



Invasive alien trees disrupting bio-diversity

Of all the plants that have proved useful to humanity, three are distinguished with utmost veneration. These are: Neem, Coconut and Bamboo -- all natives of South Asian subcontinent and adjoining areas. In India, *neem* is known as 'divine tree', 'heal all', 'nature's drug store', and 'panacea for all diseases'.

K. MAUDDOOD ELAHI

ALL over northern Bangladesh the practice of planting fruit trees near the homestead and on other lands is being undermined in recent decades. This has happened soon after the campaign of Social Forestry Programme (SFP) publicising for planting certain quick-growing trees supposedly of higher timber-value. Earlier, many fruit-bearing trees have been the sources of extra income as well as supplementary food for many households in the impoverished areas, specially in the Monga-prone districts of northern Bangladesh. In particular, for example, seeds of jackfruits and creeper potato (Gachh Alu/Machh Alu) stored earlier were used in time of food scarcity during the Monga induced crisis.

During the last three decades or so there has been a rush for planting cheap wood trees of foreign species under the of the government with the help of a number of NGOs and commercial nurseries in northern Bangladesh (also elsewhere in the country). The idea of this so-called 'social forestry' came along with loans from the Asian Development Bank (ADB) since late 1980s. In most parts of Northern Bangladesh (also elsewhere with original forest areas, as in greater Dinajpur district, the Madhupur tracts, Sylhet, Chittagong and Chittagong hill districts) and even in the natural *sal* forest zones of the greater districts of Rangpur and Dinajpur, indigenous trees in natural forests were replaced by exotic foreign species of *acacia* and *eucalyptus* under two ADB funded projects - Thana Aforestation and Nursery Development Project (TANDP) and Forestry Sector Project (FSP) of the Forest Department.

On the other hand, over-exaggerated campaign for planting the above foreign species like trees has instilled a distorted perception of real value of these trees amongst the people and turned them away from planting fruit trees or traditional cash-earning trees. As per local plant nurseries, there are now more than a billion of such exotic trees, mainly eucalyptus, planted in greater Rangpur alone.

The acacia seeds do have some food value for human consumption, but is less of timber value and its leaves are favourite food for Koala Bear in Australia (<http://en.wikipedia.org/wiki/Acacia>). However, that is not consistent with local cuisine culture of people are the leaves

