



Kumbh Mela at Prayagraj'19

CSE TEAM'S KUMBH VISIT FEB'19 AND ANALYSIS OF THE EVENT



Background: Significance of Kumbh

'Intangible Cultural Heritage of Humanity'

- Kumbh held every 12 years; Ardh Kumbh every 6 years
- **Religious significance** - Bathing during Kumbh '**Clean all Sins**'
- World's Largest Religious Gathering.
- **120 mn** people had visited previous Kumbh (2013).
- This year **240 mn** people visited over a period of **55 days**. (~18% of country population)
- Av **2 – 2.5 million** people bathed every day.
- During **6 main bathing days** crowd reached around **20 - 40 mn**. (*i.e. almost 40 times the existing population of Pryagraj or Allahabad*)



Kumbh - Challenges for Management

Sudden Increase population density

(average daily floating population ~2-3 times the city population)

In addition to **Crowd Management, Safety, Security** etc, Sanitation / Public Health is a big challenge:

- Facilitating **Water, Sanitation & Hygienic**
- Controlling - **Open Defecation & Urination**
- Controlling - **Stagnant water** (including waste water) causing mosquito breeding Indiscriminate **garbage disposal**, choking drains & nullahs
- Increase in **River Pollution**.
- **Threat of outbreaks like Cholera.**





Past Outbreaks in Kumbh

- **First ever Cholera Epidemic** in 1817 believed by some to have started at Kumbh Mela.
- Various Instances public health issues reported in past Kumbh Melas:

Reasons attributed

- Reduced **Hygienic conditions and exposure to pathogens due to** exceptionally larger proportion of Bathers in the River
- Drinking of water from polluted sources (**People not able to distinguish between potable and non-potable water**)
- Traditional beliefs regarding drinking Ganga water / include storing of water for relatives back home.





Prayagraj Kumbh 2019 - Swachh Kumbh!

- ‘**Kumbh Mela**’ a prestige event for the Country.
- One of the most hyped and promoted Kumbh (even though it's an ardh Kumbh)
- ‘**Most Expensive Kumbh ever**’ – budget inc. from INR 1300Cr to INR 4200Cr (**INR 42 Billion**)
- Rs 234 crores (~6%) has been allocated for **sanitation**.
- SDG-6 ‘Clean Water & Sanitation’ by 2030 – efforts reflected in the Kumbh Mela





