

Feature

Environment

Urbanisation and Environment : The Asian Context

by Chapal Bashar

URBANISATION is a part of civilisation that brought people to concentrate in particular areas. Millions are migrating to urban areas since ancient ages and this has gained much momentum during this century that ends only after seven years. People migrate from rural areas to urban centres for subsistence and with the hope of a better life. But, could the urbanisation ensure better life and subsistence for all? A closer look into the matter will provide the right answer to the question. About its adverse impacts on the environment, however, there is little doubt.

As recommended by the United Nations, localities with more than 20,000 inhabitants living close together constitute urban centres. Mankind was able to form permanent settlements only during roughly 10,000 years ago. Even 5000 years before, the only such settlements on the globe were small semi-permanent villages of farmers. The size of these small towns was limited since its dwellers had to move whenever the soil nearby was exhausted.

Until the year 1800, less than three per cent of the world's population was living in cities of 20,000 or more. But now the figure is more than 40 per cent and it is rising.

The urbanisation, caused and accelerated by migration of rural population to cities and towns, is due to poverty of rural people, created mainly by growing landlessness of farmers and lack of economic activities in villages. Industrialisation and major commercial activities are also centred in urban areas.

Urbanisation undoubtedly plays a major role in the development of national economy, yet, its adverse effect on the environment in the Asian cities is undeniable.

Population growth in cities

The pressure of population growth in towns and cities is one of the major reasons for degradation of urban environment. The world's population has doubled over the past 40 years while in the same period urban populations have tripled.

The world population in mid-1992 was estimated to be 5.5 billion. It is now growing at a rate of 1.7 per cent per annum. By the end of this century the total population will reach 6.2 billion and by the year 2025, the world population may reach 8.5 billion mark.

According to the United Nations statistics of 1992, more than two of every five persons in the world (43 per cent) are urban dwellers. Seventythree per cent of the population of the more developed regions are urban, but only 34 per cent in the less developed regions are urban residents.

The world urban population grew at a rate of 2.7 per cent

per annum between 1985 and 1990 adding 284 million dwellers. UN projection indicates that during the 1990-1995 period, 321 million more people will be added to the world's urban areas.

In Asia, six least developed countries also had urbanisation levels lower than 20 per cent. They are: Afghanistan, Bangladesh, Bhutan, Cambodia, Laos and Nepal. Bhutan was the least urbanised with just 5.3 per cent of its population living in urban areas. All the residents of another Asian country —

in urban areas as "a case of too many people gathering too fast in too few localities with too few resources to support them."

Overpopulation in the cities creates problems in housing, waste disposal, traffic and transport system, health, education and many other sectors. All these problems result in continued degradation of environment.

Housing problems

Housing, a basic need of the people, has become the most acute problem faced by the ci-

ties — over one billion people — now live in squalor of shanty towns and slums, mainly in the developing countries. A UN study predicted that 60 per cent urban population of Asia would be found living in slums and squatter settlements by the turn of the century unless drastic reforms are undertaken.

Shortage of land in the cities is the main reason of housing problem. While the urban poor find their shelters in slums and squatter settlements, the better-offs look for households worth living. Some of these middle-class dwellers can procure small household of their own, while majority depend on rental houses or apartments.

The proportion of urban population below the locally defined poverty line is very high in most of the Asian countries. From half to three-fourths of the income of these poor families is spent on food. They cannot spend enough for better housing, which leads them to take shelter in slums. And this is the major cause for the expansion of slums in Asian cities which has affected the urban environment.

As the eventuality of the growing demand for housing, the construction of new buildings in the urban areas increased sharply during the past few decades. In most of the Asian cities, these constructions were done ignoring environmental aspects and the urban localities became congested creating health hazards. There are government authorities in all the urban areas to look after planned growth of the cities. But whether these authorities could do their job to maintain congenial urban environment is a matter to be looked into.

Public utility service

The state of public utility service in most of the cities in Asia is deplorable.

The number of cities in Asian countries is not many where water supply for the dwellers is adequate. The water supply authorities in Dhaka can only meet 60 per cent requirement of the city's seven million people.