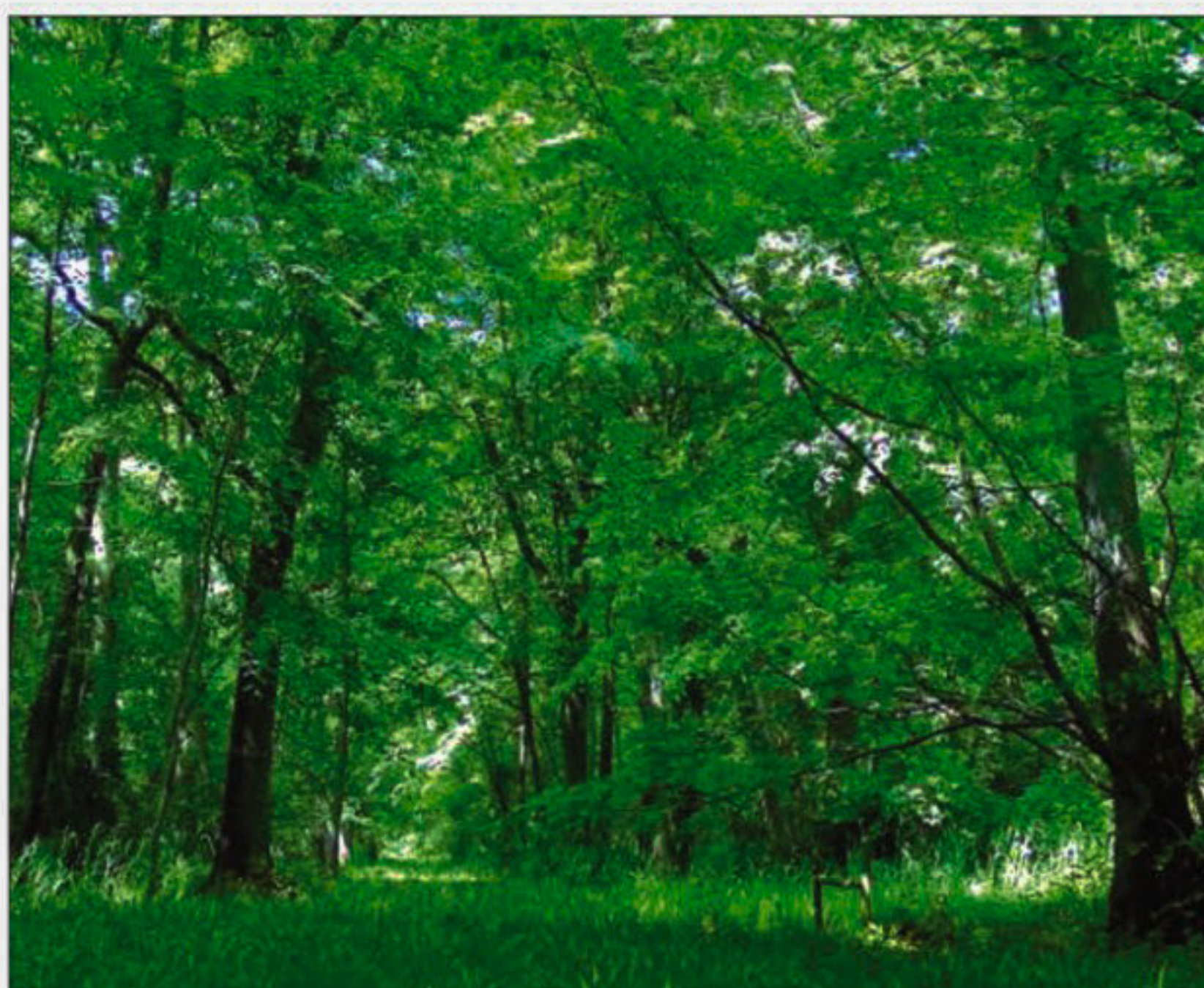
liked by livestock population in Bangladesh. On the other hand, the eucalyptus has a number of medicinal and cosmetic uses, and its timber as basic raw material in soft-wood and ply-board industries (http://www.drugwatch.infor/a_eucalyptus_JWurges.htm). But neither the Social Forestry Program and the local NGOs nor the Ministry of Commerce and Industries is known to have ever aware of such potentialities; and as the field level information indicates, the local people are entirely in dark about such utilities.

Planting misery onto poverty

One would now be appalled to see that the native *sal* trees were indiscriminately felled in order to prepare grounds for man-made forests in the above areas. The forest officials have allegedly been only too happy to undertake the responsibility to implement the project as they could very easily and quickly pocket some profit by selling valuable *sal* timber, while appeasing both the government and the donor agencies as to their performance on the 'social forestry programme'. It may be noted that here the two exotic varieties (acacia and eucalyptus) of trees are of Australian origin. But in Australia there is a campaign of planting *Neem* trees of South Asian/Indian varieties!

Elsewhere, as in the Madhupur in Tangail following clearing of *sal* forests the man-made forest of exotic species has now been replaced by banana plantation evicting the tribal or *Adivashi* people (Garo/Mandi and Koch) in collusion with forest officials and local political elites. In many rural homesteads of northern Bangladesh, as a result, fruit-bearing trees have greatly been replaced by eucalyptus, varieties of acacias and mahogany trees. These trees are also being planted in crop fields as well as along the plot boundaries of farm lands. Even a large area of natural *sal* forests from Salti (named after Sal-tree forest) to Vendabari in Mithapukur upazila in Rangpur and other places in the districts of Dinajpur, Thakurgaon, Panchagarh and adjoining areas have been cleared to plant mainly eucalyptus, a quick-growing species but of little timber value.

