

# **Computer Modelling of Energy, food and Environment: The Case of Bangladesh**

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Previous efforts on energy modelling are critically examined and a system dynamics model to simulate population, cattle population, food and energy is presented. This model is also used to simulate and study the effects of different energy policies. The system dynamics model is combined with a LEAP model to prepare standard energy balance sheet, to project energy supply and demand, and to assess the likely impacts of energy policies on contributions to global warming. The data on projected population, cattle population, agricultural wastes and animal wastes from the system dynamics model are fed into the LEAP model. Simulated results show that energy demands in all sectors of the economy are increasing with time. Simulated results also show that the demands for biomass fuels are also increasing with time. Demands for biomass fuels, natural gas, oil and electricity in Bangladesh in 1995 are 67.25%, 16.51%, 9.66% and 3.55% of the total demand respectively. The greenhouse gases contributing to global warming are also increasing with time. The simulated results show that biogenic CO<sub>2</sub> emissions are increasing at a faster rate than that of non-biogenic CO<sub>2</sub> emissions. Bangladesh is responsible for a small fraction of total anthropogenic CO<sub>2</sub> emissions but could be seriously affected by climate change.