

## Feature

## Development

## Poverty and Environment Situation in Dhaka City

by DL Mallick

*The slum, whether authorized or illegal, provide their dwellers very little civic amenities and healthcare. The unauthorized slums are particularly in bad condition. There are many slums which do not have any latrines for the tenants. Many slums are without any water supply and most are deprived of water, electricity and gas facilities.*

are environmental unsuitable for housing. These are located on the low-lying areas, especially by the sewerage or rivers, canals, bus terminals and railway tracks. There are also inner city slums and squatter settlements which are smaller in size and are scattered all over the city.

## Occupation and Income of the Poor

A BIDS survey report of 1991 on urban poor shows that an overwhelmingly majority of the slum dwellers (80 per cent) have only one occupation and very few have secondary and almost none has tertiary job. A large number of male household heads are involved in rickshaw pulling followed by construction work, petty service and small business.

On the other hand, women are mainly employed in domestic service followed by garments and cottage industries. They are involved in less gainful activities.

The monthly income of 27 per cent slum dwellers is below Tk 1,000 and 41 per cent of them have an income of Tk 1,000-2,000 while 16 per cent earn Tk 2,000 and above. With such low income, the poor are compelled to live in very small spaces — as low as 15-20 sq ft per capita — in shacks built with scraps, or odd bits building materials without any ventilation or natural light. They cannot enjoy even a square meal in a day and live sub-human life with an open invitation to diseases and disasters.

## Miserable Housing Condition

Most slum and squatter dwellers live in houses constructed with poor materials. About two thirds of all houses are made of bamboo, wood and tin followed by jhupri, 28 per cent of which are made of sacks, straws, bamboo etc. The settlements of the poor, i.e. the slums and squatter areas, have very little open space for vegetation.

The slums in Dhaka are most congested, with a density of over 2,000 persons per acre or 5,000 persons per hectare. A high proportion of city households, near about 40 per cent, cannot afford even the cheapest house or apartment with basic services like water supply and sewerage connections. They have no alternative but to rent rooms in the slum areas in illegal settlements.

## Curse of Illiteracy

About 75 per cent of the slum dwellers have been found to be illiterate, whereas the female literacy rate, 12.6 per cent, is negligible. It was found that only 35 per cent of the school-aged children go to school in the slums of Dhaka city. The slums on government land are likely to have schools within the area while the

slums on private land do not have any school.

The majority of the parents in the slums cannot afford to send their children to schools outside. Moreover, the school-aged children are engaged in some income generating activities. This way, illiteracy is increasing among the urban poor.

## Low Nutritional Status

The urban poor households have a very low nutritional status in terms of caloric intake. They take food below the national average. A study on minimum consumption bundle has estimated that an average Bangladeshi's daily intake of food should contain at least 832 gm of food which will provide 2112 calories and 58 unit of protein. But the average consumption of the urban poor remains below 700 gm which does not provide even 2,000 calories.

The urban poor, mainly the slum dwellers, suffer from acute malnutrition. They cannot take fresh vegetable and protein from fish or animal. The household expenditure on food of the poor is low in urban areas. The urban poor pay more than 50 per cent of their income for house rents, fuels and transports while less than 50 of their income is spent for food, clothing, health and education. Forty-four per cent suffer from malnutrition and over 7 per cent from acute malnutrition. The poor suffer from scarcity of drinking water. A majority of them do not have

water supply from WASA. In case of bathing, a considerable proportion of slum dwellers use river or pond water which is unhygienic.

## Diseases and Health Hazards

Although poverty is the underlying cause of health problems, it is likely that the existing poor environment and health subsystem significantly adds to poverty. The main health risk from environmental degradation are those from pathogens in the environment, indoor air pollution, substandard housing and industrialization.

A survey report says that about 65 per cent of the slum dwellers suffer from various diseases. Of them 20 per cent, 16 per cent, 11 per cent, 8 per cent and 10 per cent suffer from fever, asthma, intestinal diseases, typhoid and other complicated diseases respectively. An overwhelming majority of them, 75 per cent, are not physically and mentally sound. But the available medical and health care facilities for them is awfully meager.

## Limited Access to Civic Amenities

The slum, whether authorized or illegal, provide their dwellers very little civic amenities and healthcare. The unauthorized slums are particularly in bad condition. There are many slums which do not have any latrines for the tenants. Many slums are without any water supply and most



The city has very little to offer the poor.

are deprived of water, electricity and gas facilities.

