

Post-flood Rehabilitation: BUET Study Perspective

Short-term and Long-term Priorities

By Md Asadullah Khan

Humans are impressively resourceful species with a unique ability to accommodate even sweeping changes. In countries and regions hit by climatic upheavals, people have come up with a variety of solutions that are likely to have broad applicability to global problems. It is hoped that the BUET study results would show the nation a way out to live with the "flood" that is almost an annual occurrence in this country.

BAKGLADESH experienced the worst ever floods of the century that in terms of severity, destructiveness and duration (for more than two months at a stretch) exceeded all other floods in the living memory of people in the country. With flood water engulfing 54 out of 64 districts in the country, the main Aman crops that constitute about 50 per cent of the total rice production have been destroyed and the damage caused to roads, culverts, bridges, dwelling houses, industries, fisheries, livestock, forestry and other infrastructures has been colossal by any measure.

In assessing the damage one would immediately find that the agriculture sector has borne the highest hit. About one-third of the Aman crops have been lost because of the lapse of the planting season. The loss estimate of food grains has now shot up to 43 lakh tons as the government statistics reveal. The loss in the agricultural sector, as the Food and Agriculture Minister has put, stands at Tk 3718 crore possibly at the initial count. Undeniably, the economy of the country rests on agriculture. All endeavours to alleviate the farmer's woes through fair distribution of grants and loans would hardly improve the situation unless people work with a sense of commitment, motivation and honesty.

Along with providing highest incentives for bumper Boro harvest and rabi crop, food-grain supply in the villages has to be regulated through rationing system and government must identify the most vulnerable areas right now through reports from the administration in the respective localities. "In the days to come," said a veteran political leader now off from public life, "as people see this heart-breaking, unfolding tragedy, the suffering must not only touch our hearts, it must move all our actions to take some practical actions that such disaster demands."

The flood affected people with hardly any provision or savings at their temporary or makeshift shelters are going back to their hearth and home that are now shattered and devastated lands. Unless they can be helped to rebuild their houses out of the rubble and harvest crops, unemployment, diseases and starvation will exact a heavy toll.

Speaking about Dhaka city, the unsanitary condition in and around the water-logged areas is appalling. TV images of hapless children in some devastated areas of the city drinking directly from the truck carrying water at the behest of some NGOs indicate acute scarcity of pure water that still prevails in these areas.

The marooned people in the ravaged land search for fresh water only to find a thick, slimy brew so fouled by human

waste, accumulated garbages and leaking sewers that it does more to spread disease than quench thirst. Indeed that's what is happening in the villages. The number of diarrhoea cases is rising alarmingly in the villages after water has receded. Indeed, hunger and sickness comprise the grim reality that so many people that only reminds the haunting images of bony children and adults of Sudan and Ethiopia projected through TV and international journals during the 90s.

In such a situation it would be appallingly tragic if parties are intent upon winning their wars on political fronts than feeding the people they are supposedly fighting for. In respect of the reconstruction of the flood-ravaged country on a war footing, many affluent people have come ahead of their own to stand by the distressed people. The noble instance set by some housewives in the city areas in running gruel kitchen as well as the work done by some philanthropists in Demra and Gandaria of the Dhaka city in providing food and shelter to the marooned people during the chaotic days and also in clearing the accumulated filth and garbage in their areas through personal endeavours would go a long way to inspire others in the country. To be sure, only governmental efforts would hardly be enough to replenish such colossal damages in crops, housing and infrastructure in and around the country.

People are happy to see that the government has taken some very prompt and pragmatic measures in recouping the losses and repairing the damages inflicted in different sectors including setting up of Employment Bank, Test Relief and Food for Work Programme and a moratorium on the recovery of agricultural loans up to Tk 15,000 already due for one year as well as distribution of improved varieties of vegetable seeds worth US \$250,000 through the generous donation of FAO.

The launching of Employment Bank on September 22 last by the Prime Minister with the avowed purpose of alleviating poverty and generating employment by extending loans to youths without any collateral or mortgage against the loan is a commendable step at least in respect of its timeliness. This is a laudable venture insofar as it paves the way for youth forces full of potentials and ideas to be engaged in meaningful enterprises, taking them away from the maelstrom culture that many of them got involved in for want of opportunities.

