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THE HINDU

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*Cover: The Kingfisher.
Apart from housing almost the entire
colour spectrum within its feathers, it
links the three realms on earth: land,
water and sky.*

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Left: Fragment, c. late 16th Century.

of mangoes that thrive in India. It is present in the 14 different kinds of wood we see (depressingly) inlaid to make a wall painting. And if we extend our minds a little more, we should be able to see that it also means the vibrant colours that characterise Holi and Indian clothes, which come (or used to, till synthetics took over) from a variety of dye-producing plants. And, of course, it also means the tiger and the rhino and the elephant, charismatic animals that evoke awe and excitement, and which are used as "flagship" species for conservation programmes. Finally, it also includes the range of natural and human-influenced ecosystems that we live amidst: forests, lakes and rivers, coasts and seas, grasslands, agricultural fields and pastures, deserts, snow-bound peaks . . . even urban areas with vestiges of vegetation and waterbodies.

Perhaps the least obvious aspect of biodiversity is genetic. Variety in what constitutes the basic building block of all life, is also the base of continuous evolution . . . and we should not forget that we humans are a product of the same process, even if we, sometimes in our technological bravado, think we are apart from nature. Diversity in genes also provides the basis for continued survival in the face of new or changing environments. When the number of lions or orang-utans or of

The many and the none

Bansuri Taneja and Ashish Kothari

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Variety, they say, is the spice of life. How boring if each day were like the other, and how distasteful if we had to eat the same dish every day. We hear the word often, but how often do we think about what biodiversity means to us? In the urban centres of modern India leading middle class lives, a diversity of food is what might bring biodiversity to a level we can understand . . . how would it be if we only had potatoes, or for that matter eggplant, to live on. Or, only one variety of mango throughout India, instead of the several hundreds that one can savour through the few months of summer?

In technical parlance, biological diversity is the variety and variability of life on earth. Expressed as an example that we might be able to identify with, biological diversity is manifest in close to 1000 varieties



Kalpani Canabade/Wildlife

a plant species decreases, these species lose their resilience to environmental changes, or to genetic decay, and eventually succumb. At another level, this fact comes home to us when we realise that vegetables are losing their distinctive tastes, having lost their natural variation and having been doctored to reach the biggest size possible or attain the glossiest exterior. Their genetic diversity is quelled to serve the function of productivity/ yield maximisation, and to suit our increasingly unidimensional view of what "looks good".

Why should we be worried?

The word biodiversity is often heard in connection with how it is fast disappearing. The call has been sounded frequently, that if humanity is not careful we are going to lose the fibre of the planet that makes life possible. Some of us might be familiar with the simile about the ship that is losing one nut at a time . . . each step does not seem to be a significant loss in itself, but lose enough of them and the ship is surely going to sink. We are slowly and surely losing the species and genes that keep the earth "afloat". In time, if we are not able to halt this decline, this ship will sink. There are already signs of this, manifested by a series of global changes in climate, hydrological patterns, and other ecological functions that we all survive on, and by the collapse of global fisheries, the desertification of tens of millions of hectares of once-productive land, the loss of soil nutrition, and so on. Not all these are caused by biodiversity loss, but such loss is a significant factor in



Ajay Mohanram

triggering or aggravating these phenomenon.

These warnings, as this issue of *Folio* endeavours to show, are not a moment too early, nor are they unnecessarily alarmist. Biodiversity and its loss are not abstract notions unlikely to affect our generation or the one following. Biological diversity is closely tied in to our lives and identities in myriad ways, some of which have been touched upon above.

As human beings proud of our ability to think and feel, we should be concerned about the impact that our greed and arrogance in assuming the planet is meant to serve only our needs, is inflicting on the rest of the living world. As is brought out in the article on Extinctions in this issue, our species, one out of perhaps 50 million, is hastening the planet onto an irreversible path of mass deaths. This is a profound ethical issue, but also one of enormous economic

and material dimensions. One significant aspect of this, a living example of how our own traditions put themselves amidst, rather than apart from, nature is brought out in the article on Sacred Biodiversity.

Though it concerns all of us, biodiversity is most directly related to the everyday lives of India's ecosystem people. Hundreds of millions of small farmers, fisherfolk, herders and hunter-gatherers, a substantial number of them tribal, depend on the diversity of species, genetic varieties, and ecosystem services for their livelihoods and cultural lives. It provides them with their fuel, food, fodder for livestock, housing material, medicine and spiritual sustenance. The loss of biodiversity is a direct attack on their very survival. For this part of humanity, the ship is already



The flip side of biodiversity is cultural – and religious – diversity. Trends that steamroller this plurality are the equivalent of agri-monoculture, and as dangerous.

Below left: A southern tribal.
 Below right: A woman from Kinnaur (H.P.)
 Right: A mutilated image of God.



K. Ramesh Babu



Karnal Saha



Ajay Mahajan

sinking. It is these concerns that the article on Livelihoods, Empowerment and Biodiversity seeks to elucidate. Directly related is the article on Health, which brings out the link between biodiversity, medicine, nutrition and the physical and mental well-being of human beings.

It is important to note here that the presence of just any species functioning as a resource is not adequate. It is the diversity of species, of animals and plants and even micro-organisms, that is valuable to rural communities. As Jagat Singh Choudhury of the Kumaon Himalaya, one of the many thousands of ecosystem people, explains: "There should be every kind of tree in the forest, there should be fodder trees, fuelwood trees and those which keep the soil

moist. *Banj, kafai, ayar, buraans*, will keep our soil humid and their leaves will make humus which will have organic diversity. There should be fruit trees also and trees which will supply wood for building purposes – and the most important trees are those which will keep the environment clean: broad-leafed ones. The rest are for industry, *rambans, bans, ringal*, and grass and creepers other than these. Creepers are the main resources for fodder. What elders say is that earlier there were dense forests and there were many species in them. But now in the monoculture pine forests there is no (diversity) . . . if trees, grass, herbs, creepers, etc. all grow then won't there be economic development?"

