Bamboo Flowering in the North-East
Crisis Beckons Opportunities

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When it flowers, bamboo dies, and famine follows,” so goes the popular belief, a phenomenon that coincides with the rise of rodent population and food scarcity. Mizoram, which already experienced the ‘mautani’ tragedy in the late fifties, is preparing the state administration and its people to face any eventuality, even encouraging the village folks to fight the rodent menace with a ‘one-rupee-one rat tail’ reward.

The twin natural happenings of gregarious bamboo flowering – mostly Melocanna Baccifera species, locally known as muli bamboo – and the rise in rat population in several northeastern states of Mizoram, Meghalaya, Southern Assam and Tripura is reported in the media on a daily basis.

Though there is no authentic data available on the geographical spread of the bamboo-flowering in the northeast, scientists fear that the impending crisis is likely to destroy over 25 million tonnes of bamboo stock, spreading over 18,000 hectares of forest areas within the next few years, and bearing serious economic and ecological implications. They claim, in simple economic terms, if the entire resource was left to rot in nature, it means draining of about Rs. 1200 crore.

One of the critical aspects of gregarious bamboo flowering is the decay and degeneration of the large bamboo stock, which will directly affect the rural communities. For the tribal communities in the North-east, bamboo is a life-supporting gift of nature; some say the poor man’s timber. Bamboo plays an irreplaceable role in their lives. The Assamese traditional wisdom aptly describes the importance of the bamboo in their homestead planning: “Uttare charu/ Dakkhine garu/ Pube hahi/ Poshine bah (Kitchen on the north, cow shed on the south, pond/ duckery on the east and bamboo groove on the west).”

“The Assamese people always keep a bamboo groove on the west that protects the house from the pre-monsoon cyclone hitting from the west,” says Prabin Kotoky, a senior forest official. Other hill communities too maintain their bamboo stock, which grow abundantly. Apart from its use as house building material, bamboo provides critical support to make tools required for a whole range of things such as making baskets, mats, handicrafts etc., that help them improve their economic condition and ‘material culture’. Bamboo shoots, a tribal delicacy, is a highly nutritious food item. Bamboo, therefore, is an integral part of rural life, both in the plains and in the hills, and its exploitation remained on a non-industrial scale.

The impact will also largely be felt on the paper and pulp industries that feed on the bamboo resources, the scientists said. The two major paper mills of the Hindustan Paper Corporation (HPC) at Jagiroad in Nagaon district and Panchgram in Cachar district of Assam totally depend on the supply of bamboo, mostly muli variety, from N.C. Hills, Barak valley, Mizoram and Meghalaya – which are mostly affected by the flowering impact in the region. The HPC basically uses three major bamboo species – B. Tulda, D. Hamiltonii (for the Jagiroad unit) and Melocanna B. (for the Cachar mill).

But then, every crisis offers useful learning lessons and opportunities. So does the bamboo flowering. But what are these challenges and opportunities?

Five decades ago, when Mizoram faced the harrowing food crisis as a result of gregarious flowering and rodent invasion of farmlands – that eventually snowballed into a full-scale insurgency – the problem remained localised. Though Mizos still resent the “criminal indifference to the human sufferings” by the then government, many considered it as merely an issue of mismanagement of food supply, rather than learning lessons from the impact of the flowering and dealing with this natural problem.

Now, decades later, the anxieties are no longer localised; they have assumed national and global dimensions. Why?

Three major factors have been at work: One, research and development of technologies on bamboo and rattan that can transform them from a ‘poor man’s resource’ to a rich man’s industry; two, the spectacular success in the Chinese Community-based bamboo development programme as a model for rural livelihood and enterprise. This also proves that bamboo can build partnership between the rich and the marginalised to earn profit from it, and finally, the Supreme Court ruling on timber trade forced the industry to look for alternatives. Bamboo was found to be a viable and prolific resource.

