

FINANCING OF URBAN INFRASTRUCTURE

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(Views personal)

Structure of presentation

- Urbanization trends and status of urban services in India
- Investment required to create & maintain infrastructure to deliver desired level of services
- Financing of urban infrastructure & services
- Way forward

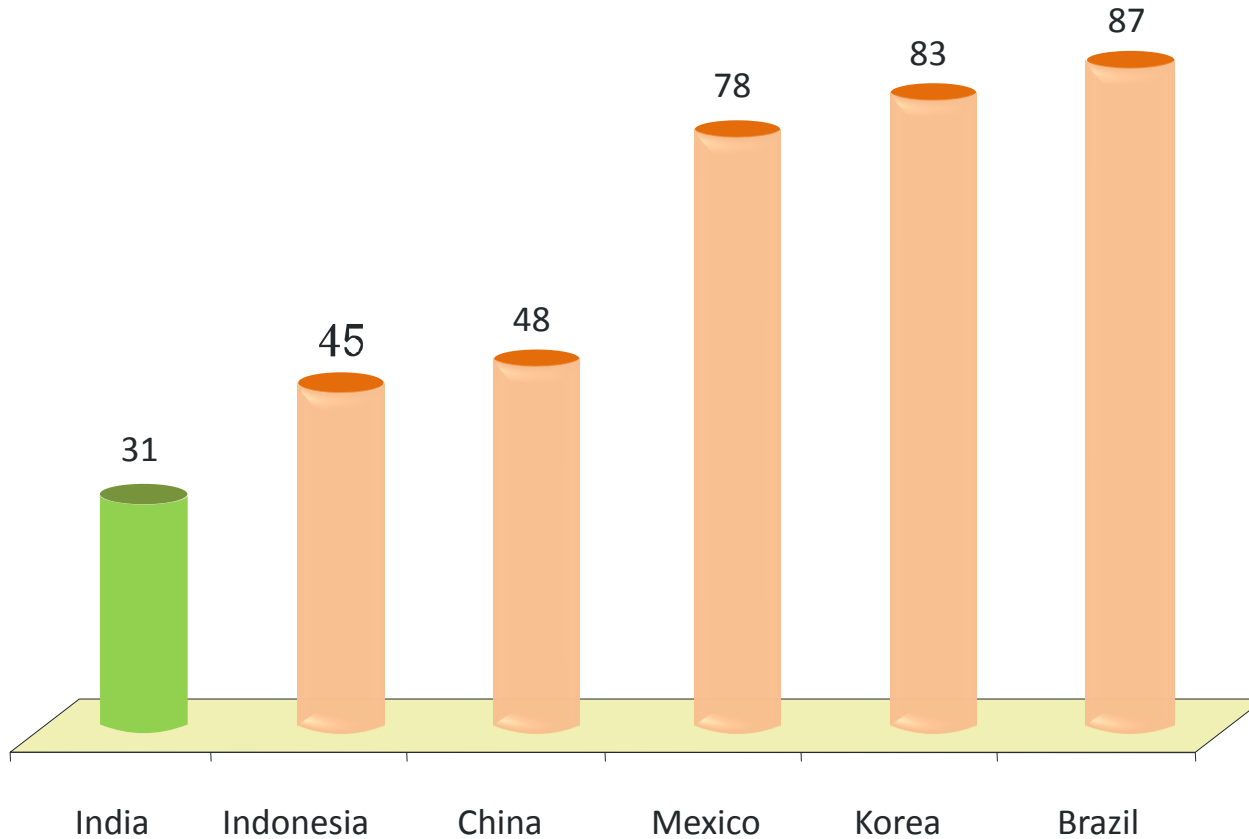
Urbanization trends I

- 2001 census: Urban population- 285 million (27.8%)
- 2011 Census: Urban population – 377 million (31%)
- Urban population growing rapidly
- Higher population pressure on smaller cities
- No of million+ cities growing
- Marked demographic shift from rural to urban

Urbanization trends II

- India's urban population to increase from 377 million now to 600 million by 2031
- The number of metropolitan cities to increase from 50 in 2011 to 87 by 2031
- The population in these cities to increase from 160 million in 2011 to 255 million by 2031
- The population in other cities to increase from 217 million in other cities and towns in 2011 to 343 million by 2031

Urban share of population 2011



Source: United Nations and Government of India

Economic significance of cities

- Cities contribute significantly to national economy
- Industries and services mostly located in urban areas
- In 99-00, urban GDP share 52% against population share of 27.8%
- Urban contribution to GDP is increasing and now almost 65 %
- Need more cities as engines of growth for providing agglomeration economies
- Investment climate is about ease of doing business and also ease of living
- Cities & towns of India are visibly deficient in the quality of services they deliver

Status of urban services I

■ Water Supply

- only 74% urban households served by piped water supply
- only 39 cities qualified on 3 basic water quality parameters of turbidity, residual chlorine and Coliform bacteria

■ Sanitation

- 11% Urban households have no latrines & 8% use pit latrines
- 77% use septic tanks & 30 million people defecate in the open

