

Social forestry, exotic trees and monga

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ALL over northern Bangladesh the practice of planting fruit trees in and near homestead and other lands is being undermined in recent decades. This has happened soon after the campaign of Social Forestry Programme publicising planting of certain quick-growing trees supposedly having higher timber-value. Earlier, many fruit-bearing trees have been the sources of extra income as well as of supplementary food and nutrition during the *Monga* crisis for many households. In particular, for example, seeds of jackfruits and creeper potato (Gachh Alu or Machh Alu) stored earlier were used in case of food scarcity during the *Monga* period. The timber of jackfruit trees is also of great value for furniture making as well as for house construction. During the last three decades or so there has been a rush for planting cheap trees of foreign origin under the Social Forestry Programme 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 'social forestry' came along with loans from the Asian Development Bank (ADB) in late 1980s with a view to involving women and local poor people to have an alternative source of income and to overcome rural fuel crisis through planting of some quick growing tree species. Unfortunately, this programme did never look for any quick-growing local trees. Consequently, all over northern Bangladesh (also elsewhere as in Madhupur Tracts 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 began to be replaced by exotic foreign species of acacia and eucalyptus under ADB funded Thana Afforestation and Nursery Development Project (TANDP) and Forestry Sector Project (FSP) of the Forest Department, GoB.

These exotic trees are being planted with almost missionary zeal in all the *Monga*-prone upazilas in northern Bangladesh. As per local plant nurseries, there are now more than a billion of such exotic trees planted in Greater Rangpur alone. It is striking to note that as soon as one crosses the

Jamuna Multipurpose Bridge, one would come across proliferation of eucalyptus trees all around homesteads and in farmlands as if these are being elevated to the status of 'national tree'!

The same applies to the acacia trees. The acacia seeds do have some food value for human consumption, and its leaves are favourite food for Koala Bear in Australia (<http://en.wikipedia.org/wiki/Acacia>), but that is not consistent with local cuisine culture of people nor is the leaves liked by livestock population in Bangladesh not to speak of its very less timber value. Although, 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), neither the Social Forestry Programme nor the local NGOs or the Ministry of Commerce and Industries is known to have ever exploited 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 even sizeable parts of native sal forests were cleared in many areas to prepare grounds for man-made forests in northern Bangladesh. Large areas 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. The forest officials perhaps have been happy to undertake the responsibility to implement the project as they could easily gain money by selling valuable sal timber, while appeasing both the government and the donor agencies as to their performance of the 'social forestry' programme. It may be noted that the main two exotic varieties of trees are of Australian origin. But in Australia itself there is a campaign for planting *Neem* trees of South Asian/Indian varieties!

Elsewhere, as in the Madhupur sal forests in Tangail, the experience has been even bitter where the man-made forest of exotic species has now been replaced by banana and pineapple plantations

There is the need for an in-depth evaluation, and preferably, a total policy shift of the Social Forestry Programme in northern Bangladesh (as well as elsewhere in Bangladesh) in the interest of accruing real social and economic benefits out of social forestry programme. It should be noted that local plants, animals and microbes typically found in a given geographic region constitute the natural biotic community of any sustainable ecosystem, and we have almost destroyed this ecosystem to the detriment of economy and livelihood of the poorer sections of population.

by outsiders evicting the tribal people or Adivasis (Garo/Mandi and Koch) in collusion with forest officials and local political elites. There is also evidence of deliberate clearing of natural woodland to provide areas for social forestry projects.

It may be mentioned here that the sal is economically the most important species since 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. They are also a good habitat for wild bees producing honey and wax. A number of tribal populations -- Adivasis (mainly, the Santhals, Oraon, Munda etc.) -- of northern Bangladesh used to consider these sal forests as their economic base for survival. This base having been disturbed, these people have now been made to join the already economically depressed and socially disadvantaged landless agricultural labourers of 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.

On the other hand, the exaggerated campaign for planting the said foreign species of trees has instilled a distorted perception of their use/value at the cost of local trees amongst the people, and turned them away from planting fruit trees or traditional cash-earning trees. It is questionable whether these foreign species have been able to meet the demand of the rural poor. It is quite apparent that the SFP does not have any expressed spirit of sustainable economic entrepreneurship for enhancing their livelihood.

