

Feature

Development

Fisheries Call for Better Attention

by Shahrah-e-Hasan

FISH and fisheries have been an integral part of the life of the people of Bangladesh from time immemorial. Fish has been the natural complement to rice in our diet contributing about 80 per cent of daily per capita protein intake (95 per cent in the Forties and Fifties). Fishery sector's contribution to the country's GDP and export earnings is nearly 6 per cent and 12 per cent respectively.

The sector provides full-time employment to about two million people in catching, packing, transportation and trading. A large number of rural population also engage themselves in fishing as a part-time occupation for family consumption and supplementing income. A survey indicates that an estimated 73 per cent of the rural households undertake some kind of fishing annually.

Festive occasions of the Hindu community is incomplete without fish. Sending a large fish to the bride's residence along with sweets and saris has crept into the wedding ceremony of Muslims with the passage of time. Until about 50 years back, making of decorative pieces with the scales of large fish was a common feature in the country. Two hundred and sixty species of fresh water fish belonging to 55 families were reported in 1989. About 56 species of Palaemonid and Penaeid prawns occur in the fresh waters, estuarine waters and marine waters. The species of tortoises and turtles occurring

in Bangladesh number about 25. In the marine waters the species of fish recorded so far are 475 of which only about 65 are commercially exploited. Ten species of pearl-bearing oysters have been reported. There are seven species of edible marine oysters.

There are 11 species of marine crabs and four species of fresh water crabs. Of these one species is edible. Three species of edible lobsters are available in the waters around St Martin's Island and Teknaf. Ten species of frogs and toads found in different areas of the country play an important role in controlling insects and pests. Of these the Indian Bull Frog and Skipper Frog are edible.

Fish production is from open inland water capture fishery, closed water culture fishery and marine capture fishery.

The inundated flood plains are central to the sustenance of the open inland water fishery production system. Nature has made Bangladesh a world leader in fresh water fish production with 4000 kg per square kilometre a year against 411 in China and 391 in India. But there has been a continuous decrease in yield from 459,905 tons in 1984-85 to 419,530 in 1987-88.

Closed water culture fishery is practised in ponds and reservoirs. Brackish water aquaculture in the coastal areas of Cox's Bazar and Bagerhat-Satkhira is flourishing, but the cultural practices are still primitive. The primitive. The

produce from this system registered an increase from 123,811 tons in 1984-85 to 175,925 tons in 1987-88.

Trawlers catch shrimps from the Bay of Bengal discarding the fish that come in with the shrimp. Capture fishery in inshore areas is dominated by artisanal fishing with mechanised and non-mechanised country boats. Marine fishery contributed 187,563 tons in 1984-85 and 227,582 tons in 1987-88.

Besides over-fishing because of the pressure of population, loss of habitat, disease and water pollution has led to a decline in number and species of fish.

Many species of fin fish like "nandail," "mahseer," "pila shol," "taki," "baghair," "rita," "tit punti," "silond," "bacha," and "bistara," once abundant, are now rare. Some are even under the threat of extinction.

By the year 2005 about two million hectares of flood plains would be lost to fishery due to flood control, drainage and irrigation projects. As more and more fishery habitats undergo ecological alteration due to such projects total productivity diminishes, and, with the completion of each project irreversible changes take place adversely affecting other open water systems because of its inter-connected nature.

Construction of the Farakka Barrage, Chandpur and Muhuri projects, Chalan Beel project, Horal river project, obstruction of fish movements due to Boral river regulator, cross dam across river Shiv, and

several such project, withdrawal of water at the Ganges-Kobadak projects and sediment deposition in aquatic habitats have reduced stocks of carps in the Ganges-Brahmaputra-Meghna (GBM) river systems. Haors have been lost to fishery being turned into agricultural fields. Karnaphuli flood control and irrigation project have also affected breeding of carps, and coastal embankments have eliminated the "bheri" fish culture.

Haphazard expansion of coastal aquaculture has caused the loss of both arable and natural systems such as mangroves, eg. the Chakaria Sunderbans, and shrimp yield has gone down.

Basic management practices for revenue earning do not take into account any measure to protect and conserve the fish resources. Because of the ownership pattern stock assessment, catch and effort analysis etc. to develop and enforce needed fish protection and conservation measures cannot be undertaken. Unregulated and indiscriminate exploitation of resources from egg to juveniles to spawning adults of fishes is thus rampant.

