Settlement Geography - India

Urban developments

Rural settlements topic done in Settlement Geog P1.

Defn of urban place:

2011 census - (1) All places w/ municipality, cantonment board, corp or notified town area committe
STATUTORY TOWNS - 4041 (2011)

OR

(i) a min of 5000 popu, 75% male working in non agri & density > 400/km²
CENSUS TOWNS - (3892)

outgrowth - unit such as village, hamlet, block outside the ~~urban~~ statutory limits of a town but in the revenue limits of villages contiguous to the town. (Eg) Military camp, Univ campus, railway colony - 981 (2011)

Urban agglomeration - continuous urban spread consisting of a town & its adjoining urban outgrowths or two or more contiguous towns w/ its outgrowths. - 474 (2011)

Criteria :- At least one town in UA should be statutory town
- Total popu of all constituents of urban agglomeration > 20000.

Metropolitan - > 10L popu. 53

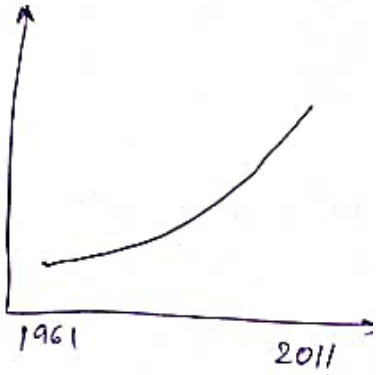
class I > 100,000
II - 50k - 1L
III - 20k - 50k
IV - 10k - 20k
V - 5k - 10k
VI < 5000

Urban growth:

(1) Pd of slow urban growth (before 1931)
1881 - 9.3% ⟶ 1931 - 12% . CR of 2.69%
slow urbanisatn due to disasters, epidemics, High Mortality

(2) Pd of med growth (1931-61)
1931 - 12%, 3.5 Cr to 1961 - 18%, 8 Cr.
growth due to industrial towns, capital cities, WWII, partitn
1951-61 - decade of inactive urbanisatn due t in urban centres (declassificatn)

(3) Pd of rapid growth (1961 - 2011)
1961 - 18%, 8 Cr ⟶ 2011 - 31%, 37.7 Cr
↓ 2657 towns ↓ 7933 towns
Migratn.

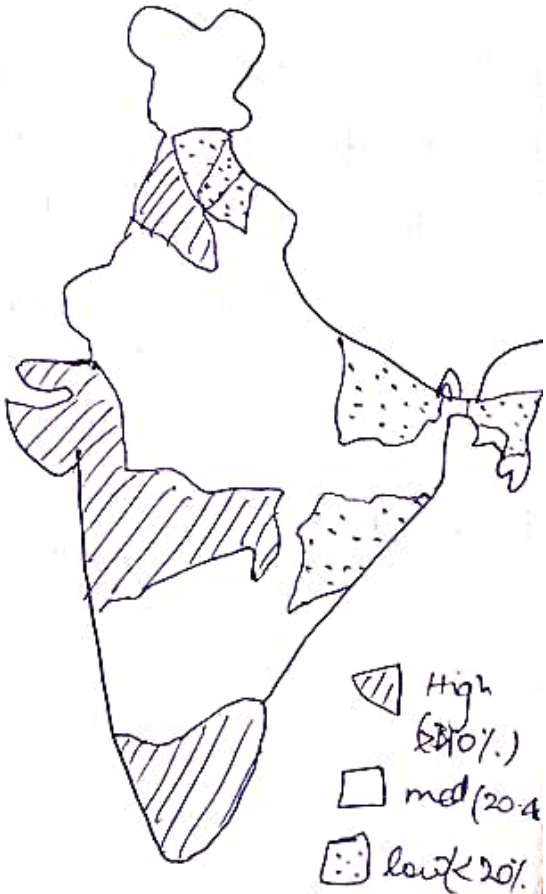


Future - >50% urbanisatn by 2050. Add 40 Cr to urban

Spatial patterns:

Goa (62%) > Miz (51%)
TN (48%), KL (48%), MH (45%), GJ (43%)
PB (38%), KA (38%), HR, WB, AP

Least urbanised → HP (10%), Bi (11%), UP (20%)
As (74%), Od (17%), Si, Arun, Naga



no. of towns is in TN (14%. of Indian) > UP > WB > MH

Net addn of 2774 towns in 2001-11 decade

High urbanisatn growth rates in Si, Nagp, KI, Tri, Hary

Spatial pattern of urban growth: 1st phase - till 1991 - devpd states - low devdpg - high due to govt sponsored infra, urban industrial dispersal prog, transfer of funds to local bodies.

