Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it's the only thing that ever has.

–Margaret Mead

SHEHRI

JANUARY - MARCH 1997 Vol. 1/No.19

INSIDE

QUETTA EARTHQUAKES AND QUETTA BUILDING CODE: CITIZENS PERSEVERANCE SUCCEEDS

Crisis preparedness and management have never figured highly on the list of our urban planning priorities. The aftermath of the Quetta tragedy clearly illustrates this fact. ***Qazi Faez Isa,*** *analysis the Quetta Earthquake, the related issues and discusses the efforts being made by some concerned citizens to improve Quetta's disaster (earthquake) management potential*

SHEHRI, has been in the forefront in drawing attention to the Quetta Building Code, enacted after the infamous 1935 Earthquake, which killed 60,000 persons and flattened Quetta. Regretfully the Balochistan Government and the Quetta Municipal Corporation in recent years have observed the Building Code only in the breach. Millions of rupees were made when buildings were allowed to be constructed exceeding the maximum permissable height, and on the designated mandatory open areas. The authorities whose job was to enforce the Code and safeguard the public interest for a share in the proverbial pie became accomplices of corrupt builders.

It happened again, and we were not prepared for it.

Almost ten years ago I had written an article entitled "QUETTA EARTHQUAKE - May 31, 1935, Can this happen again?" (DAWN dated 10th June 1988). In retrospect this article makes interesting reading. A few excerpts from this article are reproduced:

"Presently buildings in Quetta are coming up at a frightening rate and speed with scant regard to the earthquake factor. There seems to be no supervision or planning. In an earthquake area, it is essential that there be open spaces and parks in congested areas of the city, where citizens may collect when buildings start coming down on them. Quetta city has the unique distinction of having a solitary park, the Liaquat Park, which too is away from the congested city area."

"A golden opportunity presented itself to the authorities to have a park in the heart of the city when a decision was taken to move to another location, the well laid out vegetable and fruit market situated in Kandhari Bazaar. Meetings held by citizens of Quetta demanded that when the vegetable and fruit market is pulled down a park be set out in its stead. But the Municipality and the authorities recommended a multi-storeyed shopping complex This betrayal of trust was undoubtedly motivated by the money which is to be made on the allotment and sale of shops."

"After the Earthquake, all of Quetta city was rebuilt in accordance with regulations set out by Harry Oddin-Taylor ("O.T."), the builder of the Sukkur Barrage. O.T. set out specific regulations and prescribed even the quantity of cement to be used. The construction of every building was watched and monitored at every stage. A checking system was introduced, involving coloured cards which builders had

siderable destruction of property was caused. In the multi-storeyed buildings in Quetta, cracks and fissures appeared, which have made them dangerous to inhabit. In its typical apathy and incompetence, Quetta Municipal Corporation has as yet to conduct a survey and properly document the same.

Another article on Quetta was written (DAWN dated 29th May 1992) and various pressing issues were addressed. It was again pointed out that:

"Due to Quetta being situated in an area of high seismic activity, multi-storeyed buildings were not previously permitted. However, whether it is corruption, apathy on the part of building authorities or the following of the example set by Quetta's Municipality (Baldia Shopping Complex) a number of multi-storey buildings are now coming up fast."

"The earthquake of 1935 which had totally levelled Quetta city, had the salutary effect of buildings being constructed along sound engineering lines. Town planning and building principles were adhered to. A recurrence of the jolt of 1935, which is considered as amongst the ten worst recorded earthquakes in terms of casualties, restricted construction to a single storey and rarely up to two storeys high."

Unfortunately, other than earning the displeasure of the corrupt politicians, officials and builders the campaign to arrest the violation of the Quetta Building Code failed. The ears of the Government remained deaf. Confronted with this dismal state of affairs the next step was taken and a constitutional petition was filed before the Honourable High Court of Balochistan (C.P. No. 125 of 1995). The Petition first came up for hearing before the Court on the sixtieth anniversary of the 31st May 1935 Earthquake. On this very day another earthquake struck Quetta, however, this was a mild one and measured only 5.2 on the Richter scale.

Scenes from the latest disaster.


The faultlines of Quetta

In the affidavit-in-rejoinder filed in the case it was stated that: "It is submitted that exactly 60 years after the 1935 earthquake to the very day Quetta was jolted. Whether the same was a mere coincidence or a portent of what is in store for the residents of Quetta, only Allah Almighty can know. However, God forbid if a calamity does strike, let it not be said that no warning was received. Multistorey builders are playing with the lives of the residents of Quetta."

The Respondents in the case tried to underplay the significance of the highly dangerous seismic location of the city and attempted to persuade the Honourable High Court that the Petitioners were needlessly being alarmists.

The legal battle had commenced. Extensive research into the history of the earthquakes in the Quetta region was conducted and placed before the Honourable High Court. Recommendations contained in the Quetta Master Plan advising against vertical grown of Quetta, were also cited.

One such paper, which was part of the compilation of Technical Papers sponsored by Quetta Development Authority, and written by an expert on seismotectonic studies, Mr. Mansur Ahmad, stated that:

"Quetta area lies within an active seismic region, which has experienced several destructive earthquakes during the last 60 years. The most destructive earthquake was that of 1935 which almost com-

**Will time stop again at Quetta?
(In the ruins of Quetta, a wrecked clock marks the time when disaster struck the city during the night of May 31st, 1935)**

pletely destroyed Quetta city. After 1935 earthquake, it was realized that future construction should be designed to withstand, expected seismic forces. Therefore, the Government of Balochistan prepared and enforced, a Building Code in 1937 to regulate the construction of private buildings within the limits of Quetta Municipality. This code recommends adoption of a seismic factor of G/8 (0.125 g) alongwith the recommendations, requiring specific type of construction and materials."

This expert on seismotectonics, in his article, made a frightening observation, that, in view of the recent advancements made in the science of seismology, "it has been realized that areas near active faults could experience far higher accelerations, than what has been recommended in the Seismic Code of Quetta."

The divisional bench of the Honourable High Court comprising of Mr. Justice Amir-ul-Mulk Mengal (now Chief Justice) and Justice Javed Iqbal delivered a landmark Judgment (reported in PLD 1997 Quetta at page 1, Begum Saida Qazi Isa and two others versus Quetta Municipal Corporation and five others). Mr. Justice Amir-ul-Mulk Mengal observed, that, "a dangerous situation has arisen due to construction of multi-storeyed buildings in Quetta Town, without observing provisions of Building Code, thus putting into peril the lives of inhabitants and passer-bys. The entire population of Quetta cannot be allowed to be put in danger for the benefit of a few builders who are constructing plazas and multi-storeyed buildings. as against the provisions of Building Code, 1937". "The population of Quetta, if construction of such buildings are allowed, shall be put to the threshold of horrible destruction in case, God forbid, any earthquake of high grade jolts the town."

The town was indeed jolted eight months after the Judgment was delivered. Since the 28th February 1997 earthquake hundreds of earthquakes, have been recorded, some too low in intensity to be felt, others powerful enough to cause alarm and fear. Wave upon wave of earthquakes continue to come, and there is no telling whether they are ebbing or building up to deliver a more powerful blow. If under construction multi-storeyed buildings were allowed to be raised to heights in excess of the maximum prescribed under the Quetta Building Code, many more lives would have surely been lost. Undoubtedly, this Judgment has saved many lives. The recent earthquake made front page news both at home and abroad. In the BBC's World News, it was stated that many more deaths and injuries would have occurred if there were more multi-storeyed Buildings in the area.

The High Court directed the Quetta Municipal Corporation, Quetta Development Authority, Building Control Board and the Government of Balochistan "not to allow construction of any multi-storeyed building in future, within local limits of Quetta City as against the provisions of Building Code, 1937".

The victory of the Citizens confirmed the motto which SHEHRI has adopted - "Never doubt that a small group of thoughtful, committed citizens can change the World. Indeed it's the only thing that ever has". □

(Qazi Faez Isa, is a Barrister-at-Law, and Chairman Shehri-CBE)

The Annual General Meeting of Shehri-CBE has been scheduled for the 12th of April, 1997 (3 p.m.) The venue of the meeting is the Shehri office. This will be an election year.