Discharges of toxic industrial effluents, raw organic and domestic wastes and release of agro-chemicals through run-off make the aquatic environment uninhabitable for fish, prawn and other living organisms. Bioaccumulation of harmful chemicals such as chlorinated hydrocarbons (DDT, Lindane,

Heptachlor, etc.), mercury, lead, chromium, is taking place in edible fish and prawn and through these to the human beings.

Thirteen species of fin fish have been introduced so far to augment production and for insect and weed control experiments. Gold fish has been imported for decoration purpose only. The introduction of the species from Africa and Europe, were not preceded by any study of their influence on or the interaction with local species. Several were found to have been competing with the local species for food to the detriment of the latter and some have been found to be omnivorous with high tendency to predation.

Ulcerative disease of fish has spread into Bangladesh causing heavy fish mortalities for the last four to five years. No method has yet been developed here regarding its prevention or cure.

Formulation of a national policy on use, conservation and development of fishery resources is a prerequisite for sustainable development. Such a policy, drafted by the Ministry of Fisheries, in September 1990, may be finalised taking into consideration the recommendations of the National Conservation Strategy, sponsored by the Government and International Union for Conservation of Nature and Natural Resources (IUCN).

REBUILDING IN THE AFTERMATH OF THE CYCLONE

JUST six months ago, one of the worst cyclones in Bangladesh history laid waste the lives, livelihoods and future of millions of the nation's poorest people. The nation is still reeling from this catastrophe and the survivors continue to face the Herculean task of rebuilding what the winds and rain and tidal waves destroyed.

Recently at the Headquarters of the International Fund for Agricultural Development (IFAD), H E Majid-Ul Haq, Minister of Agriculture, Irrigation and Flood Control, Government of the People's Republic of Bangladesh met with IFAD President Idriss Jazary to discuss bilateral matters particularly the IFAD special assistance project for cyclone affected rural households in the country. During the meeting, Waldir Rahman, Ambassador of Bangladesh to IFAD signed a US\$15.4 million loan agreement with the Fund that will assist a large number of the people in the affected areas begin the task of rebuilding toward a sustainable future. With grants from the Danish International Development Agency and the European Community, and funds from the Bangladesh Government, the US\$20.7 million special assistance project for cyclone-affected rural household will focus on some 69,000 farming and fishing families living on the islands and coastal regions in the Chittagong-cox's bazar area.

Long-term, sustainable development for the rural poor, not emergency relief, is the goal of IFAD's eleven previous interventions (for a total cost of US\$348 million) in Bangladesh and of the 302 projects it has financed in 93 developing countries since 1978. With this project IFAD becomes one of the first international agencies operating in the country to emphasize on two essential dimensions of recovery: rehabilitation and prevention.

With the staggering loss of crops, livestock, tools and — for fishermen — boats and gear, the very means of present and future survival have disappeared. And the poor lack the resources to replace them. The first step is to ensure this replacement. Small farmers will be given, free of cost, enough seeds and other inputs to see them through a full year's crop cycle. Through a combination of loans and grants, they will be able to purchase tools, poultry and livestock and to gain the use of power tillers.

A similar system will permit small-scale fishermen to replace lost craft and gear, repair that which can be salvaged and reclaim ruined freshwater fish ponds.

Many of the poorest households in the region are landless, a high percentage of them headed by women. These people will receive credit and also grants to start up their

farmer enterprises again or to set up new ones. Prevention of future disasters must go hand in hand with rehabilitation. Obviously, nothing can be done to stop cyclones from sweeping out of the Bay of Bengal. But, a lot can be done to minimize the loss of life and property when they do come. The project will therefore also work to replace and improve the early warning systems, to build cyclone shelters for people and animals, and to replant coastal mangrove forests and wind breaking stands of trees around houses and fields.

As important as these physical structures are, even more vital is the strengthening of local village self-help institutions that can act effectively in time of crisis as well as in times of calm. Thus a major feature of the project is the formation and support of village development committees. These groups would be responsible for such activities as reclaiming roads, small bridges and fish ponds for planting trees and for maintenance of shelters.

The hours of cyclone fury are terrifying, but the weeks and months and years of the aftermath are perhaps even more grim: the prospect of a life even more deprived than before. Having to rebuild from scratch, the work of a lifetime is a daunting task, but with effective, timely support, it can be done. — UNIC Feature

WITH his usual flare for modesty, Moammar Gaddafi called his pet project to pump billions of cubic metres of fresh water from beneath Libya's southern sands north to the coast the Eighth Wonder of the World.

