IMPLEMENTATION PROGRESS

Pakistan

3rd Regional Workshop of CARE Component 1: Regional Sectoral Focal Points

24 February 2025

Presented by
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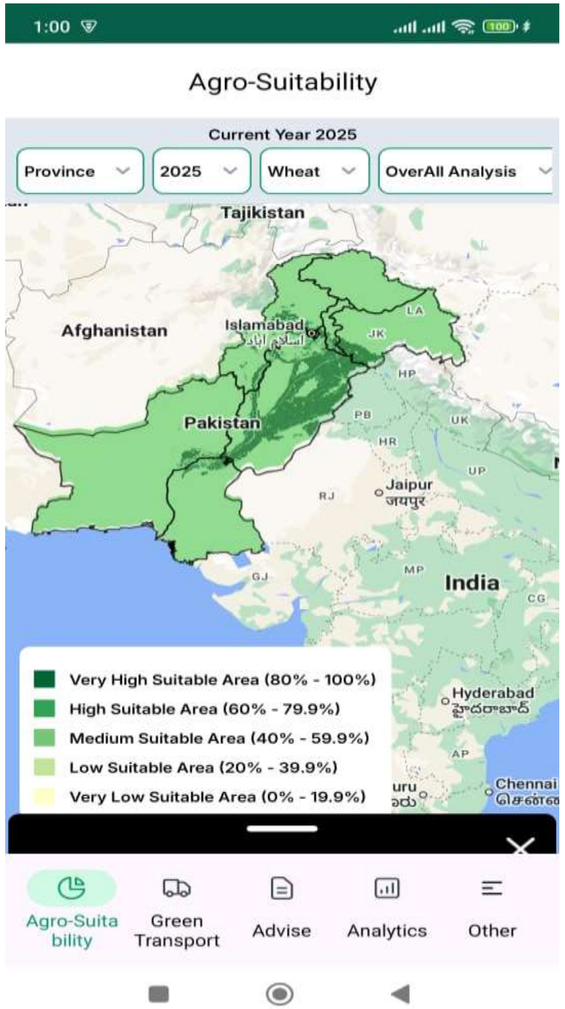
Outline

- Overview of Tools
- Progress and Achievements
- Capacity building
- Challenges
- Way Forward
- Demonstration of the Tools/DSSs
- Discussion

