

ABSTRACT

Household sector is an important and major sector with reference to socio- economic development. Energy plays an important role for development of the household sector. This sector provides the platform for development. Any crisis arise due to inadequate development of household sector, thus could affect seriously the development of the society and hence the nation. Energy plays an important role in development of all sectors including household sector. It has been world wide recognized that rural sector is facing serious crisis in different aspects of livelihood. The present investigation aims to analyze the present energy use scenario and future demand of energy in rural household sector. Typical five villages (Napaam, Kacharipam, Dhulapadung and Pathekakuri) of Sonitpur district have been considered for the present study. Door to door survey has been conducted to collect information required for this analysis, such as population pattern, household resources, type of fuel used for cooking, lighting, transportation and appliances used for different activities. The availability of crop residue biomass per capita per annum was also assessed in all five villages. Borchola is the most resourceful (0.95.08 tonnes) followed by Pathekakuri (0.68.81 tonnes), Napaam (0.38.94 tonnes), Kacharipam (0.14.04 tonnes) and Dhulapadung (0.6 tonnes). Similarly the potential woody biomass available from the domestic bari land in all the villages was assessed and found to vary between Borchola (76.83 tonnes/annum) and Dhulapadung (23.28 tonnes/annum). The energy use pattern is assessed considering major activities like cooking, lighting, transport, comfort and entertainment. The source wise (biomass, fossil fuel and electricity) energy utilization pattern in these five villages is also assessed. Biomass dominant energy utilization is the characteristic feature of all the villages under study. Variations are observed in per capita energy consumption amongst the villages. Daily Energy consumption from fuel wood is the highest in Kacharipam (158.95 MJ) which is a non electrified village, followed by Dhulapadung (114.42 MJ), Borchola (96.87 MJ), Napaam (95.62 MJ) and Pathekakuri (60.94 MJ). Due to the frequent power-cut the electrified villages use kerosene as a secondary fuel for lighting. The daily consumption from kerosene is found to be the highest in Kacharipam (7.97 MJ) followed by Borchola (6.89 MJ), Napaam (4.9 MJ), Dhulapadung (4.88 MJ) and Pathekakuri (4.2 MJ). Dhulapadung consumes the highest energy in transportation than the other villages with a value 65.44 MJ/day. Higher uses of two-wheelers have caused the higher level of transport energy consumption in

Dhulapadung compare to other villages. The daily electricity consumption is the highest in Napaam village (13.98 MJ) followed by Dhulapadung (11.57 MJ), Pathekakuri (8.07 MJ) and Borchola (7.27 MJ). Percentages of electrified households of the total household in Nappam, Dhulapadung, Pathekakuri and Borchola are 70%, 32%, 62% and 58%, respectively. The amount of money spent for energy amongst the five villages varies between Rs169.70 (Dhulapadung) and Rs 50.43 (Pathekakuri). In general fuel has been found to be the costliest item amongst energy sources consumed in all the villages. The saving potentiality (based on modeled economic households) for three categories of households were also assessed and found scope of substantial amount of fuel wood savings in all the villages. Future demand was also assessed based on a modeled future household scenario. The existing energy use utilization pattern in thirty three household with all modern facilities is considered for modeling the future scenario. There will be increase in demand of fossil sources of energy (comprising LPG and petrol) for cooking and transportation activities in all villages. The demand of electricity will also increase. In Napaam village the demand for LPG, transport and electricity will increase by ten, twenty two and thirteen times, respectively of that of the present levels of use. Similar increased are also noticed in other villages.