Great stink of 1858. 150 years ago, an exceptionally hot summer reduced the river Thames to a scandalous condition known as the ‘Great Stink’. Overflows from around 200,000 cesspools and their discharges of raw sewage into drains leading to the river were responsible. The smell off the river was so excruciating that Parliament could barely sit, and sessions in the adjoining Courts of Law had frequently to be curtailed. London then suffered regularly from cholera, and it was still automatically assumed that fumes were responsible for its spread. The Stink therefore powerfully concentrated MPs’ minds. The act they rushed through led to the transformation of sewerage in London by Sir Joseph Bazalgette, and eventually to a widespread public health engineering revolution in Britain and throughout the industrializing world.

Today, a new sanitary revolution is desperately needed on behalf of the 40 per cent of the world’s population who are without sanitation. In the rapidly urbanizing developing world, still only a fraction of sewage is treated before ending up in heavily polluted, and stinking, rivers. Much excreta is washed into them – as in 1858 London – by stormwater drains filled with ‘excrementitious effluvia’ that is either deposited in the open or dumped at night from cesspools and toilet pits. Great Stinks are by no means altogether banished to the past.

The heroic story of the 19th century sanitary revolution in Britain has been retold so often that some of its most instructive features for the business of sanitary transformation in the modern era are buried below layers of historical spin. Engineers usually take pride of place, obliterating other social, economic and political aspects. A very important influence was the rise in living standards associated with the industrial revolution. By the 1820s, the toilet as a household installation had become well-established. New squares in towns such as Brighton and Bath contained the first housing anywhere in the world with flushing toilets as a standard item. This belonged to a much broader commercial drive based on a new market for home improvements. The boom continued throughout the century, making modest fortunes for such entrepreneurs as Thomas Crapper, whose name became synonymous with his devices. Take-up of the water closet on a scale well beyond the most privileged members of society was therefore an integral part of a transformation in living habits. Ideas of respectability, social status, and personal comfort and convenience were the drivers. The promotion of health had nothing to do with it. In fact, the development of the flushing device precipitated the Great Stink and the public health crisis.
Today, developing world is similarly in a state of **rapid urban transition**; and the problem of poor or no toilet and waste removal facilities is as acute. Slum population as a proportion of urban population is relatively high and has little disposable income. Housing in many urban areas would not be unfamiliar to Charles Dickens or Victor Hugo. The very real demand for toilets and sanitation services in crowded slums and tenements where there is nowhere at all to ‘go’ is frequently neglected by programmers focusing on ‘the poor’; yet this is where greatest need is felt, and the desire to join the clean, toileted, respectable ranks of society much the strongest.

[Calcutta housing] One reason for the relative lack of attention to sanitation in poor urban areas is the distortion within contemporary poverty analysis, which tends to perceive poverty in the developing world as largely a rural phenomenon; or to believe that public action to ease the situation of slum dwellers will attract further indigents into town and should therefore be avoided. Many of those forced to resort to ‘wrap and throw’ as their system of sanitation are not even counted in estimates of those without access to facilities since the residents of squatter and shanty-town settlements are invisible in surveys and censuses. Since they occupy land ‘illegally’, municipal authorities refuse to acknowledge their existence in any formal way so to avoid having to take responsibility for service provision. Thus the defecatory and waste management needs of these illegal urban populations – who may constitute as many as 300 million people worldwide – are not recognized in the data compilations which inform the Joint Monitoring Programme of WHO and UNICEF. As a result, the relatively rosier picture of sanitation in urban compared to rural areas – 79 per cent compared to 45 per cent – ignores those who need services most urgently. Instead of 600 million poor urban dwellers being without sanitation, the figure is likely to be closer to 1000 million.

**What can we learn from the heroic 19th century story?**
[five points listed on one frame in very short form]

• This was not primarily a public health revolution, although it led to the birth of public health. It was primarily a life-style revolution, driven by consumer desire for the WC. **Distortions in the historical account; wrong diagnosis.** All sorts of false assumptions and ideas have been passed down from the 19th century experience. For example, John Snow – who managed to get the handle of a pump in Broad Street, Soho, disconnected as the way to stop the spread of cholera – has been passed down to history as the person who discovered that the cholera bacillus is not transmitted in the air, but in water. But the real culprit in cholera spread is excreta, and water is not the only medium in which it may travel. In the Broad Street case, the ‘dejecta’ of a patient with diarrhoea had been thrown into a cesspool, recently deepened to contain more liquids, and abutting the water supply to the pump into which the pathogens had leached. The lesson passed down, however, is about water; the more important role of excreta became obscured.
Water-related disease is almost all, actually, excreta-related. Also the demand for the toilet drove the whole process of behaviour transformation and requirements for drainage and sewerage. There was full ‘participation’ in the sense that people were committing household expenditure; this was not an exercise in doing public health ‘to’ people whether they wanted it or not. It has often been interpreted in that way: public health engineers have to inflict public health on reluctant consumers. This is deeply misconceived.