Indeed, the US\$25 billion project has made many people wonder.

Officially it is called the Great Manmade River, though it is not a river at all, but a pipeline. And what a pipeline. Some 1,900 kilometres so far, or 250,000 of the 80-tonne concrete and wire pipe sections, all laid end-to-end beneath the desert.

Simply put, the plan involves tapping into the estimated 35,000 cubic kilometre reserves of fresh water trapped in limestone caverns beneath the desert, pumping the water to the surface and transporting it to the coast.

The water — more than 80 per cent to be used for farming — will make the nine-day trip north mostly by gravity, with massive reservoirs to keep the pressure up and numerous pumping stations to boost it.

Work on the project — overseen by South Korean construction giant Dong Ah — began in 1983. One of the biggest civil engineering undertakings of the century, it has involved drilling hundreds of water wells, assembling specialised pipe construction plants, building kilometres of roads to transport pipe sections, digging, scrapping and sometimes blasting the 1,900 kilometres of seven-metre deep trench in which to lay the pipe and the construction of pumping stations and vast reservoirs, like one at Ajdabya about one kilometre wide, to control the flow of water.

Environmentalists worried tapping groundwater was a bad thing, but the Libyans said there would be no impact outside the immediate area of the wells. And at the outset Egypt protested it had claim to some of the water too. When Gaddafi said the resulting irrigation, would provide jobs for a million Egyptian farm workers in Libya, protest over water ownership stopped.

Phase One, officially opened by Gaddafi in September, will carry two million cubic metres of water daily to the coast through parallel pipelines, one running from wellfields at Tazerbo to Benghazi and the other from Sarir to Sirf.

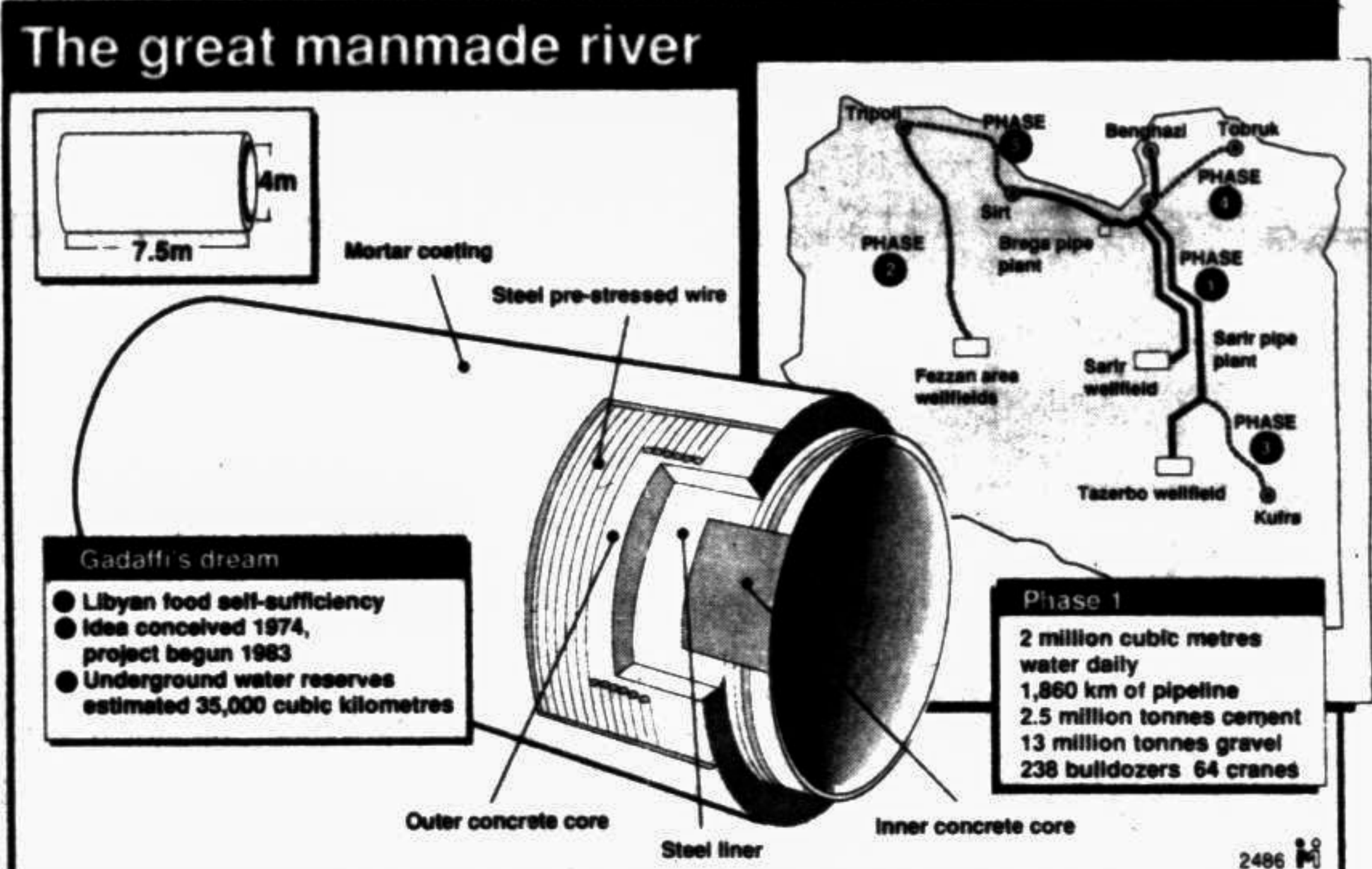
And as long as the oil money does not run out, work will continue well into the next century towards the goal of food self-sufficiency for Libya. Phase Two, a separate pipeline from wellfields in East Fezzan to the capital, Tripoli, is already being built — again with Dong Ah as contractor. It will take seven years. Phase Three would add a further 1.68 million cubic metres of water flow to Phase One.

