Blue revolution blues

MD. ASADULLAH KHAN

NEARLY 200 years ago, Thomas Robert Malthus, known as the prophet of doom, argued that the world's population was increasing geometrically, but food supplies only arithmetically, so unless population growth was checked, food would run out. By contrast, the prophets of abundance, who insist that no crisis is looming, have almost proved right. Since 1950, the world's population has more than doubled but food output has more than trebled. Now the debate is about to enter a new phase. Over the next few decades, the prophets of doom and abundance will turn their attention to three resources - grain, fish and water - which are particularly important to developing countries. This time around, proving the doomsayer wrong could turn out trickier.

The world's fish harvest has risen from 49 million metric tonnes in 1965 to over 110 million metric tonnes today. However, some worrying trends have also emerged. Much of the recent increase has come from farmed fish. As reports reveal, among the catches of wild fish from the sea, fewer have been of high value species (such as haddock and cod). According to the Food and Agriculture Organisation (FAO), around 60 per cent of the world's various commercial fish stocks are now being harvested near or beyond sustainable levels.

With the decline in stocks, there has come about conflict between otherwise peaceful nations. For example, Canada and Spain had a serious row about Greenland Halibut a few years ago, and the Malaysian navy has killed Thai fishermen suspected of illegal fishing. As rich countries have depleted their stocks of fish, they have imported growing quantities from developing countries that now catch far more quantities. In 1995, fish export from developing countries were worth $23 billion more than their earnings from meat and cereal combined, according to calculations from the Washington-based Food Policy Research Institute.

Fish, it would seem, are proving Malthus right. Fishermen the world over have little incentive to conserve stocks. They know if they do not take all the fish, others will. Governments in some countries are trying to enforce restrictions on fishing, in some cases using satellites to track boats. But developing countries have neither the money nor the technology to regulate their millions of subsistence fishermen and in rich and poor countries alike rules are still widely flouted.

Of course, over-fishing is not the only human activity that is jeopardising life in the oceans. Coastal pollution and habitat destruction, filling in wetlands, building dams, etc, are adding to the crisis. Because the oceans are running low on many of humanity's favourite fish, the obvious solution has fallen on raising more seafood down on the fish farm known as aquaculture. Fish breeding practised for decades has now become a giant international business. Supermarkets in affluent countries are now awash in farm-raised Cod, mussels, scallops and shrimp. On the other hand, one quarter of the world's shrimp is raised in 50 countries with Thailand and Ecuador leading the harvest.

Theoretically, fish farms are a good thing: they provide much needed food while taking some of the pressure off dwindling fish populations in the wild. But in practice, aquaculture is often profoundly wasteful and destructive. Leaving aside whatever concerns animal-rights activists may have about raising sea creatures in close quarters, fish farms can devastate the surrounding environment, especially the lush coastline forest. And the idea that the growth of aquaculture can save wild fish is, to a great extent, wishful thinking. Species that humans are not fond of eating, like menhaden, a type of herring, are widely caught in the oceans, ground into fishmeal and fed to farm-raised salmon and other restaurant favourites.

So far, the farming of salmon and shrimp has had the most serious impact on the global environment. Once luxury items, they are now both plentiful and popular, thanks to huge industries dominated in many areas by multinational food processors and governments hungry for foreign exchange.

Shrimp farming is particularly damaging to the tropical world's mangrove forests, coastal necklaces of dense low-lying trees that nurture marine life, filter water and soften the sea's constant battering of the shoreline. Much of the world's shrimp is raised in ponds gouged out of these thick mangroves. Here, sheltered from the dangers of the open sea, the creatures spend six months living tightly packed - as many as 500,000 per hectare - in artificial ponds, before being scooped up, processed and exported.

In places such as Bangladesh, Thailand and India, which grow shrimp mainly for export to richer countries, diseases and pollution limit a farm's life to 10 years. Shrimp farms located off the Sunderbans, Khulna, Bagerhat, Barisal, Bhola have almost crashed in just about 10 years. Vast areas of cultivable land in these districts where once paddy was grown were turned into shrimp farms by being filled with salt water. It paid off instantly. But after about ten years of harvesting, these shrimp farms have crashed because of virus infection. The irony is that even when the water has been released, salt has spilled out in the surface land and vast areas have become unfit for any type of cultivation.