POLICY MATTERS

Oversee Committee to suggest improvements in KBCA

The former caretaker Minister for Housing & Town Planning, Mr. Maqbool Rahimtoola and the Director General, Development Authority (KDA) after meetings with Shehri members formed an :"OVERSEE COMMITTEE" to oversee the functioning of the Karachi Buildings Control Authority on 17th Dec. 1996, officially notified for a period of two years.

The Committee may undertake the following functions, subject to control and direction of the Government:

(i) To oversee and monitor the grant of permissions for high rise buildings within the building and Town Planning Regulations.

(ii) To recommend updating of buildings and Town Planning Rules/Regulations form time to time.

(iii) To ensure effective enforcement of buildings and Town Planning Rules/Regulations.

(iv) Take measures to protect and preserve, environment of the City.

(v) To recommend policy measures to regulate the growth of the City both vertically as well as horizontally.

(vi) To make recommendations for amending Sindh Building Control Ordinance, 1979 where-ever necessary.

(vii) To suggest ways and means of making the Authority more efficient.

(viii) To draft rules for giving effect to the provisions for the Sindh Building Control Ordinance, 1979 for consideration of the Government.

(ix) To take measures to ensure that the provisions for amenity parks, playgrounds, public services and recreational areas in various housing and other schemes are properly utilised and allotted.

(x) To make recommendations for the effective preservation and restoration of buildings of architectural, cultural or historical interest.

(xi) To coordinate with any Task Force, advisors, experts or other persons performing any functions under the Sindh Building Control Authority Ordinance, 1979.

(xii) To make laws/rules/recommendations for the Freedom of Information for lay out and buildings plans.

Later on, a ten member "Task Force" to deal with irregular and unlawful construction activities in the city, was also formed.

Four sub committees have also been constituted viz.

1. Committee to oversee Karachi Building Control Authority (KBCA).
2. Regulations, Bylaws & Monitoring.
3. Public participation and transparency in the workings of the KBCA.
4. Immediate improvements in KBCA.

The Oversee Committee has already made a number of suggestions, including an autonomous status of KBCA, having exclusive zones for the construction of highrises in the city and due to the efforts of the Committee, a public information counter has been opened in KDA.

Various other steps are under process, such as measures to deal with the owners of illegal buildings, plinth level verification certificate procedures, regular maintenance of field books by the KBCA, and suspension of licences of architects and engineers of unauthorised buildings and proper verification of owners and builders.

A public information counter has also been opened at KDA, Civic Centre. The counter provides information and registers complaints with a view to improving the functioning of KBCA. The counter operates from 10.00 a.m. to 1.00 p.m. (Saturday's through Thursday). At public service are Chief Controller Buildings (COB) of circles A to H of the city. □

MEMBERS OF KBCA OVERSEE COMMITTEE
(Non-Government members)

1) Prof. Mohammad Nauman
   NED Engineering University
2) Prof. Noman Ahmed
   Dept. of Architecture & Planning
   Dawood College of Engineering
3) Mr. Ardeshir Cowasjee
4) Dr. Jamil Ahmed
   Chairman, PEC
5) Mr. Farhat Adil.
   NESPAK
6) Mr. Misbah Najmi
   Chairman, PCATP
7) Mr. Abdul Karim Tai
   Chairman, ABAD
8) Mr. Arif Hasan (URC)
9) Mr. Qazi Faiz Isa
   Barrister-at-Law
10) Mr. Saleem Thariani
11) Mr. Aftab Mohammad Khan
    Pakistan Institute of City & Regional Planning
12) Mr. Roland De'souza
    Shehri CBE

MEMBERS OF KBCA OVERSEE COMMITTEE
(Government members)

1) Mr. Jamil Ahmed Siddiqui
   Secretary, Housing & Town Planning
2) Mr. Wajid Rana
   Director General
   Karachi Development Authority
3) Mr. Mohammad Hussain
   Senior COB, KBCA
4) Mr. Aftab Ahmed Qureshi
   Director General
   Lyari Development Authority
5) Mr. G. Sarwar Kherio
   Director General
   Malir Development Authority
6) Mr. Dasti M. Ibrahim
   Law Officer, KDA
7) Mr. Munir Ahmed Memon
   Deputy Director, (SEPA)
8) Mr. Tahir Ahmed
   Director Bldg. Control Deptt.
   Hyderabad Development Authority
9) Mohiuddin Yousfi
   Asst. Director
   Bldg Control Deptt. HDA.

KBCA PUBLIC NOTICE/WARNING

Do not book a shop, flat, or office, etc., in any completed or under-construction project before confirming that

- Plans of the project have been approved by KBCA, and a copy is available for inspection at site

- The builders/developers have the proper NOC of KBCA for sale of units in the project.

The public is warned that

- If a flat or shop or office has been built without an approved building plan and sale NOC, the purchaser will not be able to get ownership rights and the illegal structure will be dismantled/demolished. Furthermore, there is no way to ensure the durability of construction because of the absence of a valid approved plan and inspections by the authority.

- The "Sindh Building Control Ordinance 1979", makes it mandatory for the citizens to occupy premises, houses, buildings, shops, showrooms, etc., only after obtaining a completion certificate/occupancy certificate from KBCA.

- "Regularisation" of building violations has been banned under SBCO '79 since 1994, so builders cannot have violations regularised.

- Failure to comply with the Ordinance by the builder or the purchaser is punishable with imprisonment of two years or/and a fine of not less then Rs.20,000, or both. If the offence is a continuing one, a fine of Rs.500 per day from the date of first commission will be levied.

Contact the KBCA Public Information Counter at Civic Centre, Gulshan-e-Iqbal for copies of approved plans and other relevant details.

You have the right to know, and you have the right to protect yourself!

Chief Controller of Buildings
Karachi Building Control Authority (KBCA) Civic Centre,
University Road,
Gulshan-e-Iqbal, Karachi-5.
Phone: 493-6981
Fax: 493-2263

LAND MANAGEMENT

Saving the KTC amenity plots

The Karachi Transport Corporation (KTC) is being wound up. Eleven amenity plots in Karachi that were used as depots and bus-stands are in the process of being converted for commercial use and sold.

The citizens are full aware of the lack of proper and adequate bus terminals, parking yards, repair workshops, etc. in Karachi. Intercity buses, local buses and coaches are found stationed on public roads picking up passengers, having their vehicles repaired, and carrying out other activities that disturb the traffic, cause congestion, affect the safety of pedestrians and destroy the general convenience, peace and welfare of residential, commercial, industrial and recreational areas and neighbourhoods. The bus-owners are compelled to do this, owing to the lack of properly designated amenities and facilities like terminuses and workshops; they also have to pay huge amounts in *bhatta* to the police and district administrations.

It is thus deplorable and unforgivable that the KTC amenity plots be converted to commercial use and sold. The government states that they need money to pay off the debts of the corporation. We suggest that the government finds other means of discharging its debts, without depriving the citizens of Karachi of valuable amenity spaces.

To stop the mushrooming conversion of amenity plots, the Sindh Legislature, on October 4, '94 amended by an Act the KDA order of 1957, Article 57-A, Clause (2) stating"No amenity plot ... shall be converted to or utilised for any other purpose". This represented the will of the people.

At the end of December 1996, Governor Kamaluddin Azfar issued an Amendment Ordinance to the KDA Order, stating "Provided that any amenity plot resting in the KTC may, with prior approval of the government, be converted to or utilised for another purpose". This represented the will of the caretaker government. We wrote in protest to the Governor, President, CM, and Minister H&TP on January 8, '97 - but have received no reply to date!

On Feb. 13, as required under law by the "KDA Order of 1957", and the "Karachi Building & Town Planning Regulations, 1997", the Director(Master Plan & Environmental Control Department), KDA issued a Public Notice in the press, inviting objections" from the residents residing in the neighbourhood on the proposed conversion" of our amenity plots. Although it is commendable that the government is trying to pretend to follow the law (after all, previous governments did not even pretend to do this and converted amenity plots at their own discretion in gross violation of law), the KDA Order Article 52-A Clause (3) actually reads: "The Commissioner shall .... invite objection from the general public....", and the Karachi Building & Town Planning Regulations Part II Schedule D Clause 3(b) also reads: "The Commissioner shall invite objections from the general public....." . No where is "residents residing in the neighbourhood" mentioned, and thus the government's notice is illegal.