Water stagnation on the roads in Dhaka city is another problem for which the authorities blame unplanned housing and illegal occupation and filling of some canals for housing. Dumping of household wastes in the sewerage drains also create obstruction to flushing of wastes and rain water. The arrangement for garbage disposal is also not satisfactory.

Calcutta and many other cities present the same picture of water shortage, water stagnation and unimproved drainage

systems. Disposal of sewage, garbage and waste water remains as a major problem for most of the Asian cities and towns. Inadequate power supply is also a big problem for urban centres particularly in India and Bangladesh.

The limitation of the utility services also contributes to pollution of the urban environment. The authorities often attribute the cause of inadequate utility services to overpopulation in cities. However, proper planning could save the situation to a great extent.

Traffic and transport problem

Transportation is an essential infrastructure for urban development. So, the maintenance of sound and smooth traffic system along with improved road communication is indispensable for cities since it can help maintain congenial urban environment.

However, this essential infrastructure is very poorly developed in most of the cities in Asia. Besides traffic jams, Asian cities face the hazard of smoke released from motor vehicles. Noise pollution, created by a growing number of road transports, is also affecting the urban environment.

In Bangkok, traffic jams are so severe that passengers' time is lost on city streets while the vehicles consume extra fuel. According to a study, these extra fuels cost at least one billion dollars a year. Another one billion dollar is lost through medical bills and worker absenteeism because of pollution related ailments. In cities of developing countries, more than a billion people are believed to be living in condition where the air is not fit for breathing.

In the cities of Bangladesh, slow-moving transports dominate the streets. In Dhaka city alone, about 300,000 cycle

rickshaws ply the roads causing frequent traffic jams. Air pollution, thanks to smoke from the motor vehicles, is a major problem in Dhaka on which the authorities have little control. The kind of air pollution is also severe in many other cities including Tokyo.

Problems of health, food and nutrition

Prevailing poverty among a large number of urban dwellers causes malnutrition which is a profound problem widespread in developing countries. And

this malnutrition continues to grow.

The total number of malnourished people in 1981 was 460 million, in 1987 it was 512 million and now it is over 770 million.

The health situation in urban slum settlements is extremely bad for both the slum dwellers and other citizens. The urban poor, particularly slum dwellers are unable to afford adequate nutritious food. Children of the developing countries are the main victim of malnutrition. In Bangladesh,

44.2 per cent of all urban children suffer from chronic malnutrition and about 6.9 per cent suffer from acute malnutrition.

As a natural consequence of modern urban life, street food culture is now spreading in all the cities of Asia. Street food vending provides fast food facilities for urban population and employment opportunity for many as well, but it has also become a matter of concern since the question of quality, safety and hygiene is involved with it.

According to a FAO report, street foods are socio-economic impetus for the less educated and relatively poor urbanites. But they are not quite clean and are responsible for causing frequent cases of food poisoning.

The dense and squalid environment with little or no essential health and sanitary facilities breeds a host of communicable diseases. Children are more vulnerable to diseases than others. The major diseases affecting urban poor population are diarrhoea, respiratory tract infections, fevers, typhoid, whooping cough and various eye diseases. Most of the diseases are related to environmental conditions, particularly the pollution of water and air.

Education problems

Urban areas generally show better records in literacy and education than the rural areas. In Bangladesh, about a decade ago literacy rate at the national level was only 23.8 per cent while for urban areas it was 34.8 per cent. But the urban literacy rate has been declining due to continuous migration of the illiterate rural poor as well as an increase in the number of urban poor. The total number of urban illiterate in the country was about 5.4 million while in 1991 the number stood at 12.8 million.