"Oil revenues are, therefore, being invested in the construction of a substantial project to the benefit of all the community in this generation and for many generations to come," says the foreword of a glossy handbook on the project published by Libya.

Across the country, dreamy posters show a dashing Gaddafi in traditional dress with water gushing behind him and label the leader the Great Man River Builder. The cynics call his project the Great Madman's River.

Gaddafi as Old Man River Pumps up a Dream

Moammar Gaddafi's grand scheme to pump billions of gallons of water from beneath Libya's desert sands to farmland on the coast has met with partial success. The first phase of the \$25 billion project that could eventually lay more than 3,000 kilometres of pipeline has already been unveiled, despite staggering cost overruns, foulups and no lack of criticism. Gemini News Service reports on one of the biggest African construction projects since the pyramids. by Allan Thompson



But apart from the tendency to criticise the scheme because it was so closely attached to the erratic Gaddafi, there

were very real problems about which the Libyans are still reluctant to talk.

Mankush, head of the Great Manmade River Authority, effectively the man in charge of it all, refused any form of in-

terview, declined to speak on the telephone and would not even answer basic questions by fax.

No other official claimed to be able to speak for the project as a whole. All preferred to extol the virtues of project components like the Brega pipe plant or Ajdabya reservoir.

Diplomatic and industry sources confirmed there had been serious problems with the water wells drilled by Brazilian company Braspetro. Screens around the wells were collapsing and sand and gravel getting into the water supply. Some of the casings had to be refurbished, causing great expense and delay, the sources said.

And while the Libyans still talk about a five-phase project, with later connections to Tobruk in the east and a linkup between Phases one and two, the sources said the project has now unofficially been scaled down to three phases.

"You will be told that it is proceeding according to plan, but since the plans are changing all the time, it is truth by modification," said a senior Western diplomat in Tripoli. "Originally it was five phases and now it is three. There have been continuous delays, mostly in the Libyan end because there are enormous amounts of money involved in it," the diplomat added.

Some experts charged that for the estimated \$5 billion used to build Phase One, numerous desalination plants could have been built along the coast to serve the same purpose.