Key Stakeholders and Partners

Overview of Tool – CLIM PLANNed DSS and Mobile Application



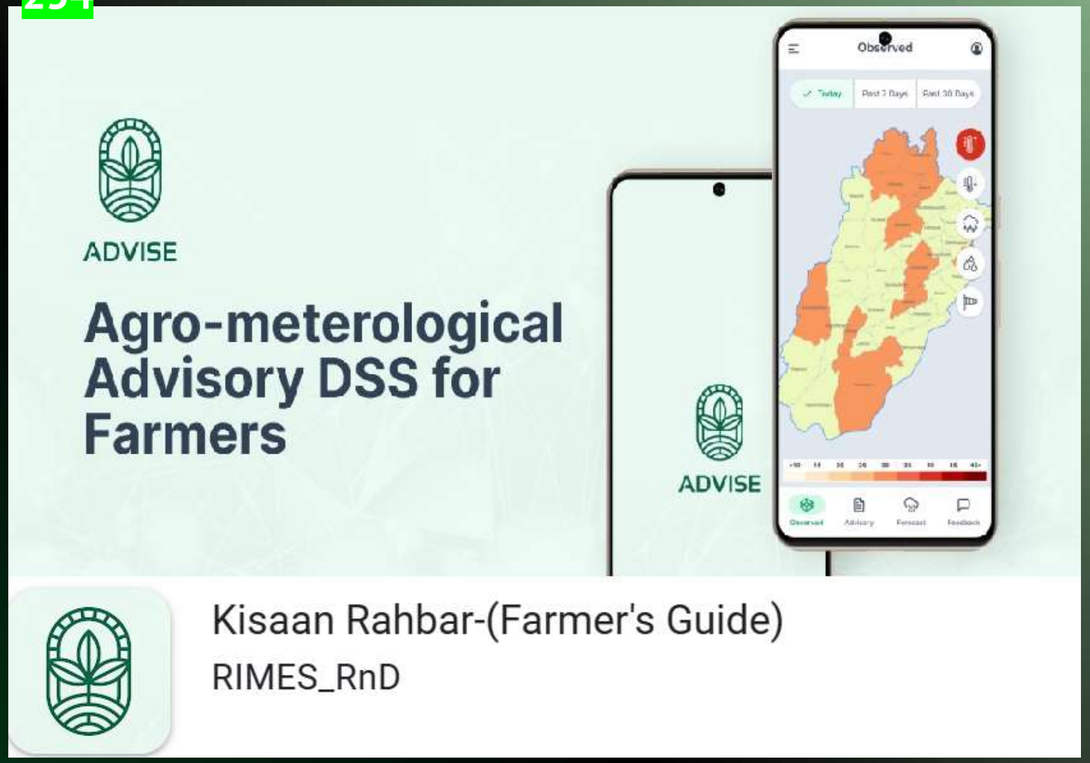
Mobile App – ongoing Development

Overview of Tool- ADVISE

Advise Mobile App
Kisaan Rahbar

Available on google play and Apple app store

Registered users: Balochistan 222 and Punjab 254



Progress and Achievements

Data Collection and Integration
Local and global datasets to support system development, with real-time forecast data integrated to enhance the reliability of DSS outputs.

01

Value Addition
Development of new features to the systems:
- Planting Date Prediction Module
- Pest Forecasting Module

02

User Feedback Based System Refinement
Comprehensive feedback from users and stakeholders was collected to enhance system functionality and user experience.

03

Mobile App Availability to Farmers
Two mobile applications fully developed

04

Government Ownership
Demonstrated government ownership

05

Advisories Dissemination
BACH:
Total advisories: 49 - Approved advisories: 29
(9 Districts for apples, olives, and dates)
2Punjab:
Total advisories: 87 - Approved advisories: 57
(4 Districts for rice and cotton)

06

Capacity Building and Training
Trained 271 officials in using the system and 274 officials on climate applications.

07

System Handover
Completed the handover of the system to two stakeholders, with the final handover to the remaining stakeholders planned for completion by the end of February.

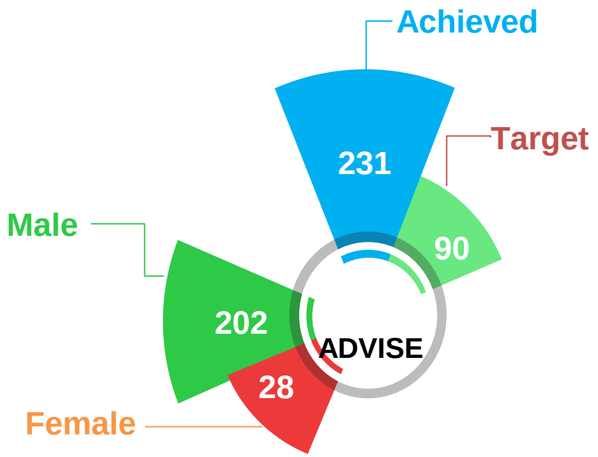
08

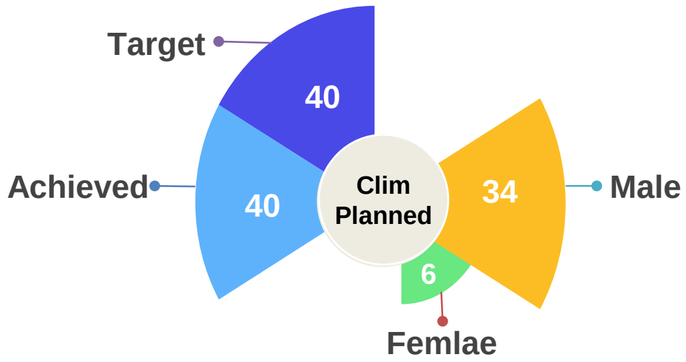
Scalability of System
The system is scalable and can be easily adapted and expanded to accommodate additional data sources, users, and functionalities in the future.

