



Regional Workshop on Framework and Toolkit Development

Data, Modelling and Forecast Data Workflow

Mitesh V. Sawant

Agriculture Specialist and Project Manager, RIMES

Regional IBF **Framework & Toolkit** for Temperature Hazards

What It Means for SAHF Countries.....

❑ IBF Framework

1. Blueprint for Action

- Common **regional approach** for temperature IBF
- **Agreed** hazard, impact and warning levels
- **Clear roles:** NMHS, DRR, health sectors
- **Alignment** across SAHF countries

❑ IBF Toolkit

2. Practical Resources

- **Ready-made** methods and templates
- Example **warning matrices and messages**
- Data workflow and DSS examples
- **GEDSI and MEL** checklists

❑ Country Implementation

3. Adapting to Local Context

- **Customize thresholds, National Level Matrices** to national conditions
- **Integrate** with existing systems
- **Build capacity using shared tools**
- Benefit from regional coordination

Data & Modelling Workflow for Temperature IBF



Regional → National → Local

Seamless data flows connecting all levels for temperature IBF



Core Platforms

DataEx, RDAS & SKHub and RRP-UNESCAP + Local Data (Socioeconomic And exposure and coping capacity) provide foundational support to countries



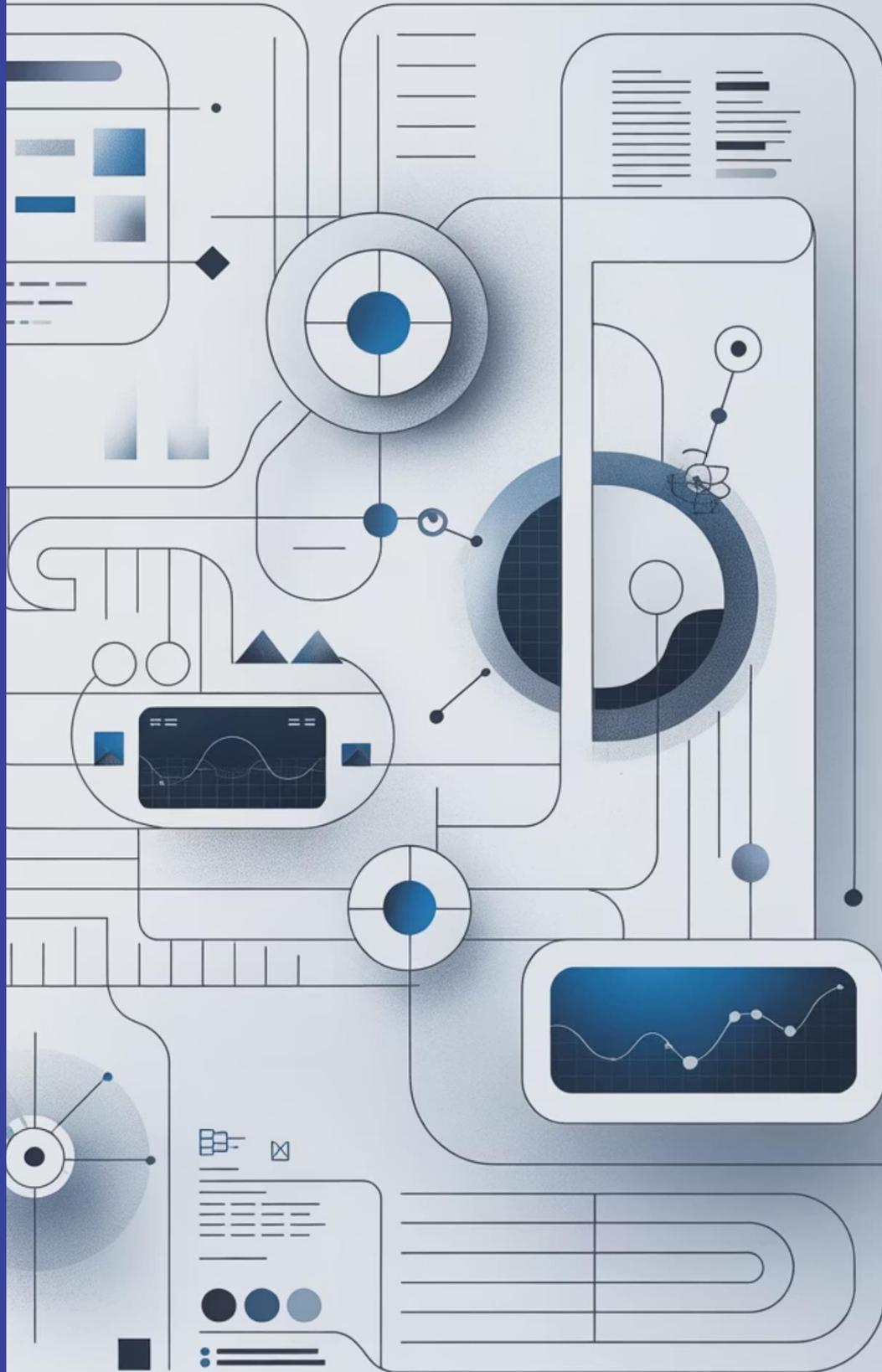
Decision Support for Anticipatory Action and Preparedness