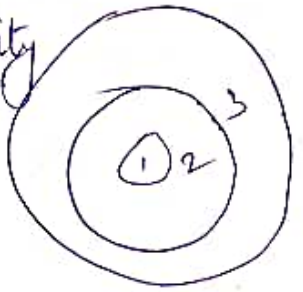
2nd phase - After 1991 - high growth in devpd states due to conc^{n} of devpt activities in these states

Morphology of Indian cities

Intro: Indian urbanisatn passed through ancient, medieval, British & post indpce → complexities due to each

(1) Bazaar based cities - recently origin from mkts, temple, admin, agri follow Concentric zone.

Zone 1: Chowk, main commercial activity retail, wholesale + residential one 1st floor



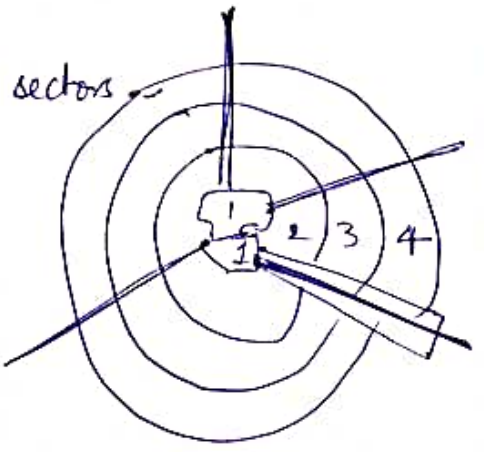
Zone 2: Zone of transitn:
- mixed land use of retail, wholesale and rich ppl

Zone 3: Zone of poor popn:

haphazard devpt based on transportatn, econ devpt, demography
roads are meandering, lack of amenities

(2) Colonial based city model:

Zone 1 - 2 CBDs | mix of concentric zone & sectors



Old
↓
wholesale, trading retail
traffic jams, poor roads

new
↓
multistoreyed
specialised land use
only commercial

Zone 2: Zone of working man houses
- slums & squatter, work in CBD
- recently, segregat of rich & poor sectors

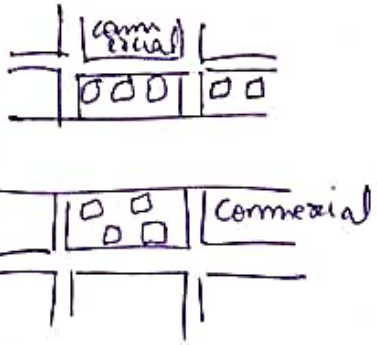
Zone 3: MIG, interspersed apts.
- presence of urban village due to urban sprawl & RUF

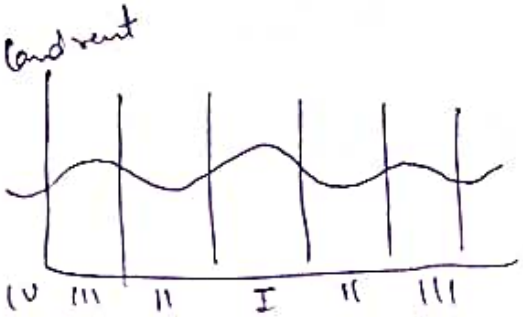
Zone 4 - Similar to Zone 5 of Burgess.
new unplanned colonies.
ppt planned colonies (grid)
Presence of open country. Green belt

3) Planned cities

- grid pattern (⊥) for smooth traffic
- multiple nuclei (each nuclei has its own commercial, hospital, school)

Chandigarh, Dispur, New Bhopal





Correlate urban problems due to morphology

Gentrification: encroachment of rich ppl into areas of poor ppl (Zone 2)

Criticized by Marxist/Radical

Favoured by other & economists as central cities are zone of econ decpt & to become global city, econ instn are needed in city centre.
Also would solve the problems of Zone 2 by relocating poor to well off outward areas.

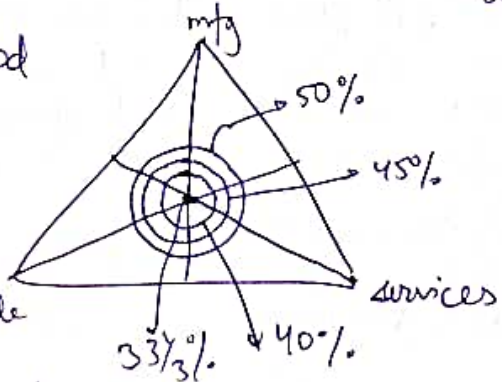
Functional Classification of Indian cities

Earliest class^n by Ambirtal using 1961 census for 67 1L cities
He used the dominant fn approach.