Shared latrines are the most common in slum area. A survey says that only 1.1 per cent of the slum dwellers use own latrines while 89 per cent of them use shared latrines. The others are in the habit of defecating in open spaces. Compared to private slums, the public slums are more likely to have fewer latrines. Human excreta is a source of pollution and infection, especially in the slum areas. It is a major cause for environmental pollution.

These slums are located mainly in low land and in unhygienic environment. During the 1987 and 1988 floods, about 66 per cent and 75 per cent of the slums were inundated completely or partly. Majority of the slums get engulfed with the rain water every year while during floods, the sufferings of the slum dwellers know no bounds. So, the poor are the worst sufferers of the environmental hazards.

## Poverty-Environment Linkages

The urban poor live a sub-human life. They do not have access to resources and have insufficient income to maintain minimum standard housing, food, clothing and health. Slum dwellers are neglected. They are ill-fed, ill-clothed and are illiterate, or under educated.

Their dwellings lack basic amenities and do not get inadequate medical facilities. They do not get safe water and energy for fuel. They do not have sanitary latrines and the slum environment is not sound for human habitation. They inhabit in low-lying crowded places and in inferior environment.

Moreover, the poor are mostly dependent on natural resources for their livelihood and are damaging the environment. There is co-relation between poverty and environmental degradation. The growing poverty situation in the cities of the South Asian countries has adverse impact on the urban environment.

The emerging environmental crisis has impact on health and productivity of the individuals, households and communities. On the other hand, poverty causes pollution and environmental degradation. It is the poor who suffer most from the consequences of environmental degradation.

Poverty alleviation measures should integrate environmental issues and at the same time environment protection measures should aim at reducing poverty. Reduction of poverty will take care of environment. The problem of urban poverty and urban environmental issues deserve to be included as an integral part of the urban policy framework.

A BCAS Feature

## SYLHET'S PATHAR MAHAL

## Providing Livelihood for Many

by Chapal Bashar



Stone Quarries — a valuable source of income.

RAHMAN works from dawn to dusk to extract boulders and gravel from the Rangani river's bed at Sripur. He gets a maximum of 100 taka a day to feed his family of seven.

Jashim earns his living in the same way, but at a different place — Jafong. With a small boat, he, along with four or five others, collects stones from beneath the water of Plain river and when the sun sets, Jashim returns home with the day's income that varies from 70 to 100 taka.

Similar is the life of tens of thousands of workers — who collect stones from the quarries at the northern zone of Sylhet. The quarries — scattered in the area from Sripur to Bholaganj — contain huge deposits of stones having different size and quality, that meet country's requirement in construction work and other necessities.

The stone quarries, officially termed as Pathar Mahals, are lying at the river beds or at the adjoining areas of the rivers which come down from the hilly region. Despite continued extraction throughout the year, the natural reserve of the stone remain almost inexhaustible since the deposition of boulders and gravels continue with the flow of river water, especially during the monsoons.

A dozen of such Pathar Mahals are now under jurisdiction of Sylhet district administration who lease out the quarries to private parties on yearly basis. The quarries earmarked for extractions are located at Jafong, Sripur, Bholaganj, Utmachhara, Bairangchhara, Chikadaha, Nazirgaon, Lovachhara, and also at the areas

beside Dhalai river, Maradalia river, Sari river and Sunai river.

The district administration collected revenue over 40 lakh taka from the lease-holders during the Barga year 1400 while the lease arrangements for the current year now being processed.

Under the given conditions, the leasees have to give priority to local experienced workers while employing people for stone extraction. The Pathar Mahals of Jafong, Sripur, Bholaganj and Dhalai river are comparatively bigger where large number of workers are employed. These workers are also known as barki workers since they use small boats locally called barki to carry extracted stones.

The total number of workers employed in the Pathar Mahals could not be gathered from any source, yet, according to unofficial estimates, about one lakh workers are involved, directly or indirectly, with this stone extraction business. At Bholaganj alone, four to five thousand boats remain engaged for collecting stones during monsoon while the number of such boats at Jafong is about one thousand. Each of the boats need at least four people to collect the stones from the river bed and carry those to the bank.

All at the Pathar Mahals, the workers are employed on piece-meal basis and one earns four taka for collecting a cubic feet of ordinary stones while the rate goes up to ten taka for stones having superior quality. At Jafong and Bholaganj, the barki workers get 60 to 120 taka for a boat-load of boulders and gravels, but the payment may go up to 200 taka if they

collect better stones. The boat-workers share the money among themselves.

The middlemen engaged by the lease-holders are virtually the most powerful and also important persons at the quarries since they engage the workers, pay them for collection and supply the stones to the wholesale traders. The stones extracted from the Sylhet quarries reach destinations all over the country by trucks for use in constructing buildings, roads or embankments. The movement of trucks — loaded with stones of various sizes — on the 55 kilometer-long way from Jafong to Sylhet is a common scenario every day.

