

Humans – a threat to humanity

Humanity is but a blip on the time-scale of life on earth. But that blip is all that we have, and our present global course guarantees its extinction. What are the realities? Why should the situation be of interest to medical practitioners and what should we be doing?

In his one-man mission of lectures and movie 'An Inconvenient Truth', former US presidential candidate Al Gore has shaken the world to the reality and catastrophic effects of global warming. He was not the first with this message, but he has used his formidable communication skills and energy to spread it globally and persuasively. Some have dismissed his message, citing the historical warming and cooling of the surface of the earth.

Two centuries ago Thomas Malthus was proclaiming another message. He propounded the theory that the population would continue to outstrip the available food supplies. His remedy was stern limits to human reproduction. Charles Darwin had read Malthus' *Essay on the Principle of Population* and recognised a weakness in that it had not been determined to what extent humans could increase their supply of food by putting sufficient resources to work. The theory did, however, apply to plants and food that could not be increased artificially. Unless they remained in balance, mortality would be very high.

Sky-high oil prices signal that the world's oil supplies are no longer meeting demands. South Africans were at first little inconvenienced by higher petrol prices and have felt buffered by seemingly endless coal reserves and our own coal-to-liquid manufacturing by Sasol. Until the energy crunch hit us! Blackouts disrupting industry, mines, farms, business and every other aspect of our lives have become a sorry routine. The causes are varied and well known, but the present situation gives us a foretaste of life with dwindling resources.

But like increasing our food supplies, can we humans not solve the energy problem by artificially producing our own renewable biofuels? This is already a huge business in Brazil, is making headway in the USA and is being pushed in South Africa. Take virtually any crop: sugarcane, mealies, sunflowers, soybeans, grasses, etc., produce it in vast quantities, and turn it into liquid fuels for burning in cars, generators or anything that is powered by combustion. Neat solution! Except for a few inconvenient truths, such as: it also contributes to global warming, adds to demands for irrigation water in our increasingly dry country (and planet), burdens the world's strained ecology with the effects of yet more fertilisers and pesticides, and causes steeply rising food prices and further loss of biodiversity.

Answers to the question of how many people can live on earth are neatly explained by Martin Desvaux.¹ In the million years before 8000 BC the prehistoric hunter-gatherer

population grew from 100 000 to 7 million people at an average of 7 people per year. The development of agriculture and domesticated animals in the Neolithic transformation phase enabled the population to grow to 500 million by 1600 AD, a growth rate 165 times faster than in the prehistoric period. The development of science and engineering in the 18th century led to the industrial revolution and the third phase of population growth that has had the most severe impact: an 11-fold increase to over 6.7 billion in just 250 years.

The population growth impact on the environment has been expressed by the equation $I=PAT$. This states that the impact on the environment is directly proportional to population size (P), 'affluence' (A) (defined as the resources a population consumes and wastes), and technology (T) through prolonging life, producing things more quickly and cheaply (which feeds back into consumerism and affluence) and growing food faster (which feeds back into 'population').

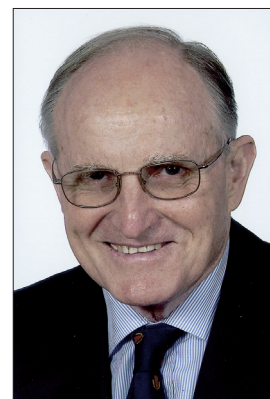
Between 1980 and 1990 the world crossed the sustainability limit and by 2003 had progressed into 'unsustainable space'. If everyone lived with an average European Union lifestyle, the world would only sustain 2.2 billion people; an American lifestyle could only sustain 1.2 billion. But the UN predicts that by 2050 the world population will exceed 9 billion!

Without a serious international attempt to bring the world population back to sustainability, the earth will become increasingly depleted of biological resources. Rich nations will want to retain their comfortable lifestyles that predict an enormous increase in poverty and catastrophic population crash in poorer countries. The price will be extensive human suffering through resource wars and starvation.

The only effective solution is for politicians to grasp the nettle and to lead their nations to accept the necessity of – and provide the means to have – smaller families. The stark realities of the potential of the world's worst population crash in history also require the re-examination of religious and other beliefs.

Medicine can assist in this objective, as achieving it is not rocket science. Desvaux's quote from Spike Milligan is witty and wise: 'Contraceptives should be used on every conceivable occasion'.

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1. Desvaux M. The sustainability of human populations: How many people can live on earth? *Significance* 2007; September: 102-107.