It would be fine if growers could use a pond over and over again. But the population density eventually fosters diseases that can knock out a shrimp population in a matter of days. Pathogens settle into the muck of shrimp waste and unconsumed fodder, poisoning a pond against further use. After a pond has exhausted its usefulness, usually within three to six years growers move along the coast, destroying mangrove forests and rice fields to make room for more ponds, digging them by the hundreds. Or, when contamination becomes deeply embedded, as happened in Taiwan in the late 1980s, and now in most parts of Bangladesh the industry simply crashes and never recovers, leaving kilometres of barren coast, lost fortunes and social disruption. This is now happening in Thailand, the world's biggest producer, prompting big-time Thai shrimp growers to move into Vietnam, Cambodia and India. "Commercial shrimping interests are drawing down the world's biological capital," says Peter Riggs, who studies the impacts of aquaculture for New York City's Rockefeller Brothers Fund.

Large-scale shrimping hurts people as well as the environment; traditional livelihoods have been endangered when farms have replaced mangroves. Where the forests were once a source of medicines, charcoal and game, there are only ponds patrolled by armed guards hired to prevent local people from poaching shrimp. "Entire communities have been devastated," says Conner Bailey, a rural sociologist from Alabama's Auburn University who has studied the impact of shrimp farming in the Philippines and Indonesia. "While it is a wonderful thing to grow so many shrimp, it has destroyed a way of life," says Bailey.

While shrimping undermines the coast of equatorial countries, salmon growing is polluting sea bottoms in temperate zones. Along the coasts of such nations as Norway, Scotland and Chile, salmon are raised in 15-m net cubes rafted together over several hectares of coldwater bays. Typically, 50,000 to 200,000 fish crowd each pen, until they reach four kilograms, the size at which they are harvested. They are fed a diet of fishmeal, and the trade-off is dismal: three kg of fishmeal produces one kg of salmon. A large percentage of the meal falls to the sea floor along with faeces, creating "dead zones" where nothing lives. "Some bays smell like pig farms," says Alexandra Morton, a British Columbia-based marine researcher.

Disease is a constant worry. Bacterial infection can ravage penned salmon shrimp and other varieties despite the dose of antibiotic given them. If sick fish escape, they can easily spread the disease to wild fish.

Other than the dire environmental problems such greedy practice involves, the way it hurts the farmer warrants attention. It's in his best interest to site his pens where currents and tides will wash the waste away. Irish salmon farmers are cleaning up their industry by reducing fish density and by letting a bay go fallow for a month after each harvest, so that its water and the sea bottom can purify themselves. "As in every livestock-rearing process, you have to look after your animals," says Richard Flynn, executive secretary of the Irish Salmon Growers' Association.

The shrimp industry too is becoming aware of its shortcomings. Seeing the value of preserving mangroves as a source of wild shrimp stocks, some farmers are finding alternative sites. When the Baltek Corp decided in 1983 to diversify from growing balsa wood in Ecuador to producing shrimp, it located its 600 hectares of ponds only on salt flats away from the forests.

Perhaps fish farmers can take some cues from China, where aquaculture has been a crucial part of the culture and economy for centuries. In Hong Kong's Mai Pomarshes, a nature reserve managed by the World Wide Fund for Nature Hong Kong, shrimp are being raised in the traditional Chinese way, which relies on low-population density. A ditch dug around a cluster of mangroves on the shore provides an ideal home for shrimp larvae. There they grow, consuming natural nutrients, such as debris from mangrove trees. A sluice gate both prevents the shrimp from leaving and allows an exchange of water with the sea through the motion of the tides, thus reducing the accumulation of pollutants. A shrimp farm using this technique on the Red River Delta in Xuanthuy, Vietnam, is able to produce 75% of the shrimp that a more densely packed farm could yield. While the difference certainly affects short-term profits, the chances of a debilitating disease that will wipe out an entire harvest are greatly diminished. Nature has given the fish farmers of the world a profoundly simple lesson: a certain amount of short-run gain must be sacrificed to ensure long-run survival.

ENVIRONMENT WATCH

Vines spread, choke trees in Amazon jungle

REUTERS, *London*

Jungle vines are spreading faster in South America's Amazon rainforest than before, choking trees and potentially slowing the forests' ability to soak up damaging greenhouse gases, scientists say.

The spread of woody vines - like the ones Tarzan swings from in the movies - is the first change in plant composition that scientists have recorded in the deepest virgin jungle, and suggests mankind is having more impact on delicate ecosystems than previously shown.

A team of researchers from Bolivia, Ecuador, Peru and the United States, led by Oliver Phillips of Leeds University in Britain, counted and measured the vines, called lianas, in the primary rainforests of the Amazon.

They found that the "dominance" of lianas over trees had increased by between 1.7 and 4.6 per year over the last two decades of the twentieth century.

"It's the first time that a changing composition has been observed in mature forests," Phillips told Reuters in a telephone interview. His team's findings are to be published in the British science journal Nature on Thursday.

