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<td>Author(s)</td>
<td>Singh, Gurmit K. S.</td>
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The Klang River:
A Malaysian Man-Made Environmental Problem

By

Gurmit Singh K S
INTRODUCTION

The Klang River (including its major tributaries of Batu, Gombak, Kerayong, and Pencala) may not be the largest in Malaysia but the Klang Valley which it drains is certainly the most developed and man-altered portion of the country. Beginning some 100 km from the Straits of Malacca in the Main Range of Peninsular Malaysia, it flows through the National capital of Kuala Lumpur, Petaling Jaya, Shah Alam, and Klang before reaching the sea at Port Klang.

With almost a seventh of the national population and the widest range of human activities, the physical environment in the Klang Valley has undergone many man-made changes from tin-mining during the 19th century to extensive urbanisation and industrialisation today. The River has had to bear the full brunt of all these changes.

KLANG’S ENVIRONMENTAL STRESSES

As recently as the turn of the century, the River was navigable up to the point where it met the Gombak. But tin-mining which cradled the birth of Kuala Lumpur was also one of the first major environmental stresses of the River as it discharged loads of silt into the Klang. The clearing of the jungle, first of rubber, then for buildings and roads, and finally oil palm, increased erosion in the Valley. The result has been silting of the entire river system so that effective navigation is possible only up to the outskirts of Shah Alam. Despite the fact that tin-mining is on the decline, additional silt now comes from badly managed housing sites, earthworks and highways.
As human concentration increased in the Valley and sanitation facilities failed to keep up with this growth, organic pollution of the River became serious. Although more of the sewage is now ending in treatment plants, increased kitchen and other organic waste is moving through poorly maintained drains and ending up in the River. It appears that many residents and even some officials tend to treat the River as a sewer and garbage dump. Irresponsible businesses also try to get away by dumping their waste into the River.

Organic pollution has been exacerbated by the increased intrusion of chemical and industrial effluents because manufacturing and processing has increased. Although some controls and treatment have been implemented, industrial pollutants still end up in the Klang River.

The mandatory river reserve on both banks has hardly been observed. Development, whether legal or illegal, has occurred right up to the banks with consequent erosion and waste discharges. Periodic dredging (to perhaps alleviate the frequent floods) has destroyed the River's fragile ecosystem, altered its course and piled ugly mounds of dredged material along the River's banks.

Except for some of the upper reaches, the River is aesthetically disfigured. RTM made a documentary in 1983 entitled 'The Fate of the Klang River'. It shows clearly what the River has become.

**COMMUNICATING THE PROBLEM**

The Environmental Protection Society Malaysia (EPSM), ever since its formation in 1974, has taken a very active interest in the environmental quality of the Klang River. In both trying to understand its problems and influencing positive action, EPSM faced a series of communication problems.

Realising from the beginning that some scientific data was essential before the problem could be adequately addressed, we tried to get the necessary information from government sources but were denied access to up-to-date data. Mobilising volunteers and borrowed laboratory facilities, we conducted our own study of organic pollution only in early 1975. The results of this study were published in the newspapers. They formed the basis of our subsequent campaign to get the authorities to clean the River. This was supplemented by another study in 1977 on siltation, which was again reported by the Press.

At every possible opportunity, EPSM urged City, State and Federal officials to clean the River and to stop pollutants from entering it. We also called upon the public to stop treating the River as a sewer. Over the years we issued a series of press
statements on the quality of the River.

On 10 June 1979, at our Annual General Meeting a resolution was passed calling for the cleaning of the River and the establishment of a joint task force to supervise this. We even held a press conference on the banks of the River on World Environment Day in 1981.

It is interesting to note that other studies on the River from Universities and Government Departments slowly started becoming publicly available after 1978. Thus, when we did our last study in 1984, we were able to compare some of these findings. Consequently we were able to express some guarded optimism in our latest press statement of 16 March, 1985.

