FORESTRY RESEARCH PAPER SERIES

Number 4 December 1986

NONCOMMERCIAL COOKING ENERGY IN URBAN AREAS OF NEPAL

Kamal Raj Paudyal

HMG-USAID-GTZ-IDRC-FORD-WINROCK PROJECT

STRENGTHENING INSTITUTIONAL CAPACITY IN THE

FOOD AND AGRICULTURAL SECTOR IN NEPAL

FOREWORD

This Forestry Research Paper Series is funded through the project, "Strengthening Institutional Capacity in the Food and Agricultural Sector in Nepal," a cooperative effort by the Ministry of Agriculture (MOA) of His Majesty's Government of Nepal and the Winrock International Institute for Agricultural Development. This project has been made possible by substantial financial support from the U.S. Agency for International Development (USAID), the German Agency for Technical Cooperation (GTZ), the Canadian International Development Research Centre (IDRC), and the Ford Foundation.

One of the most important activities of this project is funding for problem oriented research by young professional staff of agricultural agencies of the MOA and related institutions, as well as for concerned individuals in the private sector. In particular, funding is provided by the Ford Foundation to support research activities related to the human aspects of natural resource management. This research is carried out with the active professional assistance of the Winrock staff.

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NONCOMMERCIAL COOKING ENERGY IN URBAN AREAS OF NEPAL

Kamal Raj Paudyal*

INTRODUCTION

Total energy consumption in Nepal was estimated at 6.1 million equivalent tons of coal energy in 1984/85, of which about 94 percent was used for household cooking and heating. Of the total energy consumption, 83.6 percent was derived from fuelwood, 9.1 percent from agricultural waste products and 1.6 per cent from animal waste. (Ministry of Finance, 1985).

About three-quarters of the present fuelwood supply comes from the forest. Presently, about 6 million tons of wood are extracted annually from the forest, which is more than twice the annual sustainable supply of 2.5 million tons (UNDP/World Bank, 1983, 1985). With the rapid population growth and an increased demand for both fuelwood and agricultural land, over-exploitation of the remaining forest is accelerating. This will ultimately deteriorate agricultural production and reduce the quality of life for the Nepalese unless strong action is taken.

Several forest protection and plantation programs have been initiated. To date, the total forest area planted or managed as protected forest is 69,840 ha. However, this achievement is hardly adequate to ensure minimal forest area for ecological balance as well as for the supply of fuelwood in the future.

Selling fuelwood in the commercial urban centers has developed into an important off-farm activity, employing thousands of people. The increased fuelwood demand has attracted households from rural areas to sell fuelwood as an occupation. The inadequate supply of fuelwood from public institutions has also contributed to this trend.

As more people get involved in marketing fuelwood, patches of the forest in the vicinity and peripheral areas of urban centers will be systematically denuded. The suppliers will continue extracting fuelwood from the forest until their wages fall below other forms of employment.

Understanding the dynamics of the private fuelwood market can help energy planners. However, there has been a lack of research on the magnitude and sources of the private fuelwood market and on the socio-economic characteristics of the fuelwood sellers.

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Objectives

This is a case study of private fuelwood supply and suppliers in the Bhaktapur Town Panchayat within the Kathmandu Valley. An attempt has been made to estimate the annual fuelwood supply from private sources. The objectives of the study are as follows.

1. Estimation of total demand for fuelwood as cooking energy in Bhaktapur.

2. Estimation of fuelwood supply by private individuals.

3. Documentation of socioeconomic characteristics of private fuelwood suppliers.

The paper also addresses the following questions. Who are the fuelwood sellers and what are their socioeconomic characteristics? How much fuelwood do they sell annually and what are their annual earnings? Why are they engaged in the business? From where do they obtain fuelwood?

