



Pakistan Meteorological Department
Government of Pakistan



(ISO 9001-2008 Certified; Provider of Aviation Meteorological Services)

PMD: Services for National Development and International Safety

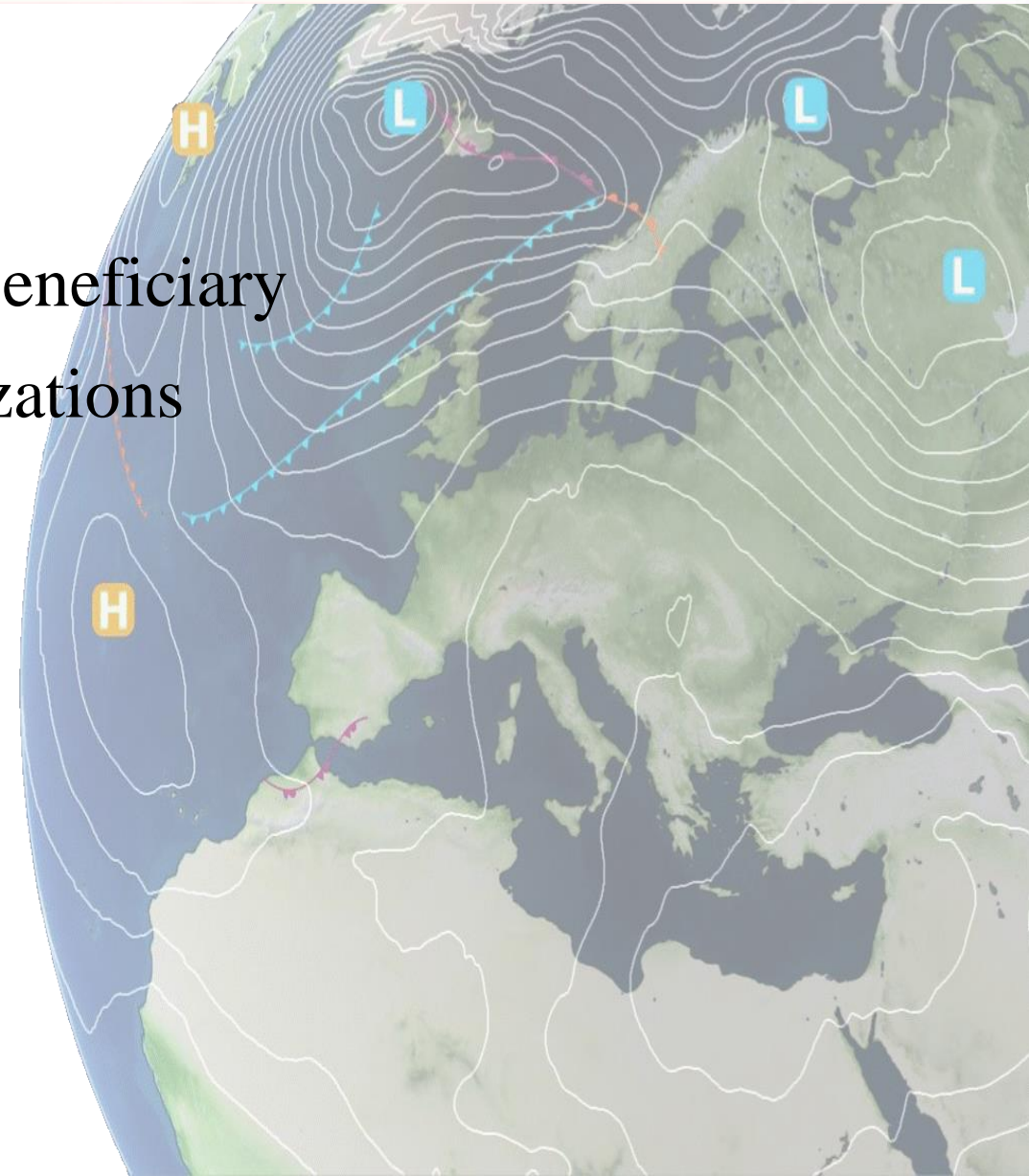
Sahibzad Khan

**Director General/Permanent Representative to WMO
Pakistan Meteorological Department
Islamabad.**



Sequence of the Presentation

- Mission Statement & Objectives
- PMD Services/ Dedicated EWS and Beneficiary
- PMD Services for Ministries / Organizations
- Maritime Services in METAREA IX
- Existing Met. Network
- Achievements (2022-23)
- Future Road Map
- Challenges





Mission Statement & Objectives

“Provision of effective **Meteorological, Hydro-meteorological and Geophysical Services** for improved quality of life, property and environment by increasing safety on land, sea and air.”