Without any investment, the government earns a substantial amount of revenue from these Pathar Mahals. And there is no question that the resources available from the quarries in northern Sylhet help country's development work a lot while it also generate employment for a vast population. Thus, the lifeless hard stones have become source of earning for many.

The government authorities are unaware about the number of workers employed at the Pathar Mahals, even they don't have any idea about the quantum of deposits there, since no official survey was conducted in this regard.

Some experts believe that the stone reserves at the deeper layer of the quarries are abundant since these were deposited for centuries. 'If extracted in a planned method, the stones from these deposits can meet the requirement for constructing the Jamuna bridge,' said an expert.

threatened. In addition, the Poyand Lake nature reserve which is fed by the Yangtze serves as a winter habitat for the endangered Siberian crane. Changes to the flow of the river could disrupt their migration habits.

The banks of the lake are used by locals to grow medicinal herbs and reeds for paper-making. They will not receive compensation for the permanent flooding of the lake.

The government says that there are good environmental reasons for the dam, including the prevention of flooding that has plagued people in the region for decades.

Some engineers argue that flooding is often the result of silting in the large tributaries below the dam, like the floods caused by the Hwai tributary of the Yangtze two years ago. They claim that if the dam traps silt coming from the upper reaches of the river it could erode dykes downstream and actually increase flooding.

Silt is a controversial issue. China's Sanmexia dam on the Yellow river was crippled by silt in two years. Hydrologists say they can now design release mechanisms that will allow the silt to continue its path. But the silt load of the Three Gorges may be a mammoth 2 billion tons a year. Environmentalists concede that silt can be allowed through, but point out that Chinese estimates of silt flow are so crude that they vastly underestimate the load with which the dam will be faced.

If they are right, the fertile agricultural land below the dam could be ruined by loss of its main source of fertility. And the slowing down of the river could cause salty sea water to intrude into the delta near Shanghai and destroy farmland there.

Some argue that China can meet its energy needs and solve its pollution problems without resorting to the dam, which the government says will cost \$410 billion but which critics say could cost ten times as much.

Nicholas Lenssen, a senior researcher at the US-based World Watch Institute, says that energy efficiency is the solution.

— Gemini News

## Planners Hope Three Gorges will Brighten China's Greyness

Pratap Chatterjee writes from Chongqing

FIRST-TIME visitors to the Chinese city of Chongqing are struck by its extraordinary greyness and the absence of bicycles in a country where they are the favoured means of transport.

The two are related: the hilly terrain on which the city

downstream from the city, the government is planning a dam that will produce more electricity than any other ever built on the planet — the equivalent

airport is expected to come into service in just under two years.

In late January China signed the first contracts for foreign equipment to build the dam. Four companies — Caterpillar and Ingersoll Rand of the US, Fried, Krupp and Mannesmann of Germany and Atlas Copco of Sweden — won contracts worth \$10 million.

The dam's first effect will be the relocation of people living around the site. Wushan, for example, a town of 20,000 people at the entrance of the gorges, will be submerged by the lake created by the dam.