Data feeds national DSS and local tools: INSTANT, NLAS



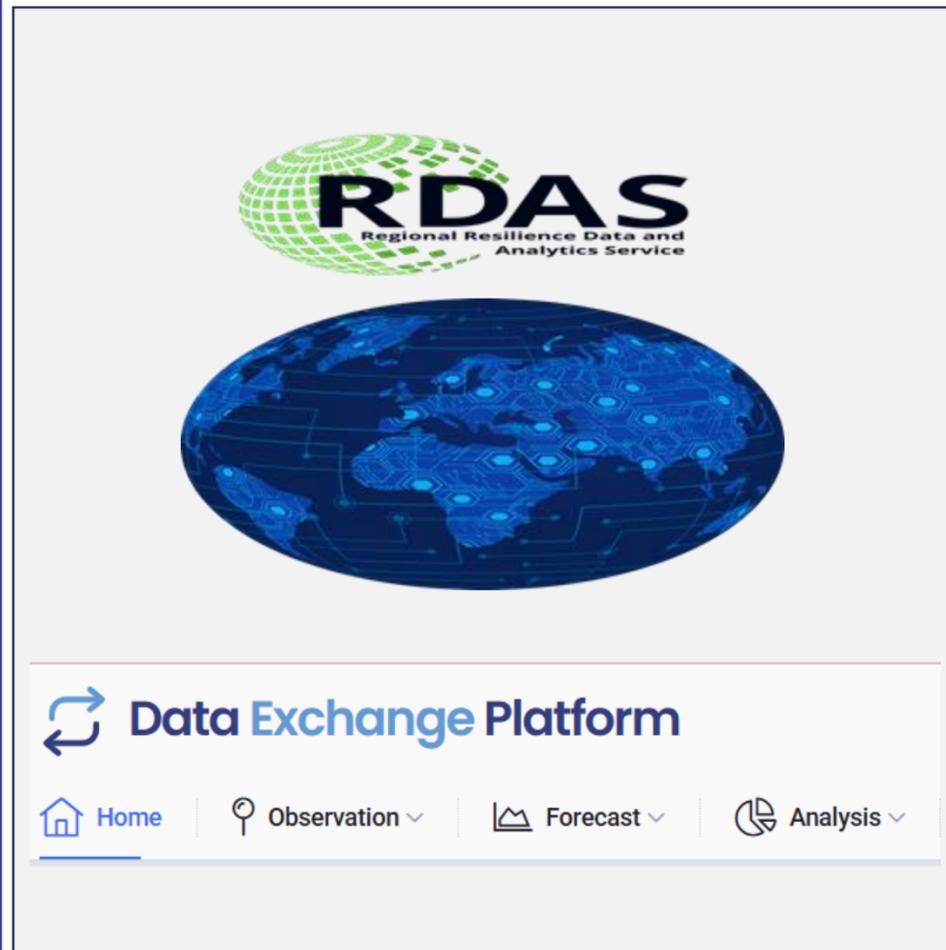
Toolkit Output as per the SOP of NMHS/User Sectors