Along with the two exotic species some mahogany trees are planted with hardly enough space left for their proper growth; often planted around homesteads, in

plots within the rice fields and either removing or alongside bamboo groves and along the boundary lines (ails) of rice fields. These trees would take minimum 15 to 20 years for fetching perhaps Tk. 600 to 800 per cft. But within the same period, some fruit trees, like, jackfruit, mango, lemon or coconut would bear fruits and add to household level nutrition as well as cash income; and a number of perennial trees, such as, betel nut and bamboo would mature in 8 to 10 years to contribute cash earning as well. In 15 to 20 years time, the same jackfruit trees, if felled, would yield timber valued more than Tk. 1500 to 2000 per cft, bamboos maturing within 1 to 2 years would fetch Tk. 90 to 120 a piece, and betel nuts, usually maturing during the *Monga* season, would fetch about Tk. 100 to 150 per Kg.

The economics is simple and straight enough to understand that the luxury of planting exotic trees is now proving suicidal! Further, a number of crops, like, ginger, turmeric, some varieties of taro etc. cannot grow satisfactorily near or under the shadow of eucalyptus or acacia trees. These crops traditionally were used to be cultivated in backyard garden of almost all households and along with orchards and/or under the perennial fruit trees.

Thus the foreign species of trees have caused widespread damage to the cultivation of traditionally high-value spices like, ginger and turmeric in northern Bangladesh lowering their production by about 50 per cent during last few decades. It may be mentioned that northern Bangladesh used to meet most of the country's total demand of ginger which is now imported from China and India.

The consequences are quite obvious. There has been decline in household income from off-farm or home-based cash sources and the *Monga*-hit people are the worst sufferers. It is ironical to note that local fruits are not to be seen in abundance in any rural markets. Fruit shops are now full of costly



apples and oranges imported from abroad.

It is quite apparent that the whole SFP is far from ground level reality of social and economic entrepreneurship and lacks planning wisdom vis-a-vis local needs for poverty alleviation. In this connection, it may be appropriate to undertake a separate study in order to investigate into the impacts of the TANDP and SFP on the household and community level nutrition status and to evaluate the comparative socioeconomic advantages, if any, of planting foreign species of trees against indigenous/traditional trees in northern Bangladesh.

Local tree crops and the monga

The supposedly misconstrued campaign of social forestry has somewhat diverted the rural peo-

ple 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/Jambura, varieties of Boro/Kul, jack fruit, mango, lychee, coconut, betel nut, bamboo, categories of palm, Kamranga, Nona and Sharifa Ata, tamarind, Golapjam, Jamrul, indigenous olive. Many of these, particularly, ginger, turmeric, lemons, coconut and betel nut could be good sources of income during the period of *Monga* in northern Bangladesh. These are traditional crops of high monetary value, and can supplement household income for people in poverty. On the other hand, the range of herbal trees could be a good source of money all the year round for many poor households in northern

Bangladesh. Among the herbal tree species, the *Neem* - a member of the Mahogany family, in particular deserves special attention for both of its timber value as well as medicinal properties for human health as well as pest control in various crops.

Neem - the 'divine' tree

Of all the plants that have proved useful to humanity, three are distinguished with utmost veneration - *Neem*, Coconut and Bamboo - all natives of South Asian subcontinent and adjoining areas. In India, it 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 antihelmintic, antifungal, antidiabetic, antibacterial, antiviral and antifertility. 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 many different medical preparations. *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 such as acne, and maintaining skin elasticity. *Neem* twigs are widely used for brushing teeth in India, Bangladesh and Pakistan -- the practice is perhaps one of the earliest and most effective forms of dental care.