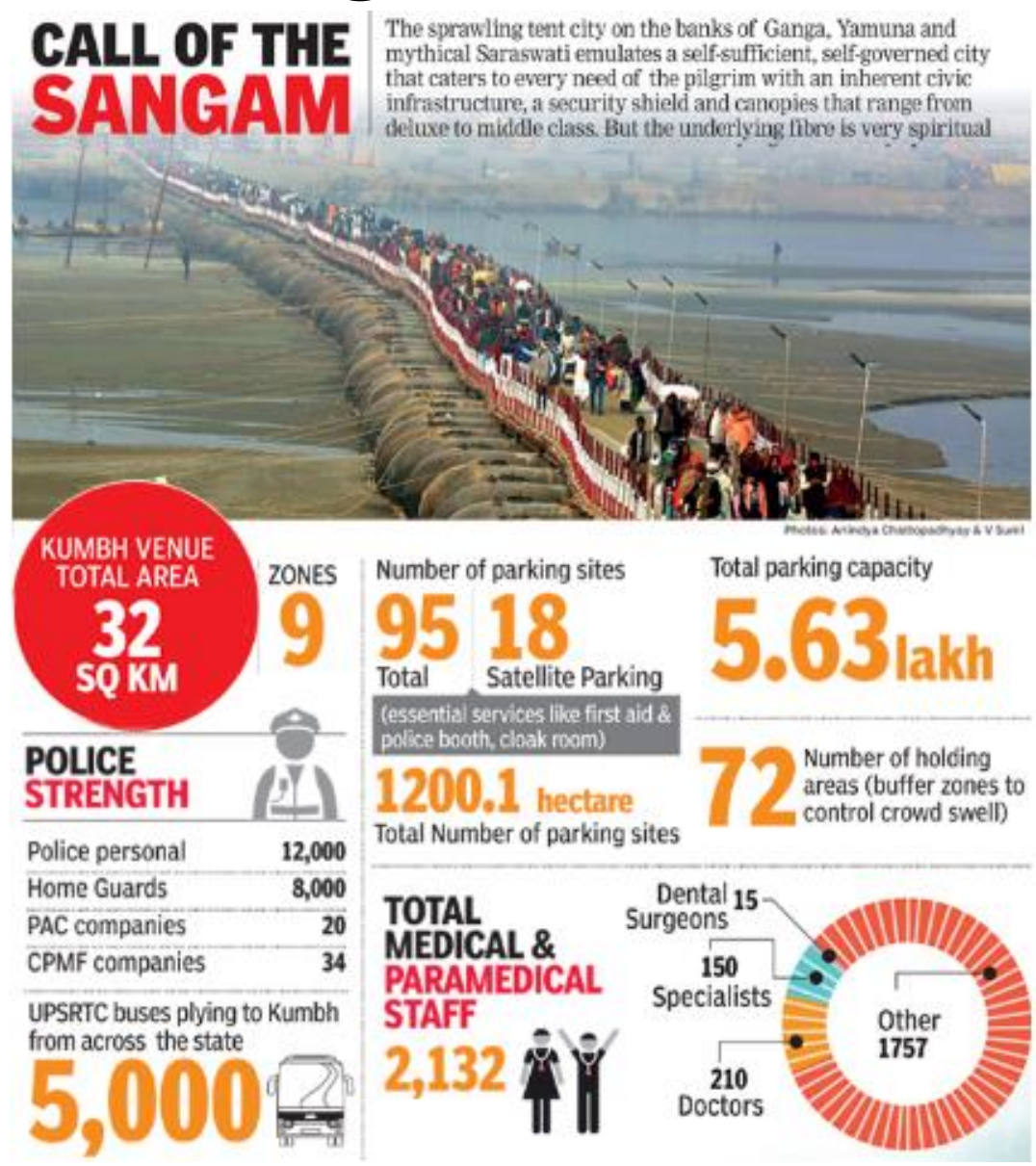
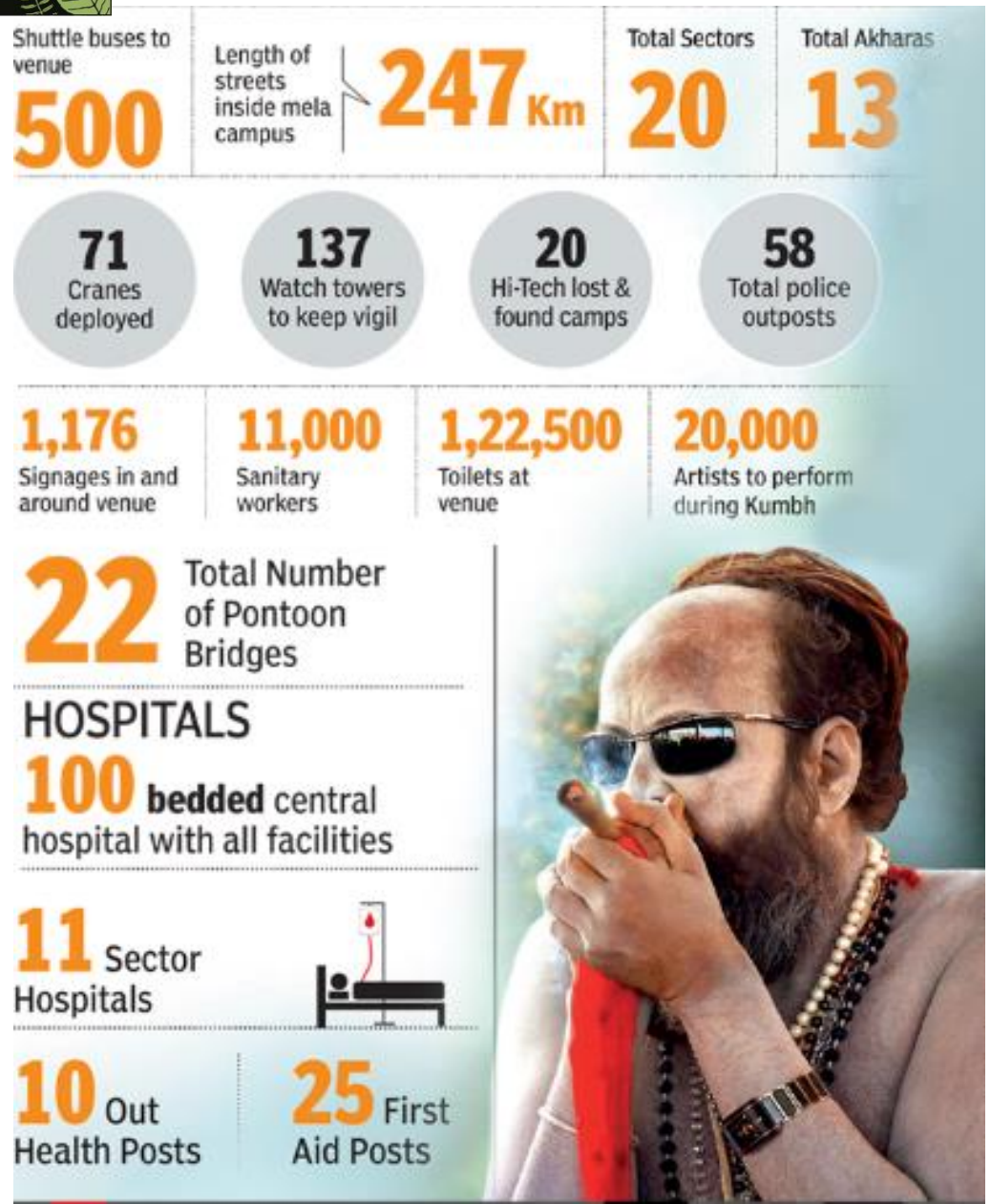
Kumbh 'Tented City'

