Wood famine in developing nations

Reforestation becomes increasingly necessary: Members of the Forestry Research Institute of the Philippines replant bare areas of an experimental mangrove forest in Pagbilao, Quezon.

In its many forms, wood is a fundamental resource. It warms and powers most of the world's poor, and economic advancement does not reduce a society's reliance on wood. In its rawer forms, wood is the basis of most of the world's construction materials and paper products. Developed nations refine timber into more sophisticated materials such as cellophane, rayon, plastics and liquid fuels. And while the world represented in the science fiction movie *Silent Running* could relegate the planet's trees to a spaceship botanical garden, forests actually provide immeasurable ecological benefits. They protect land from erosion, hold water in the soil throughout dry periods, and serve as a home to countless plant and animal species.

However, while the areas devoted to forests in Europe and North America have increased slightly in recent years, most of Africa, Asia and Latin America are experiencing a critical shrinking of their forests. In fact, many of the world's poorer, developing nations are entering a "wood famine," says Erik Eckholm in his 64-page report on deforestation published by the Worldwatch Institute in Washington last week.

Heavily forested regions — covering at most 20 percent of the earth's land — are disappearing at the rate of 1.2 percent annually, Eckholm says. That's about 11 million hectares, an area the size of Cuba or Bulgaria.

Although timber is used throughout the world, wood shortages hurt the poor most. About half of all wood that is cut annually goes for fuel, primarily for the one-third of the world that still cooks and heats with firewood. Urban families in parts of West Africa and Central America spend 25 percent of their income for wood or charcoal.

The main culprit of deforestation is agriculture. Most farmland was once forested at least to some degree. But as populations have expanded and the need for food and grazing land has increased, forests have been plowed under. The productivity of farmlands has been declining as well (SN: 11/4/78, p. 308), and so larger and larger portions of the earth's surface are being stripped of forests.

Firewood is the second largest threat to forests; 80 percent of the wood used in developing countries is burned for fuel. But because the distribution of ample forestlands does not always coincide with the populations depending on them, local overharvesting to the point of devastation is occurring with increased frequency. In parts of India, a family member must spend two days a week foraging for the family's wood. Illegal harvesting of timber by armed poachers is being reported by Sudanese forest rangers; the wood will be marketed in the form of charcoal in urban areas. So bad are the wood shortages in Nepal and Haiti that already some peasants have cut back their diet of vegetables that require cooking, Eckholm reports. When wood cannot be found, families most often turn to burning animal dung, the only fertilizer most have to renew the soils that feed them.

This firewood shortage is expected to get much worse. John Spears of the World Bank calculates that even with optimistic assumptions that wood-conserving stoves, biogas reactors and solar cookers will be used where available, an additional 20 to 25 million hectares of wooded plantations must be planted by the year 2000. At the present rate of reforestation, that is 10 times more than will be available, he says. Regional shortfalls, of course, will be more serious. Spears speculated last October that the planting rate for the Sahelian zone of West Africa must increase 50-fold if the firewood demands for the year 2000 are to be met.

Many tropical countries export timber they could readily use because "as with other resources, buying power rather than need determines global allocation of traded products," Eckholm writes. Inflated wood prices in Pakistan due to resource shortages have caused a 500-fold increase in the price of some wood over the last 12 years. A simple board now costs twice as much in Pakistan as in the United States, Eckholm says, although the income of the average American is some 46 times that of the average Pakistani.

Paper, taken for granted in most developed countries, is also a significant drain on wood. While the annual per capita consumption of paper in developing nations is six kilograms, North American per capita use is 257 kg. "In fact, each year the average American consumes about as much wood — one cubic meter — in the form of paper as the average resident in many Third World countries burns as cooking fuel," Eckholm found.

What can be done? Solutions to aid the developing world may have impacts on the developed world. While developed nations tend to manage their resources well, they often exploit those of others. Valuable rain forests in Brazil, for instance, are being cleared so that multinationals like Volkswagen can raise cattle, Eckholm says. Cattle ranching on what were once tropical rain forests in Central America is providing steaks for American tables. The import policies of sympathetic nations could have an impact in cases like these.

But more important, he says, the ignorance and economics that have resulted in wasteful harvest practices in many of the world's poorer nations will probably change only if peasants can be enlisted to cherish and preserve the potentially renewable resource that forests offer them. He describes the recent reforestation efforts in China, South Korea and parts of India as an example of the promise "social forestry" offers. □

FDA's acceptable risk

The Food and Drug Administration plans to ask Congress to relax food-safety laws, according to an interview with FDA Commissioner Donald Kennedy in the Feb. 13 Wall Street Journal. The reasoning, Kennedy says, is that when food-safety laws were written, technology was unable to detect the minute quantities of toxic substances that contaminate or are included among additives in many foods. The risks they pose are probably small, he said, and may signal a need to devise a new regulatory concept of "acceptable risk." Among proposals being considered is relaxation of the "Delaney Clause," which now requires a ban on any food additive shown to cause cancer. But if Kennedy has his way, saccharin will not be among the substances wrested from Delaney's grip. "A good food-safety law would still require the removal of saccharin," he said, whereas the arguments for using nitrites "are much more persuasively argued." Nitrites, which may break down in the body into cancer-causing nitrosamines, give many cured meats their characteristic color and flavor while guarding against botulism. □

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