Shehri-CBE would like all concerned citizens to record and voice their objections to this illegal and improper conversion of amenity plots. □

SAVE THESE PLOTS

LOCATION			
Plot ST-1, Block No. 6 Scheme No. 36	8.36 acres	East	Gulshan-e-Jauhar KDA Depot
Plot ST-4/A&, ST-4/B, Block V-A, Nazimabad	2.261 sq acres	Central	Bus Stand Paposh Nagar
Plot ST-1,Sector 5/H North Karachi, Township	2.4 sq. acres	Central	Bus Stand, Surjani
Plot ST-35 & ST-39 Sector 11-1, North Karachi	5.91 acres	Central	North Karachi Depot
3rd & 4th floor, Annexe-B, Civic Centre, Gulshan-e-Iqbal.	12,751 sq ft.	East	Civic Centre (H.Q)
KDA Scheme 2,	7 acres	West	Orangi Nala Depot
SITE Karachi	7.48 acres	West	Model Depot
Malir Halt	?	Malir	Malir Depot
Plot H-22, KDA Scheme 3, Township L1A, Landhi	2.95 acres	East	Landhi
Survey No.448 Deh Mehran, Malir	10 acres	Malir	Mehran Depot
Plot ST-39, B/35-E, Korangi	21.91 acres	East	Korangi Depot

COMMENTS

A reform package for KMC

The Karachi Metropoliton Corporation is riddled with financial, technical and administrative mismanagement, corruption and petty political intrigues. ***Muhammad Nauman*** *proposes a comprehensive reform package, aimed at restructuring the most important civic institution of the city.*

Karachi Metropolitan Corporation (KMC), is one of the oldest municipal institution in the subcontinent charged with the responsibility of providing civic services. Through the Sindh Local Government (Amendment) Act, 1996, it was split into Karachi Metropolitan Corporation (KMC) and five District Municipal Corporations (DMCs). The functions have been redistributed between KMC and DMCs. The major functions to be performed include: planning, development and maintenance of roads, bridges, street lights and storm water drains, special development programmes, public health including sanitation and solid waste management, medical services, fire fighting service, land control, removal of encroachments and social welfare including libraries, museums and art galleries.

Scenes from our urban crisis

Gross Deficiencies

The KMC and DMCs have failed to perform their functions and there are general complaints of deficiencies, scarcity, delays and imbalance in the distribution of services.

Roads, street lights, and public buildings are not properly maintained. Garbage collection and disposal services are most unsatisfactory, projects are ill-planned, generally executed with delays and substandard construction. The management of other services is also poor.

Underlying Problems:

Control of administrative, legal and financial levers is in the hands of government. Diffusion of political and administrative leadership has led to case by case external intervention by the government bureaucracy, pressure groups and politicians. There is no city planning development policy and investment coordination. There exists a well organized system of corruption where provincial bureaucracy, civil administration, ruling political party, KMC officials and the contractors are the major beneficiaries. Poor coordination in decision making exists which is both, vertical (federal/provincial/local government) and horizontal (inter departmental and public-private). There is poor internal organization within KMC with large numbers of unskilled manpower and political appointees.

Need for Major Reforms

The constraints mentioned will not allow any improvement in the system. Moreover, the present role of KMC/DMCs to plan, prepare tender documents, supervise and verify the work and its quality is a major source of corruption and inefficiency. These functions are to be separated by means of fundamental reforms. The objective of reforms should be to make KMC autonomous, reduce its direct functions and increase its role as an Oversight Body guiding and monitoring the urban processes.

Theme of Reform

The inefficiency and incompetency of public sector staff, poor organization and management together with slow procedures and processes within the local bodies, warrant that the operation and maintenance of services which have industrial or economic characteristics, should either be delegated to the private operators or to the community wherever its organisations is strong.

The elected council of KMC shall appoint regulatory bodies for various services to regulate quality, price and reliability of service. Specific features of a contract such as service conditions, investment programme and maintenance of assets should also be included in the duties of these

regulatory bodies which should comprise of professionals and should also include professionals nominated by NGOs.

The role of KMC is to manage and protect communal interests of the population. It should provide the citizens with the services of planning, regulation and protection. The proposed regulatory bodies will regulate on behalf of KMC, and KMC will act as oversight institution for them. This arrangement will ensure efficient implementation of the policy and plans approved by the KMC without interference.

There should be a "Metropolitan Planning Body" to prepare & modify the City master plan and make short and medium term strategic plans for development. The body should also recommend change in land use. All proposals of the body be considered by the KMC for approval. The body should comprise of experts from the public sector and reputed independent professionals.

The KMC/DMCs will have to decide regarding the functions to be delegated to the private operator, the functions to be managed by the community and the functions to be retained by the corporation.

Legal and Administrative Frame-Work

Sindh Local Government Ordinance needs to be suitably amended to provide autonomy to KMC/DMCs and decentralisation of responsibilities and resources with increased freedom upto the level of the Councillor and to allow role of informal organizations (CBOs, NGOs) in KMC system.

Administrative and financial powers be granted to the elected council of KMC/DMCs for appointments and payments to the regulators and operators (private and community). Any discretionary powers of the government in this regard may be withdrawn. Provision of public hearings and provisions to constitute the metropolitan planning body and the regulatory bodies be added in the amended Act.

In order to maintain active public participation in the affairs of KMC/DMCs, electoral reforms are needed to guarantee continuity of local bodies elections. In case of their dissolution, elections must be held within sixty days. The tenure of local bodies be reduced to three years. The size of most of the constituencies in Karachi has more than doubled, they have to be further divided in order make them manageable.

Administrative reforms in the services of KMC/DMCs will be the logical result of the new role assigned to them. The organizations will require reduced number of employees with enhanced skills. Separate cadre delinked from Sindh Cadre Unified Grade (SCUG) service will be required.

Councillors office to be made responsible for maintaining internal streets with in built capacity to perform necessary managerial and accounting functions. Technical back-up can always be provided by the respective DMC.

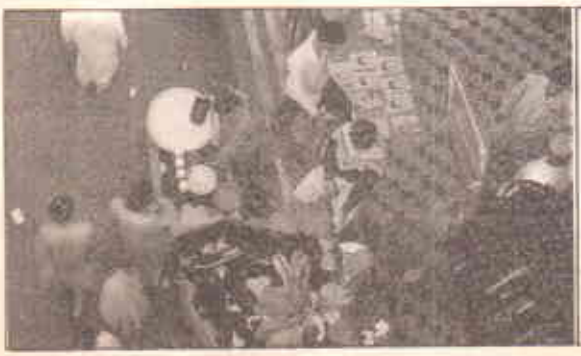
Public Participation

In order to ensure public participation and public accountability, all proposals pertaining to planning, regulatory standards, terms and conditions of contracts and quality assurance must be put to public debate and public hearings before finalization. Representatives of NGOs be allowed to monitor the progress and quality of work.

Role of Citizens

The citizens of Karachi have to play an active and major role in the Urban management process to make this City liveable. The issues concerning local government have to be debated in public. Accountability and transparency will not materialize and public hearingswill never be conducted without building heavy pressure on the government. □

(Muhammad Nauman, is Associate Professor, Electrical Engineering, NED Engineering University, Karachi and a former Technical Advisor to Administrator KMC/Chairman KW&SB.)



Roadside encroachments are being removed from various parts of the city. Such initiatives have been taken in the past, and have always failed to get off the ground, for reasons hidden from nobody. It is hoped that the present drive succeeds, where others have failed. We keep our fingers crossed.

ENERGY

Redefining our Energy Policy

Engr. Ain-ul-Abedin warns of the dangers of pursuing the present energy policy, calls for a revaluation of all power plant deals, and suggests exploring alternative sources of energy production, such as cogeneration.

The process of accountability in high places has begun. The first signs are encouraging as VVIP culture is being ridiculed in the quarters that matter, totally corrupt officials are being removed and held, hopefully for true accountability. But one most damaging sector has yet not even been mentioned in the list of those which are to be properly investigated -- this covers those sponsors of private power plants who have gotten away with murder! If the evils of corruption and waste are to be seen together, than one should look at the Energy sector.