■ Sewage disposal

- less than two third of urban households in class-I & II towns were connected to the sewer system
- installed sewage treatment capacity is only 30% (CPCB report 2009) & capacity utilisation is around 72.2%, which means that only about 20% of sewage generated is treated before disposal

Status of urban services II

■ Solid waste management

- about 1,15,000 MT of municipal waste is generated daily & most of the waste is transported to land fill sites and deposited there
- scientific treatment and disposal of solid waste is practically non-existent

■ Urban transport

- public transport accounts for only 22% of urban transport in India
- only 65 out of 423 class-I cities have a city bus service

Estimation of investment needed I

- 11th Plan estimates: Rs 1.29 lakh Crores for water supply, sewerage, drainage & SWM and Rs 1.32 lakh Crores for UT
- McKinsey Global Institute estimated investment requirement for urban infrastructure over 20 years
 - Capital : USD 1.2 trillion (Rs 54 lakh cr)
 - Revenue: USD 1.0 trillion (Rs 45 lakh cr)
- CII assessed the requirement for 2011-20 as USD 990 billion (Rs 44 lakh cr)

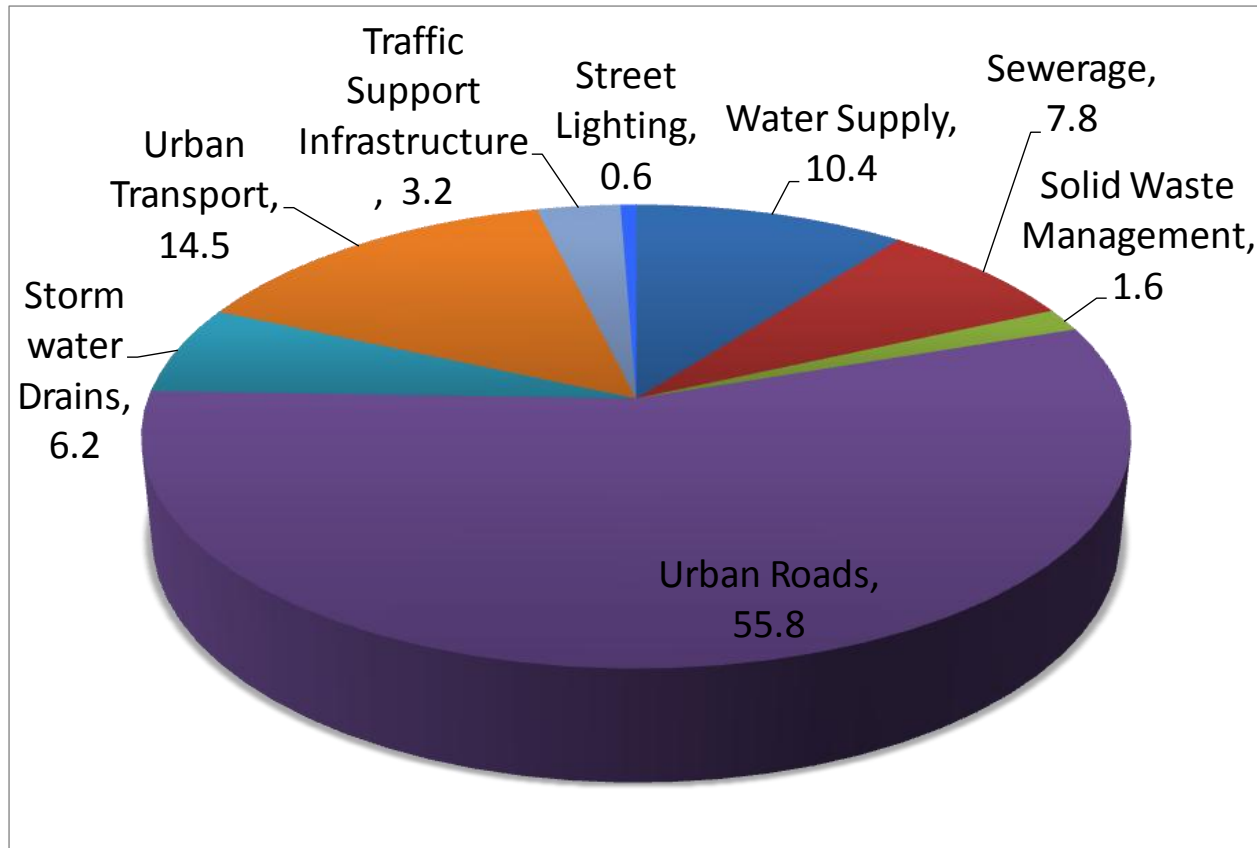
Estimation of investment needed II

- GOI appointed HPEC in May 2008 with Dr. Isher Ahluwalia as chairperson
 - Estimation of demand for urban infrastructural services 2008-20
 - Estimation of investment requirement for urban infrastructural services including O&M
 - Suggest options for financing these investment requirements
- Report submitted in April 2011
- HPEC Estimates for 20 year period (2012-13 to 2031-32)
 - Capital: Rs 39.2 lakh cr
 - Revenue: Rs 19.4 lakh cr