We reviewed the newspapers to get some idea of how the press communicated the views of the different environmental actors. Most of the time the focus was on floods and Government Ministers/Officials spoke only to the Press, hardly ever to the environmentalists. The only discussion of sorts was during the drafting of the KL Environmental Action Plan in 1983. It is pertinent to note that while promises to clean the River are almost a decade old, the root causes have never been systematically pursued. For example, six boats for river patrolling have gone to waste to be now replaced by a mechanical device called a Ponchi. The silt traps in the drainage systems continue to be uncleared.

The long neglect by the broadcast media was broken in 1983 when RTM enlisted my help to produce their Klang River documentary. Over recent weeks, there has been some footage on river pollution with a special Issue programme devoted to it on 16 March, 1985. I gather that this new interest is prompted by the Prime Minister's desire to see the Klang River cleaned.

CURRENT STATUS

As stated in our press release of 16 March, EPSM sees some sign of improvement in organic pollution over some stretches of the River but silt levels are not moving in the right direction. Certain parts of the river banks are greener and cleaner but they are still not extensive enough. Garbage and litter as well as some industrial effluents are still entering the River.

There is no place that can be recommended for recreation and fishing, once the River enters KL's boundaries. One certainly cannot jog along most stretches of the River and the crows are ever present. Although some changes have been made, the overall improvement has not been significant.
Some idea of the physical parameters of the River as found in our latest study of 1984 can be seen from the following:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biochemical Oxygen Demand (BOD)</td>
<td>3.80 - 18.90 ppm</td>
</tr>
<tr>
<td>Chemical Oxygen Demand (COD)</td>
<td>4.64 - 76.98 ppm</td>
</tr>
<tr>
<td>pH</td>
<td>6.20 - 7.5</td>
</tr>
<tr>
<td>Temperatures</td>
<td>24 - 27°C</td>
</tr>
<tr>
<td>Suspended solids</td>
<td>36 - 3498 ppm</td>
</tr>
<tr>
<td>Potassium</td>
<td>1.70 - 4.43 ppm</td>
</tr>
<tr>
<td>Lead</td>
<td>0.50 - 1.05 ppm</td>
</tr>
<tr>
<td>Sodium</td>
<td>3.75 - 7.25 ppm</td>
</tr>
</tbody>
</table>

EPSM has always stated that changes will be slow but we have to start NOW. If the views we presented in 1975 had been acted upon, it may have been possible that the River would be much cleaner now. Nevertheless, if the Malaysian Government and people decide to tackle the problem now, there is still hope that the Klang River could eventually become a sparkling waterway of Malaysia.
Fig. 2

LOCATION OF SAMPLING STATIONS

SG. GOMBAK
No. 1
SG. GOMBAK
No. 2
SG. BATU
No. 1
SG. BATU
No. 2
SG. PENCHALA
No. 1
SG. PENCHALA
No. 2
SG. KERAYONG
No. 1
SG. KERAYONG
No. 2
SG. KERAYONG
No. 3
SG. KERAYONG
No. 4
SG. KELANG
No. 1
SG. KELANG
No. 2
SG. KELANG
No. 3
SG. KELANG
No. 4
SG. KELANG
No. 5

NOT TO SCALE
Fig. 3

AREAS OF POLLUTION

SG. GOMPAK
No. 1

SG. BATU
No. 1

SG. BATU
No. 2

SG. GOMPAK
No. 2

SG. GOMPAK
No. 3

SG. KELANG
No. 1

SG. KELANG
No. 2

SG. KELANG
No. 3

SG. KELANG
No. 4

SG. KELANG
No. 5

SG. KERAYONG
No. 1

SG. KERAYONG
No. 2

SG. KERAYONG
No. 3

NOT TO SCALE

B.O.D.

Clean water
0 - 9.9

Semi-poluted
10 - 29.9

Grossly polluted
30 AND ABOVE

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APPENDIX 1
SAMPLING STATIONS AND THEIR LOCATION

Sg. Kelang No. 1 : Sampling station situated downstream of
dam at Klang Gates and upstream of
Zoo Negara.

Sg. Kelang No. 2 : Sampling station at junction of
Mountbatten Road and Malay Street.