People only hope that the Prime Minister's stern warning that any foul play in disbursement of agricultural loans, distribution of relief goods and issuance of VGF cards would be dealt with seriously could be followed by action in letter and spirit, in case of any default re-

ported from any quarter. That calls for establishing a local coordination cell even at the union level comprising political leaders, administrators and elite of the locality including heads of the educational institutions. The central coordination cell to be instituted in the Prime Minister's office would look into the grievances or complaints of foul-play or manipulation or corruption, sent either through letter or fax or e-mail, most expeditiously. All these measures would usher in a healthy climate in the politics of the country that so long remained mired in dirty godfather powerplay.

There must be some silver lining behind every dark cloud. This disaster of such an unprecedented magnitude and catastrophic proportions might help people come out of the dirty politics that only increased their sufferings and created a wall of difference between them.

Incidentally, the Relief Committee formed in BUET that distributed food items worth Tk 4 lakhs containing a package of rice, pulses, chira, gur, salt, ORS and water purification tablets enough for a week for one person among the flood affected persons in the villages on the bank of Dhaleshwari, in Kamrangir Char, Arahazar and Ghior area of Manikganj and Nawabganj, comprised students of all shades of opinion, representatives from the teachers' association, representatives of the officers' association, representatives of class III and class IV employees. In BUET students demonstrated that when calamity befell a nation, politics mattered least to them. Their participation in relief activities in different parts of the disaster-affected localities under one banner might come up as a symbolic instance for the whole nation.

Unless we can show cohesion and national identity on the basis of national reconciliation, the national reconstruction and massive rehabilitation programmes would fall far short of the need of the hour. Assuringly, the Prime Minister in a meeting with his cabinet ministers has emphasised the need for a corruption-free relief distribution network. Fully aware of the corruption scandals that tarnished the image of the previous government during disasters the prime minister has asked for careful monitoring of the rehabilitation programme that starts with allocation of Tk 3270 crore to be issued as fresh agricultural loan

for the farmers in the flood hit areas.

Malnutrition, a crippling scourge for the nation for all time, was now all pervasive right after the floods. A survey conducted by the "Save the Children" organisation in about 40 thanas of the flood-hit areas of the country from 25th August to 5th September last revealed severe malnutrition cases in those areas.

The report indicates that about 17.8 per cent children in the rural areas and 18.5 per cent in the urban areas are suffering from severe malnutrition. Even children admitted in the ICDDR,B hospital in Mahakhali showed severe signs of malnutrition that would incapacitate them or render them unfit for any type of work in future. Diarrhoeal attack, doctors at the ICDDR,B Hospital opined, could be attributed to such severe malnutrition.

On the other hand, population pressure in the country though somewhat stabilised in the urban areas, mostly among the affluent and literate section of the population, it proliferates at an alarming rate in the rural areas, surprisingly in Dhaka City. A Relief team belonging to a cultural organisation led by Prof. Golam Mohiuddin of BUET narrated to me after their return from the Tongibari village of Munshiganj that they found 15 pregnant women among 326 men, women and children huddled up in a makeshift shelter in that locality. To be sure, this figure indicates the population growth that still prevails at more than 4 per cent in the rural areas. That means growth rates are outstripping our ability to provide the bare necessities — food, housing, fuel.

Overpopulation means overloading the earth's capacity and that translates into diminishing resources and deteriorating quality of life in our country.

To be more specific, Bangladesh had 80 million people in 1974, 90 million in 1980 and has more than 120 million today. There is a lot of evidence that with empowerment of women, liberal investment in education and adequate health care system, we can bring the birth rate down in our country. Costa Rica reduced the average number of child birth from 7 to 3. The country has no army and invests in education and good health care. As long as the production of basic food stuffs does not increase with the number of people and as long as per capita income

remains stuck at \$ 200 annually, nature will simply correct the problem in its unpredictable way without respect for human suffering.

But we have to look for long term solutions, other than fastening seat belts here and there or keeping us confined to some tinkering. Racked by periodic floods, a poor country like Bangladesh with such a huge population has fewer options.

China is now convinced that environmental neglect, particularly severe erosion caused by heavy logging is partly to blame for devastating floods that have killed more than 3000 people in China this summer. Denuded hillsides there are unable to absorb rains, which then wash soils into the river and its tributaries far upto Bangladesh. Meanwhile, we can only appeal to our Himalayan neighbours to do something about the root cause of the flooding; the deforestation of watersheds in India, Nepal and China that has turned seasonal monsoons into unnatural disasters. Likewise, in our own country we have to launch massive afforestation programme, especially along the river bank to arrest erosion of top-soil well as to prevent siltation of the river bed that was largely to blame for such heavy inundation. It should be made legally binding on rural people to plant at least five trees for every tree felled.