Draft data workflow models ready for country implementation



Data Ecosystem

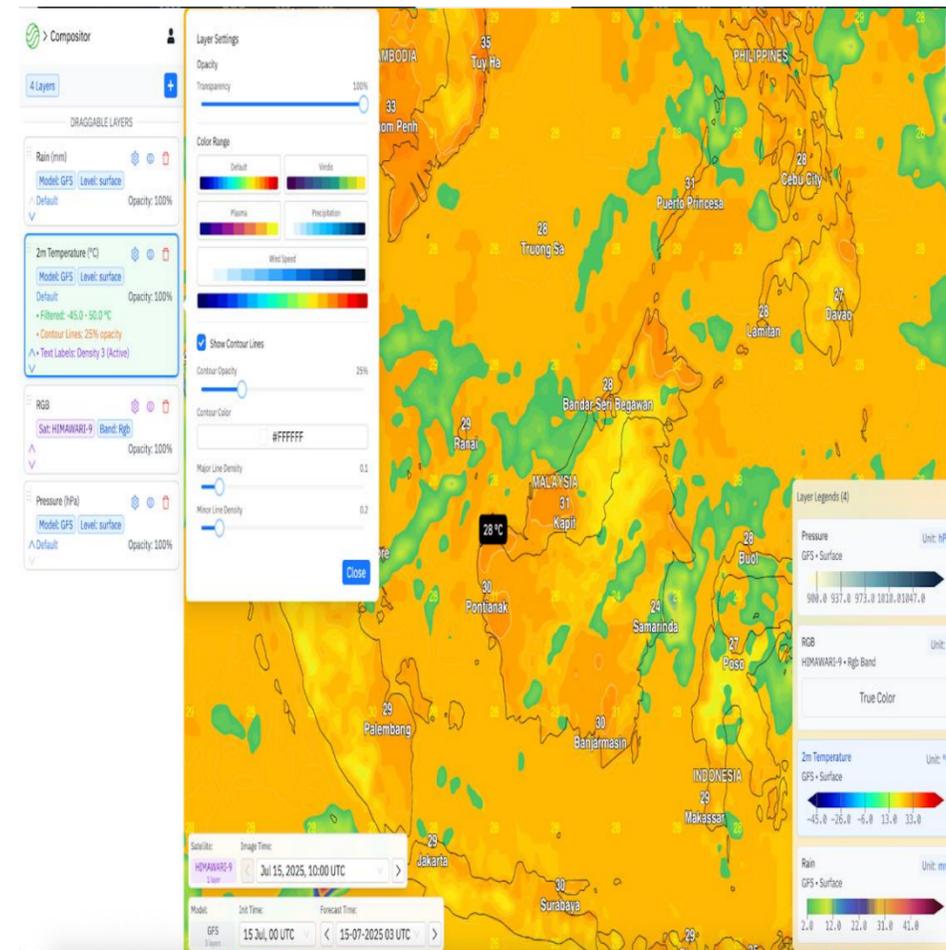
Three-Layer Architecture for Climate Resilience



