying resistance are never completely successful. They must be translated into choices that individuals in the society involved will wish to make. To achieve this the special knowledge and skills of anthropologists, sociologists, and psychologists, will need to be called upon.

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Dr F. Raymond Fosberg, 1908–93

With the death of Ray Fosberg in Church Falls, Virginia, on 25 September 1993, the environmental movement as well as taxonomic botany lost an outstandingly able and dedicated exponent and we ourselves mourn a staunch and loyal friend of more than fifty years. He was an Advisory Editor of our Journal — after being a Consulting Editor of its predecessor, *Biological Conservation*, from its beginning in 1968 — and was a memorably active participant in all our four International Conferences on Environmental Future, which extended from 1971 to 1990.

Born on the 20th of May 1908 in Spokane, Washington, Ray was educated in the California school system before obtaining his BA at Pomona College in 1930 and subsequently an MS at the University of Hawaii, Honolulu, in 1935, and PhD in 1939 at the University of Pennsylvania. His positions held thereafter were: Assistant Botanist in the US Department of Agriculture (1939–42), US Cinchona [Quinine] Procurement Program in Colombia (1942–45), US Micronesian Economic Survey (1946), J.S. Guggenheim Memorial Fellow (1947), Visiting Professor, Department of Botany, University of Hawaii (1948), Research Associate, Catholic University of America (1949–50), Botanist, US Geological Survey (1950–65), and finally in the Smithsonian Institution, Washington, DC, where he was Special Adviser for Tropical Botany, Curator of Botany, and Senior Botanist (1966–78) before becoming Emeritus Botanist in 1978.

Those are the 'bare bones' of a career which may sound prosaic but actually was markedly the opposite: for Ray

was a vigorous producer of scholarly works and an outspoken battler for what he believed to be right — to the extent that in some quarters he was apt to be referred to as 'fighter Fosberg'. Thus according to the *New York Times* (29 September 1993) he 'published more than 600 papers on plant classification, plant distribution, ecology and conservation, and contributed to many scientific books. He was also co-Editor of *The Flora of Ceylon*, of which eight volumes have been published. He was the Founder and Editor of the *Atoll Research Bulletin*, a forum on island biology published since 1951. He was a Founder and Board Member of the Rachel Carson Council and helped to found the Nature Conservancy...'. To quote Professor David R. Stoddart in an appreciation of which he kindly sent us a copy, the '*Atoll Research Bulletin* will stand as one of Ray's chief memorials, not only for the information it records but for the way it has served to codify and institutionalize the emergent discipline of coral reef island studies during Ray's professional life.'

In these times of widespread instability, media domination by 'the media', and reverence for material gadgetry and money, it is interesting to cogitate that in the long run it is probably the kinds of things which Ray instituted and persisted with that really matter, and so if one is looking for signs of greatness, one should probably look for them among such dedicated innovators as our unforgettable friend Ray Fosberg.

NICHOLAS POLUNIN