SAMPLE REPORT · GEOSPATIAL ANALYTICS

Remote Sensing & Land Intelligence Report

Crop Condition and Land-Cover Change Assessment

Satellite-derived vegetation health, crop-condition indicators and land-cover change analysis for a 120,000-hectare agricultural district over three Kharif seasons (2022–2024). Sensor: Sentinel-2 MSI (10m); supplementary: Landsat-9 OLI.

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Status	Sample / Illustrative

This document is a sample/illustrative report produced by GeoSpatial Analytics to demonstrate report structure, analytical depth and output format. All figures, coordinates, scores and conclusions are illustrative only and do not represent real assessments.

SECTION 1

Study Area & Data Summary

Study area	Sample District (illustrative), approx. 120,000 ha
Sensor (primary)	Sentinel-2 MSI — 10m spatial resolution, Level-2A (BOA)
Sensor (secondary)	Landsat-9 OLI — 30m; used for 2022 baseline only
Analysis period	Kharif 2022, Kharif 2023, Kharif 2024 (June–October each year)
Cloud filter	Scene cloud cover < 20%; median composite per 16-day window
Indices computed	NDVI, EVI, NDWI, SAVI, LAI (from SNAP biophysical processor)
Classification	Random Forest (500 trees, 14 spectral + temporal features); OA = 91.4%
Ground truth	Field survey points n = 240; Kappa = 0.88

SECTION 2

Land-Cover Change Summary (2022 → 2024)

Land Cover Class	Area 2022 (ha)	Area 2024 (ha)	Change (ha)	Change (%)
Irrigated cropland	68,200	65,400	-2,800	-4.1%
Rainfed cropland	22,400	21,100	-1,300	-5.8%
Dense vegetation/forest	8,900	9,200	+300	+3.4%
Fallow / bare soil	9,800	11,600	+1,800	+18.4%
Built-up / urban	6,200	7,900	+1,700	+27.4%
Water bodies	4,500	4,800	+300	+6.7%

Urban expansion (+27.4%) and fallow expansion (+18.4%) are the dominant change drivers. Agricultural land loss is concentrated in peri-urban zones within 5 km of town centres.

SECTION 3

Crop Condition — Kharif 2024 vs 5-Year Mean

Sub-district	Mean NDVI (2024)	5-yr Mean NDVI	Anomaly	Condition
Block A (North)	0.62	0.68	-8.8%	Below normal
Block B (Central)	0.71	0.70	+1.4%	Normal
Block C (East)	0.58	0.67	-13.4%	Poor
Block D (South)	0.74	0.72	+2.8%	Good
Block E (West)	0.66	0.64	+3.1%	Good

Block C (East) shows a significant negative NDVI anomaly consistent with delayed sowing and below-average monsoon onset rainfall. Field verification recommended for crop insurance purposes.

NDVI anomaly analysis based on 5-year baseline (2019–2023). Seasonal cloud contamination may introduce ±0.03 uncertainty in individual pixel composites. Classifications should be validated against district agricultural department records.