India, the second largest bamboo-growing country in the world, silently watched the outstanding economic transformation based on bamboo and rattan programme in China and other countries. And soon it launched an ambitious National Bamboo Mission to tap the country’s vast underused resources, and energise the rural economy through cane and bamboo development. The initiative got a further boost with several UN agencies such as, United Nations Industrial Development Organisation.
Northeast, which grows about 60 per cent of the country’s bamboo resource, naturally became a major focus and the hub of cane and bamboo development activities. Thus, under a UNDP-sponsored programme, INBAR was invited to set up an experimental agency, Cane and Bamboo Technology Centre (CBTC) at Guwahati to explore the cane and bamboo resources of the northeast, and to begin with, provide technical guidance to bamboo users, artisans and entrepreneurs as well as build networks between them and the technology providers.

“One of the key components of our works is to set up a demonstration centre at Guwahati, where they can come and see for themselves how technology can improve their skills and products,” says Kamesh Salam, CBTC project co-ordinator. For the last two years, the CBTC has been pursuing those objectives, and has made some visible progress in creating interests among local bamboo users and artisans.

However, there are two immediate issues the CBTC is grappling with, says Partha P. Majumdar, the project manager: The first is the management of bamboo flowering crisis and secondly, to work out a comprehensive action plan for initiating the commercialisation process of cane and bamboo resource through a sustainable community-based bamboo plantation programme that creates employment and improves economic condition of the tribal people.

In April a group of experts comprising the scientists, bamboo-based business managers and the forest officials gathered at the Rain Forest Research Institute, regional scientific think tank at Jorhat, to discuss how to transform this ensuing flowering crisis into a huge opportunity. The immediate challenge is: what should be done with a huge pile of bamboo, which might simply go waste due to the impact of gregarious flowering? Should they leave it to natural course as they did five decades ago, or they should make use of the resource?

“We need to address two key aspects,” Director General of Indian Council of Forestry Research & Education (ICFRE), R.P.S. Katwal urged the experts. “First of all, we must make an assessment of the bamboo stock that may be available in the wake of the gregarious flowering, and draw up appropriate strategies for their sustainable utilisation; secondly, develop comprehensive plans to meet the challenging task of restocking the vast track of area with more valuable bamboo species.”

The experts felt that a detailed resource survey and mapping of the bamboo resources of the northeastern states had to be carried out, applying the state-of-the-art Geographic Information System (GIS) in collaboration with the forest department and the Forest Survey of India. They have also suggested that a bamboo flowering database be prepared with the help of INBAR, RFRI, FSI and forest departments. Even though the FSI has done inventory surveys of the growing bamboo stock in forest areas, the experts admitted that these were unreliable as studies over the last few decades offer disparate account, and therefore, an objective resource assessment system for bamboo must be developed in the region.

Regarding the available bamboo stock, the HPC, the main consumer of raw bamboo, suggested that maximum extraction of bamboo should be done, if possible well before the flowering; they offered to procure the bulk of bamboo. “We are prepared to lift one million MT of bamboo annually,” one of its senior officials told the experts. It has even offered to become a nodal agency for procuring bamboo from the region to feed the paper mills and other bamboo-based industries in the country. The HPC officials fear that the Cachar unit, which uses muri bamboo, may be badly hit if the supply chain of muri bamboo gets disrupted due to flowering crisis. They also urged the experts to suggest steps, including improvement of road and transport infrastructure and review of lease and contract systems that would enable the HPC to secure better access to the resources.

However, many experts feel that considering the many value-added uses of bamboo, the paper and pulp industry could face serious resource (raw material) crunch, as it does not offer an attractive price for it.

“Bamboo growers and users now will have many more options to raise their income,” Salam claims, citing a recent INBAR study, which spelt out at least 10 major bamboo-based sectors – construction, packaging, bamboo-board, bamboo-mats, house building, incense sticks, tooth picks, chop sticks, tools and implements, bamboo shoots, etc., – totally an economic activity worth a whopping Rs. 10,000 crore in the region.

