



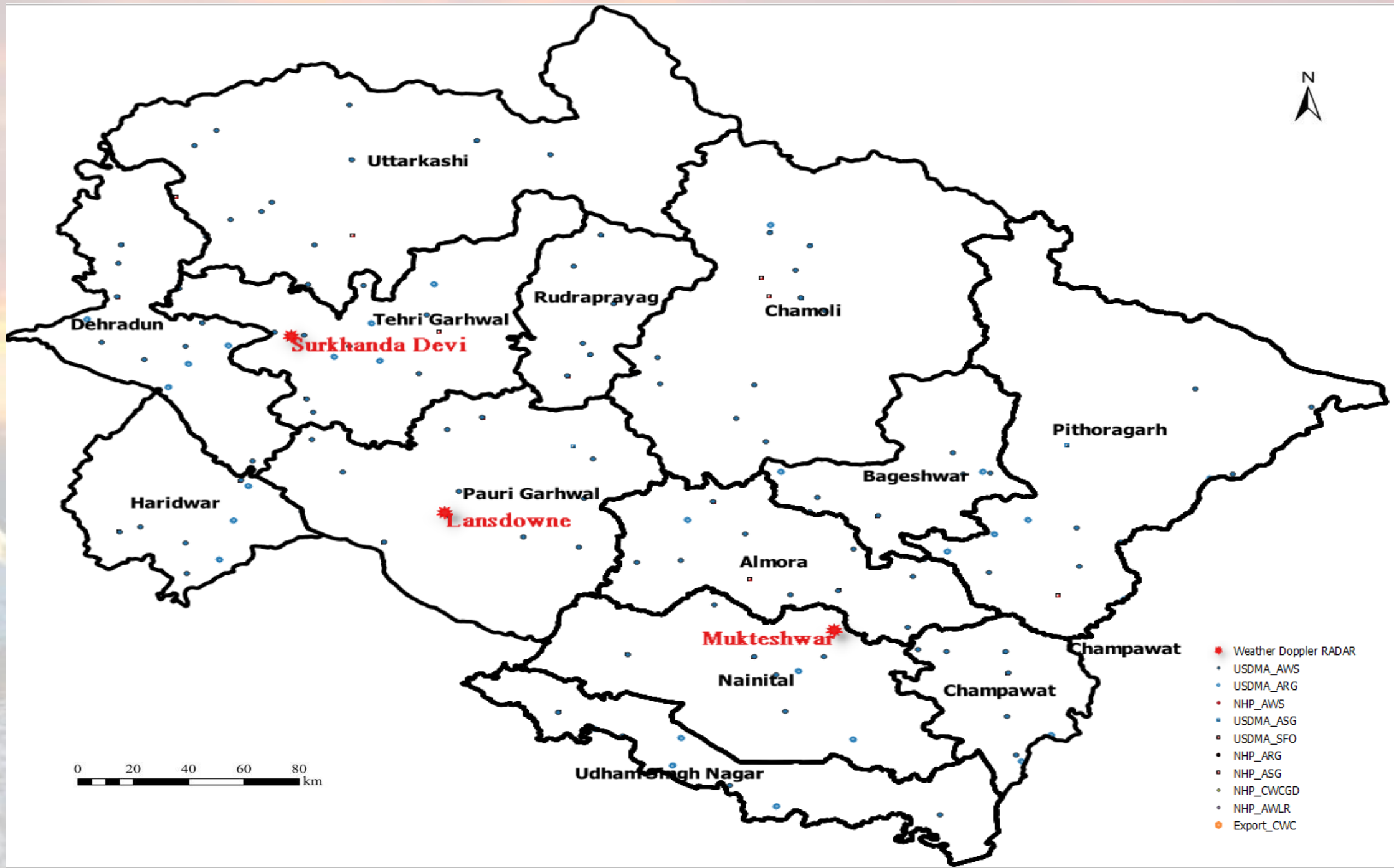
Dr.Pooja Rana,
Planner,
Uttarakhand State Disaster Management Authority
Uttarakhand

Layout

- Existing System
 - ✓ Hydro-met networks,
 - ✓ Forecast /warning
- Dissemination of Early warning
- Identify the gaps in present existing system
- Recruitment and Recommendation by USDMA

Existing System- Hydro-met networks

Instruments	Departments				
	USDMA	IMD	CWC	IITM	Total
Meteorological Sensors <i>(Automated Weather Station-AWS / Automated Rain Gauge-ARG /Surface Field Observatory-SFO/ Automated Snow Gauge-ASG)</i>	176	80	112	-	368
Hydrological Sensors <i>(Automated Water Level Recorder –AWLR)</i>	-	-	28	-	28
Doppler Weather Radars	-	03	-	-	03
Lightning Sensors	-	-	-	03	03