Sg. Kelang No. 3 : Sampling station at Jalan Sulaiman next
to Railway Station.

Sg. Kelang No. 4 : Sampling station at Jalan Kelang Lama
at Petaling.

Sg. Kelang No. 5 : Sampling station at Puchong, upstream
of Puchong Weir.

Sg. Gombak No. 1 : Sampling station situated 10 miles
from K.L. along K.L. - Kuantan Road.

Sg. Gombak No. 2 : Sampling station at Jalan Pekeliling -
about 300 yards from Jalan Ipoh/
Jalan Maxwell round-about.

Sg. Gombak No. 3 : Sampling station at Jalan Tuanku
Abdul Rahman - next to Selangor Club
Padang.

Sg. Batu No. 1 : Sampling station situated about 3 miles
upstream of Batu Caves.

Sg. Batu No. 2 : Sampling station at Jalan Maxwell.

Sg. Penchala No. 1 : Sampling station at 8th Mile
Jalan Damansara.

Sg. Penchala No. 2 : Sampling station at Jalan 19/1,
Petaling Jaya.

Sg. Penchala No. 3 : Sampling station situated downstream at
Guinness Malaysia Sdn. Bhd., about 30 feet
upstream of confluence of Sg. Kelang and
Sg. Penchala.

Sg. Kerayong No. 1 : Sampling station at Kg. Pandan.
Sampling station at 4½ Mile Jalan Kelang Lama,
upstream of confluence with Sg. Kelang.
<table>
<thead>
<tr>
<th>Sampling Station</th>
<th>Parameter</th>
<th>Average</th>
<th>Maximum</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sg. Klang 1</td>
<td>BOD 5</td>
<td>2.8</td>
<td>11.1</td>
<td>1.7</td>
</tr>
<tr>
<td>Sg. Klang 2</td>
<td>BOD 5</td>
<td>2.0</td>
<td>11.9</td>
<td>1.2</td>
</tr>
<tr>
<td>Sg. Klang 3</td>
<td>BOD 5</td>
<td>2.0</td>
<td>11.8</td>
<td>1.2</td>
</tr>
<tr>
<td>Sg. Klang 4</td>
<td>BOD 5</td>
<td>2.0</td>
<td>11.9</td>
<td>1.2</td>
</tr>
<tr>
<td>Sg. Klang 5</td>
<td>BOD 5</td>
<td>2.0</td>
<td>11.9</td>
<td>1.2</td>
</tr>
<tr>
<td>Sg. Batu 1</td>
<td>BOD 5</td>
<td>2.0</td>
<td>11.9</td>
<td>1.2</td>
</tr>
<tr>
<td>Sg. Batu 2</td>
<td>BOD 5</td>
<td>2.0</td>
<td>11.9</td>
<td>1.2</td>
</tr>
<tr>
<td>Sg. Batu 3</td>
<td>BOD 5</td>
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</tr>
<tr>
<td>Sg. Batu 4</td>
<td>BOD 5</td>
<td>2.0</td>
<td>11.9</td>
<td>1.2</td>
</tr>
<tr>
<td>Sg. Batu 5</td>
<td>BOD 5</td>
<td>2.0</td>
<td>11.9</td>
<td>1.2</td>
</tr>
</tbody>
</table>

**Note:** All results given in B.P.M.

**Key:**
- B.P.M.: Biological Oxygen Demand (5 days @ 20°C)
PERSATUAN PERLINJINGAN ALAM SEKITAR MALAYSIA (EPSM)
Environmental Protection Society, Malaysia

an introduction to EPSM

EPSM is a non-governmental organisation (NGO) made up of concerned Malaysians from all over the country and from all walks of life. These citizens are concerned about the deterioration of the environment and believe that citizens must work for the enhancement of especially the environment of the poor and while preserving the quality of many aspects of the existing physical environment.

EPSM was launched at a public meeting held on 11th January 1974 in the national capital, i.e. Kuala Lumpur.

