

The Spatial Polarization of Woodfuel Supply and Demand in Senegal

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Historically, technological innovation has spurred the widespread use of fossil fuels, hydroelectricity, and nuclear power in the world's industrial economies. In the developing world, however, traditional biomass fuels, especially woodfuels (firewood and charcoal), continue to be an important energy resource for a large share of the population. These fuels often constitute the primary source of energy consumed by most households, and play a significant role in meeting many commercial and artisanal energy needs as well. Globally, woodfuels account for about 53 percent of the world's total roundwood production, i.e., all rough wood destined for industrial and energy uses combined. The figures are 78 percent and 15 percent for the developing and industrial countries, respectively, and 87 percent for sub-Saharan Africa (World Resources Institute 2000, 256-57).

This study assesses the situation in the Republic of Senegal, a small West African nation highly dependent, particularly in the household sector, on woodfuel energy. Geographically, an intriguing aspect of the situation in Senegal is the marked change over time in the spatial patterns of woodfuel supply and demand. Analysis of the foci of production and consumption indicates a polarized pattern in which the former is increasingly concentrated in remote sections of southeastern Senegal and the latter in the heavily urbanized Atlantic coastal region. The discussion focuses on the environmental, economic, social, and political consequences of the spatial polarization of supply and demand of this important energy resource.

WOODFUELS IN THE GLOBAL AND SENEGALESE CONTEXTS

The relationship between woodfuel energy use and environmental conditions in the developing world has received considerable attention since the mid-1970s. Erik Eckholm, writing for the Worldwatch Institute, first described this relationship as the "other energy crisis," one of receding forests and cold hearths in the developing countries at a time when industrial nations were preoccupied with oil embargoes imposed by the Organization of Petroleum Exporting Countries (Eckholm 1975). Subsequently, many researchers have explored the subject (Smil 1980; Chatterji 1981; Bogach 1985; Agarwal 1986). Although most studies conclude that energy-related exploitation of forests and woodlands is not as significant a factor in global deforestation as is land