However, in order to anchor these ideas on a commercial scale, Prof. A Damodaran of Indian Institute of Plantation Management, Bangalore focuses on a few other key issues: first, greater understanding of the existing structures and functioning of bamboo markets in the northeast; secondly, studying the entire bamboo supply chain – people and agencies involved in harvesting, collections, transportation, etc., – and its management to understand the current operations both in terms of scale and extent; and finally, working out an accurate account of the...
physical out-turn of bamboo annually not only from the forest areas but also from farmlands and plantations.

“Bamboo out-turn is not merely a function of stock. It is a function of harvesting systems which, in turn, relate to the economic situation of communities that subsist on bamboo – as is the case in the North-East,” he said.

All these require supportive policy initiatives for sustainable bamboo supply and the processing chains management. Several policy workshops strongly recommended bamboo to be treated as agricultural crop rather than a forest produce that would enable the community to take up bamboo plantations, and access scientific and technology inputs. Of course, “it is important to ensure that bamboo produce required for subsistence needs do not shrink in availability on account of an excessive focus on commercially significant products,” Prof. Damodaran opined.

The state governments of Tripura and Mizoram have already come up with a bamboo policy, which provides for creating bamboo districts, setting up demonstration and training centres for bamboo growers, artisans and entrepreneurs. The state governments need to address the more fundamental issue of creating those enabling conditions that promote sustainable community livelihood and rural economy.

A bamboo that never flowered!

An Apatani folklore explains why

As alarm sounded across the northeast over the impending fall out of the gregarious bamboo flowering, a group of bamboo experts was told to visit Ziro, a scenic pristine valley in Lower Subansiri district of Arunachal Pradesh. There they learned about a unique tribe, the Apatanis, who developed an indigenous method of growing monopodial bamboo (Phyllostachys sp.), which never flowered. Locally known as Apatani bamboo, it appears to be a close cousin of China’s ‘Moso’ species, which revolutionised the Chinese rural economy, said Dr. K. Haridasan, a senior scientist of State Forest Research Institute (SFRI), who pioneered the cane and bamboo survey and documentation in the northeast. Recently he visited China to understand the economic miracle. “On our way back, we brought some bamboo seedlings and tried on a few pilot plots. They are showing excellent results,” Haridasan said, suggesting common genetic traits between the Moso and the homegrown Apatani bamboo.

Apatani migration story also suggests the Chinese connection. The Apatanis migrated from Sino-Tibetan region and came down all the way to the present location where they have settled with well-developed wet rice and bamboo cultivation. “It was a long journey, spreading over centuries,” said 55-year-old Hibu Nyani, a respected community leader. “Our ancestors told us that once long long time ago, there was a huge seed-bearing flowering. They were so beautiful and aromatic that birds devoured them all. Bamboo were unhappy; they realised that if they produced seeds like this they would not be able to multiply because of the birds. So they decided to raise their families hidden from the birds, through the roots. Since that time there was no flowering.”

Amazingly, scientists see a sense in the story, as Haridasan goes on to explain that the Apatanis propagate the local bamboo through the rhizomes only. They plant the bamboo rhizomes keeping specific space to allow them to expand. Secondly, they strictly follow a sowing-rearing-harvesting schedule, which spans over three-four years. “Any child can tell the age of a bamboo from its colour,” says H. Doding, another bamboo plantation promoter, who is himself a farmer. The bamboo copses are ready for harvest within two years. Unless they are harvested within five years, decay will start, he added. That clearly suggests why Apatani bamboo never flowers.

Apatani bamboo is an integral part of the local people, so much so that, says Tilling Doley: “We leave our houses unguarded, but keep our bamboo plantations locked.” He is planning to set up a Bamboo propagation centre at his Nana-Koo Orchid Complex at Ziro, and has been encouraging the community to get involved in the enterprise. In fact, considering the well-entrenched indigenous bamboo plantation tradition, Ziro has been recognised as the bamboo district.

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**BAMBOO FLOWERING** 5