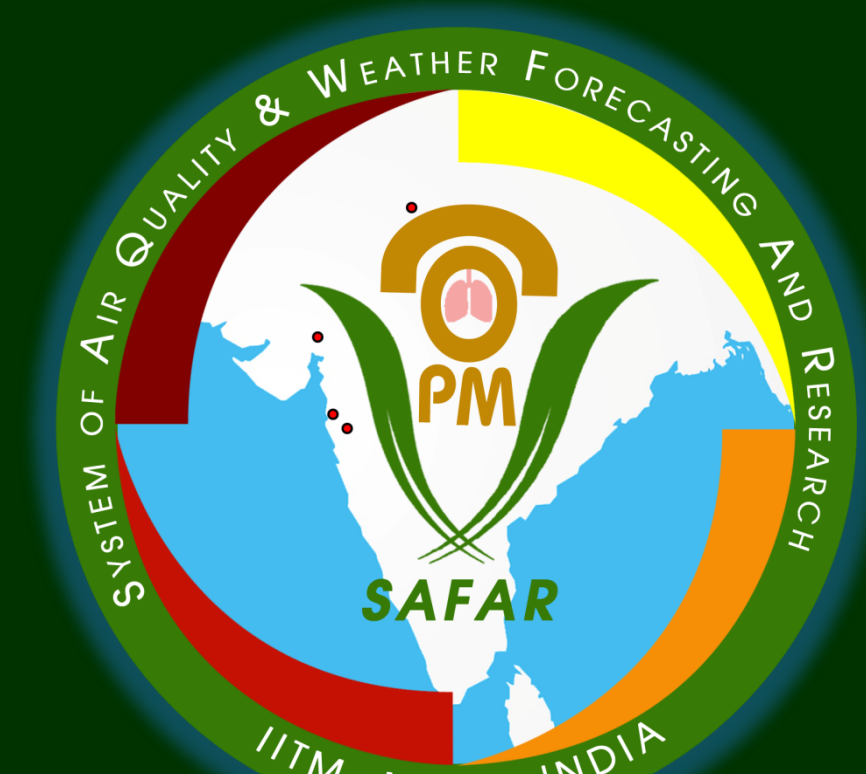




METROPOLITAN AIR QUALITY AND WEATHER SERVICES – SAFAR

Indian Institute of Tropical Meteorology (IITM), Pune, India

EMISSION INVENTORY CAMPAIGN FOR SAFAR-PUNE-2019: INITIAL RESULTS



Introduction:

Emissions Inventory (EI) implies to a compilation of data for all air pollution sources that are responsible for air quality changes in a region. An emissions inventory being a relentless practice; it needs continual improvement. Catching up the pace at which land use pattern, lifestyle, so also an overall Environment is changing.