Data Collection and Estimation

Secondary sources of information have been utilized to calculate fuelwood demand. For objectives 2 and 3 data were obtained from field inquiries. Sixty fuelwood sellers from different markets in Bhaktapur were contacted for marketing information. Of these, 22 were randomly selected and visited during September 1985 in their villages to discover their socioeconomic characteristics. The local public sector fuelwood supplying unit and private depots were also contacted to understand their role in the supply of fuelwood to Bhaktapur.

The total demand for fuelwood in Bhaktapur for household consumption was calculated on the basis of population and per capita fuelwood consumption figures derived from secondary sources. Total fuelwood sales by the public Fuel Corporation (FC) depot and the private fuelwood/timber depots were obtained (Appendix 1). The supply of small scale fuelwood sellers (back-load fuelwood suppliers) was calculated by subtracting the sales of these two sources from the total demand.

The actual quantity of fuelwood supplied annually by a back-load supplier was estimated by averaging the annual sales of the 60 sample households. To estimate the number of households involved in selling fuelwood, the total supply of fuelwood by back-load suppliers was divided by the average annual sales of households.

Although children and elderly members of some of the households were also reportedly involved in collecting fuelwood, their efforts were mainly directed toward meeting household demand. Therefore, only the economically active members of the households (15 to 60 years) are assumed to be involved in selling fuelwood.

FINDINGS

The Setting

Bhaktapur is located 13 km. east of Kathmandu at 4368 ft. above sea level. The population of this town panchayat grew from 40,112 in 1971 to 48,472 in 1981--an annual growth rate of 1.9 percent. Accordingly, the number of households and family size also increased from 6600 to 7270, and 6.1 to 6.7, respectively (CBS). Using these growth rates, the panchayat population and number of households has been estimated to be 52,285 and 7839, respectively, in mid-1985.

Demand for Fuelwood

The household demand for fuelwood is mainly for cooking. As fuelwood is burned in open fires or simple mud stoves for cooking, it also provides light and heat for the household. During the cold winter months, live coals are salvaged from the evening fire and carried in clay pots to heat other parts of the home. Smoke from the fire also serves to preserve meat hung above the hearth and to keep destructive insects away from the house timber and from grains stored in the attic.

There have been several studies on the per capita consumption of fuelwood in the country, but only a few have analyzed Bhaktapur separately. Donovan and Bajracharya (1980) estimated annual per capita consumption at 84 kg., while a study conducted by the Agricultural Projects Services Centre (APROSC, 1983) estimated it at 156 kg.

A discussion held with local elites and knowledgeable people in the Bhaktapur identified which estimate was more realistic. According to these subjective judgments and a comparative study of fuelwood consumption in other areas, the latter estimate (156 kg per capita) was determined to be realistic and is used in this study. The total household demand of fuelwood in the Bhaktapur Town Panchayat is estimated at 8156 metric tons (mt.) annually.

All the fuelwood brought by sample respondents is in the form of bhari. Bhari are comprised of split log pieces or small branches tied together into a cylindrical shape, roughly 40 to 50 cm. long and 30 to 40 cm. in diameter, or arranged systematically into a Doko (basket). Most of these loads are, however, rearranged to make them look bigger than they actually are.

Apart from the usual slight variation in dimension, the bhari also fluctuate in weight. This is primarily a function of species composition, moisture content, and wood form. Bhari bundles varied from 20 to 40 kg., with an average weight of 30 kg. The range of wood in a bhari varies by season, differences in accessibility, and labor availability.

Supply of Fuelwood

There are three main sources of fuelwood supply in Bhaktapur. The Fuel Corporation and private fuelwood depots meet 16 percent of the total fuelwood demand. Back-load fuelwood suppliers are the major source meeting more than four-fifths of the fuelwood demand.

Fuel Corporation. There is a sales depot of the Fuel Corporation at Napukhu in Bhaktapur. Average annual sale of fuelwood from the depot is 1194 mt. (based on five year averaging--Appendix 1). The average customer does not does not buy more than 0.3 mt. All the fuelwood sold by the Fuel Corporation is assumed to be for household consumption.