- City of 'Prayagraj' or 'Allahabad'
- **32 sq km** area along the Confluence of **Yamuna and Ganga river**.
- Divided into **20 sectors**.
- Sectors 1 to 4 – permanent structures with sewer lines
- Other 16 sectors:
 - Located on **Flood Plains**
 - **temporary facilities** which are **commissioned and decommissioned** for every event.





Kumbh Mela - Arrangements





Kumbh (2019) ‘in limelight’ Guinness World Records

- Largest Crowd Management
- Largest Sanitation Drive – 20,000
- Largest Painting Exercise of Public Site
- “Longest Parade of Buses” – 500 buses to ferry pilgrims to Kumbh





SANITATION AT PRAYAGRAJ KUMBH (2019): HITS AND MISSES

KUMBH (2019) - HITS

1. “No Open Defecation” the motto of this year’s Kumbh

- 1.2 lakh toilets made available spread across Kumbh.
 - 62,500 public toilets + 20,000 urinals along site bus stops, parking area, along roads etc.
 - 40,000 for residential users inside the tented city.
- Toilets connected to FRP containment units which were being emptied regularly. (~daily)





KUMBH (2019) - HITS

2. Monitoring & Maintenance of Toilets with use of ICT

- Services of 10 Private Vendors hired to operate 250 cesspool vehicles 24x7 service – on demand.
- **20,000 Sanitation Workers**, in addition **1500 Swachhgrihi** specially for monitoring of toilets was done by **Mobile app / WhatsApp** used for **monitoring Toilets**: included uploading photos and filling out questionnaire online
- Use of Jet Spray Machines for cleaning of toilets