Besieged Juba Turns its Wasteland Lavatories into Farms

by Modi Bulson de Kiden

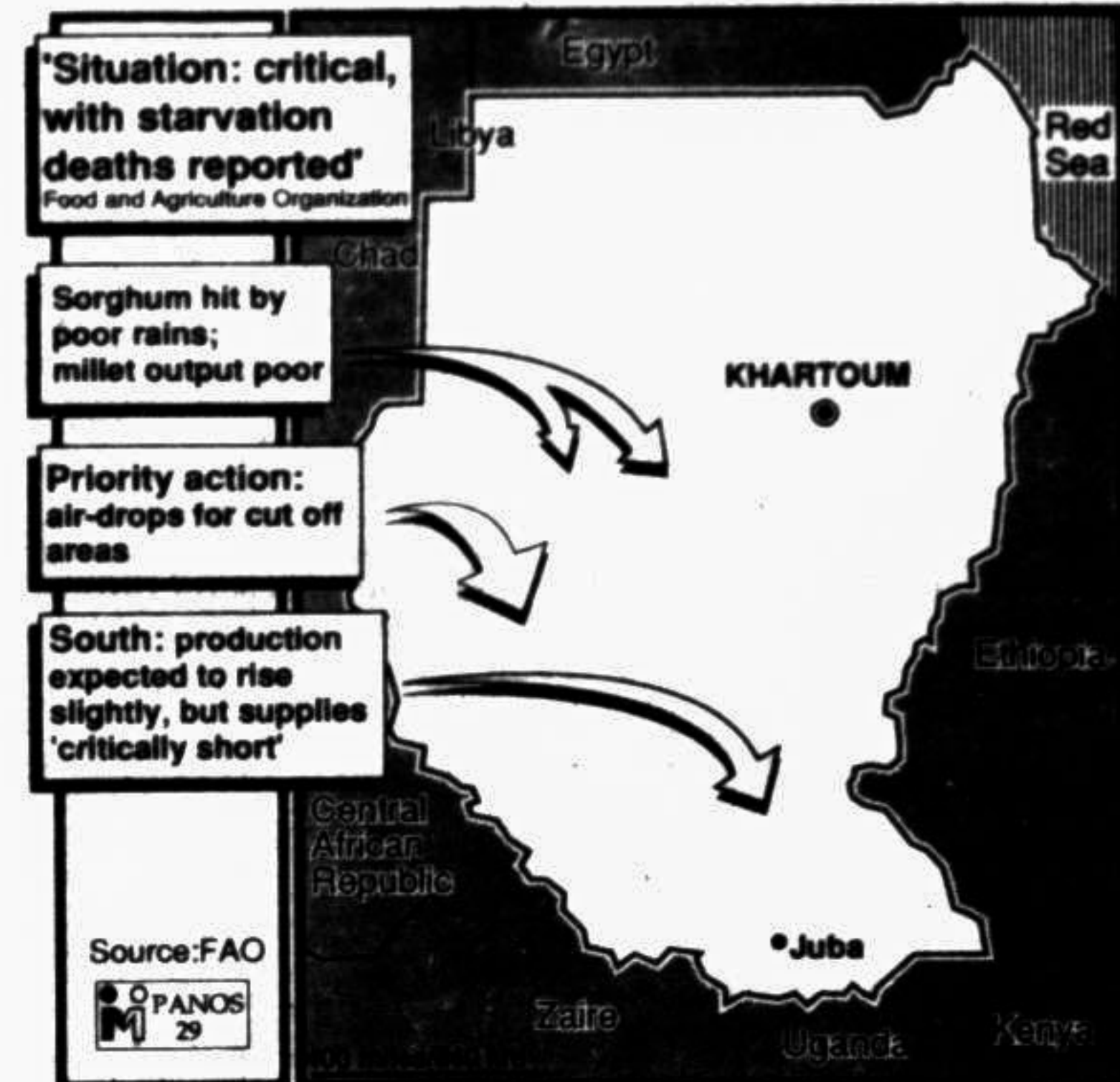
IN the midst of Sudan's civil war, the besieged people of Juba have turned faces-ridden waste-ground in the city into food plots.

The greening of the capital of Equatoria state, 1,200 kilometres (746 miles) from the capital Khartoum, is the result of efforts by the state ministries of agriculture and education and a group of non-government organisations (NGOs).

The first attempt at an environmental clean-up came almost a decade ago, when the local Directorate of forestry launched a tree-planting and beautification campaign.

By 1990, thousands of Juba residents had planted trees, mainly eucalyptus and neem, around their homes. But as shelling by soldiers of the rebel Southern People's Liberation Army (SPLA) stepped up, and emergency food supplies from Kenya and Uganda became scarcer, residents were encouraged to plant foodcrops. (The SPLA is fighting for a bigger say in the central government, dominated by Muslim Arabs from the north, for the predominantly Christian and animist African Southerners.)

The Red cross, the British and Canadian NGO consortium Acord and several church-affiliated NGO supplied seeds and implements.



