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PRESS STATEMENT FROM THE MINISTER FOR THE ENVIRONMENT

CLEANING UP OF SINGAPORE RIVER, KALLANG BASIN AND ALL WATER CATCHMENTS

Sparkling waters teeming with fishes fill our streams, canals, rivers and reservoirs. Lush green parkland line their banks. In the city, a tree-lined promenade flank the Singapore River against a backdrop of modern high-rise commercial buildings. Pleasure boats laze along its clear water. These are ideal environment for our people to spend their leisure.

This is the scenic landscape which the Government hopes to realise when it completes its programme to clean up the Singapore River, Kallang Basin and the unprotected water catchments (Kranji, Western Pandan, Jurong, Bedok and Sungei Seletar) in 1987. The Ministry of the Environment is already holding discussions with the Urban Redevelopment Authority and the Parks and Recreation Department on beautifying some of the rivers after they have been cleaned up.

The programme, launched in 1977, has already achieved significant progress. Our river waters have become visibly cleaner and less smelly. Analyses show that the amount of organic pollutants have decreased. But further improvements can be achieved, when the sources of pollution are progressively removed under the programme.

The main sources of pollution in the water catchments are from pig and duck farms, sand quarries, squatters, trade and backyard industrial activities and sullage water from premises and villages. In the urban catchments, additional main sources of pollution include rundown urban areas, squatter pockets, street hawkers and riverine activities.

By 1987, /2.

By 1987, most of these sources of pollution should either be resettled, reorganised to reduce pollution or demolished for redevelopment. Demolition of squatter premises and rundown urban areas however, may take longer, depending on the public housing and urban renewal programme.

At the same time, the Government will accelerate the sewerage programme. Rundown urban premises, which are not due for demolition immediately, will have to be connected to sewers. Rural sewerage systems will be constructed to provide better sanitation for villages.

Eventually, modern sanitation or rural sewerage systems will be extended throughout Singapore. Similarly, refuse collection and road sweeping services will be provided throughout Singapore. All wastewater will be treated before discharge into watercourses. The refuse collected will be incinerated. Open drains and canals in Singapore should only collect clean runoff water.

The Government can only provide the infrastructure to remove all waste for proper treatment. Our people and the industries have a more important role to play if they are to help the Government protect our national heritage, recreational resorts and our drinking water supply. They must cultivate correct social habits by not throwing wastewater and refuse into drains or open grounds. Otherwise, these will eventually find their way into our streams, canals, rivers or reservoirs. The efforts and money spent by the Government to clean up the watercourses and catchments will be nullified.

Members of the public can also help the Government remove sources of pollution by reporting to the Ministry of the Environment discharge of wastewater or dumping of refuse into drains or open grounds. They can do so either in writing or by telephoning the Ministry's Operations Room at Tel: 635111 Ext: 232 or 260.

A copy of the progress report on the programme up to 31 March '81 is appended.

PROGRESS REPORT ON CLEANING UP OF
RIVERS AND WATER CATCHMENTS

1 INTRODUCTION

1.1 The Singapore River and Kallang Basin Catchments cover about a quarter of the total area of Singapore. In them are sited about half of our built-up areas. The Kallang Basin drains five main rivers and these are the Bukit Timah/Rochore Canal, Sungei Whampoa, Sungei Kallang, Pelton Canal and Sungei Geylang. The Singapore River combines with the five rivers of the Kallang Basin at the city front and flows through a common river mouth.

1.2 The water resources of Singapore come from protected and unprotected water catchments. The protected water catchments are MacRitchie, Peirce and Seletar Catchments. The unprotected water catchments include the existing Kranji, Pandan, Jurong and Western Catchments and the future catchments of Sungei Seletar and Bedok.

1.3 The cleaning up programme will eliminate the filth and stench in our rivers and canals, in particular the Singapore River and Kallang Basin, so that clean water will be restored in water-courses and aquatic life will return. Clean water in water catchments will ensure a safe water supply and reduce water treatment cost.

2 SOURCES OF POLLUTION

2.1 The main sources of pollution in the water catchments are from pig and duck farms, sand quarries, squatters, trade and backyard industries and sullage water from premises and villages. In the urban catchments, additional main sources of pollution include rundown urban areas, squatter pockets, street hawkers and riverine activities.

3 CLEANING UP PROGRAMME

3.1 Although the cleaning up programme has been going on for some time, greater impetus was given to it in 1977 with the formulation, by various Ministries and authorities, of the following action plan:-

(a) Phasing /2.