09

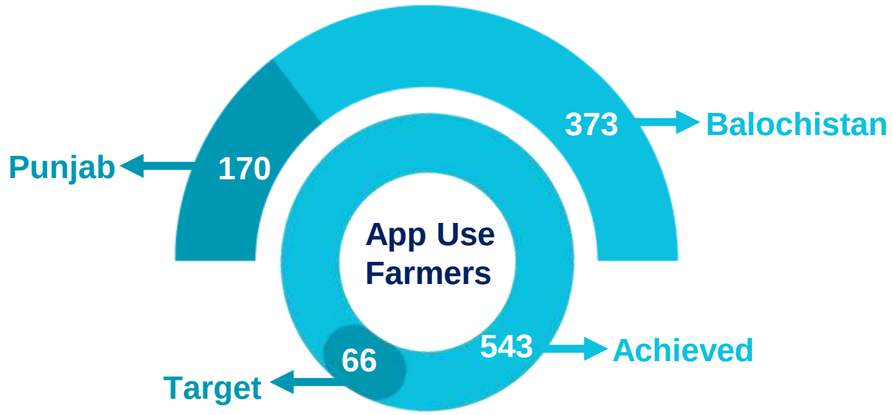
Capacity Building

Use and O&M of DSS





Mobile App



Challenges

01 Interdepartmental Coordination

Ensuring seamless communication and coordination between various government departments can be challenging, leading to delays.

02 Bureaucratic Hurdles

Navigating through bureaucratic processes and obtaining necessary approvals can slow down the co-production process

03 Resources Constraints

Limited resources and budget constraints often hinder effective collaboration and progress.

04 Limited Outreach

The limited focus on education and awareness can undermine project gains

05 High Expectations from Skaholders

Frequent requests such as downscaling the geographic scope, addition of new modules

06 Data Availability

Limited access to data, data quality, integration and compatibility issues, timescale

07 User Confusion

Farmers and other users often become confused by the availability of multiple systems, affecting their adoption and trust in the technology

Way Forward

March

-Handover to all provinces completed
-System testing and improvements
-Work on CLIMPLANNED APP

May

-System testing and improvements
-Experience sharing sessions with farmers
-O&M sessions with departments

April

- System testing and improvements
-Advisory dissemination
-Completion of CLIMPLANNED Mobile APP
-Experience sharing sessions with farmers
-Sessions with extension departments

June

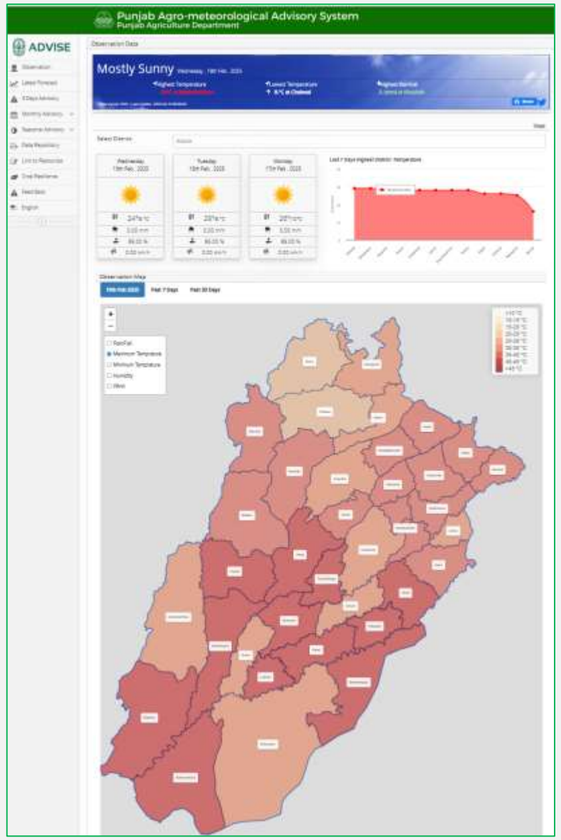
- Climate Applications Forum (CAF)
- System testing and improvements