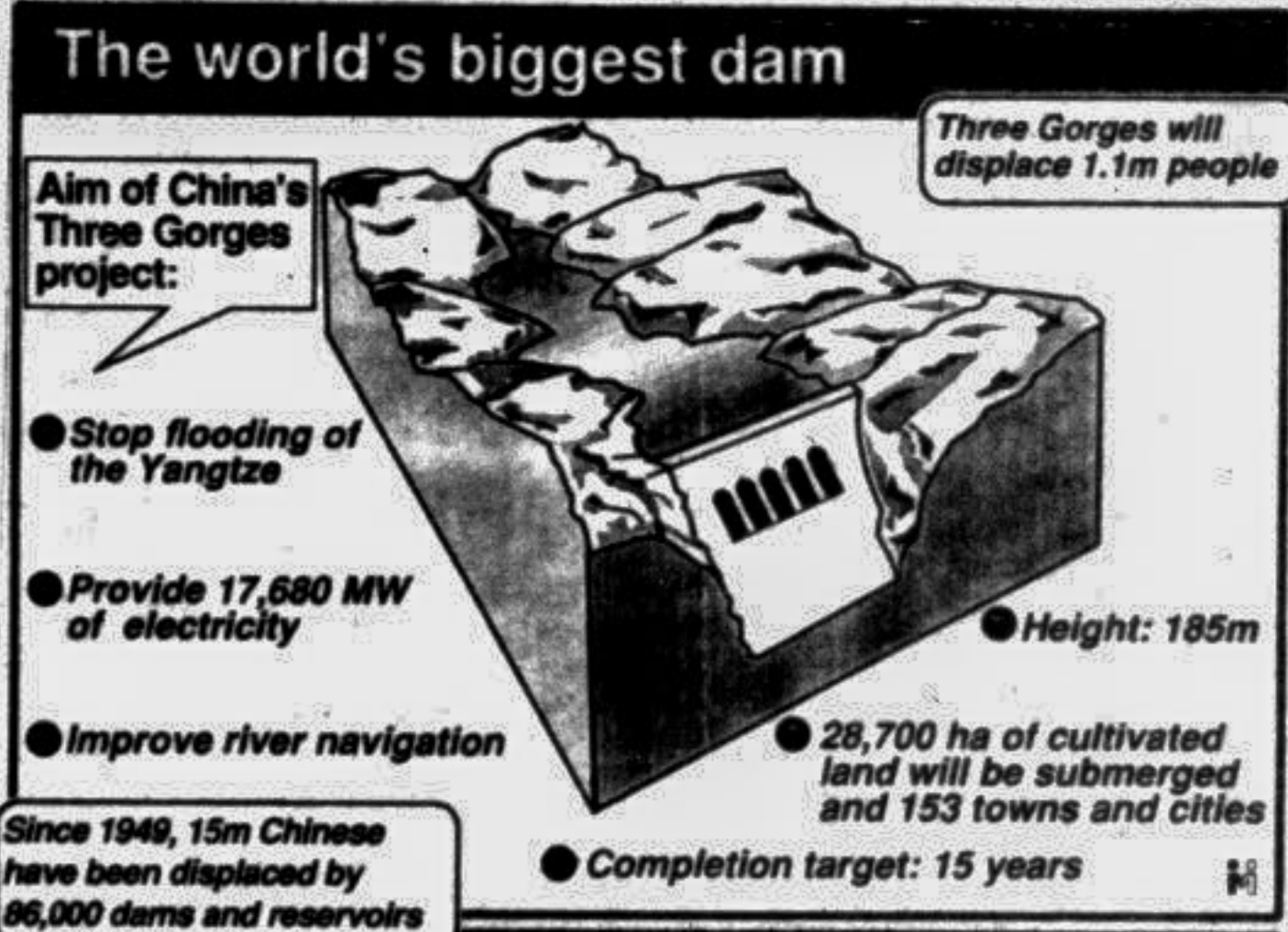
No matter, say the planners, the town will be rebuilt higher up the mountainside. But the people who have tilled the lands near Wushan for centuries are expected to crowd into the new city looking for work. Local officials expect the city's population to quadruple.

The problems of 60,000 displaced peasants in Wushan pale before the total number who will be displaced by the dam and its associated 600-kilometre-long inland lake that will end at distant Chongqing. Officials say it will displace 11.1 million people, one-third of whom will be farmers, who stand to lose 32,000 hectares of land. More than 100 towns will be submerged.

Others say as many as 1.7 million people could be forced to move, with many more in the area below the dam affected by the loss of land fertility caused by the damming of the water above them.

Aquatic life will also be affected. The Yangtze is home to the white flag Yangtze river dolphin, the most endangered river dolphin in the world. Numbers have dropped from 1,000 to 300 in the last decade, according to the Chinese Academy of Sciences.

Other endangered species such as the Chinese sturgeon, the finless porpoise and the Yangtze alligator are also



of 3 million in the southern province of Sichuan is built makes it difficult to cycle and creates a natural sink that traps all industrial and traffic pollution.

This pollution results from burning local coal which has a very high sulphur content. It not only greys the buildings but also contributes to acid so toxic that it can dissolve steel. In 1990 alone the city spent \$400,000 replacing lamp-posts and buses that had been eaten into by pollution.

Chongqing is one of China's worst polluted cities but all the others also suffer from the pollution caused by coal that supplies 76 per cent of the country's electricity.

Government officials say that the days of such pollution are numbered. Chongqing lies on the Yangtze, the third longest river in the world, on whose banks some 75 million people live and grow one-third of China's food.