Private Fuelwood Depots. There are seven private timber/fuelwood depots in Bhaktapur. Together, they sold 430 mt. of fuelwood during 1984/85 of which about 21 percent was bought by household, 13 percent by hotels and restaurant, and 66 percent by industry and trade. Thus, these private depots supply about 90 mt. of fuelwood annually to the household sector.

Back-Load Fuelwood Supplier. Of the total fuelwood requirement, the above two sources supply about 15 percent and one percent, respectively. The remaining 84 percent is supplied by the back-load fuelwood sellers. Based on this assumption, this sector alone supplies about 6872 mt. of fuelwood annually to Bhaktapur (Table 1).

Table 1. Fuelwood Supply to Households

Sources	Quantity (mt.)	Percent
Fuel Corporation	1194	15
Private fuelwood depots	90	1
Back-load fuelwood sellers from rural areas	6872	84
Total	8156	100

Based on the quantity of fuelwood supplied by the rural population, the average load carried, and their demographic characteristics, approximately 6076 from 1423 households are directly or indirectly involved in selling fuelwood to Bhaktapur. This is about 12 percent of the total town population.

Field investigations reveal that the average household sells about 205 bhari (back-load) of fuelwood annually in Bhaktapur. Of this amount, 73.5 percent is bought by households and the rest by hotels and restaurants (13.0 percent), and industry (8.5 percent) (Table 2).

Table 2. Total Annual Fuelwood Supplied by Back-Load Suppliers

	Household	Hotel/ restaurant	Industry	Total
Quantity in bhari	229,068	37,838	24,826	291,732
Kg. equivalent	6,872,040	1,135,140	744,780	8,751,960
Percent	(78.5)	(13.0)	(8.5)	(100.0)

Planting by the Fuelwood Sellers

Only 12 respondents (20 percent) report they planted saplings on their own land or private forest during the past year. On the average, respondents plant 14 trees per year. None had planted in the public forest. This indicates that these fuelwood suppliers are not contributing to forest preservation.

Socioeconomic Characteristics of Back-Load Suppliers

Residential Location. Back-load suppliers are residents of the rural areas around Bhaktapur, and including villages in Bhaktapur, Kavre, and Kathmandu Districts (Table 3). Back-load suppliers can be seen entering into Bhaktapur from all directions early in the morning. Most of them head toward Taumdi, Sukuldhoka, Inacho, Tachapal, Muladhoka, or Bansgopal and wait until a customer comes to bargain, while others who have regular household buyers and go directly to the intended household and sell at pre-determined prices.

Table 3. Distance Travelled by Villagers to Bhaktapur

District	Village	Distance from Bhaktapur (km.)
Bhaktapur	Sipadol	5.5
	Nagarkot	7.9
	Chitapol	4.5
	Nangkhel	4.0
	Gandu	6.0
	Asbhari	9.0
Kavre	Byabar	10.1
	Kusadevi	9.0
	Falami	9.0
	Nainchala	9.0
	Khanigaun	10.5
	Rele	12.0
Kathmandu	Indrayani	7.5
	Ghumarichok	8.0

Origin of Business. All the respondents inherited their fuelwood business. They did not want to stop fuelwood selling immediately as it provides a reliable source of income. None were optimistic about continuing the job as fuelwood is becoming harder to collect, and competition with alternative sources of energy is becoming more intense.

Social Status. Selling fuelwood is not regarded as a prestigious job in Nepal. Therefore, only persons of lower socioeconomic status are involved in the business. This is confirmed by the fact that only one person in the sample group is a member of a social organization (Youth Organization, Village Level Committee) and none held any social or political position.

Ethnicity. The majority of the back-load fuelwood sellers are lower caste (Matwali). Among the sample households, there were Lama (40 percent), Tamang (33 percent), Brahmin (10 percent), Newar, Rai, and Magar (5 percent each), and Chhetri (1 percent).