July

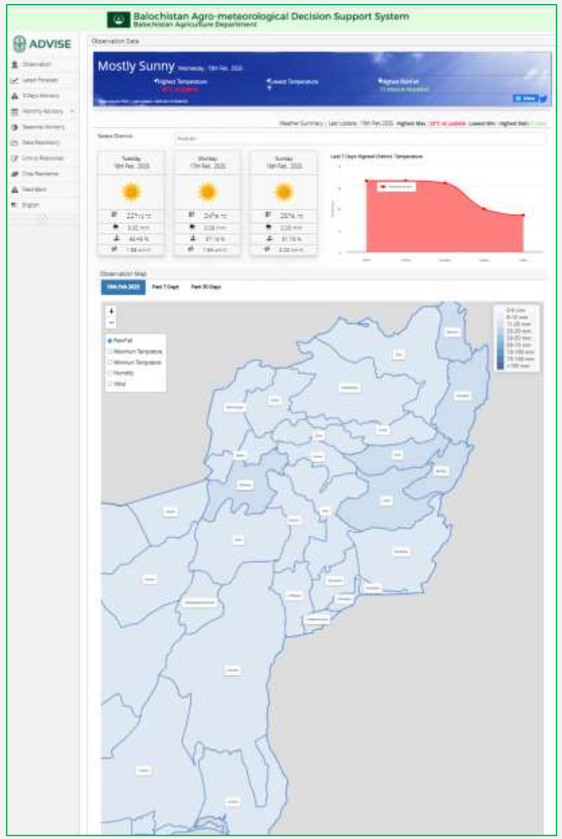
- Project Closing

Demonstration

CLIMPLANNED



ADVISE Punjab



ADVISE Balochistan

Overview of ADVICE-DSS

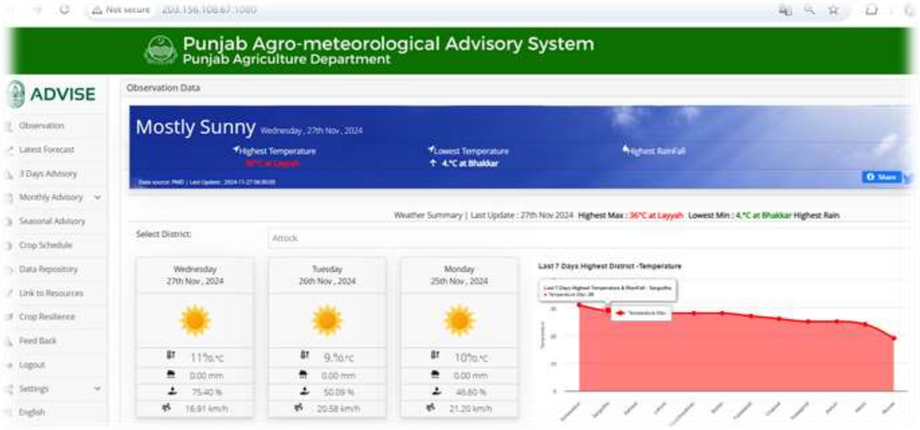
- **ADVICE DSS provides data-driven, site-specific crop management recommendations tailored for extension workers and farmers.**

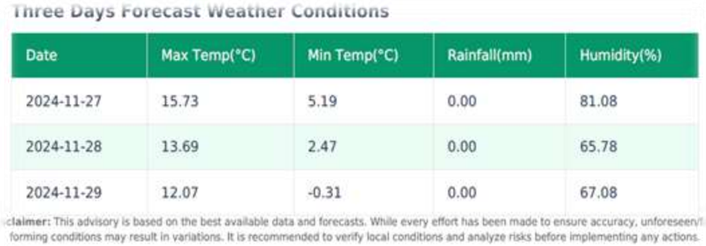
- **It offers localized weather-based advisories for short-term, monthly, and seasonal planning to support informed agricultural decisions.**

Key Features:

- **Localized Weather Forecasts:** Access to three-day weather forecasts tailored for specific regions.

- **Agricultural Advisories:** Recommendations on crop management, pest control, irrigation, and fertilizer application based on real-time conditions.
- **Data Integration:** Incorporates satellite data, meteorological inputs, and field data for precision farming.