3 CLEANING UP PROGRAMME (Cont'd)

- 3.1
- (a) Phasing out of pig farming and wet duck rearing
 - (b) Phasing out of pollutive riverine activities
 - (c) Resiting of street hawkers
 - (d) Resiting of squatters
 - (e) Further extension of sewerage systems
 - (f) Redevelopment of rundown urban areas

3.2 The success of the programme requires the active participation and a high level of commitment by the various Ministries and authorities, and the co-operation of the public. The Ministry of the Environment is co-ordinating the efforts of other Ministries and authorities in the cleaning up programme.

3.3 The programmes to phase out pig farming and wet duck rearing are targeted for completion by 1982 and 1981 respectively. The other programmes are scheduled for completion by 1984 except for the clearance of squatters and urban rundown premises which is targeted for completion by 1990.

4 PROGRESS

4.1 Cleaning Up of Singapore River/Kallang Basin Catchment

4.1.1 The progress of the cleaning up of Singapore River/Kallang Basin Catchment has been satisfactory. Some areas of the programme are, however, lagging slightly behind schedule due to social and economic constraints, and to a lesser extent to technical difficulties.

4.1.2 The progress of the various cleaning up programmes up to March '81 is in Annex I.

4.1.3 In the Kallang Basin, squatters, illegal structures and unauthorised activities will be phased out. The small boat building and repairing yards will be encouraged to reorganise and amalgamate into larger ones, upgrade their operations and meet pollution control requirements by 1984. The large shipyards will have to comply with pollution control requirements.

4.1.4 The relocation /3.

4.1 Cleaning Up of Singapore River/Kallang Basin Catchment (cont'd)

4.1.4 The relocation of lighter trade activities targeted for mid-1983 is slightly behind schedule as the warehousing and ancillary facilities at Pasir Panjang Wharf will not be ready until the end of 1983.

4.1.5 The Ministry of the Environment, in collaboration with Urban Redevelopment Authority and Port of Singapore Authority, is working on a scheme to beautify the Singapore River with a view to retaining some of the characteristics of the river.

4.1.6 Wastewater will be collected for proper treatment, and refuse which would otherwise find its way into watercourses, will be collected for dumping or incineration. Open drains and canals would only collect clean runoff water in future.

4.1.7 With the partial removal of the sources of pollution, there is a general improvement in the quality of water in the Singapore River and Kallang Basin. Some of the analytical results of the quality of water in the rivers are given in Annex II. Our river waters have already become visibly cleaner and less smelly. In the upper reaches of the rivers and canals fishes have already returned. Rochore Canal is one such example.

4.2 Cleaning Up of Unprotected Water Catchments

4.2.1 Kranji Catchment is the only unprotected water catchment which is free of pigs. The pig population in the other catchments was reduced from 174,320 to 37,360, a reduction of 78 per cent.

4.2.2 All street hawkers in Kranji Catchment have been resited to food centres with pollution control facilities. In the Sungei Seletar Catchment, the total number of street hawkers was reduced from 124 to 74, a reduction of 40 per cent. There are no street hawkers in the other catchments.

4.2.3 The progress of the various cleaning up programmes is summarised in Annex III.

4.2.4 Improvement works to the existing rivers and drains in Bedok, Jurong, Pandan, Sungei Seletar and Western Catchments are in progress.

5 COST OF CLEANING UP RIVERS AND WATER CATCHMENTS

5.1 The cleaning up of rivers and water catchments is a continuing programme. As such, the cost incurred by the various Ministries and authorities for routine cleaning up operations is a recurrent one.

5.2 Apart from the routine cleaning up operations, the Government has also embarked on several development projects to clean up the rivers and water catchments. Some of the projects and their estimated costs are listed below:-

- (a) To-date, about \$4 million has been spent on the construction of rural sewerage system (R2) to serve individual rural homesteads in the unprotected water catchments of Kranji, Western, Jurong and Pandan. Another \$4.5 million will be required to complete the project mainly in the future unprotected water catchments of Sungei Seletar and Bedok.
- (b) The Ministry of the Environment has incurred about \$25.5 million in extending sewerage facilities in the Pandan and Kallang Basin Catchments. Another \$7.0 million will be required for the projects in these areas.
- (c) The Ministry of the Environment together with HDB has already incurred about \$14 million in resiting street hawkers into food centres with pollution control facilities. Two such food centres are at Buffalo Road and Farrer Park. An additional \$44 million will be required to resite the remaining street hawkers into proper food centres in HDB estates and those to be built by MOE at Hill Street, Church Street/Market Street and Telok Ayer II.
- (d) Port of Singapore Authority is currently constructing a lighter trade facility at Pasir Panjang. The construction cost is estimated at \$35 million. When completed in late 1983 lighters will go there.