- **Towns and cities came first.** There has been insufficient attention to urban poverty in the aid and development discourse generally, and the tendency of the statistics on sanitation is to mask the problem of urban squalor. **Sanitation is most wanted and needed in urban areas.** There is huge demand, especially among women. Public toilets: certain environments in which this is the only option, yet they are dismissed as ‘unimproved’. Certainly, there are public toilets, such as India’s ‘dry latrines’ which are just enclosed spaces in which people defecate and leave the mess for scavengers to remove, which cannot be tolerated. But some congested living environments are not able to cope with individual household toilets. Community facilities, with effective septic tanks or sewers, are the only solution. Insufficient efforts have been made to promote low-cost facilities, household or communal, that will work and can be managed so that they will not stink or become foul quickly; nor has there been sufficient effort to create a new sanitary economy, including rubbish collection and vacuum extraction sludge removal systems, to provide services in informal and slum settings. Privatization of utilities in Dar es Salaam actually brought an end to sanitation programmes in poor areas of the city, just as an example. Studies have brought to light the continued existence of the nightsoil men or pit emptiers in African as well as Asian cities; sanitation workers of an informal or small-scale kind need to be brought within the framework of service promotion. The whole problem needs to be addressed from the point of view of employment and entrepreneurial activity, but at a small, local, organic scale where the margins are viable. Decent facilities, decent jobs, initially subsidized or publicly financed to get going. The lifestyles transformation has to be seen as a potential engine for new jobs and expenditures, rather than an impossible burden on the public health budget.

- **Public action was critical.** The perceived threat to public health required public action, publicly voted funds, and the creation and regulation of public institutions. The poorer parts of towns would never have been served without the entire reformation of municipal government in Britain. In London before the Stink, different areas came under separate administrations as communities became absorbed into the metropolis: to have them work together required joint administration under a metropolitan board of works. In other towns and cities, small-minded men of property, who saw their influence in local affairs as a means of furthering their own interests, would not vote in sanitation measures for poorer
parts of town. Finance had to be made available; public health legislation; housing regulations. And the gradual opening of the political franchise. Transformation in class attitudes had to be brought about. There was huge social discrimination, often based on ideas of clean and respectable living. Doctors would not allow poor patients to sit on the upholstery. The ‘unwashed’ were seen as a different species; yet many spent high proportions of their incomes on soap and washing. You will also find this in urban areas today: in a suburb called Ouakam in Dakar, there is no natural drainage, and women are paid $0.50 to take away a bowlful of laundry water. People make extraordinary efforts and pay what for them are considerable sums to keep themselves and their houses clean and sweet-smelling. This is a delicate issue. If you read the attitudes of people in Victorian England towards the poor, they are highly reminiscent of attitudes in many parts of the world today – the City Hall which is not interested in the situation of the poor, only in prestige buildings and five-star hotels. If sanitation is left to the private market, nothing will be done for the ‘great unwashed’. Just as it was unrealistic in Victorian times, it is unrealistic today to look for full cost recovery from low-income service consumers – and grossly unfair. It makes no sense to subsidize the household installation, the toilet pan and its surrounds which are a private household amenity; but the external removal or storage systems, the emptying services, the treatment plants, and whatever else is needed in terms of service infrastructure should be subsidized as a part of the managed environment shared by the community. If this is not a job for the Town Hall, what is? In Victorian Britain, the sanitization of urban spaces was the driver of municipal administrative reform, and heavily influenced the modern discipline of town planning.

- **The topic has to be made respectable.** The 19th century revolution enjoyed powerful support from figures of political importance, commitment from the Church, from reformers, intelligentsia, and the upper echelons of society. John Ruskin: ‘A good sewer is a far nobler and a far holier thing than the most admired Madonna ever painted.’ Huge civic pride: pumping-stations were like cathedrals. Sir John Bazalgette’s Crossness pumping station has some of the most beautiful ornamental ironwork in Victorian Britain. Opened in 1865 by the Prince of Wales, attended by other royals, Archbishops, Lord Mayor, 500 other guests who dined on salmon while the city’s excreta gushed forth beneath them. Why aren’t we able to inspire this kind of all-encompassing civic pride today? What is the equivalent today? Green, environmentally pleasing and efficient installations, with support from such figures as Prince Charles? (Note the quote by Sir Ronald Ross as exemplifying attitudes of public figures of those days.)

- **Health impacts took decades to realize.** The transformation of the living environment in such a way as to have a major impact on health took time; not until the early 20th century did mortality rates show a significant decline. Thus the task in terms of public health transformation took over 50 years. Yet today we have the
absurdity of donors wanting to show health impacts within a few years of their investments, as if the whole story of having a decent, private and dignified place for one’s personal business is purely a matter of disease control and nothing else. Health benefits are in a sense inevitable; but it is almost impossible to show a direct epidemiological cause and effect from persuading people to build a toilet house or adopt a toilet habit. In addition, in order for the public health benefits of toilets and sewerage to take effect in the 19th century, a huge number of factors were involved, including social and economic transformation, changes in public attitudes, advances in education and medical discovery, and political change. Only in a subsidiary way was this a story of technological advances and massive construction projects. Targets such as the MDGs are fine as a way to build momentum, but if they mainly lead to drives in construction, there is every possibility of wastage. **There are no short cuts; it is not possible to build your way to sanitary improvement.**

The parallels between today’s situation and what happened in the earlier sanitary revolution cannot be taken too far. But they are instructive, nonetheless.

**Sir Ronald Ross:** Great is sanitation; the greatest work except discovery, I think, that one can do. What is the use of preaching high moralities, philosophies, policies and arts to people who dwell in appalling slums? You must wipe away those slums, that filth, these disease. We must begin by being cleansers.