Family Characteristics. The socioeconomic survey covers 152 persons of 22 households. The family size of these households ranges from 4 to 11 persons, with an average family size of 7.0.

Of the total population, 61.8 percent are economically active, (in the 15 to 60 year age group), 30.9 percent are dependents below 15 years, and 7.3 percent are dependents above 60 years.

The literacy rate is less than ten percent. The female literary rate is only four percent while the male literacy rate is 15.4 percent.

Land Resources. Most of the sample households are small farmers. The land owned by these households ranges from 0.1 to 1.4 ha. On average, a household owned 0.7 ha. of cultivated land, comprised of 0.1 ha. lowland and 0.5 ha. upland. In addition, some have also rented land. The average amount rented land is 0.1 ha. per household, consisting 0.02 ha. of lowland and 0.1 ha. of upland (Table 4). None of the sample households rent out their land.

Table 4. Landownership (ha.)

Land	Lowland	Upland	Total
Owned	0.1	0.5	0.7
Rented	0.02	0.1	0.1
Total	0.1	0.6	0.8

Most of the respondents report their land is not very fertile and can grow only one crop a year. Only four respondents report that they sold foodgrain the previous year, and then only as a distress sale.

Livestock. All sample households selected for intensive interviews had cattle, but only seven households have buffalo, 18 households have goats and sheep, six households have pigs, and 21 have poultry. The average livestock raised per household is 4.1 cattle, 0.6 buffalo, 4 goats/sheep, 0.4 pigs, and 14.6 poultry. Sixteen households (72.7 percent) report they sold livestock and livestock products in the previous year.

Income. The average annual cash income of the sample households was NRs.7312. The percentage contribution of each income source and the number of households involved in each source of given in Table 5.

Table 5. Average Annual Cash Income per Household (percent)

	Fuel-wood sales	Wages	Fruit and vegetable sales	Live-stock sales	Salary and pension	Food-grain sales	Total
Amount (NRs)	4620	1039	968	503	120	62	7312
	(63.2)	(14.2)	(13.2)	(6.9)	(1.6)	(0.9)	(100.00)
No. of households reporting income	22	17	18	16	2	4	
	(100.0)	(77.3)	(81.8)	(72.7)	(9.1)	(18.2)	

Importance of Fuelwood Income. The income received from fuelwood sales is generally spent on daily consumption materials, such as food-grain, oil, salt, spices, and tobacco. Part of the income is saved for festival expenditures and clothing. Only one respondent, a student, used the income from fuelwood for education.

During festival days, they also bring specific herbal and holy plants to sell. The common plants brought include caff flower during Tij, sugarcane, ginger, and banana plants during Dasain puja, marigold in Tihar, and yam on the Maghe Sankranti. In addition, they bring fruits, vegetables, and leaves of the sal tree to sell. This extra income is generally used for individual purchases rather than for the household.

Wage Income Compared with Income from Fuelwood Sales

As some of the fuelwood sellers work also as wage laborers, the prevailing maximum and minimum wage during the past year was also recorded. Among the respondents, the maximum wage was NRs.30 per day. The minimum wage received (during off-season) was NRs.18 per day. The average wage thus is NRs.22 per day. On the other hand, the average price of fuelwood sold during a year was estimated at NRs.28 per bhari.

Average time in going to the source, collecting a bhari of fuelwood and carrying it home was estimated to be four hours, as was the average time to go to and from the market (excluding time to wait for buyer). Thus, a bhari of fuelwood always makes more money than a day's wage as long as the extraction of fuelwood from forests involves no cost other than labor.

Sources and Types of Fuelwood Extraction

Sources of Extraction. Eleven of the sample households (18 percent) report they collect fuelwood only from their own land (including forest), while nine (15 percent) collect only from the public forest. Four (seven percent) of the households normally buy fuelwood from other persons. The remaining 36 households (60 percent) collect fuelwood from more than one source.