- To provide information on Weather, Climate and Geophysical phenomenon for public safety.
- To support in Disaster Risk Reduction activities, socioeconomic development based on Climatic Potential of the country.
- To monitor Climate Change and its impact, generate Future Projections and suggest Policy Options for Adaptation.



PMD's Services

- Meteorology
- Hydrology
- Drought
- Seismology
- Agro-meteorology
- Aviation Meteorology
- Marine Meteorology
- Glaciology (Glacier Monitoring)
- Climatology/Astronomy
- Research and Development

Dedicated Multi-Hazards Early Warning Systems

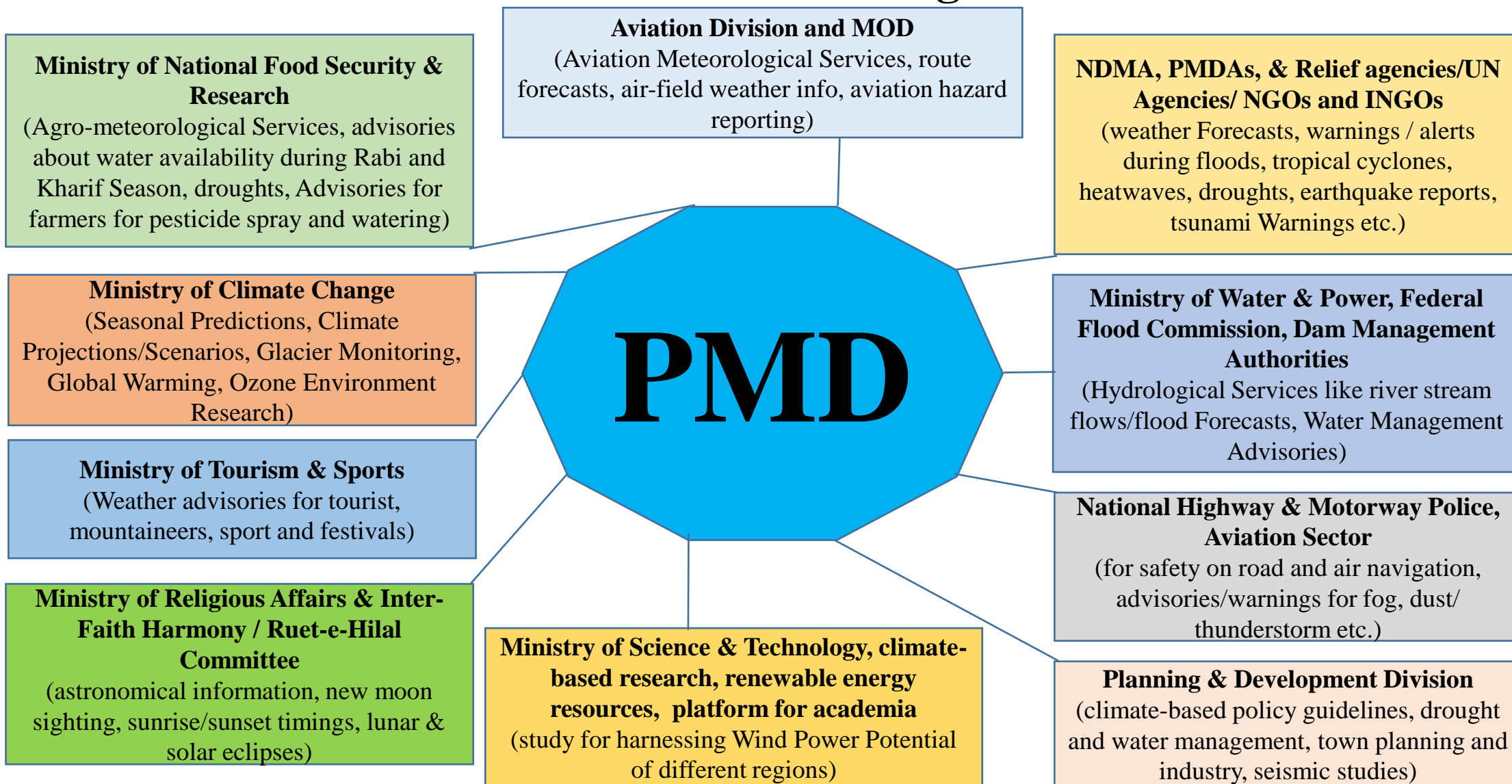
- Heavy Rain Warning System
- Flood Early Warning System
- Earthquake & Tsunami Early Warning System
- Cyclone Early Warning System
- Heat Wave & Marine Early Warning System
- GLOF Early Warning System
- Drought Monitoring & Early Warning System
- Fog, Smog, Dust/Thunderstorm, Visibility Warning

