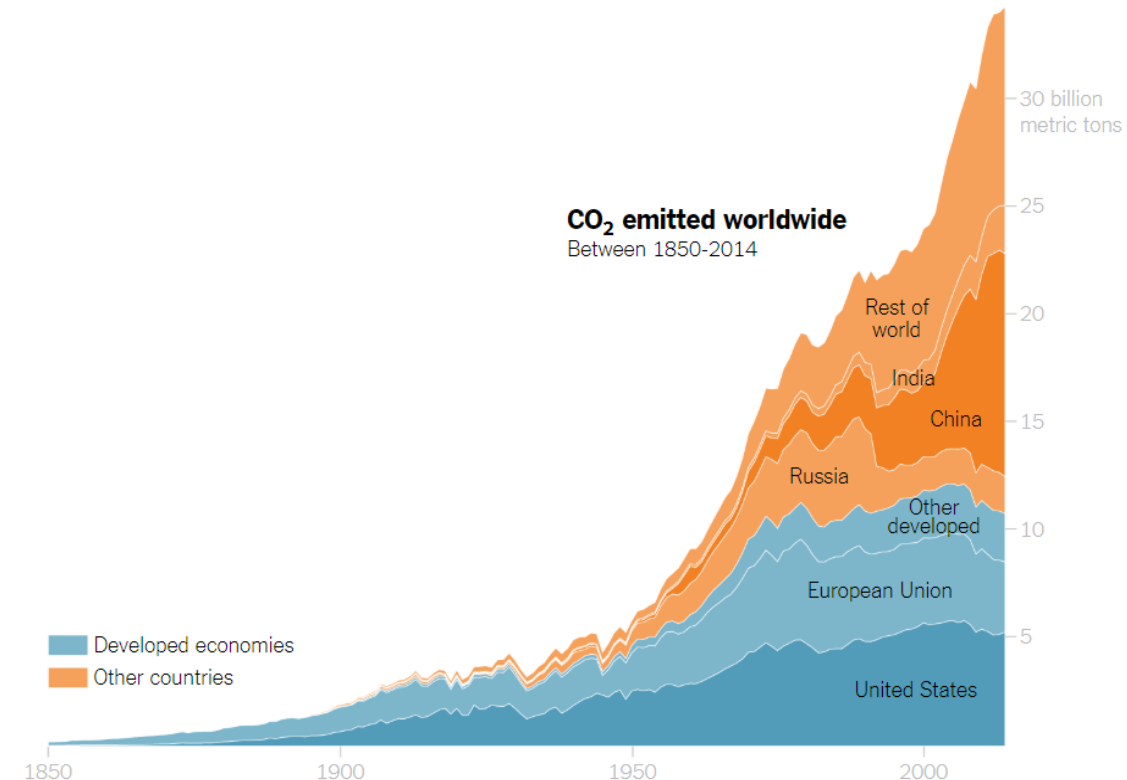# Using OSM to counter Climate Change

Leveraging Open Data for a Sustainable Future

Presented By:

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Climate Change

➢ **Long-term shifts:** Refers to significant and lasting changes in global temperatures and weather patterns.

➢ **Human-caused:** Primarily driven by the burning of fossil fuels (coal, oil, gas).
Greenhouse gases: Release of gases like carbon dioxide traps heat in the atmosphere.
Rapid warming: Current warming trend is happening at an unprecedented rate. **Global impacts:** Rising temperatures and heatwaves.

CO$_2$ emitted worldwide
Between 1850-2014

30 billion metric tons
25
20
15
10
5

Rest of world
India
China
Russia
Other developed
European Union
United States

Developed economies
Other countries

1850   1900   1950   2000

Continued

- Changes in rainfall (droughts and floods).

- Sea-level rise.

- Ocean acidification.

- Ecosystem and biodiversity disruption.

- **Significant threats:** Impacts human health, food and water security, infrastructure, and societal well-being.

- **Requires global action:** Needs significant reduction in greenhouse gas emissions.

- **Key solutions:** Transition to renewable energy, improve energy efficiency, protect ecosystems, sustainable practices.

- **Crucial understanding:** Essential for building a resilient and sustainable future.