EPSM has highlighted environmental problems through the press, made representations to Government Departments and polluters, undertaken studies and surveys, increased public awareness through forums/seminars and the regular publication of its quarterly ALAM SEKITAR since mid-76.

Among the various projects that have been completed are:

* Representations to the Division of Environment on the Environmental Quality Council and Effluent Standards;
* A Water Quality Survey of the Klang River - 75/76;
* Land Mismanagement Study of the Klang Valley - 77;
* Solid Waste Study in the Klang Valley - 73/79;
* Teach-in on Water Pollution - 77;
* Malaysia's First Declaration of the Environment - 77;
* Malaysia's 1st Environmental Journalism Course - 79;
* Energy & Environment Seminar - 78;
* Endau Rompin Campaign - 77/78;
* Anti Concorde Campaign - 77-79;
* International Sun Day - 79;
* World Environment Day - 77-79;
* National Seminars/Forums & Talks on the Environment at all major Malaysian towns - 78/79;
* Batu Caves Campaign - 79/80;
* Environmental studies of P.J., Taiping & Kelang - 80/81;
* Decade Review Seminar - 82;
* Tembeling (Nat. Park) Campaign - 82/83;
* Air & Noise Monitoring - 81-onwards
* Envirowalks in all the 13 state capitals - 1983/84;
* Papan Campaign - 1984;
* Environmental Management Workshops (assistance to the Malaysian Institute of Management) - 1983/84;
* Press statements which cover a wide range of environmental issues including energy, siltation, palm oil pollution, EIAs, public transport, pesticides, legislation, Concorde, national parks, forestry, corruption, dams, land development, urbanisation, solid waste, nuclear energy & waste, public accountability, development planning, beach contamination and oil pollution, synthetic detergents, information decontrol, population policies, etc.

EPSM maintains active contact with many national and international NGOs interested and active in the environment.
The Environmental Protection Society Malaysia (EPSM) welcomes press reports, which include the river names as well as some measured data, that 19 rivers, including the Klang, show some environmental quality improvement. We also welcome the commitment expressed by the Federal Territory Minister that the Klang River will definitely be cleaned and not allowed to remain a sewer. We particularly welcome the greater openness shown by the Department of Environment (DOE) currently unlike the situation in September 1980 when none of the 24 so-called 'cleaned' rivers were named.

However, EPSM would caution the public from reaching the conclusion that these rivers are either completely or permanently clean. DOE's own assessment of the Klang River in June 1983 (as reported in the press) was that it was somewhat less dirty although these changes were not visible. EPSM did its own monitoring in June 1984 and made comparisons with our earlier measurements of 1975 and 1977. Our readings indicate that in the case of the Sg. Gombak, the Biochemical Oxygen Demand (BOD) worsened by 50% while the suspended solids decreased by 40%. However in the case of Sg. Kelang (along Jln. Kelang Lama), the BOD improved by 40% while suspended solids decreased by 35%. But the suspended solids in the reaches above the confluence with the Sg. Gombak increased between 290 - 370%. Overall, the Sg. Kelang was partially clean in terms of organic pollution but certainly polluted in terms of suspended solids (including silt).

Using the Klang River as a yardstick, we would say that although the efforts of the DOE especially in implementing the various regulations under the Environmental Quality Act has had some positive impact on riverine quality, much more effort is needed. We reiterate our previous calls that there must be greater political and business commitment to environmental quality, matched with public co-operation. Only then will we see tangible improvements, which will inevitably take time to become visible. We are slowly moving in the right direction.

EPSM urges the following immediate positive measures:

* strengthening of the DOE's manpower and operational resources so that the present tempo of environmental monitoring and enforcement can be improved, especially at the regional level;
* improvements in environmental research and data dissemination, utilising all resources in government, business, industry, universities and voluntary citizen groups;
* elimination of pollution at source without wasting huge amounts of money on gigantic sewerage systems that only transport the pollutants to the sewerage plants;
* drastic improvements in the cleanliness and maintenance of all our drainage systems right from the small household drains to the overgrown local-authority controlled drain reserves;
* strict implementation of earthworks bylaws and control of erosion, especially from all development sites.