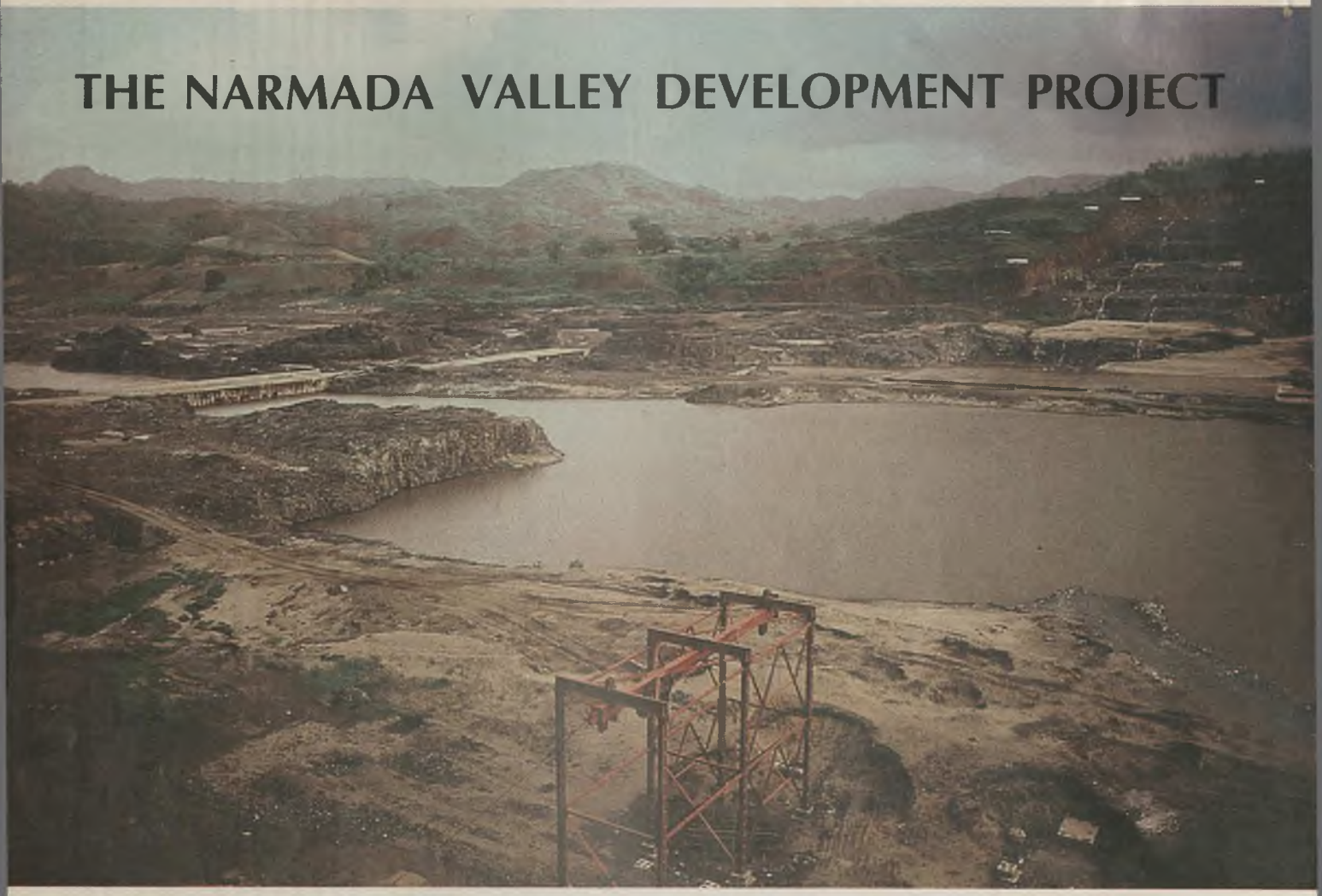
THE NARMADA VALLEY DEVELOPMENT PROJECT



Navagram Dam Site in Gujarat

THE Narmada, "the charmer", the inspiration of saints, the creation of Lord Shiva, life-giver to millions of people amidst the hills of central India; the Narmada, the largest west-flowing river in the Indian peninsula, winds its beautiful 1312 km long course through densely forested hills and fertile agricultural plains into the Arabian Sea. Its natural splendour is matched only by its cultural richness—lush forests and fields, rocky gorges and thundering cascades are complemented by exquisite temples, massive bathing ghats, and innumerable tiny spots of pilgrimage on its banks.