There is evidence of clearing existing woodland to provide areas for social forestry projects. It may be mentioned here that the *sal* is economically the most important spicier as the trees provide hardwood as poles and sawn timber for house building. The current timber value of



the *sal* is about Tk. 2000 per cft. In addition, local people collect firewood as well as dried leaves as source of fuel. The bark and roots are known to have medicinal value for various ailments. Its seeds are being used for oil extraction for various uses. They are also a good habitat for wild bees producing honey and wax. A number of tribal populations (mainly the Santhals, Oraon and Munda) of northern Bangladesh used to consider *sal* forest as its economic base for their resourcefulness. This base having been disturbed, these people have now been turned to join the already economically depressed and socially disadvantaged landless agricultural labourers in this region.

Further, it has also been noted that the two introduced varieties of trees of foreign origin have also threatened local biodiversity since no bird species is attracted to their fruits and the birds also avoid them for nesting. Also an increasing level of disturbance in the traditional ecosystem is now being suspected. Even their leaves are not used as fodder for livestock and they do not easily decompose to add nutrition to the soil. The pollen from their flower (particularly of acacias) is also suspected for aggravating various types of allergies and asthma among human population.

It seems that the does not have any spirit of economic entrepreneurship for enhancing livelihood of the rural poor. For example, these two tree species and some mahogany are planted with hardly enough space left for their proper growth (eucalyptus and acacia require about 3 meters gap in-between for their growth). Most often planted around homesteads, in plots within rice fields and either removing

or alongside bamboo groves and along the boundary lines (*alls*) of rice fields, these trees would take about 5 to 7 years to mature and the wood value would fetch Tk. 400 to 500 per cft, and could be of better use after 15 to 20 years fetching perhaps Tk. 600 to 800 per cft. But within the same period, a fruit tree, like, jackfruit, mango, lemons or betelnut would bear fruits contributing cash earning as well as household level nutrition. In 15 to 20 years time, the same jackfruit tree, if felled, would yield timber valued more than Tk. 1500 to 2000 per cft. And a single piece of bamboo maturing within 1 to 2 years would fetch Tk. 90 to 120 a piece. The economics is simple and straight enough to understand that the luxury of planting exotic trees is suicidal for Bangladesh! Further, a number of crops, like, ginger, turmeric, some varieties of taro etc. cannot grow satisfactorily nearby or under the shade of eucalyptus or acacia trees. These crops were cultivated in backyard garden of almost all households and along with orchards and/or under the perennial fruit trees, like, mango, jackfruit, lychee etc. Thus the foreign species of trees have lowered their production by about 50 per cent during last two decades. The consequences are quite obvious. It is quite apparent that the whole Social Forestry Programme is far from ground level reality of social and economic entrepreneurship and lacks planning wisdom vis-à-vis local needs for poverty alleviation.

Prospects of local tree crops

It is now quite evident that the misconstrued campaign of social forestry has now somewhat diverted the rural people from planting many traditional cash-earning trees, like, various herbal trees (i.e. *Neem*, *Arjun*, *Haritaki*, *Bahera*, *Ashok*,

Amlaki, *Kanchan*, *Jarul*, etc.), *Jam* (tree-berries), *Sajna*, a range of lemons including *Batabi* *Lebu* or *Jambura* etc. Many of these could be of good sources of income during the period of crisis in many impoverished areas of Bangladesh

On the other hand, the range of herbal trees could be a source of money all the year round for many poor households in Bangladesh. Among the herbal tree species, *neem*, in particular deserves special attention for both its timber value as well as medicinal properties for both human health as well as pest control in various crops. The timber value of *neem*, suitable to use in ten years, is much higher i.e. fetching Tk. 1000 to 1200 per cft similar to mahogany trees. It is ironical that while the Indian varieties of *neem* are being planted West Africa and American continents, they are being almost annihilated in Bangladesh in a planned manner.

The case of neem

Of all the plants that have proved useful to humanity, three are distinguished with utmost veneration. These are: *Neem*, *Coconut* and *Bamboo* -- all natives of South Asian subcontinent and adjoining areas. In India, *neem* is known as 'divine tree', 'heal all', 'nature's drug store', and 'panacea for all diseases'. Generally, *neem* is considered to be useful as a source of shade and medicine - especially for malaria, and products made from *neem* have proven medicinal properties being anti-anthelmintic, antifungal, anti-diabetic, antibacterial, antiviral and anti-fertility. It is considered a major component in Ayurveda and is particularly prescribed for skin diseases and alleviating suffering of chicken pox patients.