Investment Estimates for 8 Sectors

Sector	Total (Rs Cr at 2009-10 prices)	%
Water Supply	3,20,908	10.4
Sewerage	2,42,688	7.8
Solid Waste Management	48,582	1.6
Urban Roads	17,28,941	55.8
Storm water Drains	1,91,031	6.2
Urban Transport	4,49,426	14.5
Traffic Support Infrastructure	97,985	3.2
Street Lighting	18,580	0.6
TOTAL	30,98,141	100.0

Relative shares of sectors



Financing of urban infrastructure

- ULB own funds
- State Government
- Central Government
- Private Sector (PPP, pooled finance, land based instruments)

ULB resources

- Among the weakest ULBs in the world in terms of financial powers
- Low capacity to raise resources
 - Borrowing requires state government's approval
 - Precarious state of finances
 - Poor governance
 - Unable to levy & recover adequate user charges
- Low financial autonomy
- Tax bases narrow, inflexible

Improvement measures

- Strengthen 'own' sources of revenue
- Predictable, formula based devolution from State's revenue receipts
- Other scheme based transfers from Centre & State
- Help ULBs to
 - leverage own resources to incur debt
 - access new forms of financing thro PPP
 - use land as a resource e.g. FSI, betterment levy, impact fee,

Framework for urban water supply

- Investigation, preparation and execution of schemes for creation of water supply capacity and augmentation thereof in respect of urban areas is the clear responsibility of the Board
- Once created their O & M, collection of water charges etc. is generally the responsibility of the ULBs
- As per the Acts, both the ULBs, and the Board have been given powers as regards O&M of the schemes and the state government the discretion to decide as to whom this should be entrusted

Major problems in urban water supply I

- Inadequate data for planning and outcome monitoring
- Lack of role & institutional clarity leading to lack of accountability
- Lack of mechanism for holistic planning & technical weaknesses in planning
- Inadequate managerial capacity of ULBs
- Capital inadequacy & unsatisfactory system of allocation of available capital
- Inadequate O&M expenditure and poor O&M practices
- Uneconomic tariff levels

