

INSTITUTE OF CURRENT WORLD AFFAIRS

DGD-16

Rediscovering firewood

P.O. Box 1615  
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Mr. Peter B. Martin  
Executive Director  
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U.S.A.

Dear Peter,

Although the use of wood as an energy source is hardly a novel idea, the regenerative properties of woody plants have brought a new popularity to the most common of fuels. Thus, we find "wood and charcoal" as one of the seven energy supply options selected for scrutiny in the upcoming United Nations' Conference on New and Renewable Sources of Energy to be held in Nairobi this August. In preparation for the Nairobi gathering, ESCAP with the assistance of its sister organizations, FAO and UNEP, convened an Expert Group Meeting on Fuelwood and Charcoal in Bangkok earlier this month.(1) The conference was organized to facilitate discussion and exchange of ideas among individuals experienced in various aspects of the production and consumption of wood fuel in the Asia and Pacific region. Delegates from most of the countries in the area, including Bangladesh, China, Fiji, India, Malaysia, Pakistan, the Philippines, Papua New Guinea, Sri Lanka, Thailand and Viet Nam, participated in the meeting. Also in attendance were representatives from the World Bank, assorted United Nations agencies and the United States, plus several observers, including myself. Noticeably absent from the conference, however, was official representation from Nepal, the Asian country widely alleged to be facing the most serious problems regarding forest destruction and fuelwood scarcity.

As the keynote speaker explained, the main objectives of the Expert Group Meeting on Fuelwood and Charcoal were

"to review the present state of the art, research and development in the production, transportation, storage and use of fuelwood and charcoal in the ESCAP region; to determine the potential for further development; to suggest suitable action to promote and achieve better

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(1) ESCAP being the acronym for the United Nations' Economic and Social Commission for Asia and the Pacific; FAO, the Food and Agriculture Organization; and UNEP, the United Nations Environment Programme.

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management, and to identify the needs of countries in the region for technical assistance, information exchange, and financial assistance in the production and use of fuelwood and charcoal."(2)

Clearly, such a task would have been beyond the capacity of a six-day conference had the delegates not done a considerable amount of homework. Having recently completed an investigation of fuelwood supplies and requirements throughout the world, FAO had prepared a comprehensive report on the topic, entitled "A Global Reconnaissance Survey of the Supply/Requirement Situation." Excerpts from this paper were distributed to the conferees and subsequently provided the focal points of discussion.

According to the FAO survey, seven geographical areas encompassing 25 countries fall into the category of "acute scarcity situations" with regard to fuelwood supplies. More specifically, they are described as

" zones or countries in negative wood energy balance where existing wood resources have been depleted to the point where populations are no longer able to obtain sufficient fuelwood even through overcutting. Consumption is below minimum levels."(3)

As the section on Asia continues,

"Such situations prevail in mountainous areas in northern India, northern Afghanistan and the hills of Nepal and over 30 million rural people are affected. The estimated level of needs is between 1.7 and 1.9 m<sup>3</sup>/inhabitant/year while the estimated availability varies from 0.05 to 0.55 m<sup>3</sup>/inhabitant/year. Over-cutting of existing fuelwood resources is generalized: forest and tree vegetation are destroyed with severe effects on the environment . . . . If current trends continue, it is estimated that by the year 2000 the fuelwood availability will be reduced to less than 0.3 m<sup>3</sup>/inhabitant/year on average, and fuelwood will have completely disappeared in some areas . . ."(4)

Together with several states in Northern India--Punjab, West Bengal, Rajasthan and Gujarat--the Nepalese Terai, an extension

(2) Opening address by Deputy Executive Secretary of ESCAP, Princy H. Siriwardene.

(3) FAO. 1980. A Global Reconnaissance Survey of the Fuelwood Survey of the Fuelwood Supply Requirement Situation. Paper presented to the Second Meeting of the Technical Panel on Fuelwood and Charcoal for United Nations Conference on New and Renewable Sources of Energy. Rome.

(4) De Montalembert, M. R. 1980. Fuelwood in Asia: An Identification of Critical Situations. Paper presented to ESCAP/FAO/UNEP Expert Group Meeting on Fuelwood and Charcoal, (NR/EGMFC/1). Bangkok. May 5-II, 1980.

of the Gangetic plain, falls into the penultimate worst category, that of a "deficit situation", where, according to FAO,