The authors of 1994 Energy Policy ensured windfall profits for the "lucky" sponsors (and they surely lined up outside the doors of those who mattered) and the result is that we are now likely to get extremely expensive, and the most polluting power plants in the whole world. The myth of buying power from these (political) "power" plants at US cents 6.5 equivalent vanished a long time back, and it is now estimated to cost equivalent of US cents 8 per unit. No where in the world are private power plants allowed to sell bulk power anywhere near this tariff. In India, with the change of government, Dhabhol project was re-negotiated, with the final tariff now closer to US cents 5, and we want to give the same people 60% higher tariff! For the already economically burdened people, this very high energy cost will literally prove to be the last straw on the camel's back.

The real reason for this very high tariff allowed under the "Energy Policy" is the payment for capital costs. US $19 per month or US $228 per annum for every KW capacity on this account, has justified the high announced costs of the Project.

Barge-mounted power plant can serve as an alternative. 80 MW (megwatt) barge units could easily be installed at Bin Qasim port, anchored and connected for around US $500 per KW but we must beat everybody (even No. 2 is not good enough) on the corrupt list and so a similar plant will be installed for us at US $1000 per KW (kilo watt)! All such projects should be re-negotiated for correct capital cost payments, so that final selling tariff does not exceed US cents 5 per unit. There are a number of world-reputed organisations who could do this if they are assured of an environment of honesty and technical competence.

SUGGESTIONS FOR IMPROVING THE ENERGY POLICY

Those who now control the ship, can set precedence to proceed towards safer waters by:

1. Cancelling/re-negotiating expensive and polluting private power plants.
2. Conserving our own Sui gas by ensuring most efficient utilisation in Cogeneration power plants (Some industries/commercial buildings have been allowed to operate very inefficient power plants on gas engine which only uses 1/3rd energy and wastes the remaining 2/3rds. This should not be allowed at all).
3. Encouraging Cogeneration as a policy, to both conserve energy and meet the power short-fall.
4. Urgently stop *GAS KUNDA SYSTEM*, which has just started in the last 2-3 years, by allowing higher gas pressures wherever there is a requirement. Since kundas provide enormous earnings all round, it is better to officially allow higher pressures and charge accordingly, rather than allow kundas and officially receive payments for only a small part of actual gas consumption. □

– Engr. Ain-ul-Abedin

Secondly, serious pollution threats from most of these power plants, specially due to sulphur dioxide emissions and oily-water discharge are being completely ignored. Many newspaper articles, letters to the editor and seminars, specially during last 3-4 years,

have pointed out the seriousness of the problem primarily due to combination of Pakistan State Oil (PSO) grade worst quality furnace oil and wrong technologies being used in most thermal power plants.

Neither our own Natural Environmental Quality Standards (NEQS) are being followed nor the updated World Bank Guidelines are being met. Some power plants do not even have high chimneys and are polluting both the air and the water. It is totally wrong to accept just any terms for the private power plants. Expensive and polluting power plants will hurt us like a double-edged weapon. First, our production costs will be higher and the wide-spread pollution will degrade our environment and produce a sick work-force.

Expensive and polluting power plants will hurt us like a double-edged weapon. First, our production costs will be higher and the wide-spread pollution will degrade our environment and produce a sick work-force.

What we need is economical, efficient and clean power generation. One quick way to get it, is by using low-BTU (British Thermal Unit) gas. There is another *MOST EFFICIENT* way by utilising all the thousands of industries, where gas is used to meet thermal loads for steam or hot water. This combined heat and power system (or Cogeneration) could produce thousands of MW of power, using existing source of Sui gas supply, thereby saving enormous foreign exchange in fuel imports and reducing pollution levels considerably. □

(Engr. Ain-ul-Abedin is Principal, Ain-ul-Abedin Associates).

Environmental Protection Act Okayed

On January 20th, 1997 The Federal Cabinet (caretaker) approved Pakistan Environmental Protection Act, 1997 which seeks to protect environment and promote sustainable development through a partnership approach. The Minister for Environment, Local Government and Rural Development Senator Shafqat Mehmood presented the draft Act before the Cabinet.

The increasing public awareness on environmental issues and involvement of environmental concerns in every walk of life actuated the need for replacing the 1983 Ordinance by a new environmental law. It gives powers to the Federal and provincial EPAs to issue Environment Protection Order where it is deemed necessary to control pollution within specified time. The act enables EPAs to levy pollution charge on violators of NEQS.

(Dawn, Jan. 21, 1997)

Co-generation: technology of the future

Cogeneration (the combined production of heat and power) is likely to become widespread. Many factories may generate their own power with biomass, using the waste heat for industrial processes as well as heating and cooling. Such systems are in wide use in some parts of the world already, and can raise total plant efficiency from 50-70 percent to as high as 90 percent. Excess power can be transferred to the electric grid and used by other consumers. In Germany, new micro-cogeneration systems are now being introduced that allow restaurants, apartment buildings, and other facilities to produce power for themselves.

(Courtesy: Saving the Planet, World Watch Institute)

URBAN ISSUES

Transportation system of Karachi: Issues and concerns

Dr. Zubair Ahmed highlights the various defects in the transportation system of Karachi, puts forward solutions, and advocates the adoption of an integrated approach, involving all sections of the society.

An effective road network system is an important element in the socio-economic development of cities and towns. Assessment of demands on the existing roads, combined with strategies for improvement of the existing infrastructure and development of new ones can help in determining the needs of a road network. The major objectives include the provision of an adequate service level for traffic, achievement of a high level of safety for users, preservation of road and environment conditions at or above a desired level, maximization of socio-economic benefits and minimization of agency and user costs.

Mayhem on the streets: Will the KMTP ever see the day of light

Planning Defects

A close look at the major transportation planning efforts would indicate that most of them have been developed in virtual isolation of each other and not as part of an integrated network. The Clifton Flyover Project, Lilly Road Bridge and NIPA Flyover are few examples which can be cited.

Another major deficiency in our planning efforts has been the practice of evaluating projects solely on the basis of economics. The 'before and after analysis' has concentrated on direct costs and benefits based on the principles of engineering economy, and fails to reflect the needs of nonusers and the environment. If these concerns were clarified through citizen's participation or public hearings, then most projects would not taken such a long period for implementation. Also, a substantial and effective community agreement could have been achieved on a feasible, desirable and equitable course of action.

Design Defects

This activity involves alternate facility configurations, taking into account physical, traffic and environmental parameters. Most of the existing roads in Karachi have been designed on the basis of traffic volumes and loads of yesteryears and have deteriorated with time. Except for major arterials such as Shaheed-e-Millat Road, which are being redesigned according to present volumes and specific loading criteria, most of the roads in the metropolis are still being designed by 19th century methods, without any proper analysis. This results in rapid deterioration and involves frequent maintenance of the roads. The high monetary costs of maintenance, combined with budgetary constraints make it impossible for repairing all the damaged roads within a specific period.

A striking feature of facility design practised in this city is to design them for either a specific movement or for a short term horizon. This leads to bottlenecks at merging or weaving sections and increased congestion over an extended period of time. In some cases, collected data does not match ground realities. Thus, the facility is either underd designed, conservatively designed or has a flawed design.

Construction Defects

Construction involves the management of budget, time, people, equipment and materials to transform designs into physical realities. Seen in this context, the construction standards of most of our roads leave much to be desired. Corrupt practices, lack of technical knowhow, faulty construction techniques and absence of any quality control programmes have led to premature failure of roads. One often sees water standing on the pavement because proper cross slopes have not been pro-

How to relieve road congeston

Growing levels of congestion on Karachi's road network is a major concern. Some congestion relieving measures are listed below:

- The Northern and Southern Bypasses should be made operational to discourage through vehicles from plying within the urban area.
- Long term parking should be discouraged in congested areas and commercial parking garages be constructed.
- Routine maintenance of roads should be carried out during night hours.
- Exclusive pedestrian zones be earmarked along busy commercial centres such as Empress Market.
- Proper signal timing plan to improve operational level of service at intersections and along busy corridors.
- Better time management of truck deliveries and pickups.
- Increase in capacity of existing roads through widening or by constructing properly designed grade separated structures.
- Construction of transitway facilities for mass movement of people thereby discouraging excessive private automobile use.
- Checking of road worthiness of vehicles (including pollution check).