The major source of fuelwood for back-load suppliers is public forest, contributing about 44 percent. About 39 percent is collected from their own private woodlots, and about 17 percent is purchased from

other people, of which the majority comes from private woodlots.

Types of Fuelwood. Private fuelwood sellers report they prefer to cut branches and twigs rather than fell trees on their own land. However, they were indifferent to collecting fuelwood from the public forest as trees they cut are not owned by anyone. Seven respondents (11.7 percent), report they had cut only branches to get fuelwood last year, while the rest cut branches as well as trees, depending upon situation and availability. Of the total fuelwood collected last year for sale, branches contributed about 68 percent and trees the remaining 32 percent. Two respondents collected only dried fuelwood, one collected only green fuelwood while the remainder collected both types of fuelwood.

Drying and Storing. All fuelwood collected from public or private forest is first brought home and left to dry. The fuelwood collected from the land near the home is often cut and left to dry at the same place. However, all fuelwood is brought home and stored at least one night before being carrying to the market (except for fuelwood bought from other persons). The collected fuelwood is sometimes stored for longer durations, especially for sale at festivals.

Costs Involved. Only household members are engaged in the collecting and marketing of fuelwood. Adult men fell and and splinter the trees, while women collect small branches and twigs. Children and the elderly also engage in collecting small pieces of wood, mainly from the area near the home, to be used for household consumption.

Average distance travelled from home to the fuelwood source ranges from 0.06 km. (to their own land) to 3.1 km. (to public forest) with an average time of one hour. It takes about three hours to collect a bhari of fuelwood. The average travel distance from their home to Bhaktapur town is about seven km. and takes about four hours both ways. Hence, the sellers spend about eight hours to earn income from the sale of a bhari of fuelwood.

None of the respondents paid tax for the collecting and marketing of fuelwood. They do give one piece of wood as jagaat (a "donation") to the person who owned the area where they were waited for a customer. Some respondents who purchase fuelwood in the village to sell in Bhaktapur pay about 60 to 75 percent of the sales price.

Marketing

Supply. Back-load fuelwood suppliers from the rural areas sell fuelwood in Bhaktapur town early in the morning. They generally leave their home at 4 or 5 AM. Their time of arrival depends on the distance travelled, but, depending on the weather, the peak sales of fuelwood can be observed between 6 and 9 a.m.

Annual sales of fuelwood by the sample households range from 18 to 320 bhari, with an average of 205 (Table 6). The survey results reveal that the fuelwood sold by a household increases with landholding up to 20 ropani and declines thereafter (Table 7). This is because people with higher economic status do not like vending fuelwood.

As all the sample households are farmers the supply of fuelwood is affected by farming seasons. The volume of fuelwood supplied is smaller during planting and harvest and greater during the off-season. This is because of varying seasonal farm labor needs.

Table 6. Sales of Fuelwood by Family Size (N=205)

Family size	Percentage of households	Average sales per household (in bhari)	Percentage of total fuelwood sold
Less than 5 persons	18.0	136	11.0
6 to 8 persons	59.0	218	61.0
More than 9 persons	23.0	254	28.0

Table 7. Sales of Fuelwood by Landholding (N=205)

Landholding	Percentage of households	Average sales per household (in bhari)	Percentage of total fuelwood sold
Less than 5 ropani (0.5 ha.)	23.0	158	17.0
5 to 10 ropani (0.51 ha.)	18.0	171	15.0
10 to 20 ropani (1.02 ha)	50.0	245	60.0
Above 20 ropani	9.0	179	8.0

The Buyers. Back-load fuelwood suppliers can sell fuelwood to any customer. Few, however, develop relationships with the buyers and continue supplying to them.

About 27 percent of the sample respondents report they sell fuelwood only to households, while the remainder sells to households as well as other buyers. Of the total fuelwood sold by the latter group, 78.5 percent, 13.0 percent, and 8.5 percent is sold to households, hotels and industry, respectively (see Table 2).