Qazi Ahmed used multifnal attempt to classify 1 L+ cities in 1971.
discarded as var used by him didn't conform to Indian
Onkar Singh used fnctional & specialisatn index. Omprakash Singh used
Nelson method to classify UP

Ashok Nitra : Multifnal approach, 1961 & 71 census.
7 activities grouped in 3 ← m/fg
← trade & Transport
← Service

Used triangulatn method



(1) Pre dominant fn highly accentuated outside 50% circle
(2) Pre dominant fn accentuated → 45% - 50%
(3) fn moderately diversified → ~~33⅓~~ 40% - 45%
(4) " highly " → 33⅓ - 40%.
(5) No fnal specialisatn → 33⅓%

However, can't do for 7 fns.

MK Jain Classificatn - 5 major categories

- Primary acti - agri, labour, mining, household acti
- Industrial acti - mfg
- Trade & commerce
- Transp storage Comm
- Services

(1) Monofnal towns - any 1 of the 5 acti employ 40% or more workforce

(2) Bifnal towns - No sector >40%. but 2 sector >60%.

(3) Multifnal towns - NOTA

Indian Classificatn based on all:

(1) Admin cities

(2) Prodn centres - Atmd, Jamshed, Durgapur, Rourkela, Bhilai

(3) Transport - (1) where rail starts, rail ends - Kathgodam, Kalka, Rishikesh
(2) where coast ends → Mumbai, Goa, Chennai, Kandla
(3) where inland transport converges - Itarsi, Agra, DDU

(4) Trade centre - Mumbai, Kol, Chen

(5) Mining - Singrauli, Jharia, Raniganj, Digboi

(6) Defence - Ambala, Jalandhar, Jamnagar, Udhampur, Meerut

(7) Edu - Roorkee, Pilani, Varanasi

(8) Religious - Ayodhya, Hardwar, Madurai, Rishikesh, Mathura, Bodhgaya

(9) Tourist - Dharamshala, Manali, Darjeeling, Shimla, Mahabaleshwar

(10) Residential - satellite towns → Panchkula, Mohali

(11) Multifnal - Metros.

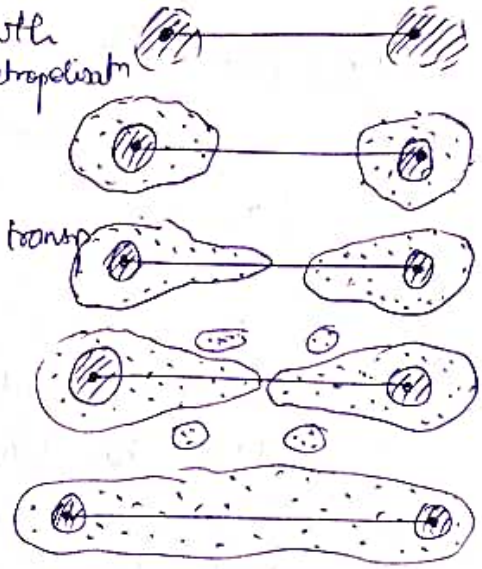
Conurbation & Metropolitan region

Conurbat - Patrick Geddes 'Cities in Evolution'

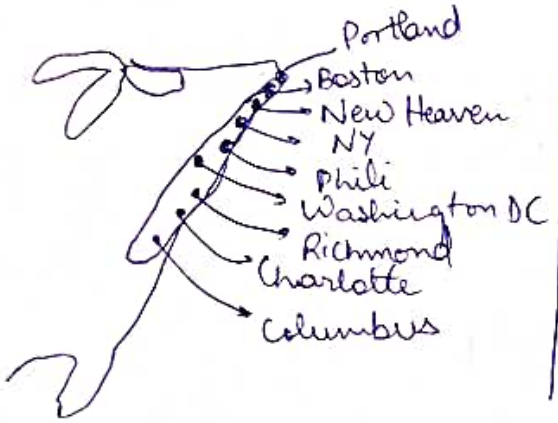
↳ continuously built up area formed by merger of several originally separate sprawling cities

