

NOTES, NEWS & COMMENTS

Resolutions from the Workshop on Forest Decline and Reproduction: Regional and Global Consequences

During recent years, European forests have been under strong pressure from a changing environment, especially of decreasing air-quality. Since the early 1980s, a number of alarming reports have been released, and the signals from scientists have generated major concern within industry, governments, international organizations, and society in general.

Forest declines are a common phenomenon, particularly in highly-industrialized countries. Currently about 6 million hectares of forest in Europe are declining. At least 1.2 thousand million cubic metres of standing timber in Central (Eastern and Western) Europe are considered to be severely damaged by air pollutants. In this region, about 700 million cubic metres more are also affected but not severely damaged. In the Nordic countries about 700 million cubic metres can be regarded as being affected but not severely damaged. The volume in declining forests corresponds to about five normal yearly harvests in the central and Nordic countries of Europe. Recent reports from the United States, Canada, South America, Southeast Asia, and Japan, indicate increasing forest decline attributed to air pollutants also in those regions. So far, however, no quantitative estimates can be made about the extent of decline in those regions because of the limited efforts that have been made to estimate the future development and extent of such declines.

Reactions of Concern

Taking into consideration the current situation and the growing extent of forest decline, the Ninth World Forestry Congress in Mexico in 1985 appealed to all peoples and nations, and to their governments within the framework of national sovereignty, to recognize the importance of forest resources for The Biosphere and the survival of humanity, and to devote themselves to safeguarding those resources which will provide humanity with food, raw materials, energy, rural well-being, ecological protection, and 'maintenance of the quality of life'.

Many countries have already adopted measures against forest decline, including forest restoration. The International Conference on Acidification and its Policy Implications, in Amsterdam in 1986*, considered forest decline and stressed the importance of international (particularly East and West) cooperation. Such cooperation can help to obtain a consistent picture of the extent and causes of forest decline, to evaluate its long-term effects, and to identify the human responses that are required to maintain the sustainability of forest resources, the forest industry, regional forest ecosystems, and the entire Biosphere. Another major initiative was the *Silva confernece* on trees and forests which was held in France in 1986 with the objective of getting politicians to formulate policies for sound forest management.

The International Institute for Applied Systems Analysis (IIASA), situated in Laxenburg, Austria, has launched a study on the development and consequences of forest decline attributed to air pollutants and changes of climate, within the Biosphere Project of its Environment Programme, and with strong links with IIASA's Acid Rain and Dendrochronology Projects. In the framework of these activities, a Workshop on Forest Decline and Reproduction: Regional and Global Consequences was convened

with the objective of seeking a consensus about the status and knowledge of forest decline, especially in Europe. The workshop, held in Krakow, Poland, during 23–28 March 1987, was organized in cooperation with the Systems Research Institute of the Polish Academy of Sciences, Warsaw, and the International Union of Forestry Research Organizations (IUFRO), headquartered in Vienna. It was attended by some 100 senior scientists and agency representatives from East and West Europe, North America, Scandinavia, and Japan. Also, a team of experts from the United Nations Economic Commission for Europe, specializing in forest decline, met in Krakow after the Workshop. The following statements represent the major conclusions and recommendations of the participants at the Workshop.

Pollution

Forest decline is a very serious problem throughout most of Europe, and is occurring in other parts of the world such as Japan, Canada, and the United States. Declines occur both from known causes—such as pests, climatic factors, and high ambient concentrations of pollutants—and from unknown causes. The Workshop concluded that governments, industry, and the public, must take the necessary actions to reduce polluting emissions to acceptable levels. This could be stimulated by international cooperation in research and development on environmental protection and energy conservation technologies, with emphasis on facilitated and free exchange of information and technology. In addition, society in general, and the forestry community in particular, must continue to search for ways to adapt to the inevitable near-term consequences of continued forest decline caused by air pollution.

Monitoring

Most European countries experiencing forest declines have only recently started to monitor systematically the condition of their forest resources. The Workshop agreed that monitoring must be done on a unified basis, following internationally accepted protocols. Unification should include harmonized sampling, assessment, monitoring, and analysis, of the effects of air pollution on forests. The Workshop urged countries to adopt the internationally accepted protocols in their existing or newly-established monitoring programmes. The Workshop recognized the importance of additional measurements, including especially remote-sensing techniques and volume-increment studies. These programme components need to be integrated into multifactor analyses that attempt to provide early warning of impending changes and improve understanding of basic processes for forecasting and other purposes.