Regional Layer

DataEx – Two-way meteorological data exchange platform

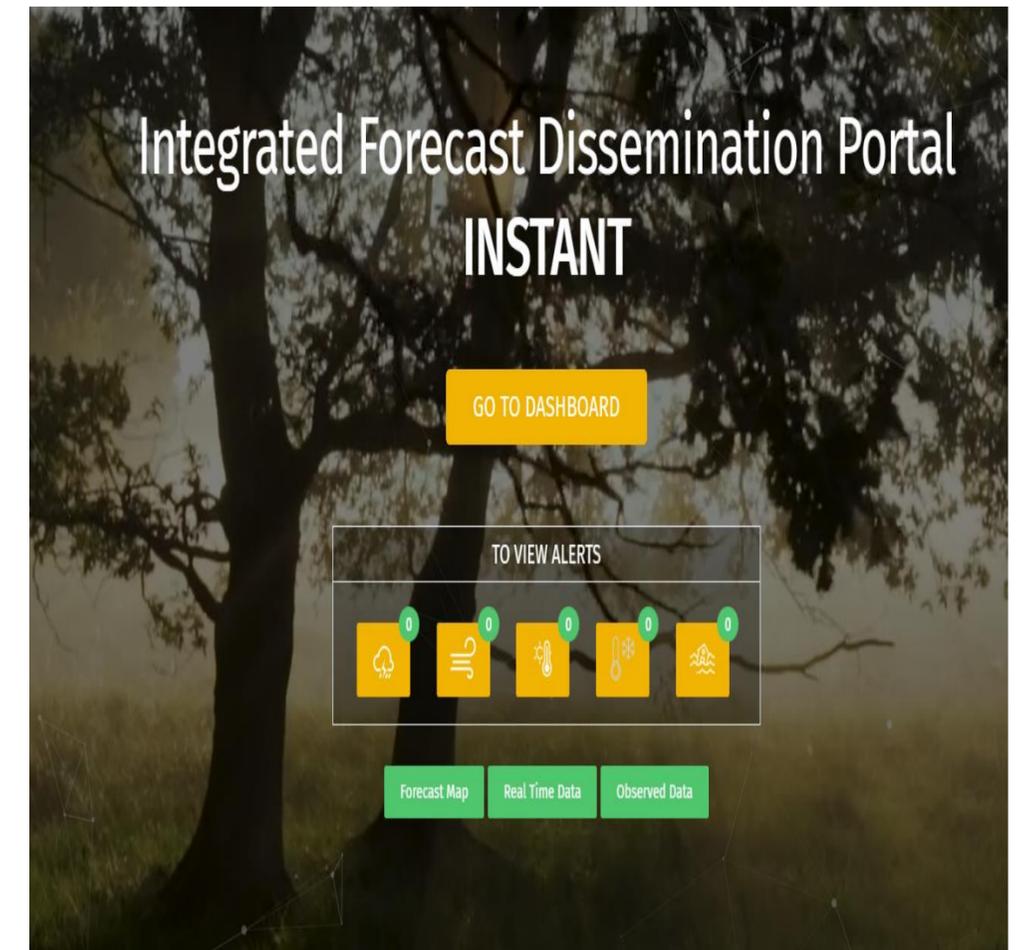
RDAS – Regional resilience data and analytics service



