

## The environment battle

that cannot fail to damage their futures in the longer term.

Because the UNEP Report is a review of what happened during the 1970s, it does not have anything really new to tell us: by mid-1982 most important environmental news has found its way into the press somehow. What it does offer is informed analysis and evaluation. Here it differs to some extent from previously published material, and may indeed challenge — or at least modify — some widely accepted public beliefs.

For example, the world press has for some years been full of reports of pollution of the seas. "This review suggests," says Chapter 17, "that on the global and regional scale fisheries and marine ecosystems have not yet been damaged significantly by pollution. Certainly such unambiguous proof of acute damage as exists is highly localized — around oil refineries and industrialized estuaries, bays and coastal zones where numbers have been reduced and many species eliminated. Even land-locked and contaminated seas like the Baltic or Mediterranean show no decline in marine productivity. Oil production is a nuisance, a bird-killer and a threat to coastal shellfish and tourism and it has grown during the decade but cannot be proved to have had any serious impacts on a wide scale."

### Some cautionary notes

This sort of statement, while based on the facts, did not go down very well with some scientists who attended a UNEP workshop to discuss a preliminary draft of the book. Therefore cautionary words were included.

"Yet many marine scientists," Chapter 17 goes on, "feel uneasy about taking such negative evidence at its apparent face value. They argue that even if concentrations are low, the contamination of the sea is increasing: that chronic effects could appear slowly but then be virtually irreversible, and that the most stringent precautions are therefore essential. In the present state of uncertainty there are good reasons for treating such arguments with respect, and for sustaining monitoring and research."

The *Global 2000 Report to the President* spoke of a "progressive degradation and impoverishment of the Earth's natural resource base," and indeed the layman has been led to believe in recent years that the planet's minerals may soon be exhausted. UNEP's report says: ". . . in an absolute sense, the Earth cannot 'run out' of mineral raw materials since mankind's use of them shifts them from place to place, rather than destroys them." The book emphasizes three crucial points: "that it is the quality and accessibility rather than absolute quantity of mineral reserves that matters; that it is often uneconomic to prove the existence of recoverable reserves for more than 30 years ahead; and that the proportional use of one mineral rather than another or the balance between recycling and extraction from the ore depends on economic and political factors rather than any crude notion of absolute availability or exhaustion."

Because major investments in energy or industry have to be planned over a long time-scale, because this time-scale may exceed the period for which it has been considered necessary to prove reserves, and because it may vary in the case of alternatives (such as nuclear power and fossil

fuel), national planning is becoming increasingly essential, the report says.

### That "ozone layer"

Changes in the ozone layer of the atmosphere as a result of man's activities were another area of concern during the 1970s. We were told that the chlorofluorocarbons from spray cans and refrigerators and other sources could deplete the ozone layer, thus allowing more ultraviolet rays to get to the earth's surface, which in turn could increase the incidence of skin cancer and produce other harmful effects.

UNEP's report says that if this has happened, there is no instrumental evidence of it. Here again, however, caution is necessary in accepting what is essentially negative evidence: to say that man's instruments cannot detect any change in the ozone layer is not to say that no change has taken place. It simply means that any that might have occurred would have been too small for present instruments to detect.

### Acid rain

Canadians will be able to take little comfort from the Report's findings on acid rain. Their chief quarrel with the United States in recent months has been that government's tendency to delay preventive action and deny responsibility for acid rain in Canada on the ground that all the evidence on the causes of acid rain is not yet in.

UNEP's report, while acknowledging international concern about acid rain, particularly in Scandinavian countries and North America, could be interpreted as agreeing with the U.S. view of the evidence. For while the Report acknowledges that, at least in "two considerable areas the reality of the phenomenon is firmly established," and while it outlines some of its harmful effects, the Report maintains that "the precise nature of any ecological impact on terrestrial systems is far from clear."

"The rate of forest growth is said to have declined by between 2% and 7% in southern Scandinavia and the northeastern United States between 1950 and 1970," says the Report, "but it is not possible to state unequivocally that this was due to acid precipitation. In one area of the United States acid rain was suspected of causing damage to young spruce trees downwind from a coal-fired power station in Ohio. Laboratory studies have shown that acid mist can damage sensitive species and that acidification of the soil can increase the rate of uptake of toxic metals. Other experiments indicate that acid precipitation can accelerate erosion of plant membranes, alter responses to disease-causing organisms, affect the rate of germination of conifer seeds and the establishment of seedlings, decrease soil respiration and increase the leaching of nutrient ions from the soil. But terrestrial ecosystems are complex, with many living and non-living components, and *no firm conclusions could be drawn at the end of the decade about whether significant damage was occurring in nature.*"

### Forests — disappearing or growing?

The destruction of the world's tropical forests has also drawn worldwide attention in recent years. This is a problem in which UNEP itself has been strongly interested. (Its location in Kenya, where the problem is acute, could have