Beneficiary Sectors

- ❖ Aviation
- ❖ Water
- ❖ Energy
- ❖ Agriculture
- ❖ Tourism
- ❖ Religious



PMD Services for Ministries / Organizations





Marine Meteorological Service (METAREA IX)

- ❖ Pakistan is a Coordinator since 1976 of METAREA-IX (consists of 17 countries)
- ❖ PMD-Area of responsibilities under Global Maritime Distress & Safety System(GMDSS).
- ❖ Forecast is issued twice daily through **INMARSAT** Coastal Station Perth, Australia for the ships already in sea.
- ❖ Issues coastal warnings to Ports, all ships and concerned National Authorities
- ❖ Sea Bulletins for fisheries broadcast by Radio



Bahrain	Ethiopia	Jordan	Qatar	Sudan	Kuwait
Djibouti	Iran	Oman	Saudi Arabia	UAE	Uzbekistan
Egypt	Iraq	Pakistan	Somalia	Yemen	



Achievements (2022-2023)

- In 2022, Early Warnings for **Six climate extremes events (snow blizzard, heatwave, GLOF, Flash Drought, Torrential Rainfall (Flash Floods) and Monsoon Instant Rainfall flood)** were issued Timely that helped to save lives, properties of the community.
- **World Meteorological Organization (WMO)** in its press release appreciated PMD early warning for monsoon 2022, helped to minimize the damages.
- **Biporjoy Cyclone (2023): 31 Advisories/Alerts** were issued, due to anticipatory action, no casualties were reported. Disaster Management agencies, NGOs, INGOs and UN agencies appreciated
- **Flooding in Sutlej River (2023):** Timely Early warning of flood was issued and updates are being shared. No human loss is reported up till now.



