Dashboard Modules

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A. City Overview

1. **City Selection** (Continent > Country > City)
2. **Map interface:** base map with layers toggle.
3. **Key layers:**
    - land surface temperature,
    - air quality index,
    - land cover,
    - water stress,
    - soil moisture,
    - nightlights.
4. **Time slider:** historical trends year 2000–present.
5. **Quick stats:**
    - population,
    - growth hotspots,
    - % impervious surface,
    - canopy cover.

B. Heat & Air Quality

1. **Heat map of Urban Heat Island (UHI) intensity.**
2. **Vulnerability overlay:**
    - Elderly Population (>50),
    - Child Population (<12)
    - Schools,
    - Hospitals.
3. Air pollution hotspots (NO_2, ozone, aerosol).
4. **Alerts panel**: days exceeding WHO thresholds.
5. Suggested actions: cooling centers, tree planting zones, traffic control.

C. Water & Soil Health

1. GRACE anomalies showing groundwater depletion zones.
2. SMAP soil moisture levels for drought/flood monitoring.
3. River basin health (if data available).
4. Overlay of industrial sites and wastewater facilities.
5. Recommendations: recharge sites, water conservation measures.

D. Land Use & Growth

1. Land cover classification (in percentage)
    - Built-up,
    - Vegetation,
    - Bare soil,
    - water bodies.
2. Change detection (15-year urban expansion trends).
3. Nighttime lights growth to detect informal settlements.
4. New housing need analysis (based on population projections).
5. Zoning compliance check (link to city planning data or Detailed Area Plan by the Government).

E. Greenspace & Ecosystem Health

1. Park and greenspace accessibility map (15-min walk threshold).
2. Vegetation cover index.
3. Biodiversity corridors (forest patches, wetlands).
4. Restoration opportunity areas (for tree planting, soil cover).

F. Healthcare & Safety

1. Clinic and hospital location optimization (using population + vulnerability).
2. Emergency resource allocation under extreme heat/flood scenarios.
3. Facility risk: identify hospitals in flood zones or high-pollution corridors.

G. Transportation & Mobility

1. Transit access gaps (distance to bus/rail stops).
2. High-congestion corridors with high pollution.
3. Proposed new transit corridors.
4. Electric charging infrastructure planning (using nightlight + energy gap data).

H. Community Engagement

1. Citizen reporting app: flooding, pollution, heat stress, infrastructure gaps.
2. Crowd data validation against NASA indicators.
3. **Feedback loop:** City responses logged on dashboard. (A separate Apps for Community)

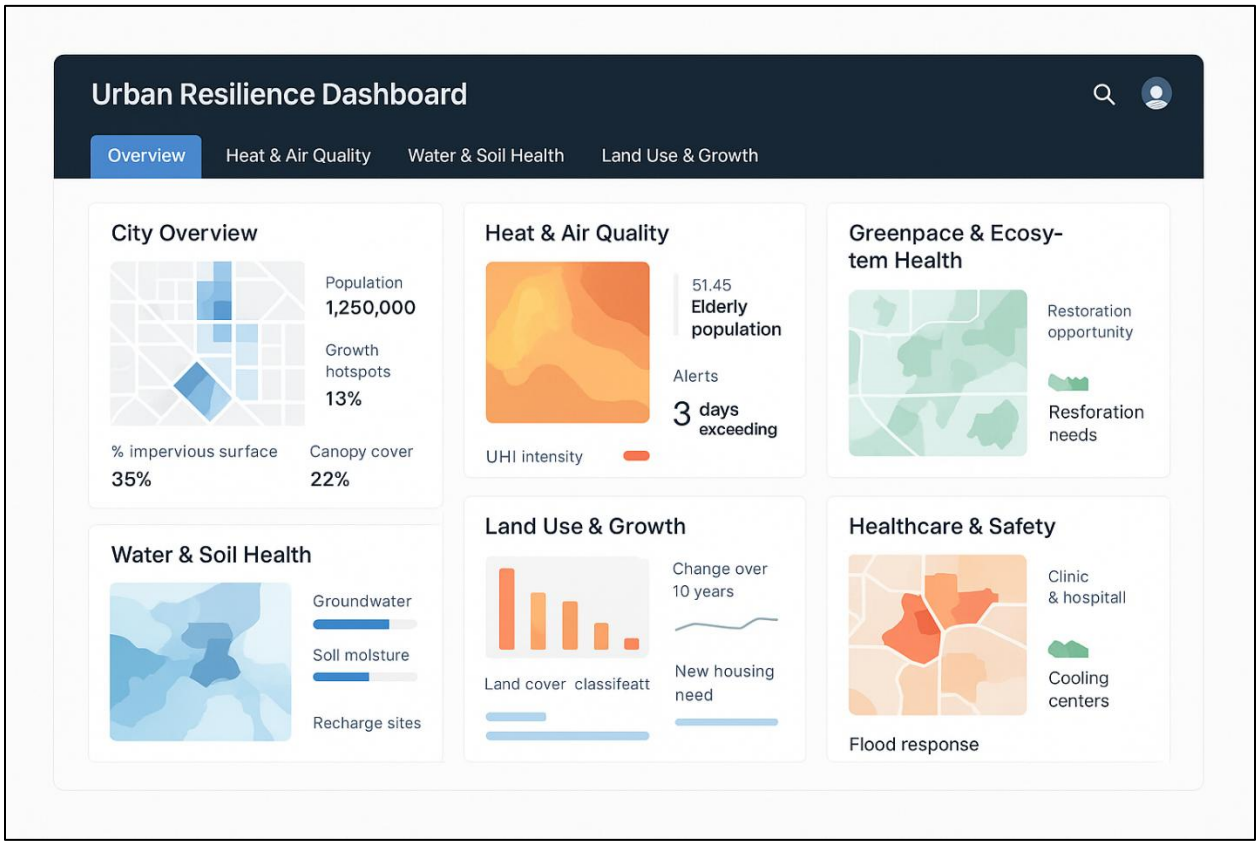

Fig-1: Representation of the Dashboard Demo

- NASA Earthdata Worldview → Best for live, map-ready layers (temperature, air quality, flood, vegetation).
- NASA Earth Observatory → Good for global context maps + communication material.
- NASA SEDAC → Adds population, socioeconomic, nightlights (urbanization intensity).
- WorldPop & Copernicus GHSL → Provide high-resolution population and urban density maps.
- Copernicus Services Catalogue → Best for land use, atmosphere, climate change layers.
- WRI Data Explorer → Policy-relevant sustainability and environmental indicators.
- CSA RCM / INPE / INDE → National partners, useful for radar, vegetation, and land use at finer resolution.

[You will find These at our challenge resource Page:
data-pathways-to-healthy-cities-and-human-settlements > resources]

***Use the help of **ChatGPT** if you find any problem to understand it