He said the growth in vines appeared to have been caused by greater concentrations of carbon dioxide, the "greenhouse" gas that most scientists believe is causing global temperatures to rise as a result of human activity.

Plants absorb carbon dioxide in photosynthesis and scientists have predicted that as humans produce more of the gas, forests would grow to soak some of it up, a phenomenon called the "carbon sink," which could help ease global warming.

But Phillips said the additional carbon appears to benefit resource-hungry vines more than slower-growing trees, throwing off the balance in jungle forests.

"What we think we were finding is the ecosystem responding, not just in growth but in a change in its composition. If you change an environmental driver like carbon dioxide concentration, some plants will do better than others," he said.

As the vines weigh down trees and kill them, they can reduce the ability of the forest to soak up more carbon, making the problem of global warming even worse.

Other plant and animal species are also likely to have been affected by the increase in vines relative to trees. Different insects may pollinate vines rather than trees, different birds may eat the insects, and so on.

"The ecosystem's connected. You change one part and other parts are likely to change too," Phillips said. "It's a kind of example of how we can't predict how the world is going to respond to the changes we're causing."

Great Salt Lake shrinks

AP, *Salt Lake City*

The Great Salt Lake isn't as great as it used to be. A lack of precipitation and a hot summer have left the lake at its lowest level since 1980.

"It's been real hot and dry," said Wallace Gwynn, a geologist with the Utah Geological Survey. "The lake's dropping like a rock."

The lake was at 4,198 feet above sea level as of Tuesday. Gwynn predicted the lake will bottom out around Dec. 1 at 4,197 feet. The last time it was that low was in 1972.

The lake level is entirely dependent on the weather. The level normally falls from summer into late fall before lower temperatures and moisture raise it again in the winter and spring.

The lake's historic peak came during the "flood years" of 1986 and 1987, at 4,212 feet. Its all-time low, 4,191.35, was in 1963.

Because it's such a shallow lake, even minor drops expose much more land area around the lake. For example, at 4,200 feet above sea level, the lake covers 1,700 miles.

At its 1963 low point, it only covered 950 square miles.

Living on the edge

ARUN DEVNATH

ANY write-up on environmental issues, bereft of ideological base, is stale to readers. The write-up must be reflected through a prism of ideas. The annual report on the state of environment in the country, *Bangladesh Paribeshchitra 2001*, brought out by the Forum of Environmental Journalists of Bangladesh (FEJB), is not just a compilation of reports, but a carrier of information presented in a different perspective.

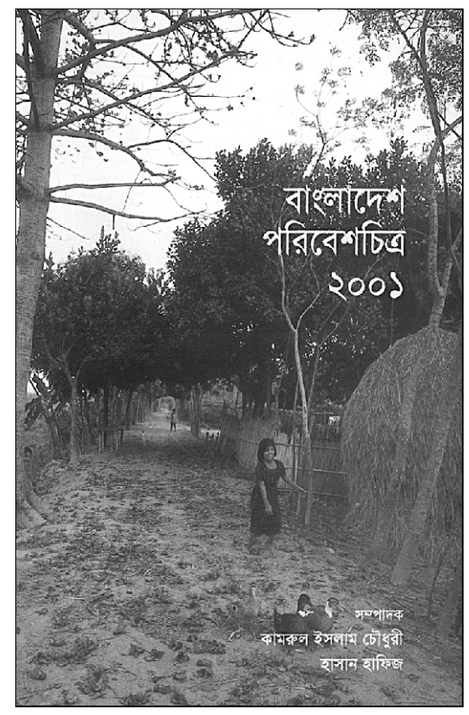
Professor Serajul Islam Chowdhury's *Kuthar Kathin Kathor* has implanted the nucleus in the report, which carries all other write-ups forward. He based his idea on the negation of industrial revolution that sucked all people helpless into a vortex of fast-forward development - at the expense of nature, in many cases. Consumerism fed on the industrial revolution has pitted people against nature. It is but a self-imposed exile. People on the earth have been left alone in tortured inactivity.

Consumerism is the main culprit at work. Consumerism creates the profiteer. The profiteer depletes natural resources. And the result: a series of disasters -- global warming, melting of icecaps, ozone hole, water surges that threaten to submerge the country's southern part.

Consumerism does not live in isolation. It is nursed by capitalism that has left the fate of the earth in the hands of so few people. The report in its preamble cautioned that there is a bizarre form of ideology in play. Capitalists build a storehouse of wealth, much of which is ruthlessly extracted from the natural world, using up resources that can never be renewed.

