

COMMENT

## **'The Limits to Growth'**

WITHOUT FOSSIL FUELS, ANY country can support only about 4 people per hectare of arable land. That puts many countries at well beyond the maximum sustainable size. What is going to happen to the excess population between now and the year 2030 (when oil production will be down to half of its present level)? Answer: either emigration or starvation.

The post-oil world will be much grimmer than the optimists imagine, and that is partly because they are not looking at the big picture. Hydrocarbons are the entire substructure of modern society. Electricity comes largely from coal or natural gas. The energy for mining comes mainly from diesel fuel, or it is transmitted through electricity. So without fossil fuels there will be no electricity, and without those same fossil fuels there will be no metals.

If the present growth trends in world population, industrialization, pollution, food production and resource depletion continue unchanged, the limits to growth on this planet will be reached sometime within the next one hundred years. The most probable result will be a rather sudden and uncontrollable decline in both population and industrial capacity.

Whatever faults one may find with 'The Limits to Growth' (and there are many), the growth trends did in fact "continue unchanged", and more recent projections of future history often match that of 'The Limits to Growth'.

Since the decline of the present civilization will be marked by a loss of fossil fuels, followed by a loss in both metals and electricity, there may be no point in preserving the knowledge of subjects that only make sense when they are supported by present technology. For example, there is little point in transmitting the vast amounts of data that constitute modern medicine if the requisite medications and machinery will no longer be available. For that matter, one might even ask if there is any point in describing how to build a simple cart or wagon if the technology for creating a set of wheels is no longer there.

To deal with peak-oil preparation, one must also make some clear choices about the subject matter: the who, when, and where. There are far too many variables in future history. For a modern executive, peak-oil preparation means adding solar panels to a 20-room lakeside cottage. For that same executive's grandchildren, it will mean scavenging and thievery. □□□