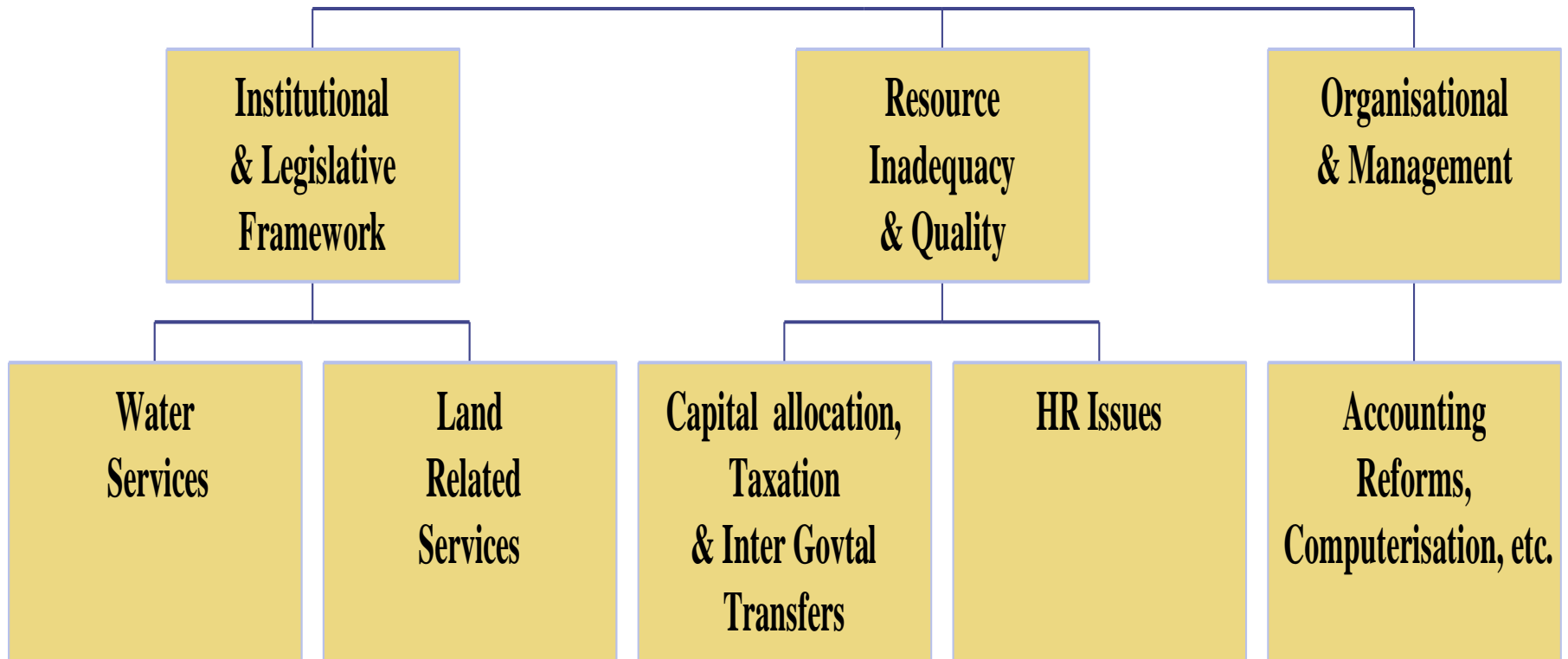
Major problems in urban water supply II

- Mandya city has an installed bulk water supply capacity of 31 MLD but is at present using only 19.5 MLD
- The city's current population is 1,25,000, implying about 156 LPCD available for the *entire population*
- As per ULB records, the city has in all, about 8000 official water connections & 4000 plus illegal connections
- These 12000 entities should then be receiving nearly 320 LPCD
- Most parts of the city however get water for only one hour a day

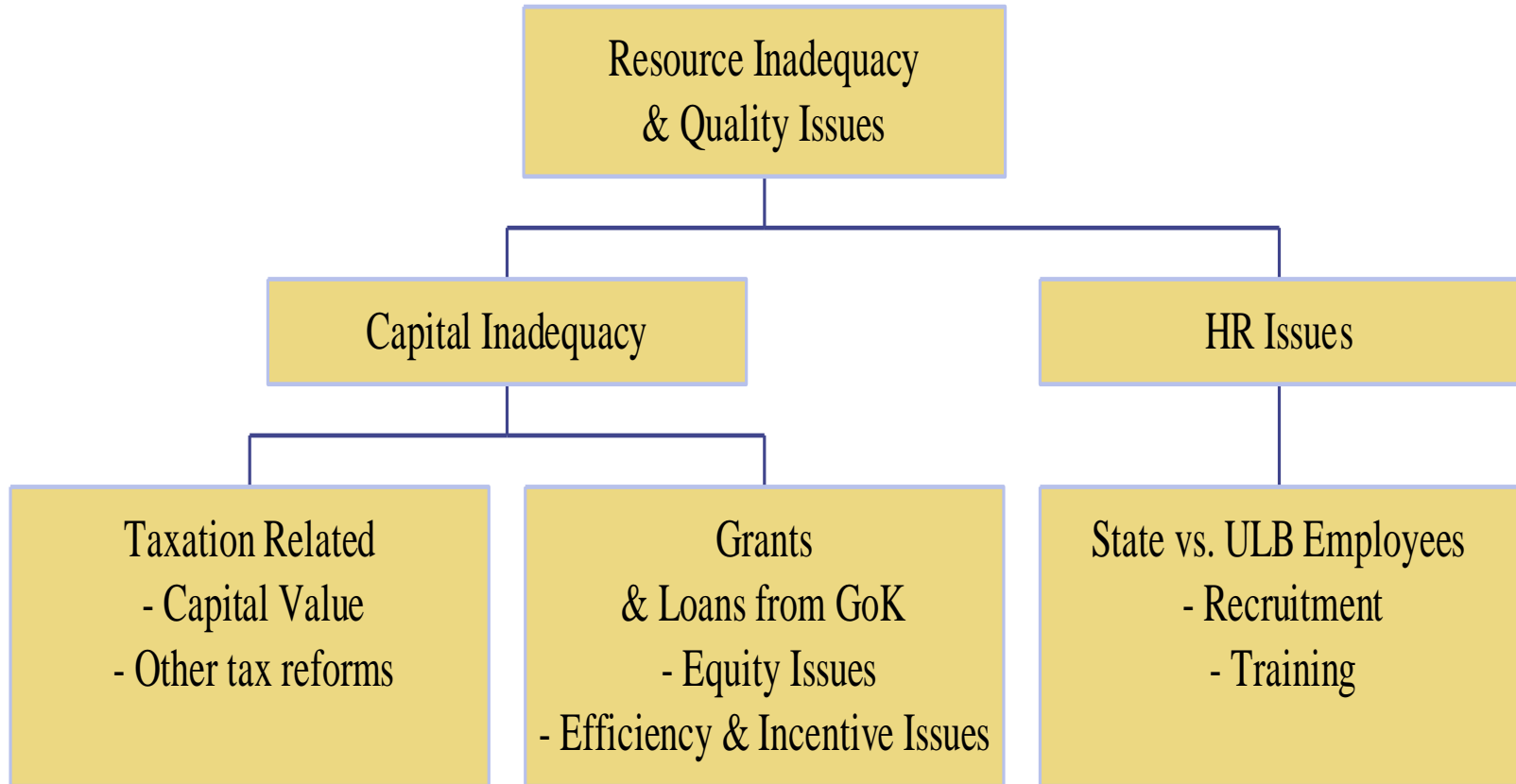
General & common issues

- Sub-optimal outcomes in provision of services needs to be seen in the context of a larger governance problem of the public system of which ULBs are a part
 - Public sector governance reform
 - Municipal sector reform for greater local accountability
- Institutional, organizational and legal complexity & loading of conflicting roles in one agency
 - Split responsibility of service provision
 - Unbundling of policy formulation, regulation & service provision
 - Capacity & HR development