The report is a rallying cry against this mindless extraction of resources. We hope we yank back the joystick of unfettered consumption and save us from nose-diving into our own extinction.

Structurally, the report has been prepared on a pool of as many as 30 articles on various environmental issues that have a common read in newspapers. The report covers many issues like forest resources, Osmany Udyan, the Sundarbans, animals, fruits, biodiversity, shrimp cultivation, the Bay of Bengal, the Gorai River, river erosion, arsenic menace, air pollution, slums, waste management, floods, etc.



And 38 contributors pooled their efforts in the report. Besides highlighting the environmental crises, the book dwelt on the environmental laws, management and policy.

The report makes it difficult for the readers to visualise an optimistic scenario for the country over the next 30 years. Deterioration will go unchecked, if countervailing measures are not taken with urgency.

Extreme weather sparks off climate action calls

REUTERS, *Berlin*

THE storm clouds massed over Europe that are causing some of the worst floods for decades may have a silver lining for the continent's environmentalists as the battle lines are drawn for the Johannesburg Earth Summit.

While floods threatened historic buildings and crops across Europe and hundreds drowned after torrential rain in Nepal, Iran and the Philippines this week, drought has shriveled harvests in southern Africa, Vietnam, Australia and the United States.

Ahead of the summit on the environment and development that starts in Johannesburg in two weeks, Europeans have used the extreme weather as ammunition for criticism of President Bush's rejection of moves to fight global warming.

Speaking during a visit to the flooded historic center of the Bavarian university town of Passau, German Interior Minister Otto Schily said weather disasters like floods showed the need for a redoubling of efforts to protect the environment.

German Environment Minister Juergen Trittin agreed, saying higher global temperatures in recent decades had led to rising sea levels and increased rainfall and were at least partially to blame for a bout of unpredictable weather seen in recent years.

"If we don't want this development to get worse, then we must continue with the consistent reduction of environmentally harmful greenhouse gases," he told NDR radio in an interview.

Benedict Southworth from the Greenpeace environmental group in Britain, said temperature records were being broken across Europe and the frequency of extreme events would increase. "Now we're getting the first sense of urgency of what it will be like when climate change really starts to bite," he said.

Rich world must pay

Gallus Cadonau, the managing director of the Swiss Greina Foundation for the preservation of Alpine rivers and streams, agreed and suggested a punitive tariff on imports from the United States to force cooperation on greenhouse gas emissions.

"This definitely has to do with global warming. We must change something now," he said. "Those nations that really are careless with the environment should have to compensate."

U.N. Environment Program chief Klaus Toepfer said the latest extreme weather should persuade rich nations of the need to act fast to reduce emissions of carbon dioxide and other gases that are believed to contribute to global warming.

"We must massively fight that and it is above all an obligation of industrialized countries," Toepfer told DeutschlandRadio Berlin in an interview.

Toepfer rejected suggestions that a lack of U.S. interest could render irrelevant the U.N. World Summit on Sustainable Development that runs from August 26 to September 4 in South Africa, although he admitted it might disappoint.

"We would like to go much further, but the world cannot be changed just by one conference," he said.

While the summit will host some 50,000 participants including dozens of world leaders, President Bush is expected to be on holiday at his Texas ranch. The United States produces a quarter of the world's carbon dioxide emissions.

Bush pulled out of the Kyoto agreement on reducing greenhouse gases last year, saying it would cripple the U.S. economy and give unfair exemptions to developing countries.

No proof of link

Cato Buch of Norwegian environmental group Bellona admitted there was no proof of a direct link between erratic weather and the so-called greenhouse gases produced by burning fossil fuels that are believed to be increasing global temperatures.

"We can't say 100 per cent that this is linked to climate change caused by people, but scientists agree that such dramatic weather is more likely if the greenhouse effect is taking place," he said.

Germany's Trittin also said global warming was by no means the only cause of the recent floods in Europe and said building along river banks and flood plains was also partly to blame.

"In many cases, we don't need more dykes, but fewer dykes. Rivers should not be forced to act like canals, but given the space to spread onto the plains," he said.

In Romania, where 10 people have died as a result of bad weather in recent weeks, Ion Simion, adviser to the Environment Ministry, said tree felling was also a problem.

"Another cause of these floods is the fact that forests have been cut down, not only in Romania but everywhere," he said.

Danica Leskova from Slovakia's Hydrometeorological Institute cautioned against jumping to conclusions about a link between floods and global climate change.

"Our memory is too short," she said. "Our regular and scientific observations did not begin long enough ago to make such self-assured deductions.

"There is one nice - or ugly - thing about nature: it is unpredictable."