– Dr. Zubair Ahmed

vided. Capacity and safety problems arise because of raised manholes above the surface. Alligator cracking and other forms of distresses are visible because the road mix was prepared without any standards and no check was made on the quality of the material being used.

Condition Evaluation

Condition Evaluation includes physical survey of the facility, analysis and prediction of facility performance in terms of rideability, structural capacity and safety. Evaluation results help not only the planning and design efforts, but also h helps in chalking out an effective maintenance and rehabilitation strategy. In the absence of any reliable data, it is difficult to maintain even the minimum acceptable levels in urban service.

Maintenance and Improvement Programmes

Maintenance programmes include routine and periodic maintenance of the road, such as minor repairs, patching and sealing. Maintenance Activities are carried out in this city on an adhoc basis. The objective of any maintenance work is to remove the cause first, and then treat the symptoms. We tend to neglect the first part. The maintenance work on our roads involves improper patching or overlaying on a regular basis, sections of distressed roads. The contractors benefit at the expense of the road user.

Database Management

A comprehensive and well organized database is a vital link in institutional management of road systems. It helps in coordinating various functional activities, through continuous transfer and exchange of information. Unfortunately, most departments of civic agencies, with few exceptions do not maintain a database of various transportation related activities.

Traffic Relate Issues

Traffic Engineering Bureau (TEB), Karachi has taken a number of counter measures to alleviate congestion and increase road safety on the roads, but have met with limited success. The reason is that there exists direct and fundamental relation between land use and traffic level patterns. Approving land developments without providing adequate transportation capacity will result in congested, unsafe and environmentally damaging conditions.

Environmental improvements with regard to roads has been limited to occasional weeklong checking of smoke and noise emitting vehicles. For new traffic related projects, where environmental impact assessments are required to be submitted, the report is just a filler. No real analysis is carried out.

Human behavior is an important component of traffic improvement measures. It has become a national habit to breed contempt for all rules and regulations, and traffic laws and ordinances are no exception. Undisciplined drivers and pedestrians are the major sources of accidents on our roads.

REMEDIAL MEASURES

Following are some measures which can avoid or reduce the adverse impacts of some of the issues listed above.

Institutional Measures

The most important measure is to bring various agencies involved with mobility, safety and roadside environment under one umbrella. This can be achieved through setting up a "Transportation Management Team (TMT)". This team can work under the domain of Karachi Metropolitan Corporation and can bring together individuals representing various transportation and support agencies, experts, public officials and citizen groups interested in a particular project. The TMTs can be formed and used to address a specific problem, need, or circumstance for a given urban area, or it can address a wider range of transportation management issues. The objectives of such a team will be to serve as a forum for public-private consultations on issues of transportation planning, financing and implementation and also to make the existing transportation facilities productive and cost-effective. A Transportation Master Plan for Karachi needs to be developed on an urgent basis.

Design and Construction Measures

Roads should be designed and constructed for the foreseeable conditions according to their functional classification and various design alternatives should be evaluated to meet the objectives listed earlier. Moreover, the design should be vetted by consulting transportation experts similar to the exercise carried out for structural design. In this way any flaws inherent in the design can be checked before actual construction commences.

The technical and financial capabilities of the contractors should be evaluated before awarding any work. The contractor should be awarded contracts on reasonable market rates and be given added bonus if the work is completed on schedule and according to specifications. He should be made responsible and accountable for maintenance of the road for a specified period after construction, as is practised even in most Third World countries.
Road Management System

Roads are not only to be constructed but also to be maintained properly. This can be done through development of a "Road Management System (RMS)" by the civic agency. The road system comprises pavement, bridges, roadside facility and traffic control devices. The success of the RMS will depend on the following factors:

- Periodic review of socio-economic characteristics
- Sequential traffic counts on major roads on a periodic basis
- Annual update of network inventories
- Regular monitoring of road condition and subsequent updating of database
- Adoption of "Maintenance First" policy

Citizen Participation

No implementation measures will be successful without the positive and active participation of citizens. It is also necessary to educate and discipline the users of the road. Citizen Police Liaison Committee(CPLC) and Traffic Engineering Bureau(TEB) have done commendable work in this regard. But more needs to be done for the message to reach those who really matter. Organizations like Shehri have a responsibility towards this end. They can reach out to the masses through public meetings and seminars arranged at places where the average user of the road can attend without any qualms.

CONCLUSION

The problems of Karachi are manifold, and transportation is one of them. Only a well coordinated transport system can minimize the sufferings of the road users and nonusers. Achievement of this goal is not only the task of transportation planners and engineers, but requires the collective effort of those who are interested in making this city a better place to live. □

(Dr. Zubair Ahmed, is Assistant Professor, Transportation Engineering, Civil Department, N.E.D. Engineering University, Karachi)

MASS TRANSIT SOLUTIONS

Seizing the opportunity of the Ministerial Conference on Infrastructure, held in Delhi at the end of October this year, over 117 local government officials, academics and NGOs from 16 countries came together to make recommendations for more sustainable transport policy and planning. Organised by CITYNET, UNCHS and the Housing and Urban Development Corporation (HUDCO) in collaboration with the Sustainable Transport Action Network (SUSTRAN), with the financial support of UMPAP, the Regional Policy Seminar on Urban Transport and Mass Transit, provided the opportunity for a rich exchange of ideas and experiences. These were then formulated into a document, "Collective Commitments for Sustainable Cities: Local Agenda for Urban Transport Infrastructure and Services", which was delivered and incorporated into the Ministrial Conference as recommendations.

(Source: CITYNET).

RESOURCE MANAGEMENT

Sharing the Rivers

As pressure on fresh water increases, the need for co-operation between states to protect them and share them is growing. Here ***Sandra Postel*** *reviews the global challenge and calls for a new ethic of river sharing.*

Just south of the US-Mexico border, the Cucapa, or "people of the river," have fished and farmed in the delta of the Colorado River for some 2,000years. Today, they are a culture at risk of extinction.

Just 40 to 50 families remain in the delta region. There is little work for the younger tribal members, and many have migrated to the cities. Traditionally, they ate fish three times a day, but now they are fortunate to have it once a week. Since their water is too salty to grow melons, squash, and other traditional crops, their diets have become less healthy. One expert on the Cucapa predicted a few years ago that "barrang a miracle, you're seeing the last of them."

The reason for the Cucapa's precarious state lies in the neon lights of Las Vegas, the cotton fields of Arizona, and the swimming pools of Los Angeles. The Colorado River, the Cucapa's lifeblood, has been so heavily dammed and diverted in the western United States that it literally disappears into the desert before it reaches the sea. Seventy-five years ago, the American naturalist Aldo Leopold described the Colorado delta as a "milk-and-honey wilderness" teeming with wildlife. But that was before more river water was promised to seven U.S. states and Mexico than the river annually carried. Today, the delta is a desiccated place of mud-cricket earth, salt flats, and murky pools.

Unfortunately, what has happened to the Colorado is but an extreme example of a disturbing and wide-spread decline of the aquatic environment worldwide. Globally, water use has more than tripled since 1950, and the answer to this rising demand generally has been to build more and bigger water supply projects - especially dams and river diversions. Around the world, the number of large dams (those more than 15 meters high) has climbed from just over 5,000 in 1950 to about 38,000 today. More than 85 per cent of the large dams now standing have been built during the last 35 years.

Globally, water use has more than tripled since 1950, and the answer to this rising demand generally has been to build more and bigger water supply projects - especially dams and river diversions. Around the world, the number of large dams (those more than 15 meters high) has climbed from just over 5,000 in 1950 to about 38,000 today.

This is a massive change in the global aquatic environment in a very short period of time. Many rivers now resemble elaborate plumbing works, with the timing and amount of flow completely controlled, like water from a faucet, so as to maximize the rivers' benefits for humans. As population and consumption levels grow, more and more rivers supply increasing volumes of water to cities, industries, and farms - but lose their vital ecological support functions in the process. The Nile of northeast Africa, the Ganges of south Asia, the Amu Dar'ya and Syr Dar'ya in the Aral Sea basin, the Huang He (Yellow River) in China, and the Colorado are among the major rivers that are each now so dammed, diverted, or overtapped that for parts of the year little or none of their freshwater reaches the sea.