Process of evolut

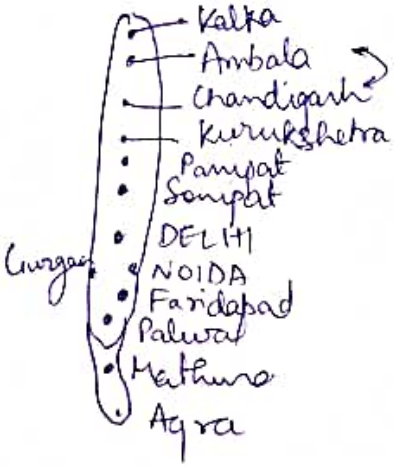
CP industrializat & growth
↓
agglomerat, primate, polarisat, metropolisat
↓
urban sprawl starts
↓
ribbon sprawl due to transp
↓
jogging & merge



Conurbat are part of urban ecology, fully integrated w/ megalopolis. horiz urban sprawl, leap frog, massive building, hypermkts, residential colonies



Rhine - Ruhr



Metropolitan - 1Mn+

Areas of dominance - Delhi - Y&K, HP, UK, Pb, HR, WUP, Raj, MP (North)
Kolkata - All NE, Bi, WB, JH, OD, EUP, CH
Chennai - TN, PY, KA, TL, AP, SCH, SOD
Mumbai - GJ, MH, MP, GOA

Prakasa Rao: Metro cities are char by large scale consumpt^n and large quantum of flow of ppl, goods, services, info.

1901 - Kol
1911 - Mum
1951 - Del, Che, Hyd
1961 - Amd, Blr
1971 - Kan, Poona
1981 - Luck, Nag, Jai
2011 - 53 - Surat, Patna, Ahmedabad, Indore, Coim, Kochi, Kozhi, Bhop, Thrissur, Vadod, Agra, Virag, Malappuram, Thiru, Kannur, Ludhi, Nasik, Vijay, Madurai, Vara, Meerut, Rajk, Farida, Jamshed, Srina, Jabal, Asansol, Allah, Dhanbad, Vasai, Aurang, Amrit, Jodh, Ranchi, Raipur, Kollam, Gwalior, Durg, Chandi, Trichy, Kota

Urban Sprawl

US- physical pattern of low density expansion of large urban areas into surrounding countryside. Common in industrial, primate and coastal city
- patchy, scattered, leap frog

Reasons
- popu growth (migrat & natural)
- devpt of transp
- econ growth, rising incomes → ppl buy land
- white flight

Types
- low density sprawl
- ribbon
- leap frog

US in India
- fast in Class I cities
- like UK type (horiz) except Mumbai

Consequences
1. Unplanned growth
2. Farmers suffer -ve externalities & encroachments
3. Loss of community spirit & value
4. Longer commuting time, less leisure time (social)
5. diffi to provide infra like MRTS (econ)
6. envt effects → destruct of forests, wildlife, land aesthetic, air quality
7. admin problem - diffi jurisdict & overlapping
8. Gen of slums, squatter

Positives
1. Reduce burden in core
2. reduct in gap b/w rich & poor → reduce social tensn
3. housing opport to slum dwellers, immigr, minorities

Urban Agglomerat^n - urban landscape where cities tend to
together & constitute a contiguous built up area.
- core periphery relat^n

Urban cluster - tendency of cities to locate within 75-100 km
from major city. Delhi cluster - 11 cities
Dhanbad cluster - Bokaro, Durgapur, Ranigarj, Or

Urban shadow - absence of city or town in 75 km radius
Jai, Nag, Hyd

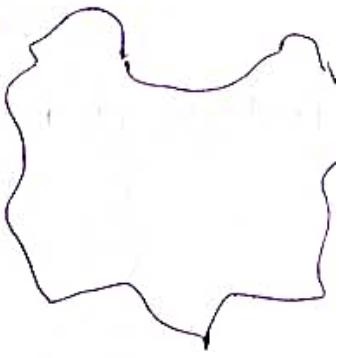
Urban dispersal - large agri areas support urbanisat^n at low le
hence large no. of urban towns develop but less lar
cities. Eg. IGP, Vidharba, Malwa. Also equal distri of
small villages & towns

Urbanisat^n as geog < micro urbanisat^n
metropolizat^n
Counter urbanisat^n / sub urbanisat^n

" as social process < Aryanisat^n
Persianisat^n
Westernisat^n

" econ < Primary
2°
3°

CASE STUDY of Pune:
- Initial core has been Kasaba Peth, Kothrud, Aundh, Hadapsar
- Urban sprawl to Baner, Balewadi, Pashan
- Fringe areas of Sanganwadi, Aundh, Karvenagar, Dhankawadi have experienced signif demog change & high class residential areas & allied services

