8.CONCLUSION

The project has accomplished all commitments. The survey of the rubber plantation wastes revealed a tremendous amount of energy available from these wastes. The total nationwide wastes is estimated as 2432.11×10^3 tons, 167.99×10^3 tons and 132.2×10^3 tons of dry leaves, fallen branches and seeds, respectively. When compared with other agricultural wastes, the rubber plantation wastes rank number 5 in terms of weight and energy. The availability in term of energy is 5.8283×10^{16} Joules or $1,364.9 \times 10^3$ toe annually. This amount of energy represents about 5.95% of the whole energy consumption of the country.

Handling of the rubber plantation wastes is very difficult. Dry leaves can not be densified without heating process. Briquetting of the dry leaves is not economically feasible as far as electricity is required. At present situation, the densified leaves cannot compete with the fuelwood. However, the leaves can be converted to carbonized leaf briquettes and sold at a price high enough to be feasible. The carbonization of the dry leaves can be achieved by the indirect fired method. The densification

is achieved by using 10% cassava starch as a binder. The annual income to cost ratio was found to be 1.86.