Not surprisingly, aquatic systems are showing signs of deterioration, decline and, in some cases, collapse.Fresh waters contain abundant animal life - including, for example, about 40 per cent of the 20,000 recognized fish species. According to some estimates, the total diversity of animal life per unit area of rivers is 65 times greater than that of the seas. But freshwater fish and other animal life are increasingly threatened by the destruction of their habitat. Dams, dikes, diversions, and levees eliminate vital flood plain habitat, change temperature and salinity conditions, alter the volume and timing of river flow, trap sediment and nutrients upstream, dry up wetlands, and block fish migration. In

North America, the American Fisheries Society lists 364 species or subspecies of fish as threatened, endangered, or of special concern - the vast majority of them at risk because of habitat destruction. One of the most dramatic cases of river depletion has occurred in the Aral Sea basin of central Asia. Once the planet's fourth largest lake, the Aral has lost half its area and three fourths of its volume because of excessive diversions of its two major sources of inflow - the Amu Dar'ya and Syr Dar'ya - in order to grow cotton in the desert. Prior to 1960, the two rivers poured 55 billion cubic meters of water a year into the Aral. Between 1981 and 1990, their combined flow into the sea dropped to an average of 7 billion cubic meters, just 6 per cent of their total annual flow.

Wetlands in the Aral basin river deltas have shrunk by 85 per cent. Twenty of the 24 native fish species have disappeared, and the fish catch, which totalled 44,000 tons a year in the 1950s and supported some 60,000 jobs, has dropped to zero. Low river flows have concentrated salts and toxic chemicals, making water supplies hazardous to drink and, along with the lack of sanitation services, contributing to rampant disease. The population of Muynak, a former fishing town, has dropped from 40,000 several decades ago to just 12,000 today. The 228,000 people who have fled are "ecological refugees" in the truest sense. The Aral Sea disaster shows vividly how damage to economy, social stability, and human health can follow close on the heels of ecosystem destruction.

As water supplies increasingly fall short of needs, competition for water is increasing not only between the human economy and the natural environment, but between and within countries. A new politics of scarcity is emerging as farms and cities, states and provinces, and neighboring countries compete for a limit or shrinking pool. Three principal forces conspire to make water scarcity a potential source of conflict: the depletion or degradation of the resource, which shrinks the 'resource pie', population growth, which forces the pie to be divided into smaller slices; and unequal distribution or access, which means some get larger slices than others.

River basins most likely to be hot spots for hostility are those in which the river is shared by at least two countries, water is insufficient to meet all projected demands, and there is no recognized treaty governing the allocation of water among all basin countries.

Much of the tension and strife over water scarcity to date has occurred within countries, but the potential for hostility or conflict between countries exists as well. Unique among strategic resources, water flows easily across political boundaries. Many countries depend on river water from upstream neighbours for a substantial portion of their surface supplies. Particularly in the face of population growth and rising water demands, these countries can become highly vulnerable to decisions by upstream countries to siphon off more water for themselves. According to Thomas Homer-Dixon of the University of Toronto, co-director of the project on Environmental Change and Acute Conflict, the evidence suggests that "the renewable resource most likely to stimulate interstate resource war is river water".

River basins most likely to be hot spots for hostility are those in which the river is shared by at least two countries, water is insufficient to meet all projected demands, and there is no recognized treaty governing the allocation of water among all basin countries. Examples of such potential hot spots include the Ganges, the Nile, the Jordan, the Tigris-Euphrates, and the Amy Dar'ya and Syr Dar'ya.

Egypt may be more vulnerable than any other country to a reduction in river water flowing into its territory. The nation depends on Nile water for 97 per cent of its surface supplies.

With a population of 60 million climbing by 1 million every nine months, some 2.5 million hectares of cropland totally dependent on irrigation, and a current water demand that is very near the limits of the total supply, any cutoff of Nile flow would be highly disruptive, if not disastrous. Until recently, Egypt was at minimal risk of suffering such reductions, except, of course, from drought. But Ethiopia, which controls 86 per cent of the Nile's total flow, is now intent on developing water resources for its own economic advancement. If Ethiopia were to use Nile water to irrigate even half of its potentially irrigable area, flows downstream to Egypt could be reduced by some 9 billion cubic meters per year - equal

to 16 per cent of Egypt's current annual Nile supply.

When downstream countries are relatively less powerful than water-controlling upstream countries, conflict may be unlikely, but social and economic insecurity - which, in turn, can lead to political instability - can be great. For example, as the weaker riparian, Bangladesh will almost certainly not choose to go to war with India over the Ganges. But the nation suffers greatly as the last in line to receive the river's water. Likewise, Syria and Iraq remain vulnerable to Turkey's massive dam-building upstream on the Euphrates River.

Achieving more sustainable patterns of water use and restoring and maintaining the integrity of river systems is going to take the deployment of new technologies, policies, and management strategies. More effective water pricing and water marketing, for example, can create incentives to use water more efficiently and to allocate it more sensibly. Along with the setting of water-efficiency standards, such incentives can encourage greater use of the brace of conservation technologies that are on the shelf, but underused.

Greater co-operation both within and between countries is also urgently needed – not only to avert conflict, but to protect the aquatic environment that underpins regional economies. At least 214 rivers flow through two or more nation. At the moment, however international law offers little concrete help in resolving water disputes between nations, and says virtually nothing about protection of water ecosystem. It is largely up to governments, with public involvement, to hammer out watersharing agreements that are equitable and ecologically sound. Much work remains to be done, but there are hopeful signs of co-operations in such places as the Aral Sea and Nile basins.

Water is the basis of life. Reconciling humanity's growing demands on freshwater systems with the protection of their vital life-support functions ranks among the most critical challenges in the decades ahead. It will require, most fundamentally, a new ethic of sharing water – both with each other and with nature as well. □

(Courtesy People and the Planet, Vol. 5 No. 3)

(Sandra Postel is Director of the Gobal Water Policy Project in Amherst, Masachusetts, USA, author of Last Oasis (W.W. Norton, 1992), and co-author of State of the World 1996 (W.W. Norton, 1996) from which parts of this article were drawn.)

Poor water management: a threat to soil, water and good security

POORLY managed irrigation contributes to water shortages and pollution, land degradation and the spread of waterborne diseases. In many regions, water is being pumped out of the ground for irrigation faster than it can be replenished. Over pumping in India's Tamil Nadu state has lowered the water table by 25 to 30m in a decade. Much of this water is wasted. As much as 60 percent of the water withdrawn for irrigation, often does not reach the crop. It is lost through canal leakage, spillage, infiltration and unproductive evaporation, although some of this water reaches the river or ground water allowing it to be used by others downstream.

Poor drainage and irrigation practices lead to waterlogging and salinization, which have sapped the productivity of nearly 50 percent of the world's irrigated lands.

Unless irrigated fields are drained properly, salt builds up in the soil as water evaporates, making the land infertile. Salinity now affects more than 20 percent of the irrigated land in China and Pakistan.

(Soruce: FAO, World Food Summit Publication, 1996)

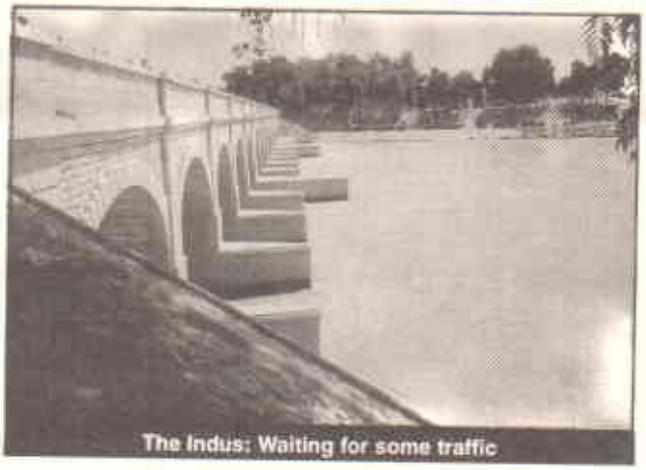
INLAND NAVIGATION

Planning for a better future

As the newly inducted government stresses the need for developing a vibrant transportation network, attention should also be directed towards establishing an inland water transport system. ***Farhan Anwar*** *pleads the case of navigating the Indus.*

Inland navigation implies the use of inland waterways for trading and other related activities. Many countries, who have been wise enough to develop and use their inland rivers or canal networks for transportation of commodities, have gainfully reaped enormous socio-economic and environmental benefits.