Such a view is also powerfully voiced by Dalit women farmers of Andhra Pradesh, as brought out in the article on Agriculture and

Biodiversity. Combining seed diversity, organic inputs, land rights, local markets and cultural traditions, these women have issued a powerful challenge to the monocultural, chemical-intensive, Green Revolution that promised prosperity and brought it too, but for a short period and at the cost of deadened soils, poisoned waters and food, a narrowing genetic base, and suicide-prone farmers. Biological diverse farming systems are indeed the future of India's agriculture, not the hi-tech biotechnology that agricultural scientists and corporations are trying to entice us towards. Farmer and other ecosystem communities, empowered with the seeds of self-sufficiency, are also challenging the rampant biopiracy that we face, in which age-old knowledge regarding turmeric, neem, and myriad other elements of biodiversity have been patented in an attempt to make it the exclusive domain of corporate interests. The article on Patents highlights the struggle to protect indigenous knowledge in the face of this appropriation of the ultimate human organ, the mind.

With the forces of commercialisation and globalisation sounding a death knell for many biodiverse areas, there is havoc being wreaked on the lives of people living in and dependent on them. Environmentalists are often blamed for being anarchists or anti-development. But if the aim of development is to improve the standard of living for the country's poor, then how can snatching away these people's means of sustenance be possibly called "development"? It is this question that those who have suffered in the name of development are now asking themselves. Not only that, they are resisting and challenging the domination of the powers-that-be over their lives, and questioning the path of economic progress that prescribes such destruction. This crucial challenge, and the alternative models of human welfare that are being successfully tried across India, are the subject of the article on Development. Two strategies towards such an alternative vision are highlighted in the articles on Legal Spaces and Education. As the latter brings out, it is finally only an enlightened public – which does not

Securing India's future

There are two common themes that unite the articles in this issue: the ecological security of the country and the livelihood security of communities dependent on biodiversity and natural resources.

These are also the two bottomlines of a unique exercise currently underway: the National Biodiversity Strategy and Action Plan (NBSAP).

A follow-up to the U.N. Convention on Biological Diversity, the NBSAP is a project of the Ministry of Environment and Forests, funded by the Global Environment Facility through the United Nations Development Programme. What sets it apart from previous such planning exercises, is that the technical execution of the project has been handed out to an NGO, Kalpavriksh, which has set up a 15-member Technical and Policy Core Group (TPCG) of experts and activists from various fields and parts of India. Administrative co-ordination is being done by the Biotech Consortium of India Ltd.

The NBSAP may be India's biggest ever environment and development planning process, and perhaps one of the world's biggest. In a radical departure from established norm, the planning is starting from several decentralised sources. About 20 local micro-planning processes at village to district levels, 33 State and Union territory level processes, 10 planning exercises for ecological regions cutting across States, will bring a variety of area-specific information and perspectives. In addition, national working groups are preparing action plans on 14 themes, including many of the aspects covered in this issue: culture, agriculture, wildlife and ecosystems, health, technology, laws and policies, education and training, and patents. Each of these processes involves a variety of actors, from farmers and fisherfolk and adivasis to scientists and academics, governmental and non-governmental organisations, artists, armed forces personnel, the corporate sector, and so on. A series of public hearings, workshops, festivals and exhibitions, *yatras*, boat rallies, science exhibitions, advertisements and media write-ups, and other such processes are being used to attract maximum public participation. A Call for

Participation, printed in 16 languages, is being distributed in thousands.

Key elements of each of these plans will form the base of the national level plan, which will be written at the end. Each of the plans can, however, be pushed for implementation as soon as ready, independent of the national plan. The entire exercise is supposed to end by mid-2002. It is to the credit of the Ministry of Environment and Forests, and specifically of National Project Director R.H. Khwaja, and the two very hard-working scientists G.V. Sarat Babu and Sujatha Arora, that they have facilitated such a unique process.

The most critical challenge that the exercise faces is to suggest creative ways to influence current development planning and budgeting. The Planning Commission may be setting up a group to especially look at how biodiversity concerns can be built into the formulation of the 10th Plan for 2002-2007. But equally, if not more important, will be the voices and opinions and the very down-to-earth recommendations, of the thousands of ecosystem people who are involved in the process.

The first local level action plan of NBSAP was released on February 17 at a village near Zaheerabad in Andhra Pradesh: significantly, it was a people's plan, put together after a mobile biodiversity festival through 70 villages. The document shows how sustainable agriculture, seed diversity, secure livelihoods, locally sensitive markets, and cultural aspects can be tied together. It is this kind of powerful message, and the combined efforts of scientists, government officials, and activists in putting together a comprehensive picture of biodiversity, that will hopefully make the critical difference.

Readers who would like more information on this process, or would like to take part in it, may visit the website <http://sdnp.delhi.nic.in/nbsap>, or write in to:

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necessarily mean one educated in today's insensitive schooling system – that will make the difference.

And finally, if the readers of this issue, mostly we suspect city-based, still think that they are something apart from biodiversity, there is a piece about Urban Nature . . . just to remind us that we are all connected to the strands of life. As the native American chief Seattle is believed to have said, when all the eagles and fish are gone and the waters killed by pollution, only then will we realise that money cannot be eaten.



G. R. Mubherjee/Wildlife