We don't have any magic power to stop such fury of floods or to prevent it altogether. But we can adopt some measures to alleviate the distress of the people, develop some strategies about future planning and development that give us potential to live with such "devastating natural disasters." This is what Professor Iqbal Mahmud, Vice-

Chancellor of BUET dwell at length in a meeting with the Deans of the Faculties, Heads of the Departments, senior Professors and Directors of the Institutes. The Vice-Chancellor stressed that BUET as well as the country should be capable of assessing, analyzing and managing a catastrophe of such horrific proportions in future. He said that BUET academics with their established reputation can undertake research projects on different aspects of floods that might work as guidelines for the nation as a whole. The Vice-Chancellor further stated that BUET despite having severe resource constraints and fund crunch would fund the research projects within its limited resources in the larger interest of the country.

Meanwhile research themes from different departments and institutes namely, IFCDR (Institute of Flood Control and Research), WRE (Water Resource Engineering) Deptt, URP (Urban and Regional Planning) Deptt, IPE (Industrial and Production Engineering) Deptt, and CE (Civil Engineering) Deptt, have been submitted to the "Research Evaluation Committee" of CASR (Committee of Advanced Studies & Research) headed by Professor Sohrabuddin Ahmad of the Civil Engineering Deptt. The committee is learnt, has so far approved about 35 projects on different aspects of floods, "its impact and future strategies" involving a financial expenditure to the tune of Tk 40 lakh to be utilised from the research fund of the BUET.

The research study would cover • Agriculture & Forestry, • Housing & Settlement, • Infrastructure: Roads, Highways and Railways; Embankments;

Bridges; Ports & Harbours; Transmission Lines for Electricity, Gas, Water Supply, • River Bank Revetment/Bank Erosion, • Environment and Health, • Industrial Sector, • Power and Energy Sectors, • Navigation and Transport Sector, • Flood Mechanism/Generation of Flood/Flood Hydrology/Stage-Discharge, • Development/Flood Zoning, • FCDI (Flood Control Drainage and Irrigation) Project Evaluation, • Rehabilitation Issues and Priorities, • Mitigating Measures, • Socio-Economic Analysis of Flood Impact.

Research proposals placed before the "Research Evaluation Committee" touching on different aspects of flood include the following titles/topics to be taken up by the respective Departments and Institutes.

IFCDR (Institute of Flood Control and Research): 1) Performance Evaluation of FCD/FCDI Projects during 1998 flood; 2) Review of flood management practices with respect to 1998 flood; A thematic study; 3) Erosion and local scouring around bridges due to 1998 floods; 4) Hydrological characteristics of 1998 flood; 5) Effect of coastal phenomenon of 1998 flood.

WRE (Water Resource Engineering Deptt.): 1) Characterization of 1998 flood; 2) Flood preparedness and coping measures; 3) Flood forecasting and warning; 4) Flood damage assessment and impact; 5) Mitigation measures and performance; 6) Strategy for flood management.

URP (Urban and Regional Planning Deptt.): 1) Vulnerability of road and rail networks with special reference to 1998 flood; 2) Impacts of the 1998 floods on Dhaka city: A socio-economic analysis; 3) An application of GIS to delineate flood zones of Dhaka city based on the 1998 flood damages.

IPE (Industrial Production Engineering Deptt.): 1) BUET studies on "1998 Flood in Bangladesh"; Industries sector; 2) Proposal for textile sector; 3) Future floods and industrialization policy.