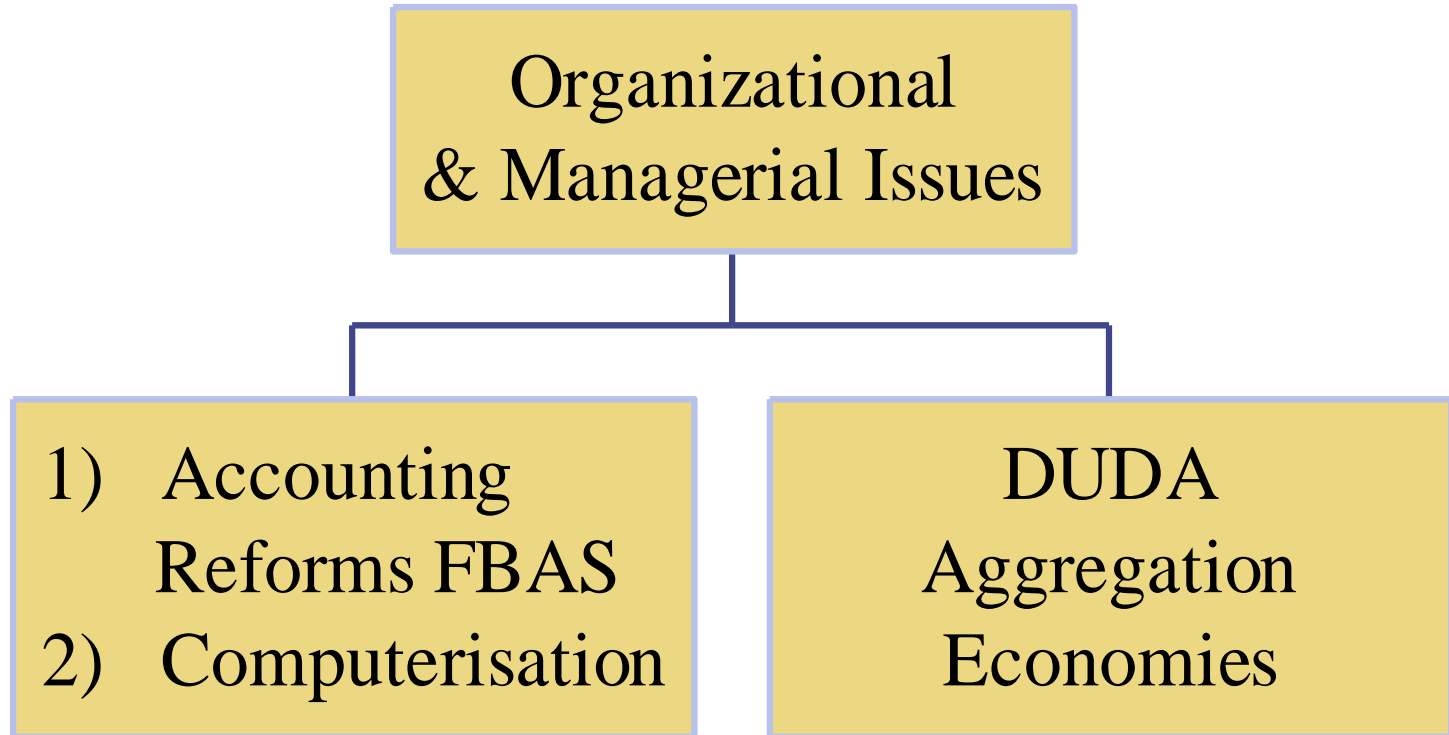
Reasons for poor ULB services



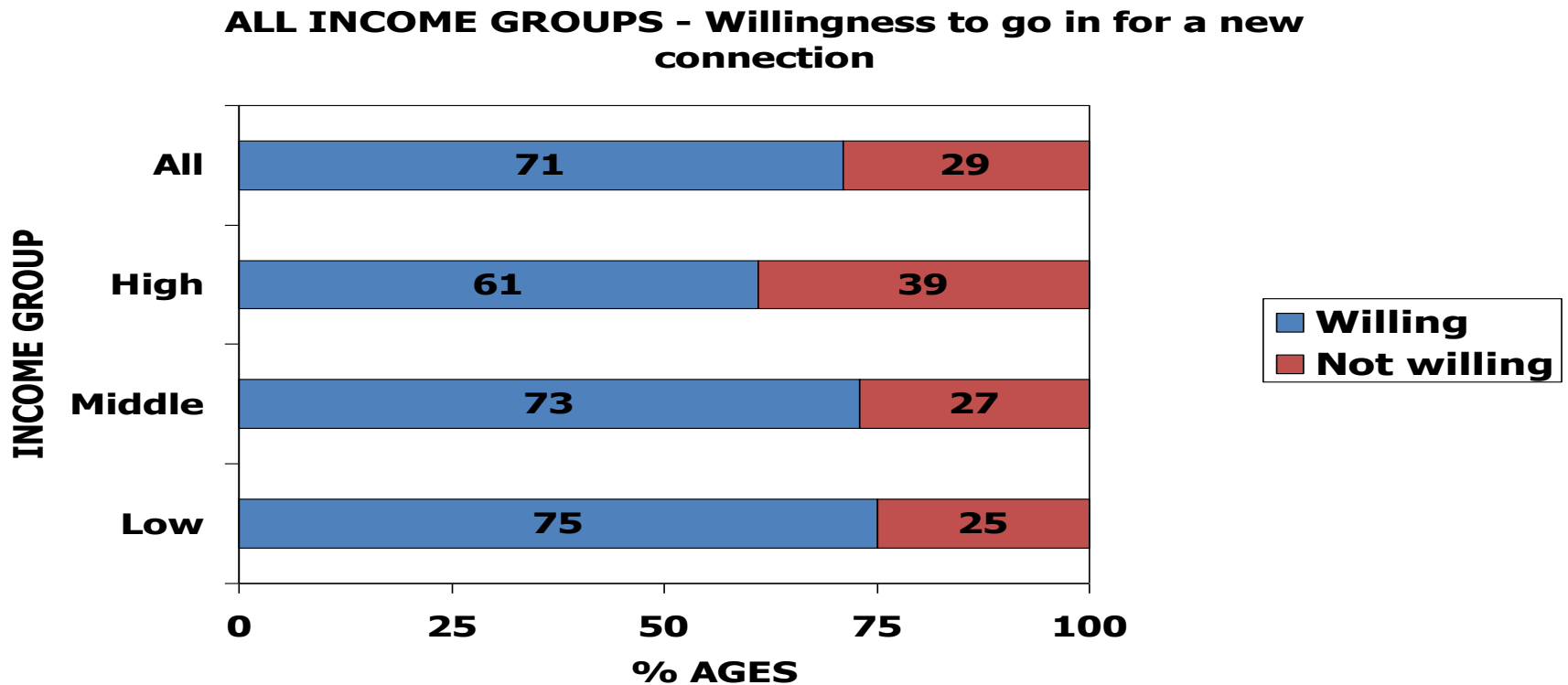
Resource issues



Organizational & management issues



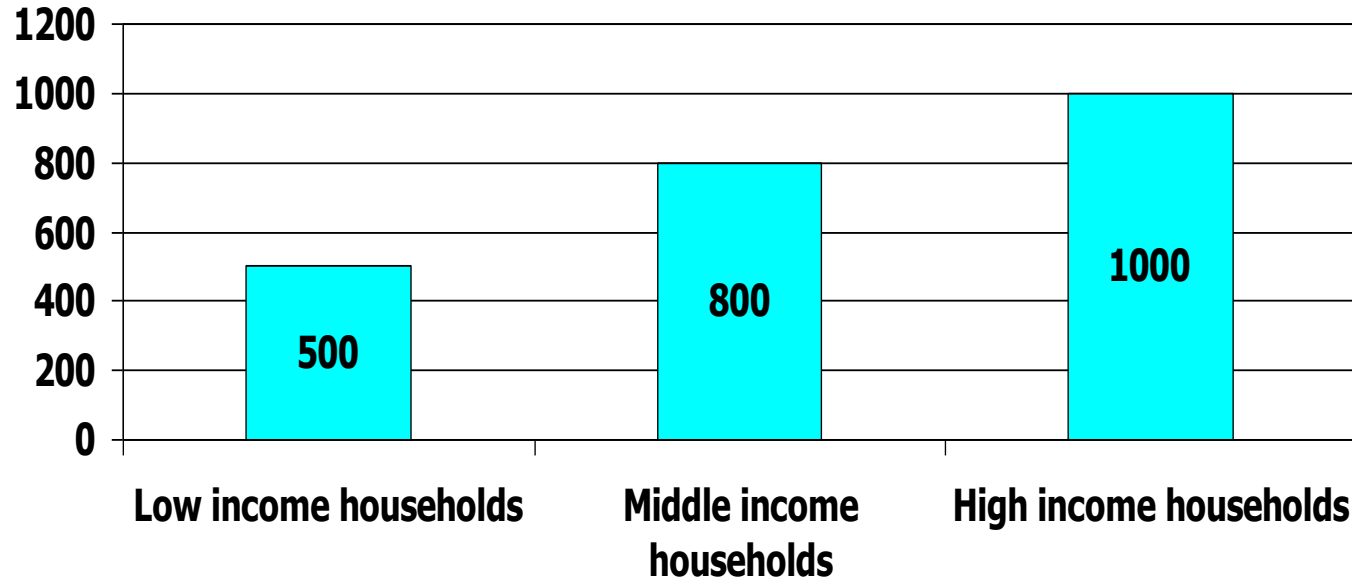
Willingness to Accept/Avail New Connection



- Own source dependence – of 214 respondents willing to take up new connection, only 3 would continue use of old source.
- Willingness to accept new connection may be taken as accurate representation of those willing to give up existing source with improved water supply