In Ghana it has become the leading provider of firewood/fuel for the densely populated Accra Plains, and it is of great importance for its anti-desertification properties and possibly a good carbon dioxide sink. *Neem* is drought resistant and from Somalia to Mauritania it is a leading candidate for helping halt the southward spread of the Sahara Desert. Near Makka, a Saudi philanthropist planted a forest of 50,000 *Neem* trees for shade and comfort of pilgrims who camp each year in the Plains of Arafat. In 1980s *Neem* was introduced into the Caribbean 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. Among the isolated *Neem* constituents, limonoids (Azadirachtin)

are effective in insect growth-regulatory activity - it does not directly kill pests, but alter the life-processing behaviour in such a manner that the insect can no longer feed, breed or undergo metamorphosis. 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. Because *Neem* is a tree, its large scale production promises to help alleviate several global environmental problems: deforestation, desertification, soil erosion, and perhaps even (if planted on a truly vast scale) global warming. Its extensive, deep roots seem to be remarkably effective at extracting nutrients from poor soils. These nutrients enter the topsoil as the leaves and twigs fall and decay. Thus, *Neem* can help return to productive use some worn-out lands that are currently unsuited to crops.

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. The timber value of *Neem*, suitable for use in ten years, is much higher than those of acacia or eucalyptus, 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 from South Asia to West Africa, and American continents, they are being almost annihilated in Bangladesh!

Concluding remarks

The above discussion simply implies the need for an in-depth evaluation, and preferably, a total policy shift of the Social Forestry Programme in northern Bangladesh (as well as elsewhere in Bangladesh) in the interest of accruing real social and economic benefits out of the programme. It should be noted that local plants, animals and microbes typically found in a given geographic region constitute the natural biotic community of any sustainable ecosystem, and we have almost destroyed this ecosystem to the detriment of economy and livelihood of the poorer sections of population.

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China continues measures to tackle air and water pollution

NURUL HUDA

CHINA decided to continue measures adopted to tackle air pollution in Beijing on the eve of the Olympic Games to address environmental challenges despite recent improvement in its air quality. According to Du Shaozhong, Deputy Director of the Beijing Environmental Protection Bureau, the treatment of heavy polluting vehicles and in some cases their removal will be accelerated. Authorities have plans to reduce dust from construction site to curb air pollution.

Beijing requires heavily polluting companies to address their pollution problems as a pre-requisite to resume their operations with the conclusion of the Olympic Games. "If they cannot resolve the pollution problems, they must stop or limit their production," the China Daily said quoting Du Shaozhong.

According to Vice Chairman of Beijing Olympic Committee (BOC) Jiang Xiaoyu China improved air quality of the city significantly through efforts of about 11 years. According to him, air pollution of the city has been greatly reduced through corrective measures involving an investment of about 15 billion Yuan. According to him the hosting of the Olympics was an opportunity for his country to project its image and reply to criticisms from different quarters prior to the big world event.

About 90 per cent of Beijing's waste water is now treated and over 50 per cent of the city has been brought under afforestation programme. Natural gas accounts for 60 per cent of energy generation -- up from 45 per cent in 2000. Meanwhile, a total of 50,000 taxis and over 10,000 buses have been replaced with new ones, and 4000 of the buses are powered by natural gas

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-- now the largest fleet of its kind in the world, official sources claimed. Besides, at least 200 polluting industrial units of the city have been closed, shifted or have switched over to cleaner modes of production over the past seven years. All these cost an estimated amount of nearly 45 billion Yuan.

The China Daily in its issue of August 24 quoting Ms. Wang Li, Deputy Director of Beijing's Traffic Administration said that since the opening of the Games on August 8, the city's air quality ranged between excellent and fairly good on the pollution index, the cleanest for any summer period in the past 10 years. Ivo Allegrini, Head of the Air Pollution Department at Italian

National Research Centre and a member of the Beijing Environment Protection Bureau's 12-member expert panel on air quality assessment during the Olympic Games had words of praise for Beijing's improvement in air quality: "The city's air quality was highly satisfactory during the Games in the past two weeks. Pollutant data were no higher than that in most urban cities".

Andreas Wahner, Director of the Institute for Chemistry of Germany told the China Daily, "Beijing's air pollution measures have received a remarkable improvement as major pollutant concentration has declined to reach WHO guidance." Du Shaozhong of Beijing

Environmental Protection Bureau who sounded realistic said, "The environmental challenges we face are by no means over." He said they would draw experiences from the Olympics to organize volunteers to get involved in the daily environment protection administration and continue to reward those who report illegal pollution activities.