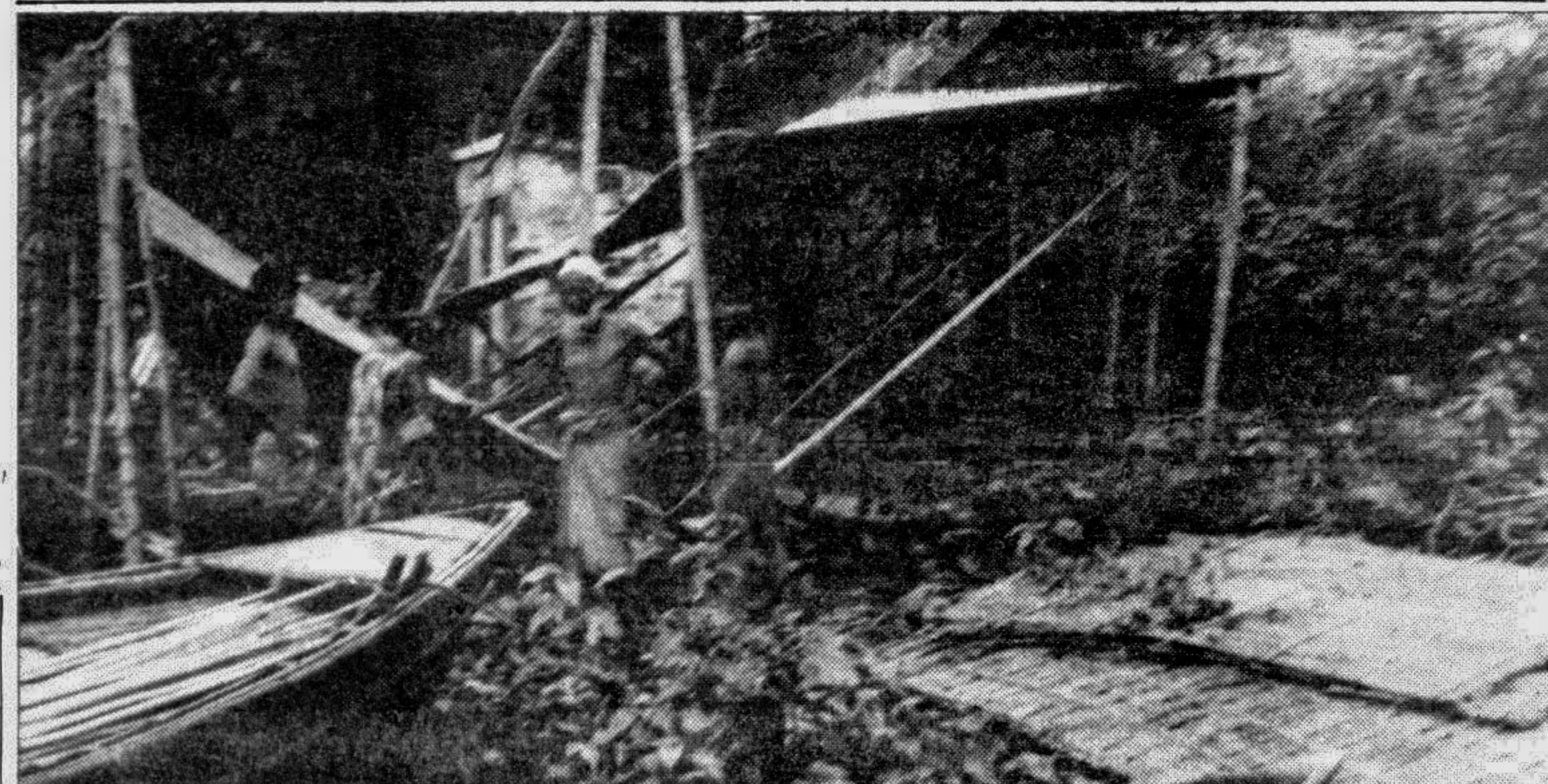
CE (Civil Engineering Deptt.):

1) Assessment of road structures during the current (1998) flood; 2) Concept of flood shelters to cope with flood; 3) Assessment of damage to transport network in flood affected areas and recommendations for improvements; 4) Design and construction of roads in flood affected areas; 5) Assessment of economic loss caused by flood damaged transportation network; 6) Assessment of flood damage to the selected roads in and around Dhaka city and remedial measures; 7) Road rehabilitation by recycling of damaged pavement materials; 8) Impact of 1998 flood: Assessment of water quality in affected areas of Dhaka city; 9) Development of low cost technologies for treatment of contaminated water in flood affected areas.

10) Assessment of sanitation and solid waste management situation in flood affected areas of Dhaka city; 11) Study of damage of subgrades during current (1998) flood.

Precisely speaking, necessity has spawned invention everywhere. People should not forget that virtually every long-term environmental change is occurring now in miniature form somewhere on the planet, whether it is regional warming trend or vanishing coast line. And humans are impressively resourceful species with a unique ability to accommodate even sweeping changes. In countries and regions hit by climatic upheavals, people have come up with a variety of solutions that are likely to have broad applicability to global problems. For example, the Netherlands has flourished more than 12ft below sea level for hundreds of years. Venice is beginning to put a flexible sea wall that will protect its treasured landmarks against Adriatic storms without doing ecological damage to the city's lagoon. People hope that the BUET study results would show the nation a way out to live with the "flood" that is almost an annual occurrence in this country.