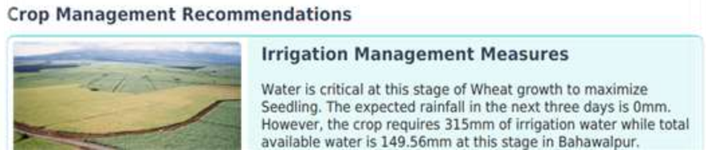




Three Days Forecast Weather Conditions

Date	Max Temp(°C)	Min Temp(°C)	Rainfall(mm)	Humidity(%)
2024-11-27	15.73	5.19	0.00	81.08
2024-11-28	13.69	2.47	0.00	65.78
2024-11-29	12.07	-0.31	0.00	67.08

Disclaimer: This advisory is based on the best available data and forecasts. While every effort has been made to ensure accuracy, unforeseen/ forming conditions may result in variations. It is recommended to verify local conditions and analyze risks before implementing any actions.



Datasets Utilized for ADVICE DSS

Data	Variables	Global Data Sources	Local Datasets/ Validation
Weather Data	Maximum Temperature	European Centre for Medium-Range Weather Forecasts (ECMWF)	Pakistan Meteorological Department/
	Minimum Temperature		
	Rainfall		
	Relative Humidity		
Soil Fertility	Nitrogen	HWSD (Harmonized World Soil Database)	Soil Survey of Pakistan/ Extension 2.O project
	Phosphorus	NASA (National Aeronautics and Space Administration)	
	Potassium	GSDE (Global Soil Dataset for Earth System Modeling)	
Water Availability Data	Evapotranspiration (ET)	MODIS Satellite (ET × CL)	On-Farm Water Management Department & PCRWR
	Modeling-Conveyance Losses (CL)		
Crop Threshold	Optimal (Tmx, Tmin) and Rainfall at crop growth stages	Conducted Analyses-DSSAT, APSIM modeling	PAD/ Research Papers
Pest/ Disease	Threshold (Tmax. Tmin, RH, Rainfall). IPM practices	Pest Warning & Quality Control Pesticides Agriculture Department Punjab (Crop Production plan)	

