

Natural disaster management: IESL demands paradigm shift

By Oliver Standing

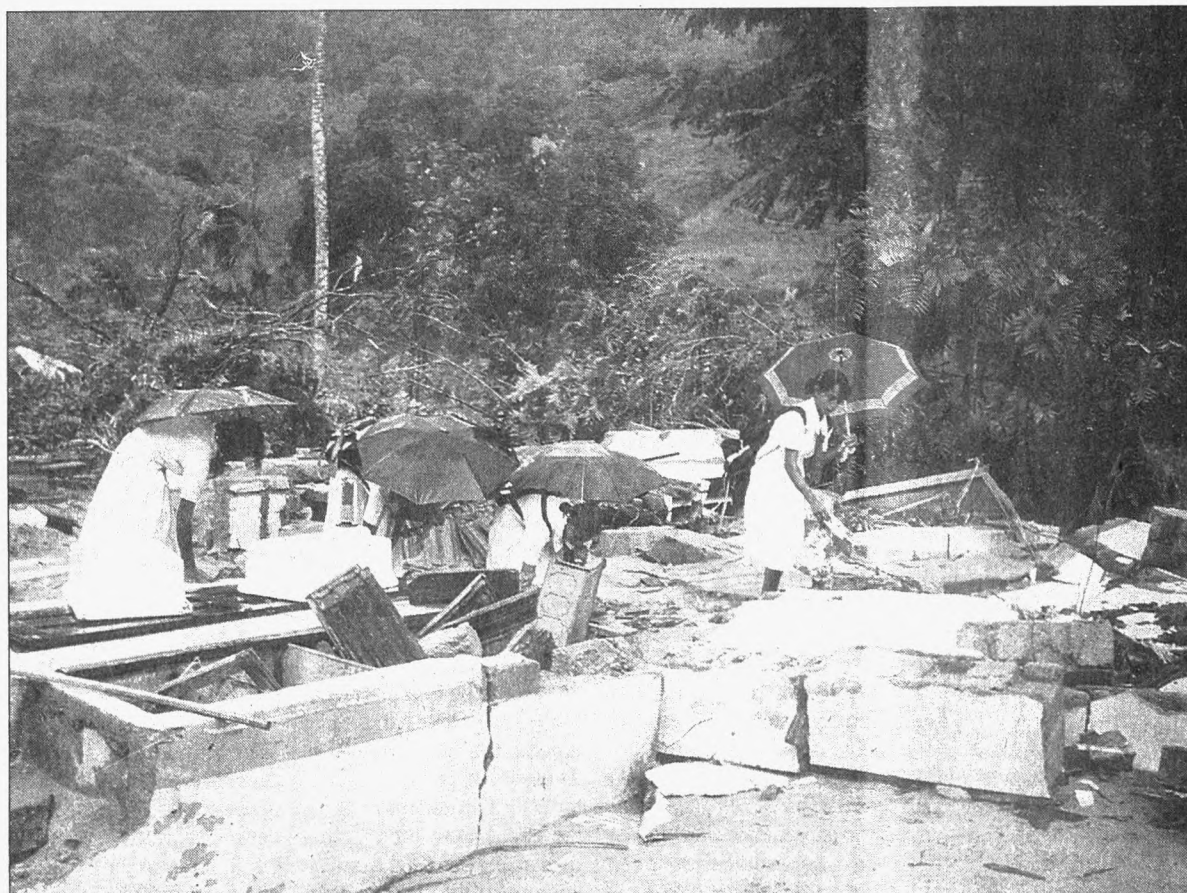
A conference entitled 'Natural Disaster Mitigation and Management Measures' took place on Thursday at the Institution of Engineers, Sri Lanka (IESL). The speaker was Engineer (Ms) Geethi Karunaratne, while several other engineers composed a discussion panel. The chair was Eng. (Prof) LL Ratnayake. The IESL established in Anuradhapura in 1906 now has 7,000 members.

Doubtless the drive for the conference came, in part at least, from the severe flooding and landslides we had to face a few months ago. Around 250 died, 160,000 families were displaced and billions of rupees lost. 'We cannot avoid natural disasters', Ratnayake said, 'although we can mitigate and minimise the bad effects in our country'.

The recent findings that over half a million people have been killed in Bangladesh by natural disasters over the last 40 years is indicative of the very pressing nature of this issue. The 90s were declared by the UN to be the International Decade for Natural Disaster Reduction. Given recent events we must all ask: where is this reduction?

The consensus amongst the Institution of Engineers of Sri Lanka (IESL) is a radical one. Eng. D.P. Mallawaarachchi of IESL and the Roads Development Authority writes, 'Current institutional arrangements to both mitigate and manage disasters on the scale of the country's recent experiences are totally inadequate. It is not the fault of the NDMC [Natural Disaster Management Centre] attached to the Ministry of Social Welfare because just three persons staff that unit.'