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Living with flood: Residents of a Munshiganj village reconstructing flood-devastated house. (To withstand the next flood?) —Star photo by AKM Mohsin

South Comes Face to Face with Ageing Population

The demographic timebomb, the gradual shift towards an older population, has obsessed governments in the industrialised world for many years. The worry is whether social security systems designed for full employment and few aged people can survive the change. But as Gemini News Service reports, the problem is one the developing world cannot ignore either. Mike Crawley writes from London

THE proportion of elderly people in developing countries is on the rise, a trend that promises to have far-reaching implications for the economies and the health-care systems of the South.

The statistics put a twist on the conventional demographic image that emphasises the youth of the developing world's population.

Current estimates show that 7.3 per cent of people in the developing world are age 60 or older. Projections by the UN Population Fund (UNFPA) suggest that number will reach 12.3 per cent in the year 2025 and 19.2 per cent in 2050.

"It's become a global issue that everyone's concerned about, it's no longer just a northern European issue," says Dr Emily Grundy, a demography expert with UNFPA.

The ageing of the South is ironically a result of some international development success: declining birth rates and increased life expectancy, particularly in Asia and Latin America. The migration of young people to the developed world is also playing a role.

But the situation poses questions that developing countries will be forced to grapple with as their population ages. At the heart of the issue: how to divide scarce resources among programmes for the elderly and those that meet the needs of other citizens.

Governments in the South won't have long to contemplate the dilemma, because the greying of their population will happen much more rapidly than it did in the North. It took 115 years for the over-65 age group in France to double from 7 to 14 per cent of the population. In Brazil, that will happen over about 20 years.

It's this rapidity that prompted UN Secretary-General Kofi Annan to call the global ageing process "a revolution that hits developing nations harder than others."

we are going to regret it," says Dr Alexandre Kalache, chief of the World Health Organisation's ageing and health programme.

Most governments in the South are not taking action to the extent that Kalache believes they should. For instance, India has no national policy on the elderly and its two most recent five-year plans haven't targeted social or health-care resources to older people.

The challenge is to get ageing onto the international development agenda. Kalache, who has worked on the issue of ageing and development for two decades, says he's seen incredible reluctance among non-governmental organizations (NGOs) to address the issues of the elderly. For years, NGOs have focused on children in their programmes and their publicity.

If agencies don't react soon to the shifting demographics, they'll eventually be forced to by sheer weight of numbers. Every month, one million people turn 60, and 80 per cent of them live in the developing world. Projections suggest that in 50 years, the elderly population of Bangladesh will be three times what it is today, four times higher in the Philippines and five times higher in Indonesia.

There have been some recent moves to tackle the ageing of the elderly. WHO's Ageing and Health Programme was launched in 1995. In early October, the non-governmental organisations HelpAge International began a study hailed as the first of its kind in the developing world: thousands of interviews with older Africans, asking them about the issues that affect them and what they need to improve their quality of life.