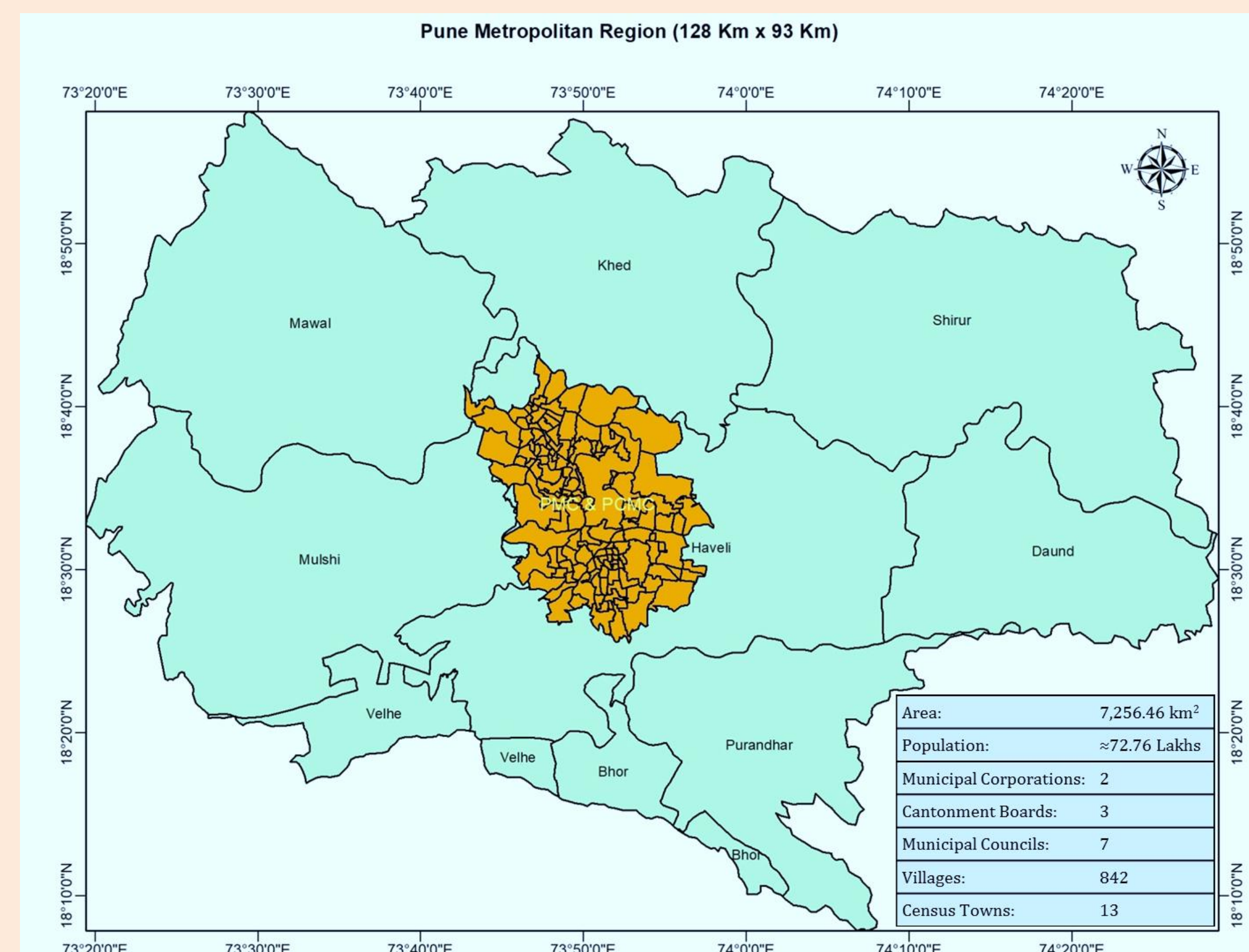
Present Emissions Inventory Campaign 2019 is an exclusive refinement of earlier work and value-added effort. Campaign steered in collaboration with Savitribai Phule Pune University (SPPU), Pune. The task was accomplished in cooperation with local bodies (i.e. PMC, PCMC, PMRDA), educational institutions and the Department of Environment Science, SPPU. More than 120 student volunteers from different colleges and SPPU contributed to this extensive scientific campaign.

Ground Trothing Intensity:

- ✓ Vehicle density count done at 170 Major & 37 Minor roads; random survey conducted for vehicle kilometers travelled (VKT/day), Fuel type used, fuel consumption, Hour of usage etc.
- ✓ More than 40 roads surveyed exclusively for speed breakers
- ✓ Nine bus terminals and depots were surveyed
- ✓ 34 slum pockets & 99 Household areas surveyed: Fuel type used and hours of cooking, family size, mosquito repellent used, water heating practice, etc.
- ✓ More than 90 Hotel & 75 Street Vendor areas visited: Fuel type used, pollution control measures are taken, etc.
- ✓ About 50 Tourist Places visited: Visit mode of transport, tourists per day, parking lot survey, etc.

Aim:

To develop ultra-high resolution (400mx400m) inventory for PMC-PCMC over 30kmx30km domain along with resolution of 4km over entire Pune Metropolitan Region (PMR) domain (128x93km) for extra superior forecasting.