What is OpenStreetMap?

- OpenStreetMap (OSM) is a free, open-source, collaborative mapping platform.

- Anyone can contribute and use the data for various purposes.

How OpenStreetMap Can Help Combat Climate Change

- OSM provides detailed, up-to-date geographic data for climate action.

- Applications:

  - Disaster preparedness

  - urban planning

  - deforestation monitoring

  - renewable energy projects.
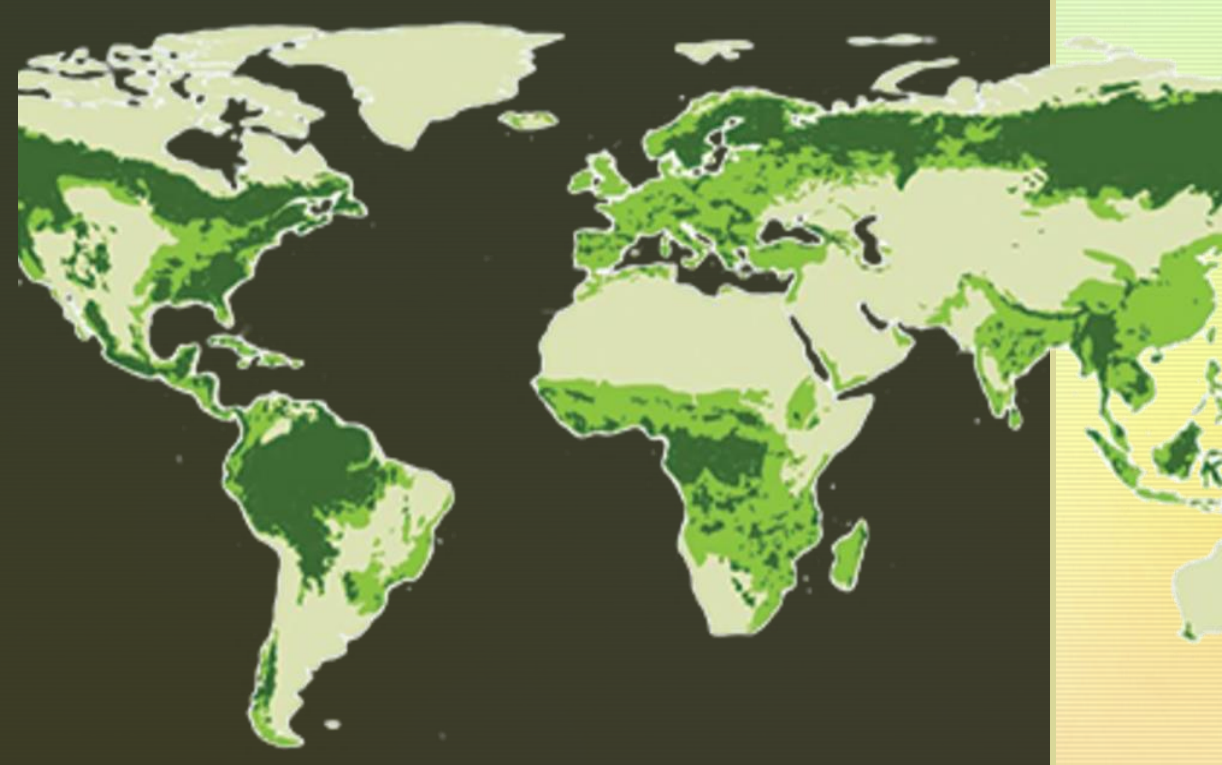
Case Study 1 - Disaster Preparedness

- Mapping flood-prone areas to improve emergency response.

