done nothing to diminish this interest.) Its report acknowledges the severity of this problem, but it does something that has rarely, if ever, been done before: it draws attention to the "dramatically contradictory estimates" of such damage. While in no way detracting from the importance of forest destruction, the report says estimates of its extent vary from 7 to 20 million hectares a year — in other words by a factor of almost three.

"The assertions as to what has happened to the world's forest area over time are at best highly speculative," the Report declares — an observation that is interesting in the light of the large amounts of publicity those assertions have received in the world's press.

One of the reasons for this is that definitions of forest vary, says the Report, so that comparisons between studies may be misleading. Secondly, coverage by surveys "is so far incomplete and in many countries is based on very sketchy evidence." Out of 45 countries with tropical rainforests, Sommer (one author of published studies) had evidence from only 13, and Myers (another author) used data from 18. A third problem is that the term "conversion" of a forest is a matter of loose connotation. "It may signify at one extreme the selective cutting of a forest or at the other extreme the complete destruction of a stand and its replacement by culitivated agriculture or open pasture. In between these extremes a wide variety of transformations may occur."

However, while the figures are suspect, a few trends are generally agreed upon by scientists and foresters, says the UNEP Report. "Europe, the USSR, Oceania and North America seem to have enlarged their total forest areas; Latin America's areas have been decreasing; and the area of African closed forests has decreased. These figures say nothing about changes in the quality of the forests, whose measurement is impeded by the third problem of estimation."

The Report notes that many observers even go beyond the estimates and conclude that the forests of Asia will have disappeared by the end of the century or earlier, and that those of Latin America will not survive for more than 50 years.

"Such estimates," it says, "do not take full account of the afforestation programmes or the operation of technical and economic factors that affect the rate and type of cutting. Altering forests to expand agriculture (and to produce wood, fibre and energy) need not be detrimental if the fallow period associated with shifting cultivation is sufficiently long, or if the cleared area is converted to a well-managed plantation. Where the area is transformed to permanent farmland, the consequences for species diversity are catastrophic."

Salt and deserts

Desertification and salinization of soils are other forms of land destruction that receive considerable attention from the study.

"Desertification continued on a grand scale during the decade," it says. "Some 60,000 square kilometres of land wre destroyed or impaired annually as a result of severe and recurrent drought and human exploitation. Large areas of the Sudan, Ethiopia, Somalia, Senegal, Brazil, Iran, Pakistan, Bangladesh, Afghanistan and the Middle East turned into deserts. Between 600 and 700 million people were threatened by this inexorable deterioration."

The Report points out that, although the cures for desertification are well-known, and although a 1977 UN conference (sponsored by UNEP) produced an action plan to combat it, these cures had not been put into effect in much of the world by the end of the decade.

Salinization of the soil caused abandonment of about the same area worldwide as was being reclaimed and irrigated. The problem was particularly acute in semi-arid and arid regions. "Fully half the irrigated soils in the Euphrates Valley in Syria, 30% in Egypt, and more than 15% in Iran were believed to be affected by salt or waterlogging."

By 1981, estimates had been made for the losses and degradation of productive agricultural land that would take place if processes under way in 1975 continued.

"Given the trends believed to be underway in 1975-1980, the total area of high productivity cropland would, according to this projection (by P. Buringh of the Agricultural University, Wageningen, The Netherlands), diminish in the period 1975-2000 by toxification (25 million hectares) and by conversion to non-agricultural uses (75 million hectares). During the same period about 45 million hectares of high-productivity cropland would be reclaimed from forests, making a net loss of 55 million hectares in high-productivity land. Through a similar combination of shifts, including loss by erosion and desertification, the area in medium and low-productivity cropland would increase from 1,100 million to 1,455 million hectares."

Carbon dioxide

The World Environment, 1972-1982, singles out one problem as "undoubtedly the largest outstanding environmental problem confronting the world at the end of the 1970s": what it calls "the CO_2 question." CO_2 of course is carbon dioxide, and scientists have warned that the rise in carbon dioxide in the atmosphere from increased burning of fossil fuels could result in higher temperatures on the surface of the earth. This in turn could produce weather changes, for example changes in precipitation that might increase rainfall in dry areas, but also reduce it in currently valuable agricultural areas such as the cornfields of the U.S. mid-west. It could even, some think, melt part of the Antarctic ice-sheet, causing sea-levels to rise by five to six metres and posing serious problems for ocean ports.

"The implications of the rise in atmospheric carbon dioxide concentrations do need to be taken seriously," the Report concludes in one of its forthright statements, "especially because most national energy plans assume an increase in carbonaceous fuel combustion."

Telling what happened

Even here, however, the Report points out that major uncertainties remain. This illustrates the most extraordinary and unsettling aspect of this major study: how little science yet knows about the environmental changes that have taken place during the decade. The editors of the Report freely acknowledge this lack: "The world community," they state, "has not yet achieved one of the major goals of the Stockholm Conference — the compilation, through a global programming of monitoring, research and