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THE ROLE OF BIOGAS AND
ORGANIC WASTE RECYCLING IN RURAL ENERGY

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RURAL ENERGY

BACKGROUND

There is a general awareness that rural energy is or is going to be a serious problem. This awareness has been created by the scarcity of fuel wood and charcoal leading to high prices. However there is a serious lack of understanding of:

- the real causes of fuel wood shortage
- the limitations in arresting the problem
- likely consequences if the problem is not arrested and
- other interrelated and equally important problem areas such as food production and employment

Without a thorough understanding of these aspects our efforts can be misdirected to end up in frustrations just like efforts to boost agricultural production did not prevent the current food crisis. In a National Cash Crop Policy for Kenya by L H Brown (1963) it was stated very clearly that Kenya's number two problem is farm income. However having said that, the policy document said much about the number two objective and very little about number one objective. Moreover implementation of that National

Cash Crop Policy has virtually stifled food production. Cash crops like coffee, tea, pyrethrum, sugarcane and livestock production have also virtually replaced the farm wood lots and could very well be the cause of the fuel wood shortage. It is now apparent that these cash crops have earned or helped save foreign exchange which has been used to create a modern sector of economy consisting of 10-20% Kenyans earning 20 times more than the rural 80%. That sector has not generated badly needed employment or sufficient foreign exchange to purchase commercial energy for its own use, let alone subsidise food imports. The big question is whether or not our National Cash Crop Policy - the Kenya's pride - was not in fact misdirected. There is no question that it was implemented to expectations and even beyond.

Now we are very determined to solve the energy problems and I believe we have the capacity to do it; we should be most concerned about the possibility of creating other problems or failing to address the real problems of our society. To safeguard against solving problems and creating others in the process, the rural energy problem must be examined against the broad perspective of rural development.

Rural development objectives are to alleviate poverty by providing:

- food
- energy and
- employment.

This can only be achieved through the utilisation of basic resources of:

- land and
- labour

to increase:

- agricultural production
- biomass production and
- rural industrialisation

In this paper the role of biogas and organic waste recycling in meeting the domestic and agricultural energy is examined. A case study drawn from semi-arid Kenya is used to illustrate the possibilities.

THE BIOGAS-SLURRY - organic waste recycling system

A mixture of biomass (vegetative waste, dung, etc) and water in the ratio of approximately 1:9 may be partially digested in anaerobic process to produce biogas (mainly methane and carbon dioxide) and organic residue known as sludge containing plant nutrients (nitrogen, phosphorous, potassium etc) in

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