The Narmada originates beneath a small holy *kund* (tank) on the 1051 metre high plateau of Amarkantak, part of Madhya Pradesh's Maikal Range. Descending first in the form of the lovely Kapildhara Falls, it rushes south-west through a deep, narrow and heavily forested valley and is joined by the first of its 41 major tributaries, the Burnher. Turning northwards past Mandla town it splits into a number of rapids called Sahasradhara where, according to legends, King Kartavirya of the Thousand Arms had in vain tried to check the maiden Narmada fleeing from the male river, Sonbhadra. About 400 km from the source, the river runs past the bustling town of Jabalpur, drops at the Dhuandhar Falls, and cuts through the famous Marble Rocks in what is one of the most spectacular points of its journey. Past Jabalpur, the Narmada irrigates the fertile upper plains for a stretch of 400 km. After being joined by several tributaries here, it widens out and sluggishly flows past the middle plains, famous for their fertile black soil. After narrowing again into a series of rapids and passing through some densely forested areas of Khandwa district, some 900 km from its source, the Narmada blesses the holy trinity of towns, Omkareshwar, Mandleshwar and Maheshwar. Further west, it begins to be hedged in by hills again. As the Vindhya and the Satpura ranges converge, the river rushes through an awesome gorge some 113 km long, during the course of which it touches Maharashtra and enters Gujarat. Emerging from the gorge, the Narmada enters the lower plains and follows a broad meandering coarse till it reaches the ancient port of Bharuch. Here, widening into

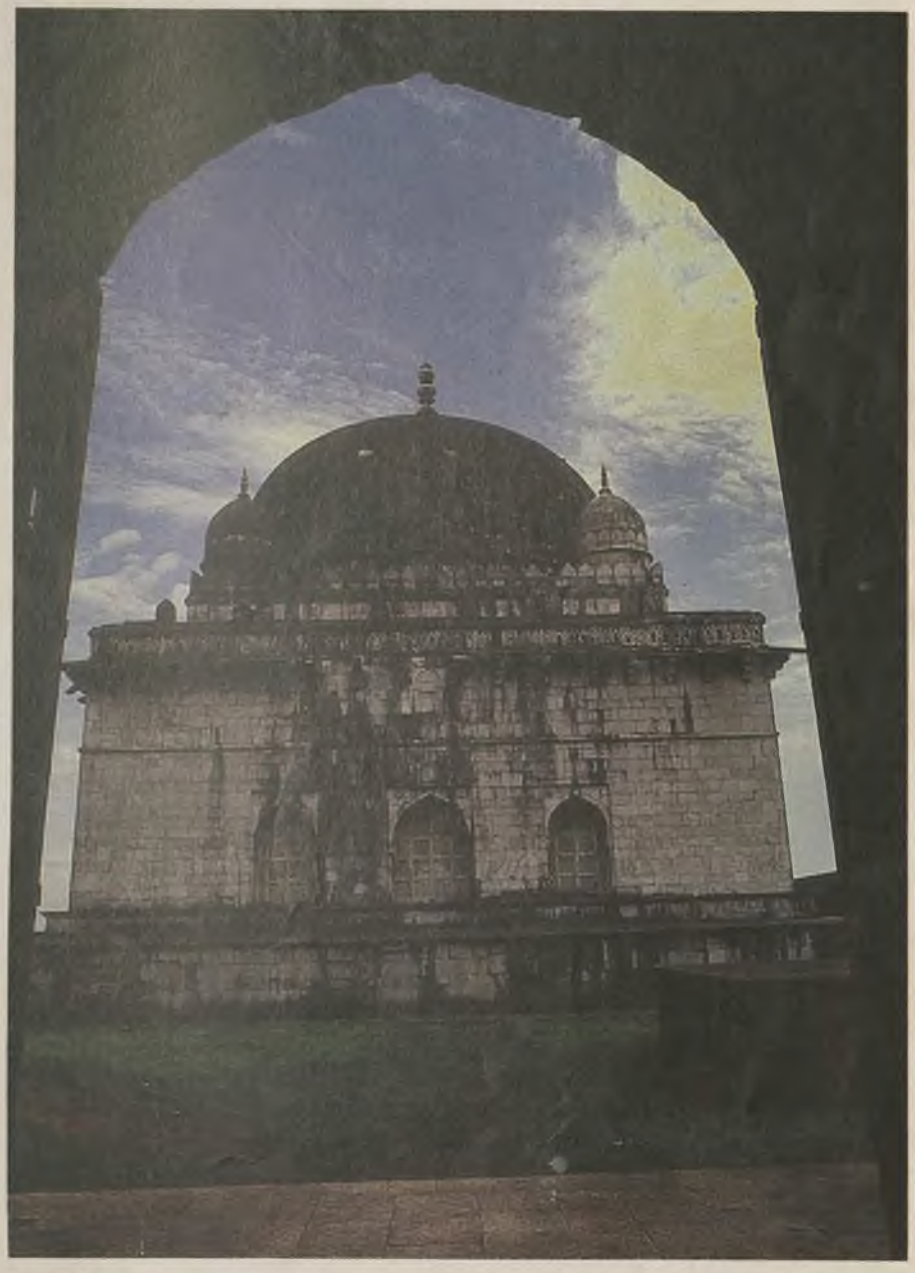
Text & Photographs By
—Ashish Kothari—

an estuary, the tired river finally deposits its holy waters into the Gulf of Khambhat (Cambay) of the Arabian Sea.

