

population of some of these listed plants. To cite a few examples I have observed the species: *Abutilon ranadei*, *Aponogeton satarensis*, *Dipcadi ursulae*, *Kalanchoe olivacea*, *Oianthus urceolatus*, *Urgenia congesta*, *Delphinium malabaricum*, etc.

The literature referred in preparing such lists is some 5–20 years old. Nature being dynamic, many changes have taken place in these 20 years. Thus a plant which

was rare, endangered and endemic some 20 years ago might have re-established itself again in some other habitat.

There is a need for a fresh check-list by re-exploring various natural habitats. Central and State Government organizations, various funding agencies, students of branches of botany at universities and colleges should contribute in this exploration of the botanical wealth of our

country. This basic work is needed in the conservation strategy of our biodiversity. Without this fundamental knowledge we cannot plan conservation of our plants.

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River linking project: Case-specific approach is needed

This has the reference to the write up¹ on the proposed river linking project. It is, in fact, in tune with the so-called widely accepted 'development approach', a way of achieving socio-economic development adopting scientific methods to solve a variety of problems, especially in countries like India. The ever-increasing water shortage problem of the country can be solved only by such a mammoth project. Several other experts too share the same opinion, with a caution that the project should be implemented by taking all environmental safeguard mechanisms into consideration².

However, most of the experts across the spectrum of specialization, as also mentioned by Biyani and Gupta, are of the opinion that such a project is not feasible on many counts³. Those conclusions are drawn mainly on technical, geological, environmental, economical and social grounds. Serious doubts are also expressed on the efficiency of water sharing by different user communities in future, considering the complex nature of Indian political economy. The broad trend of this debate, set over last three years has certainly indicated that there are more people who oppose it than those who support it. Several alternatives, like rain water harvesting and watershed development, are also suggested as solutions for this ever-increasing water scarcity scenario.

The discussion, however, has taken place mainly at conceptual level so far. The entire debate generated across the country has taken the proposals of the government, as if it is a single project. There is need for assessing these projects by looking at dif-

ferent river-linking schemes separately. Such a case-specific study alone could reveal the real and concrete picture over the impact of the different schemes. That approach would also help us to guide the policy framing process, which could take care of both environmental security and the remedy for acute water shortage problems. Efforts can be made to quantify the costs and benefits, both short and long-term, under the light of such field-specific studies. This strategy can also integrate both the traditional methods like rain water harvesting and engineering methods like river linking efforts to meet demand for water.

'Western Ghats' component of the proposed river linking project in peninsular India is the case in point. The ecological significance of this hilly terrain region spread parallel to the west coast with its unique flora and fauna is recognized as one of the 'Biodiversity hot spots' in the world. In this 'Sahyadri' region of Karnataka, for instance, the river linking project proposes to divert two major west-flowing rivers to the eastern direction in order to link and augment the flow in east-flowing rivers. They are namely, 'Bedthi river to Tungabhadra' and 'Netravati to Hemavati river'. There is a need for looking at these proposed projects in the Western Ghats region, with a different perspective, which may not necessarily be relevant to other areas. Biodiversity loss, for example, by any such construction-intensive projects would be beyond comprehension in this region as compared to that in the plains. The unique riparian ecology, higher evaporation rate of surface water bodies due

to tropical conditions, lower water retention capacity of the laterite soil, seismologically sensitive southern Indian plate, high endemism of flora and fauna, etc., are already shown to be constraints for such projects in this region. The reduction in natural flow of original stream is also shown to be jeopardizing the downstream ecology, specially in the coastal region. The studies have shown that it may harm the ecological and livelihood security of the region by creating conditions like fish famine. The proposed schemes mentioned above would also cause a huge socio-economic loss. This component, thus, needs special treatment while assessing its impact.

The different schemes, therefore, proposed in this mega river linking project, need to be treated with such micro-analysis approach while understanding the overall costs and benefits. Otherwise, the entire debate may end up in one or the other of extreme decisions (pro or against), which would serve no real purpose.

1. Biyani, A. K. and Gupta, S. K., *Curr. Sci.*, 2004, **87**, 277–278.
2. Murthy, T. V. V. G. R. K., *J. Geol. Soc. India*, 2003, **62**, 380.
3. Radhakrishna, B. P., *Curr. Sci.*, 2003, **84**, 1390–1394.

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