- OSM data helps NGOs and governments plan evacuations and resource allocation.
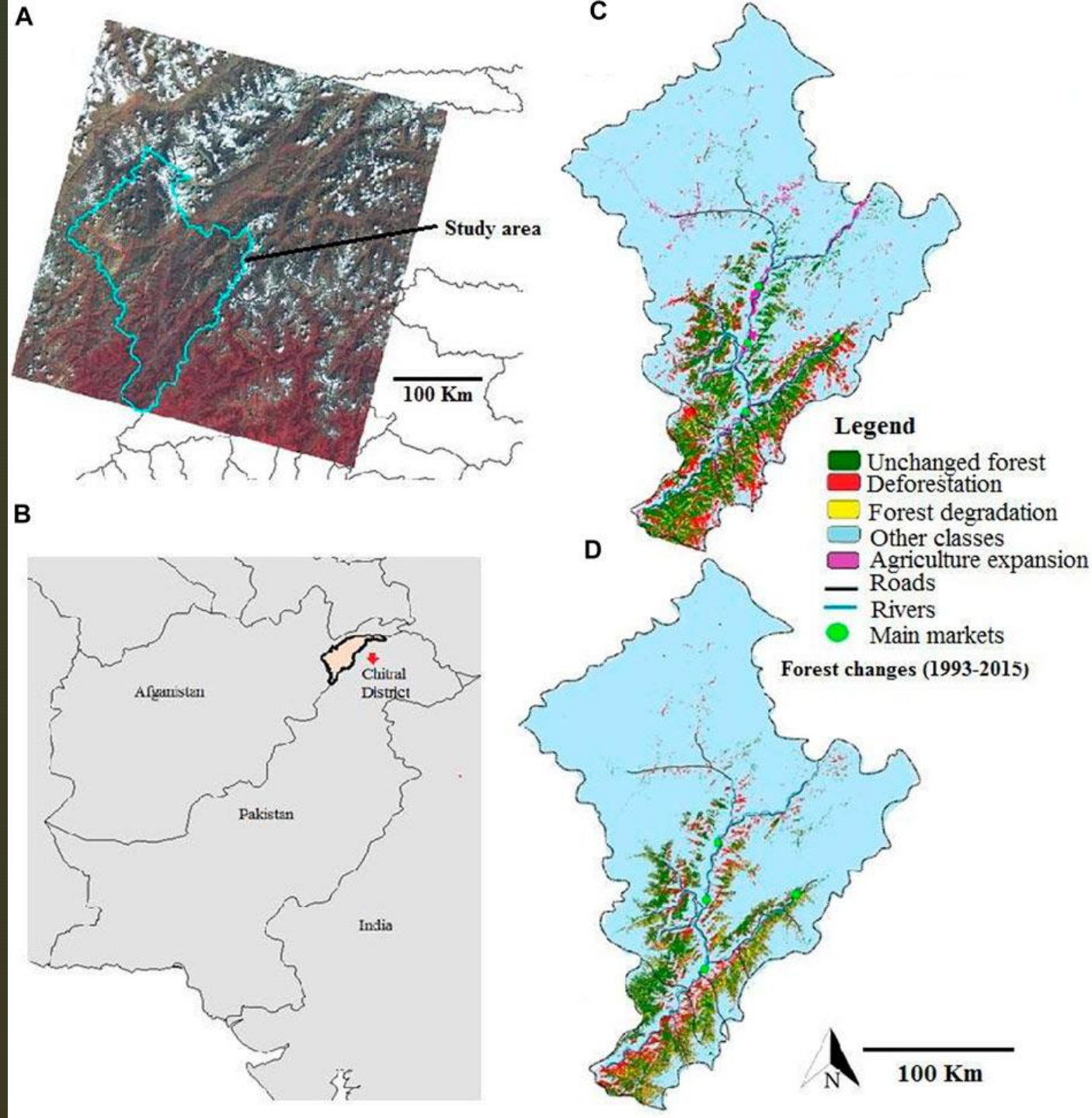
Case Study 2 - Urban Green Spaces

- **Content:**

  - Mapping parks, trees, and green infrastructure to improve urban resilience.