Research

Forest decline is a very complex and uncertain phenomenon. The Workshop identified the need for well-coordinated, interdisciplinary, systems-oriented research programmes in several specific areas including physiological and ecological cause-effect relationships, social and economic consequences, and policy responses. Such research needs a balanced combination of empirical studies and modelling efforts, including the development of early-warning systems. As both the causes and the effects of many current forest declines are regional in scale, great

* See the account, by Petra J. Mak & Said Zwerver, published in our Autumn issue of last year—*Environmental Conservation*, 13(3), pp. 277–8, 1986.—Ed.

advantage would be gained from an international set of regional case-studies, involving both East and West but with emphasis on Central Europe. Such case-studies should include analyses of how various stakeholders might react to a range of forest-decline scenarios. Support for forest-decline research should be shared among governments, industry, forest landowners, and international organizations.

Future Forest Resources

The Workshop agreed that the best way to explore possible effects of forest decline on future forest resources would be to construct consistent and complete scenarios based on a combination of explicit assumptions, forecasting models, and expert opinion. Scenario-building should be interdisciplinary—including at least climatological, ecological, social, and economic, factors—to make results of the greatest potential value to policymakers in their considerations of the future potential of forest resources under conditions of decline.

Trade and Markets

No significant regional market disturbances have yet occurred that can be attributed to pollution-induced forest decline. However, given current patterns of forest decline, particularly in Europe, future disturbances to roundwood and forest-product markets, trade patterns, and industry structure, due to forest decline, cannot be ruled out. Indeed, changes in the timber-supply situation in Europe may lead to disturbing consequences for timber-exporting nations in other continents. The Workshop concluded that exchange of information between timber producers and timber-processing industries, as well as among wood-product importing and exporting nations, should be improved.

International Cooperation

Forest decline is clearly a multinational problem in many respects, including transboundary air-pollution, policies for emission reductions, global forest-product markets, research, and resources for mitigating the problem. Therefore, the Workshop stressed the need for strong international cooperation in these areas (such as the Conven-

tion on Long-range Transboundary Air Pollution), as well as coordinated actions by governments and industries to alleviate the problem. The Workshop urged all responsible concerned public as well as private and commercial interests to join forces in a concerted effort to improve the condition of forests.

Conclusion

The forest-decline problem embraces environmental, social, and economic, implications as well as timber considerations. Therefore, the Workshop concluded that efforts to understand better than hitherto, and manage the consequences of, forest decline must deal with complete ecosystems in which Man is an integral component at once from biological, technical, social, economic, and psychological, points of view.

The Workshop also agreed that the extent and causes of forest decline are different in different regions of Europe and elsewhere, because of differences in factors such as pollutant types and loadings, forest types, climatic conditions, site conditions, and silvicultural regimes. At this time, it is possible only to deliver simple, general recommendations on the steps necessary to avoid continued and new forest decline in the future. Such recommendations must be adapted to actual conditions prevailing in specific local or regional cases of forest decline; but the knowledge required to do this is usually not available. The Workshop concluded that strong efforts must be made as soon as possible to generate this basic information for effective international decision-making.

Finally, the Workshop agreed that clear and consistent national policies related to the forest sector and to pollution, as well as international cooperation in air-pollution control measures and exchange of research and monitoring results, are required. It was recognized that IIASA is an appropriate institution to catalyse such cooperation.

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AIDS—An International Perspective

We are witnessing the beginning of a world-wide epidemic of AIDS (Advanced Immunodeficiency Syndrome) and infection with its causative agent, the human immunodeficiency virus (HIV). AIDS must now be considered a potential threat to a large number of the world's citizens, and we must respond accordingly.

When AIDS was first recognized in 1981, the disease seemed limited to a single nation and to a single group characterized by its sexual orientation. Today, while most people recognize that AIDS is occurring in many countries, relatively few are aware of the truly global scope of the problem and, sadly, many remain ignorant about the risk factors associated with HIV infection.

Reflecting 'intense international interest and concern' about AIDS, the 39th World Health Assembly, on 16 May 1986, formally endorsed the commitment of the World Health Organization (WHO) to a global strategy for prevention and control of HIV infection. In this article we propose to review current knowledge about AIDS as an international health problem and summarize the WHO perspective and plans for global HIV prevention and control.

Global Epidemiology

As of 20 October 1986, a total of 33,217 AIDS cases were reported to WHO from 101 countries representing all continents. The largest number of these reported cases, 28,592, or 86% of the total, are from the Americas. Europe has reported 3,245 cases, Africa 1,008, Oceania 317 (all from Australia and New Zealand), and Asia 55 cases.

This official case-list only reflects to a limited extent the actual scope of the current AIDS problem. Given the emotional and political climate which surrounds AIDS, we consider the reporting of even a fraction of known AIDS cases by national health authorities to express national willingness to deal constructively with the AIDS problem. In addition, insufficient AIDS diagnostic capacity and health-reporting infrastructure in many countries of the 'developing world' tends to reduce the number of reported, as compared with actual, AIDS cases.

In the Americas, 91% of cases, or 26,002, are reported from the United States where the epidemiological characteristics may be considered typical of 'Western' AIDS. The United States government estimates that between 1 and 1.5 million US residents are HIV-infected and that approxi-