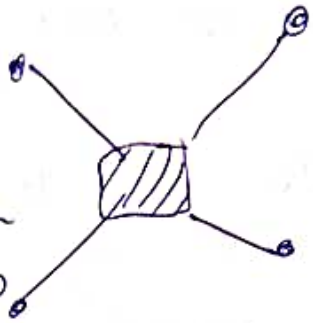


Satellite towns

concept derived from Garden cities which were ancilliary suburbs surrounding the megacities. These were location of some industries & residences of workers, connected through fast transportatn. Rapid growth after WWII.

In dvpd world, post WWII only consist of high class residential

Eg Hover, dover ST of ~~Toronto~~ London Hamilton, Oshava, Guelph of Toronto



Delhi - Gurgaon, NOIDA, Faridabad
Mum - Navi Mumbai, Kalyan - dombivali
Kolkata - Rajarhat

In India → unplanned emergence of ST from secondary cities

Transport satellite town → Eg Puri - Khurda road, wattare of Vizag
Ent - industries shifted to satellite town Eg. New London near Boston

dormitory Satellite town - eg. Loni in Delhi
Industrial " " - Ghaziabad "
Admin " - Gandhinagar
Village turned " - Bahadurgarh Delhi

Slums & problems

Slums: residential areas where dwellings are unfit for human habitation bcoz they are dilapidated, cramped, poorly ventilated & unclean.

- lack social integrat w/ city & drug abuse, alcohol, crime has sharp socio-econ stratificatn

Squatter settlements - temporary and scattered in many parts specially outer zones where urban areas merge w/ rur
- consist of makeshift dwellings & lack essential services
- illegality of land ownership → main char

High slum popu → Mum(52L), Hyd(23L), Kolk(23L), Delhi(16L)
17.4%. hh → slums (28%) (30%.) (16%.)

Causes: rapid growth, unemploy, mass migratn of unskilled, highland shortage of housing

State distri - AP, TL, MH, CH, MP, OD, WB → high
(36%.)

Positive picture abt slums - 74%. access to tap water
90%. " elec
70%. own their own houses

Slums - Illegal, face evictn
small houses, one room shared by all
construct by poor materials
open defecatn, poor ventilatn
shortage of health & edu
low sex ratio

Slum devpt prog in India: (1) Slum areas (improvement & Clearance) Act, 1956
(2) Slum clearance boards, slum rehab Auth in states GJ, MH
(3) Scheme for Envtal improvement of Urban Slums in 1972
(4) Natal Slum devpt prog. 1996. upgrade slum amenities
(5) Valmiki Ambedkar Awas Yojana (VAMBAY) - construct & upgrade dwelling units & healthy envt
(6) All merged to form Integrated Housing & Slum devpt prog (IHSDP) in 2005
(7) Rajiv Awas Yojana (now PMAY) → credit incentive, formalisatn of slums, community partn, PPP constructn, Housing for All, rehab of dwellers

Town Planning

- exercise of promoting orderly devpt of city along rational lines w/ due regards of health, amenity, convenience, industrial, comm devpt

Principles of town planning

(1) Provision for separate areas for industries: indus^{n} ⊆ urbanis^{n}
correct locatn of industries

(2) Division into frnal zones: Industrial, residential, admin etc
for close interrelatnship & division of land. (complimentary)

(3) Transport - RTS, local train, bus, decongested road, flyovers, underpass, footpaths, cycling track

(4) Green spaces & belts

(5) Public places - community halls, parks, monuments, religious

(6) Stratificatn of residential areas into upper, middle, lower

(7) Proper land use as designed

(8) Health, hygiene, sanitation

(9) Rehab, constructn, redevpt of old towns, old buildings

(10) Urban decentralisatn - satellite towns

(11) Slums, squatter - rehab, basic amenities

(12) develop city centre - CBD to decongest

(13) Provision for long term growth, 10-20 yrs plan

Indian town planning

Chandigarh, Bhubneshwar, dispur, Gandhinagar - Admin
Rourkela, Bhilai, Durgapur, Bokaro - industrial

CASE STUDY of Chandigarh

- mnt city, 10L popu, 2011
- rect, chequerboard, grid
- original → 3642 ha b/w patiali in west & sukhna-cho in NE.
- 30 sectors, 24 resid, 6 for other purpose
- 17-CBD. 14 → univ of Punjab, 11, 12-edu instit
- admin, govt building in North industries in east southern part for future expansion