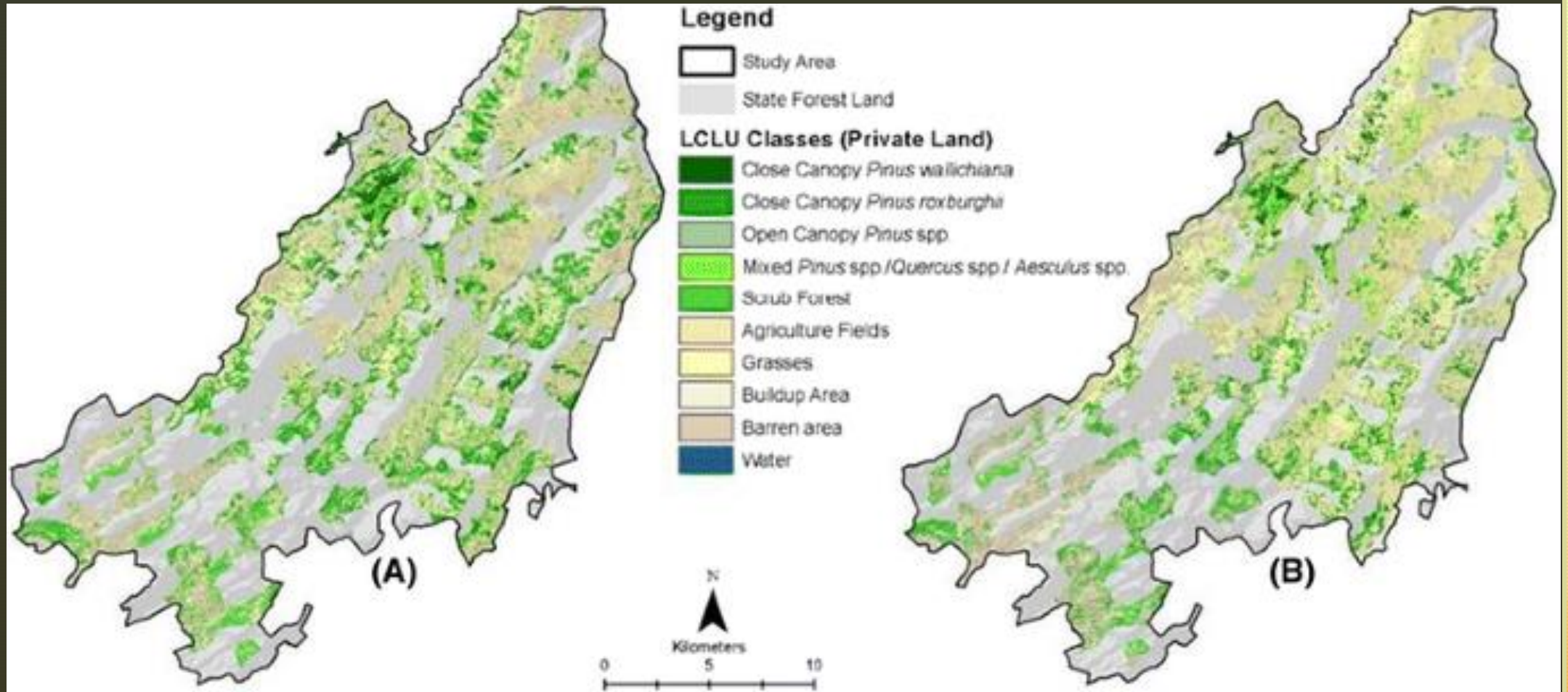 - Helps cities plan for heatwave mitigation and carbon sequestration.

Case Study 3 - Deforestation Monitoring

- OSM data combined with satellite imagery can track deforestation in real-time.

- Enables activists and governments to take action against illegal logging.

A — Study area — 100 Km

B — Afganistan, Pakistan, India, Chitral District

C / D

Legend
- Unchanged forest
- Deforestation
- Forest degradation
- Other classes
- Agriculture expansion
- Roads
- Rivers
- Main markets

Forest changes (1993-2015)