" ... populations are still able to meet their minimum fuelwood needs but only by cutting in excess of sustainable supply. The fuelwood resource is already less than required to meet current needs .... estimated at 0.1 to 0.4 m<sup>3</sup>/inhabitant/year .... (and) are frequently higher than the average availability estimated at 0.05 to 0.15 m<sup>3</sup>/inhabitant/year. In some places consumption is restricted by supply shortages at levels lower than minimum needs, which people try to complement by an intensified use of agricultural residues and dung. Under current trends of destruction of the woody vegetation the availability of fuelwood will be reduced by year 2000 to less than 0.12 m<sup>3</sup> / inhabitant / year."(5)

These dismal pronouncements forecast a very bleak future for Nepal, indeed. The seriousness of the situation is compounded if one understands the destruction of the forests not only as a loss of fuel, but also a loss of an important source of livestock fodder, fruits and tubers, medicinal herbs and various grasses useful for thatching and weaving. As one sitting in the midst of the disaster, so to speak, I find it somewhat difficult to comment on the broad generalizations presented by the FAO analysts. Certainly, the figures presented are well within the range of possibility for Nepal (cf. DGD-14). While in some areas the situation may not seem quite so dire as depicted, in others the scenario sketched for the year 2000 is fast approaching. The future implications in terms of human suffering, possible mass migration and political instability in this already volatile, populous region of Asia are frightening. Efforts to alleviate the rapidly worsening situation cannot come too soon nor too quickly.

It is laudable that the authors of the FAO worldwide survey have recognized the importance of accessibility in assessing the availability of fuelwood supplies. Too often researchers disregard the remoteness of remaining forests when calculating their availability as energy resources. Even if road systems were stretched to these distant forests, the fuel costs involved in transporting the timber, or even charcoal, to consumers would render this wood fuel too expensive to burn. Moreover, it is heartening to find that the authors have defined areas of differential scarcity not along political boundaries, but more appropriately by broader ecological zones. Accordingly, Nepal falls into two categories, thus, recognizing significant differences between both the problems and the potential of the hills and the plains. I question, however, the decision to use an artificially contrived level of "needs"

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(5) Ibid.

rather than the traditional consumption figure as a proxy measure of demand. Admittedly, fuelwood consumption figures from developing countries are fraught with inconsistency. The authors of the FAO survey have developed various measures of need, no doubt, partly in an attempt to circumvent the problems of widely divergent wood-fuel consumption estimates. If one uses a theoretical "needs" figures as a base for planning, however, it seems one must assume consumer parity in the marketplace, and risk falling short of supplying sufficient fuelwood to meet the demands of the poorest elements of the population. With a focus on "needs" one transforms the question of fuelwood supply inadequacies to largely a problem of distribution, perhaps a valid point, but a very touchy political issue in most developing countries. In the larger context, it may be just this issue of distribution of energy resources between the developed and the developing, or rich and poor, countries that may spark some of the most emotionally charged debate at the forthcoming Nairobi conference.

Having worked for several years with the statistics on the production and consumption of wood fuel, I can appreciate the Herculean effort that went into FAO's "Global Reconnaissance". It is quite easy to dissect such sweeping analyses, however; the host of assumptions, such as, the continuation in current trends in consumption patterns and forest management, that must be made in order to draw the disparate fragments of data into a coherent argument are generally very vulnerable to criticism. Nevertheless, if policy-makers and planners are to grasp the gravity of certain problems, it is often necessary to illustrate one's message with bold strokes.

Certainly all of the delegates to the conference were very much aware of the data discrepancies in wood fuel production and consumption statistics. It was recognized that better statistics are desperately needed if responsible policy decisions are to be made with regard to the development of various energy resources. Emphasizing the necessity for a uniform information base, the group recommended that a data gathering mandate be incorporated into new projects, both as a means of collecting information for prospective projects, as well as a method of monitoring the effectiveness of on-going programs.

Although the participants discussed a variety of means to enhance wood-fuel supplies and temper demand, they correctly acknowledged that no one technology could be expected to solve the complex problems of fuelwood scarcity and energy deficits in developing countries. A multi-pronged attack addressed to improving fuelwood productivity, distribution and end-use efficiency, as well as increasing production would be necessary in all cases. Furthermore, it was stressed that more attention must be paid to the assessment of social and environmental impacts of proposed programs to insure that they will be truly beneficial and sustainable on a long-term basis. Most notably, it was pointed out that the major obstacles to tackling the problem of fuelwood shortages

were not technical nor silvicultural, but rather social, economic and administrative in nature.

Indeed, the problem of alleviating the energy crisis in many areas of Nepal is of such magnitude and urgency that perhaps it should not be left to government alone. With the assistance of the forestry community, private voluntary organizations could play a significant role in promoting localized planting of tree species for the production not only of fuel, but also fodder and other tree products. Less tangible benefits from reforestation, such as soil stabilization, improved water supplies and a more moderate climate would also contribute to reversing the spiraling trend of environmental and economic impoverishment in rural areas.