WTP Connection charges

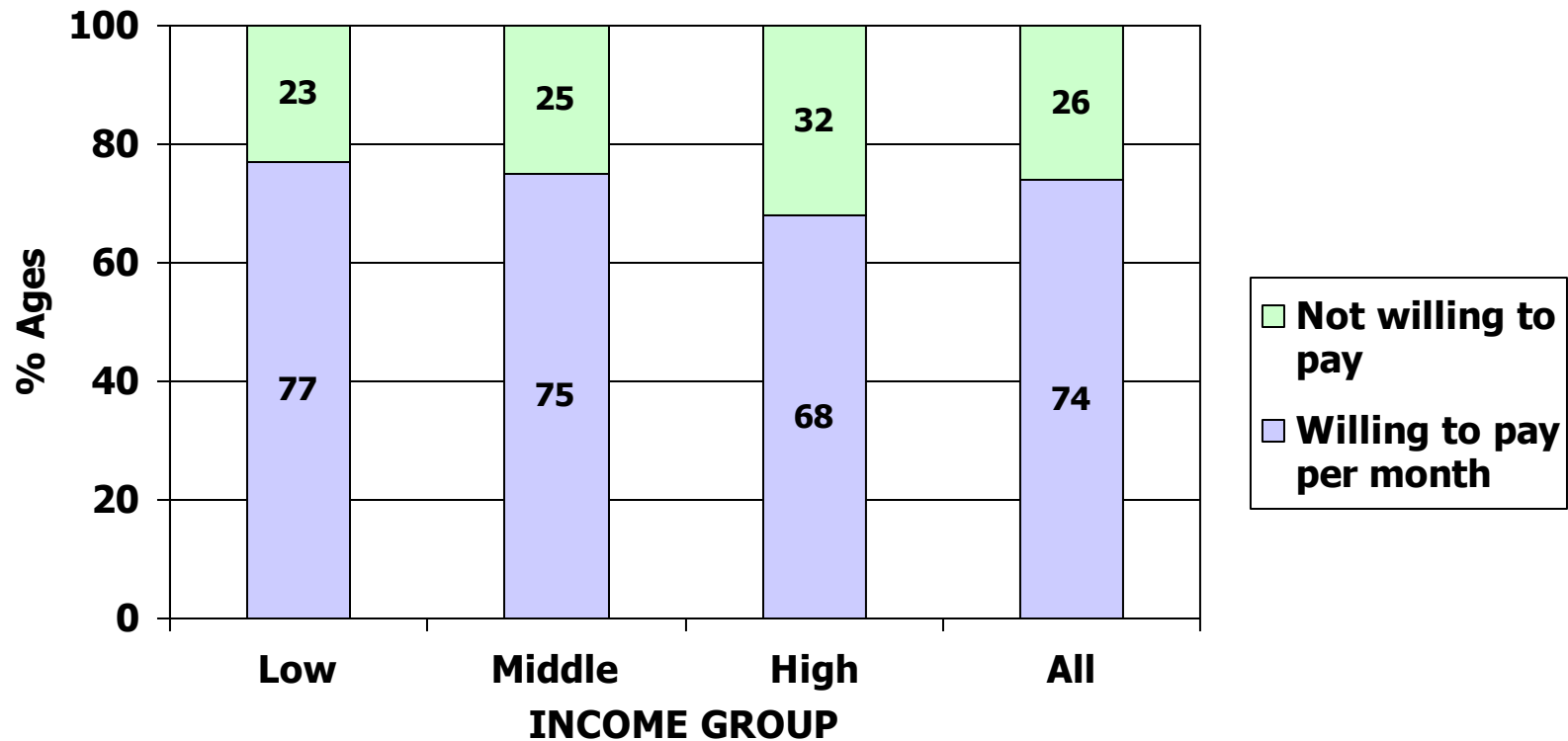
Median WTP - Connection Charge (Rs.)