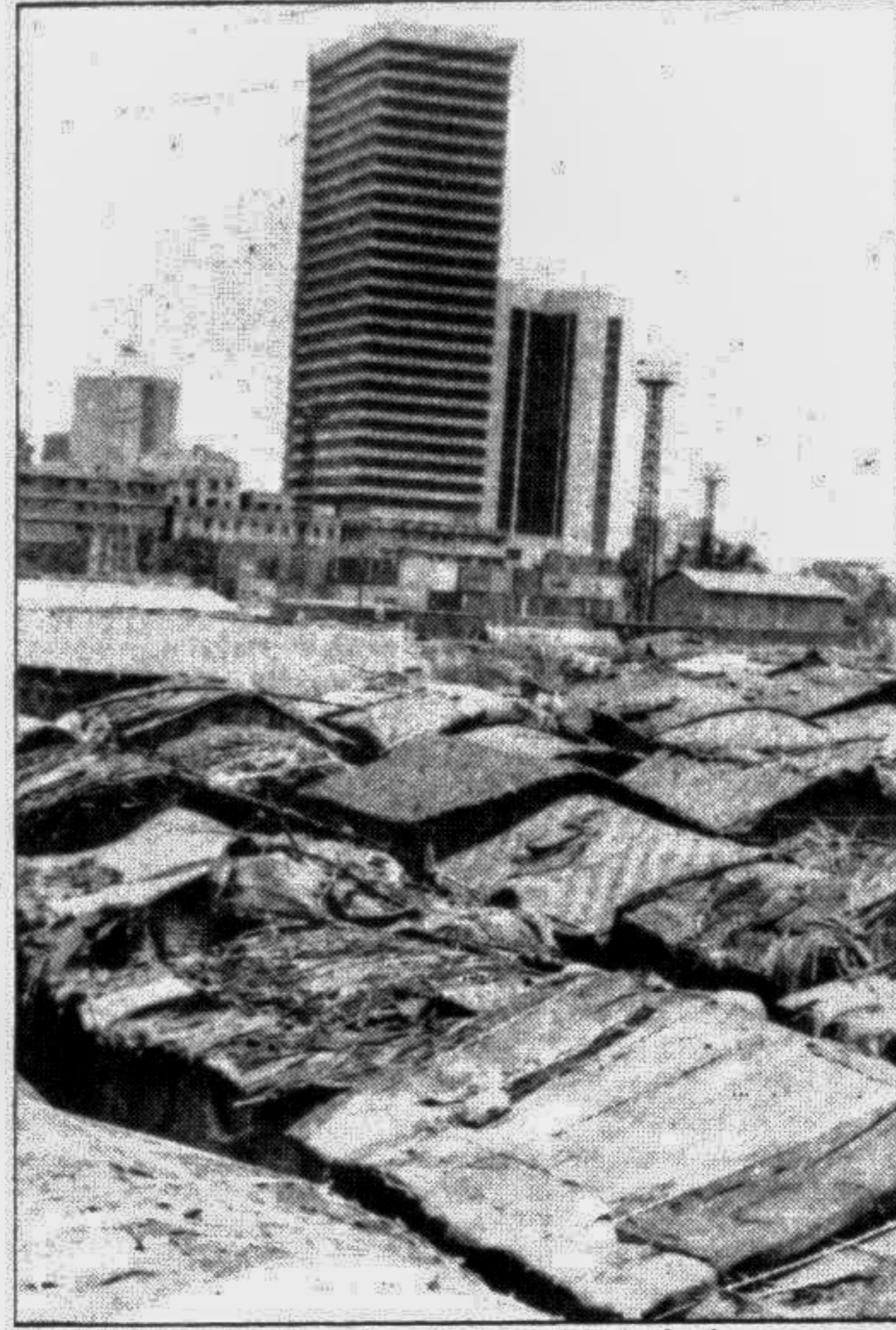
Social problems

Poverty, unemployment and economic problems have also affected the social life in the urban areas. Violence and criminal acts of various types have increased in almost all the cities in Asia. Drug addiction, which is a major problem in social life, exists more in the urban areas than rural areas.

Crime incidents alarmingly increased in many of the major cities of south Asia. In Bangladesh available statistics show that such incidents in large and small urban areas remarkably increased during recent years.

A congenial environment in the urban areas is the crying need of the hour for which public awareness as well as concerted efforts of policy makers and authorities are imperative.

(Abridged version of a paper presented by the author at a seminar on Environment held in Kuala Lumpur from 14 to 16 June '93.)



Dhaka: Where the urban disparity is yet to be bridged. — Star photo

Singapore, are urban dwellers. There are already more than 100 cities in Asia with population over one million.

Tokyo is now the largest city of the world with an estimated population in 1992 of 25.8 million. Other Asian cities which had population exceeding 10 million in 1992 were: Shanghai (14.1 million), Bombay (13.3 million), Seoul (11.6 million), Beijing (11.4 million), Calcutta (11 million) and Osaka (10 million). The population of Jakarta and Manila is also over 10 million.