The existing NDMC should be restructured and reactivated as a new Disaster Mitigation and Management Authority (DIMMA) with wide-ranging powers to obtain the effective participation of all relevant organisations.



File Photo: Children search for their books among the rubble of a destroyed school in the Ratnapura area

This is a concise telling of the IESL's conclusion. Much of Karunaratne's talk was spent in detailing the advantages of such reconfiguration. Importantly, she said, this change will be beneficial not only in life saving terms, but also on a financial scale. It is cheaper to prevent a disaster than to clear it up.

All well and good, but an obvious problem springs to mind. What international organisation or charity will cough up grand sums when presented with plans for dyke construction or house relocation as opposed to heart-rending photos of grannies neck deep in filthy water or a motherless baby wailing on a pile of garbage? As evidenced by the recent floods, it is this type of event that makes world news.

Had preventative measures been taken and the death toll reduced, we can only assume that less publicity would have occurred, and less aid been given.

Despite this worry, we can certainly take many steps to minimise the damage caused by natural disasters. Some preventative measures are non-structural.

The instance of land zoning was given. Sri Lanka is split into three wind loading zones. The highest risk zone runs along the north and east coast, taking in Jaffna, Trincomalee and Amparai. The second is through the central and east part, encompassing Vavuniya and Polonnaruwa. More than half the island is in zone-three; Colombo, Kandy, Galle and Hambantota amongst others.

These zones are an indication of risk from cyclonic winds. In zone one structures must be built to withstand winds of 110 mph, whilst those in zone-three need only withstand wind speeds of 75 mph.

The Ministry of Housing and Plantation Infrastructure have published booklets on both cyclones and floods. These contain structural advice for those building houses. Recommended shapes, bracing methods and door and window design are all covered in detail.

Other structural measures include the building of dykes along rivers, the strengthening of old rickety buildings and the building of only strong

constructions from now on. Additional non-structural measures include drives for public awareness, the relocation of people in threatened land and the promotion of insurance.

I spoke to Udeni Amarasinghe, Senior Lecturer in Engineering Geology at Peradeniya University, about preventative measures to combat landslides. He agreed that awareness must be increased. For a huge mass of soil to shift suddenly and violently a large amount of power is needed. This is manifest in the many geological happenings that precede the landslide which can be taken as warning signs. The first sign is the cracking of slopes.

This indicates a shift of the soil mass and will appear a few days before most landslides. More severely, house walls can crack, and trees tilt. The water level in wells and bore holes is likely to rise, as the earth is saturated with rain, and springs may appear in previously dry land. If these signs occur then the houses nearby must be evacu-

ated. Amarasinghe said that on a provincial government level 'village headman-like people' should be educated first, and they must then pass on this simple knowledge to everyone in the locality.

Amarasinghe also mentioned resettlement. From 'prone slopes people must be resettled to stable lands. This is the only way to ensure 'loss of life is prevented or minimised'. In the eyes of some, though, this issue remains surely contentious. It is only possible to speculate as to whether entire communities will agree to be settled.

If they are moved, the areas they previously inhabited must be reforested to ensure the soil is root-bound and secure.

Karunaratne recounted the story of the 1993 Helauda landslide disaster near Ratnapura. She explained how the area is unstable (as are Bandulla, Kegalle, Kandy and Nuwara Eliya) but was targeted for public awareness. A safety day on 5th April 2001 took place, with a procession of children, a

seminar and a poster competition. Projects like these, it is said, help to keep the perennially imminent threat in the minds of locals. Just one man, Mr Jayawardena Ratahamy, survived the '93 landslide that killed 38. Interestingly, he owned much land that was under the debris. Once cleared, he received purchase offers for it. He declined them all, citing the public awareness project as his cause. Come this years floods and another large landslide occurred. Thanks to Mr Ratahamy, nobody had houses in the area and no deaths occurred. He has pledged to sell his land only if the area has remained free of landslides for 10 years.

The country has, in the past, tried to take preventative measures. After the terrible cyclones on 1978 in the northeast, many reports were made proposing guidelines.

However, none of them were made mandatory. If a company is erecting houses it will naturally wish to spend as little as possible. Can we really imagine companies voluntarily following guidelines that might necessitate the use of expensive materials or techniques? We must strive for something more effective, more capable and Karunaratne claimed, and all agreed, that we must 'establish such an authority as to create a culture of safety'.

She explained that its tasks would be manifold, ranging from the maintenance of current preventative construction such as the dykes along the Kelani Ganga to the 'conducting of structural research'. Mallawaarachchi was refreshingly blunt in his diagnosis, 'The government should scrap the Sri Lanka Counter-measures bill and the National Disaster Management Plan.'

The proposed DIMMA should supersede these. The entire country demands that suitable emergency action on the lines suggested be taken...The time to act is NOW!'