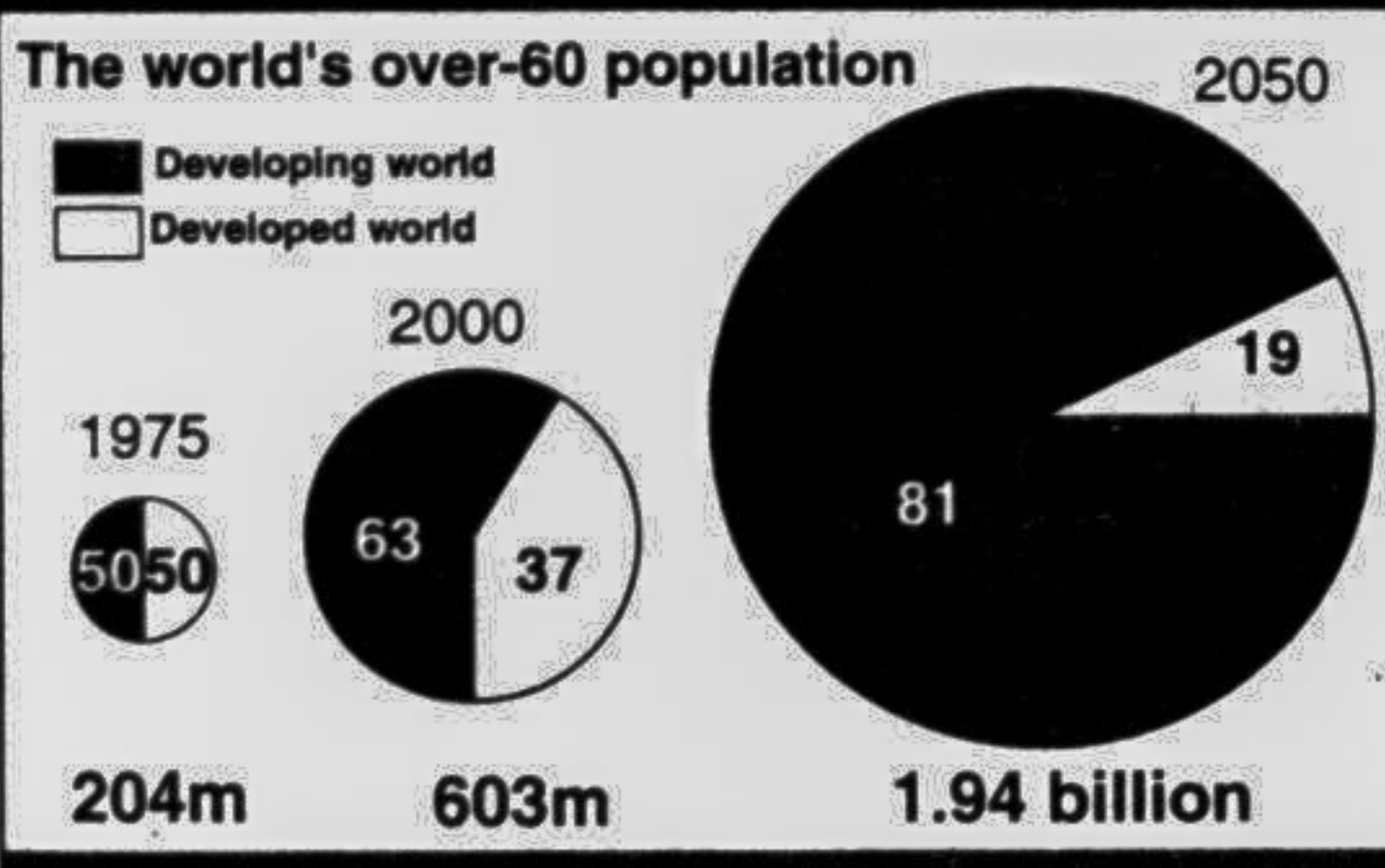
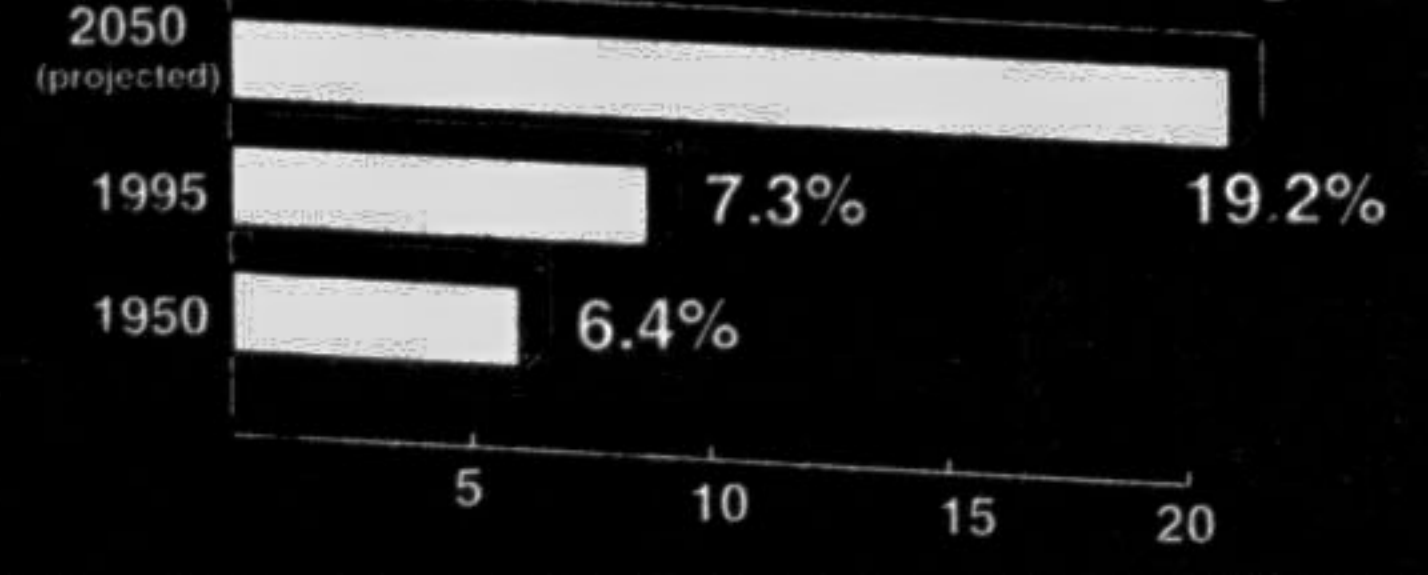
The UN has declared 1999 as the International Year of Older Persons, with the relationship between ageing and development one of the year's four central themes. The fourth Global Conference on Ageing takes place next September in Montreal, Canada.