The United States of America and various countries of Europe, notably France, have for long maintained extremely efficient inland water transport systems. However, Pakistan, which has one of the world's largest river and canal networks has failed to develop its inland water transport system - the cheapeast and probably the safest mode of transportation.



The Indus: Waiting for some traffic

Surprisingly inland water transport is not a concept alien to this part of the world. Early evidence of inland navigation in the River Indus was found in the ruins of Moenjodaro (2500 B.C). Much later, when Alexander attacked the Sub-continent in 320 B.C., he utilized the inland waterways for mobilising his troops comprising a flotilla of about 200 large and small sized crafts.

The conquest of Sindh by Muhammad Bin Qasim in 712 A.D. revolutionised the navigation system as it transformed the River Indus into a busy and prosperous trading route. Trading activities of the Indus continued to flourish during the periods of successive Muslim rulers.

The British also realised the importance and potential of the Indus as an effective transport route. On taking control of the Sub-continent, they commissioned a fleet of vessels known as the 'Indus Flotilla' consisting of ten ships and forty-three barges However, it is a great pity that this extremely beneficial system of inland navigation came to a sudden and abrupt end in 1871 when the British Government abandoned the flotilla in order to protect and promote the newly developed railway network. Private vessels tried to survive but were forced out of business following the construction of the Sukkur Barrage.

Some efforts have been made since then to revive this system and several studies have been undertaken by government, non-government and even foreign organisations, but feasible and implementable alternatives have not been identified. Some fear that the navigable depth or a sufficient flow is not available, particularly downstream of Sukkur, while others contend that the development of such a system would pollute our water bodies even further.

However, a recent study indicates that such fears are misplaced and the idea of a properly functioning inland navigation system is not only viable but can be implemented without any major obstacles. This study was conducted by the Civil Department of NED University at the suggestion of eminent scientist and Nobel Laureate Professor Dr. Abdul Salam. A team of senior students under the guidance of Professor Saeed Ahmed Khan of the Civil Department conducted this extensive study which succeeded in breaking new ground on this issue.

The study delineates a new navigation route from Sukkur downstream to Kotri Barrage and from Kotri Barrage upstream to Port Qasim. It puts to rest previously raised fears that the Indus lacks sufficient discharge in winter. Recently collected data has shown that the river has supplies of 1500 cusecs for eight months of the year which is enough of a flow to start navigation with barges (large flat bottomed boats for use in canals and rivers, espe-

cially for carrying goods) of nine feet draft while if barges of lesser draft, say six feet or below, are used one can continue navigation for up to ten to 11 months.

In the United States, which has 2500 miles of navigable channels, 60% of the waterways maintain a minimum depth of nine feet. So it is felt that there would be no hesitation in starting with a nine-foot draft of the Indus river.

As ten clear months are available for navigation the remaining two can be used to carry out maintenance of barges and waterways. The route linking Sukkur to Kotri appears all the more feasible as there is no longer any need for extensive dredging of new link canals. Only minor rehabilitation work will have to be carried out.

The use of inland waterways for transportation of bulk commodities will give a major boost to our economy. The easier and cheaper movement of agricultural commodities from the farm to market will lead to a reduction in the marketing prices while at the same time providing more benefits to the farmers. Fertilisers and seeds could also be distributed to the farmers at their doorstep, efficiently and economically. Reduction in the overall cost of production and marketing of the products due to cheaper transportation of raw and finished products and availability of cheap labour will boost the development of industries in, the rural areas. A number of small ports will also develop along the waterways for handling cargo, storage, refuelling, maintenance and long stay of crafts at places like Sukkur, Larkana, Sehwan, Kotri, Kalri Lake and Phutti Creek. Backward areas along the waterways would develop in a short time due to increased port and related activities.

Unemployment rates too would drop as direct jobs would be provided in operations and maintenance, boat building, loading and unloading the related industries while a number of indirect jobs would become available as a result of the boom in the local economy.

Increased road traffic and resultant accidents threaten the safety of both life and cargo. An inland water transport system would greatly reduce the congestion on the roads by taking care of the major portion of the bulk cargo, leaving the roads safe. Since it is proposed to link the inland navigation route to Port Qasim, the resultant increased activity at Port Qasim would take a substantial load off from Karachi Port which is over-burdened at present. As water transport is best suited to carry cargo (which is greater in volume but less in weight) most of the bulk cargo could be moved through the inland water transport system leaving the heaviest cargo to be transported through trucks and railways. Problems of rapid urbanisation would be partially solved with migration from the rural areas to big cities registering a drop.

The easier and cheaper movement of agricultural commodities from the farm to market will lead to a reduction in the marketing prices while at the same time providing more benefits to the farmers.

The protection of the fragile ecological balance of any area is an important element in modern development. In order to develop an efficient inland navigation system, a certain minimum depth of the waterways for navigation round the year will have to be maintained. This will have a positive effect on the development of ecology of the area. Precious aquatic life such as the Palla fish and internationally renowned blind dolphins which are fast dwindling in number would benefit as their population would increase due to more areas and depth of water in the low flow period and better migration facilities.

Forests play an important role in the economy of a country. The forest cover in Pakistan is much below the required standards. Due to the increased depth of the water more riverine forests would develop, and consequently, aquatic life would flourish. Water transport is a cost effective mode of transport as water crafts consume much less energy compared to road transport and railways and also are more environment friendly.

In view of such immense benefits there is no reason why a properly engineered and designed inland navigation system cannot be implemented in Pakistan. We need to take bold steps to boost and stimulate our sagging economic fortunes. The development of an inland water transport system is one such step which can go a long way in achieving the desired objectives. □

(Farhan Anwar, is Member, Shehri Managing Committee and Editor, Shehri Newsletter).

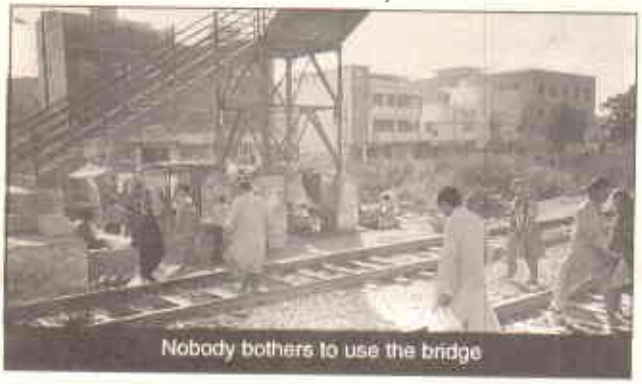
(Courtesy: Dawn)

NEIGHBOURHOOD WATCH

SHEHRI invites the residents of the city to share with us, their concerns, on issues which are adversely affecting their neighborhood's environment. Please write to us, preferably with a supporting photograph, so that efforts are made and solutions sought - Ed.

WAITING FOR A DISASTER

I am a resident of Al-Falah Housing Society, Malir. People in this are a and the adjoining localities are exposed to dangers, due to inappropriate transportation facilities at Malir Colony Railway Junction, which is located on the right side of Malir Halt. There are three tracks, which are used by both passenger and goods trains travelling between Karachi and upcountry. People have to cross these tracks to reach the main road. At an average two to three trains pass on these tracks every ten minutes. There



Nobody bothers to use the bridge

is only one pedestrian bridge available for crossing the tracks, which is very high and is also not properly located. The result is that nobody uses the bridge. Our lives, specially of kids, are in constant danger while crossing these tracks. According to the railway gate keeper, an accident takes place once every fortnight. Also, much time is wasted when the track is closed. Sometimes emergency cannot be met. Due to these problems, value of our land has also fallen. Constant noise and smoke are major environmental problems. It is felt that under-passes and properly located overhead bridges be built immediately. The chances of relocating the tracks to some alternative route should also be explored.