CLEANING UP OF SINGAPORE RIVER/KALLANG BASIN CATCHMENT

	Start of Programme	As At Mar 81	% Reduction	Remarks
1 No of premises not connected to sewers (including those in the run-down urban areas)	21,002	10,142	52) Programme is on schedule.
2 No of nightsoil bucket latrines	11,847	5,365	55	
3 No of overhanging latrines	735	128	83	
4 No of sewered premises discharging sullage water into open drains	3,961	121	97) Programme is expected to be completed by the end of 1981.
5 No of street hawkers	4,926	2,752	44) Programme is on schedule.
6 No of premises without refuse removal services	710	139	80) Programme is ahead of schedule.
7 No of pigs	75,590	13,000*	83) Programme is expected to be completed by the end of 1981.
8 No of pig farms	610	110*	82	
9 No of ducks	Not available			

* Statistics on pig population and number of pig farms are as at April 1981.

QUALITY OF RIVER WATER

	1978			1981 (up to Mar 81)		
	BOD	SS	Amm-N	BOD	SS	Amm-N
Singapore River	21	108	3.8	5	45	1.8
Bukit Timah/ Rochore Canal	35	89	14.6	9	39	2.9
Sungei Kallang	335	1025	67.2	79	314	27.3
Sungei Whampo	105	156	56.4	11	57	3.6
Pelton Canal	23	65	20.2	7	78*	3.5
Sungei Geylang	32	49	16.5	8	133*	3.3

* : High SS content due to presence of silt

BOD : Biochemical Oxygen Demand @ 20°C and 5 days
(A measurement of organic content of water)

SS : Suspended Solids (A measurement of solids content in water)

Amm-N: Ammoniacal Nitrogen (A measurement of nutrient content of water)

CLEANING UP OF UNPROTECTED WATER CATCHMENTS

	Kranji	Pandan	Jurong	Western	Bedok	Sungei Seletar	Total	Remarks
1 <u>Installation of R2 Sewerage System</u>								
(a) No of premises required to install R2 system at start of programme	3,430	930	1,125	66	2,333	2,998	11,477	Implementation of R2 sewerage systems for individual squatter premises in Kranji and Western Catchments is nearing completion. The programmes for Pandan and Jurong Catchments are scheduled for completion in 1982. For Bedok and Sungei Seletar Catchments, the programme will be implemented some time in the middle of 1981.
(b) No of premises installed R2 system as at 31 March '81	3,194	593	952	632	10	10	5,382	
(c) % completion	93	64	85	96	0.4	0.3	47	
2 <u>Phasing Out of Pig Farming</u>								
(a) (i) No of pig farms at start of programme	Nil		630	80	470	770	1,950	All the pig farms will be phased out by end of 1982.
(ii) No of pigs at start of programme	Nil	60,730	10,840	37,470	65,280	174,320		
(b) (i) No of pig farms phased out	Nil		510	40	350	560	1,460	
(ii) No of pigs phased out	Nil	45,990	8,760	30,550	51,390	136,690		

	Kranji	Pandan	Jurong	Western	Bedok	Sungei Seletar	Total	Remarks
(c) (i) % pig farms phased out	Nil		81	50	74	73	75	
(ii) % pigs phased out	Nil		76	81	82	79	78	
3 <u>Phasing Out of Wet Duck Rearing</u>								
(a) (i) No of farms rearing ducks at start of programme							7,290	* Includes approximately 2,500 householders each keeping less than 50 ducks. Wet duck rearing will be phased out by the end of 1981.
(ii) No of ducks at start of programme							2,000,000	
(b) (i) No of farms phased out							6,360	*
(ii) No of ducks phased out							500,000	
(c) (i) % duck farms phased out							87	
(ii) % ducks phased out							25	
4 <u>Resiting of Street Hawkers</u>								
(a) No of street hawkers at start of programme	164	Nil	Nil	Nil	Nil	124	288	
(b) No of street hawkers phased out	164	Nil	Nil	Nil	Nil	74	238	
(c) % street hawkers phased out	100	Nil	Nil	Nil	Nil	60	83	

	Kranji	Pandan	Jurong	Western	Bedok	Sungei Seletar	Total	Remarks
5 Clearance of squatters and all squatter colonies/pockets								Squatter areas will be cleared under a ten-year programme (1980-1990). Details are being worked out.
6 Phasing out of sand quarries								
(a) No of sand quarries at start of exercise	-	-	-	-	25	-	25	Private sand quarries will be phased out within the next two years and in future all sand quarry operations will be centralised and run by MND Holdings Pte Ltd
(b) No of sand quarries as at 31 March '81	-	-	-	-	18	-	18	