Still, there is precious little expertise or research on ageing in the developing world: a gap

Our ageing population

Ageing is no longer just a concern of the developed world. NGOs and governments seem slow to see implications for basic services

Percentage of developing world's population over age 60



that needs filling, since the experience of the developed world is of little use. The way that old people are cared for in Belgium won't work in Botswana.

Kalache says it's important to acknowledge that the ageing of the South is happening amidst other societal changes, such as the migration of the young to the cities, the weakening of traditional family support and the shift away from values that respect the aged. All this is linked to the dwindling of a long tradition: people having plenty of children who would eventually take care of them in their old age.

When these changes happened in the North, the state stepped in on behalf of the aged, providing health-care and social security. But many developing countries lack formal social security systems and these days, global economic heaves like the International Monetary Fund are pushing for — or demanding — reduced government spending.

These very rich countries that have 60 years to accommodate ageing are cutting back, let alone the poorer countries that are ageing in 20 years," Kalache says.

He says reacting in a knee-

jerky way to the health concerns of the growing numbers of elderly — by building lots of large hospital wards, for instance — will not work in the south. Mimicking the western-style medical system of transplant and acute health-care for the elderly could overwhelm the medical systems of poorer countries.

Kalache recommends investments in preventive and primary health-care, support for families to care for their elderly members, changes to the medical curriculum that emphasize things like the nutritional needs of the aged.

The elderly in the South are by no means just a burden, but their contributions are often not measured. Some work for their entire lives. Many act as caregivers for the children of wage-earners, in some cases allowing younger adults to go overseas to work in more lucrative jobs. It's just another reason for governments and agencies to start taking action to ensure the health and well-being of a rapidly greying population.

The writer is a Canadian journalist working in London for Gemini News Service.

No End to Marine Pollution

by Radhakrishna Rao

A rapid growth in industrialisation, expansion of agricultural activities, an unprecedented increase in tourist influx around the world, oil and gas exploration along with movement of ships and tankers carrying oil products across the high seas of the world have all conspired to pollute marine environment with a stunning rapidity.

FOR hundreds of years now, seas and oceans around the world which account for more than two third of the earth's surface, have been serving as a convenient dumpyard for waste and pollutants generated by man.

As it is, about 70 per cent of the pollutants entering the marine ecosystem are generated by human activities on the land. A rapid growth in industrialisation, expansion of agricultural activities, an unprecedented increase in tourist influx around the world, oil and gas exploration along with movement of ships and tankers carrying oil products across the high seas of the world have all conspired to pollute marine environment with a stunning rapidity.

In fact, the seas and oceans have been a veritable trash bin wherein all the refuse of modern day civilisation are emptied, speedily and efficiently.

Clearly, the modern day consumerism has in its inimitable way contributed to the disruption of the finely tuned marine ecosystem. Hazardous pesticide residues from fields and farms, untreated urban sewage, industrial effluents, oil spills as well as plastic bags and cans and bins strewn haphazardly on the beaches by tourists are taking a heavy toll of the health and well being of the seas and oceans.

Not surprisingly, marine ecologists are worried that an unchecked decline in the health of the oceans and seas can have adverse effect on the communities inhabiting the coastal belt.

As it is, more than half of the world's population inhabits coastal zones. The well being and the very survival of the coastal population is dependent on the buoyant health and continued vitality of the marine ecosystem.

