

Ensuring future energy security

Bio Energy Association holds 5th AGM with a call

by Arjuna Hulugalle

Walking into the AGM of the Bio Energy Association on Wednesday 7th January 2009 at the 80 Club was like a stroll into a "path of sanity" off a beaten track. Conspicuous by their absence were political policy makers and the Press in what was in terms of national priorities, an important meeting.

One had left a city of cacophony where loud controversy and bitter confrontation among public figures reigned, where vociferous insults were hurled without rhyme and purpose devoid of any concern for basic needs and priorities of our society and the people. One had left a world where reason and caution had been thrown to the winds.

On an unobtrusive veranda in the club house, a comparatively small group of people, with a collective intelligence quotient far exceeding many a large public gathering, had met to deliberate an important national issue.

They were a concerned and dedicated group, representing a cross section of industrial firms, the engineering profession, businessmen, agriculturists, scientists and interested citizens.

Haunting them was the thought that the country could in the near future find itself with inadequate energy supplies. The reason being a "short circuit" in some part of the world on which Sri Lanka was reliant on gas and petroleum.

Every one present realized how fragile the globe was both in physical terms of climate change and in economic and political terms and their thoughts were with this preoccupation.

The specific examples were the effect of the Russian Ukrainian controversy where Eastern European populations were freezing today in one of the coldest winters because of the stoppage of Russian gas supplies.

The thought that passed through many a mind was what if the Gaza conflict spreads to Lebanon and the rest of the Middle East, and the Straits of Hormuz is closed. The hope is President elect USA Barack Obama, but is his personality strong enough to astutely manage and establish a better world in order to prevent a total catastrophe and can he come up with a plan to save humanity?

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The profit motive in the short term cannot and should not be the sole criterion. The government has to be proactive and give the leadership. This was in essence what was expressed by the President of the Bio Energy Association, Parakrama Jayasinghe, in his address and what was expressed in the discussions that ensued subsequently.

In a Press release after the meeting, the BEASL defined terms, relevant to making the public understand the significance of Bio Energy. They also elaborated with vital information several pertinent facts on Bio Energy use in Sri Lanka. Some of these are given below:

Why Biomass? It is organic, non-

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fossil material, collectively. In other words, 'biomass' describes the mass of all biological organisms, dead or alive, excluding biological mass that has been transformed by geological processes into substances such as coal or petroleum.

Carbon Sinks

There is a vital difference between energy production from fossil fuels and from biomass. Burning fossil fuels releases CO₂ that has been locked up for millions of years. By contrast burning biomass simply returns to the atmosphere the CO₂ that was absorbed as the plants grew and there is no net release of CO₂, if the cycle of growth and harvest is sustained. Thus the biomass option is proven to be CO₂ neutral. Energy plantations will act as carbon sinks. As such the energy producers using biomass could benefit from Carbon Credits under the Clean Development Mechanism (CDM) formulated under the Kyoto Protocol. Carbon Credits are being traded for US \$ 15-20 per ton.

The newly created Lanka Carbon Fund, to which a reference was made in the Presidential report, is an important milestone to facilitate getting Carbon credits to Sri Lanka.



Vehicles are seen standing in queues to fill fuel at a gas station in New Delhi, India, Friday, Jan. 9, 2009. Officials say a strike by thousands of executives of India's state-run oil companies demanding salary hikes has left nearly 60 percent of gas pumps dry and delayed flights across India. (AP)

Soil Enrichment

The establishment of Short rotation coppice (SRC) plantations with Nitrogen fixing trees such as Gliricidia and Leucaena in degraded lands previously used by shifting cultivators will over time upgrade the land to its original status.

Alley Cropping

Growing of Gliricidia in hedge rows along with cash crops is a practice with valuable benefits to the food production well proven by trials by the Mahallupalama Agricultural Farm several decades ago and is currently being promoted by the Agricultural Farm at Gannoruwa. This synergistic will generate the biomass for energy requirements while providing fertility for the crops and fodder for livestock.

