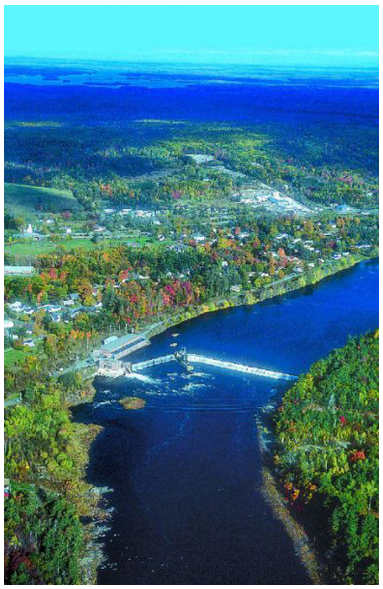
ENVIRONMENT / CONSERVATION

Liberating a river

ASHISH KOTHARI

Print edition : Jan 16, 2009

T+ T-



An aerial view of the Veazie dam on the Penobscot river. Soon the river will be freed from this obstruction.-HEATHER PERRY/ PENOBSCOT RIVER RESTORATION PROJECT

UNDOING the damage done by human beings to nature is not a novel idea any more, not in the face of climate change. But actual actions in this regard are rare. So, when one hears of a project that actually aims at restoring the health of a river and bringing back the migrating fish species in order to benefit indigenous and other communities living along it, it comes as a breath of fresh air or rather a cup of pure water.

The Penobscot river and its tributaries form the largest river system of Maine, a State in north-eastern United States. This area has been inhabited by the Penobscot Indians for the past 10,000 years. These tribes treated the river and its inhabitants and everything that depended on the river with respect and restraint. The earliest European settlements in America came up in this region, which is also known as New England. In the past couple of centuries, the new Americans dammed, polluted and poisoned the river and its tributaries, and over-harvested its aquatic wealth.

All that is set to change. Now, in a bold peoples initiative, Maines inhabitants, old and new, have agreed to restore a considerable part of the rivers health. Significant progress has been made in the past couple of decades to clean the river of pollutants by enforcing pollution control measures in the paper mills on its banks and installing municipal wastewater treatment plants with the active involvement of the State and federal environmental agencies, backed by independent research by the native tribes and environmental non-governmental organisations.

The most radical move, however, involves the decommissioning and complete removal of two dams the Veazie dam, the first one to be built in 1834, and the Great Works dam and the redesigning of the Howland dam, to provide a full bypass channel for the fish run.

The move is expected to revive the annual phenomenon of upstream migration by the Atlantic salmon (Salmo salar) and 11 other sea-run fish species. (Most of the salmon decline was owing to the dams as they could no longer migrate beyond the Veazie dam. Pollution, especially from the paper mills and the expanding townships, added to the impact. Some pollution from agriculture still continues.) The project, which acquires even more meaning as the Atlantic salmon is on the endangered list, will restore 100 per cent of the former habitat of four other fish species, including

another nationally endangered species, the shortnose sturgeon (Acipenser brevirostrum).

The benefits of the project will go well beyond the resurgence of aquatic life: water quality is expected to improve, which, along with the return of the fish, will help increase the overall biodiversity of the river and the areas along its banks. Insects and other invertebrates are expected to reappear, and the surge in the fish population and the nutrients they add to the river and shoreline ecosystems is expected to provide new feeding grounds for aquatic mammals, such as otters, and birds, such as bald eagles.

A restored river could revive the livelihood of the fishing communities along its banks, including the Penobscot natives; improve food availability; and generate more income from tourism. Before the dams came up, 50,000 adult salmon were estimated to have migrated every year. In the past couple of decades their numbers were only between 1,000 and 4,000.Advocates of the project have reason to believe in these expected benefits. In 1999, a 160-year-old dam in Augusta, the capital city, was taken apart. This enabled the Kennebec river to flow free again, and within a short time there was significant improvement in its water quality, a tripling of the insect diversity on its banks, major increases in several fish species, and the return of birds such as the osprey and the bald eagle, which had almost disappeared from the area. People across the U.S. are watching the Penobscot restoration project with keen interest. If it proves successful, it could lead to demands for replicating the idea elsewhere. Indeed, it has aroused interest across the world. India should also consider similar steps, as a number of its river water projects have caused ecological and social ruin.

A decision to decommission dams is never easy, the biggest issue being the loss of hydel power or other benefits that they may have been providing. In this case a solution has been found. It is not clear who precisely came up with this idea for the Penobscot river. The local tribes have been long critical of the dams, as have been wildlife researchers and enthusiasts.