The reason households prefer fuelwood brought by back-load suppliers is that the wood is always cut into small pieces that fit into their small mud stoves. Liquor-makers and oil-extracters prefer larger size wood for their large earthen ovens.

Some of the fuelwood sellers, mainly from the northern part of Bhaktapur (Ghumarichok, Indrayani and Nagarkot) generally sell fuelwood to the brick industry during the winter. The reason for this is that they do not have to wait and bargain because these industries buy on a weight basis, although prices tend to be slightly lower.

There are also a few middlemen involved in the fuelwood trade. One supplies firewood for cremation at Hanuman Ghat. Others make small bundles (weighing roughly one to three kg.) and sell them retail at NRs.1 to 5 each and make a good profit. One middleman, however, deals differently. Some households believe him to be a good bargainer and an expert in judging the quality and quantity of fuelwood in a bhari. Therefore, they ask him to buy fuelwood for them. This middleman gets

NRs.1 to 3 per bhari for this service. However, the fuelwood channelled through these middlemen is less than one percent of the fuelwood supplied by the back-load suppliers.

Prices

Back-Load. The sales price of a bhari of fuelwood is not always a function of weight. Prices appear also to reflect the quality and quantity of the fuelwood, the bargaining ability of the buyer and seller, special relationships, such as familial ties, unwritten contracts, between buyer and seller, and changes in supply and demand.

Institutional. The Fuel Corporation (FC) charges two different prices for the fuelwood sold by it. The lower price, NRs.0.55/kg. is charged for amounts up to 300 kg., and is meant for household cooking. The price charged when selling more then 300 kg. at a time is NRs.0.70/kg., which is mainly bought by industries. Nonetheless, almost all the fuelwood sold by the FC depot at Bhaktapur is to households.

Both FC fuelwood prices in Bhaktapur are lower than the prevailing market prices which reflects its policy of providing fuelwood to the general public at a cheaper rate. The present prices of fuelwood are also below the actual cost incurred by FC of NRs.0.71/kg. This has caused a net loss to FC thus, it is planning to increase its prices in the near future.

The Fuel Corporation occasionally sells bark and cutpiece (timber residues) which it buys from the Timber Corporation (TCN). The price charged by FC for these fuelwoods is NRs.0.90/kg. for any quantity. The higher price for bark and cutpiece is justified on the grounds their higher costs involved in buying from TCN.

Private Fuelwood Depots. Prices of fuelwood sold by private depots is the highest among the various sources of supply. Their prices are mainly guided by supply and demand, in addition to the quality of the fuelwood sold.

Price Fluctuation. The average price of fuelwood received by back-load suppliers fluctuates highly. It is higher during the farming season when the supply is smaller and during major festivals (Dasain, Tihar) when demand is high. Similarly, it is lower during off-agricultural season as a result of larger supply (Appendix 2).

CONCLUSION

Fuelwood is the most important cooking fuel in Nepal. Rural Nepalese virtually do not have any alternatives. Urban Nepal also exhibits an increasing dependence on fuelwood as source of cooking fuel. Supply and prices of commercial sources of energy have not been able to initiate a switch from noncommercial sources. There is growing consensus on the lack of policies to initiate such a change.

With the rapid growth of population and low employment opportunities people in the rural areas have no other alternative except to rely on the agricultural land which is already overcrowded. Owing to the small landholdings and poor fertility, almost all the farming is subsis-

tence. Hence, there are only two sources of cash income--wage labor and fuelwood selling. As the former is not always available and the wage income per day is relatively lower for unskilled work the latter is preferred for cash as long as the extraction of fuelwood from the forest does not involve prohibitive cost and demand exists. This situation is held responsible for the increasing number of people being involved in selling fuelwood over the years.

