viewed as a blot on India's image in this field and it stays on solely due to its enormous size.

As mentioned earlier, not much information is available as to how the State System has been performing in the field of science and technology (S&T) research in our country. An effort was made in this study to get a quantitative perspective of the same in terms of the share of Bhatnagar Awards going into the four sectors mentioned above using data available on the internet at http://www.csir.res.in/external/heads/career/award/bhatnagar1998.htm and http://www.dst.gov.in/awards/award-index.htm.

The result is shown in Figure 1 that gives the share of Bhatnagar Awards going into the four sectors, taking all the six categories of awards into account, and covering the period 1960–2012. The points on the graph are decadal averages for five decades, with the last point being the average for the last three years (2010–2012). The horizontal line of a particular colour indicates the average for the entire period of the entity shown in that colour, thus giving an average share of 50% for R&D institutes, 33% for INIs and 13% for State universities. During the decade 1960–69, R&D institutes had 35% share of the Bhatnagar Awards, followed by the State universities at 31%, and Central institutes at 23%, after which the steady decline of the State System sets in, the curve hitting zero in 2007 and staying there since then.

The steady and steep plunging of the curve for the State university system over five decades must be one of the most dramatic presentations of what has been allowed to happen to this segment. (Equally disturbing is the fact revealed in the figure that even central educational institutes appear to be losing out to the R&D institutes which are obviously non-academic in nature – with disturbing portents for the future of India's science.)

It could be mentioned that, representing as it does the highest level of quality in Indian science, Bhatnagar Awards can be expected to go only to the very top institutes. But the disappearance of our state system from the national S&T radar is total and complete elsewhere too, as evidenced from their near-absence in any of the S&T policy formulation bodies like SAC-PM, influential studies that make recommendations like the National Knowledge Commission, the numerous Committees and Boards that decide on R&D funding, important academies and editorial boards, etc. Why this phenomenon cannot be glossed over as another of the inconvenient truths about our country is the sheer fact of the State System being numerically over 90% of our nation's HE&R system. Many of our bold national visions of the day like doubling our share of the world's publications from its present value of about 3.5%, or raising our GER from the present value of 12–13% to a respectable 25%, etc. are grossly unrealizable without significant improvements in the quality of our State System.

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Discovery of Manmanhara, the largest flattened plateau of Karnataka and second largest in India

Large flattened lateritic plateaus are rare in the Western Ghats although small ones, less than 2 sq. km do occur, but are left highly neglected due to their seasonal adversities. The Kaas Plateau (10 sq. km) of the north Western Ghats in Maharashtra is the largest flattened lateritic plateau of India. During extensive surveys for the collection of curious, endemic and botanically interesting plant wealth, specific to lateritic plateaus in Mookambika Wildlife Sanctuary, Udupi district, Karnataka (13°42′–13°59′N lat. and 74°39′–74°50′E long.), the present authors found few such small plateaus within the sanctuary which inspired to explore the possibility of larger one. The endeavour resulted in locating a completely concealed, evenly flattened hilltop which formed a large lateritic plateau, the Manmanhara Plateau (Figure 1). Endowed with dense, extremely diverse array of flowers, variously coloured and in full bloom, spreading like a carpet from one end to the other on the land, the entire panorama radiated like a botanical paradise, left undiscovered even during the extensive explorations of British botanists since 1807 (ref. 1) and unexplored till date.

The Manmanhara Plateau is located in the southwest boundary of Karnataka, 10 km from Kollur town, Udupi district, at about 700 m altitude, 13°48′N lat. and 74°44′E long. The name Manmanhara was given by the local inhabitants of the adjacent Meghani valley perhaps owing to its mesmerizing natural beauty during rainy season. Stretching about 6 sq. km, the broad, flattened, more or less circular plateau is the second largest in India after the Kaas Plateau and largest in Karnataka. The entire plateau is surrounded with moist deciduous and semi-evergreen forests. It harbours about 300 diverse species of angiosperms comprising many exclusive, endemic, endangered and botanically curious plant species, and is also repository of the type locality of the rare *Canscora devendrae* R. Kr. Singh & Diwakar[2], *Ceropegia attenuata* Hook. var. *mookambikae* Diwakar & R. Kr. Singh[3] and *Curcuma mukhraniae* R. Kr. Singh & A. Garg (R. Kr. Singh and A. Garg, unpublished). Further, 20% of the 300 angiosperm species which are endemic to the plateaus of the Western Ghats, also occur on this flattened plateau, viz. *Aerides crispa*, *A. maculosa*, *Alysicarpus pubescens*, *Chlorophytum glaucum*, *Crotalaria nana*, *Dendrobium barbatulum*, *D. microbulbon*, *Dimeria deccanensis*, *D. stapfiana*, *Eria dalzellii*, *E. reticosa*, *Eriocaulon cuspidatum*, *E. dalzellii*, *E. eurypeplon*, *E. odoratum*, *Euphorbia fusiformis*, *Fimbristylis lawiana*, *Flemingia tuberosa*, *Geissaspis tenella*, *Glyphochloa acuminata*, *Habenaria crinifera*, *H. digitata*, *H. grandifloriformis*, *H. heyneana*, *H. plantaginea*, *Impatiens kleiniformis*, *I. minor*, *Indigofera dalzellii*, *Indopoa paupercula*, *Iph-*