KUMBH (2019) - HITS

3. Nullah / Drains tapping and Wastewater management

Total Nullahs in Pryagraj – 82

- Tapped to STP : 26
- Treated in-situ : 56

Executing Agency	Method of Treatment	No of drains
UPJN	Bioremediation	30
UPJN	Geo-tubes	5
NEERI	In-situ Method	6
NPCC	Bio-remediation	4
NMCG	Bio-remediation	1
UPJN	Filtration – up-flow Filter	10



KUMBH (2019) - HITS

4. Preparedness for Public Health Emergencies at Kumbh

- **72 Quick medical response team** of 5 member each.
- **86 Ambulance (24x7)**
Available through
- **1 Central Hospital** (100 beds) & **11 Circles Hospitals** (20 beds).
- **25 First Aid Posts** spread across the Kumbh Area



KUMBH (2019) - HITS

5. Provision of Clean Water

- 300 Kms of drinking water pipeline laid for 24x7 supply with taps across the 20 sectors.
- Source – Borewells (67 no.)
- Water Kiosks were set-up with private companies chipping-in (HUL, LG).
- 2 police officers were stationed 24*7 to ensure safety of the source water and avoid any contamination.





KUMBH (2019) - MISSES

1. Clean Ganga **'Only Temporary'**

What made the Ganga Clean during this short period of time?

- **Release of extra water upstream at the Tehri dam around 6000-7000 cusec**
- **Temporary shut down of heavily polluting industries like tanneries in Kanpur**

Is it sustainable in the Long Run?

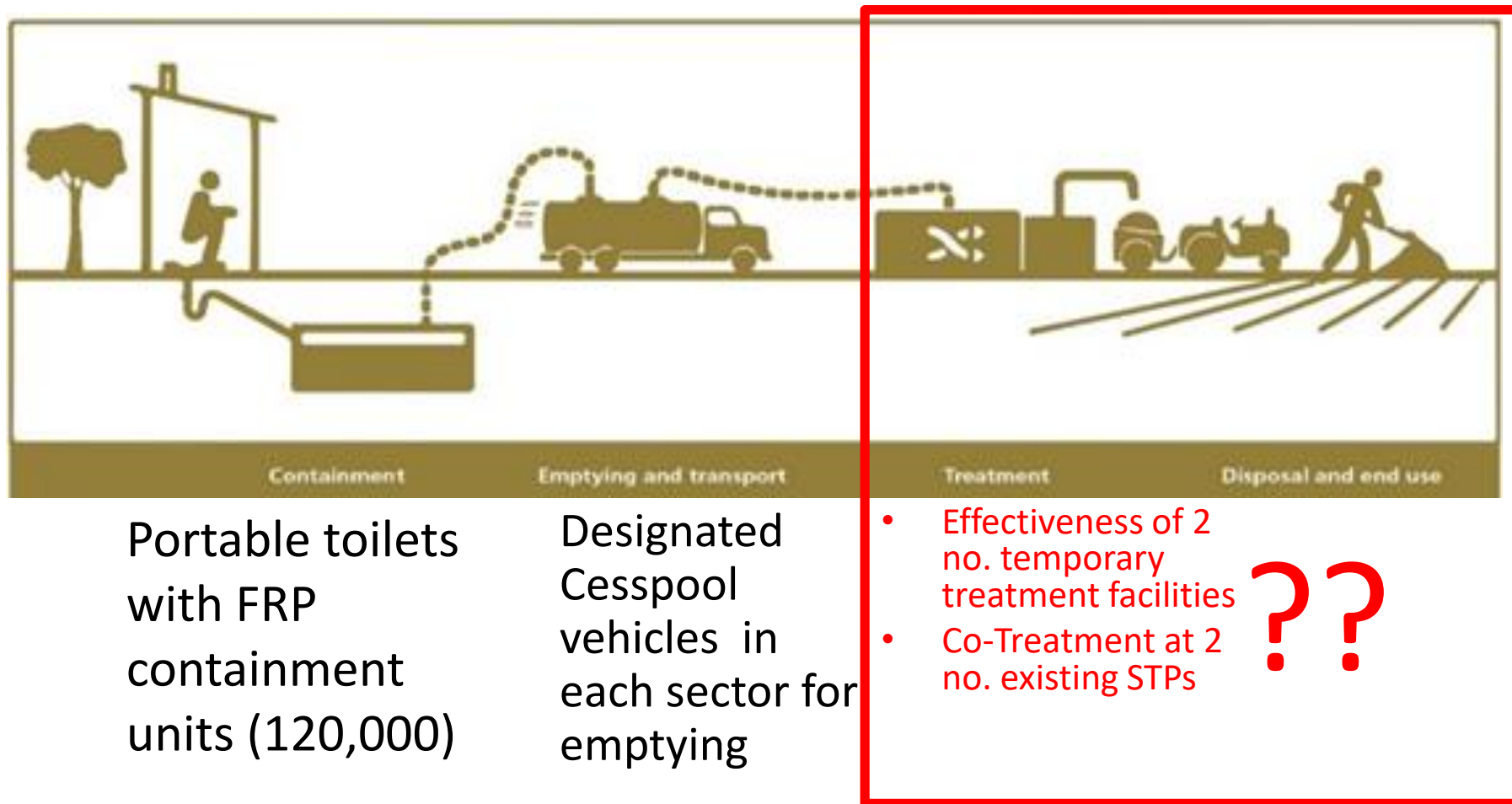
- The impact of nullah / drain tapping & insitu bioremediation on cleaning Ganga River is debatable . ?