National Layer

NMHS Infrastructure – Data servers, databases, national models

CDIS – Climate Data Information Systems and national data centers



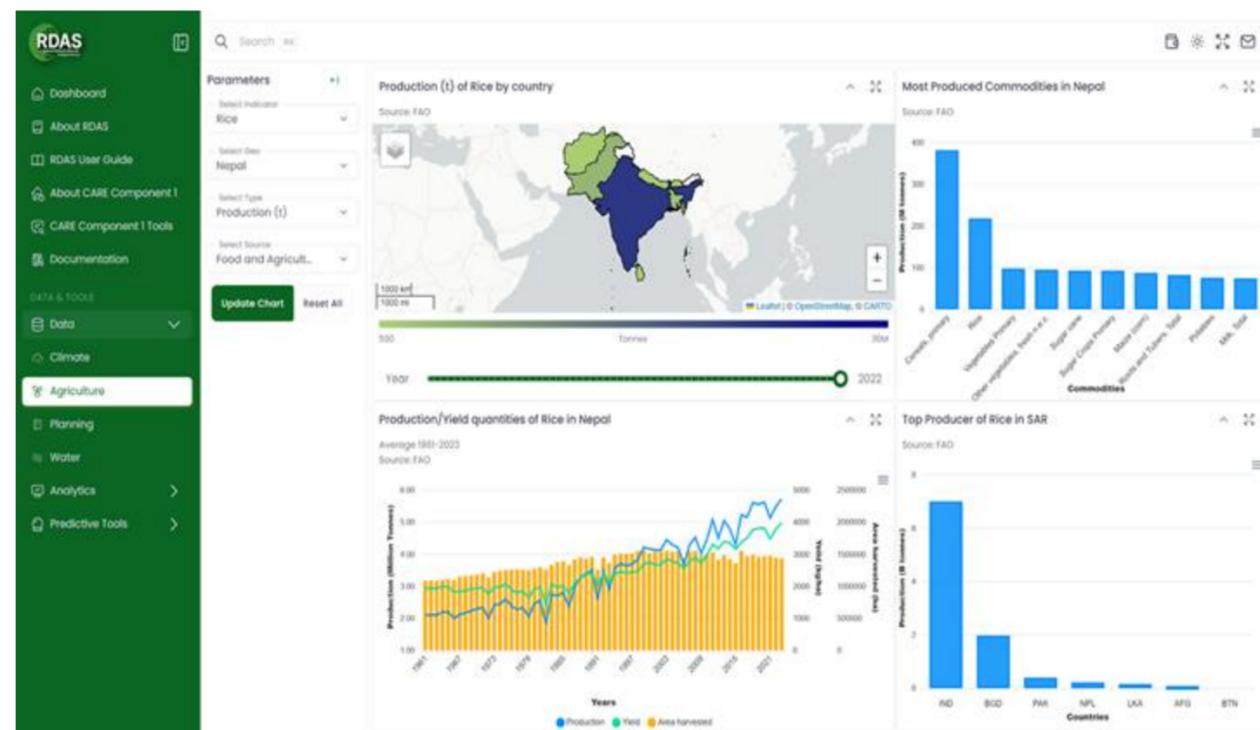
Local / User Layer

INSTANT – Multi-hazard portal for communities and agencies

NLAS – National Livestock Advisory System for sector planning

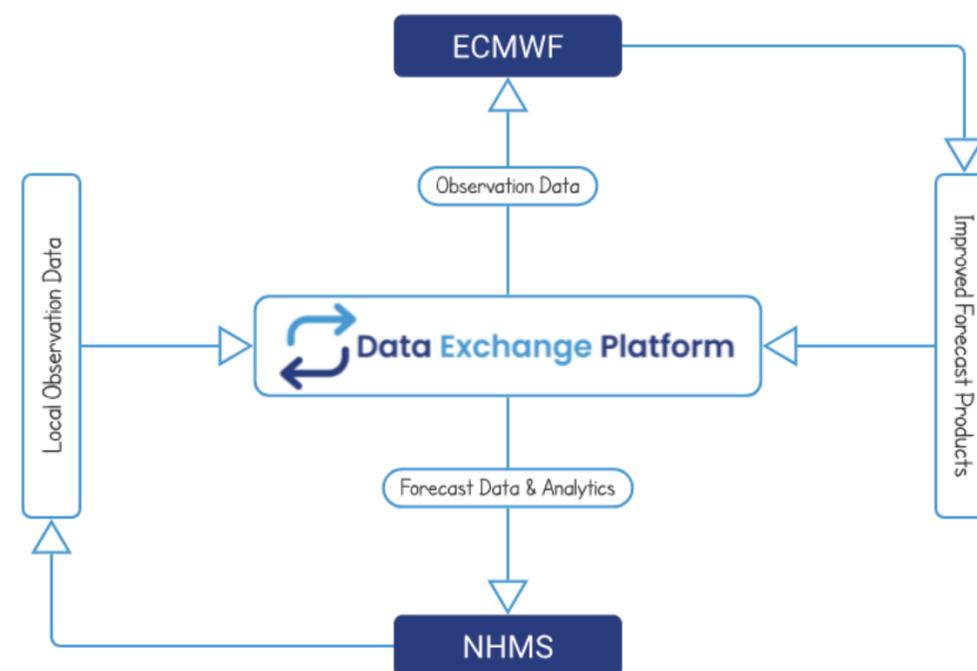
Level 1: Regional Layer: DataEx & RDAS

Foundation for Regional Cooperation



RDAS

- ❑ One-stop for regional data & analytics service
- ❑ Curates multi-source datasets:
 - Climate & weather data
 - Exposure & vulnerability layers
- ❑ Provides analysis & visualization tools and pre-processed IBF-ready layers (e.g. heat indices, risk maps)
- ❑ Feeds both SKHub and National DSS through APIs / downloads



DataEX

- ❑ Two-way meteorological data exchange platform
- ❑ Allows NMHSs and RIMES to:
 - Share observations and processed products
 - Access global model products (e.g. ECMWF)
- ❑ Provides a standardized gateway for regional model input and verification data