Historically the relationships of the local community and the forest department officials to the forest resource have been largely ones of predator and preservationist respectively. In the constant struggle between these two groups working at cross purposes, the forest has been degraded and destroyed. Only in recent years have foresters recognized that local community participation in forestry programs could provide the key to resolving conflicts in forest management. Despite the profuse verbal support given to local villager involvement in the planning and implementation of forestry projects, the traditional, top-down approach of scientist dictating to lay people was readily apparent at the recent meeting in Bangkok. Noticeably, the criteria mentioned for the selection of tree species for fuelwood plantations contained no reference to consumer preference nor the suitability of various wood species as a domestic fuel, for instance, to the sparking and smoking characteristics of different wood. Foresters must not only be open to messages from the community, but should actively seek the advice of their market, the public. It must be stressed continually that foresters do not exist to serve trees, but rather to serve people through wise forest management.

One of the most shocking conclusions of the FAO paper was that in some areas of acute fuelwood scarcity, "forestry solutions ... are ... limited." Strongly contesting this assertion, the delegates pointed out that it is in precisely such districts, especially in remote mountain areas, where forestry must provide a solution. Wood has been the traditional fuel and suitable alternatives can not be made available on the extent to which the need exists. It is irresponsible for foresters, especially FAO, to imply otherwise.

Foresters should not be hindered by archaic definitions of forestry; we must shake the stereotypic view of forestry as the management of large blocks of land planted to identical trees in endless neat rows. Forestry solutions are limited only by the imagination. In China, for instance, foresters have promoted afforestation through what has been termed "four-side" planting; roadsides, railroad right-of-ways, canal banks and terrace bunds have been planted with various tree species to provide fuelwood for the rural

population. Similarly, in the Philippines forestry appears to have emerged from a strictly rural context. The Filipino delegate reported that vacant lots in downtown Manila are being planted to fast-growing tree species to provide fuel, as well as a more visually pleasant cityscape. Proper pruning of the fast-growing poplars and silky oaks (Grevillea sp.) planted along the major streets and roads in Kathmandu could yield not only valuable firewood, but also more attractive thoroughfares.

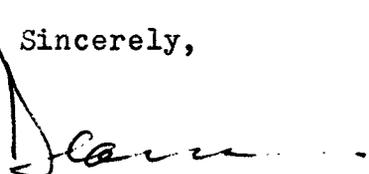
At the recent meeting in Bangkok, much of the discussion regarding increased production seemed to focus on large scale plantations. In that context, an interesting, if disturbing, anecdote was related by the representative of the Philippines. He told of a forest of fast-growing Leucaena, or ipil-ipil, planted to provide fuelwood for the local villagers, which was sold to a high bidding industrialist seeking raw material for a rayon factory in Taiwan. Additionally, I recall a similar story in which forest department officials reneged on their promise to distribute the proceeds of the sale of timber from the community forest to local villagers, arguing that they needed the profits of the harvest to finance the establishment of new plantations.

Unfortunately, I doubt that these are isolated incidents. I expect such tales will become more common in the years to come. As social and economic development proceeds, the demand for pulp and paper products grows exponentially. With petroleum resources becoming ever more scarce and expensive, the demand for wood pulp as chemical feedstock will increase dramatically. I question the wisdom of relying too heavily on large scale plantations for the production of wood fuel for rural communities. Large blocks of forest are more economical to harvest than scattered trees along roadways and canal banks. Without a strong political commitment supported by legal guarantees, plantations for fuelwood may very likely be gobbled up by a more affluent group than the local peasants.

Specialized seminars and workshops oriented toward a single forest product are necessary to bring due emphasis to the very important, if mundane, problems such as fuelwood scarcity. Participants at such gatherings must take care, however, that in narrowing their focus, they do not lose sight of the context of their subject. Despite that fuelwood supplies a great proportion of the energy needs of more than a billion people (roughly 80 percent of the population) in the Asia-Pacific region and accounts for 85 percent of total roundwood removals in this region, fuel is only one of several benefits that mankind receives from the forest. Non-wood forest products, both commercial and non-commercial, and the very difficult-to-value services such as watershed, soil conservation and climate amelioration, may be equally if not more important than fuel in some instances. It is crucial that the demand for fuelwood not be considered in isolation of other forest products or alternative energy sources. With fuelwood and charcoal as just

one of seven discussion items, the forthcoming United Nations Conference on New and Renewable Sources of Energy in Nairobi appears to give full consideration to the latter. Unless participants also take due account of the former, however, recommendations for improving fuelwood supplies, no matter how well-intentioned, may be untenable in light of the multiplicity of demands on forest resources.

Sincerely,



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