THE Narmada forms a very large basin, bounded on three sides by hill ranges—the Satpura, the Vindhya, and the Maikal and on the fourth by the Arabian Sea. It covers an area of almost 100,000 square kilometres, 32% of which is said to be forested, and 60% under cultivation. Its climate is humid and tropical, with a high average rainfall of 1,178 millimetres. As per the 1971 census, some 16 million people inhabit the basin, most of them engaged in agriculture and related business. There is sizeable tribal population, especially in the forested parts. Many tribal groups live here, the more prominent being Bhils, Gonds, and Baigas. Most of them have by now adopted settled agriculture. While they have fairly equitable land distribution patterns, in the non-tribal peasant belts of the plains 20% of the farmers own 70% of the land in some districts.

The Narmada is one of the very few large rivers in India whose water potential remains to be tapped. That this is so is not due to lack of knowledge of its potential. Indeed, plans to harness its waters were mooted way back in 1946, but the various States concerned could not agree on each other's share of water and power. Finally in 1969, an interstate tribunal was set up to look into the dispute. In 1978, the Narmada Water Disputes Tribunal finally gave its award, stipulating the relative shares of Madhya Pradesh, Gujarat and Maharashtra. Final planning and work then started.

THE Narmada Valley Davelopment Project is the largest single river valley project in the world. Its statistics are impressive. It involves the construction of some 30 major dams, 10 on the Narmada itself and 20 on the tributaries. Of these, 19 are irrigation,



Narmada 'Kund', Amarkantak (above) and Hoshang Shah's Tomb, Mandu (below), situated in Narmada Valley

Tribals inhabiting the Narmada Valley

6 multipurpose and 5 hydel schemes. In addition, the Project incorporates 135 medium and 3000 minor irrigation schemes. With a present cost estimate of Rs. 90 billion which is likely to escalate beyond Rs. 250 billion eventually, the Project is scheduled to reach completion of all construction and related activities by 1996, and expansion of all irrigation and power networks by about 2030. All together the dams are expected to irrigate nearly five million hectares of land in Madhya Pradesh, Gujarat and Rajasthan. Some of this land is at present seriously drought-prone. The project is also slated to generate over 3000 MW of power potential. In addition, the dams are expected to help in checking floods, generating pisciculture in the huge reservoirs that will come up, give temporary employment to tens of thousands of people, supply water for domestic and industrial use and promote tourism.

OVERALL, then, the Narmada Valley Project is expected not only to bring about an agricultural revolution in the valley, but also an industrial one because of the spurt in power generation and water availability. Agro-industries, in particular, will get a great boost. Also, urban growth is likely to accelerate tremendously.

NO development project, however, is without some attendant costs, and the Narmada Project has its fair share of them. One of these is the submergence of large land areas under the reservoirs of the dams. The Narmada authorities, however, say that the forest loss will be compensated by afforestation. In addition to forests, about 2 lakh hectares of agricultural, grazing, and other land will also go under water. With the loss of forests the habitat of some of wildlife may also face danger. However, the authorities are planning to relocate some of the endangered species.

In the past, irrigation projects in India, including one in the Narmada Valley itself, have at times created problems of water logging. The Indian Institute of Sciences, Bangalore, has recently warned that this could be a problem in the Narmada Project too. One positive step the authorities are taking to try and counter this is the lining of all canals, which has been made compulsory in this Project. Another possibility being considered is large-scale conjunctive use of ground-water with surface irrigation.

Among the social costs of the Project, the most significant is displacement of people due to submergence of their homelands. Massive resettlement effort will indeed have to be tackled with special care, sensitivity and planning.

THE Narmada authorities have also recognised the potential of the irrigation systems for greatly increasing the incidence of waterborne diseases. Malaria will have to be tackled carefully. The Narmada authorities have recently, in collaboration with the World Bank, the World Health Organisation and the National Institute of Communicable Diseases, begun a systematic study of the possibility of schistosomiasis, the crippling disease which has hit millions of people near irrigation systems in Africa.

It is to the credit of the Narmada Project authorities that, perhaps for the first time in India, there is recognition of some of the potential costs. Several studies on these aspects are being undertaken, and there is a scheme to train the Project officials in environmental issues. It is well recognised that at the massive scale at which the Project is being undertaken, minimising the social and environmental costs and maximising the gains are not going to be easy; it is a task that needs to be undertaken with great caution and sensitivity. □

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