Water and Life

Water as a public service and implications for the health of the people

– the importance of urban sewerage.

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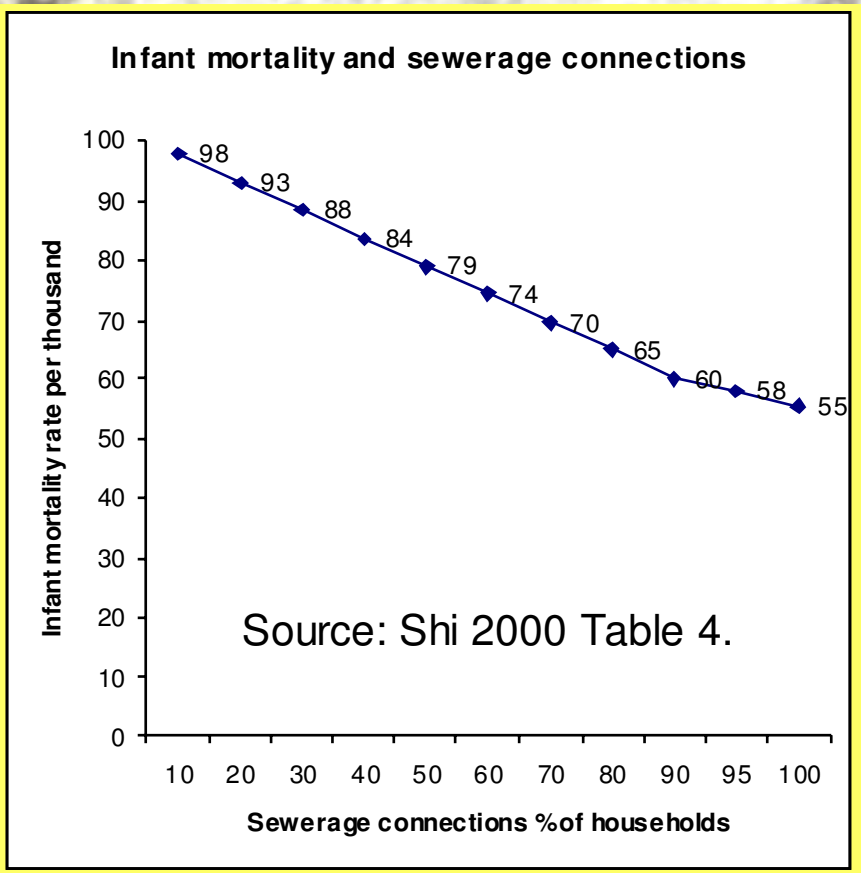
Zaragoza, 1 de julio de 2008

Summary

- Sewerage and health
- Urban sewerage in MDGs
- Need for sewerage by country
- Need for public finance not private investment
- Affordability
- Conclusions

How sewers reduce child mortality and morbidity



Salvador, Brazil

Sewerage programme 1996-2004

Coverage rose from 26% to 80%

2000km sewers, 300,000 connections

$220m, half from IDB loan

22% Reduction in under-5 diarrhoea

43% reduction in poorest households

Source: Barreto et al 2007

"….public responsibility is to ensure that sewerage is installed. At a typical cost per person of $160, investment in sewerage is too large to be left to cash-strapped municipalities, and needs the involvement of international organisations, and central government and its agencies." Barreto et al

MDGs: gap between 'improved sanitation' and sewerage

Region	Urban Population billions	% with improved sanitation	%with sewer connection
Sub-Saharan Africa	0.27	53	19
Eastern Asia	0.58	69	50
Southern Asia	0.46	63	24
South-eastern Asia	0.24	81	9
Latin America Caribbean	0.43	86	62
Northern Africa	0.08	91	73
Western Asia	0.13	96	83
CIS (former Soviet Union)	0.18	92	82
Developed countries	0.76	100	93
World total	**3.11**	**80**	**56**

Source: JMP online data

Need for urban sewerage connections by country

Numbers needing connection to halve urban pop without (millions, and % of total)

