Natural disasters

No one has control over natural disasters. It tests our capability to cope, every time it occurs on earth. We cannot stop natural disasters from happening, but we can prepare ourselves. We feel proud of our scientific and technological excellence and it is obvious that we have made an impact in the world of S&T. Then, why should India not be able to prepare herself well before a disaster hits? This is a question we must ask ourselves.

Every time a disaster strikes the magnitude of response from all sections of society is impeccable. But the question is, do we wish to remain as 'reactive' all the time or should we also become 'proactive'? Out of my personal experience of working in Gujarat earthquake relief programme, I can say that, indeed, sheer ignorance about the nature of a disaster makes people more vulnerable to it. Education and social awareness programmes at every level are a must.

It should not take 1000 deaths in developing countries to make the same impact as one death in a developed country. Like a smoke or fire alarm system, a system needs to be around us everywhere to trigger the alarm for predetermined actions, which would be carried out in a strict manner to save life, property, etc. under any disaster situation. This demands good training and skilled manpower.

Last but not the least, bringing new scientific approaches and technologies, strengthening the existing ones, and more importantly, injecting a right attitude from the top to the ground level could give us a safer place to live.

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Saraca asoka

This is regarding the research article published by Arvind *et al.*[1], with cover-page photographs of some red-listed species of India. It is a good attempt in directing conservation efforts. However, the first photograph, *Saraca asoka* does not match with the image. I have a doubt about this image and would like to give some clarification on this important medicinal plant. The photograph looks more like a shrub of the Rubiaceae family than a Caesalpinaceae tree. The Ashok (Sanskrit for anti-suffering) tree is a symbol of longevity. It grows in the central and eastern Himalayas as well as in the west coast of India. Its bright orange flowers bloom in abundance during spring. It occurs naturally as a forest tree, often at the edges of streams. Initially slow to establish, it eventually develops into a tree with a compact canopy of pinnate leaves composed of lance-shaped leaflets. New foliage is soft, limp and pale green to light pink, becoming stiffer and deeper green as it matures.

Mythological stories reveal that Sita is said to have sat under this tree while being held captive by Ravana. Hence the tree is also called the Sita Ashok, and is not considered auspicious around Hindu homes, especially those homes where there are daughters. However, it is also sacred to Kama Deva, the God of Love, and its brilliant flowers provide delicately perfumed temple decorations.

According to a survey[2], about 34% of Indian women suffer from reproductive health problems related to uterine bleeding. This plant is a source of the 'wonder medicine' Ashokarista used to treat such ailments.

1. Arvind, N. A., *Curr. Sci.*, 2005, **88**, 258–265.
2. Batliwala *et al.*, *Status of Rural Women in Karnataka*, National Institute of Advanced Studies, Bangalore, 1998, p. 128.

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Although I am a muscle biologist, I would like to think of myself as an amateur botanist too. The first picture on the cover page of the 25 January 2005 issue of *Current Science*, despite the poor resolution, looked like the *Ixora* species to me and not *Saraca asoka* as is mentioned in the legend on the second page. I am aware that the flowers of the two are incredibly similar. However on the basis of three notable differences, it does not look like the one that is mentioned. The differences being: (i) *Ixora* buds look pointy, while *S. asoka* are blunt; (ii) *Ixora* flowers have a pointed tip, *S. asoka* are rounded; (iii) Whiskery anthers droop out in *S. asoka*, that are visibly absent in *Ixora*.

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See *Current Science*, 2005, **88**, 725 for an erratum on this subject.

—Editor

Lymphatic filariasis eradication programme

The eight states in the Northeast, i.e. Assam, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, Meghalaya and Sikkim, have a tropical climate with luxuriant moist and deciduous rainforest. This environmental condition is ideal for breeding mosquitoes, leading to epidemics like malaria, lymphatic filariasis (LF), Japanese encephalitis and other mosquito-borne diseases. Low socio-economic conditions, difficult terrain, limited health facilities coupled with poor surface communication specially during long monsoon periods, pose major challenges in providing health services.

LF caused by nematode parasites *Wuchereria bancrofti* and *Brugia malayi*, is one of the leading causes of permanent and long-term disability in humans. Mosquito vectors, mainly *Culex quinquefasciatus* and swamp-breeding species of *Mansonioides* transmit LF in the country. India alone accounts for 40% of global burden of this disease. About 450 million people in more than 18 states/union territories of India and belonging to about 257 districts are at risk of infection.

