

tion and the real role of the universities, the infrastructure the country has developed is advocated to be surrendered to the private sector by the supporters of the new economic policy – which will fuel the crisis in the universities and university science.

The germs of this illness can be traced out in the complex character of our society too in which the university system exists. Universities as centre of learning are expected to bring out society up from its traditional evils but somehow social evils have dominated the university system. The remedy is not easy. But further deterioration will lead to the collapse of the system good or bad we have developed with a definite infrastructure.

It needs thorough discussion and participation of each section. Superficial and ill-worked conclusions do not help; rather they will divert the input and energy.

Planning should be drawn to search out motivated people from the masses and not from the elite sections who live in the big cities only for higher education and technical training. General standards of input and output have to be improved countrywide and definite accountability is required to be fixed at each level. Participation of youngsters and people from the distantly placed universities and colleges should also be assured in the decision-making bodies. Most importantly, science education and research should

be well linked to the societal and environmental problems of the country.

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## Intellectual property rights and biological resources

The article by Madhav Gadgil and Preston Devasia on 'Intellectual property rights and biological resources: Specifying geographical origins and prior knowledge of uses' (*Curr. Sci.*, 1995, 69, 637–639) has a significant bearing on the debates relating to the Convention on Biological Diversity (CBD) and the General Agreement on Trade and Tariffs (GATT). Some comments:

1. IPR specifications should include not only a declaration of country of origin (or other source) and known indigenous knowledge (as suggested by the authors), but also proof that the material/knowledge has been obtained in keeping with the provisions of the CBD. This would include:
  - Prior informed consent of the country of origin (Art. 15 of the CBD);
  - Mutual agreement with country of origin (Art. 15); and
  - Consent of local community, if any, from where collected (Art. 8j).

I have, in a note to the CBD Conference of Parties, proposed an International Certificate Regime, in which such declarations are made. However, even before such a regime can be established (possibly as a protocol to the Convention), IPR rules can specify such requirements.

2. The authors' definition of 'country of origin' is problematic (it incidentally came up in a similar form and received heated reactions during the negotiating rounds to the CBD), for the following reasons:

- It appears to suggest that the Convention's provisions should act retroactive-

ly, to which there is vehement opposition not only from industrial countries but even from many tropical countries which have received genetic resources from other tropical countries (for instance, would India be made to pay for coffee/tea/rubber, or Latin American countries for coffee?);

- It does not match with the CBD's, and amendments at this stage are extremely unlikely;
- Some other system would have to be figured out for resources whose origin is unknown or unclear, or whose origin was in a 'country' the boundaries of which now exclude the region of origin (if something originated in what is now Pakistan, who would be the country of origin: India or Pakistan?);
- What are 'components of natural biological communities'; is a wild plant taken from India and 'naturalized' for over a century in, say, Brazil, such a component? Is *Prosopis juliflora*, or *Lantana camara*, now 'naturalized' in India, such a component?
- In case of domesticated/cultivated components, I can understand that the authors want to exclude countries which have received crops/livestock from other countries in the last five hundred years; but what of varieties which have been developed *within* the last five hundred years? These are not covered by the authors' definition.

It was some of the above reasons which led the negotiating parties in the CBD to the simple definition of countries of

origin as those countries which possess the resources *in situ*. By no means is this the ideal definition (especially given that many true countries of origin lose out), but it appears to avoid many of the problems, and is therefore the most acceptable. In the long run, we could consider a less problematic definition, like: 'country where the resource is known to have had its first occurrence, and, in the case of resources for which this is not known, the country where the resource occurs in *in situ* conditions'.

3. There are now several other concrete suggestions for ensuring recognition and returns for local community knowledge, including some form of community intellectual rights, material transfer agreement contracts, and so on. Some of these may be as effective as IPR regimes, and need to be examined worldwide and in India.
4. Finally, I must add that the question of whether IPRs should be allowed on life forms (and biotechnologies) at all is far from resolved; I personally have several ethical and socio-political reservations, and my comments above should not be construed as a fundamental acceptance of such IPRs. Any further debate on the above could perhaps touch on this aspect as well.

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