Specialized Centers

NWFC
Islamabad

NAMC
Islamabad

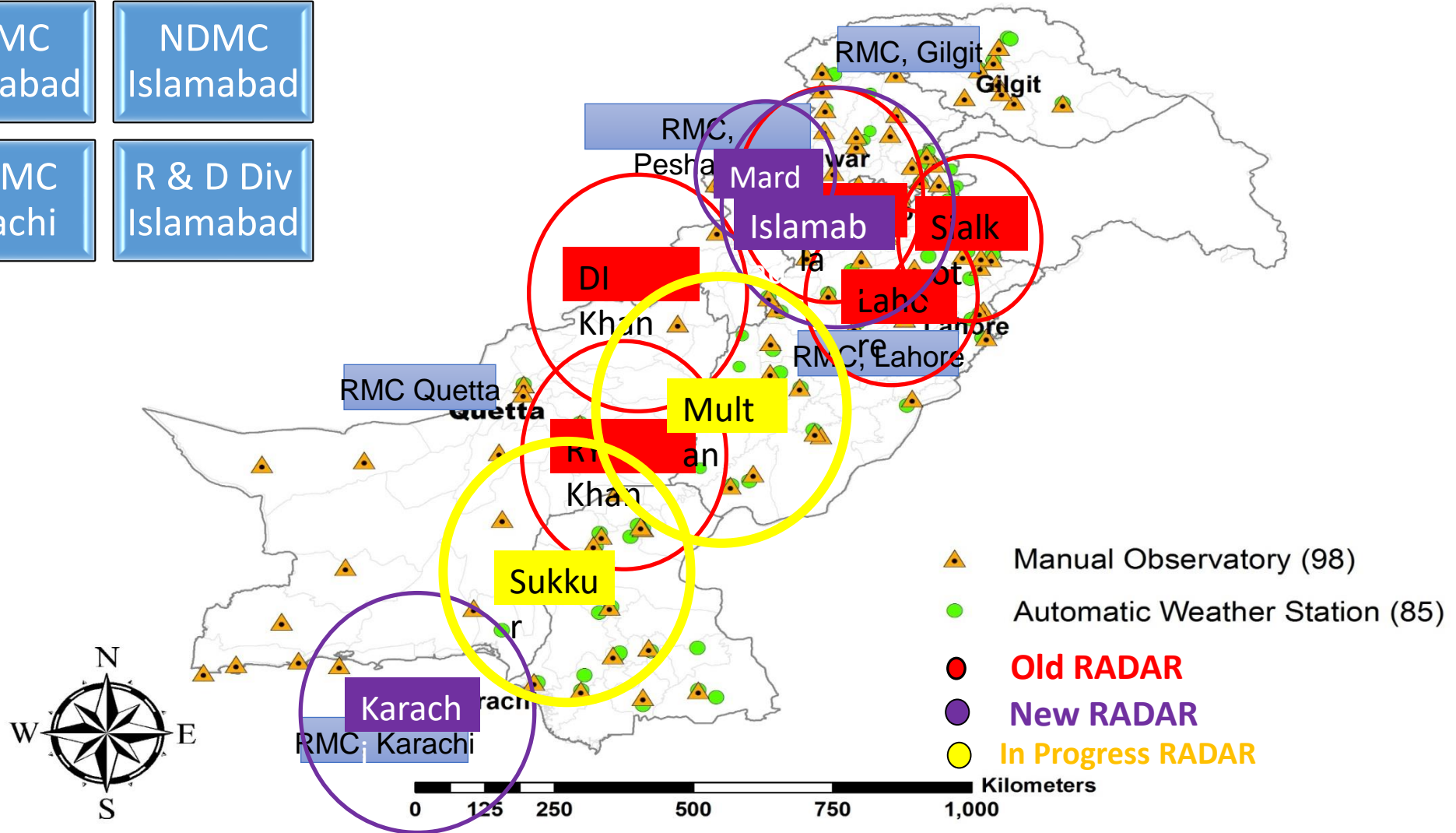
NDMC
Islamabad

FFD
Lahore

NTSMC
Karachi

R & D Div
Islamabad

Existing Met Network

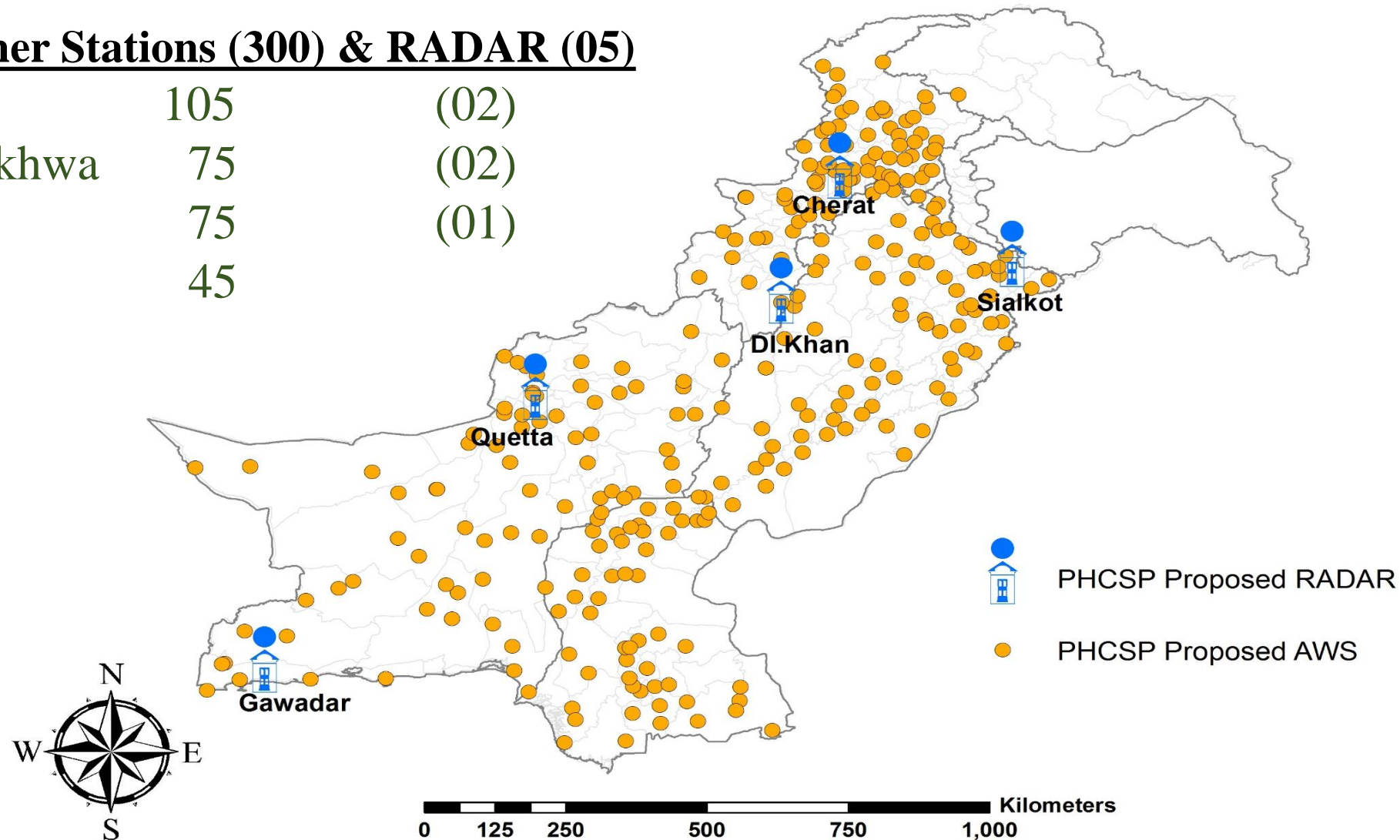




Future Road Map: Plan for Strengthening of Early Warning Network of PMD

Automatic Weather Stations (300) & RADAR (05)

Balochistan	105	(02)
Khyber Pakhtunkhwa	75	(02)
Punjab	75	(01)
Sindh	45	





Research, Development, Innovation & Self Sustainability

❖ PMD Web Portal (Interface Developed – Test Run)

- Digitization of PMD data
- Tailored Forecast at 47,000 Geographical locations in Pakistan (5KM resolution)
- Interface for Sale of PMD Products

❖ Kisaan Mobile Application (Features Locked - Under Development)

- For timely weather information specifically for farmers, a Kisaan Mobile Application has been developed and would be launched soon.
- The application would enable the farmer to know about next rain, wind storm and similar weather conditions to take timely decision about irrigation, pesticide spray and fertilizers etc.

❖ Meteorological Act Legislation (Drafting Stage)

❖ Command Control & Communication Centre (Proposed)

- Integration of all PMD products
- AI enabled Decision Support System for Realtime Warning for all stakeholder



Challenges

Technical

- Regional Cooperation for early warning Climate Extreme events prediction
- Unwillingness to share IPR (Intellectual Property Right)
- Cultural and Linguistic Barrier/Trust building.
- Outdated Equipment and Infrastructure
- Transboundary real time data sharing
- Frequent Up-gradation not possible due to high cost
- Dissemination challenges & non-cooperation of private firms on free of cost services
- Lack of Synoptic, Upper atmosphere as well as Hydro-met Data network
- Customize the Early warning products and Developing EW protocols

Administrative

- Limited Career Growth/Progression resulting in High Turn Over
- Capacity Building in accordance with technology advancement



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Thank You