Problems & remedies

Smart City: use of ICT, IOT, e-gov, real time data, digital services, better std of living

Components ① Adeq water supply ② Assured elec ③ Sanitatn. SWM
④ urban mobility & trans ⑤ Afford housing ⑥ IT connectivity, digitalisatn
⑦ e-gov, citizen partn ⑧ Sustainable envt ⑨ Safety, security, edu, health
⑩ Smart soln, innovatn

CASE STUDY of Dehradun Smart City Ltd (DSCL) during COVID:
- utilised integrated control centre & command for surveillance of COVID patients
- worked w/ dist admin to plan & manage
- public awareness campaigns, social media use through variable messaging display

Jal Shakti Abhiyan + JTM + SBM: augment local water resource, recharge existing source, water harvesting, de-salinatn, smart meters, leakage identificatn, water qualitymnt urban waste water reuse, sewage treatment

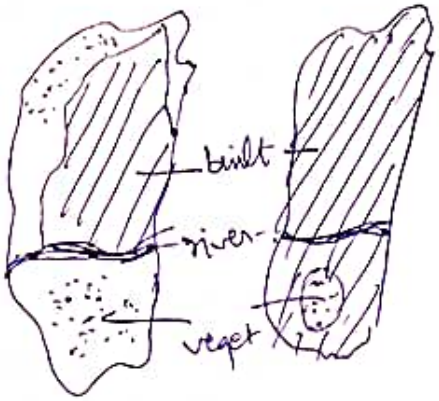
SBM - waste to fuel, recycle, compost, treatment

AMRUT - 500 cities
① Water supply: same as above
② Sewerage - decentralised, network of sewers, treatment plant, recycle, reuse, faecal sludge
③ Urban transport: fleet vessels for inland waterways, BRTS, cycle, pedestrian, parking mgmt
④ Green space & parks
⑤ Capacity building, reforms

... DELHI
growth rate of popu → 5.6% (1980-2011)
share of vehicles → Buses (0.815% ↓), Cars (30% ↑), 2 wheelers (63% ↑), others
- rapid incr in popu & vehicles (crossed 1 Cr), while public transp & roads not grown much, vehicle growth - 50%, road ↑ → 4% b/w 80-2011
- Delhi Metro - length → ___ km, ridership ___ (2019)
- Metro has relieved the pressure & it the best option

CASE STUDY of Land Use change - Chennai

	1988	2018
Built up	31%	85%
Crop land/fallow	11%	0%
Vegetation	15%	5%
waterbodies	6%	3%
Vacant land	36%	7%



CASE STUDY of pollution - DELHI
- continuous incr in vehicles → growth of 50% b/w 1980-2011. (1 Cr)
- industries firing, AC, reqrig for offices.
- tree covers are down to just 110 km² in 2017.
- AQI deteriorating since 1990, crosses 10x the WHO permissible limits in Nov-Dec
- Impact on health, econ, society

CASE STUDY of declining gravater table, AHMEDABAD
- 1970 → 87% consumpⁿ from Gwater
- 2011 - 10% " " "

due to rapid decline in avbility & huge demand due to high per capita consumpⁿ, industries of >100 Cr L/day
Present source of water is Sardar Sarovar Dam

CASE STUDY of Ecological restoratn, Sustainable urbanisatn. Kaikondrahalli lake, BLR
- mapping of lake to stop illegal encroachment
- diversion of sewage inflow, desiltatn & deweeding, incr storage capacity, affor
- attracted birds, recreatnal spots

Sustainable sanitatn:

(1) 75% of freshwater used for drinking is contaminated w/ sewage.
(2) 90% of diarrhoeal child deaths due to contaminated water, unhygienic, sanitatn
(3) MoHUA implementing SBM(U), AMRUT, Smart Cities, NERUDP for urban sanit
(4) ODF+ → not a single person found urinating/defecating in public. Public toilets are fnal & well maintained. Toilets in every house, Community, Public toilets present at appropriate dist
(5) ODF++ - complete fecal sludge mgmt, emptying septic tanks, safe transportatn & processing of community toilets
(6) Water Plus - no untreated waste water into water bodies
(7) Leverage tech - (Eg) Google Maps toilets, swachhta app. real time data capture monitoring, Swachh March for community partn, behav change
(8) Case from Mizoram - B/w 2008-14 acc to India Health Report. MIZO witnessed 13% decline in stunting & 5% decline in wasting due to sanitatn