The present rate of extraction from forest (3851 mt. annually) by fuelwood sellers to sale at Bhaktapur alone is equal to clear cutting of about 60 ha of forest each year. In addition to the fuelwood sold at marketplaces thousands of tons of fuelwood are taken by the villagers for their own use, threatening the remaining patches of forest in the surrounding areas.

Urban and market centers in Nepal are heavily dependent on the local supply of fuelwood. In Bhaktapur, institutional sources have met only 16 per cent of total fuelwood demand, while the rest is met from the rural areas. Supply from rural areas comes from individuals, extracting from their own land and the public forest. The case study reveals that more than two-fifths of total private supply is drawn from public forests.

There is virtual lack of afforestation efforts by the individuals. Withdrawal of fuelwood and timber is not supplemented by planting. Removal of private wood lots is mostly followed by burning the land under crops. Unmatched public efforts to afforest will include the peripheral areas around urban centers.

Considering the impact of rapid destruction of forest on the ecological balance and future energy supply, it is imperative that felling, lopping, grazing and fire are regulated on forest land. An essential step toward fulfilling forest-based basic needs is to involve the people in raising and protecting trees be it on their own land or on public.

However, complete restriction of fuelwood extraction from the forests without developing alternative sources does not solve the problem. As the commercial sources of energy are not dependable and cannot be expected to be reliable source in near future, traditional sources (mainly fuelwood) of energy are indispensable. Additionally, restriction of fuelwood extraction from the forest will throw some 2670 persons (twelve persons for each hundred urban population) out of their business in Bhaktapur area. Therefore, farmers should be encouraged to plant trees on their own land.

APPENDIX 1: Fuelwood Sold by the Fuel Corporation, Bhaktapur Depot (kg).

Month	1980/81	1981/82	1982/83	1983/84	1984/85
Jul/Aug	51,450	63,350	38,550	-	75,800
Aug/Sep	22,950	168,030	158,300	65,310	145,450
Sep/Oct	69,000	110,790	230,550	124,742	126,150
Oct/Nov	34,350	114,650	81,120	60,050	182,350
Nov/Dec	31,400	172,250	174,680	96,963	84,200
Dec/Jan	87,900	157,400	65,300	68,650	124,600
Jan/Feb	113,600	83,350	176,400	68,350	154,850
Feb/Mar	72,600	124,200	252,998	108,400	137,650
Mar/Apr	59,000	76,150	242,950	80,161	215,000
Apr/May	35,450	80,150	86,464	54,678	110,200
May/Jun	95,670	88,000	48,500	99,300	94,296
Jun/Jul	50,550	41,900	40,770	31,268	63,000
Total	723,920	1,280,220	1,596,582	897,872	1,513,546

Source: Fuel Corporation, Bhaktapur Depot.

APPENDIX 2: Prices of Fuelwood in Bhaktapur During Last Year (NRS/kg.).

Months	FC Depot*		Private Depots	Back-load Suppliers
	Up to 300 kg.	Above 300 kg.		
Sep/Oct 1984	0.45	0.55	1.04	1.06
Oct/Nov 1984	0.45	0.55	1.07	1.03
Nov/Dev 1984	0.45	0.55	1.09	0.93
Dec/Jan 1985	0.55	0.70	1.09	0.82
Jan/Feb 1985	0.55	0.70	1.07	0.84
Feb/Mar 1985	0.55	0.70	1.09	0.78
Mar/Apr 1985	0.55	0.70	1.09	0.76
Apr/May 1985	0.55	0.70	1.11	0.77
May/Jun 1985	0.55	0.70	1.15	0.88
Jun/Jul 1985	0.55	0.70	1.13	1.06
Jul/Aug 1985	0.55	0.70	1.18	1.01
Aug/Sep 1985	0.55	0.70	1.20	0.98

*Prices given here are for logs and prices fixed for bark and cull wood was NRs.0.70/kg until November/December 1984 and NRs.0.90/kg from December/January 1985 for any quantity.

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