Overview of Punjab ADVICE-DSS

3 Types of Advisories

1. 3-Day Advisory

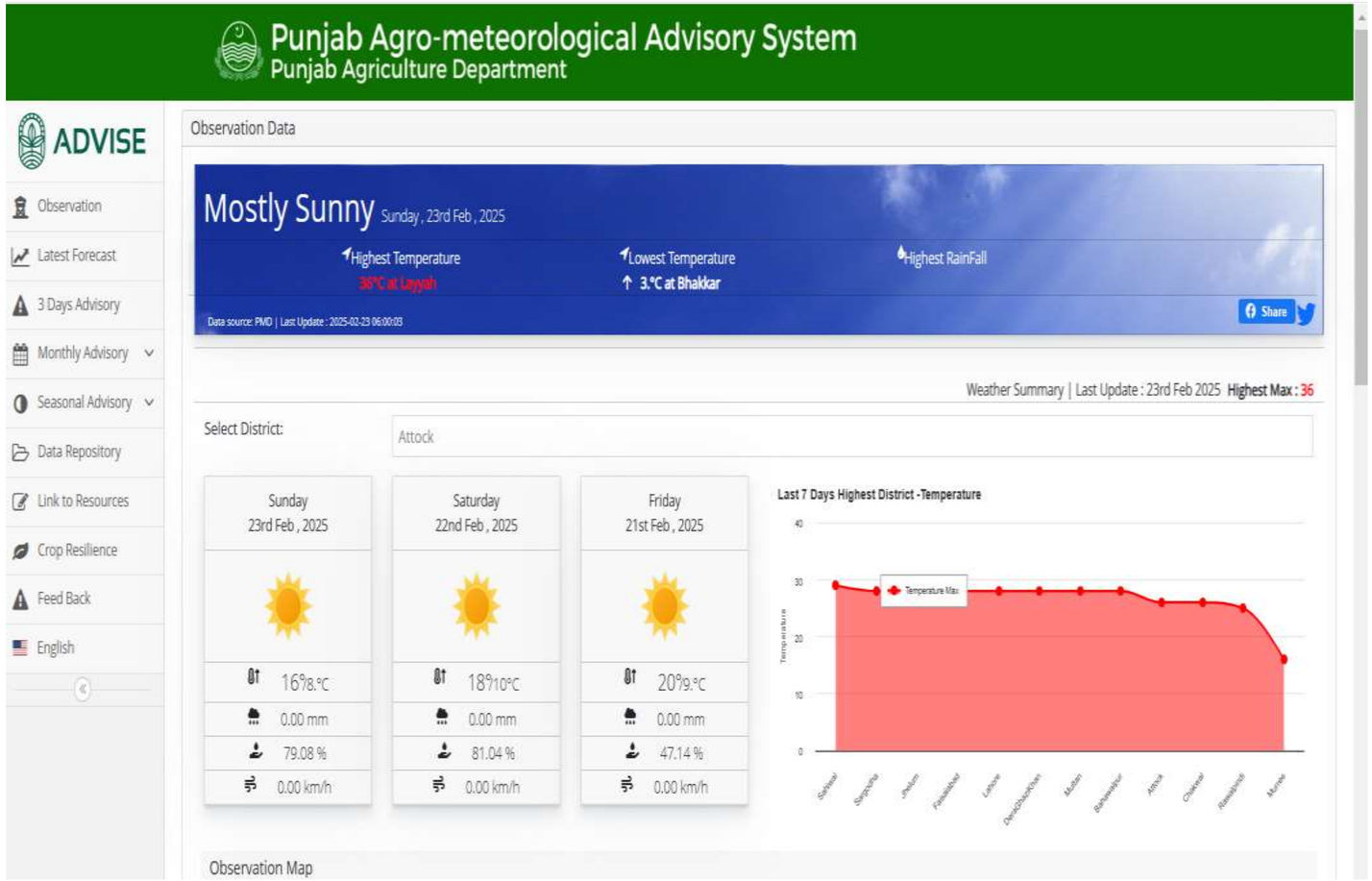
- Actionable recommendations delivered every three days
- Accurate fertilizer dosages
- Optimized irrigation scheduling