(Tabinda Firdaus, Al-Falah Housing Society, Malir, Karachi)

LIVING IN DANGER

I reside in Block 10, of Gulshan-e-Iqbal. The lives of a number of people in this locality are exposed to grave risk, as electricity towers, carrying extra high tension lines (EHT) are erected dangerously close to many households. It is my belief that construction of any kind is prohibited under high tension power

Danger in the sky

lines. However, such is not the case in our neighbourhood. Either these high tension lines be relocated, or some other safety measures should be adopted by K.E.S.C. to prevent any unfortunate accident from happening.

(Tahir Ayub Khan, Block 10, Gulshan-e-Iqbal, Karachi).

SEWAGE PONDS IN GULSHAN

My neighborhood, Block 11 of Gulshan-e-Iqbal is presently exposed to all kinds of health hazards. Just behind Noman Terrace, Phase #1, there is a ditch covering an area of one acre. Due to the constant blockage of a sewage line running nearby, the whole sewage of Block 11, is being discharged into the ditch. Grass, weed and algae have formed and the ditch is also being used for the dumping of garbage. The environment is heavily polluted. I have contacted the local area officials, but nothing has changed. The residents of the area still await a solution to this problem.

(Muhammad Amjad Abro, Block 11, Gulshan-e-Iqbal, Karachi)

Living in unhealthy environs

JUNIOR SHEHRI

Dangers of pollution

By
Najia Ilyas Nainital Wala
X - A, The Play House Secondary School

Pollution is acute in cities and areas where factories and industries are working. The major industrial areas of Pakistan are Karachi and Faisalabad. All kinds of factories function here. The smoke coming out from the chimneys of factories pollutes the air. Also this smoke travels to far off distances through air currents, with the result that a large area is affected. Moreover, the factories which manufacture sulphuric acid and other chemicals, constantly give out poisonous gases like sulphur dioxide and other gases.

These gases and the smoke are inhaled by human beings and animals causing different diseases, particularly of lungs. The waste water coming out of the factories contains poisonous substances. Such water flows openly, polluting the land and then it is either discharged into rivers or into sea. The fish and other sea animals fall victim to these poisonous substances. When such fishes and other marine animals are used by people as food, the poisonous matter gets into their bodies and causes many diseases. It is also a danger to marine life.

The problem of environmental degradation is a threat, not only to any one country but to the whole world. The big powers are constantly engaged in conducting nuclear experiments, which emit poisonous and harmful rays and gases. These are a constant danger to the world population.

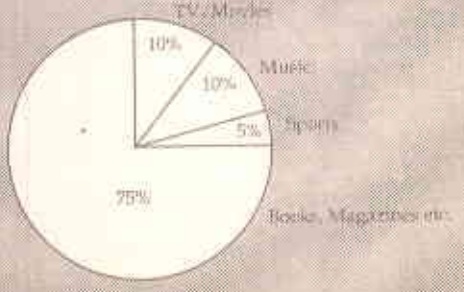
Due to pollution, the ozone layer of the higher atmosphere has been ruptured, and the harmful rays are entering the atmosphere of earth from space. This is also a new danger to human life.

Keeping in view of the above mentioned facts, we should adopt ways and means for controlling environmental pollution. It is our duty to keep our surroundings clean. We should not throw the rubbish outside. We should co-operate with the efforts of our government and the world community, in controlling pollution.

We should pledge to take part in plantation, and other activities for keeping our environment neat and clean. □

WHAT ARE OUR CHILDREN DOING?

Parents need to be aware of what their children are doing in their free time after school. Quite often, children spend their after-school time in pursuing hobbies and interests which indicate their preferences in life and also their individual talents. If parents keep a close watch on such activities, they would be able to know their offsprings better, offer them proper guidance and create an environment in which the natural talents of our youth are suitably nurtured and groomed. Shehri, recently conducted a survey among girl students of a local school to find about the interests and hobbies of the students. The age group was 12-16 years, and the girls belonged to middle to high income generating households. The girls were asked about their favorite pass time. The results of the survey are presented in form of a pie chart.



ASK SHEHRI

Most residents when faced with any civic problem do not now which person or organization to contact in order to solve their problem. In this column we invite the readers to share their worries with us and seek our help, which is always forthcoming - Ed.

Q. A multi-storey building is being constructed in my neighborhood. I think it is illegal conversion of land. Where can I get information about this project?

(Badar-uz-Zaman, Bahadurabad, Karachi)

Ans. Please, visit the 'Public Information Counter' KBCA Office, Civic Centre, (10.00am-1.00pm)

Q. I want to know what steps are being taken to prevent encroachments from appearing again at Tariq Road in the future?

(Arif Rasheed, P.E.C.H.S. Karachi)

Ans. Contact, Deputy Commissioner, East, Gulshan-e-Iqbal (Opp. National Stadium). Ph. # **4938381**

Q. I want to find out about the expected completion time of Lily Road Bridge?

(Kashif Ali, Cantt. Station, Karachi)

Ans. Contact, Director General, Technical Services (KMC), KMC Head Office, M.A. Jinnah Road, Karachi. Ph. #7732161-9.

Shehri needs volunteers

The various projects of Shehri are managed by its following six sub-committes:

- Anti Pollution
- Media & Outreach (Newsletters)
- Legal (Illegal Buildings)
- Conservation & Heritage (Old Buildings)
- Parks & Recreation
- Fund Raiser

Any person who wishes to help out in Shehri's ongoing and planned projects(cash /kind) should visit the Shehri Office for further information or contact the Shehri Secretariat through phone, fax or e-mail

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RECYCLING

An *'Offal'* Tale

Recycling the offals

HERITAGE

Preserving the beauty of Zari Mubarak

The shrine of Zari Mubarak, in Khairpur has many unique features. ***Altaf Ahmed*** *recounts its history, assesses its present condition and suggests ways of preserving the unique beauty of Zari Mubarak for future generations.*

The shrine of "Zari Mubarak", in Khairpur, Sindh, was built in the later years of the 19th century during the reign of Mir Izhanees Talpur, ruler of the princely state of Khairpur. The Talpurs belong to the Shia sect of Islam and they built many religious buildings and shrines during their reign. 'Zari Mubarak' is one of them. The shrine of Zari Mubarak has unique religious significance. The architectural plan of Zari Mubarak is similar to that of Hazrat Ali's mausoleum in Iraq and its inner mazar, constructed with gold has been modeled on the mazar of Hazrat Imam Hussein in Iraq. Another religious importance of this building is that the entire Holy Quran has been inscribed on the walls of the shrine.

The interior of the shrine.

This magnificent structure is now a victim of neglect. Originally constructed in the suburbs of Khairpur city, the Zari Mubarak is now in the centre of the most congested area of the city. Sanitation problems, such as non-removal of household garbage, overflowing sewerage water and improper drainage facilities are seriously harming this intricately designed structure.

During the month of Muharram, people gather in Zari Mubarak gather in their thousands from far and wide while weekly "Majlis" gatherings are also arranged. It is unfortunate that due to some carelessness on the part of visitors the beauty of the shrine gets eroded on such occasions.

Damage visible on the tiles

As the city of Khairpur like other parts of Sindh is being adversely affected from the twin menace of water logging and salinity, the ill effects are also apparent on the historical buildings. The resulting decay is visible in the walls and pillars of Zari Mubarak.

Since drainage facility is non-existent, rain water often accumulates in the building, erodes the structure and further increases the ground water table. There is an urgent need to restore the beauty of Zari Mubarak. Increasing levels of encroachments are polluting the surrounding environment. The sanitary conditions of the surrounding localities should be improved. As mentioned earlier Quranic verses are inscribed on the walls. Cracks have now appeared at many placers, tiles are breaking off. Specially skilled workers should be employed to fill these cracks. Proper drainage facilities should be provided, both in the courtyard and on the roof. Visitors should be guided through sign boards to ensure the beauty and safety of the mausoleum. The problems of water-logging and salinity can be tackled by introducing the use of tube-well and suction pumps to draw down the water table.

It is hoped that the much needed remedial measures are soon adopted so that the unique beauty of Zari Mubarak can be preserved for future generations. □

(Altaf Ahmed, is a Civil Engineer)