



**Gyanendra Kumar**

- **About half the world's reported cases of polio, a crippling disease virtually wiped out in Western countries, occur in India. Each year, diarrhoea kills 500,000 Indian children.**
- **A jaundice epidemic strikes a small district of India's Rajasthan state as regularly as the annual monsoon.**

- Those deadly diseases and others that afflict India can be traced to the same source: **drinking water contaminated by human waste**. Infected water causes an estimated 80 percent of disease in India.
- According to the World Health Organization (WHO), poor sanitation and inadequate sewage disposal the nation's biggest public health problems.

- **Waterborne diseases in India are very, very common. Every year, there's bound to be a few epidemics of viral gastroenteritis, typhoid, cholera**

- **Fewer than 30 percent of India's 950 million people have bathrooms in their homes or easy access to public toilets.**
- **The rest routinely relieve themselves in the open -- along roadsides, on farmland or in municipal parks.**

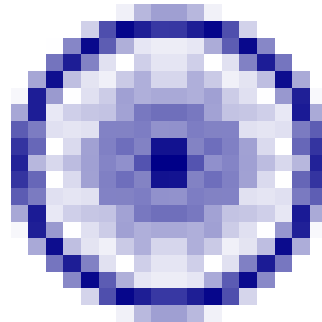
- **No more than 250 of the country's 4,000 cities and towns have sewer systems, and many of those systems do not have treatment plants.**
- **The bulk of municipal sewage -- even from such major cities as Bombay and Calcutta -- flows untreated into rivers, lakes or the sea.**

- **In cities, hundreds or even thousands of people may use the same public toilet each day, causing them to reek if not cleaned frequently.**
- **Such conditions help explain why one day recently two men could be seen urinating on the outside walls of public toilets on opposite corners of a major intersection here.**

- **Drinking water supply and sanitation in India continue to be inadequate, despite longstanding efforts by the various levels of government and communities at improving coverage.**
- **The level of investment in water and sanitation, albeit low by international standards**



# INDIA: WATER AND SANITATION



# WATER AND SANITATION DATA

- Access to improved source of water  
(Urban/Rural/Total) 96%/89%/92% (2011)
- Access to improved sanitation  
(Urban/Rural/Total) 60%/24%/35% (2011)
- Average urban water use (liter/capita/day)  
126 (2006)

- Share of household metering  
**55% in urban areas (1999)**
- Share of collected waste water  
treated **27% (2003)**

# STATUS IN INDIA

- Improved water source : 

96%	84%	88%
U	R	T
  - Improved sanitation : 

54%	21%	31%
U	R	T
- URBAN/RURAL/TOTAL

# SANITATION

- In 2010, the UN estimated based on Indian statistics that 626 million people practice open defecation.
- In June 2012 Minister of Rural Development Jairam Ramesh stated India is the worlds largest "open air toilet"

- **Of the 2.5 Billion people in the world that defecate openly, some 665 million live in India.**
- **This is of greater concern as 88% of deaths from diarrhoea occur because of unsafe water, inadequate sanitation and poor hygiene**

# ENVIRONMENT

- As of 2003, it was estimated that only **27%** of India's waste water was being treated, with the remainder flowing into rivers, canals, groundwater or the sea.

# RIVER GANGES- INDIA





- The sacred Ganges river is infested with diseases and in some places "the Ganges becomes black and septic. Corpses, of semi-cremated adults or enshrouded babies, drift slowly by.

- News Week describes Delhi's sacred Yamuna River as "a putrid ribbon of black sludge" where the concentration of fecal bacteria is 10,000 times the recommended safe maximum
- despite a 15-year program to address the problem. Cholera epidemics are not unknown.

# HEALTH IMPACT

- The lack of adequate sanitation and safe water has significant negative health impacts including diarrhoea, referred to by travelers as the "**Delhi Belly**".

experienced by about **10 million** visitors annually

# **WATER SUPPLY AND WATER**

## **RESOURCES**

- Depleting ground water table and deteriorating ground water quality are threatening the sustainability of both urban and rural water supply in many parts of India.
- The supply of cities that depend on surface water is threatened by pollution, increasing water scarcity and conflicts among users.