An UNFPA (United Nations Population Fund) study described the population growth

of cities, particularly in Asia. Economic growth, industrial and commercial activities and population expansion have increased pressure on the land in urban areas.

Cities in developing countries are currently absorbing two-thirds of their regions' total population increase. During the 1990s alone, room will have to be made in these cities for an extra 700 million people. According to a study, the urban centres of Bangladesh will need over 5.2 million housing units by 2000 while Dhaka city alone will need 1.1 million housing units.

Half of world's urban popu-

lation — over one billion people — now live in squalor of shanty towns and slums, mainly in the developing countries. A UN study predicted that 60 per cent urban population of Asia would be found living in slums and squatter settlements by the turn of the century unless drastic reforms are undertaken.

Shortage of land in the cities is the main reason of housing problem. While the urban poor find their shelters in slums and squatter settlements, the better-offs look for households worth living. Some of these middle-class dwellers can procure small household of their own, while majority depend on rental houses or apartments.

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Kuala Lumpur: One of the better planned Asian cities. — Star photo

No Choices, No Forests

by Shane Cave

HUMANS generate more energy by burning wood for cooking and heating than they generate from hydroelectric dams and nuclear fuel plants. But, according to UNEP estimates, the current rate of deforestation means that, by the year 2000, about 2.7 billion people will be short of the fuel they need to cook their daily meal.

Every year, people clear and burn the trees of an area half the size of The Netherlands — 22000 km² — so they can cook their food and heat their homes. Much of the wood is made into charcoal, because charcoal is light, burns hot but slowly and is easily broken up into manageable, burnable lumps. But making charcoal wastes 70 per cent of the energy of the wood, even before it has been dug out from the ovens in which it is made.

Even when the wood is burnt directly, much of the heat is wasted because the wood is in big lumps, is wet or is burnt inefficiently on an open fire or in an old stove.

Trees are actually a renewable energy source; they are simply stores of solar energy, because it is sunlight that allows them to photosynthesize and grow. But the people who depend on trees for their daily needs are burning wood faster than it can grow. Between 30 and 40 per cent of the world's 5 billion people are dependent on wood for cooking and heating. In 1980, 1.3 billion people were already short of fuelwood; by the end of the century, 2.7 billion people will be short of firewood.

This rate of fuel consumption might, at one time, have been sustainable for fewer people. Now, the land on which the wood once grew is not left for regrowth, but is used for building and farming, or is simply too fragile to recover, for example, in places such as Somalia and Amazonia. But the people who use this wood do not mean to destroy their homelands; they are simply trying to survive. They have no choice but to burn the wood.

Some of these people, those who are on the edge of poverty, can use wood more efficiently,