Weather Monitoring Sensors



Automated Rain Gauge



Surface Field Observatory



Automated Snow Gauge



Automated Weather Station

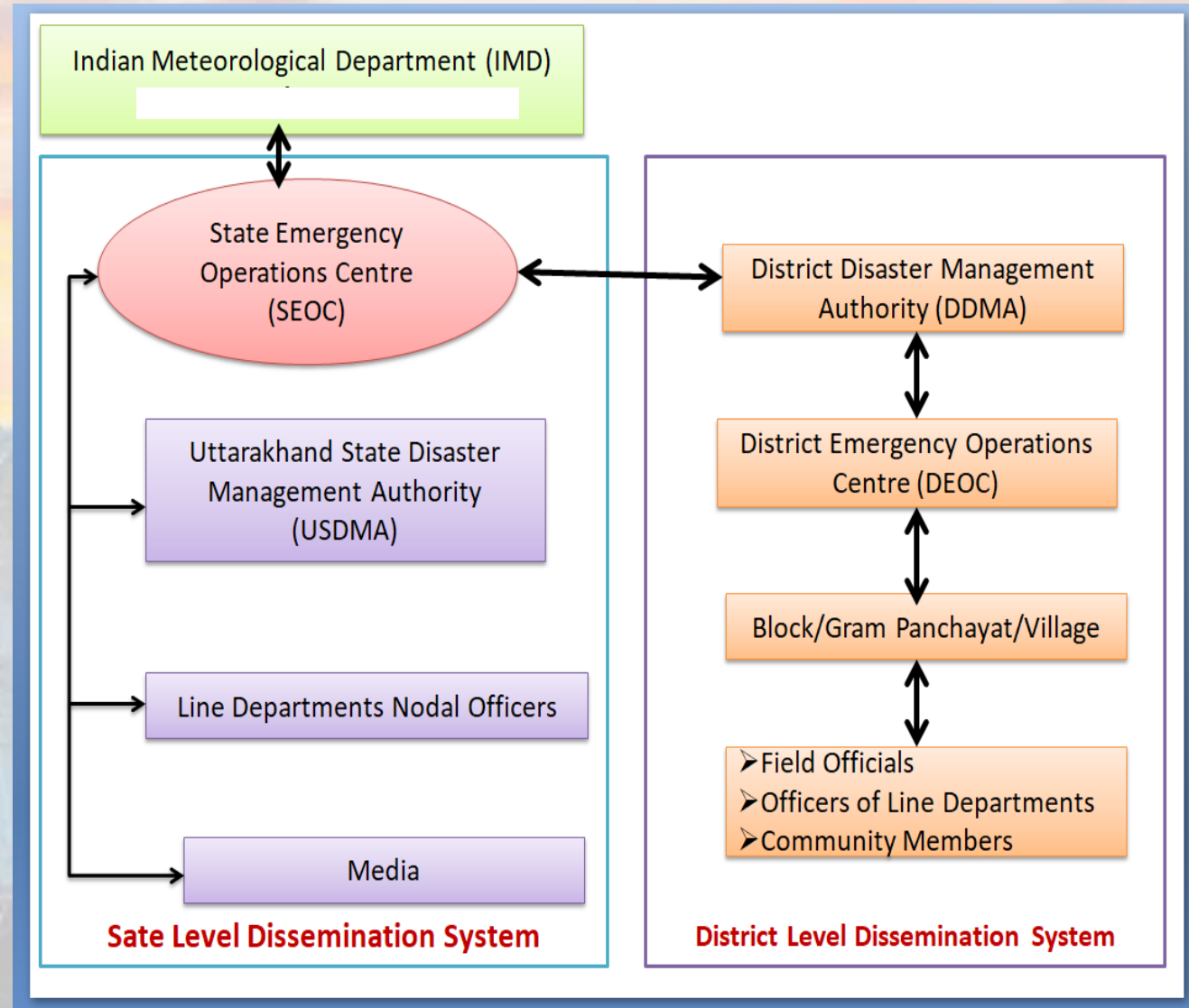
Existing System- Forecast /warning

S No.	Activity	Outcome
1	Central Water Commission	✓ CWC provides trends and warning
2	India Meteorological Department	✓ IMD provides the weather warning
3	Defence Geoinformatics Research Establishment (DGRE)	✓ DGRE provides Avalanche warning

Early Warning Dissemination System

Seamless Communication

- **CAP-Common alert protocol**
- **Advisories through electronic, print and social media.**



Functioning of State Emergency Operation Centre(SEOC) during Monsoon

Act as nerve center for coordinating Disaster Management activities at the State level.

Function

24*7
Operational

- Duty In-charge
- Operators
- Police Official

- Police Wireless
- Forest Wireless
- Toll Free number
- Satellite Phone
- Landline
- Mobile
- Media
- Social Media

- Status report generation twice in a day at 10 am and 5 pm and dissemination via WhatsApp group & mail.
- In case of aftermath of any disaster 4 status reports are generated in a day.

SEOC

Monsoon Period(15th June to 15 September)

Nodal officer deployment

- PWD
- Jal Sansthan
- Jal Nigam
- Irrigation
- UJVNL
- UPCL
- PITCUL
- Health Department
- Animal Husbandry
- SDRF
- Armed Forces
- Paramilitary Forces

- Report generation twice in a day at 10 am and 5 pm.
- Flood/heavy rainfall report.
- Daily report on water level (Data received from CWC and Irrigation).
- Dissemination via WhatsApp group & mail.
- Weather report from IMD.
- Status report of barrages from UJVNL.

Identify the Gaps in Present Existing System

➤ Issues in existing hydro-met network

- ✓ Hydro-met monitoring network is inadequate looking to tough hilly terrain.
- ✓ Automated stations have connectivity problem over hilly terrain

➤ Issues in existing Forecast/Warning

- ✓ Weather forecast
 - ✓ Receiving District level weather forecast
 - ✓ Temperature/snow forecast is not available
 - ✓ Lightning/ Avalanche forecast is District level
- ✓ Hydrological forecast
 - ✓ River water trends and warning is only available
 - ✓ The warnings are however restricted to lower reaches
 - ✓ Flood forecasting is not available

Recruitment and Recommendation by USDMA

- ✓ Densify the existing network based on the global and National standards combined with the local geo-physical and environmental conditions.

“Satellite observations are important, but they cannot substitute for surface-based observations, and they themselves need validation from surface data.”

- ✓ Forecast agencies should generate impact based forecast which will help the decision maker
- ✓ Forecast should be precise in terms of spatial and temporal.
- ✓ Forecast should include temperature and other parameters.
- ✓ Forecast agencies should provides training to the decision maker.

THANKS