# **DRINKING WATER – SOURCES**

## **(IMPROVED)**

- Piped water into dwelling
- Piped water into yard/plot
- Public tap / [standpipes](#)
- Tube well / [boreholes](#)
- Protected [dug wells](#)
- Protected [springs](#) (normally part of a [spring supply](#))
- [Rainwater collection](#)
- [Bottled water](#), if the secondary source used by the household for cooking and personal hygiene is improved

# NOT "IMPROVED"

- Unprotected dug wells
- Unprotected springs
- Vendor provided water
- Cart with small tank/drum
- Bottled water, if the secondary source used by the household for cooking and personal hygiene is unimproved
- Tanker-truck
- Surface water

# DRINKING WATER

**Piped into dwelling, plot or yard**  
**Public tap/standpipe**  
**Tube well/borehole**  
**Protected dug well**  
**Protected spring**  
**Rainwater collection**

**IMPROVED**

**Unprotected dug well**  
**Unprotected spring**  
**Cart with small tank/drum**  
**Tanker truck**  
**Surface water (river, dam, lake, pond, stream, canal, irrigation canal)**  
**Bottled water (unless 2<sup>nd</sup> Improved source)**

**UN-IMPROVED**

# SANITATION

**Flush/pour flush to:**  
**piped sewer system**  
**septic tank**  
**pit latrine**  
**Ventilated improved pit (VIP) latrine**  
**Pit latrine with slab**  
**Composting toilet**

**Flush/Pour flush to elsewhere**  
**Pit latrine without slab/open pit**  
**Bucket**  
**Hanging toilet/hanging latrine**  
**Shared and public facilities**  
**No facilities, bush or field**

# RESPONSIBILITY FOR WATER SUPPLY AND SANITATION

- Water supply and sanitation is a State responsibility under the Indian Constitution.
- Panchayati Raj Institutions (PRI) in rural areas or municipalities in urban areas, called Urban Local Bodies (ULB). At present, states generally plan, design and execute water supply schemes (and often operate them) through their State Departments (of Public Health Engineering or Rural Development Engineering) or State Water Boards.



# POLICY AND REGULATION

- The responsibility for water supply and sanitation at the central and state level is shared by various Ministries. At the central level three Ministries have responsibilities in the sector:
- **The Ministry of Drinking Water and Sanitation** (until 2011 the Department of Drinking Water Supply in the **Ministry of Rural Development**) is responsible for rural water supply and sanitation

- **Ministry of Housing and Urban Poverty Alleviation** and the Ministry of Urban Development share the responsibility for urban water supply and sanitation.

- **National Urban Sanitation Policy.** In November 2008 the government of India launched a national urban sanitation policy with the goal of creating what it calls "totally sanitized cities",
- that are **open-defecation free**, **safely collect and treat all their waste water**, **eliminate manual scavenging** and **collect and dispose solid waste safely**

# **ROLE OF GOVT - INDIA**

- 1. 1954 - National Water Supply & Sanitation programme.**
- 2. 1972 - ARWSP.**
- 3. 1981 - International Drinking Water Supply & Sanitation Programme.**
- 4. 2002 - Swjaldhara.**
- 5. 2008 - National Urban Sanitation Policy.**

# **ACCELERATED RURAL WATER** **SUPPLY PROGRAMME 1972**

- **The central government supports the efforts of the states in identifying problem villages through assistance under ARWSP.**


# A PROBLEM VILLAGE

- **Is defined as one where no source of safe water is available within a distance of 1.6 km/ 15 m deep.**
- **Where water source has excess salinity, iron, fluorides & other toxic elements/**
- **Where water is exposed to the risk of cholera**





Progress on **Drinking Water**  
and **Sanitation** 2012  
UPDATE

unicef 

 World Health  
Organization



# **INTERNATIONAL DRINKING**

# **WATER SUPPLY & SANITATION**

# **DECADE PROGRAMME 1981**

- **The stipulated norm of water supply is 40 litres of safe drinking water per capita per day.**
- **At least 1 hand pump / spot source for every 250 persons.**