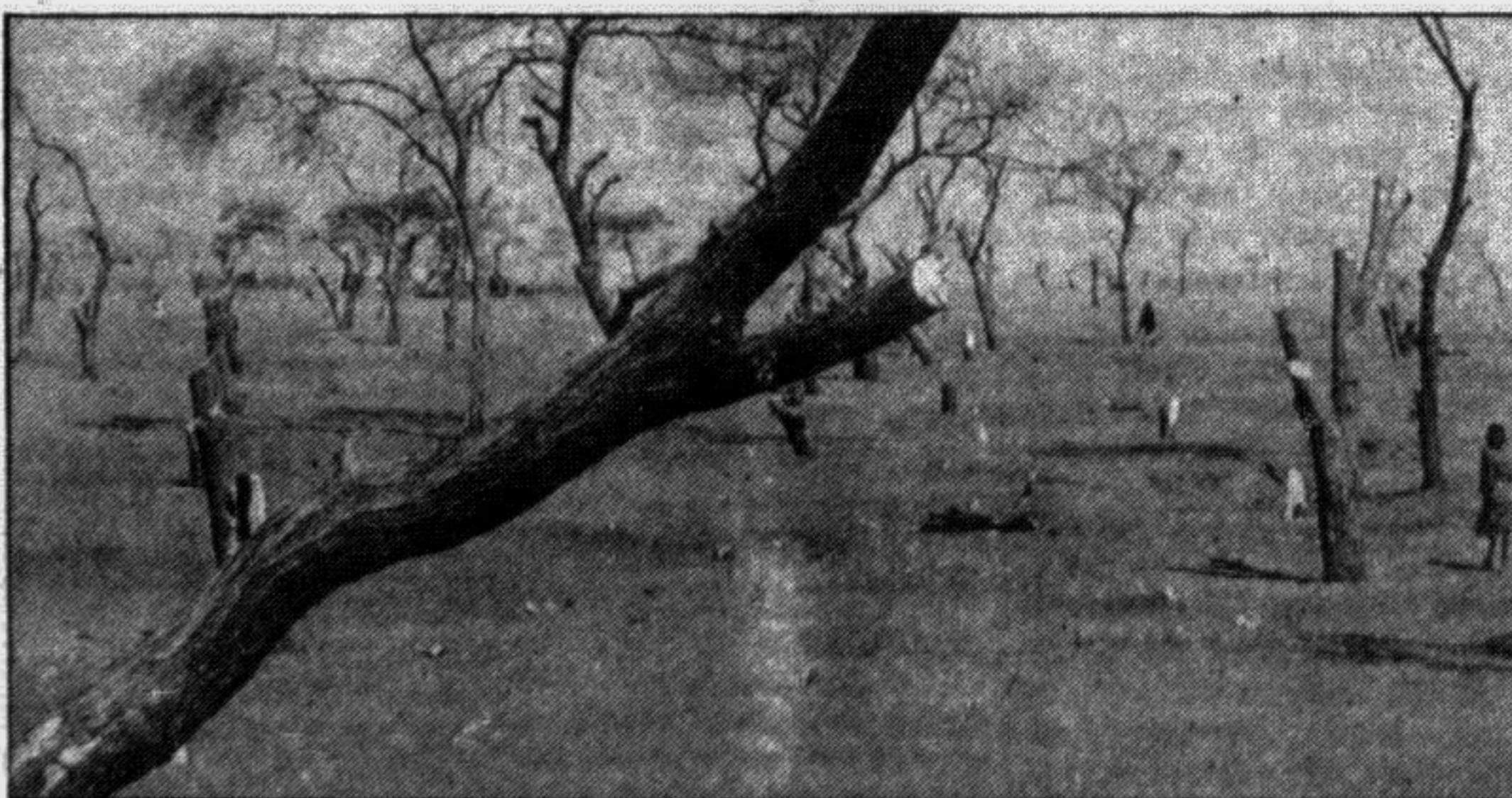
by using better designed stoves, letting their wood dry and cutting it into smaller pieces. It is the fact that these people can reduce the wood they use, and so reduce their impact on their environment, that illustrates the cost of poverty.

Many more people either do not have access to or cannot afford an efficient stove and



Women often have to walk for hours to collect wood, and can then carry only limited amounts — never enough to build up a sufficient supply to prepare for efficient burning.

especially in Africa, the women spend so long walking to find wood that they do not have the slightest chance of building up a reserve of wood to dry. They are too exhausted to collect more than a few days' wood at best, and certainly have no time



The wood stove option

Steven Karekzi, Executive Secretary of the Foundation for Wood Stove Dissemination, points out that the efficient wood stoves now being used

Country	Wood share (%)
Africa	
Burkina Faso	96
Kenya	71
Malawi	93
Nigeria	82
Sudan	74
Asia	
Tanzania	92
China	25
India	33
Indonesia	50
Nepal	94
Latin America	
Brazil	20
Costa Rica	33
Nicaragua	50
Paraguay	64

increasingly throughout Asia and Africa can reduce charcoal use by up to 50 per cent. The improvements in efficiency result from: controlling the air flow to the fuel; insulating the sides of the stove; to minimize waste heat; and using small

pieces of dry wood or charcoal. Karekzi emphasizes that these are not laboratory figures, but that they are the gains that can be made in everyday use.

The stoves use simple designs, and are easily manufactured by trained local craftsmen throughout Africa and Asia; however, the necessary materials are required, and enough



New, more efficient wood stoves (below) conserve energy and reduce the incidence of respiratory disease caused by smoke inhalation from inefficient stoves.

people with money to buy them. The basic materials are thin sheet metal and a clay suitable for firing.