Level 2: National Layer: NMHS & Sectoral DSS

NMHS Data Systems

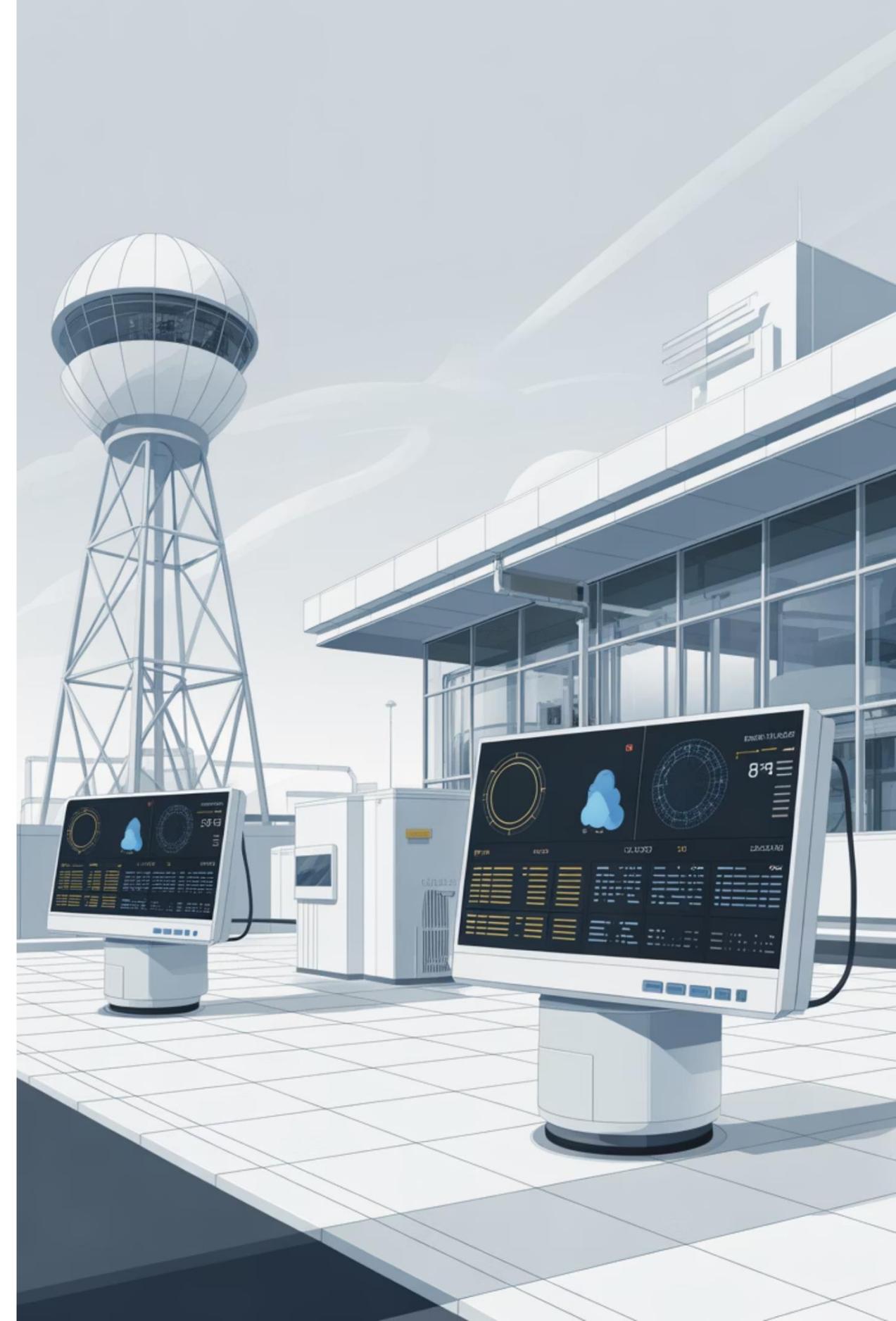
- National observation networks: AWS, synoptic stations, weather monitoring
- National forecast models and post-processing capabilities
- Comprehensive databases for climate, extremes, verification
- Quality control and data standardization protocols