- **Adopt proper environmental practices including disposal of garbage, refuse & waste water .**
- **To convert all existing dry latrines into low cost sanitary latrines.**

- **Evolve financially viable sewerage systems in cities & important pilgrimage & tourist centers.**
- **Treatment of effluents (recycling) for horticulture & other non domestic purposes**

- **It is a community led participatory prog.**
- **Aims at providing safe water in rural areas with full ownership of the community. ( Better hygienic practices & Water conservation practices & rain water harvesting)**

# **SWAJALDHARA**

- **Was launched in 25 Dec 2002.**
- **It has certain reform principles which needed to be adhered by the states.**

# SWJALDHARA - 1

- **Implemented at block / thesil level**

# **SWJALDHARA - 11**

- **Implemented at district level**

# ACTIVITIES

**1. Plan, implement, operate, manage & maintain all water supply & sanitation programmes .**

**2. CONSERVATION MEASURES :**

**A. RAIN WATER HARVESTING.**

**B. GROUND WATER RECHARGE SYSTEM.**



- As of **2010**, **12** states were in the process of elaborating or had completed state sanitation strategies on the basis of the policy.
- **120** cities are in the process of preparing city sanitation plans. Furthermore, **436** cities rated themselves in terms of their achievements and processes concerning sanitation

- About **40%** of the cities were in the **"red category"** (in need of immediate remedial action).
- More than 50% were in the "black category" (needing considerable improvement).

- **And only a handful of cities were in the "blue category" (recovering).**
- **Not a single city** was included in the **"green category"** (healthy and clean city).

- The government intends to award a prize called **Nirmal Shahar Puraskar** to the best sanitation performers.

# **SERVICE PROVISION**

- **Urban areas. Institutional arrangements for water supply and sanitation in Indian cities vary greatly. Typically, a state-level agency is in charge of planning and investment, while the local government ([Urban Local Bodies](#)) is in charge of operation and maintenance.**
- **Some of the largest cities have created municipal water and sanitation utilities that are legally and financially separated from the local government**

- **Rural areas. There are about a 100,000 rural water supply systems in India.**
- **In some states, responsibility for service provision is in the process of being partially transferred from State Water Boards and district governments to Panchayati Raj Institutions (PRI) at the block or village level (there were about 604 districts and 256,000 villages in India in 2002.**

# **“IMPROVED” DRINKING WATER**

## **SOURCES**

- Piped water into dwelling
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# **INNOVATIVE APPROACHES**

- **Community-led total sanitation**
- **Demand-driven approaches in rural water supply**

# **EXAMPLES**

- **MICRO-CREDIT FOR WATER CONNECTIONS IN TAMIL NADU:**

In **Tiruchirapalli** in Tamil Nadu, the NGO Gramalaya, established in 1987, and women self-help groups promote access to water supply and sanitation by the poor through micro-credit.

Among the benefits are that women can spend more time with their children, earn additional income, and sell surplus water to neighbours.

# **ROLE OF INTERNATIONAL**

# **AGENCIES**

# **WORLD BANK**

- **The World Bank finances a number of projects in urban and rural areas that are fully or partly dedicated to water supply and sanitation. In urban areas the World Bank supported or supports among others.**
- **The 1.55 bn National Ganga River Basin Project approved in 2011.**

- The **Karnataka** Municipal Reform Project (approved in 2006, US\$216 million loan).
- The Third **Tamil Nadu** Urban Development Project (approved in 2005, US\$300 million loan).
- The **Karnataka** Urban Water Sector Improvement Project (approved in 2004, US\$39.5 million loan).
- In rural areas it supports the **Andhra Pradesh** Rural Water Supply and Sanitation (US\$150 million loan, approved in 2009)

- The [Andhra Pradesh](#) Municipal Development Project (approved in 2009, US\$300 million loan).

# UNICEF



**Improve the child's household hygiene and sanitation environment.**

**Improve the child's school environment.**

**Improve community management and sustainability of water and sanitation interventions.**



**Gyanendra Kumar**