Assam contributes more than 94 lakh people who are at risk of filarial infection; 360,000 microfilarial carriers and 90,000 diseased persons to the national pool[1]. There is an increase of 10,000 microfilarial carriers during a period of one year. Both forms of LF (*W. bancrofti* and *B. malayi*) have been reported from Assam in earlier surveys[2]. Filarial survey conducted amongst labourers working in tea gardens and local population endorsed the earlier finding that high microfilaria and disease rates in tea labourers were recorded compared to local indigenous population[3]. However, Raina *et al.*[4] have reported a decline in *B. malayi* infection from the southern part of Assam. Regarding chemotherapeutic studies, literature retrieval revealed only one reference of drug trials against bancroftian filariasis using diethylcarbamazine (DEC) alone in a tea garden setting[5]. Thus the tea worker community is not only the main sufferer from LF, it is also responsible for transmission and propagation of filarial infection.

Most of the tea labourers whose ancestors originally migrated from high filarial endemic states like Orissa, Andhra Pradesh, Bengal, Bihar, Kerala and Uttar Pradesh during pre-independence era to work as labourers in various tea estates, are still living in densely populated labour lines within the tea gardens or in close vicinity of tea factories and remain isolated from other indigenous population. Now they are dispersing in all the possible tea-growing areas instead of living in isolation and confining themselves to the existing old tea estates, because of the fact that tea leaf plucking and processing requires skilled workers and the existing work force in Assam is being recruited in all newly created gardens across other states. In other words, along with tea workers, LF is now reaching newer niches. Further, *Cx quinquefasciatus*, the main vector of LF, is ubiquitous.

Studies conducted in Pondicherry, Shertallai and elsewhere in the country had shown that man-days loss due to filarial fever, acute attack and chronic clinical manifestation is huge and exerts significant impact on the socio-economic condition at both state and national levels. In the tea garden set up of Assam and Tripura, where tea output is directly related to work output, man-days loss due to filarial fever, acute attack and clinical manifestation must be enormous.

Researchers have found that single annual regimen of DEC at the dose of 6 mg per kg body weight, if given as mass therapy alone or in combination with albendazole (> 85% drug intake coverage), to eligible population consistently for a period of 4–6 years (Fecund period of filaria worm) is sufficient to control/block the transmission cycle of LF. These findings prompted the World Health Organization to identify LF as one of the six major tropical diseases potentially eradicable and planned to eliminate LF globally by 2020. Till date more than 32 out of 83 endemic countries are in the eradication programme globally. India has also joined hands with WHO and accordingly LF eradication programme in India was started in Andhra Pradesh, Tamil Nadu, Bihar, Uttar Pradesh, West Bengal, Kerala and Orissa.

However, the picture from the NE region is different. Though studies on filariasis in Assam have indicated specific vulnerability of tea-garden workers who have ancestral link with filarial-endemic states, except some scanty reports from Assam there is no documented report on prevalence of LF from any other state in the NE region. Even Tripura which is the second largest tea-growing state in the NE region that employs significant proportion of the worker population in the tea industry, lacks documentation. Currently, the only Filaria Survey Unit (established in 1965) is operating from Directorate of Health Services, Guwahati. Further, there is no filaria clinic in the whole NE region. The existing survey unit has limitations and constraints in conducting thorough night-blood surveys.

High compliance in the intake of drug by eligible population and consistency of mass drug administration programme are the key factors behind the success of the LF control/elimination. Recently, the state government of Assam for the first time launched mass DEC administration on 5 June 2004 in four of the 23 districts, namely Dibrugarh, Sibsagar, Nalbari and Kamrup. Though filaria eradication programme has begun in Assam, to make it a success in the NE region, strategic and meticulous planning is a must. Information about prevalence of LF is significantly lacking in this region. Also, the old method of night-blood survey for filariasis is cumbersome, painstaking and inconvenient to both the surveyor and the subject and is difficult to perform due to obvious operational limitations. Rapid screening of children 2–14 years of age in a population for presence of filarial antigen by ICT (immuno-chromatographic test) card test which can be done at any time (during day or night), though uneconomical, may be practically feasible and a suitable substitute to the night-blood survey for this region.

Secondly, issues like earmarking of population, coverage level of mass therapy, consistency and monitoring of programmes for stipulated period are some of the real challenges ahead for programmers and planners. LF eradication programme needs active help and support from all tea growers and big and small planters (ultimate beneficiaries), who can play major role through their existing health care system. This will go a long way in the success of national LF eradication programme in this part of the country.

1. Anonymous, In *Health Information of India – Population Exposed to the Risk of Filariasis.* Directorate General of Health Services, Ministry of Health and Family Welfare, Govt. of India, 1991, p. 150.
2. Sasa, M., In *Human Filariasis – A Global Survey of Epidemiology and Control* (ed. Sasa, M.), Univ. of Tokyo Press, pp. 335–372.
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