China	**251**	**22%**
India	**184**	**16%**
Indonesia	**73**	**6%**
Brazil	**60**	**5%**
Nigeria	**43**	**4%**
Philippines	**34**	**3%**
Pakistan	**32**	**3%**
Bangladesh	**27**	**2%**
Iran	**25**	**2%**
Congo DR	**15**	**1%**
Total of top 4 (China, India, Indonesia, Brazil)	**568**	**50%**
Total of 20 countries with greatest needs	**851**	**75%**
Total in all developing countries	**1,141**	**100%**

Source: calculated from JMP and UN ESA pop data

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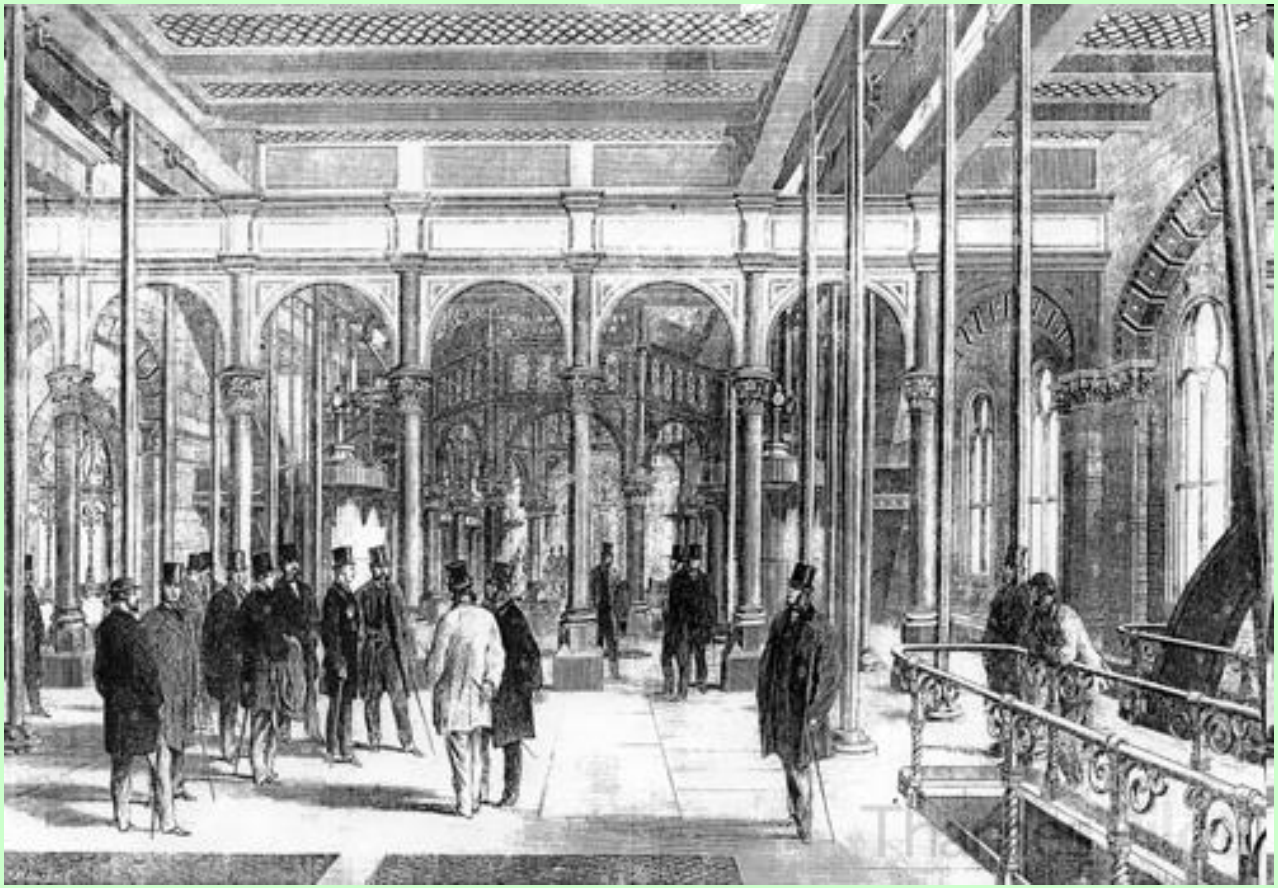
Sewers are made of taxes