The Penobscot Nation (each native tribe in the U.S. calls itself, and is recognised as, a nation; this gives it a degree of autonomy in functioning though, of course, it remains subject to the overall American nation) and partner organisations had in the 1990s taken hydel power companies to court on a number of complaints, and in 1996 won a major case against a proposed new dam.

When a power company, PPL Corporation, bought several dams in 1999, it approached the Penobscot Nation and environmental organisations to discuss ecological issues. Nearly five years later, the groups emerged with a consensus: the removal of two dams and the redesigning of others to provide significant ecological benefits, while maintaining the hydel power potential by upgrading several other existing dams.

The 2004 settlement agreement was signed by PPL Corporation, State and federal government agencies, and the newly formed Penobscot River Restoration Trust, including the Penobscot Nation, and a number of environmental or fishing groups, including the American Rivers, the Atlantic Salmon Federation, the Maine Audubon, the Trout Unlimited and the Natural Resources Council of Maine. The Nature Conservancy, one of Americas biggest conservation organisations, joined in 2006 to help with fund-raising and ecological research and monitoring.

For the Penobscot tribe, the project is crucial not only for ecological recovery but also for its cultural survival. A number of traditions, including sacred ceremonies and earth-based world views, are inextricably linked to the river. Restoring its health is, therefore, a sacred duty.

John Banks, head of the Penobscot Natural Resources Department, explained to this writer: The Penobscot has been our lifeblood all these years, now is the time for us to give back. The river has also been crucial to the tribe for navigation and trade; tongue-in-cheek, they call it our I-95, referring to the highway that snakes through much of Maine.

John Banks and others of the tribe have for years been championing actions for cleaning up the river. They have found and reported oil spills by irresponsible gas stations, toxic leaks by paper mills, and other violations. They have persisted in pressing for prosecution or closure in such cases even when they encountered inaction or negligence by State or federal environmental agencies. They have also sought action on invasive species and pressed for higher standards of water quality.

They have built up their own sophisticated water and air monitoring systems, with fully equipped laboratories whose results cannot be disputed and whose services many of the government agencies

use now. They also monitor other aspects of their environment, including wildlife populations on the tribes lands. Interestingly, their wardens, having been trained at the States Warden Service, have law enforcement status all across the State, including on non-tribal lands.

Such rights are actually only a fraction of what they once enjoyed. Like most other native tribes of the Americas, the Penobscot natives have suffered greatly at the hands of European settlers.

They once had a claim to 2.5 million acres (one acre is 0.4 hectare) of their traditional territories, but betrayals and recalcitrance on the part of the governments forced them to accept a deal giving them full rights now to a little over 135,000 acres.

Like many other tribes in the U.S., they now struggle to reconcile the imperatives and influences of modernity with the desire to retain their traditions and identity. Increasingly, they assert their right to survival and security as an independent tribe, a nation, but it is not easy when surrounded by the domination of the people who now call themselves Americans. For all these reasons, the Penobscot restoration project is crucial to them.

Would such a process work in India? Technically, there is no reason why it should not although one cannot adopt precisely the same methods and apply them to tropical systems or to the much larger dams that have been built across its rivers. The biggest hurdle, though, will be achieving the political will, for there is simply too much vested interest in the dams.

Moreover, there is not even near-enough interest (or enough power with those who are interested) in reviving rivers, restoring wildlife habitats, spurring local fishing economies, encouraging local cultures, or, well, simply letting rivers run free again. Replacing the power and irrigation lost because of the decommissioning of dams is another challenge although, again, this is eminently possible with alternative energy sources and decentralised irrigation.

Even if India does not manage to start decommissioning its dams, it should certainly learn a lesson from the Penobscot project. Damming a river, even with a medium-sized dam, can prove costly to the environment, the wildlife and the people. Many of the dams simply do not make any kind of sense in the long run.

Even from a narrow economic point of view, they could prove to be big mistakes, for they depress a large range of ongoing economic activity that is hidden, including resources use for survival by local communities. In many cases, looking at a drainage basin-wide approach can balance power generation with fish passage better. If built without proper consideration, they could end up ruining flourishing fisheries both inland and on the coast. And they could force people to forgo sustained livelihoods from aquatic resources, and harm ecotourism and other activities.

The biggest lesson from Penobscot could simply be the age-old piece of wisdom: prevention is better than the cure. Purchasing and decommissioning the Penobscot dams is going to cost $50 million; it may have been cheaper not to build them in the first place.

The Indian government has proposed 180 dams in the north-eastern region. When will it realise that these are monumental follies that some future generation will have to pay for?

Ashish Kothari is with Kalpavriksh Environmental Action Group, Pune.

Gregor Johann Mendel: A man far ahead of his times

1948: Assassination of Mahatma Gandhi

Something is rotten: Understanding the Bollywood boycott phenomenon

1947: Madras Devadasis (I Dedication) Act passed