

## 'Publish and perish' policy of Indian universities

I read with interest the Guest Editorial by Hasnain<sup>1</sup>. It is timely and novel, and I sincerely hope that some of the ideas will be implemented in the near future. It will not be out of place to mention here that most universities in India are not well-equipped with 'functional' patent cells compared to those of premier institutes. As a result, most academic researchers are compelled to publish their research findings in journals though there may be other reasons like job opportunities, promotions, research funding, etc. However, publishing before filing a patent leads to the inevitable perishing of potentially lucrative patent rights, as the novelty requirements of various national patents

prohibit or discourage early publications. Indian university researchers should be encouraged to file patent applications and commercialize their inventions to the point of engaging in publication-delays. These views are endorsed by the fact that the Japanese government/universities have lately adopted the policy of 'publish and perish' by changing Japanese patent laws and have saved patent rights for potentially lucrative university-based inventions and in doing so is successfully minting billions of yens (or million of dollars)<sup>2</sup>. It is time for the Indian government and universities to take a lead in this direction rather than adopt a 'wait and watch' policy. This will also enhance

university–industry interaction and industry-funded research.

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1. Hasnain, S. E., *Curr. Sci.*, 2006, **91**, 1591–1592.
  2. Tessensohn, J. A. and Yamamoto, S., *Nature Biotechnol.*, 2007, **25**, 55–57.
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## Drought in Uttarakhand, natural or man made?

Uttarakhand is facing acute water shortage. Alarm bells have already started ringing in this Himalayan State due to dry weather, which has spanned over 50 days. The rise in temperature above normal in Nainital and Mussoorie has also raised concerns in the region. Since 10 December 2006, there has been no rainfall (except 0.33 mm on 30 January 2007). After 1998, when the region received only 5.4 mm of rainfall, this is the longest dry spell which the State is experiencing.

After inspecting remotely located springs in the State, it has been observed that most of them have either dried up or the discharge is reduced to such a level that they are unable to fulfil the basic requirement of the residents. There is also a drastic reduction in the flow of major rivers in the State. If this dry weather continues further for another fortnight or more, the water crisis will go beyond control and eventually, the inhabitants may be forced to migrate to nearby natural streams or rivers in the valleys.

In the Himalayan region, 'naula' (1–2 m deep well, mostly lined to get water from

seepage), 'dhara' (spout springs) and 'hand pumps' (at few places) are the main sources of water for irrigation and household consumption, because rural water supply (if it is available) is either irregular or unwholesome. Except the spout spring, which delivers water at the ground surface naturally, 'naula' and 'hand pump' are artificial methods to extract water from the slopy aquifer. Perennial or non-perennial nature of these water sources depends upon the aerial coverage of the discharging aquifer. In turn, these aquifers are recharged by rain or by snow-melt water, which gets infiltrated through the land surface and percolates to join the aquifers. The natural rate of groundwater recharge is reckoned to be 31% of the total annual rainfall<sup>1</sup>. Therefore, soil characteristics and land use play a major role in recharging slopy aquifers. Deforestation, grazing and trampling by livestock, erosion of top fertile soil, forest fires and development activities (e.g. road-widening, mining, building construction, etc.) have reduced the infiltration rate and sponge action of the land and thus the failure of the water-

shed, which results in unchecked flow of water during the monsoon to cause a sudden swelling of streams and rivers, so that there are floods in the foothills and even in the plains, and droughts in the villages located on the slope of the mountains. The present crisis is mainly the result of irresponsible growth and unplanned development of the area after Uttaranchal (now Uttarakhand) came into existence.

Regarding nature's role, there is about 30–40% decline in average rainfall over the past 50 years. Under such circumstances, rainwater harvesting and its storage is the only option left with us.

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1. Kumar, B., *Down To Earth*, 15 June 2006, pp. 36–38.
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