Image posted on Facebook by Pravind Jugnauth

KUMBH (2019) - MISSES

2. Critical Gaps Sanitation Value Chain



KUMBH (2019) - MISSES

3. Effectiveness of Temporary Treatment Facilities Established

- 2 Temporary Facilities established to treat wastewater transported by cesspool vehicles.
- Geo-bags for Solid-Liquid Separation
 - As per officials, **not a single Geo-Bag completely filled with Solids.**
 - **separated liquid is simply stored in an unlined pond** in a secluded area





KUMBH (2019) - MISSES

4. Overloading existing STPs

- **Co-Treatment at Naini and Salori STPs** of Kumbh PTs wastewater transported by cesspool vehicles.
- **Bio-remediation unit added at the inlet** step at Rajapur and Salori STP
- STPs normally running under design capacity (~50%). **However during Kumbh it was overloaded.**

S.NO	Name of STP	Designed Capacity (MLD)	Flow during Kumbh (MLD)
1	Naini	80	78.82
2	Numayad ahi	50	65.69
3	Salori	43	61.69
4	Rajapur	60	80.61
5	Ponghat	10	7.67
6	Kodra	25	33.70



KUMBH (2019) - MISSES

5. Disposal / Reuse Compromised ??

- Disposal / further treatment of Bio-Solids – not planned
- when all the glory of the event will be finished, these solids will probably be dumped in a landfill or an open drain.
- Disposal of Geo-bags also an issue.



Challenges and learnings from Kumbh'19

What about other significant but less hyped events ??

- All the **facilities were temporary** either a hire basis or commissioned & Decommissioned every year.
- **Smaller but significant Events** like (Annual Magh Mela - 10 million attendance) **may not get this kind of attention.**
- A more **permanent approach** to ensure safe and sanitized environment for all events is needed.



Image credit: istockphoto.com/zanskar



Conclusion: Learnings for ULBs from Kumbh'19

- Organizing Sanitation Workers for maintaining a sanitized environment.
- Monitoring of toilets using mobile Apps.
- Promoting Water Kiosks at public spaces by leveraging corporate sector.
- Treatment & monitoring of drains