Some 600 kilometres

## Agro-industrial By-products: Better Food for Cattle

by Nathu Ram Sarker

IN the western part of the World the livestock production has become more intensive, animal performance has steadily improved and traditional human foods have become the raw materials for animal production. In our country, shortage of animal feed and draught power and low productivity of the farm animals are the major constraints to crop production and farm income in Bangladesh. So there is need to consider agro-industrial by-products as possible animal feed. The agro-industrial by-products can be grouped according to the content of nutrients namely: (i) agricultural crops residues; (ii) by-products from the sugar industry; (iii) by-products from the forests; (iv) non-edible and other minor oil seed cakes; (v) fruits and vegetables factory by-products; (vi) marine wastes and by-products; (vii) meat processing factory wastes; (viii) animal organic wastes; (ix) miscellaneous by-products.

With the human population increasing by 2.4 percent/year, the competition between animals and land to grow food has also increased to a point where little or no land is available for fodder production. A recent on-farm study in a village reported that there is no defined pasture land in the country. Livestock live mainly on crop residues, wayside grazing and by-products from agro-industrial processing. In addition to the scarcity of feed supply, flood and drought occur frequently to make things worse. Farmers are forced to find alternative sources of feed to keep their livestock alive. Therefore, the fibrous crop residues constitute an important source of food for ruminant nutrition in the country. Available feeds are some-

times fed without consideration of their quality or the requirement of the animal. Such diets adversely affect the growth rate, age at maturity, milk production, meat production of the animal and also the draught power output for land preparation. Straw contributes more than 80-90 per cent of the total available feed for livestock, supplemented with weeds, roadside grasses, aquatic plants and limited quantities of agro-industrial by-products. The availability of the individual feedstuff has been estimated at approximately 2kg of straw dry matter, and only 0.08kg of concentrate per head of cattle per day. So, due to the shortage of quality roughage and grains, animals cannot utilise whatever genetic potential they inherit.

## Strategic uses of Agro-industrial By-products

During the last two decades, there have been over 400 scientific papers published in many countries concerning the utilization of low quality roughage as ruminant feeds. Various opportunities for improving for the feeding values are being examined in the country to make available the dry matter to the animal, the main approach in more recent research programmes in Bangladesh. Generally, agricultural by-products such as rice straw, wheat bran, are low in nitrogen and of low digestibility. Their low digestibility is caused by substances masking cell wall structures which prevent action by micro organisms and enzymes upon the substrates within the cell. It is necessary to treat fibre so that the masking substance found in the cell wall are made solu-

ble enabling the micro organisms to penetrate and act upon the carbohydrate of the cell wall. In this respect technologies on chemical and biological treatment of straw have been adequately developed.

Sugar cane tops, sugar cane bagasse, and molasses are the three major by-products of the sugar industry and are useful feed material since they are available in large quantities from a single source and at a low cost. Sugar cane molasses is one of the most widely used by-products and 5-10 per cent is used in non-ruminant diets to reduce dustiness and improve palatability. It has been reported that sugar cane bagasse can replace 50 per cent of rice straw for growing animals.

Animal by-products are good sources of quality protein and can improve the nutritional value of cereal and silk cake diets. Fish meal is the most valuable by-product for balancing the protein. Grog meal can replace fish meal twice by-weight in the poultry rations for growth and egg production. Meat meal can be included at 5 per cent in the diets of growing pigs. Blood meal is a major by-product from abattoirs and can form a valuable ingredient of non-ruminant rations. Leather meal mixed with meat meal can be included up to 3 per cent in pig diets without adverse effects.

Shortage of quality feed is one of the major problems in developing a productive crop-animal farming system in the country. The available feed resources comprising of the crop residues and by-products are not enough to meet the present requirement. If the present native breeds are im-

proved by introducing exotic breeds the need for quality feed and fodder will be further increased.

Use of rice straw as fuel caused feed shortage in many farm families particularly in poorer classes.

Shortage of feed and fodder in ruminants was identified as a serious cause of the problem of emaciated and poor body condition. The other associated problems were small and weak draft animals, delayed maturity in the heifers and long and variable calving intervals in cows. Deficiency of feed and fodder resulted in low work output of draft animals in most of the locations.

From the above observation, there is a need for systematic study to assess the nutritive value agro-industrial by-products for utilizing large quantity produced in this country. Feeding of such agro-industrial by-products will enable the ruminants to consume more and also improve the nitrogen and minerals status of the ration.

A great deal of progress has been achieved in developing laboratory techniques for evaluating feeds for ruminants. The rate of breakdown of carbohydrates is an important determinant of voluntary intake in ruminants and the degradation of protein in the rumen influences the protein supply to the host animal and the nitrogen available for the rumen micro organisms. The present work findings would help in formulation of feeding strategy for them as long as they remain in work.

This is particularly important in developing countries where agro-industrial by-products will continue to provide the major source of nutrients to ruminants over a prolonged period of time.