"These inputs helped transform Juba's former open-air latrines into green gardens," said one resident. They were also used to increase agricultural output in areas around the town not under rebel control, encompassing a radius of 15-20 kilometres (9-12 miles). One of two Southerners in the central Government

Cabinet, Father George Kings, said after visiting Juba recently that wherever he drove his car was trespassing on people's groundnuts, maize, beans and sorghum. "Nearly very available space has been cultivated," he commented. This has helped hold down food prices for the city's estimated 400,000-500,000 people.

The Juba Directorate of Agriculture estimates that about 90 per cent of open spaces have been cultivated with such crops, as well as surrounding areas.

The state Minister of Agriculture and Natural Resources, Caesar Baya, told the local Assembly that the city was producing about one-third of its basic food requirements, though this was less than the Ministry's original forecasts.

Those reaping the urban harvest are now confronted with a new problem: fending off thieves. Several suspected thieves have been shot dead by farmers.

Much popular blame falls on the 7,000 Toposa nomads who have taken refuge in Juba and are camped in appalling conditions in an old backyard. Lack of food and proper sanitation led to the deaths of about 2,500 of them, according to government social worker Elly Abudraga Ramadhan.

Medical officers say the cultivation of open spaces has also cut down the number of flies. Said James Laku Want, a medical assistant at Juba Teaching Hospital: "These places were breeding grounds for flies and a health hazard." He believes that most diarrheal diseases in Juba were a direct result of the excreta-filled spaces.

Optimists in Juba believe that if rains remain regular, relief food may not be necessary in future. Says official Sartele Kenyi Tombe: "If this situation continues for five years or so, little will be needed from the international donor community."

The afforestation and beautification drive has also been resurrected, which has also helped provide much-needed building poles and firewood.

Ascetic Fights for India's Bonded Labourers

Swami Agnivesh is a remarkable personality. A former university lecturer and politician, he has been fighting for the rights of India's bonded labourers many of whom are children. Now, reports Gemini News Service the first Anti-Slavery medal has been awarded to his Bonded Labour Front and this has put the spotlight on the Swami. by David Spark

He is modest about what the Front he founded nine years ago has achieved, remarking: "We say there are a minimum of five million bonded labourers in India and more than 10 million children in bondage. We have been able to release hardly 40,000 including 3,000 children."

But a former chief justice of India says that Swami Agnivesh has done more than anyone else to release and rehabilitate bonded labourers.

Swami Agnivesh is a former university lecturer who became a monk and also a politician, serving for a time as minister of education in Haryana state, near Delhi. He sees bonded labour as resulting from widespread rural poverty, made worse by the way factory-made goods displace the work of local craftsmen and by the way deforestation and dam-building displace tribal people.

The sort of people who become bonded labourers are illiterate folk without assets and belonging to the lowest strata of society. If they need to borrow a small sum, they go to the village moneylender or landlord who gets them into a bond agreement, sealed with a thumbprint on a bland piece of paper.

"The labourer and his whole family labour for as many as 16 hours a day to repay the loan," says Swami Agnivesh. "They

have in fact mortgaged themselves. Slavery is perpetuated in a new form.

"After a couple of years, they are told they still owe a few thousand rupees. If they go to the police, they find the police officers are hand-in-glove with the moneylender."

Other poor people, starving in their village, are recruited by contractors to work in another part of the country.

"They are brought to stone quarries and made to work there for six or eight months. Then they are told they are not to be paid any money because they owe money to the labour contractor or employer.

"The labourers are in a region where they do not know anyone or the local language and they are completely dependent on the unscrupulous contractor. They do not have the money to escape. They cannot pay the bus fare or the train fare."

"Employers prefer child labour. They can pay nominal wages or just give food, and get 16 hours' work. Children work mostly in agriculture but also in construction, brick kilns, stone quarries, carpet manufacture. Sometimes they are mortgaged by adults. Sometimes they are lured away by promises of three meals a day and the cinema once a week.

"These children are being exploited in the most inhuman manner. They are made to work long hours with minimal wages. They are ill-clothed, ill-housed, ill-fed. They are beaten up, even branded."

Swami Agnivesh criticises the trade unions for being unable to organise poor people and the authorities for failing to enforce laws against bonded and child labour: "A parliamentary sub-committee goes round the country and submits a report saying minimum wages are not being paid, and they



leave it at that." Before the last election, V.P. Singh's Janata Dal government proposed to set up a national commission to get things put right. Then it was ousted.

Swami Agnivesh says a religious movement, Arya Samaj, inspired him to help bonded labourers. He is sad that "the forces of culture and religion are getting more fundamental-