The idea to develop and use more efficient woodstoves was initiated by Mahatma Gandhi in the 1950s. Gandhi wanted to

remove wood smoke from Indian household kitchens, and so improve the health of women and children. Wood smoke that is trapped in the cooking places of the poor causes considerable lung damage. Gandhi's improved wood stove movement was reinvigorated and given global significance with the energy crises of the 1970s, when the contribution of biomass (mostly wood, but including dried animal dung) to national energy consumption began to be quantified. Biomass combustion in Asia and Africa is currently estimated to contribute, on average, 35 per cent of the energy used annually, but in some countries it makes up much more than that.

With the importance of biomass in these developing countries, the expense of fossil fuels drove people to find ways to make their other fuel go further. The global significance of deforestation was also recognized; wood burning contributed to the greenhouse effect, and tree felling reduced the planet's capacity to reabsorb the carbon dioxide given off by combustion and also exposed the top soil to greater erosion.

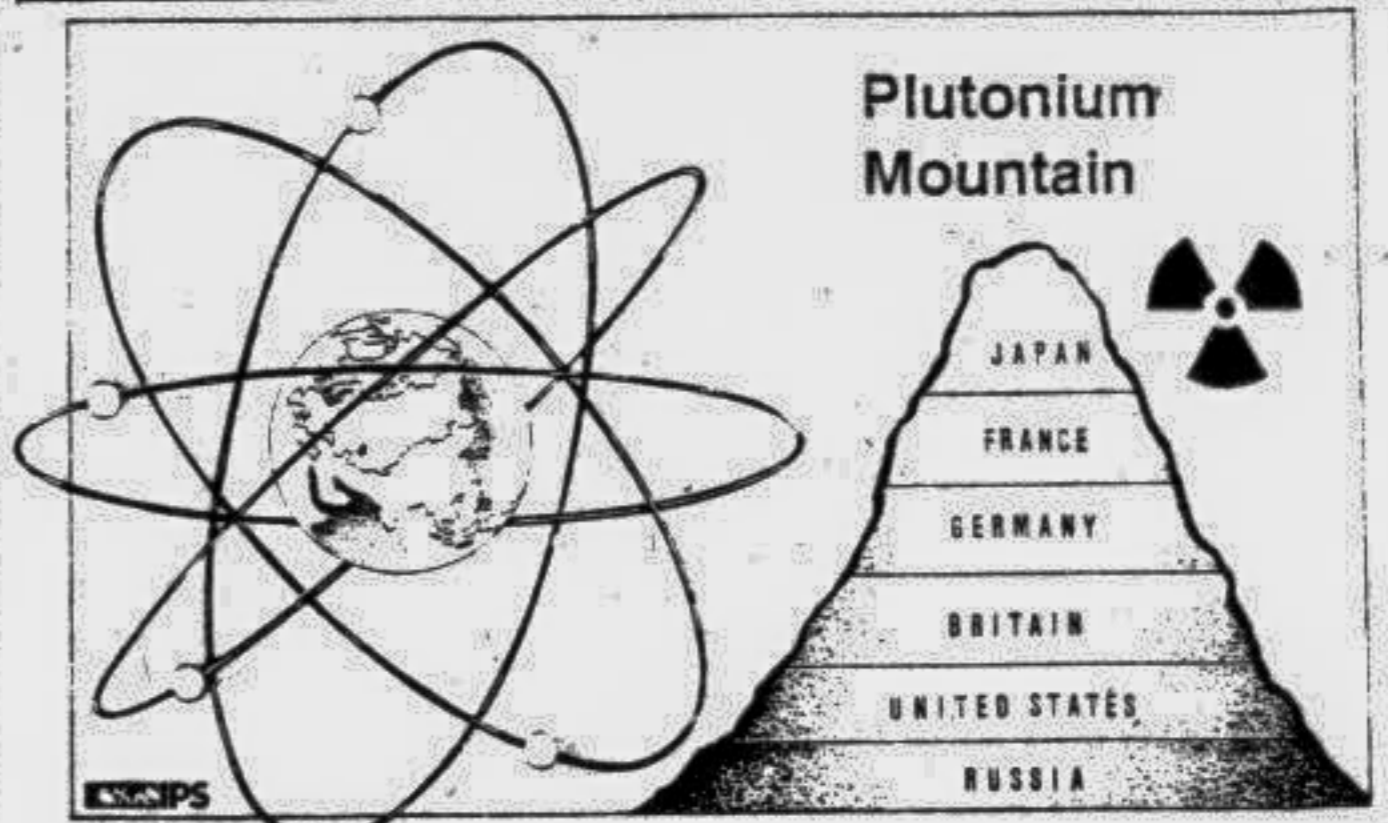
Furthermore, there has been a growing awareness of the sheer scale of the health risk posed by wood smoke inhalation. In 1987, the World Health Organization declared that respiratory diseases were the principle cause of death among children younger than five, with kitchen wood smoke being one of the major causes of respiratory disease.