The frightening minamata disease that crippled hundreds of Japanese way bank in 1950s, who consumed fish afflicted by mercury poisoning, stands out as a striking example of the impact that a degraded oceanic environment could have on human health.

The concentration of the so-called persistent organic pollutants (POP) within the few miles of the shore is quite conspicuous feature of the oceanic environment in most parts of the world.

Because POPs are difficult to degrade, living organisms including fish that occupy the topsoil of the marine food chain are seriously affected. It has been found that POPs are redistributed across the globe by ocean currents and climatic fluctuations.

Organochlorines derived from pesticide residues carried into seas and oceans by rivers are being increasingly linked with the growing number of diseases and deformities. Seals, dolphins and whales, in particular, are known to undergo reproductive disorders once they get affected by organochlorines.

Radioactive substances, heavy metals and a variety of nutrient substances that enter the marine environment are also responsible for despoiling the oceans and seas. Similarly, disposal of untreated sewage into oceanic waters is a global phenomenon.

Even in the industrialised countries, large amount of municipal sewage is discharged directly into the seas without any treatment. Untreated sewage can have significant impact on the coastal areas as it invariably contains a high proportion of harmful micro-organisms.

In the Dakshina Kannada district of Karnataka, effluents released into the Arabian Sea by the Mangalore Refinery and Petrochemicals Ltd (MRPL) had on more than one occasion led to the poisoning and death of fish population. Following a prolonged agitation by local fishermen, MRPL agreed to install an effluent treatment plant.

Most of the industrial effluents, especially those from chemical industries, react with the already accumulated wastes

and produce new compounds that disturb the harmony of the marine environment.

On another front, the advent of nuclear power plants, nuclear powered ships and submarines has increased the chances of disposal of radioactive wastes into the oceanic waters.

Pollution of the oceanic environment by hydrocarbons unleashed by petroleum based products, is, meanwhile, assuming a menacing proportion with each passing day. The use of oil as chief source of energy all over the world and the establishment of petrochemical industries have led to the transportation of an ever increasing amount of crude oil and refined products by pipelines, barges and oil tankers.

The amount of oily substances discharged every year into the sea from different sources has been estimated to be around 25,000 tonnes. The problem with the oil in the sea is that many marine animals accumulate it in their bodies in high concentration and subsequently suffer a slow and lingering death.

In the aftermath of the Gulf War, a huge oil spill measuring 25 km x 80 km had threatened to paralyse the highly sensitive marine ecosystem of the Gulf region.

The mammoth oil slick besides causing enormous damage to the flora and fauna of the sensitive Gulf marine ecosystem put out of commission a desalination plant providing drinking water to the towns and cities of the desert kingdom of Saudi Arabia. "This mother of oil spills" had not only killed a large number of birds forming part of Gulf oceanic environment.

Besides environmental devastation, oil spill pollution also causes economic loss by reducing the profit from the halt to fishing and damage to the fishing gear. Crude oil is composed of a number of hydrocarbons, some of which are harmful and poisonous. Once oil gets leaked into

oceanic water, it forms a thin layer on the water surface. If conditions are favourable, oil spills get dispersed and evaporate within days. If unfavourable weather conditions persist, sea gets agitated and transforms the oil slick into a chocolate brown mass that remains stable for about a week. Thereafter depending on the wind speed, the oil slick drifts along and slowly sinks into the bottom of the ocean.

Earth observation satellites such as American Landsat, French Spot and Indian IRS are being routinely used to monitor and track oil slick movement in the oceans around the world.

The continuous movement of an increasing number of oil tankers on the high seas of the world is a major factor behind the growing pollution of the oceanic environment. Along with this, offshore drilling operations have accentuated the problem of oil spill pollution. According to environmental scientists, the profound and long lasting damage to marine ecosystem includes damage to coral reefs, coastal mangrove swamps and shallows where birds and other sea animals have their dwellings.

Besides the oil leakage caused by tanker accidents, small quantities of oil gets spilled into the sea while being transferred from an oil terminal to the tankers. The dense layers of oil slicks prevent the penetration of sunlight into the ocean depths, thereby depriving various minute plankton species — living on the surface layer of the sea — of the much needed solar heat for their food production.

Massive death of these minute beings in turn leads to the destruction of several animals that live off them. The death of planktons thus reverberates through the food chain in the entire marine environment.

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