

### 3.3 Energy in the Context of Social and Economic Development

The centralised energy-supply systems for oil, gas and electricity that have evolved in conjunction with large scale, highly concentrated urban and industrial centres, have often proved to be inadequate for the needs of the rural populations and of the urban poor of developing countries.

Electricity is only one form of energy required for rural purposes and to the extent that it does not meet other rural energy needs, it is only a partial solution.

While centralised systems have played and will continue to play an important part in rural development, there is an undeniable requirement for attention to rural energy systems that would encompass all facets of rural energy supply problems and that would result in optimum matching of supply with demand, in which both large and small scale renewable systems will play their part. Interplay between the energy requirement and the type of energy source on the one hand and the social attitudes, the physical environment and economics on the other cannot be overstressed.

It is important to note, however, that generalized studies and models for rural areas are no more useful in real situations than purely technological studies. Any attempt to find a general model for all of these situations would be so full of generalities as to be of slight value to the specific micro-economies for which solutions must be found.

Of the wide range of technological options, only a few may be of actual relevance in specific situations as regards local needs, aptness, capital costs, the absorptive capacity of the rural population and the reliability of technological hardware.

Renewable energy technologies are site specific and thus are not easily evaluated outside their context of use. Nevertheless, there is much optimism based on experiments and social response, that suitable technologies for the production of heat, mechanical and electrical energy from biological wastes and solar, biomass plantations, wind and water power are available and can be adopted for widespread application in rural areas in most developing countries. The geoclimatic conditions, levels of technological development and economic circumstances of the developing countries are often favourable for the