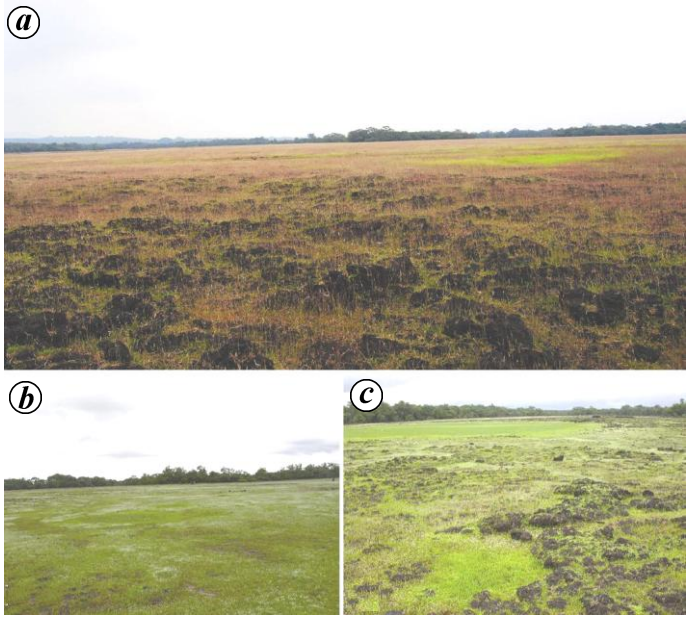

Figure 1. Manmanhara plateau views: ***a***, During pre-monsoon. ***b***, ***c***, During monsoon.

igenia indica, *I. magnifica*, *I. pallida*, *Jansenella griffithiana*, *J. neglecta*, *Lepidagathis prostrata*, *Murdannia juncoides*, *M. lanuginosa*, *M. semiteres*, *M. versicolor*, *Naregamia alata*, *Neanotis foetida*, *N. montholoni*, *Pimpinella heyneana*, *P. wallichiana*, *Pogostemon deccanensis*, *P. stellatus*, *Pseudanthistiria hispida*, *Rotala malampuzhensis*, *Senecio belgaumensis*, *S. edgeworthii*, *Smithia hirsuta*, *S. purpurea*, *S. setulosa*, *Sonerila scapigera*, *Themeda tremula*, *Theriophonum dalzellii*, *Torenia bicolor*, *Utricularia albocaerulea*, *Wiesneria triandra*, etc. Additionally, this is the only repository of the extant, but scanty, population of *Canscora stricta* Sedgw.[4], known to be extinct from its type locality in Castle Rock Plateau of North Kanara district. The plateau therefore embraces an unparalleled, fragile ecosystem, unique to Karnataka as well as the whole country.

The existence of such a distinctive, vast stretch of uniformly flattened plateau at an elevation (700 m) comparable to the largest Kaas plateau (about 850 m) invokes stipulations on its formation, perhaps parallel to the formation of Kaas Plateau, or to have come into existence during continental drift and upheaval of the Western Ghats. At present, conservation of this newly discovered plateau is of prime concern, as it is slowly becoming prone to stray cattle grazing by the local inhabitants of the Meghani valley in its proximity.

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Need to strengthen analytical support in agricultural research

The need for analytical support in agricultural research has long been recognized, especially in the context of soil fertility evaluation and nutrient management, and crop quality assessment and monitoring for selecting and breeding nutritious food staples. For soil fertility evaluation and management, soil and plant testing are the obvious means. Simultaneously, it was realized that soils indeed differ in their capacity to supply nutrients (major, secondary and micronutrient elements) to plants growing on them. From this, it follows that different soils will require different amount of plant nutrient elements as inputs from outside sources mostly through mineral and organic fertilizers, to achieve a target yield[1,2].

Moreover, fertilizers are becoming increasingly expensive, and for a rational and judicious use of nutrients added as amendments from outside sources be based on the nutrient supplying capacity of the soil for individual nutrients. As necessity is the mother of invention, obviously techniques and methods were developed to assess soil quality. Initially, soil quality tests were developed for soil organic matter and potentially available major nutrients (nitrogen, phosphorus and potassium), as they were considered as the foundation of soil quality, especially organic matter status. With time, the deficiencies of secondary (sulphur, calcium and magnesium) and micronutrients (iron, zinc, manganese, copper, molybdenum and boron) became apparent, and their use became essential as those