Sectoral DSS & Portals

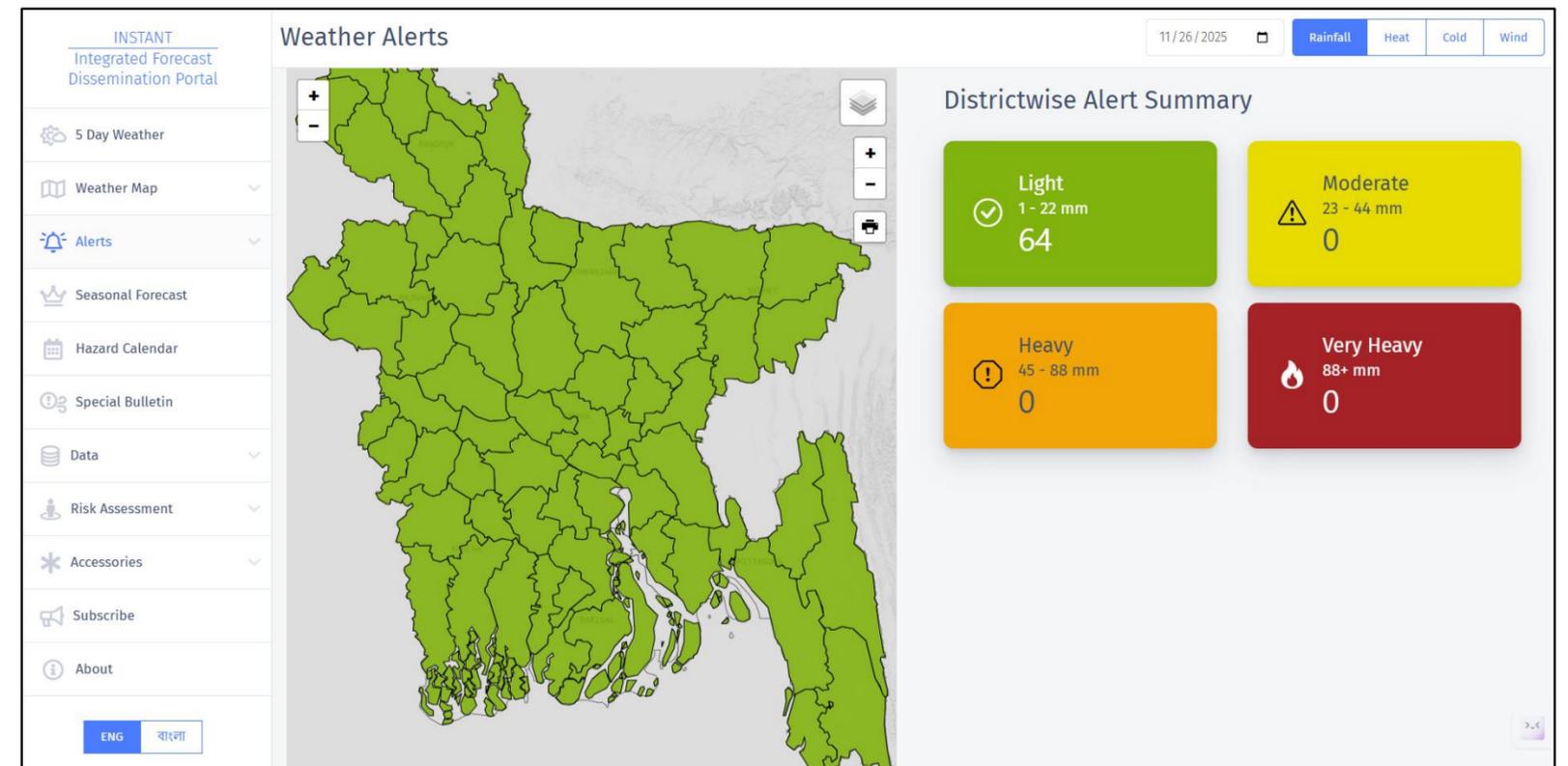
- Multi-sector int: health, DRR, agriculture, labour, urban planning integration
- National IBF dashboards for heat and cold events
- Customized warning systems and alert mechanisms
- Real-time monitoring and decision support

Integration Points

- Upstream: **Pulling from RDAS/DataEx for regional forecasts and indices**
- Downstream: **Serving data to local tools like INSTANT and NLAS**
- API-enabled connections for seamless data flow
- Standardized formats ensuring interoperability



Level 3: Local / User Layer – INSTANT & NLAS



NLAS – National Livestock Advisory System

- Decision-support for livestock planners & decision-makers
- Links:
 - Weather & climate risk (heat stress, cold stress, etc.)
 - Livestock health, production and management advisories
- Consumes:
 - Temperature IBF products from NMHS / national DSS
 - Local exposure/vulnerability info (e.g. herd distribution, breed)

INSTANT Portal

- Multi-hazard portal for **communities, agencies & humanitarian actors**
- Provides:
 - 5-day forecasts, maps, extreme event alerts
 - Special weather bulletins, seasonal outlooks
 - Email/SMS alert subscriptions
- Consumes:
 - National hazard & IBF products
 - Regional inputs (e.g. RDAS outputs) via APIs

End-to-End Temperature IBF Workflow through Handholding support from UKMET and RIMES

Integrated Systems from **Global Data to Local Action**

01

Observations & Global Models

National **observations** + global NWP shared via **DataEx** platform

02

Regional Processing

RDAS ingests data, computes heat/cold indices, publishes IBF-ready layers and APIs

03

National Processing

NMHS/DSS combines RDAS outputs with national models, **generates warning levels and sector-specific products**

04

Local Distribution

INSTANT displays alerts; **NLAS** generates livestock advisories; SMS/radio dissemination

05

Feedback Loop

Impact data from agencies and communities improves national systems and RDAS thresholds