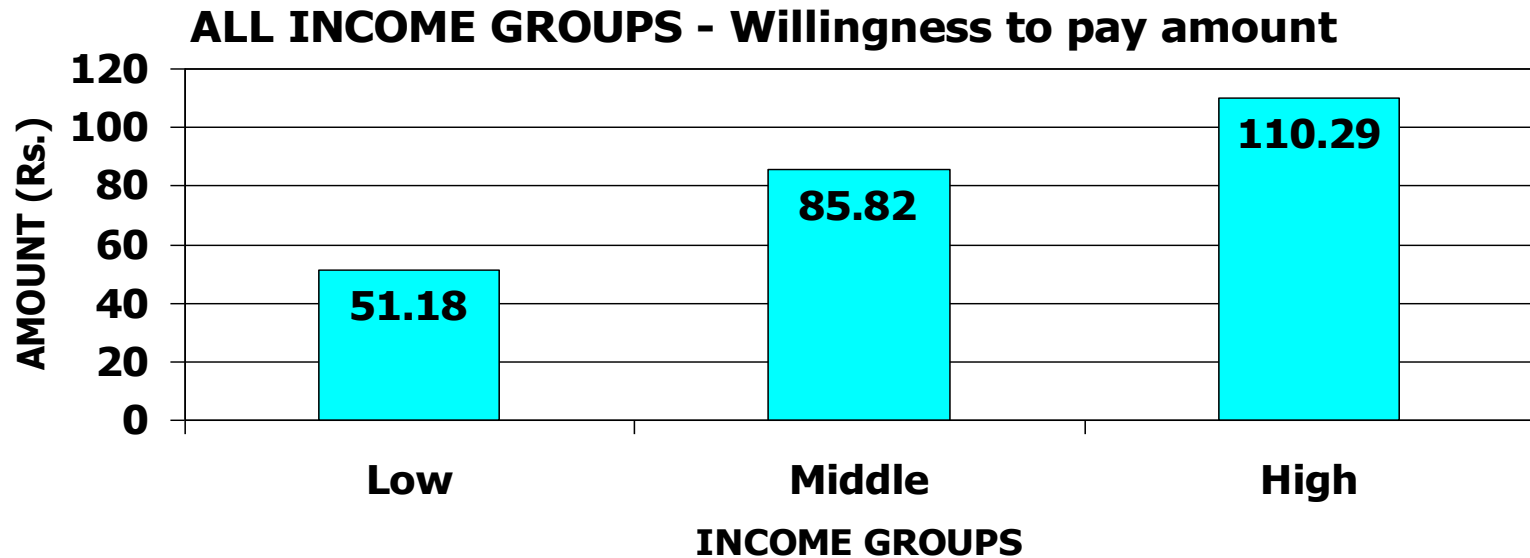
- No. of HHs (all categories willing to avail of new connections: 8457
- Estimated revenue from connection charges: Rs.65.71 lakhs (underestimate – No. of takers could increase on successful implementation of project & higher LOS)

WTP – Monthly Charges

ALL INCOME GROUPS - Willingness to pay monthly charges for water supply



WTP – Monthly chages



- 77% Low Income HHs – median WTP Rs. 50
- 65% Middle Income & 39% High Income HHs - median WTP Rs. 100
- No. of HHs WTP monthly charges (Rs. 50 / 100) – 8457
- Total annual revenue: Rs. 92.38 lakhs @ 100% collection efficiency
- Sensitivity analysis carried out for differing collection efficiencies to arrive at scenarios for annual revenues

Sustainability

- The study clearly indicates that the capital cost of Rs 3578 lakh is non recoverable with the current levels of willingness to pay
- User charges would have to be increased beyond socially acceptable levels to recover charges for both flat rates and metered rates
- Scheme would be financially feasible if only O & M Charges were considered for recovery
- The total capital cost supportable at the given rate of interest (13%) for 25 years is Rs. 19 crore for a no profit no loss scenario (revenue expenditure over entire period = revenue income)
 - A 7 % increase in user charges per annum has been assumed in line with annual inflation rates
 - 6 % annual increase in O & M charges has been considered
 - Collection efficiency of 75 % has been considered

GBWASP- innovative financing

Greater Bangalore Water & Sanitation Project

Area Profile

Eight cities around Bangalore

220 sq kms. area

1.20 mn population

Hub of IT, BT etc. and high capacity to pay
20 lpcd of water supplied at present

Ground water as source

Poor quality and irregular

Cost of project

For water supply	US\$ 74 mn.
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For sewerage	US\$ 70 mn.
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Total	US\$ 144 mn.
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GBWASP- innovative financing

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Financial structuring

Water supply

Citizen Contribution	US\$ 26 mn.(35%)
Government Grants	US\$ 16 mn. (22%)
Municipal Bonds	US\$ 22 mn. (30%)
Subordinated Loans	US\$ 10 mn. (13%)
Total	US\$ 74 mn.

Sewerage

Government grants	US\$ 17 mn. (25%)
External Assistance	US\$ 52 mn. (75%)
Total	US\$ 70 mn.

Debt/Equity ratio for water supply project is 0.76.

GBWASP- innovative financing

(contd...)

■ Citizen Participation

- Detailed assessment of demand, coping costs and willingness to pay for improved services done
- MOU with JANAAGRAHA (September 04) for structured participation
- US\$ 26 mn. to be collected by upfront (Jan.05) as beneficiary capital contribution assuming 50% coverage over a household size of over 200000
- Citizen committees at ward/ULB/state levels to play role in implementation in order to monitor quality and time schedules in construction
- Over 1000 citizens to participate as volunteers

GBWASP- innovative financing

(contd...)

- Municipal Bonds
 - KUIDFC to pool the borrowing requirements of 8 ULBs & raise US\$22mn. without government guarantee from market for 15 years maturity
 - Rated as AA (investment grade) by ICRA a recognized credit rating agency (likely to be upgraded to AAA)
 - Credit enhancement
 - Upfront cash collateral 25%
 - Guarantee (50%) by USAID
 - 50% likely by a FI
 - Escrow- 40% of revenue surplus of 8 ULBs
 - State intercept in the event of failure
 - DSCR of 1.50

GBWASP-innovative financing

(contd...)

■ PSP

- Upon completion of construction water supply O&M (and possibly under ground drainage network) to be done by a private operator through a management contract
- STPs O&M to be outsourced
- IFC likely to be transaction adviser for appointing the Management Contractor
- Legal framework to be amended

Urban infrastructure

- Thanks