



Government of Nepal
Ministry of Home Affairs
National Disaster Risk Reduction and Management Authority
(NDRRMA)

Product Application Training of Satark
Concept Note

Hotel Barahi Kathmandu
7 February 2025

1. Project background

The Climate Adaptation and Resilience (CARE) for South Asia Project, supported by the World Bank, aims to build resilience to climate variability and change. It focuses on improving regional data and knowledge availability, developing guidelines, tools, and capacities, and promoting climate-resilient decisions, policies, and investments across key sectors in beneficiary countries. The project is implemented by the Regional Integrated Multi-Hazard Early Warning System for Africa and Asia (RIMES) and the Asian Disaster Preparedness Center (ADPC). RIMES implements Component 1, which focuses on promoting evidence-based climate-smart decision-making. This component includes three sub-components: establishing Regional Resilience Data and Analytics Services (RDAS) for the South Asia Region (SAR), strengthening Decision Support Systems (DSSs) for Bangladesh, Nepal, and Pakistan, and capacity building of users of the systems and their products for climate-informing plans and decisions.

Satark DSS has been developed as part of a comprehensive project to enhance the disaster management capabilities of the National Disaster Risk Reduction and Management Authority (NDRRMA). This system provides information for effective disaster risk reduction and management, focusing on four major natural hazards: flash floods, forest fires, landslides, and lightning. By integrating data from various sources, the Satark DSS supports evidence-based decision-making during all phases of disaster management for these specific risks. The system ingests weather forecasts and other climate information products from the Department of Hydrology and Meteorology (DHM) and other regional/global climate centers. It then computes

hazard triggers and thresholds to generate dynamic impact outlooks for various sectors in daily operations impacting long-term disaster risk reduction strategies.

2. Training Background

The Satark is an ongoing co-development initiative led by the National Disaster Risk Reduction and Management Authority (NDRRMA). This training event serves as the platform to introduce the current features of Satark and support system optimization. By fostering an interactive environment, the training program aims to align the system's development with the practical needs of disaster management, ensuring that Satark evolves into a robust, user-centric tool for addressing the unique disaster risk landscape. This training program is designed to equip key personnel with the knowledge and skills to operate and maintain the Satark effectively, ensuring its sustained use and maximizing its benefits for disaster management.

3. Training objectives

This training event is designed for all NDRRMA personnel, technical and non-technical, who will be involved in interpreting and utilizing the Decision Support System (DSS). It aims to familiarize staff with the system's capabilities for monitoring and analyzing flash floods, forest fires, landslides, and lightning risks. The program will enable participants to understand the DSS's functioning, interpret its results, and effectively share its outcomes to support disaster risk reduction and management efforts.

By the end of this training, participants will be able to:

1. Understand the Satark system architecture and components
2. Generate, automate, and disseminate advisories and alerts
3. Integrate and validate data before dissemination
4. Undertake basic system troubleshooting

4. Target Participants

This training is specifically designed for:

- Staff from NDRRMA dedicated to supporting disaster risk reduction and management efforts.
- Technical staff providing user assistance for risk-specific queries and issues

Proposed total number of participants: 15-20 (to be confirmed by NDRRMA)

5. Training Modules

The content of the training event is structured to provide a comprehensive understanding of the Satark practical application. It is divided into five main sessions, considering the key aspects of the system.

I. Introduction to System Architecture and Components of Satark

This module introduces the comprehensive capabilities of the *Satark*. Participants will gain deep insights into system architecture and its practical applications in disaster risk management.

The session begins by thoroughly exploring the *Satark* architecture and explaining how various components work together to provide comprehensive decision support. This includes understanding data flow, system integration points, and core functionalities.

II. User Interface and System Navigation

This module focuses on practical system operation and navigation. Through hands-on exercises, participants will master:

Dashboard Operations: Understanding the main interface layout, customization options, and navigation tools. This includes personalizing displays and accessing key features efficiently.

System Access and login: Comprehensive coverage of login procedures, user authentication, and maintaining data security while using the system.

III. Model Integration and Applications: Participants will learn about the integrated models crucial for risk management:

- Forest fire model (MoFE and Customized model)
- Flash Flood (South Asia FFGS-WMO and HEC-HMS Customized Hydrological Model for Mohana and Tikapur)
- Landslide (TRIGRS and WOM- Customized Model)
- Lightning (HIWAT- ICIMOD)
- Evacuation routes
- Exposure datasets of census and GeoServer

IV. Core Functionalities and Features

This module addresses the primary operational aspects of **Satark** DSS related to types of hazards integrated into the system:

- Forest fire
- Flash Flood
- Landslide

- Lightning
- Evacuation routes
- Use of census datasets

Alert Generation and Management: Detailed instruction on creating, validating, and disseminating various types of alerts, including:

- Automated email advisory dissemination of risk
- Manual advisory dissemination

Data Management: Thorough coverage of data handling procedures, including:

- Manual and automated data entry methods

V. Sharing of Satark Mobile App Prototype

- Mobile app interface prototype

6. Training Methodology

The training approach adopts a hands-on, interactive approach to ensure effective learning. The methodologies include:

Interactive Lectures: Expert-led sessions combining theoretical knowledge with practical applications.

Hands-on Exercises: Extensive practical sessions using the **Satark** with real-world scenarios.

Group Activities: Collaborative learning through case studies and problem-solving exercises.

Simulation Exercises: Real-time simulation of emergency scenarios and decision-making processes.

All participants must bring a laptop for hands-on practice.

7. Expected Outcomes

Upon completion of the training, participants will demonstrate:

- Proficiency in Satark DSS operation
- Ability to generate and interpret system outputs
- Competence in alert generation and management

- Understanding of data analysis and reporting
- Skills in applying system knowledge to real situations

8. Schedule of the program

Time	Agenda	Responsibility/ Facilitation
01:00-01:15	Welcome tea	All
01:15 - 01:25	Welcome & Introduction	All
01:25 - 01:30	Objectives sharing and pre-assessment of product application	RIMES
01:30 - 02:15	Introduction to Satark (Data and models integrated into the system)	RIMES
02:15 - 02:30	Q&A Session	ALL
02:30 - 03:20	System overview, Advisory Generation, and Dissemination (Hazard-specific)	RIMES
03:20- 03:30	Refreshment Break	All
03:30-04:30	System overview, Advisory Generation, and Dissemination (Hazard-specific)- Hands-on exercise	All
04:30-04:45	Orientation on the Satark Mobile App	RIMES
04:45 - 04:55	Evaluation- participants' survey (online)	NDRRMA
04:55-05:00	Feedback and Closing Remarks	All
05:00	High Tea	All

9. Evaluation

To measure the effectiveness of the product application training, participants will complete the survey using the following templates.

1. Pre-training assessment
2. Post-training assessment
3. Participant Satisfaction Survey
4. DSS performance and utilization survey