Land Use and Green cover

Large extents of unproductive lands would now be better utilized as energy plantations. Not only will there be plantations but simultaneously the green cover in the country will be enhanced. If 500,000 Hectares of energy plantations are grown, it can increase the forest cover from the current 19% to 25%.

Soil Erosion

Gliricidia has been proven to be ideal for Sloping Agricultural Land Technology (SALT). Through a method of planting along the grid lines in twin hedgerows, soil erosion can be arrested. This method has been very effectively sustained in the hill country in tobacco growing lands.

Pricing

Energy content-wise 4 tons of fuel-wood is equivalent to 2 ton of Coal or 1 ton of oil. At prices for oil at around Rs 42,000/= per ton, the energy equivalent price of fuel-wood would be around Rs 10,000/= per ton. The current delivered price of sustainably grown fuel-wood (Gliricidia) is Rs 4,000/= per ton. Presently, energy for energy, sustainably grown fuel-wood (SGF) is three times cheaper than oil. With the creation of the market, fuel-wood as a

commodity is likely to be even cheaper. As the price of fossil fuel continue to increase and the supply becoming volatile, domestically grown fuel-wood will become increasingly attractive.

Employment & Growth in Rural Economy

Fuel-wood farming can become an attractive employment opportunity to the rural youth. A fully grown energy plantation of 20 ha (50 acres) can provide employment to around 40 persons on a sustainable basis bringing an income of around Rs 300 a day for manual labor. A one MW power plant would inject a sum of Rs 25 million to the rural economy. This sum will be shared between the farmers and the collecting agents. This opportunity will also reduce migration by the rural youth to urban areas.

Foreign Exchange

Large sums of foreign exchange will be saved from not importing fossil fuel and can be diverted to other important areas or reserves.

For example, the 425,000 tonnes of petroleum fuel is being consumed presently, in the industrial sector for heat energy. This is costing Rs 23 billion annually. This can be replaced with the planting of 450 Million trees over a period of three years.

Villages and districts in the Northern and Eastern Provinces can be mobilized immediately with this programme, which will give substantial income to the people who are desperately in need of income and livelihood, within one and a half years.

The newly formed Sri Lanka Bio Gas Association (SLBGS) with whom the BEASL is collaborating can have an impact on bringing relief to the transportation sector and other users of gas. This will also result in Foreign Exchange savings.

Electricity to Inaccessible Areas

There are many areas in the country where grid electricity may not reach due to transmission difficulties. Biomass electricity is an ideal solution to such areas. Here the CEB plans to augment substations could promote the expansion of the renewable sector.

Even if money is not forthcoming from the ADB, government policy should provide Banks with substantial incentives to promote this economic activity as it is vital for the development of the rural areas.

Economic, Social and Environmental Impact

The BEASL has now the capability to advise interested persons on the economic, social, and environmental impact of growing plants for biomass. The integrated trials at Rathmalgala are a valuable demonstration of the triple benefits of fuel, fodder and fertilizer. The public has now the opportunity to access information from the BEASL on this facility.

Apart from this a new CD has been released on the growing and utilization of Gliricidia Sepium which was put together by the Audio Visual Unit of the Department of Agriculture

The urgency for a national commitment to growing Gliricidia

At meetings connected with Bio Energy the question is asked as to why the growing of Gliricidia is not promoted with greater commitment. The urgency has still not been adequately recognised by the policy makers, even though Gliricidia was declared the fourth national plantation crop as far back as 2005. Soon dire necessity may force a change in attitude. However, if you keep it too long Sri Lanka will have to pay a great price which can be avoided with immediate action.

The presentation to the National Economic Council

The BEASL has had intensive discussions with the Institute of Policy Studies to get the subject of bio mass into the national development programme. A presentation for the National Economic Council has been pending on the Agenda of the National Economic Council for several months. This item needs the urgent attention of the government both with regard to its agricultural policy and that of energy generation and has to therefore get the highest priority.