A Situation Analysis of Parks and Open Space Gyms in Delhi - India

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PARKS/COMMONS/URBAN FORESTS IN THE VICINITY (<0.5 KM RADIUS)

- Physical Activity (69-89 min/wk)
- Air quality
- Mental Health wellbeing
- Equity

- All non-accidental mortality
- Diabetes
- Cardiovascular
- Hypertension
- Reduce noise exposure
- Reduce Heat Island Effect
- Delhi, one of the few cities with parks and urban forests in its master plan

NCD WHO- BEST BUYS

Regional Meeting on Physical Activity
22-23 November 2021
SAMPLING FRAME AND SAMPLE

- Delhi Districts - 11
- Area 1,483 sq km
- LIST : 17,335 parks

Parks Classified according to size:
- Tot- Lots (125 m² - 5000 m²)
- Housing area ((>5000m² to <10,000m²))
- Neighborhood Parks ((>10,000m² to <20,000m²))
- Community Parks and Playgrounds (>20,000m² to <2,50,000m²)
- Largest Parks (>2,50,000 m²) (5%)
SAMPLING FRAME AND SAMPLE (CTD)

Initial Sample Size calculated (through Power Calculation)

512 from a list of 17,259 parks

512 + 10% = 564

No. of Parks available for sampling after Excluding Tot-lots <2000 m² and missing parks

17,259 - 13,832 = 3,427

% Parks sampled from the available List of parks

5% Large Parks + 20% CPP + 20% HPP + 25% NPP + 30% tot lots = 564

564
DATA TOOLS AND DATA COLLECTION

- Objective Systematic Structured Observations
- Subjective Interviews with the Park Users
- Case studies
- Normalized Difference Vegetative Index (NDVI)
NORMALIZED DIFFERENCE VEGETATION INDEX (NDVI)

<table>
<thead>
<tr>
<th>Park category</th>
<th>N</th>
<th>Mean NDVI</th>
<th>Standard Deviation</th>
<th>Median</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area &gt;2,50,000m²</td>
<td>20</td>
<td>0.374</td>
<td>0.079</td>
<td>0.383</td>
<td>0.196</td>
<td>0.497</td>
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<tr>
<td>CPP</td>
<td>85</td>
<td>0.343</td>
<td>0.072</td>
<td>0.343</td>
<td>0.099</td>
<td>0.503</td>
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<tr>
<td>HPP</td>
<td>120</td>
<td>0.282</td>
<td>0.069</td>
<td>0.281</td>
<td>0.081</td>
<td>0.519</td>
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<tr>
<td>NPP</td>
<td>100</td>
<td>0.303</td>
<td>0.074</td>
<td>0.296</td>
<td>0.119</td>
<td>0.492</td>
</tr>
<tr>
<td>Tot lot</td>
<td>169</td>
<td>0.253</td>
<td>0.069</td>
<td>0.250</td>
<td>0.066</td>
<td>0.446</td>
</tr>
</tbody>
</table>

The smaller parks Tot-Lots had the lowest NDVI, and the largest parks were >2,50,000 m² urban forests and therefore had the highest values. Larger parks thus need more emphasis in town planning.
OBSERVATIONS

- Usable Parks: 494/564
- Non-usable: 70 (Encroachments: commercial use, cattle grazing, parking mafia, garage)
- Open gyms present: 294 (59%)  
- Gym equipment in usable condition: 277 (94.2%)
- Trees available for shade: 448 (90.7%)
- Children’s play area: 239 (48.4%) 
- Walking path available: 434 (87.9%)
- Greenery, flowers: 394 (79.8%)

Parks are used by

- Women: 93.7%
- Elderly: 59.9%
- Teenagers: 71.1%
- Children: 58.7%
- Middle-aged Persons: 49.6%
RANGE OF PHYSICAL ACTIVITIES

- Walking: 377 (76.3%)
- Yoga: 247 (50.0%)
- Running and jogging: 180 (36.4%)
- Sports: 173 (35.0%)
- Yoga in groups: 123 (24.9%)
- Group fitness activities: 129 (26.1%)
- Meditations: 154 (31.2%)
- Laughter clubs: 67 (13.6%)
- Talking: 231 (46.8%)
- Sitting: 335 (67.8%)
OBSERVATIONS OF OPEN GYMS & EQUIPMENT

Usage of Open Gyms
• Women: 78.7%
• Men: 91.7%
• Children: 49.5%
• Senior Citizens: 44.9%

Equipment
• Pull Chairs: 95.6%
• Cross Walker Double: 94.6%
• Cross Trainer: 88.1%
• Double Standing Twister: 87.4%
• Air Swinger: 85.0%
• Outdoor Air Walker: 80.6%
• Hand Rower: 80.3%
SOCIO-ECONOMIC STATUS AND ATTIRE

- Women’s Attire – Primarily Indian
- Salwar-Suit 92%
- Sarees 19%
- Night wear 20%
- Long Kurtis and Lower 23%
PARK USERS- INTERVIEWS

Frequency of Visiting Parks (n=2,597)
- Everyday 2222 (85.6%)
- Every Alternate Day 306 (11.8%)

Proximity of the Parks to Users
- <200 meters: 41.5%
- 200-500 meters: 21.4%
- 500-750 meters: 12.5%
- 750 m to 1 km: 5.2%
- >2 kms: 13.7%
- 1-2 km: 5.6%

Demographics
- Age
  - less than 45: 41.7
  - 45-60: 33.7
  - more than 60: 24
- Gender
  - Male: 57.4
  - Female: 42.5
  - Transgender: 0.1
PARK USERS PERCEPTIONS

Parks helped the users in the following ways

- Gave Happiness
- Health benefits
- Felt Happy after seeing the Parks
- Knowing more people
- Increase Fitness levels
- Forming Friendships
- Helped in Post Surgery Recovery
WOMEN: EXERCISE, FRIENDSHIP, MENTAL HEALTH: CASE STUDY

“Our houses are so small, that we can’t even breathe there that is why we come here and try to spend as much time here as possible.”

“We meet together every evening, to sing kirtan songs, and to discuss our issues”

“We really look forward to using the gym, we stand in a line and wait our turn to use the gym.” “We have found friends in the people at park.”
ELDERLY NETWORK SUPPORT, MENTAL HEALTH: CASE STUDY

“Our children stay abroad and we live here alone in India. We feel lonely. We have made good friends at the park. We also go for trips around India together”.

“We have made good friends at the park. We also go for trips around India together”.

“My children don’t stay with me. I stay alone and feel lonely at home. I feel nice coming to the park”
CONCLUSIONS

- Parks in Delhi provide a myriad benefits to the people living in the vicinity
- Parks / green areas helped boost physical activity levels
- Enhance physical and mental health of the people
- Provide equity and help women, children and the elderly
- Parks should not become a casualty of encroachments / other competing needs
- Other cities need to emulate Delhi

Access to parks – sidewalks-wide and un-encroached, convenient crossings
- Land use - Urban planning should make parks / urban forests mandatory in land allocation,
- SMART Cities mission- should incorporate urban forests & large parks
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