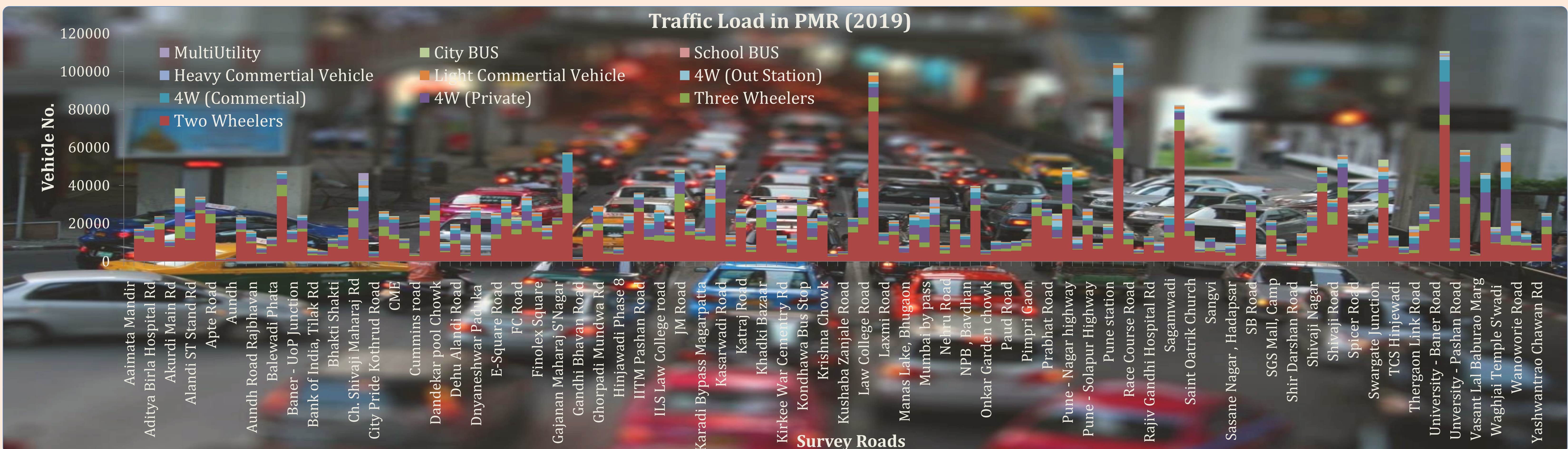
Supervisor Visit



Traffic Survey



Traffic Random Survey



Pune Metropolitan Region has 47.6%, 26.66% and 25.67% are registered as Petrol, CNG and Diesel driven vehicles respectively. About 0.07% of electric vehicles also contribute to the total fleet. Almost all two-wheelers run on petrol, followed by four-wheelers and three-wheelers. CNG – clean fuel being used by three-wheelers the most i.e. 89%. Few four-wheelers along with heavy and light commercial vehicles also use CNG as a fuel.

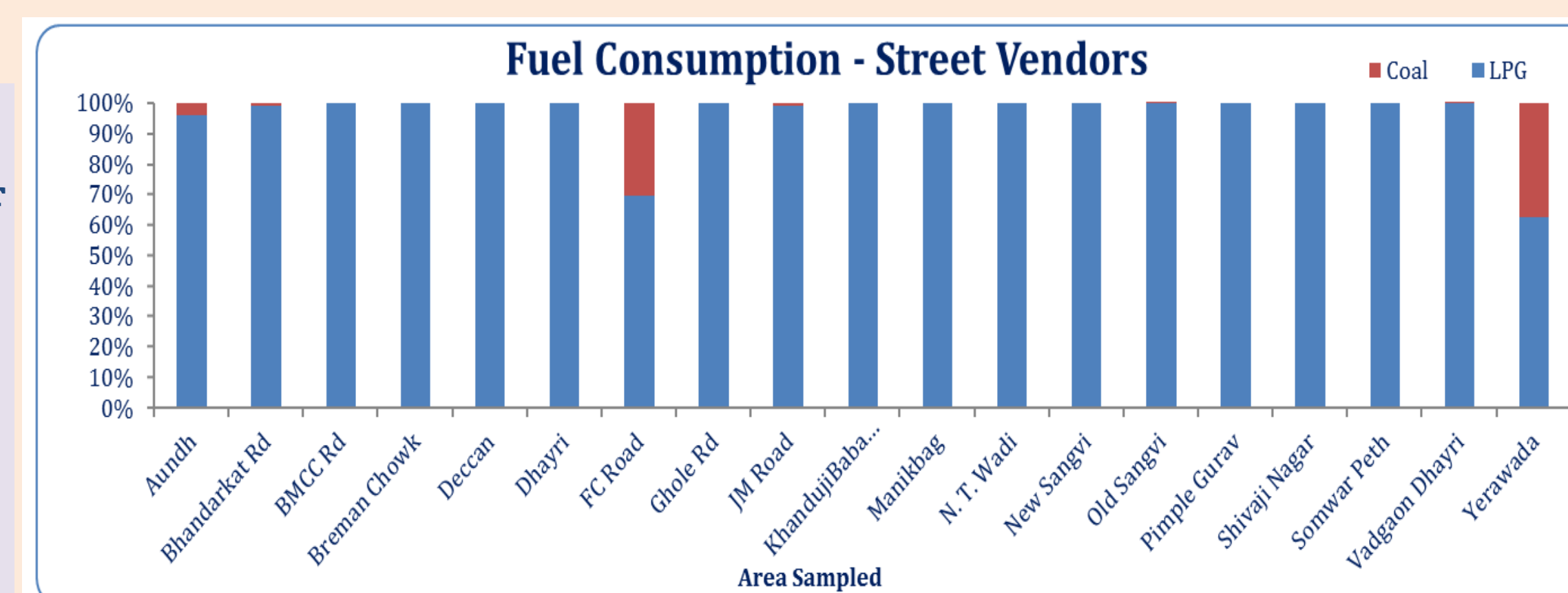


Hotels (Solid Fuel)