2. Monthly Advisory

- Comprehensive production plans tailored to monthly conditions

3. Seasonal Advisory

- Planting Date Prediction Module
- Pest Forecasting Model

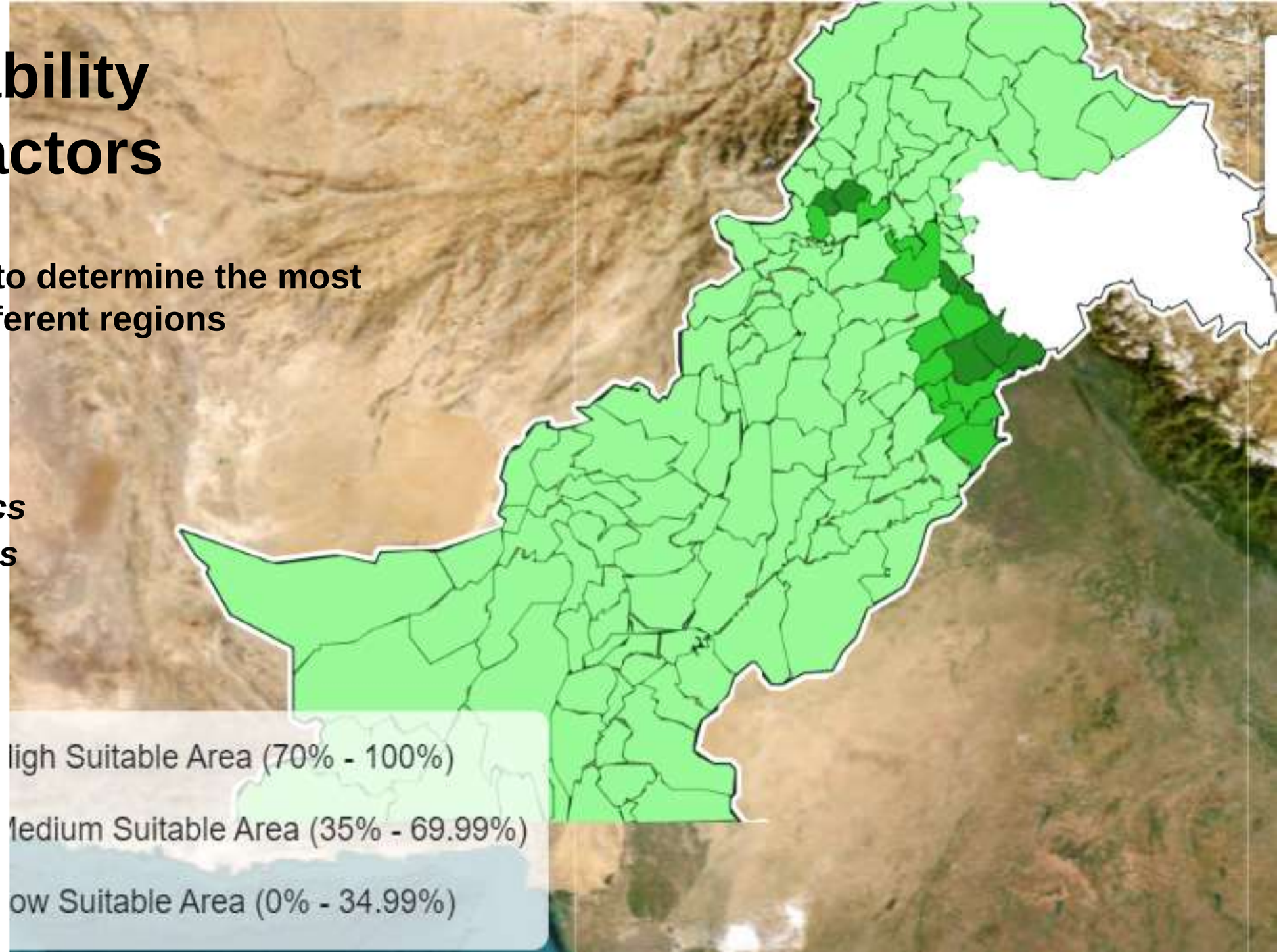


Agro-suitability and Key Factors

Scientific evaluation to determine the most suitable crops for different regions

Key factors

- ***Soil Characteristics***
- ***Climate Conditions***
- ***Water Availability***



Datasets Utilized for Agro-Suitability Analysis

Data	Variables	Global Data Sources	Local Datasets/ Validation
Climate Data •Historical: 2010-2024 •Future: 2025- 2100	Maximum Temperature	WorldClim/ CMIP6	Pakistan Meteorological Department
	Minimum Temperature		
Soil Data	Soil pH	International Soil Reference and Information Centre- ISRIC	Soil Survey of Pakistan
	Soil Root Depth		
Water Data (2015-2024)	Evapotranspiration (ET)	MODIS Satellite (ET × CL)	On-Farm Water Management Department & PCRWR
	Modeling-Conveyance Losses (CL)		
Crop Norms	Tmax. & Tmin: Optimal	FAO- ECOCROP Modeling- DSSAT Model	Research Papers
	pH Min, Max (Optimal)		
	Crop Water Requirement- Modeling		

Green Transport Decision Support System

What A tool based on transport emissions data

Purpose Generate future scenarios for transportation carbon emissions to support policy decisions

Output

1. GHG Emissions from transportation
2. Transport Emissions and socioeconomic factors
3. Future Scenario

Time Frame 2025 till 2050

Datasets Utilized for Green Transport

Data	Source	Validity
Transport Emissions	CW	Climate Watch (CW). World Resources Institute Washington, D.C (2024) Supporting organization are over 12 including World Bank, Stockholm Environment Institute, GIZ, UNCC
Socioeconomic Indicators	WDI	World Development Indicators (WDI) is a World Bank Data source
Qualitative Indicators	Scholarly Literature	Based on scientific literature

THANK YOU

CARE for South Asia Project, Component 1

Contributing to an enabling environment for climate-resilient policies and investments for select sectors in South Asia

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