- Europe (even France), N. America, Japan all financed sewers through compulsory connection + taxes
  - Inadequate private demand so consumer choice useless
  - Tax redistributes cost of public good to those who can afford it
  - E.g. Toronto (Canada) in 1880s authorise city engineer to install new sewers whether householders asked for it or not, financed by municipality:
    - "…The effects of the typhoid fever epidemic were greatly reduced by the presence of a complete, clean sewage system. At the beginning of the 20th century, most of the streets in the city had been serviced and the operational costs were met through direct taxation." (Pharasi and Kennedy 2002)
  - Cross-subsidies still e.g. EU cohesion funds, UK property tax base
- Private failure to invest in sewers or water in south
- Private sector runs only 9% of cities with pop > 1m. worldwide (and declining: e.g. Paris remunicipalises 2010)
- Requires better taxes, greater equality
  - Possible and easier with growth eg Ghana, India
  - Affordability issue is for economies, not individuals

Public commitment: 1865 dinner at the London sewerage works



- The Southern Outfall Works, as the complex was originally called, was officially opened on April 4th 1865, by HRH The Prince of Wales (later Edward VII), attended by Prince Alfred, the Duke of Cambridge, Prince Edward of Saxe-Weimar, the Archbishops of Canterbury and of York and the Lord Mayor of London, and many other persons of rank. Following an address by Joseph Bazalgette, the Royal party toured the works and reservoirs, and the Prince then turned the wheel which started the engines and, as the Illustrated London News observed, "a sensible vibration was felt throughout the building, showing that the enormous beams, lifting-rods and flywheels were in operation" Following that, in the true Victorian spirit, the "Prince and five hundred guests sat down to an excellent dejeuner, in one of the ancillary sheds, beside the Engine House" (now the Fitting Shop).

Affordability of all MDGs plus urban sewers: national economy, aid

Country	Annual cost $m.	Annual cost as %GNI	Ave growth rate 2001-2006	Aid needed >1% of GNI ($m.)	Aid needed >0.5% of GNI ($m.)
China	7878	0.30	*9.7*	-	-
India	5764	0.64	*7.3*		1232
Indonesia	2291	0.73	*4.9*		712
Brazil	1881	0.21	*2.9*	-	-
Nigeria	1364	1.48	*5.6*	440	902
Philippines	1069	0.89	*4.6*		468
Pakistan	1000	0.82	*5.2*		389
Bangladesh	855	1.22	*5.6*	156	505
Iran	790	0.38	*5.6*	-	-
Congo DR	485	6.29	*4.2*	408	446
Viet Nam	450	0.77	*7.6*		159
All dev countries	34,900			2236	7919

Source: WHO 2008 (new, all hc + PSIRU calculations

Some other measures of affordability

Aid > 0.5% as increase over current aid for water ($5.9bn.)	**33%**
Aid > 0.5% as per capita cost per day in rich countries	**$0.02**
Annual costs as % war in Iraq	**20%**
Annual costs as % 2007 profits of Shell+BP+Exxon	**40%**
Annual costs as % global military expenditure	**3%**
Annual costs as % of USA reflationary package	**23%**
Total costs as % global finance capital	**0.30%**
Total costs as % of UK rescue of 1 bank	**175%**

Aid: going to the wrong countries?

Country	Aid needed to cover spend >0.5% of GNI $m.	Annual average aid for water $m. 2001-2005 (OECD)
Iraq		343
China		287
India	1232	210
Malaysia		151
Palestinian areas		129
Indonesia	712	
Nigeria	902	
Bangladesh	505	
Philippines	468	
Congo DR	446	
Pakistan	389	
Sudan	203	
Ghana	167	
Egypt		84
Jordan		93
Tunisia		71
Morocco		91

Some conclusions

- **Health benefits of sewers – not an 'expensive luxury'**
- **Costs are affordable for most countries**
- **Aid needs are affordable for donors**
- **Countries need stronger tax bases**
- **Donors should stop promoting cost recovery and privatisation**
- **Donors should focus aid on countries in need**