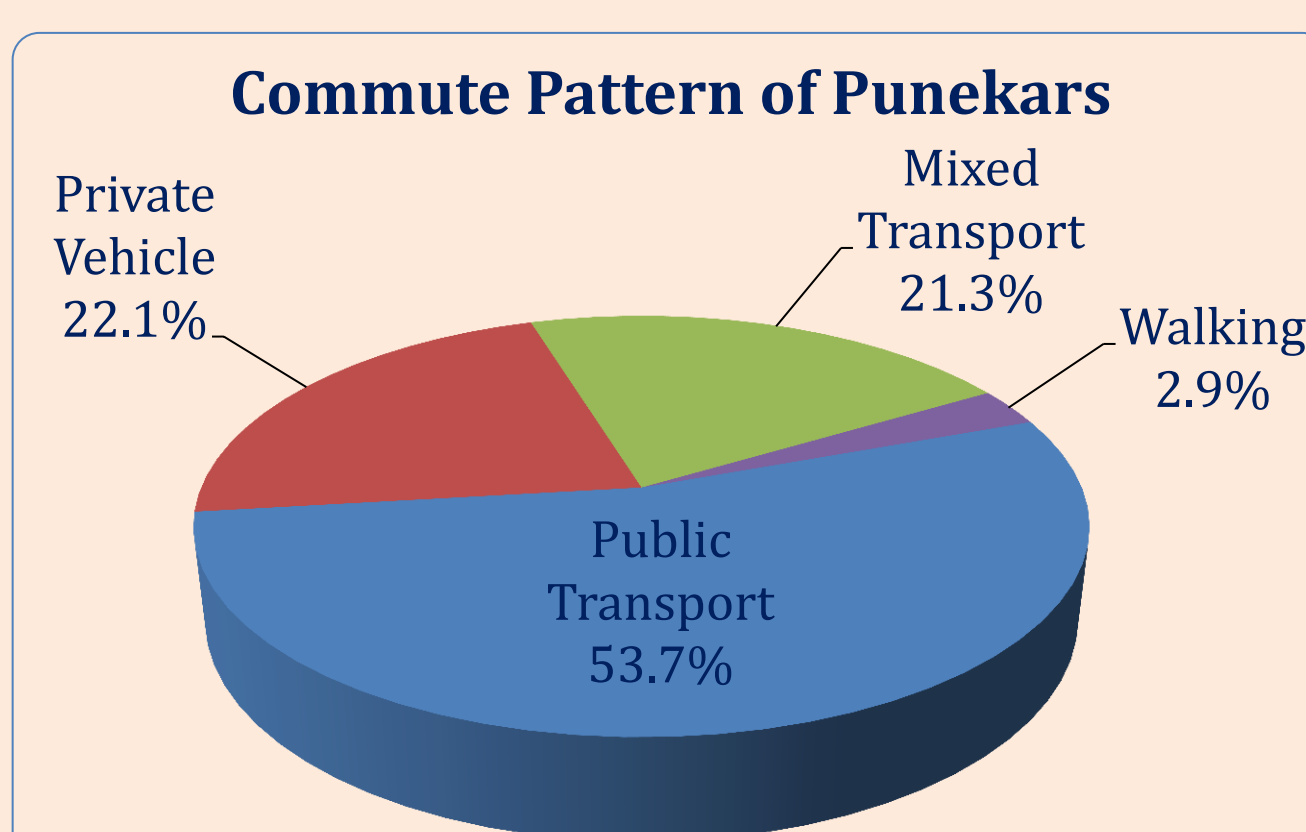
Slum Survey

Street Vendor Survey

~1871 surveyed slums had 5 persons/family; these use variety of cooking fuels (coal, wood, kerosene, diesel, LPG & electricity); so also combination of 2or3 fuels. Promisingly, 92.6% of the slums have access to LPG.



Average cooking hrs of hotels recorded to be (10.4) and street vendor (9); very few use coal or other fuel. LPG is widely used for cooking whereas some use biomass as tandoor & chulha fuel.



>2700 households surveyed had 4 persons/family; Tank and pipe supplied LPG and PNG widely used. PMR residents use ~12-15 types of mosquito repellents e.g. ayurvedic agarbatti, coil, liquidator, cream, spray, etc. Nearly 126 household residents reported for respiratory symptoms; Asthma (54), Breathing Problem (22), Bronchitis (05), Allergy (43).