All parts of the tree are used for preparing different medicines. *Neem* gum is used as a bulk agent and for preparation of special purpose food for diabetic patients. *Neem* oil is used for preparing cosmetics and is useful for skin care. *Neem* twigs are widely used

for brushing teeth in the sub-continent.

In Ghana it has become the leading producer of firewood/fuel for the densely populated Accra plains, and it is of great importance for its anti-desertification properties and being a good carbon dioxide sink. *Neem* is drought resistant and from Somalia to Mauritania it is a leading candidate for halting the spread of the Sahara Desert.

In 1980s *neem* was introduced in the Caribbeans, where it is being used to help reforest several nations. It is already a major tree species in Haiti. *Neem* is a source of environment-friendly biopesticides. Tests have indicated that *neem* materials can affect more than 200 insect species as well as some mites, nematodes, fungi, bacteria and even a few viruses.

A 1968-UN report called a *neem* plantation in northern Nigeria 'the greatest boon of the century' to the local inhabitants. Unfortunately, *neem* is now a victim of biopiracy since over a dozen patents have been taken by various chemical corporations in US and Japan. Bangladesh has lost its opportunity for a patent right!

Concluding remarks

The above discussion simply implies that there has been enormous dislocation of not only household economy and nutrition level through the Social Forestry Program but it is also causing long term impact on biodiversity and human environment at large. In such a situation, there is now great need for an in-depth evaluation, and preferably, a total policy shift in the SFP in the interest of preserving our biodiversity, local tree species and human habitat dependent on these.

Dr. K. Maudood Elahi is Pro-Vice Chancellor, Stamford University Bangladesh, Dhaka 1209, and also acts as Chairperson, Department of Environmental Science in the same university. E-mail: elahikm@stamforduniversity.edu.bd.

Creating a sustainable world

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product. Organic is like a homecoming to a purer, simpler time -- it's the most natural and wholesome approach to farming.

Thus their operations began in the year 2000, when they acquired virgin lands in Panchagarh, which had never been used for cultivation. The land was deliberately chosen to ensure the purity of the soil. They worked extensively to prepare this often arid and sandy soil using natural methods. Only natural fertilizers and pesticides, made mostly from cow dung, *neem* and neem leaves etc. are used in the garden to ensure organic farming. They also try to main-

tain natural ecosystem and balances which minimise adverse effects found in more unbalanced farming areas.

Therefore the organic tea estate is already walking on the path that the theme of World Environment Day 2010 reveals -- "More species. One Planet. One future" which focuses on biodiversity-ecosystem management and the green economy. Now it's time for all of us -- following keeping such initiatives as inspiration -- to move towards restoring the balance of the ecosystem and the environment as a whole.

Asma-Ul-Roxana is an environment activist.

Recognising **local** efforts
for a **global** concern

HSBC - The Daily Star Climate Awards 2010

HSBC, the first carbon neutral bank in the world, seeks to promote environmental preservation through worldwide projects and programmes. The Daily Star, the country's largest English newspaper, is also committed to the cause of managing climate change in Bangladesh.

The "HSBC - The Daily Star Climate Awards" is being introduced to recognise and promote individuals and institutions that are working towards adaptation, mitigation, running environment friendly business operations and doing research for climate change in Bangladesh. Open to majority owned Bangladeshi companies and Bangladeshi individuals, the awards will be given in four categories:

- Climate change adaptation: for public, private sectors, NGO/CBOs etc.
- Climate change mitigation: for public, private sectors, NGO/CBOs etc.
- Climate change research and knowledge management: for educational/research institutes, researchers, public, private sectors, NGO/CBOs etc.
- Green Business Entrepreneurships: mainstream businesses with environment friendly operations

Nomination forms and programme details can be found in www.hsbc.com.bd and www.thedailystar.net. Nominations must be submitted to The Daily Star on or before 31 August 2010. Knowledge partner for this initiative is **Waste Concern**.

Species: *Neolamarckia Cadamba*
Location: Southeast Asia

Threats: Habitat loss, climate change

The Daily Star

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