The table on the left shows the estimated rural and urban use of improved wood stoves. These are indicative figures only; because these stoves are manufactured in the informal sectors of most economies, their use is much more widespread than these figures indicate within these and neighbouring countries.

The Foundation for Wood Stove Dissemination is based in Nairobi, Kenya, and has focal points in China, Guatemala, the Indian sub-continent, Indonesia, Kenya, Senegal and Zimbabwe. — Our Planet

Nuclear Dream Up in Smoke

Plutonium surplus destroys a nuclear dream. Candy Gourlay and Judith Perera of IPS report.



SOME 50 years ago, scientists like Jinnazaburo Takagi dreamed of creating a nuclear fuel that could regenerate itself in a never-ending cycle.

At the heart of the dream was plutonium, a dense grey metal used as weapon material of fuel that could be reprocessed repeatedly. "It was my dream," says Takagi, who once worked for the Japanese giant conglomerate Toshiba. "But many years later, I realised it was an impossible dream."

It would have been a neat and elegant closed fuel cycle, adds John Willis, nuclear campaign coordinator of the environmental watchdog Greenpeace. "But in the last two years, we have seen a global breakdown of that dream."

Uranium fuels — cheaper and unusable for military means — now outshine plutonium in the eyes of the nuclear industry.

At present, however, there is a surplus of about 150 tonnes of plutonium worldwide. With the United States and Russia dismantling their nuclear warheads, the London-based International Security Information Service (ISIS) says that figure will double soon.

"There is already enough weapons grade material for all American commercial reactors to operate for at least 10 years, for all the reactors in the world to operate for two and a half years," says nuclear expert Yassen Shevelev of Moscow's

Kurchatov Nuclear Research Institute. But this has not stopped the French and British nuclear industries from planning to reprocess an estimated 200 tonnes of plutonium before the turn of the century. ISIS estimates the world's plutonium mountain will produce a surplus of between 400 and 500 tonnes if the two countries pursue their nuclear plans.

Britain, already holding the world's largest stockpile of reprocessed plutonium, is hoping to open its new THORP (Thermal Oxide Reprocessing Plant) shortly in northern England.

But THORP's future commercial viability is already being questioned by both government officials and green groups. "It is unlikely that the plutonium accumulating in Britain will be used in the foreseeable future," says an ISIS briefing paper. "No plans exist for its use in Britain, and there is unlikely to be an overseas market for the material."

Indeed, nuclear analysts are predicting a devastating future for the plutonium reprocessing industry everywhere. But they have zeroed in on the former Soviet Union, where there were high hopes of earning foreign currency from the trade.

The Soviet nuclear industry never distinguished between military and civilian operations, and the end of the Cold War slashed the demand for its services.

Germany's two largest nuclear companies propose to end plutonium reprocessing in Germany, according to discussion papers leaked last year, although existing contracts may be honoured.

But British Nuclear Fuels (BNFL), waiting to start up THORP's high-tech machinery, remains confident that its customers will not withdraw anytime soon.

Says its chairperson John Guinness: "We expect the plant to be in operation for at least 20 years. And it could well be profitably extended further."

Critics say that is unlikely. Says a Greenpeace report: "The economic case for reprocessing has collapsed as the major foreign customers consider withdrawing. It will leave the country with a massive radio-active clean up problem."