Meanwhile, 65 media persons representing 16 countries who were invited to China in connection with the Olympics, were taken to Tianjin's TEDA Resurgent Water Factory covering an area of 6.71 hectares in Tianjin Economic-Technological Development Area. As a member of the group I

had the opportunity to visit the project and get ideas how sewage water was being treated for industrial and other purposes.

The project which was set up with a total cost of RMB 170 million (One US Dollar is equivalent to 6.8 RMB) including US \$ 4.9 million Norwegian loan disposes of 10 tons of sewage daily. Officials of the project told the visiting journalists' group of whom eight were from Bangladesh that the factory has developed and expanded from the simple sewage disposal business in the past into multiple water businesses that combine sewage disposal, electroplating waste water, regenerative water disposal, sea water desalination, and other waste water disposal.

Electroplating waste water disposal of the centre was described as another advanced environmental protection infrastructure, with excellent equipment and advanced technology. According to a top official of the project, "The factory made a breakthrough in solving the significant and great technology difficulty to regenerate and recycle sewage with high contents, and took the lead in China to implement advanced treatment of sewage desalting."

Xiao Huaiyuan, Standing Member of Tianjin Committee of Communist Party of China (CPC) who is also Director of the Publicity Department of Tianjin Committee of CPC while narrating different steps which were taken for successful hosting of some of the events of Olympics in his province made special mention of air pollution control and water pollution measures. According to him authorities would continue corrective measures for improvement of air quality and reduction of water pollution so that people could breathe fresh air and get supply of safe water.

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Ghana environmentalists see local cause of climate change

Developing countries like Ghana are home to the vast majority of the world's remaining tropical forests. Those forests play a central role in removing carbon dioxide from the atmosphere, helping to alleviate global warming, and making the avoidance of further deforestation a principal goal of environmental policy makers worldwide.

TAREQUK ISLAM MUNNA

THE latest round of United Nations climate change negotiations took place in Accra, Ghana, from 21-27 August. The Accra Climate Change Talks took forward work on a strengthened and effective international climate change deal under the UN Framework Convention on Climate Change, as well as work on emission reduction rules and tools under the Kyoto Protocol. This is part of a negotiating process that will be concluded in Copenhagen at the end of 2009. Over 1600 participants attended the Accra meeting, which was the third major UNFCCC gathering this year.

Delegates at the U.N. climate change conference in Accra hoped to move a step closer this week towards an agreement to replace the dated Kyoto accord. Even as they worked, environmental activists in Ghana say the country is already feeling the effects of global warming.

Flooding, drought, and persistent bushfires are some of the results felt in recent years in Ghana from the change in global climate, says Agustus Asamoah, research

manager at the Ghana Wildlife Society.

"Ghana being a tropical country, the effect of climate change can be twofold," he said. "It can result in prolonged droughts and erratic rainfall patterns, in which case there can be years of too much rain, too much rain than expected, or less than expected in certain parts of the country. As happened in the northern part of the country last year, we had so much rain, and flooding that had not been experienced in decades."

Asamoah says precise studies have not been carried out to link climate change to decreases in wildlife in Ghana, but his research shows a correlation between fluctuating coastal water levels associated with unusual levels of rainfall, and a recent decrease in migratory bird populations.

Other Ghanaian environmentalists fear that Ghana is not only a victim of global warming, but also contributing to the problem through excessive harvesting of its once vast tropical forest. Ghana is losing its forests more quickly than they can be replaced, says George Ahadzie, director of the Accra-

based Green Earth Organization.

"The problem with deforestation is largely to blame on the government," he said. "That is, the government is not committed to some of the basic rules that it, itself has put in place to regulate or to ensure that forest is conserved. One is the issue that the government is not able to control what we call the annual allocation of companies in timber processing. So because government cannot monitor, people are always cutting beyond what we call the annual allowable cut." Ghana forests are being cut at a rate of nearly two percent annually. Only one quarter of the original forest remains.

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