N — 100 Km

Continued

Legend

Study Area
State Forest Land

LCLU Classes (Private Land)
Close Canopy *Pinus wallichiana*
Close Canopy *Pinus roxburghi*
Open Canopy *Pinus* spp.
Mixed *Pinus* spp./*Quercus* spp./*Aesculus* spp.
Scrub Forest
Agriculture Fields
Grasses
Buildup Area
Barren area
Water
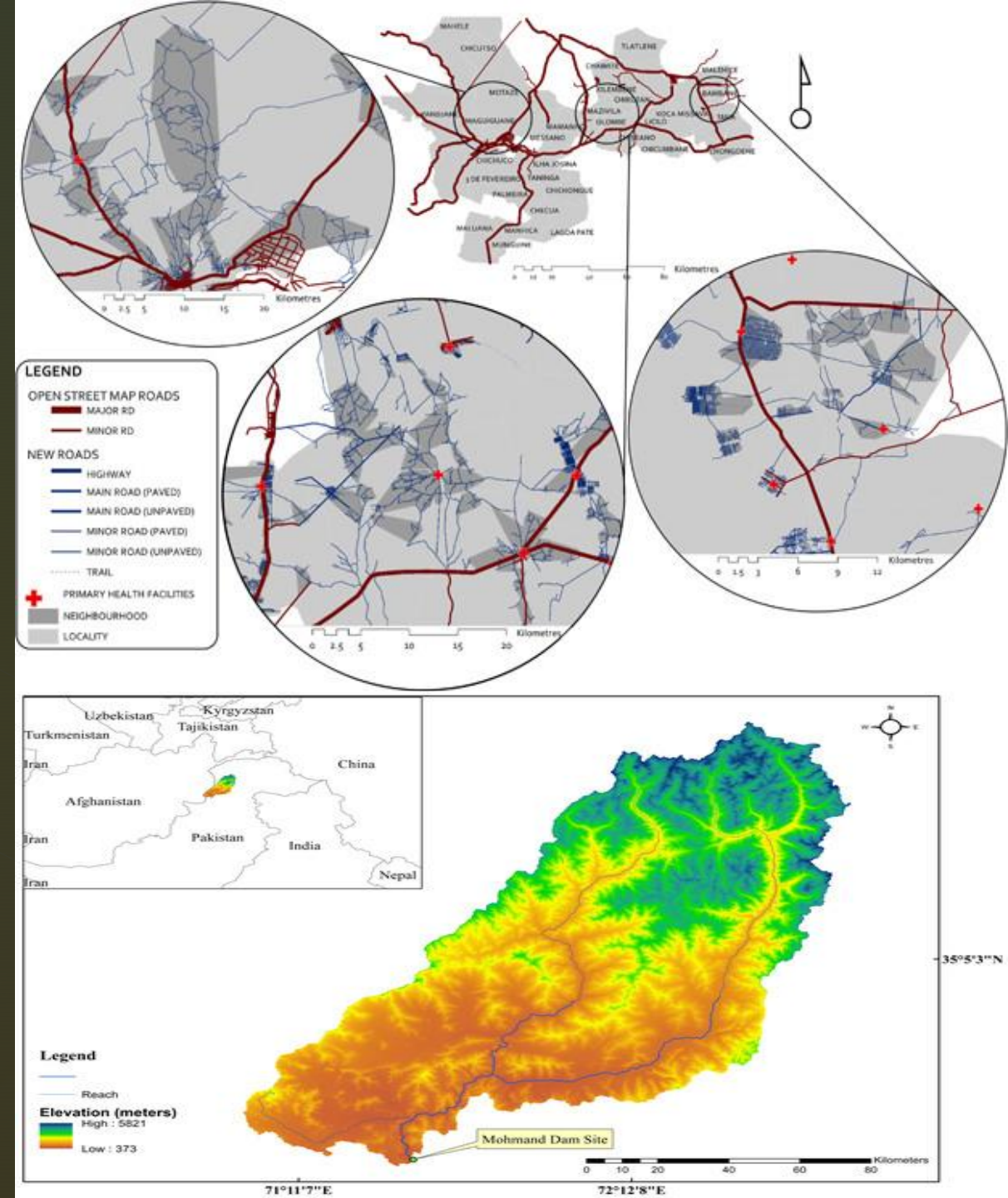
(A)

(B)

Kilometers
0   5   10

How You Can Contribute

- Anyone can contribute to OSM by adding or editing map data.

- Join mapping initiatives like Missing Maps or local climate-focused projects.

Challenges and Limitations

- Data accuracy and completeness in remote areas.

- Need for more contributors and awareness.

- Integration with other climate data sources.

Conclusion

- OpenStreetMap is a powerful tool for climate action.

- Collaborative mapping can drive meaningful change.

- Call to action: Join the OSM community and contribute to climate resilience.